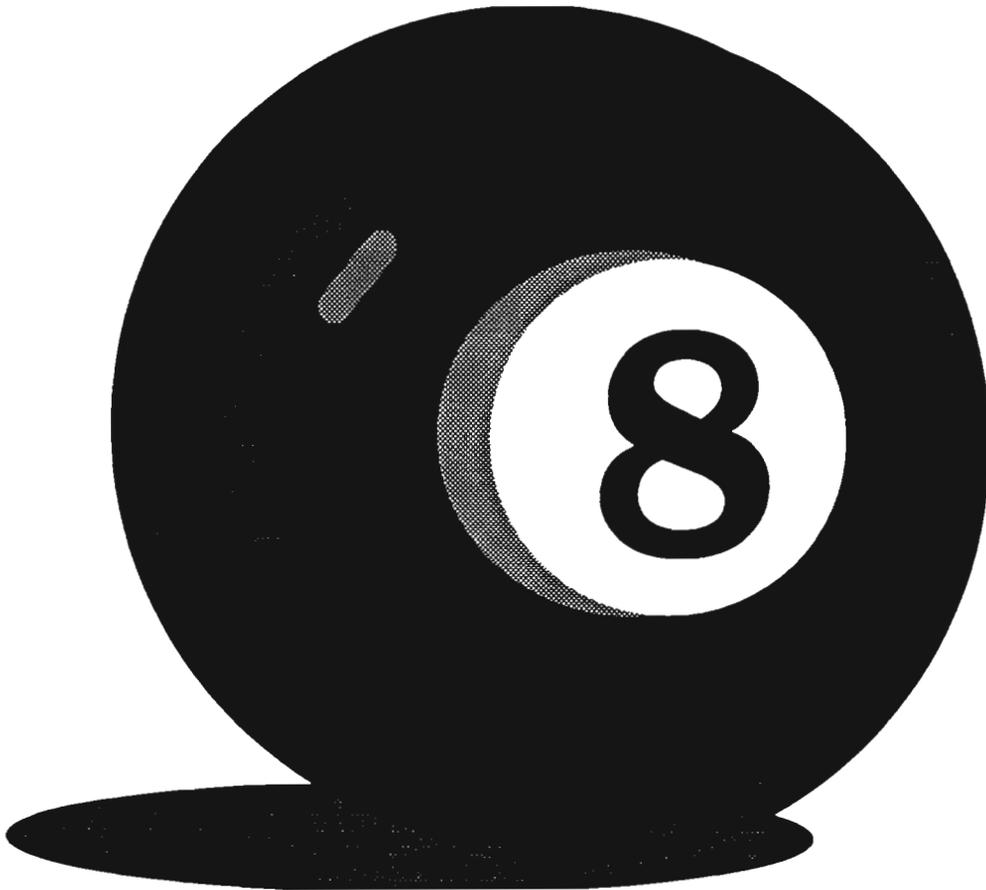
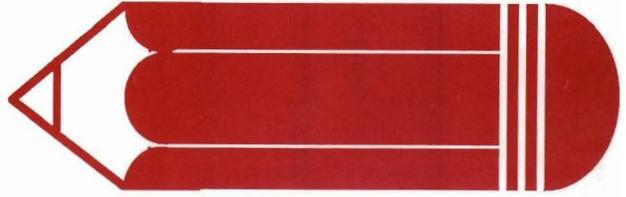


geoWorld

The definitive magazine about GEOS

Issue #19



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GEOWORLD

The definitive magazine about GEOS

Issue Number 19

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Cover: Object oriented graphics by Susan Lamb. Created with geoPublish drawing tools and saved as clip art in a master pages library. Available on GEOWORLD disk 3.

The GEOS Copying Controversy

Software Piracy: a problem that hurts everyone.
By Marshall Kragen

In *GEOWORLD* #18 I wrote an article seeking to explain what needed to be done to help GEOS to survive in a period when Commodore seems to be abandoning its 8-bit computers and Berkeley Softworks seems to be going through a period of reconsolidation and restructuring. Since that article appeared, another aspect of the same controversy has arisen.

It all began with the posting of a message on QuantumLink, to which I responded, and the resulting outpouring of messages addressing my response. Virtually all of them were opposed to the position I was taking and even made overt threats against me and insisted on an apology.

As I stated there, I would rather set forth my views in the more articulate forum provided by an article than the hastily composed messages posted on Q-Link. Others have promised to reply if I do so, and I hope *GEOWORLD* will publish the replies.

The original message said that a certain copy program allowed users to remove the copy protection from GEOS and in turn copy the boot programs to a 3 1/2" disk. Don't get me wrong. I don't yet own a 1581 disk drive, but it is my planned next acquisition. I'm sure that I will want to copy all my GEOS applications onto that better format. I can therefore understand the excitement felt in discovering that the possibility of doing so was at last available.

I feel sure that those using these programs, are not seeking to make illegal copies of GEOS rather than buy it. I've seen these same people on-line for as long as there has been a GEOS arena on Q-Link and they are among the most avid users of the program. I have no doubt they are registered owners wanting to use GEOS to the maximum, in this case through use of

the better disk drive.

What does disturb me is that because the message boards are open to everyone, those seeking to acquire GEOS through illegitimate means will also have access to these messages and discover there is a means to pirate this copy-protected software and therefore deprive BSW of deserved revenue.

Commodore users have been notorious, through the years, for their willingness to pirate software, more almost than users of any other type of computer, (except perhaps Atari). The reason would appear to be that the C-64 has always been identified as a games computer and many users could not see investing \$25-\$30 for the average arcade game, but instead would rather make a copy from someone else, allowing them to keep themselves entertained for the short lifespan of the game and then moving on to another game.

With the advent of GEOS, the C-64 and C-128 can no longer be considered only game computers, but instead are as *legitimate* as any others. The problem is that the mentality of wanting to copy something illegally rather than buy it is still out there. It is perhaps this mindset that must be cured. I see it as a terrible thing to copy these programs rather than to buy them. If you think about all of the money and time invested in creating something as well-constructed as GEOS and then have it literally stolen rather than to be rewarded through payment for your work, you can see the dilemma.

Think about it as a great book of any classic of literature. For example, I read a good book some time ago, not a classic, but a good read called *Tai-Pan* by James Clavell. The book was ironically about Hong Kong. On a

trip to Hong Kong my father bought a copy published in Formosa (ignoring copyright protection), for \$2.00. For all of his work, Mr. Clavell would receive no reward for these books. Is this what he deserves for giving us all of those hours of enjoyment?

The same is true of a designer of software. They put in so much work designing and debugging the software, writing manuals, packaging, and advertising it, only to find hordes buying the latest copy program to pass copies out to whole users' groups. This may profit the writer of the copy program, but not all those creating the original software.

Another example was brought to my attention just last night. My one true love in life is not, as many would suspect, either GEOS or the practice of law, but fine art photography, to which I devote many of my waking hours. Yet, I have just learned of a woman who has been showing works by nature photographer Eliot Porter and Freeman Patterson, (the finest nature photographer working today), as her own. Mr. Porter has obtained a court injunction against her, but I am sure all of us would share the outrage he feels, with the amount of work he put into a single photograph, to have someone simply copy it and call it her own.

Does not Jim DeFrisco (writer of *geoPaint*) have the same right to feel outrage that his work will simply be taken without due payment?

I see the problem magnified even more in the GEOS world. Regrettably, the other large makers of software for Commodore have not seen fit to make their software GEOS compatible as everyone thought they would and have not created software to be used with GEOS. Therefore, other than BSW, all of the software support has come from cottage industries, small companies operating out their homes. They find it difficult to turn out quality software, advertise it and still make a profit from its sale. I am thinking of companies exemplified by Susan Lamb, TT Graphix, Dale Beach, and others. It becomes devastating to them to have their software pirated. These people are providing us a valuable service, giving us products

otherwise unobtainable. They deserve our protection and aid. Discouraging pirating of their software is the least that we can do

I hope that I have made myself clear to those so willing to criticize me. If there is to be a discussion of copying GEOS for legitimate reasons, as were those messages originally posted, let it not be in a public forum where the information will fall into improper hands, but in a more private way. I admit, to having told others how to get around protection problems when I've determined the user had a legitimate reason to do so, but always quietly and privately on Q-Link by E-mail.

The best overall solution is for others to realize that they must cease this stealing of the property rights of others and *not want* to copy software any longer. It may be too much to ask, but it is ultimately the only answer if GEOS & other forms of software can continue to be produced

Having said all this, let's look for a solution from another angle. Perhaps BSW needs to begin now to assist those legitimately using their software to expand its usage to more convenient means. An easy way to do this is what many manufacturers of other software brands are now doing. That is, to allow you to send in your 5 1/4" disks for 3 1/2" disks so that you can use the more desirable format.

Another method would be to charge additional for unprotected software so that it could be copied to hard disks or 3 1/2" disks. Perhaps at some point BSW could simply cease copy protection altogether, although I would feel reluctant to do that if I were a manufacturer. Something must be done to assist legitimate, serious users to maximize their usage options.. It is my understanding that Apple GEOS is not copy protected. We Commodore owners deserve no less.

All I can expect is that my position is more understandable to those criticizing me. I am sure I have not lessened your criticism. But if I have started a more meaningful dialogue than the mudslinging on Q-Link, then I have accomplished enough.

--Marshall Kragen

Letters to GEOWORLD

GEOS Report Corrections

I enjoyed Michael Ross's GEOS Report article in issue #18 of geoWorld. Most of the history and chronology in the article is correct, but I would like to clarify a few points:

Berkely Softworks designed both the hardware and the software for the SkyTray computer, not just the software as the article implies.

The acronym VLIR stands for Variable Length Index Record, not Vertical Length Index Record.

The article classifies the index block of a VLIR file as "essentially a linked list." Rather, an index block is simply an array of pointers. Each record of a VLIR file, however, is comprised of a linked list of sectors, which, I suspect, is what Mr. Ross meant.

Mr. Ross refers to a phone interview he had with me, stating that I said the disk turbo code was the most elegant section of the Kernal. What I had referred to were the GEOS disk routines. The disk turbo code is an impressive piece of work, but it is not strictly part of the Kernal as it is downloaded to the 1541 drive by the **InitTurbo** routine. The GEOS disk routines, and not the disk turbo routines, are, in my opinion, the most elegant portion of the Kernal. They sport an impressive internal hierarchy with excellent register usage and complete error propagation. Both the GEOS disk routines and the disk turbo code were written by Doug Fults, who also wrote most of the deskTop and developed the VLIR concept (there is nobody at BSW named Doug Durran as the article states).

Matt Loveless
Berkeley Softworks

GEOS goes to School

We use geoWrite as our word processor throughout the school in which I teach. The kids love it!! I teach the kids to use the Commodore 10 point NLQ font. As you know, BSW 9 point

is automatically loaded and must be changed to use any other font. Once the kids have correctly changed to the Commodore font and they make a mistake in the first letter they type, the font reverts back to BSW font. Is there any way to delete the BSW font or move it to other than the resident font so this problem can be eliminated?

Graeme Wilson
Weston, Ontario, Canada

The BSW font can't be deleted, which is why it is called "resident" (or built-in). It has no file icon, but allows for text in a geoWrite file to remain intact even if no font files are on your work disk. An alternate procedure for your students could be to type a few words in BSW type, highlight the copy and change to Commodore 10 font. -Ed.

Request for geoWrite Utility

I personally have no interest in games, nor does anyone in my household. My "do wants" include good graphics and utilities. How about one to make a "multiple copies" feature in the geoWrite print dialog box (also in geoPaint)? Can you tell I'm many miles from a good copy machine?

Susan Jane Christner
Bena, Virginia

How about it geoProgrammers? -Ed.

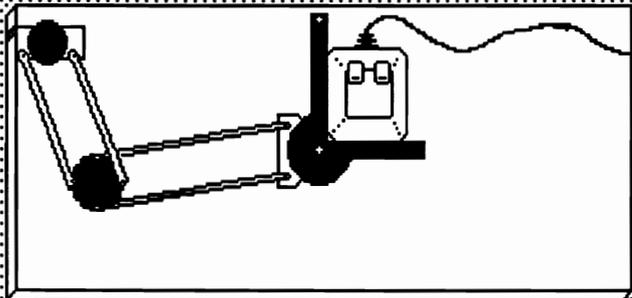
Need for GEOWORLD Disks

The fact that there are many excellent and exciting GEOS public domain programs out there that are not accessible to many of us GEOS users has bothered me for quite some time. I realize that they are available on Q-Link, but many of us do not have access to a local telephone number in order to connect to Q-Link. It is not the monthly charge for the service that deters me, but the fact that my long distance phone charges would be enormous. Thanks for making these public domain programs available to all of us.

Larry D. Henry
Louisburg, Kansas

Tracings

By Garry N. Jockel



I've long recognized that I was born with a graphic-oriented mind, but not the gift of being artistic in the spontaneous sense. The advantages of computer-aided art was ideal for me and now, GEOS has opened that whole new world to me because, I "don't talk computer". Within this graphic world I find myself coming back to geoPaint.

I too could sing the praises of GEOS but that's been done to death so I'll do what I do best, talk about the short-comings of geoPaint. The *ellipses* & the *stretch/scaling* (only within the drawing window) of the new geoPaint are welcome additions but I would like to see stretch/scaling in a full page *preview* mode. I would also like to see rotating by degrees, cutting out free-form rather than as a rectangle, distort-stretching graphics into perspective, and viewing Photo Albums on another drive. I would like to see the graphic tools of geoPublish in geoPaint and vice versa. GeoPaint has room for even more growth, Please Don't Stop!

So this was my problem: how to make full page, high-resolution pictures quicker and easier. The new 2.0 geoPaint *drawing grid* overlay didn't look like it would make my job any faster or easier. I tried to think of some way I could trace other people's artwork into my computer. I thought of using a Koala Pad or light pen. I tried tracing paper taped to the monitor screen with the contrast turned up. I thought of the expense of *Computereyes*, but, being cheap and resourceful, my

attention turned to my new toy, a 1351 Mouse. The mouse is excellent from point to point, but would distort when trying freehand art no matter how hard I tried to steady it. The problem was lateral rotation. Let me make this simpler for you pilots out there. If my mouse were your plane you would call it yaw. How do I let the mouse move freely vertically and horizontally on an X-Y plain without twisting, clock- or counter-clockwise?

My solution: By implementing a drafting arm or *Draftette*, (a small portable version of the office desk top kind, manufactured by DRAFTETTE CORP.) together with my mouse, provided the stability I needed. A drafting arm is nothing more than a double parallelogram, fixed at one end, with a ruled square and adjustable axis at the other. I found mine at a drafting/art supply store for \$25.00, including plywood board and arm.

Once home, I made the following alterations: I turned the square, (the hand at the end of the arm) over so the adjusting knob faces the board and the longer "finger" points up. Then, by bending the longer "finger" up at about 4 and 1/4 inches, (see Fig. 2) I was able to attach a pen. Placing a heavy rubber band over the one finger and twisting it over the top right corner of the mouse, then over the other finger, with the square (hand) fitting neatly in the side groove of the mouse secures the square to the mouse. I then tape a pen or pencil to the up-bent "finger".

Ready to start. With your art work taped to the drawing table, open a geoPaint drawing window and in pencil mode, place a real pencil on the starting point of work to be traced. Using CRSR keys to move pencil point into position on the screen, click the mouse button to

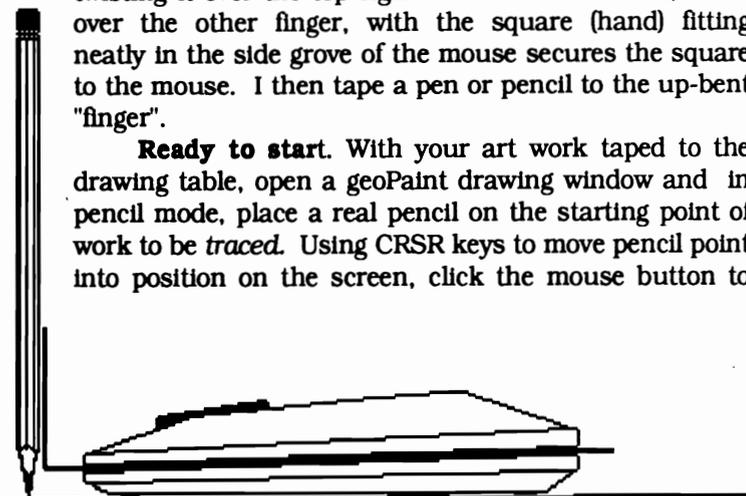


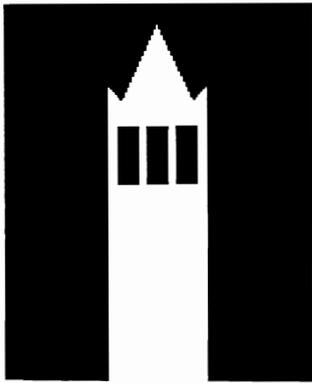
Fig-2

trace. Note: care must be taken. Short lines are better than long complicated ones and the mouse should be kept clean. This method can save you time and trouble.

P.S. It took three Drawing Windows to trace the map of Long Island which ended up as a crude likeness but was proportionally correct. The detail was touched up in Pixel Edit mode.

--Garry Jockel





the GEOS Report

DESKTOP SERENADE - A Cook's Tour.

*Part 2 of a special comprehensive report on the GEOS Environment.
By Mike Ross*

In this section, I will give a guided tour of the external environment with which the GEOS user will interact. I will start with the very basics, covering first, the Desktop and then the applications, desk accessories, utilities, and drivers included on the boot disk. The descriptions herein are Commodore 64 specific, but there is a high degree of transparency between Commodore 128 and Apple II GEOS users. Where there are significant differences, I will point them out.

To use GEOS (on a 64), the user must first insert the GEOS boot disk in his drive, then, using the standard DOS command, **LOAD "GEOS", 8, 1**, whereby GEOS will execute the GEOS boot, *GEOS*, and the GEOS kernal into memory. GEOS will then activate the DESKTOP, load in the default printer driver, default input driver, default system configuration (the disk drives and REU setup), and the Preference Manager preferences.

The idea behind the DESKTOP is to give the naive user an intuitive interface to file management. The user need only master the art of pointing, clicking, double-clicking, and icon-dragging to manage his files.

At the top of the screen on the DESKTOP is the *Command Menu*. This menu is simply a list of items. Via joystick, mouse, lightpen, or drawing tablet the user can move the pointer on the screen. If the pointer is moved into an area defined by the menu, he may single click on any menu item. On the DESKTOP, the menu selections are: *geos*, *file*, *view*, *disk*, and *special*. In most cases clicking on the menu here or in an application will bring up a *sub-menu*, and it is possible that a click on a sub-menu will activate a sub-sub-menu, and so on.

Occupying two-thirds of the screen is the *Disk Notepad*. At the top of the Notepad is a header with the name of the current disk on display. On the face of the Notepad are *Icons*. These are graphic representations of the files on the disk. The user manual describes an icon as "an object, tool, or command".

At the top, right of the screen is a Disk Icon. This icon has the name of the disk in use. On the Commodore 64, with the current version of GEOS, only two drives of a single device type are allowed. On the Apple GEOS, up to 4 drives of differing types are allowed. If the user has only one drive (and no REU), only one disk icon will be present. If the system has been configured for 2 drives (or more for the Apple) or one drive and RAMDISK, then appropriate disk icons will be present.

Below the Notepad on the DESKTOP are two more icons

-- the trash can and printer icons. On the Commodore versions, these icons are next to each other. They have been relegated to opposite corners of the DESKTOP on the APPLE version and GEOS 2.0 for the 64 and 128. Having these icons separated prevents accidental trashing of files. It is all too easy for a tired user to throw something in the trash, when he intended to print a file! Below the printer icon the name of the printer driver selected is shown. And, of course, the trash can is used to delete files.

On the Notepad, 8 file icons can be visible on a page. The Notepad itself can be many pages long. Getting to the other pages require clicking on the dog-eared corner of the pad. This emulates turning a page. In addition, there are keyboard shortcuts to get to a specific page of the pad. The order of files on a disk is translated to the Notepad as follows. On a single pad, there are 2 rows of four icons each (if the page is filled or certain files not deleted -- there can be gaps). The order of files goes from left to right, then top to bottom, then by page.

Using the pointer -- Most commands require that the user need only to point, with input device, to a menu or icon, then selecting that item with the input device's select button (like a joystick fire button). This action is called *clicking*. An example of clicking would be to click on a file icon, then go to the menu and click on the listing *file*, bringing up the sub-menu, selecting *open* to open and execute the file.

But there is a better shortcut: *double-clicking* on an icon will load and execute the file in most cases. Not all files on the desktop are executable. Font files, driver files, and system files are examples of files that cannot be directly accessed. To execute, the double-clicking must be performed fast. Double-clicking is a timed event and is distinguished from two slower single clicks.

Icons -- Icons are metaphorical expressions of the kinds of files that are on a disk, or the work an icon must perform (like the trash can). The *geoWrite* icon has a picture of pen and ink, the data files created by *geoWrite* are represented by stacks of papers. The metaphor of throwing paper in the trash can can thus be easily seen. The action on the DESKTOP is made possible by *dragging Ghost Icons*. A single click will highlight the file icon in reverse video and the second click (a slow click action, not double-clicking) will create a ghost icon that attaches itself to the pointer. Wherever the pointer goes, the ghost icon follows. If the ghost icon is placed on the trash can and

--continued

clicked, the file is deleted. The icon can be dragged to a disk icon (representing a second drive) and clicked; this will result in a copy of the file written to the disk in that drive. Ghost icons can be dragged off the notepad to the bottom of the screen and clicked on. The result will be that the regular icon will now be placed on the bottom border of the screen for further manipulation. This icon (and seven potential other icons) will remain on the border, even when a new disk is opened up. On a one drive system, dragging the ghost icon from the border, up to the newly opened disk's Notepad will set up a file copy routine to copy a file to that new disk.

One difference between the Macintosh interface and the GEOS interface is that on a Mac, a user must keep his finger on the select button while looking at a menu or sub-menu or while dragging icons around. In GEOS, the user pushes and selects, then pushes and releases. I've used both interfaces and find the GEOS method friendlier.

I have now covered the standard GEOS actions the user must master to do anything with GEOS. I will now discuss disk organization, which will lead into discussions of the files themselves.



Disk and file management -- The boot disk is to be left alone as much as possible. There are, however, some things the new user must do with the boot disk to get up and running. He must create a *back-up* copy (although newer releases of GEOS now provide a backup). He must configure the boot disk to his particular system setup, and the user must create work disks.

The backup procedure is a simple utility and won't be discussed further except to say that it is the only "legitimate" BSW utility that will copy *GEOS*, *GEOS BOOT*, and the *KERNAL*. This is a good place to discuss boot disk safety. In addition to electronic write protection and physical write protect tabs, GEOS will not allow direct deletion of files from the boot disk. The user cannot put the kernal icon in the trash directly. The user must go through a two-step process on a boot disk that first requires dragging the ghost icon below the Notepad, clicking it off, then clicking it on again, then dragging the icon to the trash can. This is an obvious safety measure.

The user must configure GEOS to his system. Most of the configuring is easily done. When GEOS boots up, it looks for the first printer driver on the disk and selects that driver as default. Likewise, the same holds for the input driver. In addition, the *Configure* and *Preferences* data files hold the disk drive setup and other parameters. The user need only to re-arrange the files on the disk in such a way that the printer driver and input driver of choice are the first of each kind of driver on the boot disk. Most of the standard printers and interface devices are supported, but non-standard printers can present problems. The user often has to experiment with different drivers to find one compatible with his printer.

Input drivers include joystick, proportional mouse, lightpen, and drawing pad. If a user has the wrong device plugged in, there is a way via cursor controls to choose a different driver. The geos menu has listings to select or

change input drivers as well as printer drivers.



The **Configure** file needs to be set up for the individual disk setup and other hardware considerations. The user will *double-click* to access this file to make the necessary changes. On the 64 with its present 2 drive limitation, the choices are: one drive, two physical drives, one drive and REU configured to RAMDISK, or RAMDISK and 1 physical drive configured as a *shadowed* drive. With shadowing, work is done in the REU for speed, then saves go to the one physical drive.

The configure file also allows you to select a *RAM Reboot* option, which will throw a copy of the kernal into a bank of the REU. This is handy for system crashes and a fast reboot of GEOS. *DMA* (Direct Memory Access) can also be selected for fast data moves. Once the user has his configuration determined, it can be saved, so the choices will default on booting GEOS. A user can go back at any time and re-configure with a choice of saving the new configuration or just using it for the present use (no save). Any save to the data file here will rewrite over the old configuration. This is a scheme that is used over and over again with one-of-a-kind type files



The last thing to set up on the boot disk is the **Preference Manager**. The manager is a file class called a desk accessory to be discussed later. In the context of set-up, it is the first desk accessory a user will need. One can set up such parameters as screen colors (for foreground, background, border, and pointer), time and date settings (the 64 has no battery clock), pointer customization (design your own pointer), and joystick/mouse speed (acceleration as well as minimal and maximal velocities can be set). These settings like the configure file are saved as a data file at the user's request and will manifest themselves upon boot-up. The user can have different preferences files from disk to disk for reasons that will become apparent.

The last thing a user needs to do to get going with GEOS is to create work disks. This is a mix-and-match process of tailoring a work disk to particular needs. The 176K 1541 disk drive fills up a disk with just a few applications.

The process of creating a work disk varies from configuration to configuration. Two drive (or drive and RAMDISK) configurations make creating a work disk easier. From the DESKTOP users can select whole disk copying from the command menu or after formatting a new disk the user can drag file icons to the disk icon selected and transfer files easily. Choice is based on how much of a disk needs to be copied.

A single drive user can use the disk copy utility supplied or he can (after formatting) drag icons off the Notepad, open a new disk, then drag the icon to the new disk. The user will then have to perform a number of physical disk swaps prompted by GEOS. This is obviously more cumbersome than a two drive setup.

A work disk should always contain the DESKTOP, the application to be used, the data files to be utilized if necessary, Preferences (if needed), font files desired,

printer driver(s), Photo and/or Text Manager, and other desk accessories or utilities needed.

Here now are the files found on the boot disk:



GEOS, GEOS BOOT, & KERNAL --

Loads in GEOS, putting the kernal in memory, loads in the various user-set default settings, executes the DESKTOP.



DESKTOP -- GEOS's file manager and interface to all GEOS has to offer. It is conceivable that a programmer could write an alternative interface, even a command line interpreter, as the DESKTOP is, after all, just another application. Here is a listing of DESKTOP menus and actions:

GEOS menu:

Geos info: displays copyright notice and version number of GEOS.

Desktop info: Displays version number of the DESKTOP. Not the same as the *info* sub-menu below.

Select printer: selects an alternative printer driver (if you wish to change from the default). The printer drivers selectable must be on the disk presently opened.

Select input: selects an alternative input driver. Works like *select printer*.

plus desk accessories on opened disk. The desktop always has the first four menu choices. Desk accessories must be files present on disk (and can also be double-clicked). Desk accessories are listed further below.

FILE menu:

Open: loads and executes currently selected file on the DESKTOP.

Duplicate: creates a duplicate copy of the selected file. A *Dialog Box* will overlay the DESKTOP requiring keyboard input. These *Dialog boxes* occur in most applications to a great extent and are part of the *GEOS feel*.

Rename: renames the selected file with a *Dialog Box*.

Info: displays information about the selected file. This is a true GEOS creation. As will be discussed, additional information above and beyond the standard DOS and requires a modified directory and header structure. When *info* is selected a "*window*" overlays on top of the DESKTOP. The window is used in all GEOS desk accessories and dialog boxes. Information supplied by the info box (other than the name of the file listed on the header) include:

Disk -- name of disk where file is located.

Type -- type of file (system, application, font, etc...)

Class -- permanent internal name of file (Eg: Write Image V2.0).

Structure -- file structure (sequential or VLIR)

Size -- size of file in kilobytes (as opposed to blocks)

Modified -- Time and date stamp of last modification

Author -- name of programmer (on files other than data and non-GEOS)

Write Protect -- write-protect status for file. A click of the hollow box next to the write protect indicator

activates or deactivates an electronic write protect. The file will not be able to be thrown in the trash.

User note box -- An area to save minimal notes concerning a file. The DESKTOP must be on disk to read this information.

To leave the info box, like so many other applications, there is a *close button* that must be clicked.

Print -- prints the selected file (data files only). The icon can also be dragged to the printer icon.

VIEW menu:

Icon: files are displayed as previously discussed. This is the view form by which to manipulate files. The other modes are display only and do not use icons.

Size: files sorted by size (largest first)

Type: files sorted by type

Date: files sorted by date of last modification, most recent first.

Name: sorted by alphabetical order of file name

DISK menu:

Open: opens disk in currently selected disk drive and displays them as described above.

Close: closes currently opened disk. This operation can also be accomplished by clicking the small box in the upper right corner of the DESKTOP NotePad.

Rename: renames currently opened disk via a dialog box.

Copy: full disk copy. Copies from source to destination disk, replacing contents of the destination disk. A dialog box will confirm the over-write. Destination disks not formatted will be formatted as part of the process. A one drive system, requires much disk swapping. For one drive systems there is an alternative disk copy utility. Copy is a fast way to get a disk into RAMDISK and back.

Add Drive: enables a second physical drive onto the system. Each drive must have its own unique drive number. The 1541 drive defaults to device #8 and a hardware switch is not standard on these drives. GEOS must step the user through a series of steps to software-select a drive number. This is not necessary for RAMDISK and 1571 drives.

Validate: verifies the integrity of the sectors of the currently opened disk. The disk re-opens after validation. The standard 64 DOS validate command must never be used as it will destroy GEOS-specific file header information such as the icon information and the info box information.

Format: formats a new disk.

SPECIAL menu:

BASIC: escapes from the GEOS Desktop to Commodore BASIC. BASIC programs will not interfere with the machine language kernal, so the kernal can lie in wait until the user presses the RESTORE button, which will bring the Desktop back up. This is different from a RAM Reboot (to be discussed later).

--continued

RESET: initializes the Desktop and re-opens the disk. Use when encountering a disk error or if a disk has not been properly opened or closed.

QLINK: boots the QuantumLink disk on the back side of the boot disk. *QuantumLink* is a dedicated 64/128 national on-line service that has (in addition to everything else), a GEOS board. GEOS techs and customer service people help users to master GEOS applications or just plain get help. In addition, there is programming support, forums, downloadable upgrades, a vast library of user-created applications, desk accessories and data files. There is also a laserprinting service (GEOS takes full advantage of POSTSCRIPT).

I've gone into some detail concerning the Desktop as it is the file handler and user interface to the system. It typifies the manner in which the various applications interact with the user. The Desktop performs a number of kernal routines that represent the system quite well. I will not go into this kind of depth in the following listing of GEOS boot files. I continue now with the listing.

The Desk Accessories: these are small utility programs that are used from within a GEOS application. Consequently, a desk accessory can be used in the Desktop as well as another application such as geoPaint. A desk accessory will overlay itself on top of the current application. What actually happens is that a swap file is created that swaps out the information covered over by the accessory. These accessories are loaded from disk, and from RAMDISK they "pop" right up without wait. Each desk accessory has a click button that returns the user to the main application.



Preference Manager: already discussed. Leaves a preferences file, one per disk allowed. This allows for customization of work disks. A user might wish for a slower mouse action in geoPaint than in geoWrite. The saved preferences data file will handle that.



Alarm Clock: will display the current time and set an alarm. If the user has not used the preference manager to set the time, he can do it here. The clock will set off a bell.



Calculator -- performs basic arithmetic functions such as addition, subtraction, multiplication, and division. The calculator can handle scientific notation. Maximum usable range is from 10^{-37} to 10^{37} .



Notepad -- for jotting down short notes. Information is saved to a notes data file, one notes file per disk. It uses the default BSW font as it is a simple string handler. The notepad, like the Desktop, has pages that can be turned. There are a 127 possible pages of notes. The Notepad has been criticized for being virtually worthless as it is so primitive (now improved in GEOS 2.0). There are no sophisticated editing features, and no dumps to a printer. Consequently, there are a number of third-party

applications developed to dump a notepad to the printer, or save the information to a text scrap, text album, or text data file.



Photo Manager (with Photo Album and Photo Scrap) -- The photo manager manages Photo Albums. Groups of images created either in geoPaint or "grabbed" by Graphics Grabber (from non-GEOS programs) are stored in Photo Albums of the user's own creation. Up to 127 images can be stored in an album. For an image to be placed in an album by the Photo Manager, a Photo Scrap must be created first. A Photo Scrap is the "go-between" for geoPaint and the Manager, although a scrap can be used by other applications or data files. Only one scrap is allowed per disk, so if additional images need to be manipulated the Photo Manager is a necessity.

The Photo Manager is a good example of multiple windowing. The Photo Manager overlays a window that displays the graphic album. On top of this box, a dialog box displays Album listings and requests a file selection. Once done, the dialog box disappears and the first graphic of the album comes up. The graphic may exceed the size of the displayed window so there is a way to scroll around the graphic. Additional graphics may be viewed by turning the page.

There are also file handling menus and sub-menus such as *cut* (deletes an image from an album while creating a Photo Scrap), *copy* (creates a Photo Scrap without deletion from the album), and *paste* (takes an existing Photo Scrap and pastes it into an album). A user can go to and from different albums from within the manager. Photo Scraps are limited in size by the window size in geoPaint. With 128 geoPaint the Scrap can be 1/2 the width of the page in 40 column display and a full page wide in 80 columns. Scraps and Albums along with the Photo Manager is one of the more powerful GEOS tools. A Photo Scrap can be pasted into almost any application.



Text Manager (with Text Album and Text Scrap) -- similar operation as the Photo Manager, the Text Manager handles albums of blocks of texts, best described as clippings. These are not inherently as useful as graphic images, and not all applications accept the Text Manager. It can be useful for moving large blocks of text from one geoWrite document to another.

This covers the basic desk accessories. Before getting to the applications, I will discuss what I call the applications support files:



Input drivers -- As previously explained, the default driver is loaded into memory upon bootup. If a user wishes to change drivers, he needs to have the necessary driver available on an opened disk. Otherwise, a user does not need to have an input driver on anything other than the boot disk. Various drivers have already been mentioned.



Printer Drivers -- as opposed to the input drivers, the printer driver must be present on every disk used. Printer support is primarily for dot matrix printers and various laser printers. Output to a printer is in bit-mapped mode as a rule although there are exceptions. Optimal printers are 80 dots per inch. Earlier applications do not handle 60 dpi or 72 dpi printers well. They have the potential to chop off the right side of printed material. The user must be careful if he has anything other than an 80 dpi printer. Changing printer drivers can only be done from the Desktop and cannot be done within any other application. There are third party desk accessories, though, that do allow a change from within an application.



Laser printer support is a bit more elaborate and is beyond the scope of this article. These drivers communicate best with a laser printer that is POSTSCRIPT compatible. POSTSCRIPT's use with GEOS requires additional utilities such as *geoLaser* and *geoPublaser* (for *geoPublish*).



Font Files -- There are 5 different font files that come with the GEOS boot disk along with the BSW 9 point default font. These font files, as well as the hundred or so that are now available, contain differing multiple character sets. The fonts essentially are bit-mapped out to the screen and printer. Font files may contain versions of the character set in different point sizes. One point is 1/72 of an inch. In addition to multiple point sizes of a given font, the style of *type* can be changed as follows: **plain**, **bold**, *italic*, **outline**, and underline. Superscripting and subscripting are also supported in some applications.

These featured types can be used in any combination. It is important to understand that these are not **escape sequence codes** sent to a printer, but pure bitmapped data. The icons this article uses are actually from an esoteric font developed by a third party, and designed to duplicate the actual icons. An application must always have its font file(s) on the same opened disk. If the font is missing, the default BSW font will manifest itself.

It is important to cover these support files in some detail as it will make covering the technical details of the kernel more comprehensible with an understanding of what these files do. More important to the user, but less important to this article, are the descriptions of the various applications that run under GEOS. These applications will be described in a more abbreviated fashion. The reason these files are being discussed at all is that they are unique in that they will not run without the kernel being resident in memory.

At last, here are the applications (other than the DESKTOP) that reside on the boot disk. GeoWrite 1.x (**x**, representing one of a number of modified versions of the same class of application), is one of the least powerful of applications. The discussion of geoWrite will concentrate on features that are common to all applications, and, therefore, is covered in greater depth.



geoWrite (Versions 1.x) -- The 1.x versions are a subset of the more powerful **geoWrite Workshop** (to be covered next issue). GeoWrite is a word processor allowing multi-page documents with multiple proportionally-spaced fonts in different styles and point sizes. Like all applications, there is a command menu at the top of the screen. This command menu is similar in style and structure to the DESKTOP's command menu, but offers commands pertinent to the application. This structure holds true for all applications and will be mentioned in the other applications.

On the command menu, the *geos* menu will list available desk accessories that can be called up. These must be on the disk to be listed in a sub-menu and used. The *file* menu offers file handling actions similar to the DESKTOP. There is an *edit* menu, identical to the menu used by Photo and Text scraps (*cut*, *copy*, and *paste*). There is a *font* menu by which the user may select a font, followed by a sub-menu for point size. Fonts available must be on the disk (as font files). Lastly, there is a *style* menu offering the various styles (bold, italics, etc., as mentioned previously). Versions 1.x do not offer superscript or subscript. It should be noted that most menu commands have keyboard alternates for experienced users. The alternatives are listed on the sub-menu next to the command. This way, a wide selection of control characters can be mastered by a user's learning curve, or not used at all, if so desired. Also, on the top line, there is a *Title Bar* with the name of the file on it. This also is common to all applications. In a box just left of the title bar is a page number indicator and small scroll box for getting around the document quickly.

Below the command menu is a *ruler*, which allows you to change the formatting of a document. Here, features such as document width and tabs can be easily set by pointing and clicking. The rest of the screen is filled by a writing window. Inside the window is a blinking *Text Cursor* indicating the position type can be entered or deleted. The cursor can easily be moved around with the mouse or cursor control keys.

To enter geoWrite (or any application for that matter), the user need only to double-click the geoWrite icon (or single click the icon and click the *open* command from the file sub-menu). An alternative and faster method is to simply double-click on the geoWrite data file icon. This will automatically load geoWrite from an available drive and then load in the text file. Any application can be indirectly loaded from an application data file as long as the application can be found by GEOS.

If the user double-clicks on the geoWrite icon (or any application icon), a familiar dialogue box pops up onto the screen with a point and click option to *Create*, *Open*, or *Quit*. This dialogue box is also available after working within in an application and closing a particular document. This gives applications a sense of symmetry and the ability to work "horizontally" across various data files of the same type (like geoWrite files).

--continued

GeoWrite works by simply entering text at the text cursor. The *DEL* key will delete individual characters. The mouse can highlight a block of text for block deletions, editing (cut and copy). Any text cut or copied using the *EDIT* command will be saved to disk as a text scrap where it can be re-used either within or outside the document, or put into a text album. Word-wraparound is a standard feature. One of geoWrite's outstanding features is its ability to inter-mix graphics and text by pasting Photo scraps directly into the document.

The writing window is of interest. On the 64, the 40 column screen is standard. Most word processors are forced into post-formatting text. This means that the user cannot see the actual layout of a page during word processing. GEOS gets around this limitation with a right- and left-ward shifting of the screen. The window itself cannot cover a full 8 1/2 inch page width due to screen resolution restrictions, so this horizontal screen scroll is necessary to offer a true WYSWYG environment. The window represents a 4.2 inch width of a page (on an 80 dpi printer). By adjusting the margins to be within this width, the disconcerting scrolling will be stopped. When a user is finished, he/she may go back to the ruler and stretch out the margin to the desired longer width.

Other features of note are the abilities to change fonts, point size, and styles at any time. It should be noted, though, that if a font no longer exists on a disk, and a portion of the data file is trying to use the non-existent font, that portion of text in the data file will revert to the BSW 9 pt. default font. This is true for all applications using font files directly.

Common to most applications is the *preview* mode available from the *file* menu. Overlaid on top of the working document, the preview will do a 1/4 reduction of the document to the screen. The text and/or graphics are not 100% legible, but the preview gives a full-page look at the document or picture. Except in geoPublish, the *preview* option is a look-only command.

An earlier technical note is in order here as this will not be covered anywhere else: as the *preview* mode requires shrinking, a statistical map is used to decide which pixel is turned on or off. Testing the dispersion of bits, a bit will look at its four neighbors to decide whether there is enough "on-ness" to warrant whether a pixel to a screen should be on or off. This property makes much of GEOS compatible with POSTSCRIPT, too.

On most applications there is also a *recover* command in the *file* menu, that will undo all that was done since the last save. The user can periodically save his document through the *update* command. If not used, GEOS will save the document as it needs to, usually when the allotted buffer space for the application is filled, a desk accessory or *preview* is activated, a page break, or closing of a file. Remember, this is how GEOS does its disk housekeeping. GEOS does all the file links, doing the dirty work for the user.

Lastly, like all applications, the file can be printed from the *print* option (in the *file* menu), as long as the proper printer driver is accessible to the application. Not truly multi-tasking, the user must wait until the document

is finished printing before using the computer again. However, the user can cancel in mid-document.

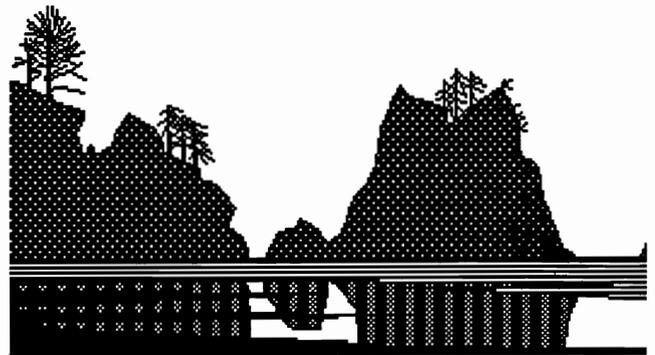
A final comment on geoWrite. GEOS works really hard in geoWrite, bitmapping as a user types. A medium-to-fast typist can quickly exhaust the keyboard buffer, losing characters to the screen. There are other applications that get around this short-coming. Stay tuned.



GeoPaint -- This is a personal favorite and was a prominent factor in the successful marketing of GEOS. Looking a lot like *MacPaint*, geoPaint offers true, full, hi-resolution graphics *with color*. The maximum "printed" resolution is 640 x 800 dots (or 8 x 10 inches for 80 dpi printers). This is actually a bigger field from which to work in than that of *MacPaint*. In fact, via the various conversion programs found in the public domain (such as *MACTOGEOS*), full *MacPaint* images may be translated to geoPaint images. The converse is not true. The *MacPaint* will lose approximately an inch's worth of image!

Of course, the user cannot access all of the image at one time, except in *preview* mode. Therefore, once again, the window provides the space for a user to work in. The window also represents the maximum size of a Photo Scrap. On the 64 the window size is 3.3 x 1.8, representing approximately 1/14 of the entire document. These windows and scraps vary between 64, 128 and Apple machines.

Below is an example of maximum window and scrap size. It is also an example of a photo scrap pasted into a text file. The image is part of a full page graphic document (*Point of the Arches*) composed by myself.



All of GEOS's built-in routines come to roost here. From the vertical *Toolbox*, the user can select from a wide variety of graphic drawing tools: pencil draw, line draw, brush draw (with a wide assortment of "brushes"), airbrushing, box, and circle draws, eraser, editing boxes (in addition to cut, copy, and paste, there is also rotation and inversion), and pattern fills. There is a large library of patterns that can be used with pattern filling, airbrushing, filled box and circle, and the regular brush. It should be noted that the same pattern on one part of the image will always "line up" perfectly with the pattern elsewhere on the image (unless the image has been "moved" in editing). Keep this in mind when I discuss patterns in the *kernal* section.

There is a *zoom* mode where the user can really get into

fine detail, with most of the tools active there.

Use of color is a feature that must be handled with all due consideration. Due to memory limitations on the 64, color memory is arranged in 8 x 8 pixels called *cards*. In this resolution, one foreground and one background color is allowed. Consequently, when the user does a *color wipe*, he must be conscientious of rounded edges near the edge of a card. Color can be turned off and on. Obviously, if the graphic is intended for hard copy on anything other than a color printer, color is not an issue. Screen results with color can be spectacular, though.

And, yes, text can be added using fonts, in points, and styles of choice. This is done through opening a text window. Each window can only contain one font in one point size. Any style indications also affect all of the text within the box. Text scraps can be imported here, as well. In addition while the text window is active, it can be repositioned and re-layed out.

Like all applications, Desk Accessories (like the Photo Manager) can be called up from within the application.

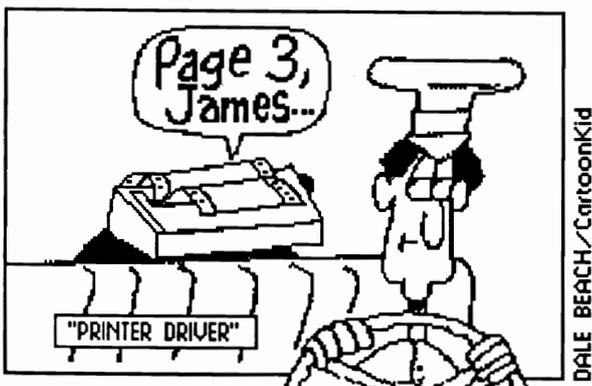
One thing that geoPaint doesn't do is allow "*or-ing*" of images. Moving an image on top of another will erase the image below it.

Using geoPaint requires scrolling through the window, which will swap overlays in and out of memory. With RAMDISK, there is no disk wait felt at all.

That pretty well covers the two major applications on the boot disk. One other little utility of note is a little program called *RBOOT* (for reboot). This program will reboot GEOS in a flash if RAM Reboot was selected from the Configure file. If, after either running non-GEOS machine language (that has written over the kernal) or a system crash occurs (which is very possible), *RBOOT* can be loaded from the standard BASIC screen with a Commodore DOS command. The program will snatch a copy of the kernal lying resident in the REU, load it into main memory, and activate the DESKTOP. If the DESKTOP is sitting in RAMDISK, GEOS is up and running instantly. All files on the RAMDISK will be left intact unless the non-GEOS application uses the REU (which is really rare).

In the next installment, I will briefly cover other GEOS applications that are available separately from the Boot Disk. Even though these programs comprise what is truly some of the most interesting GEOS applications, they will be described as brief as possible, if only to give their flavor.

--Mike Ross



GEOS WILL SURVIVE

Dear GEOS User:

Many of you expressed concern with the changes that Berkely Softworks made to its customer support department in November. Because of the high cost of customer support and the relatively low profit margins made on the Commodore GEOS product line, it became necessary to reevaluate our methods of providing customer support to our users.

After much consideration, we decided that we would be able to reach many more users through the Q-Link telecommunications network than we could reach via our direct phone lines.

Since we could only help a few hundred customers a day over the direct phone lines, and because Q-Link messages can be read by thousands of users, we felt that Q-Link was the most efficient way to reach the greatest number of GEOS users.

Shortly after this change, we received much feedback from GEOS users. For the most part this feedback let us know how unhappy users were with our new policy. Thus, to better satisfy user's needs, we reinstated our direct technical support lines.

However, since our support lines are often busy, we also established a Q-Link GEOS Representative program which ensures that all questions asked are answered within 24 hours. We recommend that customers continue to utilize the Q-Link telecommunications network for the quickest and most efficient response to any GEOS-related question.

Berkeley Softworks has no intention of abandoning the Commodore GEOS line of products. In fact, we continue to support the GEOS family in a number of ways. Aside from direct customer support, we initiated the GEOS Rep Program on Q-Link to better assist GEOS users in need of a quick response to a question. We attend major Commodore trade shows like the World of Commodore Show and send information (new product announcements, demonstration disks, and relevant company information) to Commodore user groups. We continue to develop new, and to improve existing, GEOS products as is evidenced in the recent releases of GEOS 2.0, GEOS 128 2.0 and geoChart. We even distribute free replacement disks when we discover a major bug in a program. Most importantly, we take great care to produce the most comprehensive and helpful manuals possible, so that customers do not have to rely on outside support systems.

So, in summary, yes, GEOS will survive!
Thank you for your continued support..

Sincerely,

Leland J. Llevano
Vice President, Marketing

Announcing GEOWORLD Disk #3

GEOWORLD Disk #3 has many of the files that were planned for disks 1 and 2, but bumped, due to lack of space. Features include albums full of clip-art and the best public domain fonts for desktop publishing. To guide you in creating documents like you've seen in GEOWORLD, full-page geoPublish templates are also included.

The disk has more prize-winning programs from the BSW programming contest and utilities we have found to be particularly useful. Upgrades, or new versions of some programs from previous disks are included as well.

A special feature of this disk is Object-Oriented Clip Art for use with geo-Publish. The front cover and pointing hand below show how this unique artwork looks when printed by a laser printer. It can still be printed with a dot matrix printer. To check on an order, call (602) 344-3537. Drop us a post card telling what kinds of programs you want to see on future disks.



For those of you wanting to know what files are on Disk #2, here is a brief run-down:

GEOS GAMES:

Solo Poker - solitaire poker by Ken Turner
geoWAR - war games by Lysle Shields
geoSliders - sliding puzzle by Lester Gock
YAHTZEE - dice game by Terry R. Mullett
StatesNCaps - quiz game by David A. Hall

UTILITIES:

HulmeView - seq. file reader by Joe Buckley
GetDirectory - creates text scrap of disk directory by Nicholas J. Vrtis
SWITCHER - quickly switch between applications, by Charles E. Kinney
NOTEPRINT - print notes by Dennis Seitz
DATEPRINT - print dates by Dennis Seitz
FontView - view fonts by Christopher Flynn

UPGRADES:

WrongsWrite, **ScraPeek**, **geoDirPrint** and a repaired "Whales" from Disk #1

ICONS - use with the icon editor on disk #1

PATTERNS - use with **Set Pattern** program on disk #1

LASERMATRIX - printer driver editor by William Prendergast

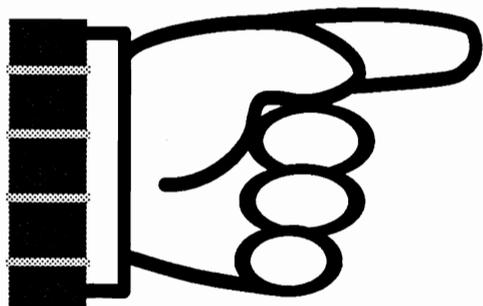
TEXT PRINT with Custom Print - prints geoWrite documents with printer's resident fonts and commands by Terry Van Camp

PrintDrvPatcher - customize printer drivers by GH Wells

CARTOONS - cartoon clip art by Dale Beach
Comic Font and **CHAMELEON** - unusual fonts by BrodyK

PRINTER DRIVERS - too many to list here. Selection includes EX-800, Interlace Epson, Epson 1 Line and Epson Labels for Epson compatibles.

FONTS - many fonts in small point sizes, especially designed for more readable text in word processing and desktop publishing.



Sample of Object-Oriented Art

ORDER DISK #3 TODAY

#1 & #2 are still available. Please indicate which numbers you want.

Send \$10.00 check or money order with your request to:

GEOWORLD DISK #3
38 Santa Ynez Street
Santa Barbara, CA 93103

Canada & Mexico: add .50 per disk. Foreign orders, add \$1.50 per disk.



BSW/Q-LINK Customer Service

How to make it work for you.
By Ken Slaughter

To say that Berkeley Softworks uses a rather unique method of customer service is, at the very least, an understatement. Due to internal re-organization (among other reasons) within BSW, the free telephone customer service software support line has recently been discontinued. This leaves the GEOS Arena Customer Service Boards on Q-Link as the sole customer service avenue for Berkeley.

There are a few other companies that offer product support via online computer services, however most come with an added surcharge for use. This added surcharge goes to pay the company for the time involved in answering the various customer service questions. For GEOS users without modems, this method poses a few problems. Berkeley Softworks is indeed aware of the problems of the non-Qlink user.

I talked with Kelly Powell of Berkeley Softworks' Customer Service Division and we discussed several topics concerning the GEOS user. I found her to be very helpful. One of the topics we discussed was the lack of telephone support. One reason the phone lines were discontinued is undoubtedly the high cost of manning them. A high cost that was not included in the price of the software, as is the case with \$300. to \$500. software, comparable in quality. The money needed to pay the phone line reps alone can be quite expensive, and it must come from somewhere.

While Kelly could not reveal any specific information concerning the company's future plans, she did state, "We (BSW) are looking into alternate avenues of providing telephone software support." My guess is that some kind of a 900 number will be used. With a 900 number, the phone company charges so much per minute and then passes a small part of the charge to the company receiving the call. The

amount BSW would get from this type of call might be enough to pay for the support. but, this is just my guess. So, in the meantime, non-Qlink users can get the best GEOS help through a local user group. Local user groups can provide help and information that is unavailable from any other source.

Another topic of discussion was how to get the most help from the GEOS Customer Service Boards on QuantumLink. When these message boards are properly utilized, the amount of help and information that can be obtained is unlimited. If you have a GEOS problem, these boards are the best place to find the solution.

First and foremost, become familiar with the boards. Log on to the service and read these messages often. You may see messages and replies that do not apply to you or your system, but I recommend that you read them anyway, because the information might apply in the future and you will get a better idea of how GEOS "thinks", and operates. If you cannot sign on very often, but are signing on to get help with a specific problem, it is still to your advantage to read several of the messages before asking your question.

Chances are you will run into the answer to your problem. Since BSW is only able to answer questions about 3 days a week, you will probably receive a reply from a regular GEOS user that had already experienced the same problem, usually within minutes or hours, depending upon the time you post your message.

When you do post a message concerning a problem, describe the problem in as much detail as possible, including your system setup and version of GEOS you are using. If it is a printer problem, include your printer name and the printer driver you are trying to use. The more detail you provide, the more complete and accurate the answer will be.

Occasionally on the boards, you will see messages from *GEOS Steve* with subjects like:

Monday's Stopping Point

This is the point to which *GEOS Steve* has answered questions. The next time he logs on, he'll read and answer questions only up to that point. So, if you ever post a question that has a reply from *GEOS Steve* that asks for more information regarding your problem, you should not give that information as a reply on the same message. Since *GEOS Steve* will stop reading messages when he reaches his **Stopping Point** from the previous session, you should re-state your message in a new posting. Give the probable and original information, along with the new information that *GEOS Steve* had asked for. This will ensure that he sees and replies to your problem.

It is also important to note that the only problems that should go into E-MAIL to *GEOS Steve* are the problems with software orders, or messages that require you to give personal information such as your address. General software operations questions should not be in E-MAIL. When you ask a question in E-MAIL, YOU are the ONLY one that will benefit from the answer. The same question, posted and answered on the boards may benefit hundreds of other users. For this reason, E-MAIL to *GEOS Steve* is a low priority when compared to the customer service boards.

The QuantumLink GEOS Arena Customer Service message boards are for the benefit of the GEOS user. They are your boards. Learn how these boards work and how to navigate around them in order to obtain the information you need to get the most out of GEOS. See you on the boards!

--Ken Slaughter a.k.a. FAT BEAR1

Technical support lines have been reinstated. The number for Commodore users is (415) 644-0926. Apple users (415) 644-3413. Questions regarding product fulfillment should call (415) 644-1373. Hours are 9-12 and 1-4 Pacific time.

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Inside Geos

A programmer's eye view into the world of Geos

By William Coleman

WELCOME TO another month of Geos programing! In my last column I discussed an advanced listbox module and presented the source code necessary to implement it. This month we will look at some of the ways to fill the buffer that is passed to the listbox.

First we'll look at a routine to fill the buffer with filenames from a disk directory and then we'll move on to ways to fill the buffer with custom text strings.

GetFilenames

The first method we'll look at is an advanced way of displaying filenames. Figure 1 lists the module that contains all the code necessary to accomplish this.

To use these routines first load the accumulator with the Geos filetype to look for. If you load it with \$ff then all of the files on the disk will be loaded regardless of the filetype. The maximum number of filenames that can be loaded at one time depends on the size of the buffer. Once this is done simply jsr GetFilenames.

The equate PAGES defines how large the buffer is in 256 byte blocks. Since each filename is 17 bytes long (16 bytes plus a NULL terminator) the maximum number of filenames will be:

$(PAGES * 256) / 17$

Note that you will not be able to read in more than 255 names at a time. Therefore the largest value of PAGES is 17. This will only be a problem with 1581 drives. Very few 1581 disks even come close to this many files so it should not pose a real problem.

If you wish to you can modify

the code to use a word length TEMP and make it a global variable.

When the routine returns the number of filenames that were loaded into the buffer will be contained in Y. As usual the X register will indicate if a disk error has occurred.

You now have all the information that the ListBox routines require to operate.

“...we will look at some of the ways to fill the buffer that is passed to the listbox.”

I Can't Print THAT!

There are several characters that will cause a crash if you try to print them with PutChar or PutString. The most notable ones are CHR\$(1) thru CHR\$(6). These characters must be kept out of the buffer at all costs.

GetFilenames will remove these characters and replace them with asterisks (*). Of course now you no longer have the proper filename in the computer so you won't be able to directly access the files but normal names should never contain these characters

anyway. It's just a bit of defensive programming.

Routines for all Versions

Take a look at the first two routines in Figure 1. InitDirRead and NextDirEntry are generic versions of Get1stDirEntry and GetNxtDirEntry respectively.

Because these two routines were not included in the V1.2 and below Jump Tables it is necessary to call them directly if the user is running these versions (they were both in the Kernal just not in the Jump Table).

How it Works

Take a look at the geoFilenames listing in Figure 1. The first thing that you will notice is that it is not very long. geos provides most of the routines that are required.

The first thing that it does is to store the filetype in a variable called type2Look4. Then a call to OpenDisk is made. This will keep from screwing things up if the user swaps the disk. It's always a good idea to do this frequently.

Next the entire buffer area is cleared. r15 is used as a pointer to the current spot in the buffer. TEMP is used as a counter which holds the number of names that have been loaded.

The bulk of the remainder of the code is a loop that gets each file entry. First it ensures that the file is not scratched.

Next the filetype stored in type2Look4 is checked against the filetype in the entry. Unless of course type2Look4 has the high bit set. In this case we want all the files regardless of filetype.

Inside Geos: Figure 1

```
.if (0)
*****
```

Get Filenames

```
Author:      William C. Coleman
Start Date:  12 April 1988
Notice:      Copyright (C) 1988, BlasterSoft
*****
```

```
.endif
```

```
buffer =      ????      ; buffer address
; PAGES is the# of pages (256 byte blocks) that the
; buffer is long. i.e. a 1K buffer would be PAGES=4.
PAGES =      ?
```

```
.ramsect
temp:        .block 1
type2Look4:  .block 1
.psect
```

```
*****
; InitDirRead - Version independent form of
; Get1stDirEntry.
; Ret:   r5 - diskBlkBuf+2 (1st dir entry)
;       X - disk error
*****
```

InitDirRead:

```
lda version
cmp #13
bcs 10$
jmp $c9f7 ; call for V1.2
10$: jmp Get1stDirEntry
```

```
*****
; NextDirEntry - Version independent form of
; GetNxtDirEntry.
; ret:   r5 - points to next dir entry
;       Y - non-zero if no more entries
;       X - disk error
*****
```

NextDirEntry:

```
lda version
cmp #13
bcs 10$
jmp $ca10 ; call for V1.2
10$: jmp GetNxtDirEntry
```

```
*****
; GetFilenames - Fills buffer with the
; unscratched filenames on the active disk.
; pass:   A - Filetype to look for - $ff= all
; return: Y - # of files loaded, X - Disk Error
*****
```

GetFilenames:

```
sta type2Look4
jsr OpenDisk
txa
bne 10$
jsr InitDirRead
txa
beq 20$
10$: rts
20$: LoadW r0,PAGES*256 ;clear buffer
LoadW r1,buffer
jsr ClearRam
LoadW r15,buffer-3-17 ;init buf pointer
LoadB temp,0 ;filenamecounter
30$: ldy #0
lda (r5),y ;get commie filetype
beq 60$ ;scratched -- ignore
lda type2Look4
bmi 35$ ;look for everything
ldy #22 ;geos filetype offset
cmp (r5),y
bne 60$ ;not correct filetype
35$: AddVW 17,r15 ;r15= addr in buffer
ldy #3 ;r15 is 3 less
40$: lda (r5),y ;get a byte
cmp #$a0 ;shifted space
beq 50$
cmp #' ' ;will remove chars
bcs 45$ ;Geos can't print.
lda #' '
45$: sta (r15),y ;store in buffer
iny
cpy #3+16
bne 40$
50$: inc temp
lda temp
cmp #(PAGES*256)/17 ;max # of files
beq 70$ ;buffer is maxed out
60$: jsr NextDirEntry
txa
bne 80$
tya
beq 30$ ;get another name
70$: ldx #0 ;X = no error
80$: ldy temp ;# of names in buffer
rts
```

If everything is OK so far then the filename can be placed in the buffer. First 17 is added to r15 to point it at the next name entry. Since the filename in the directory entry is at offset three, r15 actually points three

bytes before the actual starting address in the buffer.

The last check we make is for the characters that will crash Geos and substitute asterisks for each one found.

Once the string has been moved the counter TEMP is incremented and a check is made to make sure that the buffer isn't full. If not then NextDirEntry is called to retrieve the next directory entry. The loop will then continue until either the end of the directory is reached or the buffer fills up.

Some Improvements

There are several things you can do to improve GetFilenames. For instance you could modify it so that a table of Geos filetypes is passed to it. This would allow you to load in more than one filetype (application and auto-exec for example) without having to load in every single filename.

As I mention before you can also modify TEMP to allow more than 255 files (but you will also need to modify the ListBox code). Just remember that the value can no longer be returned in Y. You will have to use a global variable.

You can also modify the code so that the value of PAGES and/or the location of the buffer is passed to GetFilenames. This would allow you to dynamically change the size and location of the buffer.

Other Tricks

One of the advantages of the ListBox code is that you no longer

"One of the advantages of the ListBox code is that you no longer have to use filenames in the box."

have to use filenames in the box. Those of you who have used GeoProgrammer know that the debugger displays a box of filenames. The first entry in the box always says 'NO FILE'.

This can be done by using two different buffer pointers: the one passed to GetFilenames will be 17 bytes greater the one passed to the ListBox like this:

```
.psect
  buffer: .byte "No File"
         .block 17-(*-buffer)
  buffer2: .block PAGES*256
```

Note that in this case we are defining the buffers from within the psect area which will make the application quite a bit larger. A much better way that will keep the buffer out of the body of your code is to define them from the ramsect area like this:

```
.ramsect
  buffer: .block PAGES*256+17
.psect
  buffer1 = buffer+17
```

Just remember that you will have to load the 'No File' text into *buffer* by hand

Of course you are not limited to a single entry. You can fill up the whole buffer with your own text if you desire. Since the ListBox module will accept strings of any length you don't need to use 17 byte strings if a different size suits your needs better.

Final Thoughts

The ListBox is quite flexible in it's uses. There are several ways you can modify it to make it do whatever you may require. Feel free to experiment with it however you see fit. Drop me a line if you find any really unique implementations.

That's about it for this month. As I mentioned last month I've created a disk of subroutines because I know that these routines can be a pain to type in. It contains all of the modules I've talked about over the months plus many others which will make creating your own applications significantly easier.

To order your own disk simply send a check or money order for \$10.95 to:

Inside Geos Disk
BlasterSoft Ink
1431 Pacetti Rd
Green Cove Spgs, FL 32043

As always if you have any problems, questions or suggestions about this or any of my articles, or have a question about Geos in general, please don't hesitate to leave me EMail on Genie (my address is WC.COLEMAN) or send me regular mail to the above address. Happy 'puting.

William Coleman (aka Master Blaster) has written numerous public domain and commercial Geos programs. He is a Sysop in the Commodore section of the GE Information network (GENIE) and lives in Green Cove Springs, FL with his wife and two children (and yes his kids are turning into computer potatoes too)!.

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Antigrav Toolkit Notebook

by Randy Winchester



The Case of the Missing Characters

... Now in this limited time offer, buy any of the laser fonts, and receive as our gift up to 94 NEW characters absolutely FREE! That's like getting TWO FONTS FOR THE PRICE OF ONE! This exclusive Antigrav Toolkit offer is not available in stores, so read this article. Act now!

The first time I saw a printout of ALL the characters in a PostScript font, I could hardly believe my eyes. Fonts such as Helvetica (LW_Cal) and Times Roman (LW_Roma) each have 54 characters not found in the corresponding GEOS fonts. Symbol (LW_Greek) and ITC Zapf Dingbats (LW_Shattuck) each have 94 characters that have been hidden from GEOS users.

The previously unseen characters in the Symbol font include such useful things as arrows, math and logic operators, copyright and trademark symbols, and a whole set of do-it-yourself brackets and braces. A complete copy of the Symbol font, a.k.a. LW_Greek, is reproduced here for your viewing pleasure. Characters with ASCII values from \$21 through \$7E (! through ~) are the characters normally available in GEOS. The characters on the bottom half of the chart, ASCII values \$A1 through \$FE, are not presently available in the LW_Greek font (and it wouldn't do you much good even if they were).

The geoWrite Bottleneck

The new characters use ASCII values \$A1 through \$FE. If only there were some way of typing these values directly into a geoWrite document, using these characters would be smooth sailing. Unfortunately, the highest ASCII code that can be entered directly from the keyboard is \$7F, which corresponds to the DELETE character.

It's reasonably easy to enter these codes into a PostScript program created by geoLaser or geoPubLaser (see *Accessing Laser Printers*, **geoWorld**, Volume 2, Issue 3, March, 1988; *Inside PostScript*, **geoWorld**, Volume 2, Issue 4, Number 13). The only extra software required will be a plain old ASCII text editor which will be used to edit the PostScript program. Briefly, the procedure is to type in a rarely used character into your document

wherever one of the new characters is required. Save the document as a PostScript program, then use the text editor to enter the new character codes. Here are some step-by-step instructions, illustrations, suggestions, etc.

► Here's How, Step-By-Step

① Prepare a geoWrite or geoPublish document in the way you normally would. Decide where in the document you would like special characters to appear. Be sure to select the correct font, point size, and style, then enter a character that you don't plan on using elsewhere in your document. I usually use the tilde, ~, ASCII \$7E, but since I already use that character in this article several times, I'll settle on the percent sign. But honestly, how often do you use a ~ in your writing? So, for the examples in this article, I'll continue to use the ~, although any character you don't use elsewhere in the document will work equally well. Complete your geoWrite or geoPublish document as you normally would otherwise.

② Use the "Antigrav Method" (*In Search of Elegance*, **geoWorld**, Issue 17) to send a PostScript program to another computer. You can verify you have a good copy of the PostScript program by laser printing it. Remember that at this point, positions where you want special characters to appear will be marked with a ~.

③ Fire up your favorite ASCII text editor and read in the PostScript program created in step ①. Search for the first occurrence of the ~ character. You'll probably find it in a line similar to this:

```
0 9 0 (Buy VAPOR Brand) 1 3 121 80 8 PS
0 9 0 (~) 1 3 298 212 8 PS
0 9 0 ( Software Products!) 1 0 38 521 8 PS
```

The numbers on each line are parts of the PostScript program which provide information such as page position, font type, style, and size. PostScript uses parentheses to quote text to be printed. In the example above, the ~ character will be replaced with a backslash followed by the ASCII value of the special character in octal, or base 8.



I ♥ PostScript!

In this case, we want the Helvetica style registered trademark symbol (®), which is ASCII \$E2, or 342 octal, in the Symbol font. The entire example above will now read:

```
0 9 0 (Buy VAPOR Brand) 1 3 121 80 8 PS
0 9 0 (\342) 1 3 298 212 8 PS
0 9 0 ( Software Products!) 1 0 38 521 8 PS
```

which should look like this when printed:

Buy VAPOR Brand® Software Products!

④ Finish up the rest of your document filling in the rest of the character codes as necessary.

Easy Octal Math

If you think you've been hexed by hexadecimal, you'll be relieved to know that octal has very little to do with gasoline or mollusks. The octal numbering system, also known as base 8, isn't in too frequent use anymore. I'm not really sure why it was chosen to represent non-ASCII characters in PostScript. Fortunately, octal isn't much of a curse, and isn't too terrible to learn.

In octal, only the digits 0 - 7 are used. Because of this, octal numbers look exactly like ordinary everyday numbers except that you'll never see the digits 8 or 9. Often, to distinguish an octal number from an ordinary decimal number, it will be preceded by an ampersand, such as &257, or followed by a subscripted 8 as in 311₈. Counting in octal is almost the same as the way we've always counted, except that when 7 is reached, the next step is 10₈, which is equal to 8.

In order to access the extra characters in a PostScript laser font, you'll have to know their values in octal, or at least how to convert numbers to octal from decimal or hex. The conversion is based on simple division. It's made even simpler if you realize the highest number you'll encounter in this work is 255, \$FF hex, or 377 octal, the highest number which can be represented by one byte.

Enough of this math lesson. Here's the assignment. We'll find the octal value for a common

> Hints & Tips

Keep in mind that any justification done by geoWrite will be based on the character you decide to use as your flag character, usually ~. Generally, such small differences in spacing won't be noticeable, but if is a real problem, you can use a wider or thinner character to mark your place. Actually, you can use any character you like. I only select an unusual character such as ~ to make it easy to scan the file for the places I've marked, and to use the search function on my text editor to make sure I didn't miss any places. In actual use, it is generally not difficult to read through the text portions of a PostScript program, and locate where special characters will be entered, due to the context.

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.

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



ASCII character, the lower case k. Lower case k is ASCII character 107. We first divide the number by 64 and write it down, then divide the remainder by 8 and write that down. Then write down the remainder, and you've converted the number to octal.

1	Divide by 64 (107 ÷ 64 = 1)
64 107	
64	
8 43 5	Divide by 8 (43 ÷ 8 = 5)
40	
3	Remainder goes in one's place

107 is equal to 153 octal.

I'll leave converting from hex to octal as an exercise for those inclined. Just to clue you in though, if you already know hex, it's a lot easier than you might think.



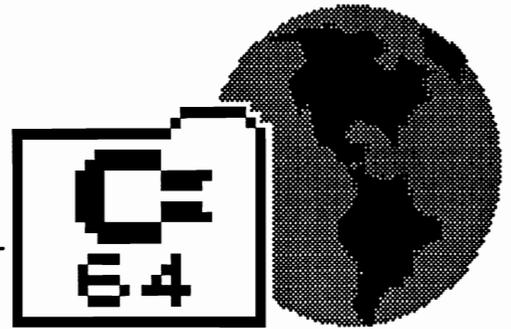
Symbol font character set

ROW # + COLUMN # = OCTAL VALUE OF CHARACTER

000	+1	+2	+3	+4	+5	+6	+7	+10	+11	+12	+13	+14	+15	+16	+17	
020																
040	!	∇	#	∃	%	&	ə	()	*	+	,	-	.	/	
060	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
100	≅	A	B	X	Δ	E	Φ	Γ	H	I	ϑ	K	Λ	M	N	O
120	Π	Θ	P	Σ	T	Υ	ς	Ω	Ξ	Ψ	Z	[∴]	⊥	_
140	α	β	χ	δ	ε	φ	γ	η	ι	φ	κ	λ	μ	ν	ο	
160	π	θ	ρ	σ	τ	υ	ϖ	ω	ξ	ψ	ζ	{		}	~	
200																
220																
240	Υ	'	≤	/	∞	f	♣	♦	♥	♠	↔	←	↑	→	↓	
260	±	"	≥	×	∞	∂	•	÷	≠	≡	≈	...		—	↙	
300	ℵ	ℑ	℔	℘	⊗	⊕	∅	∩	∪	⊃	⊇	⊄	⊂	⊆	∈	∉
320	∠	∇	®	©	™	Π	√	.	¬	∧	∨	↔	←	↑	⇒	↓
340	◊	<	®	©	™	Σ	∫		∪	∩		L	∫	{		
360	>	∫	∫		J	∫		J	∫		J	∫		J		

GEOS at its best!!! Randy Winchesters article was laserprinted on a linotronic 300 typesetter at a resolution of 2400 dpi! GEOS needs a way to save postscript files to disk. This quality could be available to anyone near a typesetting service. R.L.

Integrating GEOS v2.0



Further Along the BerkSoft Path

Tips on the creation of a fully integrated C-64 hardware/software system with GEOS 2.0, an REU, and multiple drives.

By Conrad Tillman

System Integrating Software

You may brand me as an heretic, but someone has to say it: all is not roses in the BerkSoft garden. Sure, Version 2.0 is a quantum advancement of the deskTop in the realm of System Integrating Software. It is more powerful even than the Manual would have you believe. And therein lie the thorns. Nevermind that Version 1.0 led you to get a second 1541 and replace your color TV with a high-res monitor, nevermind that you had to have an REU and a mouse to take full advantage of Version 1.3. All of that was in the past.

Version 2.0 is here and despite the Manual and all early reports, if you have an REU, Version 2.0 will handle THREE physical disk drives. It even offers the option of converting one of them, at any time, into a RAM Drive and then converting back again. It allows you to swap your device numbers at will, exit to BASIC or a non-GEOS application, then RBOOT back to the deskTop, altered device numbers intact and ready for more swapping. Worst of all, it enables the effortless use of the higher capacity 1571/81 disk drives!

BerkSoft is still at it, enticing you along the proverbial garden path toward previously forbidden (to the Commodore 64K world) territory. In other words, if you are severely infected with the GeoVirus, Version 2.0 may very well cost you the additional price of a 1581.

Is it worth it? The answer to that is a qualified *Definitely*, provided you can take advantage of all that capacity outside GEOS. Brace yourselves,

there is more heresy on the way: as good as Berkeley's applications are, you still need software from (gasp) Other Publishers.

An Integrated System

This is the point where things can get sticky. The deskTop does an amazing job of integrating all your hardware, and with a little additional home-grown cabling and switching can be nothing short of incredible. With two or three disk drives and an REU, however, situations can easily proliferate in the muddy edges of your GeoSystem that are beyond the reach of any software package. When your system gets this complex, YOU have to provide for the situations that BerkSoft (or anyone else) cannot be expected to control.

The purpose of this article is to show the way that one user has cut through the brambles, and perhaps to give you some ideas toward creating a more integrated system of your own.

Firstly, let me describe my hardware setup. Commodore's placement of their power switches is thoroughly inconvenient and an impediment to taking full advantage of Configure 2.0. I solved this by constructing a remote switch panel that individually controls the power to each of my peripherals. The cost of doing so was a handful of switches, a "project box", some electrical tape, a little solder, and some old extension cords. The serial bus leads to two 1541's (hardwired as devices 8 and 9), a 1581 set as device 10, then

branches to two printers. The printer branch was built from two old serial cables, surgically transformed into a "Y" connector. The printers are controlled at the switchbox by a SPDT switch that acts as a toggle: the power is only available to one or the other.

An REU is connected to an expansion board, simplifying occasional use of cartridge utilities. A reset switch, essential to a hassle-free system, resides on the expansion board. This setup greatly simplifies the physical control of the system, and enables convenient flexibility in the use of Configure 2.0. to set up a RAM-DISK in lieu of a physical drive.

GEOS and Multiple Drives

With the hardware taken care of, I can boot GEOS and manipulate the disk drives and printers with the deskTop. The important thing to know about drive control is that the stack of drive icons to the right is associated with the drives' respective device numbers. The Manual does not mention this, but swapping drives into positions A, B, and C alters their device numbers. The drive in position A is always device # 8. Position B is # 9, and Position C is # 10. Swapped drives retain these altered numbers until swapped again or powered off, even if you exit GEOS.

This means that one of the major obstacles to efficiently using a 1581 is removed, and with it is removed a major argument for not spending the money. With two or three drives and an REU, you can set the 1581 as device 9 or 10, and still use your 5.25" drive as device 8 for the majority of

your commercial software. For those programs that you succeed in converting to 3.5" format, GEOS provides a simple way to swap the 1581 into the device 8 slot (which is where most commercial software expects to find itself), while moving the 5.25" drive temporarily out of the way. When you've finished with the application, simply LOAD "RBOOT",8,1 to return to the deskTop. This feature still works even after exiting a program via the reset switch.

The potential problems, however, are not completely solved. GEOS will leave one of your drives as device 9, and some software will automatically discover this and expect a data disk to be there. Since a major advantage of a 1581 is the elimination of data disks, this can create an untoward situation: your program will refuse to budge until you insert a non-existent disk into a drive that you have no present intention of using.

The following short program, when RUN from the DeskTop, will, if device 9 is present, move it up to number 12, effectively taking it off-line. The program will then LOAD and RUN the file defined in the variable A\$.

```
10 Q$=CHR$(34): C$=CHR$(147):
A$="FILENAME"
20 OPEN 15,9,15: CLOSE15: IF ST
THEN 40
30 ND=12: OPEN 15,9,15: PRINT#
15, "M-W" CHR$(119) CHR$(0) CHR$(2)
CHR$(ND+32) CHR$(ND+64): CLOSE 15
40 PRINT C$ "LOAD" Q$ A$ Q$ ",8,1"
50 PRINT: PRINT: PRINT: PRINT:
PRINT "RUN"
60 POKE 631,19: POKE 632,13:
POKE 633,13: POKE 198,3: END
```

(Note that "RUN" in line 50 can be replaced with "SYS xxxxx" for programs that require a SYS number to start: handy for RUNNING programs that produce a "can't RUN from deskTop" message. For this use, you can eliminate lines 20 and 30.)

We're still not out of the weeds, however. If, at this point, you try to RBOOT GEOS, the system will crash. The deskTop is still under the impression that device 9 is present. Before RBOOTing, it is necessary to restore the system to the configuration

that matches this impression. This feat easily can be accomplished with the following program, which, if named something like RB1 and placed prior to RBOOT on the deskTop, can be LOADED in lieu of RBOOT (with a filename of "RB*"). It will locate device 12 if present, change it to device 9, then RBOOT GEOS.

```
10 OPEN 15,12,15: CLOSE 15: IF ST
THEN 30
20 ND=9: OPEN 15,12,15: PRINT#
15, "M-W" CHR$(119) CHR$(0) CHR$(2)
CHR$(ND+32) CHR$(ND+64): CLOSE 15
30 LOAD "RBOOT",8,1
```

Software for the 1581

The use of these programs successfully integrates the non-GEOS use of a 1581 into the v2.0 environment. You still need to create 3.5" disks to RUN from it, however. For the most part, doing so effectively will make it necessary for you to adapt the swashbuckling role of a software pirate.

Please be aware that I am in no way advocating piracy. The unauthorized distribution of copyrighted software is illegal, un-ethical, and immoral. Any software worth duplicating is worth paying for. Period. The use of protected software on the 1581, though, requires the elimination of the protection.

The best solution, of course, is to use only non-protected software. There are several excellent packages available, and deserving of your support. Beware of "dongle" protection, though. You can't have an integrated system if you have to fiddle with connections to RUN a selected program.

For software only available in protected form or that you own already, nibbler/parameter combinations are the best way to go. Unfortunately, most parameter packages are heavily weighted with game titles, and finding support for the conversion of protected productivity software is often difficult.

One device that can help out is the *Super Snapshot V 3.0* package from Software Support International. This "memory dump" utility creates 1581-compatible files that will LOAD without the cartridge being present.

Although not an ideal solution, "snapshotted" programs are often the only way for the average user to go.

My cartridge produces an initial screen cluttered with garbage (apparently inserted during the Snapshot process), so the programs converted this way are marred. If the initial screen contains important menu information, the problem can be more than aesthetic.

It is possible that current releases of the cartridge do not suffer from this impediment. Some more recent programs (including GEOS) are immune to the process altogether. Nevertheless, snapshotting is successful often enough to be recommended.

Another feature of this particular product, in terms of an integrated system, is that it helps to extend the universe of GEOS graphics to include practically anything displayed on your monitor. Snapshot can SAVE most any screen as a Doodle or Koala file, which can then be run through one of several available graphics conversion utilities to be sent up to geoPaint.

Additional (!) Hardware

In the GEOS environment, you tend to get used to the faster disk access times provided by the BerkSoft fast-loaders. Unfortunately, the full utilization of GEOS via the REU prevents the use of cartridge utilities to do the same for non-GEOS software. Running C-64 software at stock drive speeds is, at best, an exercise in the virtue of patience.

There is another product available to complete the integration of your system with GEOS 2.0 at its core. *Jiffy-Dos* is a collection of customized ROM chips that not only accelerate disk access speeds for all file-types and within most programs, but interfere in no way with your modem or REU.

You will need a custom chip for your computer, and one for each drive that you want to function with increased speed. Chips are available for most Commodore and compatible drives. Although it has no effect in the operation of GEOS, *Jiffy-Dos* will increase access speed with virtually all of your other software, and

provides DOS wedge style BASIC drive access as well. If your computer has a socketed Kernel chip, installation is literally a "snap". I installed Jiffy-Dos in my computer and three disk drives in approximately two hours, and I am definitely not a "tekkie".

Jiffy-Dos serves to further integrate your system by making the REU RAMDOS programs LOAD and execute more quickly, enabling the more convenient use of your expansion unit outside GEOS.

Conclusion

Berkeley Softworks promised, in their original ads, that their software would transform the C-64 into a different, more powerful machine. How many of us who were intrigued by those early ads could have guessed how thoroughly transformed our beige boxes would become? Now, let's see. I still need to expand my REU to 512K, and an 80 DPI printer is a must, and a printer buffer would

--Conrad Tillman

Super Snapshot v3.0
Software Support International
2700 NE Andresen Road
Vancouver, WA 98661

Jiffy-Dos
Creative Micro Designs
PO Box 789
Wilbraham, MA 01095

GEOS v2.0
Berkeley Softworks
2150 Shattuck Avenue
Berkeley, CA 94704

NEXT MONTH IN GEOWORLD:

Our next issue will be the best one yet. We will feature information about using GEOS fonts, including valuable tips on creating and tailoring bitmap fonts (and Mega Fonts) for your particular needs.

We will review font utilities and the best font editor available. This issue will also show some of the great public domain fonts which are included on GEOWORLD Disk #3.

Troubleshooting

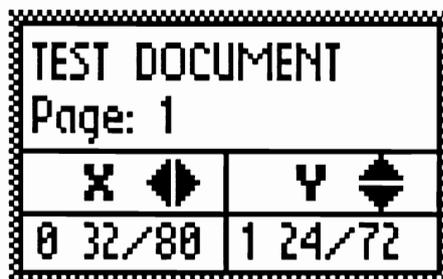
Watch those numbers in geoPublish
By Susan Puhn-Lamb

Problem: Although all my copy blocks appear to line up on the screen (in geoPublish preview display), after printing, the lines of type do not line up horizontally.

Solution: Keep a pencil and pad on your desk to jot down those funny fractions in the *Document ID Box* as you work. Layout of elements on certain X-Y locations can be important when using a dot matrix printer and critical with laser printer output.

If you want two or three columns of type to start out on the same line horizontally, the *Open Region Tool* crosshair must start on the same Y position for each column. When you start the first column, write down the position at the first click. After you drag the region down to the bottom right of the column, again write down the position to make the bottom lines line up.

This procedure is only applicable when your columns have uniform spacing and point sizes. For instance, with the *GEOS Report* article in this issue, some side-by-side columns have different combinations of point sizes. A left column may have one line with a 24 point font and the right column may have two lines, with the remaining lines in 10 point.



Once you've developed a habit of noting and writing down the X-Y locations for starting text regions, lines of copy, (including headlines) and graphics, you'll discover how accurate you can layout a page in preview mode.

Problem: After formatting with several text regions on both sides of a page, I find that text meant for the upper right region has ended up in the lower right region, and vice versa. How do I get the proper text into the proper regions?

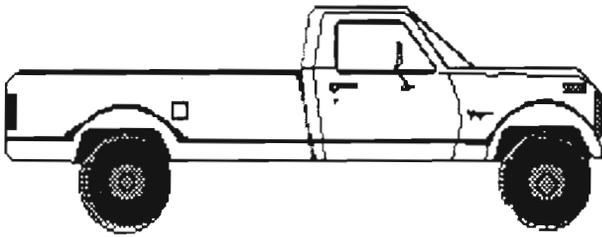
Solution: This time it is the X position of a region that is critical. Text will flow into the region further left vertically, even if it is lower horizontally. The regions might look like they have the same X axis, but checking will show that they may be only one pixel off. They must be on exactly the same X position, or the upper box further left.

Problem: I have trouble chaining photo scraps because zoom display doesn't have keyboard cursor control. The bitmap box jumps around too much and requires many tries to eliminate one-pixel gaps. Is there any way to accurately line up the scraps in preview display?

Solution: The first requirement is to have your photo scraps all cut to full drawing window size. Vertically, the scraps will be two inches apart. If the Y position of the first scrap imported is say, 0 35/72, then the next scrap should start at 2 35/72. The ones below will be 4 35/72, 6 35/72 and 8 35/72.

Horizontal placing takes a little more figuring. The scraps should be 3 and 24/80 inches apart. If the X position of the first scrap is say, 0 1/2 (which would be 0 40/80 for adding fractions), the next right scrap will start at 3 64/80. The third horizontal scrap is usually narrower than a full drawing window, but would start at 7 8/80.

This sounds complicated, but it works. Do some figuring and place the bitmaps quickly and accurately.



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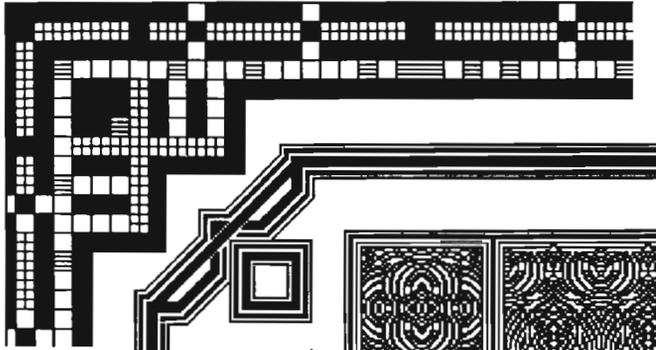
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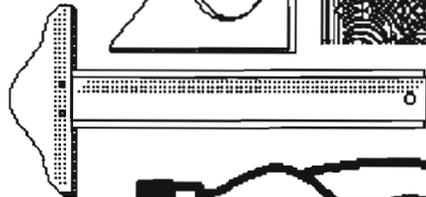
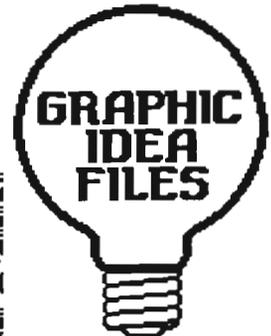
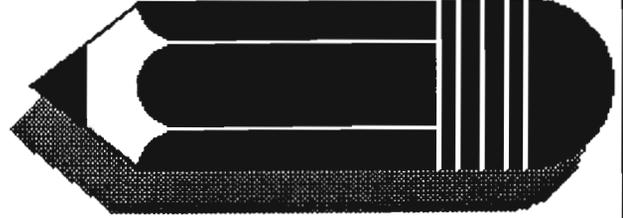
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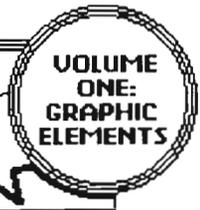


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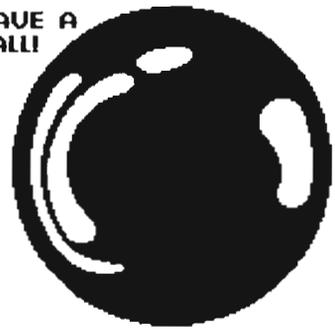


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