

Please follow these installation instructions exactly as they are presented to you. If you pay attention and do the installation correctly, you'll have no problems at all.

One important consideration is to be sure you're familiar with using GEOS. Since Wheels is released as an upgrade to GEOS, it's assumed you're already familiar with the use and operation of GEOS when it comes to pointing and clicking, as well as other general things such as the difference between an application and a desk accessory. Things like mouse drivers and printer drivers should already be understood too. Wheels is a major enhancement to an already existing product, and before using Wheels, you should make sure you are completely familiar with GEOS first.

GIVE IT A PRACTICE RUN

If you want to get a feel for the installation before actually doing it, go ahead and give the Wheels installation a practice run first. For the actual installation, your Wheels disk can't be write-protected. But for a practice run, go ahead and write-protect your Wheels disk and proceed as though you were going to install the disk for real. This way, you'll get an idea of how the installation will go and will also see just how easy it is.

At one point during the practice run, the installation will naturally fail because of the write-protected disk. But up to that point, you'll have a feel for how the installation will work. Plus this will give you a chance to make sure that the Wheels disk will boot up properly before actually doing the installation.

A BRIEF OUTLINE

In a nutshell, here's the basics of what you need to know and what takes place during the installation:

- * *Have at least one 1541/1571 drive running*
- * *Have your ram expansion plugged in and ready*
- * *Boot up Wheels and follow the on-screen dialogue boxes*
- * *Have your write-protected GEOS system disk ready and insert it only when asked*

Now, read on for more detailed instructions.

INSTALL GEOS FIRST

If you just purchased GEOS brand-new in order to install Wheels, you'll need to install GEOS first. During the Wheels installation, your GEOS serial number will be read from your GEOS system disk. There is no serial number to be read until you've properly installed GEOS.

If you're not familiar with GEOS, it would be a good idea to boot up GEOS and use it for a few days before attempting to get familiar with Wheels. Many of the functions you'll use in Wheels will be very similar to GEOS, and much of what you need to know is contained in your GEOS manual. Most of it is not repeated in the Wheels manual. The Wheels manual concentrates primarily on the new features of Wheels.

INSTALLING FOR THE FIRST TIME

Installing Wheels is a one-time thing. You must follow the instructions exactly because the installation routines won't let you do it any other way. However, the installation is very simple and you'll be guided through it with on-screen dialogue boxes.

It's not necessary to boot up GEOS to install Wheels. You'll actually boot up Wheels to do the installation. The first time Wheels is booted, the installer routines will be activated. Once the installation is completed, it will never be performed again.

Note: Be sure to perform this installation within 30 days from the date of purchase. The installation procedure comes with a very good guarantee. If it fails for any reason, simply send your Wheels disk directly to Click Here Software for a free replacement. Be sure to include a brief explanation of what may have gone wrong. Even if the failure was your own fault, your disk will be replaced. This is a 100 percent satisfaction guarantee to get you up and running in Wheels. Don't let the 30 days expire, though. After 30 days, the normal replacement cost will be in effect. Refer to section 1 of your Wheels manual for information on where to send the disk.

SETTING UP YOUR SYSTEM

You probably won't need to do anything special with your hardware to get Wheels up and running and installed properly. Most importantly, you'll need at least one 1541

or 1571 drive and ram expansion. The 1541/1571 drive is needed if your Wheels disk came supplied in 1541 format. Plus the 1541/1571 drive is needed in order to read the GEOS serial number from your original GEOS system disk. If your Wheels disk came supplied in 1581 format, then you'll need at least one 1581 or FD-2000/4000 drive and at least one 1541 or 1571 drive.

Since you'll be booting up Wheels to do the installation, and because Wheels requires ram expansion, you'll need to make sure you have your ram expansion plugged in and enabled. Section 3 of your Wheels manual contains the information you'll need concerning your ram expansion. Studying the info about ram expansion is most important if you plan to use your RamLink for the system ram. In this case, you'll be using a DACC partition and will need to be sure an adequately sized one is already set up in your RamLink.

Wheels won't boot up without ram expansion, and therefore, you won't be able to perform the installation without it.

DEVICE NUMBERS

You can boot up Wheels from any device number from 8 through 11. If you're booting Wheels from a 1581 or FD drive, and since you'll also be needing a 1541 or 1571 drive activated, make sure that the two drives do not share the same device number.

If you're using multiple drives during the installation, make sure that at least one of them is a 1541 or 1571 in order to accept the GEOS system disk when it's asked for. This can be the same drive you boot Wheels from if you're booting from a 1541 formatted disk. Any drive numbered from 8 through 11, that Wheels finds during this initial bootup, will be installed and made available during the installation procedure. Any drive numbered 12 or higher will be ignored.

READY TO BOOT AND INSTALL

Put a write-protect tab on your GEOS system disk and leave the write-protect tab off from your Wheels disk. The installation does not need to write anything to your GEOS disk, it only reads information from it. On the other hand, some information will be written to your Wheels disk which is why it must not be write-protected at first.

Note: On a 1581 disk, push the write-protect door down in order to close up the write-protect hole. This will allow writing to occur to the disk. This is the exact opposite of

the 5.25 inch disks, where the write-protect notch must be uncovered in order to be able to write to the disk.

Turn your computer on and then insert your Wheels disk into the intended drive. It's not necessary to insert the GEOS system disk yet. Wait until the installation procedure asks you for it.

Where you see "<RETURN>" in the following instructions, this simply means to hit the RETURN key.

BOOTING WHEELS 64

Now, let's start up your Wheels system. For Wheels 64, either one of the following will get Wheels going:

LOAD "STARTER", 8 <RETURN>
and then...

RUN <RETURN>

The actual command to load this file will vary only according to the device number your Wheels disk is loaded from. Change the 8 in the above command if you're loading Wheels from a different device number. Optionally, the following may be used instead:

LOAD "STARTER", 8, 1 <RETURN>

In this case, it's not necessary to use the RUN command since the file will automatically start itself.

If you have JiffyDOS in your computer, either of the two following commands will get Wheels running:

^STARTER <RETURN>
or...

%STARTER <RETURN>

Prior to using the JiffyDOS method above, use CTRL/D to activate the drive you're booting Wheels from. Keep hitting CTRL/D until you see the correct device number displayed.

BOOTING WHEELS 128

The biggest difference in booting Wheels 128 over the 64 version is the filename. In this case, we're going to load and run "STARTER 128". Another difference is using ",8,1" in the load command won't automatically start the file. Any of the following methods will get Wheels 128 running:

LOAD "STARTER 128", 8 <RETURN>
and then...

RUN <RETURN>
or...

DLOAD "STARTER 128", U8 <RETURN>
and then...

RUN <RETURN>

And of course, if the device number is anything other than 8, use the correct number in place of the 8 where you see ",8" or "U8".

Here's a couple of other methods you can use:

```
RUN "STARTER 128",U8 <RETURN>
```

or...

```
BOOT "STARTER 128",U8 <RETURN>
```

And, of course, if the drive is device 8, the "U8" can be omitted since these commands default to device 8.

If you have JiffyDOS in your 128, hit CTRL/D until the correct drive is activated and then use the following command to start Wheels:

```
^STARTER 128
```

From here on in, you'll be prompted with on-screen dialogue boxes to help guide you through the installation. Shortly after the STARTER program begins running, you should see the title screen appear, showing the Wheels hubcap spinner logo. A few moments later, the screen will change and the first dialogue box will appear.

SELECT RAM EXPANSION

Wheels will study your system and locate any of the supported ram expansion units it can find. The first dialogue box will display 4 different types of ram expansion. Only the ones that are not italicized were found. Wheels will have already chosen one of them for you. If this is the one you wish to use, simply hit <RETURN>. If you wish to use one of the other ram expansion units, select the desired one by pressing keys 1 through 4 and then hit <RETURN>.

Note: When you see an "OK" button, you can activate it by either clicking on it with the mouse or hitting the <RETURN> key. The mouse may or may not be active yet during this phase of the bootup process. If not, everything can be performed using the keyboard. If you see a "YES" or "NO" button, the "Y" or "N" keys can be used to activate them.

If you've chosen the RamLink to be used for the system ram, then you'll be presented with another dialogue box asking you which DACC partition you want to be used by the system. If the one showing is correct, select "YES". If not, then select "NO" and the next DACC partition will be displayed. Once the last DACC partition on your system has been displayed and if you haven't already selected one of them, it will cycle back to the first one again.

Note: In order to use a RamLink DACC partition, it must be at least 128K (512 blocks) in size. In order to accomodate certain applications that will require additional ram, you might wish to make the DACC partition larger than this. A size of 512K (2048) blocks makes a good choice. In addition to using your RamLink partitions, this would also allow you to configure an additional ramdisk within the DACC partition. Keep in mind that it's not necessary to use a DACC partition for the system ram in order to be able to access the RamLink native and 1581 partitions. The DACC partition is only needed for the Wheels system ram. If any other ram expansion is available and chosen, you can still access your RamLink 1581 and native partitions.

BOOTUP SETTINGS

The next dialogue box you'll see lets you choose various bootup settings. This dialogue box is covered in your Wheels manual in section 3. During this initial installation, you'll want to use the default settings. You'll see 5 different options that can be selected. Options 1 through 3 will already be selected and options 4 and 5 will be turned off. Leave these settings as they are and just hit the <RETURN> key to continue on.

CHOOSE AN INPUT DRIVER

Wheels will continue loading now that you've chosen the type of ram to use along with the default bootup settings. After a few moments, the next step of the installation involves selecting an input driver. A dialogue box will appear and you'll be presented, one at a time, with the names of the different input drivers located on your Wheels disk.

On a 1581 disk, you can choose from all the available drivers. On a 1541 disk, you'll only have a choice of the standard 1351 mouse driver or the JOYSTICK driver. All the other mouse drivers are located on side 2 of the Wheels disk and cannot be accessed during this first installation.

The 1351 driver will work with the CMD SmartMouse, the Commodore 1351, or any of the 1351 clones. The JOYSTICK driver will work with any Commodore compatible joystick or the 1350 mouse. You can always change your mouse driver at a later time, so don't worry if the one you choose now will be incorrect. If you make the wrong decision, the keyboard will still get you the rest of the way through the installation process.

The dialogue box let's you select "YES, NO, or CANCEL" to choose the input driver. If you press "N", the next driver on the disk will be displayed. If you press "C", then no driver will be installed and the installation will proceed to the next step.

Note: By default, the Wheels kernal contains the standard 1351 mouse driver. If you do not select a mouse driver, the mouse will still function, but a joystick will not.

After selecting the input driver, you'll be asked which mouse port to use, unless you chose the JOYSTICK driver, which only works in port 1.

SELECTING A CLOCK SOURCE

If you have a CMD device with an RTC chip or a SmartMouse, you'll be asked which device you would like the system clock to be set from. You'll cycle through all the choices found just like you did with the input driver.

ENTERING YOUR NAME

Once you've chosen an input driver, the installation will proceed to the next step where you enter your name. You'll have two dialogue boxes for this. The first one will ask for your first name and the second one will ask for your last name. You can enter up to 16 characters for each of your first and last names. After entering a name, hit the <RETURN> key to continue.

Now that you've entered both your first and last names, a dialogue box will appear to show you how you entered your name. If it looks like you made a mistake, press "N" to enter your name again. If it's correct, press "Y" to continue.

INSERT YOUR GEOS DISK

The next phase of the installation will ask you to insert your original GEOS system disk. After making sure the disk is write-protected, place the disk into any 1541 or 1571 drive that is currently running on your system.

Note: Do not turn any drives on or off at this point. Wheels has already configured your drives and you must not change them without the use of the Toolbox. You can do this after you are completely booted up. This is covered in Chapter 6 of your Wheels manual.

If you booted Wheels from a 1541/1571 drive and this is the only 1541/1571 drive on your system, remove your

Wheels disk from the drive and insert your GEOS system disk. If you booted Wheels from a 1581 or FD drive, or if you have more than one 1541/1571 drive running, insert your GEOS disk into one of the drives and leave your Wheels disk in the drive you booted it from.

Once the GEOS disk is in the drive, hit <RETURN>. After a few moments, another dialogue box will appear asking you to insert your Wheels disk. Remove your GEOS disk and put it away, it's no longer needed for booting up Wheels. If the Wheels disk is already in the drive, then just hit <RETURN>. Otherwise, insert it into the drive first and then hit <RETURN>.

After a few more moments, you'll be asked to insert side 2 of your Wheels disk if it's a 1541 formatted disk. If the disk is a 1581 disk, this step will be skipped. Insert side 2 when asked, and hit <RETURN>. Just a few seconds later, you'll be asked to reinsert side 1. Do so, and then hit <RETURN>.

FINISHING THE INSTALLATION

In a few short moments, a dialogue box will appear stating that the installation was successful. If this message appears, then your disk is ready to use. If anything went wrong that was detected during the installation, you should see an error message instead. If neither the success message or an error message appears, then something happened to lock up your system. This could be due to a bad disk or a bad drive, or even a problem with your computer. If your equipment is in good shape and the disk is not damaged, then the installation should work properly and the success message should appear.

Hit <RETURN> now and you'll see the next dialogue box that will instruct you to write-protect your disk. Remove your Wheels disk and do so. On a 1581 disk, flip the little door upwards to open up the write-protect hole. On a 1541 disk, place write-protect tabs on both notches.

Once this is done, put the disk back in and hit <RETURN> and Wheels will finish booting. The installation is completed.

Let's roll down our windows and go cruisin'

This manual was created while operating in the Wheels 64 environment using geoPublish and geoWrite. Printing was done using geoPubLaser with a PostScript laser printer. With geoPublish's 16 page limit, each section was created as a separate geoPublish document. Any section larger than 16 pages was broken down into multiple documents.

The development of Wheels 64 began by using geoProgrammer (geoAssembler and geoLinker) while operating in the GEOS 128 environment. When the SuperCPU became available for the 64, development shifted to operating from GEOS 64 due to the increase in speed and efficiency of the SuperCPU.

As Wheels 64 developed and became usable, GEOS 64 was no longer used and Wheels 64 was put to use for its own continued development. Its ability to handle large native partitions and big ramdisks as well as a large number of files was much needed for a project of this size. Wheels 64 continued to develop over time.

All the development files needed to create the Wheels 64 and Wheels 128 packages require almost 8 megs of storage space on the CMD HD. Throughout the entire course of development, there has been no loss of any file from disk corruption. Nevertheless, there have been many (and frequent) backups made, but fortunately have never been needed.

Wheels 128 was developed entirely with geoProgrammer while operating for the most part in the Wheels 64 environment. During the final two weeks of Wheels 128 development, geoProgrammer was used on both the 64 and 128 platforms to finish the development. This use of Wheels 128 during the final two weeks of its own development aided in the testing of the software.

Contents

SECTION 1: General Information

- 1-1 Ordering information
- 1-1 Technical support
- 1-1 Other methods of support
- 1-1 Warranty and disk replacement policy
- 1-2 Copyrights and trademarks
- 1-2 Additional copyrights and trademarks
- 1-2 Licensing agreement to original owners
- 1-2 Licensing agreement to second-hand owners

SECTION 2: Introduction and Overview

- 2-1 Introduction
- 2-2 The hardware that's needed
- 2-2 The software that's needed

SECTION 3: Booting Up Wheels

- 3-1 Your ram expansion
- 3-2 Your disk drives
- 3-2 RamLink device number
- 3-2 Bootup process
- 3-3 Booting Wheels 64
- 3-3 Booting Wheels 128
- 3-3 Now we're booting up
- 3-3 Select ram expansion
- 3-4 Bootup settings
- 3-4 Choose an input driver
- 3-4 Choose a printer driver
- 3-4 Choose a clock source
- 3-5 Finish booting
- 3-5 Changing your bootup settings
- 3-6 Your default input driver
- 3-7 Using older input drivers
- 3-7 Accelerators
- 3-7 Schnedler's TurboMaster
- 3-8 CMD's SuperCPU
- 3-8 Products not supported
- 3-8 Flash 8
- 3-8 Lt. Kernal

- 3-8 MS-DOS disks

SECTION 4: MakeSysDisk

- 4-1 Introduction
- 4-1 Compatible drives
- 4-2 Creating a WHEELS MASTER disk
- 4-2 Creating a Wheels boot disk
- 4-3 Finishing up

SECTION 5: The Dashboard

- 5-1 Introduction
- 5-1 The drive icons
- 5-2 Repositioning your drive icons
- 5-2 Clicking on objects
- 5-2 Clicking on files
- 5-2 Clicking on multiple files
- 5-3 The directory windows
- 5-3 A brief description
- 5-3 The scrollbar
- 5-4 The fuel gauge
- 5-4 The directory header
- 5-4 The close gadget
- 5-4 Activating a window
- 5-5 Moving your windows
- 5-5 Resizing your windows
- 5-5 Changing the window defaults
- 5-5 Native mode partitions
- 5-6 The system directories
- 5-6 Opening a system directory
- 5-7 System directories with native partitions
- 5-7 Multiple system directories
- 5-8 The menus
- 5-8 The wheels menu
- 5-9 The file menu
- 5-9 The disk menu
- 5-10 The options menu
- 5-11 The view menu
- 5-11 The directory menu
- 5-12 Setting the system clock

- 5-12 The printer icon
- 5-13 Copying files
- 5-13 Choosing the destination
- 5-13 Overwriting existing files
- 5-13 Moving files
- 5-14 Forcing a move instead of a copy
- 5-14 Single-drive filecopying
- 5-14 Choosing a destination
- 5-15 Disk copying with two drives
- 5-15 Copying between partitions
- 5-15 Disk copying with one drive
- 5-16 Speeding up disk copying
- 5-16 Disk copy compatibility
- 5-16 Selecting copy from the menu
- 5-17 Disk copy options
- 5-17 Swapping drives
- 5-17 Your defaults
- 5-18 Saving your default settings
- 5-18 Restoring the Dashboard screen
- 5-18 The function Keys
- 5-18 Altering the function key settings
- 5-19 Modify mode (rearranging your directory)

SECTION 6: The Toolbox

- 6-1 Introduction
- 6-1 User interface
- 6-1 Current configuration
- 6-1 Saved configuration
- 6-2 Changing your configuration
- 6-2 Removing a drive
- 6-2 Installing a drive
- 6-3 The special 1581 native driver
- 6-3 Switching between 1581 and native disks
- 6-4 Installing a ramdisk
- 6-4 Formatting a ramdisk
- 6-5 Ramdisk partitions
- 6-5 How ram is allocated
- 6-6 Displaying ram information
- 6-6 Saving your configuration
- 6-6 Clearing a saved configuration
- 6-7 Formatting ramdisks during bootup
- 6-7 SuperCPU optimization

SECTION 7: The Detail Shop

- 7-1 Introduction
- 7-2 The 128 in 40 and 80 column modes
- 7-2 Monochrome colors
- 7-2 Multi colors
- 7-3 Background pattern
- 7-3 Mouse pointer
- 7-4 Screensaver
- 7-5 Adjust timing
- 7-5 Key repeat
- 7-6 Saving your details
- 7-6 Loading your details
- 7-6 Using your details
- 7-6 File icons
- 7-7 Dashboard modifications
- 7-7 Dashboard windows
- 7-7 Icon colors
- 7-8 Icon images
- 7-8 Saving Dashboard data
- 7-8 Activating the new Dashboard data

SECTION 8: Miscellaneous

- 8-1 Your existing GEOS applications
- 8-1 Applications to avoid
- 8-2 Using new Wheels features
- 8-2 The file requestor
- 8-2 The system buttons
- 8-3 The DISK button
- 8-3 The system partition dialogue box
- 8-4 Wheels 128 features

APPENDIX

- A-1 System Disk Contents
- A-2 Troubleshooting
- A-2 Wheels fails to install
- A-2 Check your GEOS disk
- A-3 Check your Wheels disk
- A-3 Check your hardware
- A-3 Wheels crashes or won't boot
- A-4 Check your ramdisk files
- A-4 Summing up
- A-4 Using geoSHELL with Wheels
- A-4 What geoSHELL can't do
- A-4 The new commands
- A-6 Ordering information

General Information

ORDERING INFORMATION

All orders, registrations, and replacement disks may be obtained through the following address:

Maurice Randall
%Click Here Software Co.
P.O. Box 606
Charlotte MI 48813-0606
USA

TECHNICAL SUPPORT

Technical support is available free of charge to the original owner of the Wheels system package. However, if using phone support, no collect calls will be accepted, nor will long distance calls be returned.

The preferred method for technical support is through Maurice Randall's BBS: The Speed Zone BBS at (517) 322-2386, 24 hours a day. Messages may be left in either of two public message areas called "GEOS" or "Maurice Randall's Software". Responses are normally provided within 24 hours or less.

OTHER METHODS OF SUPPORT

PH: (517) 543-5202 (daytime hours)
ask for Maurice (pronounced as "Morris")
or email: arca93@delphi.com
website: <http://people.delphi.com/arca93/>

Technical support for Wheels may be limited to the use of Wheels and its supplied contents, and not so much in the use of GEOS applications not supplied with Wheels. However, general help with GEOS is still available through The Speed Zone BBS.

WARRANTY AND DISK REPLACEMENT POLICY

The original Wheels system disk is warranted to be free of unintentional defects for a period of 90 days from the date of original purchase. However, as outlined in the installation instructions, please perform the installation during the first 30 days. This way, you will know the disk is free of defects right away. During the first 30 days, your disk will be replaced regardless of who is at fault. If you accidentally corrupt the disk, it will still be replaced.

Please note: The inability for a disk copy program to make backup copies of your original disk does not indicate defectiveness. Only if the included utility, MakeSysDisk, is unable to create new system boot disks for you, or if the original disk fails its initial installation, or if it is unable to boot up on equipment that is known to be functioning properly, will the original disk be deemed defective.

If the original disk is found to be defective, you may return the disk, along with proof of purchase date, for a free replacement. After the expiration date, defective disks may be replaced if accompanied by a fee of \$10 in US funds, plus \$4 for shipping and handling to North American locations, or \$6 to all other locations.

COPYRIGHTS AND TRADEMARKS

The Wheels package as well as the products contained within it are all Copyright 1998 by Maurice Randall and Click Here Software Co., and are also trademarks of the same. The indicated package contents include:

Wheels Owner's Manual
Dashboard 64 (or Dashboard 128)
Toolbox 64 (or Toolbox 128)
MakeSysDisk
DetailShop 64 (or DetailShop 128)
The Wheels kernal

ADDITIONAL COPYRIGHTS AND TRADEMARKS

GEOS is a trademark of Geoworks and Berkeley Softworks.
FDSeries drives, HDSeries hard drives, RamLink, SmartMouse, SuperCPU, SuperRAM, 1750XL, and JiffyDOS are products and trademarks of Creative Micro Designs.
RamDrive and BBGRam are products of Performance Peripherals, Inc.
geoRAM is a product of Berkeley Softworks
Commodore 64, Commodore 128, 1541, 1571, 1581, 1350, and 1351 are products from the now defunct Commodore Business Machines, Inc.

LICENSING AGREEMENT TO ORIGINAL OWNERS

By purchasing and installing this product you are agreeing to the following:

To use the product for your own purpose and enjoyment.

To install the product ONLY on computers you will use for yourself or will be used by your immediate family in your own home or by employees in your own place of business.

NOT to install the product onto computers owned or used by other persons outside of your home or place of business.

NOT to copy and distribute the product to others by any means.

To give up all rights to the use of the product and to stop using the product if you should sell your original Wheels package disk.

LICENSING AGREEMENT TO SECOND-HAND OWNERS

All possible benefits, such as technical support, warranties, and upgrade discounts, will apply only to the original purchaser of this product. If you've obtained your original Wheels package used or second hand, these benefits are not transferred to you automatically. As the new owner, you must send in the original Wheels package disk along with a replacement fee to obtain these benefits and to obtain the rights to the use of the product. The cost of this fee is \$20.00 in US funds, plus \$4 for shipping and handling to North American locations, or \$6 to all other locations, and includes a new original system disk licensed for your own use. This does not include the Wheels Owner's Manual. Make sure you received the manual from the original owner.

Introduction And Overview

INTRODUCTION

This new operating system comes about ten years after the release of GEOS 2.0 and about 12 years after the first release of GEOS. If you've been a loyal GEOS user all along, then you've likely grown to appreciate the many nice features of GEOS and the common sense that went into the original development of it. GEOS is a remarkable enhancement to the Commodore computer and has had much to do with keeping this computer platform alive all these years.

Since much of the original GEOS kernel has been rewritten or changed in Wheels, what's actually left of the GEOS kernel can be found in versions of GEOS prior to V2.0. Therefore, you can install Wheels 64 as an upgrade to any version of GEOS 64 from V1.3 through V2.0. Likewise, Wheels 128 may be installed as an upgrade to GEOS 128 from V1.4 through V2.0. Just about every beige colored Commodore 64C came with GEOS 64 V1.3. There is still a big advantage to upgrading to Wheels from GEOS 2.0 as opposed to upgrading from an earlier version, though. GEOS 2.0 came with much improved versions of geoWrite and geoPaint. So, you might still want to buy your own copy of GEOS 2.0 just to get the newer versions of those applications.

Throughout the years, we've had new pieces of hardware released and methods employed to be able to use these products with our GEOS systems. But there's nothing like having the support for the hardware built directly into the operating system, rather than patching it up to do the job. That was one of the goals of the Wheels operating system, to better utilize what we have available to us today and to provide better support for the

future.

These computers will be around for awhile longer yet, and your new Wheels system will pick up where GEOS left off.

What you have before you is a whole package designed to work together, just like the original GEOS concept. If you're a GEOS fan, don't worry, one of the priorities in the development of Wheels was to maintain backwards compatibility with all the wealth of GEOS applications that have been developed over the years. Most of the popular applications you're currently using will still function as they always have. But the way you're going to be able to manage your overall system has been greatly improved.

In addition, there are many enhancements to the operating system that will improve the way new applications can be written to function on your system. New applications can be made more powerful than before. One of the reasons is Wheels absolutely requires ram expansion now. GEOS didn't require it but would take advantage of it if you had it. From a programmer's standpoint, GEOS applications had to be written with the idea that only the ram in the computer was available, and that was very limited. With Wheels, the programmer is automatically given 30K of free additional ram to use, and if you have extra ram not being entirely used by the operating system or your ramdisks, then the programmer can take advantage of even more ram when it's there.

This additional ram really improves the functionality of an application. For instance, the Dashboard is the new replacement for the old deskTop, and with the extra ram that's available, it can load itself entirely into memory while it's running. Whenever you

had to perform a special function with the old deskTop, such as validating a disk, the deskTop first had to load in the code from disk necessary to perform that function. It was a noticeable thing with the 1541 drive, and even more so if the deskTop wasn't on the disk that was in the drive. It would ask you to reinsert a disk with the deskTop on it before it could proceed.

The work you have before you within the Wheels operating system is a culmination of work spread out over the past few years. There's always room for improvement, and Wheels is no exception. But for you, the user, you'll find a much improved environment for managing your entire system. And with your feedback from this release, you might even play a part in the further development of additional features and improvements.

THE HARDWARE THAT'S NEEDED

If you can boot up GEOS on your system, then the only thing you have to worry about is having ram expansion. Ram expansion is a *requirement* unlike in GEOS where it was only an *option*. On the plus side, most of the popular types of ram expansion units are supported. See section 3, "Booting Up Wheels" for more information on the ram expansion units.

THE SOFTWARE THAT'S NEEDED

To start with, you'll need an original GEOS 64 system boot disk for Wheels 64 or an original GEOS 128 system boot disk for Wheels 128. The original disk is needed so that the initial installation of Wheels can retrieve your GEOS serial number. This is so that any GEOS application you own that

checks this serial number will still function within Wheels.

If you've purchased Wheels and do not own GEOS, you can still purchase the GEOS software from Creative Micro Designs. You'll find ordering information in the Appendix.

And obviously, you'll need your original Wheels system disk to get up and running. Installation instructions are covered on the separate installation sheet that came in your Wheels package.

Additionally, you'll want to have your GEOS application disk because the major GEOS applications such as GeoWrite and GeoPaint are not supplied with the current release of Wheels. The main thing Wheels replaces is the deskTop, Configure, and the main kernel operating system code. The replacement for the deskTop is Dashboard 64 or Dashboard 128, and likewise, Toolbox 64 or Toolbox 128 replaces Configure. Plus a good amount of operating system enhancements are included in the Wheels kernel, many features not found in GEOS.

As you're reading through this manual, you'll notice references to you, the user. You might also notice the user referred to as "he" or "him" or "himself". In these cases, reference is being made to the user in general and not necessarily to a male user. If you're a female, just read these references as she, her, or herself. This method merely makes reading easier.

Dig this manual out of the glovebox whenever you get lost. Now, let's fire that new system up, roll down our windows, and go cruisin'.

Booting Up Wheels

Firing up Wheels

If you have successfully installed your original Wheels disk, then you have already learned how to boot up Wheels. This was covered in the installation instruction sheet that came in your Wheels package. In this section, we'll cover the same things again that pertain to booting up Wheels, but will cover some of the subjects in greater detail.

Once you've completed the installation procedure, you can boot up Wheels from your original WHEELS MASTER disk.

The important thing now is to protect your original Wheels disk. Keep it write-protected from now on and don't use it any more than you have to. The only problem the write-protect will cause is the Toolbox won't be able to save any configuration settings to the disk. But that's ok, we want to keep this original disk in its default state.

On your Wheels system disk is a utility called "MakeSysDisk". This program is capable of making additional boot disks or boot partitions for you on any of your bootable devices. It can also create additional WHEELS MASTER disks for you in 1541 and 1581 format. MakeSysDisk should be used right after you get Wheels up and running in order to create these additional boot disks and MASTER disks for your own purpose. Section 4 covers the use of MakeSysDisk.

YOUR RAM EXPANSION

The first thing you need to consider is the ram expansion you will be using with Wheels. Wheels will automatically make use of your ram expansion during the bootup sequence.

There are several types of ram expansion devices you can use with your system. At least one of the following is mandatory:

1700, 1764, 1750, or any 1750 clone
1750XL and expanded 17xx series REU's
geoRAM and expanded geoRAM's
BBGRam's of any size
SuperCPU/SuperRAM with 1 to 16 megs
RamLink or RamDrive DACC partition of at least 128K or larger

The one type of ram expansion that needs explaining here is the RamLink or RamDrive. You must use the RAM-TOOLS utility supplied with your RamLink to set up a DACC (foreign) partition. This partition must be a minimum of 128K (512 blocks) in size. The location of the DACC partition within your RamLink or RamDrive doesn't matter. It also doesn't matter what the partition number or name is. During bootup, the Toolbox will look for all the DACC partitions it can find and will provide you with a dialogue box to pick one from. After that, the Wheels operating system will use this partition each time you boot up.

If you have a ram expander that can plug into one of the two ports on the RamLink, you can have Wheels use that instead. If the NORMAL/DIRECT switch is set for NORMAL and you have a ram expander in the front port (nearest to the computer), the Toolbox will see it and can use it instead of a DACC partition. If the switch is in the DIRECT position, the Toolbox will check the rear port for a ram expander. Keep in mind any ram expansion in the rear port is also used by the RamLink and occupies the area of memory where your partitions begin.

If the Toolbox finds more than one type of ram expansion, you'll be able to choose which one you want to use when you begin booting up Wheels. A dialogue box will appear

showing the available ram expansions. Just pick one from the list.

In GEOS, you had to make sure you had the correct Configure program on your boot disk in order to have any ram expansion recognized for use with GEOS. There were different versions of Configure for each of the different types of ram expansion units. GEOS was originally designed to use the 17xx series ram expansion units, but later on came the geoRAM and a different setup was required. You couldn't use the same boot setup with either REU. As time went on, more innovative hardware appeared and it was important for the new hardware to support GEOS, so new versions of Configure kept showing up. Not a really big deal, you just had to keep yourself organized as to which boot disk setup belonged to which ram expansion unit. Those problems are all behind us now with the new Toolbox.

YOUR DISK DRIVES

You probably won't need to do anything special with your hardware to get Wheels up and running. You'll obviously need at least one disk drive to boot up from. This drive must match the type of boot disk you have and can have a device number of 8 through 11.

If you wish, you can turn on other drives prior to booting. During bootup, only the drives that have device numbers from 8 through 11 will be installed by the Toolbox. Other drives can be added after you've booted to fill up all 4 drive spaces, if desired.

The device you boot from must have a device number between 8 and 11. The only deviation from this is with the RamLink.

RAMLINK DEVICE NUMBER

If you boot from a RamLink in a 1581 partition and its device number is 12 or higher, it will be used with the RAM1581 driver for backwards compatibility with the way the RamLink was used in GEOS. However, you'll be limited to just 1581

partitions in this mode. Device numbers that CANNOT be used by the RamLink in this mode are 14 and 23 or higher. Device 14 is reserved for the Xetec Super Graphics Gold printer interface and device numbers 23 and higher are used for other purposes in Wheels.

If the RamLink's device number is between 8 and 11, it will be treated as a DOS device instead of a ramdisk, and you'll be able to use both 1581 and native partitions, and freely able to switch back and forth between the two partition types. See section 6, "Toolbox 64" for more information on the use of the RamLink or RamDrive.

Note: The RamLink's device number having to be between 8 and 11 to be used as a DOS device is only really important during bootup. After bootup, you can manually install the RamLink as a DOS device no matter what its device number is by clicking on "Install drive" in the Toolbox. The Toolbox will alter the device number to match the location where you're installing the RamLink.

BOOTUP PROCESS

Normally, you won't see the Toolbox appear on your screen while booting (except for the very first time as it prompts you with a few dialogue boxes), but it's still busy getting your system up and running with all the correct device drivers in place and operating properly. This even includes your input driver (mouse) and your printer driver. In GEOS, the deskTop always installed these drivers during bootup. The problem with this was an AUTO-EXEC program couldn't make use of the mouse for user input, if need be.

The first thing the Toolbox does during bootup is to test what type of ram expansion you have on your system. It then installs the correct routines into the operating system for you. If you don't have any one of the allowable ram expansion devices on your system, you'll be presented with a dialogue

box informing you the boot process can't proceed any further.

During bootup, the Toolbox checks to see what kind of 'real' disk drives you have on your system having device numbers between 8 and 11. If any are found, these will be installed in their respective positions as drives A through D. Following this, if you have any ramdisks configured, they'll be installed into their drive positions as long as a real drive isn't already occupying the spot. Ramdisks are not automatically formatted like they were with the old Configure, unless you specifically make the setting in the Toolbox to format them during bootup. This allows the battery-backed ramdisks to retain their contents each time you boot up. You can learn how to install ramdisks in section 6, "The Toolbox".

BOOTING WHEELS 64

Now, let's start up your Wheels system. For Wheels 64, either one of the following will get Wheels going:

```
LOAD "STARTER",8 <RETURN>
    and then...
RUN <RETURN>
```

The actual command to load this file will vary only according to the device number your Wheels disk is loaded from. Change the 8 in the above command if you're loading Wheels from a different device number. Optionally, the following may be used instead:

```
LOAD "STARTER",8,1 <RETURN>
```

In this case, it's not necessary to use the RUN command since the file will automatically start itself.

If you have JiffyDOS in your computer, either of the two following commands will get Wheels running:

```
^STARTER <RETURN>
```

or...

```
%STARTER <RETURN>
```

Prior to using the JiffyDOS method above, use CTRL/D to activate the drive you're booting Wheels from. Keep hitting CTRL/D until you see the correct device number displayed.

BOOTING WHEELS 128

The biggest difference in booting Wheels 128 over Wheels 64 is the filename. In this case, we're going to load and run "STARTER 128". Another difference is using ",8,1" in the load command won't automatically start the file. Any of the following methods will get Wheels 128 running:

```
LOAD "STARTER 128",8 <RETURN>
```

and then...

```
RUN <RETURN>
```

or...

```
DLOAD "STARTER 128",U8
<RETURN>
```

and then...

```
RUN <RETURN>
```

And of course, if the device number is anything other than 8, use the correct number in place of the 8 where you see ",8" or "U8".

Here's a couple of other methods you can use:

```
RUN "STARTER 128",U8 <RETURN>
```

or...

```
BOOT "STARTER 128",U8
<RETURN>
```

And, of course, if the drive is device 8, the "U8" can be omitted since these commands default to device 8.

If you have JiffyDOS in your 128, hit CTRL/D until the correct drive is activated and then use the following command to start Wheels:

```
^STARTER 128
```

NOW WE'RE BOOTING UP

Shortly after the STARTER program begins running, you should see the title screen appear, showing the Wheels hubcap spinner logo. A few moments later, the screen will change and the first dialogue box will appear.

SELECT RAM EXPANSION

Wheels will study your system and locate any of the supported ram expansion units it can find. The first dialogue box will display 4

different types of ram expansion. Only the ones that are not italicized were found. Wheels will have already chosen one of them for you. If this is the one you wish to use, simply hit <RETURN>. If you wish to use one of the other ram expansion units, select the desired one by pressing keys 1 through 4 and then hit <RETURN>.

Note: When you see an "OK" button, you can activate it by either clicking on it with the mouse or hitting the <RETURN> key. The mouse may or may not be active yet during this phase of the bootup process. If not, everything can be performed using the keyboard. If you see a "YES" or "NO" button, the "Y" or "N" keys can be used to activate them.

If you've chosen the RamLink to be used for the system ram, then you'll be presented with another dialogue box asking you which DACC partition you want to be used by the system. If the one showing is correct, select "YES". If not, then select "NO" and the next DACC partition will be displayed. Once the last DACC partition on your system has been displayed and if you haven't already selected one of them, it will cycle back to the first one again.

BOOTUP SETTINGS

The next dialogue box you'll see lets you choose various bootup settings. The first time you boot up, you'll want to use the default settings. You'll see 5 different options that can be selected. Options 1 through 3 will already be selected and options 4 and 5 will be turned off. Leave these settings as they are and just hit the <RETURN> key to continue on. Actually, there is no advantage to selecting anything other than 1-3 the first time a system is booted. These setting adjustments concern mainly with how to treat the system when you "reboot" your computer. The advantage to having these adjustments is when you have

powered or battery backed ram. Some of the information in your system ram may be retained for the next time you boot up. We'll look at each of these settings later on in this section.

CHOOSE AN INPUT DRIVER

Wheels will continue loading now that you've chosen the type of ram to use along with the default bootup settings. After a few moments, the next step involves selecting an input driver. A dialogue box will appear and you'll be presented, one at a time, with the names of the different input drivers located on your Wheels disk.

The dialogue box let's you select "YES, NO, or CANCEL" to choose the input driver. If you press "N", the next driver on the disk will be displayed. If you press "C", then no driver will be installed Wheels will continue booting.

If you chose a Wheels mouse driver instead of the joystick driver, you'll next get a dialogue box asking which mouse port you want to use. Just select 1 or 2 from this dialogue box.

Note: By default, the Wheels kernal contains the standard 1351 mouse driver. If you do not select a mouse driver, the mouse will still function, but a joystick will not.

CHOOSE A PRINTER DRIVER

Just like you chose your input driver, you'll be able to choose a printer driver if at least one driver is found on your boot disk. A series of dialogue boxes will cycle through all the choices. Choosing "CANCEL" will cancel the default printer driver from a previous bootup session and will default to installing the first driver found.

CHOOSE A CLOCK SOURCE

The last dialogue box to come up before Wheels finishes booting is the clock selection box. If the Toolbox locates any of the

supported RTC clocks on your system, it will ask you if you wish to set the system clock using this particular RTC. Just like with the input drivers, you'll cycle through all the available clocks until you see the one you wish to use.

FINISH BOOTING

Once you have gotten past the input driver selection, Wheels will finish booting and load up the Dashboard.

CHANGING YOUR BOOTUP SETTINGS

If you have more than one type of ram expansion on your system, and you have chosen one of them to be your default each time you boot up, but you want to start using a different one, you can change it the next time you reboot. After loading the "STARTER" program, immediately press the CMDR and LEFT-SHIFT keys together and hold them while the title screen is displayed. If you boot from a RamLink, grab the keys quickly or you won't gain access to the dialogue box. This is especially true if you use a SuperCPU with a RamLink. You better be fast! A good tip is to flip the SPEED switch on the SuperCPU to the right to slow the machine down. Keep holding the keys until a dialogue box appears.

This dialogue box is the same one that appeared the very first time you booted up Wheels. It will display the different ram expansion types it has found on your system. The ones that are listed in an italicized typeface are not available. Just select the one you wish to use and hit RETURN. At this point, the mouse driver may not be active, but you can use the number keys to make your selection and the RETURN key will activate the OK button.

If when you boot up, your default ram expansion unit is not found on the system, this dialogue box will automatically appear anyway. This dialogue box will also appear anytime you add an additional ram expansion

device or add a new DACC partition to your RamLink. This can also appear if you take your disk and boot it up on a different system containing a different ram setup.

Note: While this "Bootup Settings dialogue box is displayed, you have the opportunity to press CMDR/f to override a "128DETAILS" or "64DETAILS" file if the Toolbox loaded one during this bootup sequence. Pressing this key combination will restore all the default factory detail settings. Refer to SECTION 7 for more information about The Detail Shop.

In the "Bootup Settings" dialogue box, you have 5 different settings you can turn on or off. For the most part, these settings will aid the users that have battery backed or powered ram devices. When Wheels boots up, it copies a considerable amount of information into the ram expansion device for use during its operation. In addition, the Dashboard stores all of its windowing and variable information in the ram expansion. Not only that, but the Toolbox sets up your ramdisks and obviously, these reside in the ram expansion along with the information on where each ramdisk is located.

For someone with battery backed ram, it can be helpful to preserve all of this in between each computing session. You can accomplish this with certain settings in the "Bootup Settings" dialogue box. Let's take a look at each of these settings and what they do:

1. Reload extended kernal

The Wheels kernal is too large to fit completely in the computer's memory, so approximately 16K of the kernal must reside within the REU. While Wheels is running, portions of this code are swapped in and out of memory as needed. If something should go wrong and your computer crashes while code is swapped in, then rebooting the system could fail if this setting is turned off. With it turned on, the extended kernal will always be

reloaded into the REU at bootup time.

If your system and applications are quite reliable and you experience very few crashes, leaving this turned off can reduce the time it takes to boot up Wheels. This is especially noticeable when booting from a 1541 drive. If you boot from a RamLink, the time savings are very minimal. In that case, leave this setting turned on.

2. Clear ramdisk partition table

If you configure multiple ramdisks, they are stored in different parts of the REU. Each portion is treated like a partition and Wheels keeps track of where each of these ramdisk partitions are. If you wish to preserve each ramdisk between sessions, then leave this setting turned off. Without battery-backed ram, there is no point in preserving the partition table and in that case, leave this setting turned on.

3. Reset Dashboard environment

When you exit an application and return to the Dashboard, you'll notice that its appearance and window layout remains the same. You can also preserve this layout each time you reboot your computer. Just leave this setting turned off and the Dashboard environment will be preserved in between sessions. Here again, without battery backup, the environment will be cleared anyway.

4. Don't install ramdisks

If you've saved any ramdisk configurations in the Toolbox, the Toolbox will attempt to install those ramdisks during bootup. This way, your ramdisk will be all configured and if the REU is battery backed, the ramdisk contents will be preserved leaving all your files intact.

The only time this can be a real problem would be if something corrupted your ramdisk. The corruption could possibly occur from using a program outside of Wheels. But for whatever reason, if you had a copy of the

Dashboard in your ramdisk, and it's corrupted, Wheels might crash everytime you reboot your computer. The Dashboard is reloaded from the ramdisk for speed reasons, but if it's bad, your asking for trouble.

By turning this setting on, the Toolbox will ignore any ramdisks in the saved configuration settings. This will allow you to load the Toolbox and manually install the ramdisk and reformat it prior to exiting out and back to the Dashboard. Reformatting the ramdisk will then clean out all bad files from the ramdisk.

5. Skip any ramdisk formatting

When saving a ramdisk configuration in the Toolbox, you have to option of formatting the ramdisk during bootup. You would want to do this if the REU is not battery backed. But let's say your computer crashed and now you have to reboot. Now you want to skip the formatting so that you can retrieve any files that you may have been working on at the time of the crash.

Reset buttons are handy for recovering from a crash. If you're using Wheels 128, you can't just do a reset due to the soft reset vector in the 128. If you need to reset to BASIC, hold down the CMDR key and reset the machine into 64 mode. Then type in POKE 996,96. Then you can press the reset button to get back to 128 BASIC. Now you can safely reboot back into Wheels and recover any files in your ramdisk.

Remember, if you turn your computer off, the power to your REU also goes away, unless it's battery backed or powered in some way.

YOUR DEFAULT INPUT DRIVER

During bootup, the Toolbox will check your boot disk for the first input driver it finds. This will be the driver it'll install. If no driver is found, then the default driver built into the operating system will be used. This default driver is a 2-button mouse driver for the 1351

mouse and will also work with the CMD SmartMOUSE, but with the center button disabled.

If you have previously chosen a default input driver during the bootup sequence, then that input driver will be used as long as it can be found on the boot disk.

If you don't have the correct driver for your input device, or the correct input device for your driver, you'll have a difficult time using your system since most everything is based on being able to point and click.

Once your system is up and running, if the mouse pointer fails to respond, chances are you have the wrong driver installed. You can always install an input driver from the Dashboard after booting if need be. Refer to "Installing Drivers" in section 5.

When you first booted Wheels and went through the series of dialogue boxes and eventually selected a default input driver, that driver will remain your default until you change it. Merely selecting an input driver from the Dashboard does not make it a default driver. That only changes the driver for that session. Only the Toolbox can establish the default input driver and only during a bootup sequence.

So, to change your default input driver, do just like you would if you wished to change your default ram device. Hold down the CMDR and LEFT-SHIFT keys before you see the Wheels logo title screen and keep holding them until the first dialogue box appears. Then continue through the series of dialogue boxes until you arrive at the input driver selection box. The driver you choose will become your default driver.

USING OLDER INPUT DRIVERS

The input drivers supplied with your Wheels system are all new and won't work on your older GEOS system. However, you can still use your older GEOS input drivers with your new system if you so desire.

The new system leaves a little extra

programming room for the input driver, and as time goes on, you may see additional input drivers being created to meet increasing needs of the users. The additional programming room provides the possibility of various new features.

ACCELERATORS

Wheels is a graphical-based operating system and therefore the applications you use will appear much slower on the screen than an equivalent program running from BASIC on a text screen. Putting any kind of data on a graphics screen takes time. The operating system generates the characters you see as little graphical bitmaps. A text-based program can put text on a screen faster because of the specialized hardware contained inside your computer, but a graphical-based program draws each character pixel by pixel. One single byte stored to screen memory will get a normal text-based character on the screen, while the same size character drawn in graphics mode requires 64 dots to be calculated and drawn. This is the reason graphical-based programs seem so much slower than text-based programs.

No program can benefit from a faster computer more than a graphical-based program. And the Wheels operating system is no different. You'll really appreciate the difference an accelerator can make to your system.

SCHEDLER'S TurboMaster

The first popular accelerator for the 64 was the TurboMaster by Schnedler. This piece of hardware speeds up your 64 about 4 times, but they are becoming hard to find as they have been out of production for several years now. The TurboMaster will obviously not work with Wheels 128, only Wheels 64.

The presence of the TurboMaster is automatically detected by Wheels 64 during bootup and will greatly enhance your system if you have one, or are fortunate enough to

find one.

One drawback is for those that have the MasterAdapter with a 1750 type REU. Wheels does not support this combination. In order to use the TurboMaster, it must be used along with either a geoRAM or a BBGRam. The TurboMaster and geoRAM can both be plugged into a cartridge port expander such as the Aprotek Aprospand unit or the EX-3 which is available from CMD.

CMD's SuperCPU

An even better choice for your system is the SuperCPU from Creative Micro Designs. Like the TurboMaster, this accelerator is also fully supported by the operating system and these units are still available from the manufacturer. The advantage the SuperCPU has over the TurboMaster is speed and expandability. It runs about 5 times faster than the TurboMaster and also allows you to add additional ram to your system inside the SuperCPU with the addition of an optional SuperRAM card.

The Toolbox can take advantage of this additional ram by managing its use for any application that might wish to use it. In order for the system to use this ram, it must be chosen as your default ram expansion device during bootup. There is a model of the SuperCPU available for the 64 and one for the 128. You'll really enjoy using Wheels with a SuperCPU.

PRODUCTS NOT SUPPORTED

There are some products that either are not supported in this version of Wheels or never will be supported.

FLASH 8

The Flash 8 accelerator from Germany is not supported by Wheels. The main reason is because a Flash 8 unit was not available

during the development of Wheels. There is no way to know if any compatibility problems would have been discovered either.

LT. KERNAL

The Lt. Kernal hard drive might be popular enough to warrant including its use in future versions of Wheels 64 and Wheels 128.

A unit was recently purchased for development and testing purposes. Also, the method needed to use this hard drive in Wheels was developed a few years ago, but never completed. Watch for this additional hardware capability in the future.

MS-DOS DISKS

It would be nice to be able to easily transfer files between MS-DOS disks and Commodore disks while in the Wheels environment.

Apparently, there is a file copy program available over in Germany for this purpose, but it has never been promoted very well in the US, so many people do not even know of its existence.

Ideally, it would be nice to be able to put an MS-DOS disk into a 1581 or FD drive and have an actual disk driver for it so that applications could read and write directly to and from the disk just like with any other disk format.

Unfortunately, the layout of a disk sector on an MS-DOS disk makes this a very difficult task to accomplish. We may or may not see this capability in the future. If nothing else, there will likely be a file copy utility included with a future release and upgrade.

MakeSysDisk

Creating new disks

INTRODUCTION

Just like GEOS, your Wheels system must be booted from disk. Even though your original Wheels system disk is copy-protected, you still have the ability to create additional boot disks using the utility "MakeSysDisk" that is supplied with your system.

Your original Wheels disk is a "WHEELS MASTER" disk. MakeSysDisk can only be loaded and run from a WHEELS MASTER disk. Not only can MakeSysDisk create bootable disks, it can also create MASTER disks. Only 1541 and 1581 formatted disks can become MASTER disks. The main difference between a Wheels boot disk and a WHEELS MASTER disk is that a MASTER disk can be used to create additional boot or MASTER disks.

Be aware that creating additional boot disks should only be done for your own use. Be sure to study Chapter 1, "General Information" about your responsibility regarding the copyright laws.

The added benefit of MakeSysDisk is it can also create bootable partitions on your CMD devices. This was one of the primary goals behind the creation of this operating system and the use of MakeSysDisk.

To use MakeSysDisk, insert a WHEELS MASTER disk into a drive and double click on the MakeSysDisk icon. You don't have to boot up Wheels from this MASTER disk to use MakeSysDisk, but you must load and run MakeSysDisk from a MASTER disk.

COMPATIBLE DRIVES

MakeSysDisk can create MASTER disks using any of the following drives:

1541 drive

1571 drive with single sided disk

1581 drive

FD drive with 1581 disk

MakeSysDisk can also create regular bootable disks/partitions on any of the following:

1541 drive

1571 drive with single or double sided disk

1581 drive

FD drive with 1581 disk

FD drive with 1581 or native partition

CMD HD with 1581 or native partition

RamLink/RamDrive with 1581 or native partition

When you run MakeSysDisk, you'll have a dialogue box that will let you choose between making a MASTER disk or a BOOT disk. Just select the operation you wish to perform.

Note: Even though MakeSysDisk can create a new disk using one drive, it's a painful operation and not recommended due to the numerous disk swaps required. It's much preferred to use two drives, one being the source drive and the other the destination. The drive you load MakeSysDisk from is ALWAYS the source drive. Let's look at an example. You've got one 1581 drive and one 1541 drive. You ordered Wheels in 1581 format and you wish to make an additional 1581 MASTER disk. Instead of using the single 1581 drive for this purpose, create a 1541 MASTER disk first and then use that disk to create your 1581 MASTER disk. This is much easier and actually doesn't take any more time. Plus you end up with both types of

MASTER disks.

CREATING A WHEELS MASTER DISK

MakeSysDisk will check the drives you currently have on your system and will present you with a dialogue box that lets you choose among the drives that are allowed to create MASTER disks. Pick the desired drive and have a blank disk ready. If need be, you can use the same drive you loaded MakeSysDisk from. MakeSysDisk is able to copy files from one disk to another. If doing so, you'll be prompted when to insert the source or destination disk.

Unlike when creating boot disks, MakeSysDisk will always format the disk that will become a new MASTER disk. Be sure not to use any disk that has data on it that you wish to keep.

The next dialogue box will ask you to insert the new disk. The disk should be placed in the drive you have chosen to create your MASTER disk in. If you chose the same drive that you loaded MakeSysDisk from, remove your current MASTER disk and insert the new disk now.

MakeSysDisk will immediately begin formatting your new disk. The only way to cancel this operation is to not insert the disk, but click OK anyway. This will produce an error and the operation will cease.

If the disk formatting is successful, the operation will continue without any further action on your part unless you're using a single drive for the operation. Keep track of which disk is which as MakeSysDisk requests you to change disks. This will take quite a number of disk swaps to get the whole job done. It's much easier if you can load MakeSysDisk from one drive and create your new MASTER disk on another.

When the operation is complete, you'll have a new WHEELS MASTER disk. A dialogue box will inform you that the operation was a success. This new MASTER

disk can serve as a backup boot disk or it can also be used to create additional MASTER disks or BOOT disks/partitions.

ALWAYS write-protect your new WHEELS MASTER disks. Even though it's possible to add additional applications and other files to these disks and to be able to boot from these disks, it's not a good idea. These are mainly intended for creating regular Wheels boot disks and they also prevent you from having to use your original Wheels system disk for this purpose.

CREATING A WHEELS BOOT DISK

If you chose to create a BOOT disk or BOOT partition instead of a MASTER disk, you'll have a few different options to pick from. Mainly this involves selecting the drive and partition to use for the boot system.

STEP 1.

A dialogue box will appear giving you the opportunity to select amongst one or more choices for the drive you wish to work with. Only the drives capable of booting Wheels will be displayed in this dialogue box. Click on the desired drive. If you choose to abort, you can click on "CANCEL" and you'll be returned to the initial dialogue box.

STEP 2.

Next, you'll be shown the drive you have selected along with the name of the disk currently in the drive. If the drive is partitionable, the current partition will also be shown. At this point, you can switch partitions if you'd like, or use the one listed in the dialogue box. If you choose to switch partitions, MakeSysDisk will call on the operating system's own function for selecting a different partition.

If you've chosen a floppy drive, you can also insert a different disk. Just click on "Change disk/partition" and you'll either be asked to insert the new disk or a dialogue box

will open allowing you to select the desired partition on a CMD device.

When you're ready to proceed creating a boot disk, click on "OK", or if you change your mind, click on "CANCEL".

STEP 3.

MakeSysDisk will perform a test on the disk now to be sure it's formatted. MakeSysDisk can format the disk for you if needed. If it appears to not be formatted, you'll be presented with a dialogue box asking if you'd like to format the disk or cancel the operation. Click on "OK" to proceed or "CANCEL" to abort the operation.

STEP 4.

The next thing MakeSysDisk checks is whether or not you might need a program called "TURBOBOOT" for Wheels 64 or "TURBO41" for Wheels 128. This is a program used only during the initial bootup for systems that don't have JiffyDOS. If you don't have JiffyDOS, this can knock about 30-40 seconds off your bootup time. If you're creating a boot partition on a RamLink or RamDrive, MakeSysDisk will proceed straight to the next step, but on all other devices, you'll receive a dialogue box asking if you'd like to install the turbo program on the boot disk. If you're going to use this boot disk without JiffyDOS, click "YES" and the turbo program will be added to your boot disk. When booting, don't load TURBOBOOT or TURBO41, the system will do it for you. You'll still load and run "STARTER" or "STARTER 128" to get Wheels up and running. STARTER is a small program that loads quickly because of its size. If the turbo program is on your boot disk, STARTER will find it and use it. TURBOBOOT or TURBO41 will work even if you have JiffyDOS, so selecting to use it is always safe. You can always delete it from your boot disk at any time if you'd like. Wheels will boot with or without it.

Note: In Wheels 128, TURBO41 is only used with the 1541 or 1571 drives. All other drives will always have fast serial routines for quick loading times.

STEP 5

If your WHEELS MASTER disk isn't in the drive, MakeSysDisk will ask you to insert it. Make sure your MASTER disk is write-protected and then put it into the drive. If this is the same drive you're creating a boot disk on, don't worry, MakeSysDisk will prompt you to change disks as needed. After you've inserted your MASTER disk, click on "OK" to proceed.

STEP 6.

The process will continue now without any further action on your part unless you're creating the boot disk on the same drive that contains your MASTER disk. If so, you'll be asked to swap disks as needed.

FINISHING UP

When finished, MakeSysDisk will inform you if the process was successful or not. If successful, you'll have the opportunity to create additional boot disks. If you wish to create another boot disk, just click on "OK" or click on "QUIT" to exit MakeSysDisk and return to the Dashboard.

From the Dashboard, you can now copy any other files you might want on your new boot disk. When creating a MASTER disk, all the files from your original WHEELS MASTER disk will be copied to the new disk. But when creating a boot disk or partition, only the minimum files needed for booting are copied. Any additional files you need must be manually copied from the Dashboard. Refer to section 5, "The Dashboard", for more information on copying files.

With the new boot disk or boot partition you've created, you'll no longer need to boot up Wheels from your original disk or

MASTER disk if you've created extra ones. You can put your original Wheels system disk and MASTER disks away in a safe place and only use them when you need to create additional boot disks.

Even if you've created a boot partition on a CMD device, make some extra boot disks for your floppy drives in case something ever goes wrong that might prevent you from booting up again. You can still access your CMD devices when you boot from a floppy drive, so making extra boot disks is an

important thing to do at this point. Protect yourself in case unexpected problems arise.

After making your new boot disk or partition, you may copy any other files that you'd like to have on the disk. MakeSysDisk only copies those files that are absolutely needed for booting up the system. Be sure to copy any input drivers you'll wish to use as these are not copied by MakeSysDisk.

The Dashboard

Your interface to Wheels

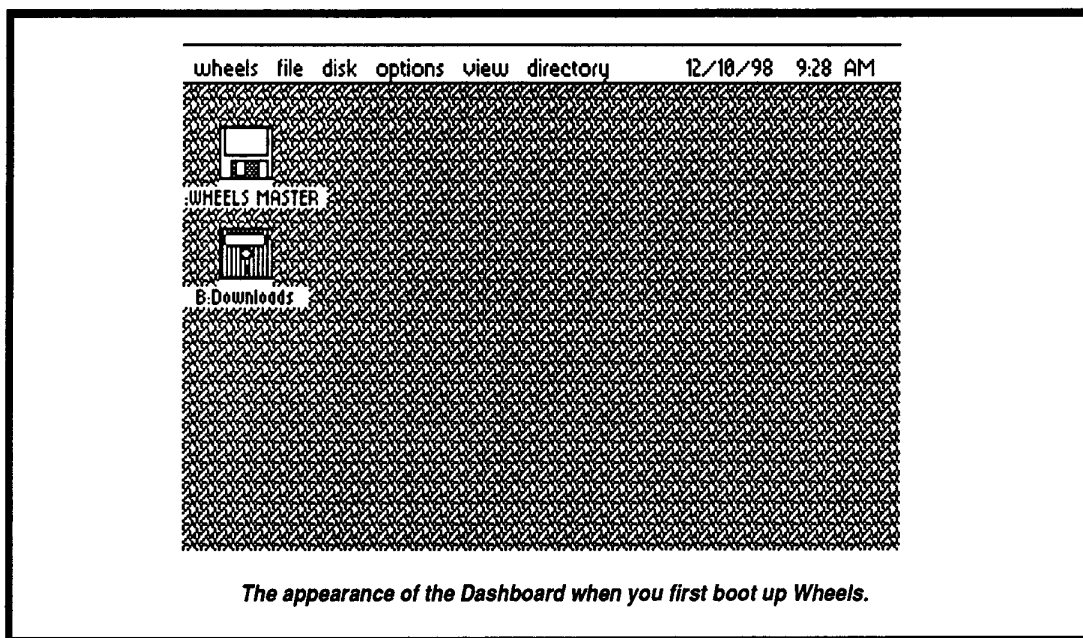
INTRODUCTION

The Dashboard is your new desktop interface, and is the main link to your system. It will likely be the application you'll use the most. From the Dashboard, you can gain access to all of your files. Most of the basic tools needed for working in a normal day to day environment are provided by the Dashboard. For the most part, the primary use for the Dashboard is to gain access to your disk drives and to be able to launch your applications. When you exit an application,

your system.

THE DRIVE ICONS

Among the first things you'll see when the Dashboard appears on your screen are the icons representing each of your disk drives or ramdisk devices currently in use. Underneath each icon is a string of characters identifying the drive letter as well as the disk or partition name for that device. When you double click on one of these icons, a window will open up on the screen listing the files currently residing



the operating system will return you to the Dashboard.

You'll discover many other features of the Dashboard will become indispensable. Being able to have multiple directory windows open is a feature that allows you to quickly bounce between your various projects or to move and copy files between the various directories on

in the directory of that device. You will see only the files that can fit within the window. To see more of the files on that directory, you can either enlarge the window or scroll up and down through the listing. Most of the devices such as the 1541, 1571, 1581, and the ramdisks of these various types, have one main directory and this is the one that will be

displayed on these types of devices. If the device is a CMD device in a native partition or a native ramdisk, the directory displayed will be the root directory.

REPOSITIONING YOUR DRIVE ICONS

By default, the drive icons are lined up along the left side of your screen, with drive "A" being at the top and drive "D" at the bottom. If you prefer a different layout, feel free to move the icons wherever you want on the screen. To do this, move the mouse pointer over the icon and then press and hold the mouse button. Within a couple of seconds, a ghosted image of the icon will appear as if attached to your mouse pointer. While still holding the mouse button, move the mouse to an empty portion of the screen where you would like the icon to reside and then lift your finger off the button. The icon will instantly move from its previous position to the new position.

You'll notice when you release the mouse button that the icon might not end up exactly on the spot where you stopped. Due to the color mapping restrictions on the Commodore screen, the icons have to be positioned on boundaries occurring every 8th pixel. So, when you move the icon to a new position, the Dashboard will find the closest 8 pixel boundary and locate the icon at that spot.

Continue moving each drive icon to any desired location. The Dashboard will remember these positions for your entire computing session until you shut down. The next time you boot up, the default settings will once again be used. You can make your new icon positions your defaults by selecting "save defaults" from the "options" menu.

CLICKING ON OBJECTS

The Dashboard works by allowing you to point and click on various objects. An object can be a drive icon, a directory window, a single file or group of files within a directory window, etc. There is always at least one

object selected even if you haven't selected anything yourself. When the Dashboard first appears, the default drive is selected. You can tell which drive this is because its icon will appear highlighted (or reversed) in comparison to the other drive icons. At this point, it's the highlighted drive icon that is the currently selected object, and any action you perform will occur to the drive or root directory represented by this icon.

When you open up a directory window, the window's border will appear highlighted. If you have other directory windows open on the screen, they will not be highlighted. Only one directory can be highlighted and active at a time. At this point, any action you perform will occur to this window and/or the directory it contains.

CLICKING ON FILES

Within a directory window, you'll see the files in that particular directory. If you click on one of them, the appearance of the filename (in text mode) or its icon (in icon mode) will be reversed. At this point, the highlighted file will be the currently selected object. If you click on a different file, the previous one will be deselected (unhighlighted) and the one you just clicked on will become highlighted and selected. Any action you choose to perform, such as deleting a file, will only affect the file which is currently selected (highlighted). If a file is selected and you want to deselect it without selecting another, hold down the CMDR key and click on the file again. Clicking on an empty area of the screen will also deselect the file in addition to deselecting the window.

CLICKING ON MULTIPLE FILES

Selecting multiple files is also possible. This allows many actions, such as filecopying or deleting, to be performed on more than one file at a time. Just hold down the CMDR key while clicking on each file you wish to select and the files you've already selected will

remain highlighted.

If you double-click on a file, the Dashboard will make an attempt to load and run that file as long as it's an application file or any other type that's capable of being run from the Dashboard.

While using text mode in a directory window, if the files you wish to select are all grouped together, click and hold the button on the first file to select and then move the mouse pointer over the next file while still holding the button down. Keep moving the mouse until you reach the last file to select and then let go of the button. If you should reach the upper or lower border of the directory window, the directory will begin to scroll and the files will continue to be selected as the mouse passes over them. This action actually toggles the state of the file, which means if you pass over a file that's already selected, it'll be deselected.

THE DIRECTORY WINDOWS

As already mentioned, you can open up a directory window by double-clicking on a drive icon. If the window contains a native mode directory and you find any subdirectories within it, you can double-click on one of them to open up another window containing just that subdirectory.

The windows always open up in relation to where they were opened from. For instance, each drive icon has a default setting determining where its directory window is placed on the screen. When you open the window, it's opened to that position as well as the size defined for that drive.

If you open up a system directory, it will open into a default position according to which drive it belongs to. When opening a subdirectory within a native mode directory, it will open up in the same size and slightly offset from its parent directory window.

A BRIEF DESCRIPTION

Let's take a look at the directory windows.

These windows have several important features. Obviously, the directory listing appears within the window. There are two modes for displaying the directory, text mode and icon mode. In text mode, you'll be able to see more information about each file than you do in icon mode, except you won't see its icon. If the window isn't wide enough, some of this information might be cut off. In icon mode, you'll only see the file's icon image displayed along with its filename. The icons are always arranged 4 wide. If you resize your windows narrower, you won't see all the available icons across the width.

In text mode you'll be able to see the size of the file listed in KBytes. Following that is the type of file, such as an application, desk accessory, etc. Then comes the date and time the file was either created or last modified. If the date and time stamp on the file isn't valid, then the date and time will not be listed.

THE SCROLLBAR

At the right of the window is a scrollbar allowing you to scroll up and down through your directory listing. If there are more files than what will fit into the window, then the scrollbar will be active. Otherwise it's disabled. There are several ways to perform this scrolling.

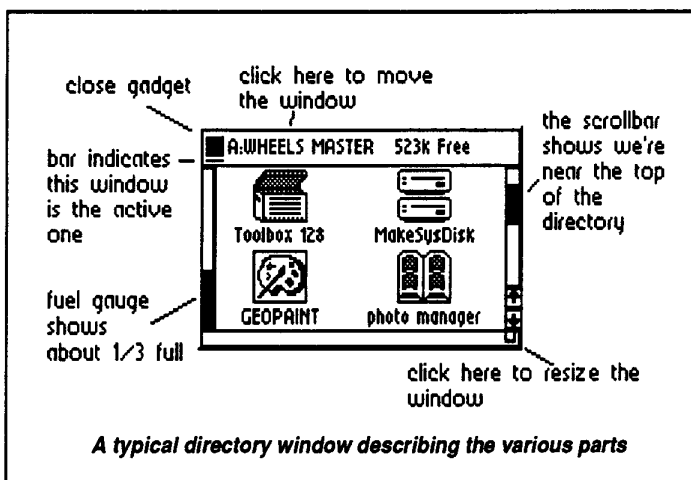
The scrollbar includes an up arrow and a down arrow. Clicking the mouse on the down arrow will scroll down through the directory while clicking on the up arrow will scroll up through the directory. The directory will continue to scroll as long as you are holding the mouse button down. While the directory is scrolling, you'll also notice the scrollbar moving along with it. The height of the scrollbar and its position in relation to the height of the window, will quickly give you an idea of where you are currently located within the directory and roughly how many files the directory might contain. The height of the scrollbar area corresponds to the size of the directory, while the height of the scrollbar

itself corresponds to the number of visible files in the window.

Another way to move the scrollbar is to click directly on it and while holding the mouse button down, drag the scrollbar up and down. As you do this, the directory will scroll along with it. Grabbing the scrollbar and moving it all the way to the top or bottom is a quick and easy way to get to the first or last file in the directory.

If you click in the white space above or below the scrollbar, then the directory will

Note: If this fuel gauge ever appears as a complete gray shaded area, it's an indication that the Dashboard has detected a problem on the disk and the disk should be validated. An improperly closed file will cause this, as well as a directory showing an invalid number of blocks free. In either case, filecopy all your files to another disk for safety reasons and then validate the disk in an attempt to repair it. The Dashboard won't display an improperly closed file so you can't accidentally copy it to another disk and continue having problems.



THE DIRECTORY HEADER

At the top of the window you'll see a string of characters. This tells you the drive letter and the name of the disk or partition whose directory appears in the window. Just to the right of the disk name is the number of KBytes free on the disk or partition. This is the actual amount of space remaining to be used. If the window isn't

wide enough, some of this information might be cut off.

THE CLOSE GADGET

At the top left corner of the window is a gadget that looks like a square. Just click on it, and that directory window will disappear from the screen.

ACTIVATING A WINDOW

When you open a window by double-clicking on a drive icon or subdirectory listing, it might open up and overlap or cover other windows you already have on the screen. Only one window can be active at a time and this is always the frontmost window. Clicking anywhere away from the currently active window will deactivate it. You'll know this

page up or down. You'll move through the directory the same number of files that are visible in the window. For instance, if 12 files fit in the window, and you're currently showing files 1 through 12, then clicking below the scrollbar will display files 13 through 24.

THE FUEL GAUGE

At the left of the window is a fuel gauge. This gives you a quick idea of how much space is in use on your disk. On a freshly formatted disk, the gauge will be near the bottom indicating an empty disk. As you add files or as your files grow in size, the gauge will rise higher and higher. On a full disk, the gauge will be all the way to the top.

because its color will change to an unhighlighted color. To activate it again, just click anywhere on the window.

Note: In Wheels 128, you'll also see a small horizontal line just below the close gadget if a window is active. This is used to also indicate the active window for the 128s that only have 16K of video ram and are unable to have different colors for their windows. Another effect also occurs to the close gadget. A main directory window will use a solid square while a system directory window will use an open square. This lets you easily identify the two types of directory windows.

If you wish to reactivate one of the other windows, just click on one of them on any portion of the window you can get ahold of. Once you've done this, the window will be brought to the front of all others and it will now be the highlighted and active window.

MOVING YOUR WINDOWS

If you wish to move a window to a different portion of the screen, this is easily done by moving the mouse pointer to the area of the window containing the directory name, near the top of the window. Click the mouse button and hold it until the window disappears and is replaced by an outlined transparent box. Keep holding the mouse button and move the mouse around on the screen. The box will follow along with you. When it's at the position where you would like it to be, simply release the mouse button. The directory window will be redrawn at this new location.

RESIZING YOUR WINDOWS

If you're not seeing all this information in the window, you can resize it using a gadget at the lower right corner of the window. If you wish to make a directory window smaller or larger, move the mouse pointer over the lower right hand corner of the window. When you click the mouse button, the window will disappear and be

replaced by an outlined transparent box that can be resized by moving the mouse around. Keep the mouse button held down while you stretch the lower right corner to the desired width and height you would like the window to be. When you release the button, the window will be redrawn in the size you have created.

Changing the width of a window will change how much information you will be able to see about a file while in text mode, or it will change how many file icons you will see across the width, to a maximum of four. Changing the height will change how many rows of filenames or file icons you will be able to see in the window at any one time.

CHANGING THE WINDOW DEFAULTS

When you first double-click on any drive, the first window that is opened represents the root directory. When you close that directory window, as long as the window is the currently active object, the position and size of that window will remain as the setting for that drive. When you open a directory window again from that drive, the same position and size will be used. You can make this your default setting each time you boot up. See "Saving your default settings." If the window was not active when it was closed, then its position and size will not be recorded for that drive.

NATIVE MODE PARTITIONS

If you have one or more of the CMD devices and have used native mode partitions from BASIC, then you'll quickly appreciate the functionality of these partitions while using the Dashboard. It's easier to navigate around within your native partitions in Wheels because you can point and click on the subdirectories in order to access them. Native partitions also permit better organization of your files while maximizing the available space in the partition.

1541 and 1581 disks have one main directory. In a native partition the main directory is known as the "root" directory. You can place files in this root directory and work from it just like you would any other type of disk directory. One difference is you can have as many as 2,040 files in this directory when using Wheels. It would be unwise to place this many files in the directory, however the capability is there if you need it.

Within this root directory, you can create branches to other directories. These would be filenames representing what's known as subdirectories. Normally, when you double-click on a filename, the Dashboard makes an attempt to load and run that file. But if you double-click on a subdirectory name, the Dashboard will instead open up an additional directory window containing that subdirectory. Within this subdirectory, you could have more files and/or subdirectories. Even though your files show up in different subdirectories, they are all still within the same partition.

THE SYSTEM DIRECTORIES

Remember the GEOS deskTop and the area at the bottom of the screen known as the 'border area'? You could pick up a file icon and place it in this border area. When you did this, the icon would disappear from the main directory pad and reappear on the border. On your disk, there was actually a 256 byte sector where the deskTop could store as many as 8 directory entries. It would actually remove the entry from the main directory and place it within this border sector. From BASIC, you would no longer be able to see the filename in the directory, but from within GEOS you could see it on the deskTop's border and the deskTop could still access it like it would from the normal directory. If it was an application, you could double-click on it and run it from the border.

This border sector is still in use, however it's now known as the system directory, or

sysdir for short. The big difference is the system directory can be more than one sector in size now. In fact, it can have as many as 255 sectors even on a 1541 disk which means it can hold as many as 2040 files! However, this isn't really true because the smallest possible file still requires at least one 256 byte sector for the data portion of the file. Once, 255 directory sectors are used up on a 1541 disk, there are only 409 sectors left. In any case, you can still get much more than 144 files on a 1541 disk now.

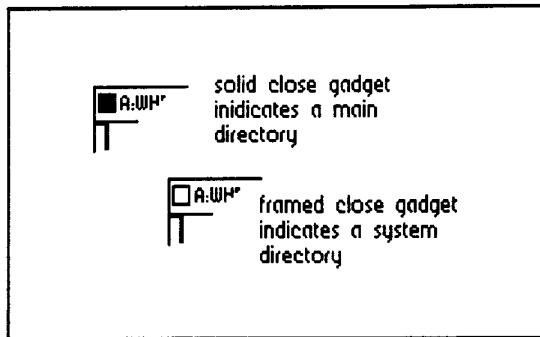
When an application is running and searching for a file, the operating system treats the system directory as though it's a part of the main directory. As a file search is taking place, the main directory is first searched, and then the search will continue through the system directory just as though it's one long directory. On the other hand, the Dashboard allows you to view the system directory separately from the main directory in its own window just like any other directory. When using drive types such as the 1541, this allows you to organize your files in two separate directory windows from the Dashboard, but to also have them visible as though they were in one big directory outside of the Dashboard. You might organize your applications and fonts, for instance, in the system directory, while placing your data files in the main directory. Existing GEOS applications will place their data files in the main directory when they are created. New applications written for Wheels can create files in either directory.

OPENING A SYSTEM DIRECTORY

To open a system directory, click on the "directory" menu and select "open sys dir." A system directory will open up for the directory that is currently active. If only a drive icon is highlighted, the system directory that's attached to the root directory for that drive will open. If a directory is active in one of the directory windows, then the system directory

that's attached to that directory will be opened.

You'll notice the system directory window has a different color (or shows a different style close gadget in Wheels 128) than the main directory windows. This helps you to identify them on the screen easily. They also open up in a default size and position which may be different from the other windows. You can scroll through the system directory listing just like you would any other directory



window as well as being able to move and resize the window.

You can tell which directory a system directory belongs to because a system directory doesn't have its own disk name. It uses the same name as the main directory it's attached to. And it'll show the same bytes free message and, likewise, the fuel gauge will appear to show the same amount of disk space used.

If, when you select "open sys dir," and there isn't a system directory already created for this directory, you'll be presented with a dialogue box asking if you wish to proceed to create a new system directory. This will happen on disks formatted from BASIC, or on newly created subdirectories in a native partition. A GEOS-formatted disk or one formatted in Wheels always has a system directory on it. When a new system directory is created on a disk that isn't GEOS-formatted, the disk will be converted to the GEOS format. The system directory is the main difference between the two formats. You

can still use both types of disks from BASIC, however, always remember to never validate a GEOS-formatted disk from BASIC, unless you're using a CMD device. (CMD DOS in the FD, HD, and RL will properly validate GEOS files, whereas Commodore DOS in the 1541, 1571, and 1581 will not.)

SYSTEM DIRECTORIES WITH NATIVE PARTITIONS

Using native partitions has an additional advantage when using system directories. A subdirectory can share the same system directory as it's parent directory. What this means is you can have a system directory attached to the root directory and any one or all of the subdirectories in the root directory can also use this same system directory. This allows you to place all your common files, such as applications, fonts, printer drivers, etc., into one system directory and organize other files such as your different types of data files into their own subdirectories.

One good example would be if you're the local computer club's newsletter editor and you're working on the newsletter each month. You could place GeoPublish and GeoWrite along with your fonts into the system directory. Then you could create separate subdirectories for each month's edition of the newsletter. This way, you can keep each month's data files separate, while only requiring one copy of GeoPublish and GeoWrite and all the fonts. In fact, you can keep creating additional subdirectories until you run out of disk space in that partition. Imagine the mess you'd have if you put all your newsletter files into one single directory. You'd have a hard time keeping track of which file belonged to which month. Plus, you wouldn't be able to have duplicate filenames.

MULTIPLE SYSTEM DIRECTORIES

When you create a subdirectory, it won't have

a system directory attached to it yet. You have to create the system directory as a separate operation through a menu selection. Open up a subdirectory and then click on the "directory" menu and select "open sys dir". You'll be given two options in the dialogue box that appears. You can use the same system directory as the parent directory, or your subdirectory can have a new system directory created for it. If you choose the latter, only this subdirectory and any subdirectories below it can have access to this particular system directory. Any subdirectory above it will not have access to this system directory. Likewise, this subdirectory will not be able to access any other system directory either, since any one directory can only have access to one system directory.

THE MENUS

Like most applications, the Dashboard uses the menu capabilities of the operating system. Along the top of the screen, you'll find the main menu. Clicking on various menus will invoke some of the different functions built into the Dashboard. Some of these functions may also be invoked through a keyboard control. When this is the case, the keyboard equivalent will be listed next to the menu item as a reminder.

One important thing to remember when clicking on certain menu selections is to pay attention to the object currently selected on your desktop. Many of the menu items act on the currently selected object. For info about selecting objects, see "Clicking on objects". Menu items you'll access from the "file" menu will act on files you have selected in a directory window while menu items from the "disk" menu will act on the disk or partition currently represented by the highlighted drive icon or the directory represented by the currently active window.

wheels	file	disk	options	view	directory
Dashboard info					
select input C-I					
select printer					
desk accessories					
geoSHELL C-C					

The "wheels" menu

From within this menu are various system functions:

Dashboard info

This pops up a dialogue box displaying the Dashboard title and copyright information. Click your mouse anywhere on the screen to close the box.

switch 40/80

(not shown in the figure above)

This is only used in Dashboard 128. This allows you to switch between 40 and 80 column modes. After selecting this item, switch your monitor to the appropriate mode also. You can also press the ALT key to switch modes.

select input

This lets you choose an input driver from the currently active directory. Only the keyboard is needed to choose a driver. Obviously you need an input device working in order to activate the menu, but you can also select this by pressing CMDR/i. When the dialogue box appears, just press "y,n, or c" to represent yes, no, or cancel as each available input driver is displayed. Before activating this, you can press CMDR/a - CMDR/d to activate drives "A" through "D" if the desired driver is on one of those drives.

select printer

This lets you choose a printer driver from anywhere on your system.

desk accessories

This lets you choose a desk accessory from anywhere on your system.

geoSHELL

If you're a geoSHELL user, this menu

item will take you right into geoSHELL provided geoSHELL can be found on your system.

wheels	file	disk	options	view	directory
	open		⌘-O		
	info		⌘-Q		
	duplicate		⌘-H		
	copy		⌘-K		
	rename		⌘-R		
	delete		⌘-E		
	print		⌘-P		

The "file" menu

Before selecting one of these menu items, click on one or more files. The action you choose from this menu will act upon the selected file(s).

open

After clicking on a file, select this menu item to load and run the file.

info

Display a dialogue box containing information about the file(s). This displays a comment box also, where you can read or edit the existing comment contained within the file's header block.

Note: Non-GEOS files do not have a header block.

If the file is write-protected, you'll see a picture of a key next to the file's icon in this info box. You can change this setting by clicking on the file icon.

Clicking on OK will save your changes to the file while CANCEL will ignore the changes and exit out of the info box.

duplicate

This will copy the selected file(s) within the same directory. It also allows you to choose a new name for the duplicate file(s).

copy

This will copy a file after presenting you with a dialogue box for choosing the

destination directory. This provides you with an alternative means of file copying instead of dragging a file's icon to another window. This is handy for when the desired destination directory is not currently opened into a window.

rename

This will pop up a dialogue box asking you for a new name for the file(s) or subdirectory that is currently selected.

delete

This will delete the selected file(s).

print

This will load and run the parent application of the data file you've selected and inform the application to print the file.

wheels	file	disk	options	view	directory
	open		⌘-O		
	close		⌘-Z		
	info		⌘-Q		
	copy		⌘-K		
	rename		⌘-R		
	format		⌘-F		
	erase		⌘-E		
	validate		⌘-U		
	swap				

The "disk" menu

Clicking on items in this menu will act upon either the disk or partition of the currently selected drive icon or the directory of the currently active window.

open

This will open up a directory window for the drive that is currently active.

close

This will close the currently active directory window.

info

This will pop up a dialogue box displaying information about the current disk or partition that represents the selected drive icon or directory window that is currently active.

copy

This lets you choose a destination disk or partition to perform a whole disk copy with the source being the currently active disk or partition. If copying a floppy disk, you can also choose the single drive copy mode.

rename

This lets you rename the currently active disk or partition.

format

This will let you format the currently active disk or partition. A dialogue box will appear asking you for a disk name and will also allow you to cancel the operation if you choose not to proceed.

erase

This will erase the currently active disk or partition. You'll first get a dialogue box asking if you wish to proceed. This is faster than reformatting since it only erases the directory.

validate

This will validate the currently active disk or partition.

swap

This will pop up a dialogue box that lets you choose a drive position to swap with.

wheels	file	disk	options	view	directory
copy settings					
function keys					
save defaults					
*DA color					
BASIC					

The "options" menu

This menu pertains to various settings within the Dashboard.

copy settings

This lets you change some of the settings used for disk copying and file copying. You can choose to have the disk copier copy each and every sector when copying disks or only copy those sectors that are actually in use, as indicated by

the block allocation map on the source disk. When a disk has very little data on it, this makes the copying go much quicker. You can also choose to retain the destination disk name instead of copying the disk name from the source drive. This helps prevent you from having two drives containing disks with the same disk names.

The file copy options are "Ask, Skip, and Replace, plus Refresh dest. window". If you choose "Ask", you'll get a dialogue box whenever the filename you're copying already exists on the destination drive. "Skip" will force duplicate files to be skipped and not copied, while "Replace" will delete the duplicate file prior to copying the file. If "Refresh dest. window" is turned on, the window you're copying files to will be redrawn so the copied files will appear in the destination window when the copying is finished. If this is turned off, you won't see the files until the next time you activate the destination window. If you're using an accelerator such as the SuperCPU, you might want to leave this setting turned on since the time required to redraw the windows is negligible. For stock speed machines, the delay can sometimes be annoying if you have more than a couple of windows on the screen.

function keys

Click on this to pop open a submenu that will pop up one of four different dialogue boxes that lets you change your function key settings. These settings affect how your directories will appear when opening them using the function keys. You can also configure how the mouse clicks will open up directories.

save defaults

Use this to save your current settings as defaults for the next time you boot up.

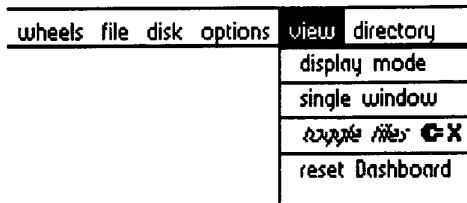
DA color

Many desk accessories don't support

color. When you open a DA on the Dashboard's screen, the colors currently on the screen might make the DA look strange. Toggle this feature on or off with this menu item. When off, the Dashboard will switch to a monochrome appearance while the DA is running.

BASIC

This option will allow you to exit the Wheels environment cleanly and return to BASIC. To get back into Wheels, you'll need to reboot the system.



The "view" menu

This menu contains various items that affect what you see on the Dashboard.

display mode

This lets you choose between text mode and icon mode for the current drive icon or directory window. Setting a drive icon to a particular mode will cause that drive to always open up into that particular mode. Setting the currently active window to a particular mode will switch the window to the selected mode. Also any windows such as subdirectories or the system directory opened up from this window will take on the same mode.

single window

Selecting this will open subdirectories into the same window instead of opening up an additional window. If you select this while a drive icon is the active object, then everytime you double-click that drive, its window will open up into single window mode. Selecting this while a window is active only affects the currently active window.

This feature is handy when you want to get to a subdirectory that's buried down a

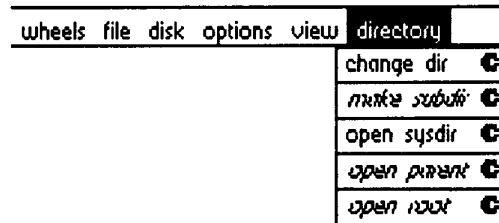
ways without having to have several windows opened up as you navigate to the subdir.

toggle files

If no files are selected in the current directory window, then clicking this will select all files. If you've already selected some files, this will then toggle the state of your files. Selected files will be deselected and files that are not selected will become selected.

reset Dashboard

Click on this to reset the Dashboard screen back to its default state. All windows will be closed and drive icons will return to their default positions. The settings used as defaults will come from whichever copy of the Dashboard is currently being used or whichever one the Dashboard decides to access for its information.



The "directory" menu

This menu deals with items relating to directories.

change dir

Use this to open up a dialogue box allowing you to change partitions or subdirectories within the current drive, disk, or partition. This works on the FD, HD, RL, and native ramdisks. Using this while a window is active will change the directory listing in that window. Using it while a drive icon is the active object will change the partition that drive icon is representing.

Note: The drive icon can represent a different partition than what might be

used in the currently active window.

make subdir

This lets you create a new subdirectory within a native partition on a CMD device or within a native ramdisk.

open sys dir

This will open up the system directory for the currently active disk, partition, or subdirectory. It can also let you create a new system directory if one doesn't already exist.

open parent

If you're currently working within a subdirectory and not the root directory, this will open up the parent directory for that subdirectory.

open root

This will open up the root directory of the native partition or native ramdisk you're currently working in.

SETTING THE SYSTEM CLOCK

At the upper right of the Dashboard screen is the clock showing the current setting. If the clock is currently set wrong it will flash a message saying "set clock." Whether it says this or is displaying a valid date and time, you can click your mouse in this area and two dialogue boxes will appear allowing you to change the current date and time.

The first dialogue box asks for the date and the second one asks for the time. You'll see the current setting displayed in the dialogue box and the cursor will be blinking in the spot where you enter the new date. A date is already entered for you to help show the format needed. You must enter six numerical digits altogether, representing the month, day, and year. For example, if you wish to set the

date to November 28, 1999, you would enter "112899" without the quotes. Enter the desired date and hit RETURN. If you change your mind, there is a CANCEL button allowing you to exit the clock setting sequence without making any changes.

After setting the date, the time dialogue box appears. This is very similar except that you enter the time instead of the date. In this case, 4 numerical digits and one letter is expected. The 4 digits represent the hour and minute and the letter will be either an "a" or a "p" for AM or PM. Let's say you want to enter the time as 6:08 PM. You would enter "0608p" without the quotes. Hit return and the new setting will appear in the upper right of the Dashboard screen.

THE PRINTER ICON

If you've installed a printer driver, it's icon will appear at the lower right hand corner of your screen (by default). In addition to being able to print files by selecting "print" from the "file" menu, you can drag the files over and drop them onto the printer icon, if you prefer.

The printer icon also has another function. If you double-click it, a dialogue box will pop up allowing you to select a new printer driver. This is the same dialogue box that comes up when you click on "select printer" from the "wheels" menu.

If you don't like the location of the printer icon, you can move it to a different location just like you can with the drive icons. Just click the mouse on the icon and hold the button until an icon ghost appears. Then, while still holding the mouse button down, move the icon to the desired location.

COPYING FILES

Copying files with the Dashboard is simple. Just select the file or files you wish to copy (see "Clicking on objects") and then click once and hold the button on any of the selected files. A ghosted icon will appear that you may drag to the destination directory window or drive icon where you would like the file(s) to be copied. If you only have one file selected, you'll see the icon for that file as you move the mouse to the destination window. If you have more than one file selected, then a special "multi-file" icon will be shown instead.

CHOOSING THE DESTINATION

Most of the time, you'll be copying files from one drive to another. As an example, let's say you have selected a group of files from drive A and you wish to copy them to drive B. You can do this one of two ways, either by dropping the file icon directly onto drive B's drive icon, or by dropping the icon into a directory window that has been opened for drive B.

If you dropped the icon directly onto a drive icon and that drive happens to be a CMD device, the files will be copied to the root directory of the partition the drive icon is currently representing. If you want the files copied to one of the partition's subdirectories, then you will have to first open the subdirectory into its own window prior to selecting the files you wish to copy to that subdirectory.

OVERWRITING EXISTING FILES

You may freely copy files from one directory window to another, however, when a file of the same name is on the destination directory the Dashboard will place a dialogue box on the screen with three options. At this point, you can replace the file, skip it, or perform the copy with a new filename. If you choose the latter, the existing file on the destination will remain unchanged and the file being copied will receive the new name. You may also

choose to cancel the entire operation and any other files you have also selected will not be copied.

When a file is copied to a destination directory, the system directory for that destination is also checked for a file of the same name since the system directory is an extension to the main directory, and it's not wise to have two files of the same name in the same directory.

If you don't care to have this dialogue box appear, you have the option to change it to always skip or always replace the file without asking first. This setting can be changed from the "options" menu, called "copy settings". See "The Menu" and also "Saving your default settings" if you wish to use the new setting each time you boot up.

MOVING FILES

When you copy a file from the main directory to a system directory on the same disk, the file is not actually copied, the directory entry is 'moved' to the system directory. The filename will disappear from the main directory and reappear in the system directory. This prevents two files of the same name from appearing in the directory since the main directory and the system directory are seen as one long directory.

There are other times when you might copy a file and find the file was instead 'moved' to the destination instead of being copied. This will happen with native partitions when you pick up a file from a directory's system directory and drop it onto another main directory that uses this same system directory. You may have forgotten the two main directories share the same system directory. However, if you copy a file between these two main directories, a copy will occur since the two main directories are not shared, only the system directory is shared between them.

There's one instance where you'll get caught into having two files of the same name, and this can only happen in a native partition.

Let's say you have two directories sharing the same system directory and both of the main directories have a file with the same name. If you move the file from one of these directories to the system directory, the other directory in question will now have a file of this name in it's main directory as well as it's system directory. A case like this is unavoidable by the operating system since it would take way too much time to check the entire partition for all the directories using this same system directory. You'll just have to watch out for this yourself. Organization is the key to preventing it. If it should happen, then you can either rename the file in the main directory or delete it. When renaming or deleting files, the first file found with that name is the one acted upon, even if you intended to rename or delete the second occurrence of the file.

FORCING A MOVE INSTEAD OF A COPY

If you hold down the CMDR key while dropping the file icon onto the destination, you'll force the file to be moved instead of being copied. You can only do this when the destination directory is in the same partition as the source. This allows you to move files from one subdirectory to another. The operating system will double check this and if a move isn't allowed (such as when copying to another drive or partition), the file will automatically be copied instead.

SINGLE-DRIVE FILECOPYING

On a floppy drive, you can force the operating system into doing a single drive copy. This allows you to copy a file from one disk to another using the same drive. You may have a need to do this if you only have one drive of a specific type, such as the 1581.

If you drop the file icon onto the drive icon of the same drive, you'll force the single drive mode. The operating system will prompt you to insert the source disk and the destination disk as required.

Another way to copy to a different disk using the same drive is to first insert the desired destination disk and double click on the drive icon to open the disk into a directory window. Then insert the disk containing the file you wish to copy and double click on the drive icon again. Even though you're using the same drive, a different window will open since this is a different disk. Now, pick up the file(s) you wish to copy and drop them onto the destination window. Since these windows represent two different disks on the same drive, you'll force the operating system into it's single-drive copy mode and you'll be prompted to insert the source and destination disks as required. The two windows might open on top of each other. If so, you'll have to move one of them in order to perform this copy method.

On the ram devices and the CMD devices without removable disks, this single drive copy mode isn't needed nor is it used since dropping the file icon onto the drive icon in this manner will copy to the root directory of the partition the drive icon represents. Also, since you can freely open different windows on the same device, the directory represented in the window is always available on the device. This is the case with devices such as the CMD HardDrive or RamLink. With the CMD FD Drive, since it uses removable media, dropping a file icon from the FD onto the FD drive's icon will force a single-drive copy mode just like any other floppy drive and will request you to insert the source and destination disks. If you're using an FD and want to copy between partitions or subdirectories on the same disk, be sure to open up the two different directories into separate windows first to avoid the single-drive mode with it's additional dialogue boxes. You could also select "copy" from the "file" menu to select the destination directory.

CHOOSING A DESTINATION

We've seen how to select a destination when

copying files, but this can also be accomplished by using a menu selection. This avoids having to open up through a series of windows to get to the destination when it's not already open. After selecting the files you wish to copy, click on the "file" menu and then select "copy". This will open up a dialogue box allowing you to select the destination drive along with the destination subdirectory, if desired.

Note: The only way to copy a file to a system directory is to open the destination system directory into a window first. Then use the drag and drop method.

This method does not allow a single drive to be used for copying files between two different disks, however. For that you must invoke the single drive filecopier as explained in "Single drive filecopying".

DISK COPYING WITH TWO DRIVES

Copying disks is as easy as picking up a drive icon and dropping it onto another drive icon. Since this action can also be used for swapping drives, you'll first be prompted with a dialogue box asking which operation you wish to perform. Select "Copy drive A to B" and then click "OK" to proceed. The dialogue box may not say "A to B", but will actually specify the two drives you've acted on. In this case, "A" is the drive icon you picked up and "B" is the drive icon you dropped "A" onto.

The drive icon you pick up is the source drive and the disk or partition represented by that drive will be copied to the destination drive or partition represented by that drive, which is the drive you dropped the icon onto. Provided the two drives or partitions are of similar types, the copying will proceed until finished.

The operating system's disk copier is not a highly specialized one and is made to be rather

flexible, and as such, it requires the destination disk to already be formatted. If it's not formatted, you'll be prompted by a dialogue box indicating an error. If so, just format the destination disk and then repeat the procedure.

COPYING BETWEEN PARTITIONS

If you wish to copy an entire disk to a particular partition, first select the source disk or partition by either clicking on a drive icon or opening up a directory window. Then select "copy" from the "disk" menu.

Note: Make sure there are no files or subdirectories you wish to keep in the destination, because they'll all be overwritten by the contents of the source disk.

You'll be presented with a dialogue box which will allow you to select the destination for the copy. Choosing "copy" from the "disk" menu can be used with any drive, not just the partitionable devices. In this mode, you can also choose the single drive copy mode.

DISK COPYING WITH ONE DRIVE

If the source drive is a floppy, you may invoke the single-drive disk copier from the "disk" drop-down menu. Select "copy" and a dialogue box will be presented for selecting the destination. In this box, select "Single" and then click "OK" to proceed. The operating system will prompt you for the source and destination disks as required. The source disk is always the one currently selected and must be in the drive at the time you begin the selection.

Note: The single drive disk copy mode will use two different disks on the same floppy drive. If you're using an FD drive and wish to copy one partition to another on the same disk, don't select "Single". Instead click on the drive letter that represents the current drive

letter of the FD.

SPEEDING UP DISK COPYING

If you have extra ram expansion available that isn't currently in use, the operating system will use it when copying disks. The more ram it's able to make use of, the faster the copying will be. With extra ram to use, larger chunks of data can be read in from the source disk before switching to the destination to write the data. This is especially helpful when using the single-drive mode since fewer disk swaps will be required.

Note: you can actually copy a whole partition on a 3.2 meg FD disk to another 3.2 meg FD disk with just one disk swap if you have enough available ram.

DISK COPY COMPATIBILITY

Before the disk copying proceeds, the source and destination are checked for compatibility. For instance, if the source is a 1581 disk, 1581 partition, or a 1581 ramdisk, the destination must also be one of those 3 types. The following outlines the compatibility between the various disk device types:

If the source is one of the following:

1541
1571 w/single-sided disk
RAM1541

The destination can one of the following:

1541
1571 w/single-sided disk
1571 w/double-sided disk*
RAM1541
RAM1571**

If the source is one of the following:

1571 w/double-sided disk
RAM1571

The destination can one of the following:

1571 w/double-sided disk
RAM1571

If the source is one of the following:

1581
FD w/1581 partition
HD w/1581 partition
RL w/1581 partition
RAM1581

The destination can one of the following:

1581
FD w/1581 partition
HD w/1581 partition
RL w/1581 partition
RAM1581

If the source is one of the following:

1581 w/FDNative disk
FD w/native partition
HD w/native partition
RL w/native partition
RAMNative

The destination can one of the following:

1581 w/FDNative disk
FD w/native partition
HD w/native partition
RL w/native partition
RAMNative

* The destination disk will still be double-sided when finished.

** The destination ramdisk will still be double-sided 1571 type

Note when copying native partitions:

Since a native partition or ramdisk can be of various sizes, the source and destination are checked for compatible sizes. If the source has the same number of tracks or less than the destination, the copying will proceed since the source will fit entirely onto the destination. However, if the source is larger than the destination, the tracks that won't fit will be tested to see if they contain any data. If this area of the source is empty, the copy will still proceed, but if it contains any data, then you will be informed the copying cannot proceed. Instead, you will have to use the filecopy functions to copy the individual files.

SELECTING COPY FROM THE MENU

If you select "copy" from the drop-down "disk" menu, a dialogue box will appear allowing you to choose a destination drive. You can use this mode instead of dropping a drive icon onto another drive icon. The advantage here is that you can also select a destination partition even if the partition's window is not currently open on the Dashboard screen.

Another benefit of this method is it allows you to open up a partition into a window and then use that as the source instead of the drive icon. You can copy from the currently active partition to another partition or another disk.

DISK COPY OPTIONS

Since the disk copier built into the operating system requires the destination disk to be formatted, it's not necessary to copy every track and sector when doing a whole disk copy. In other words, there's no advantage to copying a portion of the disk that doesn't contain any data. This only wastes time. However, you have the option of either method. You can copy the entire disk or just the portions in use. The selection for this option can be found in the "options" menu. Drop down the menu and select "copy options". See "Saving your default settings" on how to make your choice the default selection each time you boot up.

SWAPPING DRIVES

When GEOS was first created, it was basically a two drive system. The main applications written for it only worked with drives A and B. Then when GEOS 2.0 came along, the deskTop was given the ability to work with drive C, in a limited sort of way. However, the applications weren't upgraded to take complete advantage of this additional drive. Instead, a feature known as drive swapping was put into use. Unfortunately, since many old applications are still in use today, we must still support this feature.

The act of swapping drives does nothing more than switch the device numbers between the two devices, as far as the user is concerned. In other words, if you swap drive A with drive D, what used to be drive A will now be drive D and vice-versa. The drive icons will also exchange places on the Dashboard screen.

Nowadays, there is no reason why a newly written application can't be run from

any of the 4 available drives and be able to access its data files from any of the 4 drives as well as any partition or subdirectory. The new operating system makes it easy for a programmer to access any drive, partition, or subdirectory. But if you find you absolutely must swap two drives, just pick up either one's drive icon and drop it onto the other one. A dialogue box will appear asking you if you want to swap drives or copy disks. Select "Swap drives A and B" and then click "OK" and the operation will proceed. The dialogue box will actually specify the two drives you are swapping, not necessarily A and B. The two icons will exchange places on the screen and their device numbers will also be switched. If you have any windows currently open that are assigned to either of these two drives, their assignments will also be changed.

If one of the drive icons is partially or completely covered by a directory window, you may have to reposition the window to uncover the icon. Or, you can also select one of the icons and then select "swap" from the "disk" drop-down menu. You'll be presented with a dialogue box asking you which drive you wish to swap with. Simply click on the desired drive and then click "OK" and the swap will proceed. If you change your mind, just click on "CANCEL". One advantage to selecting swap from the menu is that it allows you to swap with a non-existent drive.

YOUR DEFAULTS

Various settings can be changed while using the Dashboard. Different people have different tastes and this is why the Dashboard allows you to alter the look and feel to suit your own needs and tastes. The following settings are adjustable from within the Dashboard:

desk accessory color on/off
drive icon locations
root directory window sizes and locations
directory display modes

function key settings
copy settings
color settings (adjusted using the Detail Shop)

Anytime you change these settings, they are automatically saved in a temporary memory location so as you run an application and then exit it to return to the Dashboard, your same settings will be retained. When you shut down your system, you'll lose any settings you have changed unless you save your settings to your boot disk.

SAVING YOUR DEFAULT SETTINGS

If you wish to save your default settings, activate a directory that is holding the copy of the Dashboard you wish to save your settings to. Then click on the "options" menu and select "save settings". When you save your settings, they are written directly into the file containing the Dashboard.

Let's say you've got a copy of the Dashboard on a particular disk. Insert the disk into one of your drives and then double-click on that drive icon so it opens the directory up into a window and makes the window active. Scroll through your directory listing to make sure the Dashboard is there and then select "save settings" from the menu. Your settings will be saved to that copy of the Dashboard.

RESTORING THE DASHBOARD SCREEN

Sometimes you may have numerous windows open and you just want to close everything and start over with a fresh screen. If you wish this to happen, click on the "options" menu and select "restore Dashboard". This will force all windows to close and the screen to be redrawn with the drive icons reappearing in their default locations according to the way your settings are saved. All your defaults are reloaded from the Dashboard file on disk.

THE FUNCTION KEYS

In the Dashboard, the function keys are used for changing the way a directory is displayed. By default, when you use the mouse to open a directory window, you'll see every file displayed. But you can also use any of the function keys to open a directory window. If a drive icon is currently selected that you wish to open, just press one of the four function keys and however that particular function key is programmed will determine how your directory is displayed.

As an example, F5 comes preprogrammed to display only APPLICATION DATA files. If you had pressed F5 to open the directory, only data files would be showing. If the directory window was already open and active, pressing F5 would alter the display and show the only the data files.

Pressing F1 will always display every file in the directory. Therefore, when you have used a function key to show a selective directory and wish to view all the files once again, just press F1.

ALTERING THE FUNCTION KEY SETTINGS

If you wish to alter the way a function key works, just press a SHIFT key along with the function key you wish to alter. In other words, to change the setting for F5, press F6 (shifted F5). A dialogue box will appear containing all the settings you can change.

The only deviation to this is with the F1 key. Pressing F2 doesn't provide for changing the F1 key, but instead allows you to change the way your mouse will open up directories. By default, using the mouse to open up a directory will display every file. If you wish to hide certain types of files, simply turn them off in the dialogue box that opens up when you press F2.

In the dialogue box that appears, you'll see all the different filetypes that are used in Wheels as well as in GEOS. Simply click on any of the filetypes to turn it on or off. At the

right of the dialogue box are three buttons that allow quick changing. These are "All, None, and Toggle". Clicking on "All" will select all the filetypes just as if you selected each of them with your mouse. Clicking on "None" will turn all of them off. And "Toggle" will change each setting opposite of its current setting.

In this dialogue box, you can also choose to display only those files that have their time/date stamps falling within a certain range. There is a setting for both "To" and "From". When you select "From", only the files that have a date and time that is either the same or later than the date and time showing will be displayed. If you select "To", then only the files that have a date and time up to and including the date and time showing will be displayed. If both are selected, then only the files that equal or fall in between the two dates and times will be displayed.

When either "From" or "To" is selected, non-GEOS files will not be displayed since they are assumed to not have valid time stamps, unless they were created on a CMD device (from BASIC) containing an RTC chip.

If you wish to change the date and time setting for either "From" or "To", simply click on the date/time display that is showing next to either "From" or "To." You'll get two more dialogue boxes that allow you to change the date/time settings. These are very similar to the dialogue boxes that let you change your system clock when you click on the Dashboard's clock display.

To the right of "From" and "To" are two special selections. You'll see two check boxes along with the word "TODAY". If either of these is selected and the corresponding "From" or "To" is also selected, then the date and time showing is overridden and only today's date is checked when displaying files. Any file created or modified today will be displayed, provided its filetype is also selected. Keep in mind that selecting

"TODAY" only sets the date and time that is checked. You must also select "From" or "To" to make use of it.

MODIFY MODE (rearranging your directory)

Press any of the shifted function keys as if you were going to alter a function key setting. At the upper right of the dialogue box that opens up is a special selection. This says "Modify". When this is selected, all the other selections are completely ignored. Selecting "Modify" and then using this function key (or mouse click if F2 was used) on a directory will cause every file to be displayed including empty directory spots. Empty directory spots are created when deleting a file. While a directory window is in "Modify" mode, it's locked into icon mode and cannot be switched to text mode.

Modify mode allows you to move file icons around within the directory. There are several ways to do this. You can select one file at a time and move it to another location by clicking once to highlight a file, pause a moment and then click again and hold the mouse button down. While still holding the button, drag the file icon to the location where you want to move it and let go of the button. If you drop the icon onto an empty spot, the file will be moved there. If you drop it onto another icon, the two icons will exchange places.

If you select more than one file and then pick up a "multi-file" icon, then modify mode works a little bit differently. Beginning with the location where you drop the multi-file icon, the Dashboard will look for the first empty spot and place the first of the multiple files in that position. The next file will go into the next empty spot found and so on until no more empty spots are available. If there's still more files remaining to be moved, then new positions will be created at the end of the directory unless the directory is all filled up.

Relocating files in this manner will only

work if the icon you wish to move and the location you wish to move it to are both visible in the directory window without scrolling it to the desired position. Obviously, you can't pick up an icon and scroll the directory at the same time. However, you can still accomplish the same thing by first scrolling to the location where you want to move the icon and then click on the spot while pressing the CMDR and LEFT-SHIFT keys together. This will have the same effect as if you dropped an icon on this spot.

The Toolbox

Configure your system

INTRODUCTION

Remember the old Configure program in GEOS? The Toolbox is the new replacement for Configure. The Toolbox is a very important part of Wheels. It allows you to configure and to access 4 drives within your operating system, designated as drive devices "A" through "D." There must be a copy of it on your bootdisk, since the operating system specifically looks for it during the bootup process.

In GEOS, Configure was an AUTO-EXEC file and was automatically loaded and run just like any other AUTO-EXEC. But the Toolbox is an APPLICATION file and isn't loaded during that part of the boot process. Instead, the operating system specifically looks for it and runs it before the AUTO-EXEC's are run.

If you load and run the Toolbox from the Dashboard after you've completely booted up, you'll have a user interface to work with allowing you to change your drive and ramdisk configuration as needed. This also allows you to save your ramdisk configuration so your ramdisks will be installed automatically during bootup.

This section deals mainly with using the Toolbox AFTER booting up. To learn what the Toolbox does DURING the bootup process, study section 3, "Booting Up Wheels".

USER INTERFACE

Once you're booted up and operating from the Dashboard, you can double-click on the Toolbox icon or file entry (if you're in text mode) from the directory window of your boot disk or any other disk containing the Toolbox. When the Toolbox is run this way,

you're presented with a user interface allowing you to perform certain functions needed to setup your system or change your drive configuration.

CURRENT CONFIGURATION

On the main Toolbox screen you'll see 4 boxes in the upper half of the screen and 4 boxes in the lower half. The 4 upper boxes represent your current drive configuration. Each box contains a little bit of information about the drive in that spot. If you click on one of these boxes, you'll be presented with a dialogue box permitting you to take further action concerning the drive box you just clicked on.

SAVED CONFIGURATION

On the bottom half of the main Toolbox screen are 4 boxes representing your "saved" configuration. The Toolbox attempts to create this configuration for you during bootup. As long as the devices saved in this configuration are present the next time you boot up, they will be installed for you.

Each of the 4 boxes shows you what you've chosen as your default boot configuration. If it's a ramdisk, then this ramdisk will be installed for you during bootup. If it's a real disk drive, then certain actions can take place with this drive during bootup. For instance, if it's a CMD HardDrive, the partition listed will be the partition that will first be seen for that drive when the Dashboard appears on the screen. The same thing for a RamLink. This is how you can have default partitions upon bootup.

CHANGING YOUR CONFIGURATION

It's important to know your system, especially the drives you have connected to your computer. What are their default device numbers when you first turn them on? What type are they and what kind of disk do they take?

The operating system allows you to have as many as 4 drive devices (a ramdisk is also considered a drive device) running at the same time, however, sometimes this isn't enough. For this reason, we must occasionally change our configuration by being able to switch a drive in and out of the system.

REMOVING A DRIVE

If you wish to change your drive configuration, you might have to first remove a drive from the system if it's located in the place where you wish to install another drive or ramdisk. To remove a drive from your system, open the Toolbox, and from the upper half of the screen, click on one of the 4 drive boxes from the Toolbox's user interface. In the dialogue box presented to you, select "Remove drive". This will remove a real drive or a ramdisk. If the device is a real drive, you'll get a dialogue box telling you that you may turn the drive off. At this point, you can either turn the drive off or leave it running. If you leave it running, it's device number will be changed to something between 12 and 24 (except 14) and can be easily reinstalled later during your session. If the drive is the internal 1571 in a 128D, the dialogue box saying you may turn the drive off will not appear. The drive is still renumbered up and out of the way.

If the device was a ramdisk (not a RamLink partition), you'll have the option of deleting the ramdisk entirely or saving it for later use. If you choose to delete it, the space it occupies will be freed up for use by either another ramdisk or an application requiring additional ram expansion. If you choose to

save it, the space it occupies will be preserved and the system won't allow another application to use that area. You'll have the opportunity to reinstall the same ramdisk at a later time. See "Installing a ramdisk".

INSTALLING A DRIVE

Installing a drive for use on your system is easy with the Toolbox. From the Toolbox's user interface, you'll see the drive devices currently in operation. If you're currently using 4 devices, all 4 spots will be occupied and you won't be able to install another drive. If one of the 4 spots is available, you'll see [no drive] in that position. You can install another drive at that location. Just click on that box and a dialogue box will appear. In this box, select "Install drive".

If you have a drive already turned on having the same device number belonging to that drive position, the drive will automatically be installed. So, if you know for sure the drive has the correct device number when it's first turned on, you can turn it on before clicking on "Install drive".

If the drive isn't numbered correctly, leave it turned off. Just click on "Install drive" and another dialogue box will appear asking you to now turn the desired drive on. When you see the list of drives currently available, click on the desired one and it will be installed and placed into the desired position.

It's important to know that the Toolbox will search for any drives numbered between 8 and 24, except for 14, and will present you with a list of drives to pick from. Device 14 is not checked because it's reserved for the Xetec Super Graphics Gold printer interface. For this reason, be sure not to number any drive as 14. Locations 26-29 aren't searched because the drives you currently have running are temporarily relocated to these positions to avoid interfering with the drive you're just now turning on. They'll be put back to their correct positions after the new drive is installed. This precaution is taken because it's

not uncommon to have more than one device numbered the same. One of them either has to remain turned off or have its device number changed. Thus, device numbers 26-29 are merely temporary device numbers reserved for this purpose. Device number 30 is reserved for the CMD HD. If the HD doesn't have its operating system installed yet, it will default to device number 30. Device number 25 is used by the operating system as a temporary device number when you swap drives from the Dashboard.

THE SPECIAL 1581 NATIVE DRIVER

A new innovation included with your Wheels system is the ability to use your 1581 drive with 800K disks that have been formatted for use in the CMD FD with a native partition. There are some advantages to this. You can easily share the disk between your 1581 and an FD if you have one. You'll have the advantage of using the native style partition complete with true subdirectories. And if you take advantage of the native ramdisk capability of your system, your 1581 can be used to make whole disk backups of your native ramdisk, or to quickly fill it by doing a whole disk copy from your 1581 native disk to the native ramdisk.

Unlike the FD drive, the 1581 can only be used in one mode or the other, with a 1581 formatted disk or with a native formatted disk. You must use the Toolbox to install either 1581 mode or native mode or to switch between them.

SWITCHING BETWEEN 1581 AND NATIVE DISKS

To activate the native driver, if you already have a 1581 up and running, open the Toolbox and click on the box representing your 1581 drive in the upper half of the screen. In the dialogue box that appears, click on "Remove Drive". Don't do anything to your 1581. Leave it turned on and when the

next dialogue box appears, click on "Install Drive". The Toolbox will recognize that you have a 1581 drive in this spot and a dialogue box will prompt you to choose the desired mode in which you wish to operate. You now have a choice of using "True 1581 disks" or "FDNative 800K disks". Just select the FDNative mode and the correct driver will be installed for you.

It doesn't matter if you don't have any FDNative formatted disks because you can format them right in your 1581! If you choose to format a disk, either from the Toolbox or the Dashboard, the disks will be formatted with one native partition large enough to fill the whole disk.

This disk can be used just like you would use it in an FD drive. You can add subdirectories to it and keep better organization of your files as well as making better use of the available space. You'll notice there is less space available on a native mode disk than on a 1581 disk, however it's rare that anybody ever fills up a 1581 disk because they tend to use different disks for different projects. With the native mode disk, you can put different projects into different subdirectories and make more efficient use of the available disk space.

If you wish to use a disk that was originally formatted and partitioned on an FD drive, you need to be made aware of a few limitations. The 1581 Native driver can't switch partitions if the disk has more than one partition. It can only use the first partition on the disk and it must be a native partition. Presumably, you would want only one partition to fill the entire disk since an 800K disk isn't overly large, and you can still use subdirectories to keep things organized.

The operating system knows all about this special driver and you won't find any other limitations while using it. You'll be able to format disks, validate disks, copy whole disks, and do operations on files such as copying, moving, renaming, deleting, etc.

Even your applications won't complain. They'll treat this setup just like any other disk device on your system.

INSTALLING A RAMDISK

The first time you boot up your system, you won't have a ramdisk running even though the system recognizes that you have a ram expansion unit. This is because the Toolbox doesn't know what kind of ramdisk you'd like to use yet. There are 5 different kinds of ramdisks available:

- RAM1541 - this emulates a 1541 disk.
- RAM1571 - this emulates a 1571 disk.
- RAM1581 - this emulates a 1581 disk.
- RAMNative - this emulates a CMD Native partition complete with subdirectory capability.
- RAM1581(RL) - this ramdisk actually uses one of your RamLink's 1581 partitions

All but the RAMNative ramdisks are fixed in size. They provide the same amount of disk storage space as their real drive counterparts.

The RAMNative, however, can vary in size depending on the amount of ram you have available and how large you choose to make the ramdisk. The native ramdisk can vary in increments of 64K. One track on a real native disk contains 256 sectors of 256 bytes each. This equals a total of 65,536 bytes (64K) per track and the same concept is used in setting up the size of your native ramdisks.

To install a ramdisk, click on an empty drive box from the Toolbox's main user interface screen. In the dialogue box that pops up you'll see a selection called "Install ramdisk". Click on this and another dialogue box will appear. In this box will be the various ramdisk choices you have depending on the amount of available ram.

If you have at least 64K of ram available still, you'll be able to install a 64K native ramdisk. You always have the opportunity to

install a native ramdisk if at least 64K is available. If you have more ram, then the available amount will show in this dialogue box. There are scroll arrows you can click on to adjust the size you want the ramdisk to be. To begin with, it always shows the largest size ramdisk you can create. Click on the arrows to adjust this size down, or back up.

If you have more ram, at least 192K, you'll be able to create a RAM1541 ramdisk. With 384K, you can create a RAM1571 ramdisk and with 832K or more, you can create a RAM1581 ramdisk. The maximum allowed showing for the RAMNative ramdisk will indicate to you how much ram expansion is available for a ramdisk.

A RAMNative ramdisk can be almost as large as 16 megs, if you have that much ram on your system. For this to happen, you'd need either a RamLink with 16 megs of ram and one big DACC partition (not a good decision) or a SuperCPU with 16 megs on a SuperRAM ramcard. Keep in mind, though, the SuperRAM isn't battery backed and filling that ramdisk with subdirectories and files can take time. It makes much more sense to partition this ram off with ramdisks equaling the size of your floppy drives, or the size of a partition on your hard drive. This allows easy backup and restore operations through whole disk copying.

Also, SuperCPU/SuperRAM users should reserve several megs of free ram for new applications to make use of.

FORMATTING A RAMDISK

The very first time you create a ramdisk, it won't be ready to use because you haven't formatted it yet. It must be formatted just like a real disk. However, if you install a ramdisk and it's exactly the same type and size as one you've previously used, and your ram expansion hasn't lost its power, you might notice the ramdisk is still formatted and contains the files it had the last time you used it.

One problem you could run into is when you remove a ramdisk of one type and install one of another type. The new ramdisk might occupy the area of the REU that the previous one did. That's not a problem unless you again remove this ramdisk and reinstall one of the first type you used. The portion of the original ramdisk that contained directory information is likely to still be there and intact. To the system it might look as though this ramdisk is properly formatted, until you go to use it and try loading a file. Most likely, the file will be corrupted. Keep this in mind, and if this is your case, reformat the ramdisk when you install it.

Note: This particular situation can get you in trouble when exiting the Toolbox. Let's say you have a copy of the Dashboard showing in this ramdisk directory, but maybe the actual file is all trash due to the previous use of a different type of ramdisk located in the same portion of the REU. When you exit the Toolbox, the operating system will see the Dashboard directory entry and try to load and run the Dashboard from the ramdisk. But your system will crash under the circumstances. For this reason, it is usually safest to reformat the partition prior to exiting the Toolbox if you suspect this. It's easy to get caught by this problem. So beware of it.

It's also important to keep track of what you've done previously. Did you use a program from BASIC that may have used part of your ram expansion unit and overwritten a portion of your ramdisk, thereby corrupting some of the files? Be aware this can happen. If so, then it would be wise to reformat your ramdisk even though it may at first appear ok to you.

If you're still in the dialogue box that describes your ramdisk, you'll notice a selection allowing you to format the ramdisk. If you've clicked this dialogue box off, click on the drive box representing your ramdisk to

get back to it. Then just select "Format disk". You'll be prompted for a disk name and also have the opportunity to back out of the operation if you change your mind. Alternatively, you could exit out of the Toolbox and format the ramdisk from the Dashboard. But be careful in case this ramdisk contains a corrupted copy of the Dashboard as previously mentioned!

RAMDISK PARTITIONS

Once you've made a selection for a ramdisk, you'll be asked for a name for the ramdisk. This isn't the name that will appear as the disk name for the ramdisk. This is the name that will be used as the ramdisk is stored in it's own partition within your ram expansion unit. The operating system allows you to have as many as 8 ramdisk partitions provided you have enough ram available.

When you remove a ramdisk (see "Removing a drive"), you'll be asked if you want to save this ramdisk or delete it. If you want to save it, the ram it occupies will remain protected from other applications and you can reinstall it later, if you wish. To do this, proceed just like you would if you were going to install a new ramdisk (see "Installing a ramdisk"). Only instead of selecting one of the possible choices, at the bottom of the dialogue box select "Load ramdisk".

You'll now be presented with a file requestor showing any ramdisks that have been created but aren't currently in use. Just click on the one you wish to use again and it will be reinstalled into the drive slot you're currently acting on.

As long as you either leave your computer turned on with it's ram continuously powered, or if your ram has it's own power source that's left on, your ramdisk partitions will always be preserved for use each time you boot up.

HOW RAM IS ALLOCATED

When creating a ramdisk, the largest single

chunk of ram available is the amount that will show as being available for a native ramdisk. At times, you might possibly have more ram available than what's showing, since it might not all be available in one chunk. This depends on how your system and applications and other ramdisks are currently using the ram on your system.

Also, if you've created and removed ramdisks, your ram allocation might be spread around in various chunks. When you save a ramdisk in your "Saved configuration", the location within your ram expansion is recorded and this position will always be used for that particular ramdisk until you delete it. For that reason, it might be wise to occasionally recreate your ramdisks from scratch in order to make better use of the available ram you have.

To understand how your ram is used, the operating system always uses 128K for itself. It'll use the first 64K and the last 64K. If you have 512K to begin with, this will leave you with 384K to use for one or more ramdisks. Or you can use less, such as 320K, which will leave 64K for an application to use, if it needs it. Not many applications need extra ram, but the operating system provides the means for it, if need be. So keep in mind as new applications come along, they may be inclined to require a certain amount of additional ram since they know everybody using the Wheels operating system has ram expansion in use.

DISPLAYING RAM INFORMATION

If you wish to see more info on your ram expansion and how the ram is currently allocated, select "reu usage" from the "options" menu. This will give you a dialogue box showing the REU that is being used along with the total size of the REU. This also shows the amount of free ram still available as well as the largest segment of free ram. The amounts are displayed in "k" or kilobytes along with the number of banks in

parentheses. One bank equals 64k.

This dialogue box also shows a table of the current ram usage. Most of the time, this will list the ramdisks that are occupying the REU. If an application has reserved additional ram for itself and that ram is still allocated, it will show up here.

This table also lists the starting bank for each ram device as well as the number of banks each ram device is using. This information can be useful if you ever need to restore a ramdisk to salvage its contents.

SAVING YOUR CONFIGURATION

If you have a current drive configuration you would like the Toolbox to setup for you every time you bootup, you can save it as such. Click on the "options" menu and select "save all". Each drive listed in your current configuration will be saved into the copy of the Toolbox you are using. Your saved configuration will also appear on the lower half of the Toolbox screen. If you wish these settings to be saved to the copy of the Toolbox that is on your boot disk, then be sure to load and run the Toolbox from your boot disk. Saving to copies on other drives will not affect the initial bootup process, and therefore there's no point in saving a configuration to any disk other than a boot disk.

If you only wish to make a change to one of the saved configuration positions in drive A through D, first click on the desired drive in the upper half of the screen and when the dialogue box appears, click on "SAVE". This one drive will then be saved into the same spot in the saved configuration.

CLEARING A SAVED CONFIGURATION

There will be times when you want to change your saved configuration such as when you no longer want to install a particular ramdisk during bootup. You can either resave a setting as already described, or clear the setting altogether. Click on the particular drive box in

the saved configuration part of the screen and a dialogue box will appear asking if you would like to clear this setting. Click on "YES" if you'd like to clear it or "NO" if you change your mind. At this point, if the device saved in this location was a ramdisk and you chose "NO" in order to keep it in the saved location, you'll be given the opportunity to change the bootup format status. A dialogue box will ask if you want to format the ramdisk during bootup. Just select "YES" or "NO".

If you'd like to clear the entire saved configuration, you can do this by clicking on the "options" menu and selecting "clear all". All four drive positions in your saved configuration will be cleared.

FORMATTING RAMDISKS DURING BOOTUP

In GEOS, Configure always formatted your ramdisk during bootup. This was a problem for those people that have powered ram expansion units. They were forced to re-copy the files they wanted in their ramdisk each time they booted up their system. There were ways developed to get around this, but you had to know the correct steps to take.

But now, we have a new problem. This time the problem lies with those that don't have powered ram expansion units. In this case, the user finds himself having to reformat and reload files into his ramdisk each time he boots up his system. Nothing is harmed in this case, but the extra steps needed to get your system going can become a real hassle over time. Wheels allows you a way to avoid this.

With the Toolbox, you can have your ramdisks formatted automatically during the initial bootup. When you create a ramdisk and click the "SAVE" button, the ramdisk configuration will be saved into the Toolbox so it will be installed during bootup. You'll also be presented with a dialogue box asking if you wish to have the Toolbox format the ramdisk during bootup. If you have ram expansion that is not powered or battery

backed, go ahead and choose "YES". If your ram expansion retains its contents when you turn the computer off, choose "NO". If you exit out of Wheels to BASIC and reboot back into Wheels quite frequently, you might want to say "NO" so that your ramdisk remains intact when rebooting. If you shut the computer off, then you'll have to format the ramdisk when you bootup.

As for copying files into your ramdisk during bootup, you can have a disk or partition already containing the files you want loaded into the ramdisk. Then from the Dashboard, either select all the files and copy them to the ramdisk, or if the disk is a compatible type, do a whole disk copy to the ramdisk. Doing a whole disk copy is faster than individually copying each file. There are also a few utilities designed for this function. Check around with local user groups and online services for these. geoSHELL is also capable of doing batch filecopying using a startup file that you would create for this purpose. Ordering information for geoSHELL can be found in the Appendix.

SUPERCPU OPTIMIZATION

If you use a SuperCPU, Wheels will configure it for an optimum operating mode automatically during bootup. 95 percent of Wheels users will ever need to change this setting.

However, you might use an occasional application that just seems to not work the same as it did before you got the SuperCPU. This would be a program that operates in Wheels 64 or Wheels 128 in 40 column mode that does different things with the 40 column screen. Namely, the problem occurs with the VIC chip that handles your 40 column video display. As long as the program doesn't change the location where Wheels expects the screen memory to be, things will work properly. But if an application sets up its own screen handling routines and also moves the video memory location to different parts of the

computer, the screen may or may not be visible. The computer will most likely still be working, but you just won't be able to see what's happening.

For these program to work correctly, you will need to turn off the SCPU optimization. The SCPU will still operate fast, but not quite as efficiently as it does when it's in optimized mode. This all has to do with how it handles the memory in the computer.

To turn the SCPU optimize mode on and off, click on "SCPU optimize" in the "options" menu. If an asterisk appears next to this selection, optimize mode is turned on. If the characters appear italicized, then the SCPU is not currently enabled and selecting this option will have no effect.

The Detail Shop

Polish your Wheels

INTRODUCTION

The Detail Shop is the sweetheart of this whole Wheels package. You can actually get along without ever using this program, but for those of you that like to tinker with your system, or if you get tired of the way it looks, then take your set of Wheels to the Detail Shop and do a little polishing and fine-tuning.

If you're using a 128 in 80 column mode and it only has 16K of video ram, the first thing you'll notice when you run the Detail Shop is the color. The Detail Shop is the only application supplied with Wheels that will use full color on a 16K machine. It does this by shortening up the screen from 200 lines to 176. This uses less memory and makes room in the video ram for color information. The Toolbox and Dashboard can't do this since they need the whole screen for their displays.

There are several things you can do with the Detail Shop. You can change the standard system colors that most older applications will use and you can change the system colors that are shared by the applications supplied with Wheels and any new applications that also want to use these same colors. The Detail Shop provides you with many other services, also. Here's a quick rundown of what you can do while in the Detail Shop:

- * Adjust the standard monochrome colors.
- * Adjust the system multi colors.
- * Edit the system background pattern.
- * Edit the mouse pointer's shape and color.
- * Turn the screensaver on and off and adjust the timer.
- * Adjust a timing delay for the mouse.
- * Adjust the key repeat delay and acceleration.
- * Edit any file icon.
- * Adjust the window colors used by the

Dashboard.

- * Adjust the drive icon colors used by the Dashboard.
- * Edit the drive icons and other icons used by the Dashboard.

The Detail Shop allows you to make temporary changes that will only be used during your current computing session, or you can save the changes to a special file. In Wheels 128, this file is called "128DETAILS". Likewise, in Wheels 64, it's called "64DETAILS". During bootup, the Toolbox will look for this file and if it finds it on your bootdisk, it will load in all the detail data contained in the file. If the file doesn't exist, then all the factory default settings will be used.

You can also save your detail files using any other name. You might do this if you have certain settings you want to use for a particular computing session. To use these other detail files, you would load up the Detail Shop and then load in the desired details file. Upon exiting the Detail Shop, you can activate the new details for that session.

To use the Detail Shop, just double click on it's file icon from the Dashboard. You'll soon be presented with a simple screen showing a set of menus at the top and the title image at the bottom. All the editing tools and other selections are available from the menus. There is also a limited number of keyboard controls available. In many of the color editors, you can press CMDR/r to restore the current colors or CMDR/f to reset the to the default factory colors. This also works in the background pattern editor and the mouse editors. In the Dashboard data editors, only CMDR/r is used to restore the data as it was

when the particular editor was first opened.

When you're using one of the editors in the Detail Shop, you'll see or feel the changes as you make them. In most cases, clicking on the "OK" button will put the changes into effect while you're still in the Detail Shop. Clicking on "CANCEL" will revert back to the previous settings prior to entering a particular editor.

Let's take a look at the various options available:

THE 128 IN 40 AND 80 COLUMN MODES

The 128 version of the Detail Shop can run in either 40 or 80 column mode. Just like with the Dashboard, you can use the ALT key to switch between modes. After pressing the ALT key, switch your monitor to the other mode.

You can also switch modes by selecting "switch 40/80" in the "wheels" menu.

MONOCHROME COLORS

Many of the older GEOS applications use the default system colors which consists of just one foreground color and one background color. And of course, there is the border color. You can adjust these colors by selecting "mono colors" in the "settings" menu.

An editor will pop up with the currently chosen colors listed. Plus the screen will change to reflect these colors. As you make changes, you'll see the changes immediately on the screen.

You can change the foreground color, the background color, and the border color.

In Wheels 128, you'll have different color settings for the two screen modes. The 80 column border color can't be set all by itself. When you click on the button to adjust the 80 column border color, you'll notice only two different colors are available. The border can either be the same as the foreground color or the same as the background color.

Note: It is generally advised to use the foreground color for the border. Some older GEOS applications (very few) that set up their own 80 column color schemes, and that also address the video chip directly, assume the video chip is switched in a certain way. When you switch the monochrome border color, you are changing this setting and some of these applications might end up with their colors reversed. If you see this happen, use a different setting for the border color.

MULTI COLORS

All the applications supplied with Wheels are in color. They all share the same color information which is also available to any new application that might come along that wants to use these same colors. To change these colors, select "multi colors" from the "settings" menu.

You'll be presented with a dialogue box showing all the colors that are currently selected. You can change the following colors:

- * Menu color
- * System dialogue box color
- * Application dialogue box color
- * Miscellaneous color
- * Screen background color
- * Border color

In Wheels 128, these same colors are shared between both 40 and 80 column modes. A particular color in 40 column mode might not look quite the same in 80 column mode, though. The 128 has two completely different video chips for displaying colors in each mode. The colors you choose in this editor are actually 40 column values. While in 80 column mode, the Wheels operating system uses a special internal conversion table to select a similar color to use. Be sure to switch between modes to see how your color selections appear.

When this conversion table was created, the colors that matched closely were put in the

table. Then the colors that were left over were paired as closely as possible to each other.

Here's the actual conversion table that's used:

<u>40 column</u>	<u>80 column</u>
BLACK	BLACK
WHITE	WHITE
RED	DARK RED
CYAN	LIGHT CYAN
GREEN	DARK GREEN
PURPLE	DARK PURPLE
BLUE	DARK BLUE
YELLOW	LIGHT YELLOW
ORANGE	LIGHT PURPLE
BROWN	DARK YELLOW
LIGHT RED	LIGHT RED
DARK GRAY	DARK GRAY
MED GRAY	DARK CYAN
LIGHT GREEN	LIGHT GREEN
LIGHT BLUE	LIGHT BLUE
LIGHT GRAY	LIGHT GRAY

When you select your colors, some combinations might look good in one mode but not in the other. Choose your colors carefully so they appear nicely in both modes.

BACKGROUND PATTERN

The Wheels system contains a special 8x8 pixel pattern that is used by the Dashboard and the other applications supplied with Wheels. This pattern shows up on the background of the screen. You have the ability to edit this pattern to your liking or to choose from one of the 32 (actually 34) patterns contained within the operating system.

From the "settings" menu, select "background pattern" and the editing box will appear. In this box on the left is the editing area. The 8x8 pixel pattern is blown up for easier editing. Simply click on any of the pixels and start drawing. If you click on a pixel that is drawn in the foreground color, your drawing tool will act as an eraser. If you click on a pixel drawn in the background

color, then the tool will act as a pencil and will draw dots as you move it about.

As you are drawing, you'll notice a normal size representation of the pattern changing as you draw. This gives you an idea of how your changes will look without having to exit the edit box to see the change.

Also in this box are a few icons to click on. Click on "Choose a pattern" and all the system patterns will display just below the edit box. Click the mouse on one of them to select it. There are two rows of patterns. The first 16 patterns in each row are the normal patterns that should be familiar to you from using GeoPaint. At the right side of the upper row is the current system pattern that the Dashboard will use. At the right of the lower row are two extra patterns that were always in GEOS but most people didn't know about. Even GeoPaint didn't provide the opportunity to select them.

When you select one of these patterns, you're not editing the pattern selected. You're copying it into the pattern editor. If you click on the OK button, then the pattern or any changes you've made will be copied to the system pattern. No changes are made to the regular patterns. Clicking on CANCEL will instead cancel any changes you've made while in the pattern editor.

In the pattern editor are three other icons you can click on. They will affect the pattern in the editing window. In addition to drawing directly on the pattern, you can use these to reverse the pattern, or flip the pattern in the vertical direction or flip it in the horizontal direction.

MOUSE POINTER

The 40 column mouse pointer editor is selected by clicking on "mouse pointer" from the "settings" menu. In DetailShop 128, you have to click on an additional menu that gives you a choice of editing the 40 column pointer or the 80 column pointer.

Editing the 40 column pointer works the

same in both DetailShop 64 and DetailShop 128. You have an editing window within the edit box that allows you to draw or erase the dots that make up the pointer image.

Simply click on a dot to erase it or click on an empty dot to draw it. If you hold the mouse button and move it around, you'll continue drawing or erasing as you move.

In this edit box you can also select the color of the 40 column pointer. Just click on the icon to select a color that will contrast well with your chosen screen colors.

If you're using DetailShop 64 or operating in 40 column mode in DetailShop 128, you also get to see an actual size sample of the mouse pointer as you make changes to it. This sample doesn't show up in 80 column mode since it can't be duplicated accurately.

Editing the 80 column pointer in DetailShop 128 is almost as easy as 40 column mode, but requires a little explanation to understand how the pointer works.

The 40 column pointer is a sprite, but we don't have sprites in 80 column mode. Instead, the operating system is constantly drawing and erasing the pointer image as you move the mouse around the screen. As it draws the image, it must keep track of what was underneath it and redraw that data when the mouse moves. This all happens so fast, you don't actually realize it's happening.

Since the 80 column mouse is handled in software, rather than being a hardware function like the 40 column sprites, it can't have its own color. It must take on the color of the screen wherever it's currently residing. This is the part that makes the 80 column pointer special. There are actually two images that make up the pointer. They are each 8 pixels high and 16 pixels wide. The two images are blended together to make up the actual pointer image.

One image takes on the foreground color and the other takes on the background color. By doing this, you'll be able to see the mouse no matter where it is, unless the foreground

and background colors are the same.

In the 80 column editor, you have three drawing modes. One mode draws in the foreground color, one draws in the background color, and the third can erase both colors.

If you're editing the 80 column pointer in 80 column mode, you can see 3 examples of the pointer at the right of the edit box. These samples each reside on different types of backgrounds so that you can see how your changes will affect the mouse as you draw.

One sample sits on a solid background color, one is on a solid foreground color and the third is on a pattern combining both a foreground and background color. These samples don't show up in 40 column mode since the 80 column mouse pointer can't be accurately duplicated in that mode.

The only way to learn how to edit the 80 column pointer is to experiment. To select the drawing mode, click on the icon near the lower left of the edit box. The current mode is displayed next to the icon.

SCREENSAVER

Wheels contains a default screensaver which consists of a simple blackout screen. You can make changes to the screensaver by selecting "screensaver" from the "options" menu.

In the screensaver box you can turn the screensaver on or off, you can set the timer, and you can choose the method for resetting the screen.

Click on the STATUS icon to turn the screensaver on or off.

To adjust the timer, either click on the up arrow or the down arrow. You can select anything from 0 seconds all the way up to 18 minutes in 15 second increments. Selecting 0 will actually turn the screensaver off.

While the screensaver is turned on, the operating system will watch for activity at the keyboard or mouse. If any activity occurs, the timer will be set back to the setting you've chosen and start counting down again. As

long as no activity has occurred and the timer has counted all the way down to zero, then the screen will go black.

Choosing a reset method will determine what the operating system looks at for activity. You can select just the keyboard, or the keyboard and mouse. When the screen goes black, a simple press of any key or mouse button will turn the screen back on. If you also have the mouse chosen as a reset method, a gentle nudge of the mouse will turn the screen back on.

The reason you're allowed to ignore any mouse movement is because sometimes a mouse will wiggle as it's sitting still. Some mice are not very stable and being able to shut this feature off keeps the screen from turning on unexpectedly.

ADJUST TIMING

If you want to improve the performance of your system, select "adjust timing" from the "options" menu.

The Wheels mouse drivers require a slight delay to occur before being able to read the data from the mouse port. This delay is needed due to the way the 64 and 128 are designed. The SID chip actually gets the information from the mouse port concerning the mouse's position. But the SID chip can only access one port at a time. The mouse driver sends a command to one of the CIA chips which in turn activates another chip relay that actually switches the lines connected between the SID chip and the mouse ports. The length of time it takes to do the switching is what the delay time is for.

The default delay time is 2048. In technical terms, this is 2048 1mhz clock cycles or about 2 milliseconds. The mouse driver is accessed 60 times a second, so this delay time also occurs 60 times a second. Since 1/60 of a second is only about 16000 1mhz clock cycles, 2048 of those cycles makes up a large chunk of that time. This is 2048 cycles that can't be devoted to processing time for the

application that's running. About 1/8 of the computer's total processing time is spent doing nothing. This is 1/8 of the total processing time for the "whole" computer, not just the mouse driver.

It's been found that some systems can run this delay time right down to zero. If you're using a joystick, you can set it to zero since the joystick driver doesn't get its information from the SID chip.

With the mouse drivers, one port might be able to use a lower setting than the other also. This is possible because when the port is ready to be accessed by the mouse driver, it may have already been inadvertently selected by the routines that read the keyboard.

How do you know if you've chosen too low of a setting? Simple, the mouse will jitter wildly on the screen. This jittering is due to incorrect data coming from the SID chip. The wrong port is being read and so the mouse driver keeps moving the pointer around according to the information it's receiving.

Now that the pointer is bouncing around madly, you can no longer click on the arrows to readjust the timing. In this case, just press 'c' to exit the dialogue box and the timing adjustment will return to the setting it had when you first opened the dialogue box. Then go back into the timing editor and choose a setting that's just slightly above the point where the mouse gets jittery.

Only the Wheels mouse drivers will make use of this timing adjustment. If you're using an older mouse driver from GEOS 2.0, this adjustment won't have any effect on system performance since the delay is built into the driver and is non-adjustable.

KEY REPEAT

The key repeat adjustment affects how long it takes while pressing a key before the same key repeats itself. In GEOS, this wasn't adjustable. It was fixed at a setting of 15, which means that every 15th interrupt (there's sixty interrupts every second) the key would

repeat. By repeating every 15 interrupts, you'll get a repeat character about 4 times every second.

To adjust this setting, click on "key repeat" in the "options" menu. In the dialogue box that pops up, you can adjust the key repeat time along with another speed and an acceleration rate. The second speed adjustment determines the fastest speed the key repeat will reach. This is a feature that is new to Wheels. By default, the minimum key repeat is 4 which will produce a maximum of about 15 characters per second.

When you first press a key, the character will be repeated 4 times per second. This is from the key repeat setting. Right away, the key will begin accelerating. After about 4 or 5 characters, it will reach maximum speed and be repeating 15 times per second. You can raise or lower this minimum adjustment to suit your own preference. On the other hand, the key repeat value shouldn't be set too low. If it's too low and you tend to hold down the keys too long during normal typing, you might end up with repeat characters when you don't intend to.

Changing the acceleration rate will affect how soon the key repeat gets up to full speed. Generally, the low setting will require 4 or 5 keys to repeat before reaching full speed. A setting of medium will take 2 or 3 key repeats, while a setting of high will get to full speed after 1 or 2 key repeats. Adjusting the acceleration rate and minimum key repeat value is generally a better idea than changing the actual key repeat value.

In this same edit box, you can practice typing to see how the changes will affect the keyboard. There is a string of characters already started for you that says "Test key repeat here." Use the delete key to delete the characters and then retype a new sentence to test the keyboard. You'll notice the delete key also accelerates as it's working.

SAVING YOUR DETAILS

When you've got some details set that you like, it's a good idea to save these details. You can then reload them using the Detail Shop, or if the details file is named appropriately and located on your boot disk or boot partition, the Toolbox will automatically load the details contained in the file during bootup. In Wheels 64 this file must be name "64DETAILS" and in Wheels 128 it must be named "128DETAILS". If it's named anything else, then only the Detail Shop can be used to load the details from the file. But this allows you to save many files containing any number of desired detail settings.

To save your details, select "save details" from the "file" menu. You're first given a dialogue box in which you enter the filename to use for this details file. Then you'll be presented with a series of dialogue boxes asking you to select the directory you want the file saved to.

LOADING YOUR DETAILS

Once you've saved a details file, you can reload it with the Detail Shop by selecting "load details" from the "file" menu. You'll be presented with a file requestor asking you to select the desired details file.

Once loaded, the details contained in the file will be put into effect and you'll see the changes in the Detail Shop.

USING YOUR DETAILS

The changes you make in the Detail Shop are only in use while you're in the Detail Shop, unless you specifically choose to *use* the changes. They will then take effect for the entire computing session until you turn off your computer or until you make other changes.

To put these detail changes to use, select "use details" from the "file" menu.

FILE ICONS

Sometimes you'll have a need to change the

icon from a file. You can do this in the Detail Shop. Just select "file icons" from the "options" menu and a dialogue box will pop up asking you to select a file. In this file requestor, you can switch drives by clicking on A, B, C, or D. You can also switch partitions or subdirectories by clicking on the DISK icon, if that particular drive supports partitions and subdirs. If not, then you'll be asked to insert a new disk. After clicking on the desired file, the Detail Shop's icon editor will open up.

In this editor, you will see a sample of the file's icon along with a blown up version of it in the edit window where you can alter the icon as you please. Simply click on a dot to erase it or click on an empty dot to draw the dot. If you hold the mouse button down you can continue drawing as you move the mouse.

If you like the results of your changes to the icon, click on "OK" to save the changes to the file it was loaded from. If you don't want to save the changes, then click on "CANCEL". In either case, you'll get the dialogue box asking you to select another file. If you're finished editing icons, you can click on "CANCEL" from the file requestor to quit the icon editor.

DASHBOARD MODIFICATIONS

The Detail Shop can also change a few things in the Dashboard. You can edit the window colors, the appearance of the drive icons and other icons, and the active and inactive colors of the icons. But first, the Detail Shop must load in some Dashboard data. You can load the data by selecting "Dashboard data" from the "file" menu and selecting "load" from the additional submenu that appears.

A dialogue box will appear asking you to select the directory containing the copy of the Dashboard you wish to modify. If the directory showing is correct, click on "OK". If you want to change drives, click on "CANCEL" and another box will appear asking for the desired drive. Select A, B, C,

or D and then you'll return to the previous dialogue box asking if this is now the correct directory. If you want to change partitions or subdirectories at this point, click on "Disk".

DASHBOARD WINDOWS

You can change the colors of the directory windows that are used in the Dashboard. To do this, select "Dashboard" in the "options" menu and then select "window colors" in the submenu that opens up.

If you haven't yet loaded any Dashboard data, a dialogue box will appear asking you for the desired directory as already described.

A dialogue box will appear along with 4 sample Dashboard windows. There are two sample main directory windows and two sample system directory windows. The Dashboard changes the colors of its directory windows depending on if the window is currently active or not. These colors are reflected in these samples. One of the main dir samples is active and the other is inactive. One of the system dir samples is active and the other is inactive.

In this editor, you can change the colors of each window plus you can change the color of the center area where the text and icons appear. Be careful and choose colors that not only provide a good appearance and matching contrast to your other screen colors, but also provide legibility. Remember, this is where you view your directories, so legibility might be more important than nice colors.

ICON COLORS

You can change the colors that appear on the drive icons by selecting "Dashboard data" in the "options" menu and then selecting "icon colors" in the additional submenu that appears.

If you haven't yet loaded any Dashboard data, a dialogue box will appear asking you

for the desired directory as already described.

In this editor, you can change the active color and the inactive color. Plus you can choose the color of the ghost (sprite) image that's used whenever you are dragging an icon across the screen in Wheels 64 or in Wheels 128's 40 column mode. In 80 column mode, the ghost image will take on the same color as the area of the screen it's passing over.

ICON IMAGES

If you wish to alter any of the drive icons that the Dashboard displays on the screen, you can do this by selecting "Dashboard data" in the "file" menu and then selecting "icon images" in the submenu that appears.

If you haven't yet loaded any Dashboard data, a dialogue box will appear asking you for the desired directory as already described.

This icon editor works just like the file icon editor. The only difference is that your changes are only saved to the data currently loaded in the Detail Shop's memory. They are only saved to the Dashboard when you decide to save them.

SAVING DASHBOARD DATA

Once you've made changes to the Dashboard data, you might want to save your changes. Unlike the other detail settings, the Dashboard data is not saved to a separate file. Instead it gets saved directly to a copy of the Dashboard. The Dashboard will then be able to access this information whenever it's loaded. Just select "Dashboard data" from the

"file" menu and then select "save" from the additional submenu that appears.

A dialogue box will appear asking you to select the directory containing the desired copy of the Dashboard where you would like to save the data. If you're using more than one copy of the Dashboard on your system, it might be necessary to save the data to each Dashboard file. Just repeat the save process for each Dashboard file you want to save the data to.

ACTIVATING THE NEW DASHBOARD DATA

The changes you make to the Dashboard may not take affect immediately upon exiting the Detail Shop. It all depends on which copy of the Dashboard the operating system has decided to load and run. Plus the color information that the Dashboard uses is stored in the REU during your entire computing session. The color information is only loaded in from disk if you choose "reset Dashboard" from the "view" menu in the Dashboard. On the other hand, the icon image data is always loaded from disk as the Dashboard is loading. So, those changes will take affect immediately.

Remember, the operating system has a priority order it takes as it searches for the Dashboard. It always looks at the ramdisks first. If the Dashboard is found there, that's the copy that will be loaded.

Miscellaneous

Other stuff

YOUR EXISTING GEOS APPLICATIONS

If you've been using GEOS for several years, chances are you have a fair number of GEOS applications at your disposal. Switching over to the new Wheels system isn't going to handicap all those nice applications. You can still use most of them and you'll find a few features in the new system will even enhance some of your old applications.

APPLICATIONS TO AVOID

There are a few applications or utilities you'll want to avoid. For instance, if you've had a favorite directory organizing program, it may have worked great with your 1541 or 1581 disks, but it might not understand your native mode directories. It's best to steer clear of these types of programs.

When you're first getting started with Wheels, don't fill your boot disk up with all the same **AUTO-EXEC** files you used to use with GEOS 2.0. Some of them may have been patch programs and you may not want to use them with the new system. Patch programs tend to write code directly into the operating system kernel, and that's fine for GEOS 2.0. Those programs were written for GEOS 2.0, but not for Wheels. They just might put code where it doesn't belong and you'll likely get strange results or big crashes.

A popular **AUTO-EXEC** for GEOS 2.0 was known as **DBGetFiles**. This patched GEOS so you could have more than 15 files show up in the file requestors. This was a nice enhancement to GEOS 2.0 but is no longer necessary, because Wheels supports up to 255 files in the file requestor box.

AUTO-EXEC files that read your built-in real-time clocks aren't needed anymore either.

You can configure the Toolbox during bootup to set your system clock for you from any of the popular real-time clocks available for our computers.

When you're thinking about using an application you're unsure of, learn what its intended purpose is before using it. In most cases, an old application will work just fine. Just be careful with those programs that modify parts of your system.

There are a couple of applications that utilize a 64K bank of ram with your REU. In GEOS, there wasn't a good way for an application to know if a bank of ram was in use or not. In the new Wheels system, programmers won't have this problem, but these older applications were written before Wheels came along and you can have problems with them. **geoCanvas** is one example. It's a nice program, but it tends to destroy the bank of ram that's reserved for the Wheels operating system. Try it out and see if it works on your setup. If you experience a crash either while using **geoCanvas** or soon after exiting it, it probably wiped out the system ram bank. If this happens to you, you'll need to boot up GEOS 2.0 to use **geoCanvas**. When a patch is released for **geoCanvas** to fix this problem, then you'll be able to safely use it with Wheels.

GeoWizard can't be used with Wheels since it patches code directly into the operating system. This is a good program for GEOS 2.0, but keep it away from your new Wheels. The same goes for most of the screen blanker programs written for GEOS. These have to patch code into the operating system. Avoid using these also.

Supplied with the SuperCPU is an auto-exec file called **SUPERGEOS**. Don't

put this on your boot disk, Wheels doesn't need it at all. SUPERGEOS was designed only for GEOS 2.0. It patches the kernel for use with the SuperCPU and will corrupt Wheels if an attempt is made to use it. The latest version of SUPERGEOS checks to see if you're loading it from Wheels and won't allow you to do so. One function this program provided was a switch to turn the SuperCPU optimize mode on and off. Turning GEOS Optimized mode off is only needed for programs that operate in a different screen other than the default 40 column graphics screen used by Wheels. **KoalaVert** is one such program and **geoBASIC** is another. For these programs and others (there are very few), you can turn optimized mode on and off from the Toolbox in the "options" menu.

Never try to run any version of **Configure** from that was provided with GEOS. You will experience a nasty crash. When **Configure** is loaded, one of the first things it does is to replace the disk driver for the drive you loaded **Configure** from. Obviously, this will crash Wheels in a hurry. None of the older disk drivers work in Wheels. Don't put **Configure** on your boot disk either. It's an AUTO-EXEC file and will run during bootup. You'll never be able to boot your system if **Configure** is there. For that one reason, you can't boot GEOS and Wheels from the same disk or partition.

For the same reason, **geoSHELL** users should not use the "learn" command. This command only understands how to deal with GEOS 2.0 disk drivers. If you've created any disk driver commands with **geoSHELL**, avoid using them in Wheels or you'll have problems. Always use the Toolbox to install and remove disk drives and ramdisks. There may be a new **geoSHELL** command created soon that can install and remove disk drivers. Currently, there's one called "chdisk" (supplied on your Wheels disk) that can switch between the 1581 and native drivers on an FD drive. This command actually works on

any of the CMD devices, not just the FD.

USING NEW WHEELS FEATURES

There are several new features added to the Wheels operating system that was not available in GEOS. This section of the manual will cover some of those features.

THE FILE REQUESTOR

When you load up an application like **GeoWrite**, you'll appreciate the fact you can now have more than 15 files on a single disk and still be able to access any one of them from the file requestor. This is not a modification to **GeoWrite** itself, this file requestor has always been a part of the GEOS operating system, and in Wheels it has been improved somewhat. You now can have as many as 255 files showing in this file requestor. At the bottom of the file requestor are 4 different tools you can click on for moving up and down through the file listing. There is room in the file requestor window for 5 files and when you have more than 5 files to display these tools will show up. The first tool on the left takes you to the beginning of the list and the second tool takes you to the end of the list. The third and fourth tools scroll you up and down through the list, 5 files at a time.

When you get to the file you want to open, there are two ways to do it. You can click once on the filename to highlight it and then click on the "OPEN" button, or you can do the same thing by double-clicking on the filename.

THE SYSTEM BUTTONS

When you're using dialogue boxes, you'll encounter similar buttons such as OK, Cancel, Yes, NO, OPEN, and DISK. These are all system buttons and they now have keyboard equivalents allowing you to select them with the keyboard. In GEOS 2.0, the RETURN key always activated the OK button and it does so in Wheels also. But now, you can activate the rest of these buttons with the key

that represents the first character of each button. For instance, pressing the 'c' key will do the same as if you were to click on the "Cancel" button.

There will be times when the keyboard won't activate these buttons. This will be when you're requested to enter some text, such as a filename or any other string of characters the dialogue box needs. The keys are instead being used for entering this string of characters, and you'll have to use the mouse for clicking on the buttons.

THE DISK BUTTON

Whenever you have a file requestor on the screen, the application might also have placed a "DISK" button in the dialogue box. Most of the major applications do this. The idea for this in GEOS was to allow you to be able to insert a different disk into the drive and then the application would open that new disk and display its files in the file requestor.

A new feature of Wheels is to intercept the DISK button and present the user with a system dialogue box whenever the drive being used is either a partitionable CMD device or a native mode ramdisk. For instance, on a CMD hard drive you can't insert a different disk, but this gives the user the opportunity to select a different partition or subdirectory for an application like GeoWrite to look for data files in. As an added bonus, you can even switch between 1581 and native partitions from within this system dialogue box.

You'll notice times when GeoWrite or GeoPaint isn't providing this DISK button. This will happen when you're accessing the same drive for data files as the one you loaded the application from. The application needs to be able to leave the disk containing itself in the drive. These older applications weren't programmed to be able to access themselves from any partition like the new ones will be able to in the future. But at least you can take advantage of this feature when you put the application on one drive and access your data

files on another drive.

The other times when GeoWrite or GeoPaint won't display the DISK button is when you're accessing your data files on a ramdisk. The application understands a ramdisk is not removable and won't display the button in this case. Unfortunately, it doesn't understand a ramdisk can be a native type with subdirectories.

You'll get used to the layout that will work in these cases. For instance, if GeoWrite is on your hard drive or another ramdisk and you access your RamLink, you'll see the DISK button as long as you've configured your RamLink as a DOS device numbered between 8 and 11. But if it's configured as a 1581 ramdisk with its device number 12 or higher, GeoWrite will think it really is a ramdisk and won't display the DISK button, and you won't be able to switch to a different 1581 partition while in GeoWrite.

THE SYSTEM PARTITION DIALOGUE BOX

It's much easier to change partitions on a CMD device in Wheels than it was in GEOS because the operating system has those provisions built in. Most of the time when you're in a dialogue box that is showing a "DISK" button, you can click on this button to activate the partition dialogue box. This dialogue box is also used by the Dashboard, the Toolbox, and MakeSysDisk for selecting partitions and subdirectories.

Using it is simple. If the current drive is in a native partition, you can either change partitions or move into different subdirectories within the same partition. It all depends on the device you're using and the manner in which the application requests the dialogue box to operate.

You'll soon get a feel for how this dialogue box operates. At the right are various buttons and they can change depending on the device and type of partition you're using. You might see buttons that say "Subdir" or "Part."

on them. If you're in a 1581 partition, the "Subdir" button won't be available. If you're working from a ramdisk, the "Part." button won't be available since you can't switch partitions in a ramdisk.

Note: In actuality, you can have as many as 8 ramdisk partitions, however, only the Toolbox has the means for switching between them.

If you switch partitions or subdirectories outside of the Dashboard, such as from within another application, you can work in that directory. When you return to the Dashboard, you'll be put back into the same directories that you were in when you left the Dashboard. This may be confusing at first, but you'll soon get used to it.

WHEELS 128 FEATURES

There are very few differences between Wheels 128 and Wheels 64. The basic look and feel is the same. The general operation is the same. The biggest difference in Wheels 128 is having an 80 column screen to work with, in addition to the 40 column screen.

The main applications supplied with Wheels 128 are able to deal with all the various screen modes. In 40 column mode, they will automatically use color, while in 80 column mode they will operate in one of two ways. If your 128 has 16K of video ram, you'll be using a monochrome screen with one background color and one foreground color. But if you have 64K of video ram, then you will be operating using the 128's 80 column color capability.

Operating with more than two colors in 80 column mode uses more than 16K of video ram. There are ways of doing it in 16K of ram, but it would require the use of a shorter screen. This is not always a desirable thing. The Detail Shop uses this method so that 16K machines have the opportunity to see and adjust all the different color modes.

From a user's standpoint, the screen modes are all handled without any special configuration. The new Wheels applications will generally use the best mode available. But when you are running an older GEOS application, such as GeoWrite 128, you'll notice that monochrome mode will be used. GeoWrite 128 was never programmed to operate in multi color mode. New applications that come along will most likely take advantage of the Wheels color handling routines.

Without a SuperCPU, Wheels 128 will seem slightly faster in 80 column mode than it does in 40 column mode. This is because 80 column mode can run at 2mhz, while 40 column mode must run at 1mhz. Even though there is twice as much screen information to deal with, the additional processing speed performs all the unseen calculations faster, which results in an overall quicker feel to the system.

If you're using a SuperCPU/128 with Wheels 128, then 40 column mode will feel faster to you. Now, the processing speed is about the same, and the 40 column screen can be accessed much faster in addition to there being half as much information to place on it as compared to the 80 column screen. But, 80 column mode running at SuperCPU speed is pretty impressive and you'll appreciate the full 80 column work area with applications such as GeoWrite.

If you've ever considered a major purchase, make it a SuperCPU/128. A 128 with a SuperCPU running Wheels is one outstanding machine. It's a good idea to buckle up when operating one of these systems.

So, other than the different video modes, there is really very little difference between Wheels 64 and Wheels 128. If you learn how to use one system, you'll sit right down and work the other one with no problem.

Appendix

SYSTEM DISK CONTENTS

If you received a 1541 formatted Wheels disk, some files will be on side 1 and others on side 2. The difference in this listing with 1581 disks is that all the files will be in the single 1581 directory.

Files on side 1 of Wheels 64:

- STARTER** - this is the main boot program you load and run from BASIC.
- TURBOBOOT** - this gets Wheels up and running quicker on machines without JiffyDOS.
- SYSTEM1** - the first of two main system kernel files.
- SYSTEM2** - the second of two main system kernel files.
- Toolbox 64** - this is the application that gets your system configured.
- Dashboard 64** - this is your graphical user interface.
- NAMEPLATE** - the title screen which is simply a photo scrap renamed.
- C1351D** - a two button input driver with the right button simulating a double click.
- JOYSTICK** - an input driver for a joystick or 1350 mouse.

Files on side 2 of Wheels 64:

- MakeSysDisk** - an application for creating boot disks.
- DetailShop 64** - an application you can use to change and save various preferences and other neat stuff.
- C1351S** - a two button input driver for accelerators with the right button simulating a left button click at 1mhz.
- C1351DR** - the C1351D driver with the buttons reversed.
- C1351SR** - the C1351S driver with the buttons reversed.
- Smart4** - an input driver for the CMD SmartMouse.
- Smart4R** - the SmartMouse driver with the buttons reversed.

The remaining files on side 2 are new commands for geoSHELL users. These commands will only work with Wheels and not GEOS. A more detailed description can be found later on in the appendix.

- chdisk** - allows changing disk types on the FD.
- chpart** - change partitions.
- DESKTOP** - exit back to the Dashboard.
- erase** - erase a disk directory.
- format** - format any disk, partition, or ramdisk used in Wheels.
- makedir** - create subdirectories in native partitions and native ramdisks.
- ncopy** - whole disk copier to replace the dcopy command.
- nswap** - new command to use in place of the swap command.
- parentdir** - move to the parent directory.
- rootdir** - move to the root directory.
- subdir** - move into a subdirectory.
- validate** - validate a disk, partition, or ramdisk.

Files on side 1 of Wheels 128:

- STARTER 128** - this is the main boot program you load and run from BASIC.
- TURBO41** - this gets Wheels up and running quicker on 1541/1571 drives on machine without JiffyDOS.
Note: TURBO41 is not supplied with the 1581 disk. However, MakeSysDisk is capable of creating this file when you create new 1541 MASTER and BOOT disks.
- 128SYSTEM1** - the first of two main system kernel files.
- 128SYSTEM2** - the second of two main system kernel files.
- Toolbox 128** - this is the application that gets your system configured.
- Dashboard 128** - this is your graphical user interface.
- NAMEPLATE** - the title screen which is simply a photo scrap renamed.
- 128C1351D** - a two button input driver with the right button simulating a double click.
- 128JOYSTICK** - an input driver for a joystick or 1350 mouse.

Files on side 2 of Wheels 128:

- MakeSysDisk** - an application for creating boot disks.
- DetailShop 64** - an application you can use to

change and save various preferences and other neat stuff.

128C1351S - a two button input driver for accelerators with the right button simulating a left button click at 1mhz.

128C1351DR - the C1351D driver with the buttons reversed.

128C1351SR - the C1351S driver with the buttons reversed.

128Smart4 - an input driver for the CMD SmartMouse.

128Smart4R - the SmartMouse driver with the buttons reversed.

The remaining files on side 2 are new commands for geoSHELL users. These commands will only work with Wheels and not GEOS. A more detailed description can be found later on in the appendix.

chdisk - allows changing disk types on the FD.

chpart - change partitions.

DESKTOP - exit back to the Dashboard.

erase - erase a disk directory.

format - format any disk, partition, or ramdisk used in Wheels.

makedir - create subdirectories in native partitions and native ramdisks.

ncopy - whole disk copier to replace the dcopy command.

nswap - new command to use in place of the swap command.

parentdir - move to the parent directory.

rootdir - move to the root directory.

subdir - move into a subdirectory.

validate - validate a disk, partition, or ramdisk.

The main GEOS applications are noticeably missing. Wheels is basically an operating system upgrade and therefore doesn't include applications such as GeoWrite and GeoPaint. This is one of the reasons why you need your GEOS system disks.

TROUBLESHOOTING

Anytime you're experiencing problems, try to diagnose the source of the problem. With a little thought and reasoning, you can usually figure out the problem yourself. Just because a particular application crashes every time you use it doesn't mean the application is at fault. Crashes can be caused by many different things. A bad disk will create all sorts of problems. An internal failure in your computer might be the cause but may not be readily

apparent. Many times, problems occur from poorly written software, or from something you might have used that may have either corrupted your disk or destroyed a portion of the operating system. Problems like these don't always show up while the culprit is in use. These are really difficult to diagnose.

Make every effort possible to resolve any difficulty you might be having. You'll learn best from fixing your own problems. If you get stuck, there's always someone somewhere that can help. Try contacting a technical support line if necessary, but first exhaust all other possible resources. There's always online help for those who have a modem and can access an online service or BBS. If you belong to a local computer user group, someone in the club can usually help. The same problems you're having has probably already been experienced by someone else. Just ask around, because other people can be more helpful than you might think.

Most importantly, don't give up. If you're having trouble with your system, make it a challenge to figure it out. You'll feel victorious once you get it working correctly.

WHEELS FAILS TO INSTALL

Did you follow the installation instructions correctly? Reread it and try the installation again.

Are you trying to install a "copy" of the original Wheels disk? If so, then that's your problem. You can't install a copy, only the original.

If you suspect your original disk is bad and fails to install, send it to [Click Here Software](#) for a free replacement if the installation fails within the first 30 days.

CHECK YOUR GEOS DISK

If you can't install the Wheels disk because your GEOS system disk is bad, then you'll have to deal with that issue first. If you have your "backup" system disk, give it a try. If the installation detected a bad GEOS disk, it will

tell you so. An easy way to test if your GEOS disk is OK is to boot it up. If it won't boot, then the info Wheels needs from it might not be accessible.

If other commercial programs load and run OK from their original disks, then your drive is probably ok, and your problem might be your GEOS disk. Contact CMD for replacement information.

CHECK YOUR WHEELS DISK

If you have trouble during the installation phase, then your Wheels disk might be bad. If the installer activates correctly during your very first bootup, then the portion of the disk containing the installer is OK. Try to rule out any possibility of a hardware problem. Make sure your ram expansion is functioning correctly.

CHECK YOUR HARDWARE

The initial installation of your original Wheels system disk is a critical step. The Wheels system disk was created on a properly aligned drive and the installation routines on the disk expects your drive to be properly aligned also. A drive that's slightly out of alignment will still function OK, but if your drive is severely out of alignment, the installation might fail.

If your system locks up during the initial installation, make sure your computer and disk drive are functioning correctly. You might have a problem you're not aware of. Don't blame your disks yet.

The Commodore drives have been known to be affected by signals that radiate from certain monitors or other electronic devices nearby. These signals can affect the drive as it's reading or writing data. Try moving your drive away from the monitor or to the other side of the monitor.

If you suspect a drive problem, try another drive before blaming the problem on a bad disk. You might even try a different serial cable. A dirty connection at either end of the cable can cause the voltage pulses travelling

through to be seen incorrectly.

Boot up GEOS if you can and try running some of the applications. If you experience crashes or your screen appearance doesn't look right at times in the menus or fonts, you might possibly have a memory access problem in your computer. GEOS makes use of the ram lying beneath the I/O addresses in the region from \$D000-\$DF00. Most programs you'll run outside of GEOS never use this area. Neither BASIC nor the 64's own operating system kernal use this area. If your computer has a problem in this area, it'll show up while using GEOS but might never give you a problem with other programs you might be using.

Keep in mind that Wheels uses all of your computer's resources. It might use portions of your computer memory and portions of your REU that are not used by any other program that you normally use. If you have a problem, it will show up when using Wheels.

WHEELS CRASHES OR WON'T BOOT

Wheels installs itself into your ram expansion unit. By default, Wheels will always reinstall itself each time you boot up. But with ram expansion units that have their own power supply and battery backup, you can configure Wheels from within the Toolbox to skip this step since your ram expansion retains its memory when you turn your computer off. If you've selected this option and somehow this portion of your ram expansion has become corrupted, your system might either fail to boot correctly or it might give you problems later on as the operating system accesses various routines contained within the ram expansion.

If the boot process is able to detect the ram has lost power, it will automatically reinstall itself during bootup. Or if you suspect something has been corrupted in the ram, you can force the system to be reinstalled by holding down both the CMDR key and the

LEFT-SHIFT key at the same time during bootup. As soon as you begin booting, immediately press these two keys and hold them until you see the title screen disappear. You'll cycle through the dialogue boxes to the Bootup Settings dialogue box. At this point turn on setting #1 so that the extended kernel is reloaded while booting.

If this doesn't correct the problem, then one or more files on your boot disk may be corrupted somehow. Of course, you made extra boot disks with MakeSysDisk, right? Grab one of them and boot your system with it. Then from the Dashboard, validate the boot disk that is giving you problems. Then run MakeSysDisk again to reinstall the system onto your boot disk or partition. If you didn't make extra boot disks, you'll have to boot Wheels up from your original Wheels system disk. MakeSysDisk will replace all your system files and your disk should function once again. If you have an actual physical problem on your boot disk, MakeSysDisk will most likely catch the problem and inform you of it. See "SECTION 4: MakeSysDisk" for more information.

CHECK YOUR RAMDISK FILES

When you exit an application, you'll be returned to the Dashboard. The Wheels operating system reloads the Dashboard from disk. Loading from a floppy drive is slow, so Wheels always checks your ramdisk first to see if you've copied the Dashboard there. If so, it will load the Dashboard from your ramdisk. Wheels has a particular pattern it uses when it's searching your drives for the Dashboard. If it's the Dashboard that's crashing even after you've replaced it on your boot disk, it might be because you still have a bad copy of it somewhere else on your system. If you suspect this, then delete all copies of it from your ramdisk and other sources and start over with fresh copies. The worst you'll have to do is redo some of your preferred default settings.

SUMMING UP

When you're having a problem there's always a reason for it. Isolating the cause can be a challenge. It's also good to be able to spot trouble before it starts. Knowing how your system reacts is similar to knowing when your car isn't running right. Catch those little problems before they become major ones and you'll get many years of trouble-free use out of your Wheels system.

USING GEOSHELL WITH WHEELS

geoSHELL is a command line interface for GEOS that was released in '92 and '93 and is still a very useful product today. The only version of geoSHELL that anyone should be using is V2.2. Don't try to use these new commands with any other version. When V2.2 was released, it was sent as a free upgrade to all V2.0 owners, so there shouldn't be any problems. If you purchased a used copy of geoSHELL V2.0 from someone, you got cheated. They should have included V2.2 with it also. All V2.0 owners have V2.2 also.

geoSHELL works great with Wheels although you'll discover a few limitations when you use it with Wheels. Let's take a look at some of these limitations.

WHAT GEOSHELL CAN'T DO

You must remember that geoSHELL was written with GEOS 2.0 in mind. The deskTop's border files were limited to a maximum of 8 files. They were stored in one sector on the disk. Therefore, geoSHELL tends not to look past the 8th file in what is now known as the system directory. When the dir command is used, it first shows the main directory and then shows the files in the system directory, however, it only shows the first 8 files of the system directory. A patch is in the works that will fix this problem.

It's very important to avoid using the "learn" command. Also, don't use any of the disk driver commands that you may have created with the learn command from GEOS 2.0. The GEOS 2.0 disk drivers will crash your Wheels system. Even though the learn command will create a Wheels disk driver command, it may not function properly. One reason is the learn command doesn't understand how to allocate ram in the Wheels operating system. It's best to avoid this command altogether and use only the Toolbox to install and remove drives and ramdisks.

THE NEW COMMANDS

Several new commands have been included on the Wheels disk and more will be developed as time goes

on.

chdisk

Let's say you're using an FD drive with a 1581 disk and you want to insert a disk with a native partition. Simply insert the disk and then use the `chdisk` command so that the operating system recognizes the different disk format. As long as you insert a disk of the same type, this command is not necessary. Another way to force Wheels to recognize the disk change is to use the new "`chpart`" command.

The Dashboard performs this task automatically when you double click on the FD drive icon.

chpart

You can still use the DOS wedge command `@cp` to change partitions in Wheels just like you did in GEOS 2.0, however `geoSHELL` doesn't understand that you can switch partition types at the same time. That's where the `chpart` command comes in. Just supply the partition number as a parameter and you'll be switched to that partition. The following example will switch to partition 3 on the current drive:

```
chpart 3
```

If you use the `chpart` command without a parameter, a system dialogue box will appear allowing you to select a partition from the list displayed.

DESKTOP

Without this new command, there is no way to exit `geoSHELL` to return to the Dashboard. In Wheels, `geoSHELL` actually thinks it was launched from something called "DESKTOP" instead of "Dashboard 64" or "Dashboard 128". If you use the "`exit`" command or click on `geoSHELL`'s close button, it won't find any desktop on the system called "DESKTOP". A desktop cannot have more than 9 characters in its name in GEOS 64 or 11 characters in GEOS 128. Wheels and the Dashboard perform a little trickery in this area. This was the original limitation of GEOS and the 9 or 11 character limit is one of those things that has been retained for certain compatibility reasons.

So, just type in the command `DESKTOP` to exit back to the Dashboard. Or if you type "`exit`" by itself or click on the close button, a file called "DESKTOP" will be searched for and this command will be found and the `DESKTOP` name will be installed as the default desktop. This command is not really a desktop, but when the name is used, Wheels actually substitutes "Dashboard 64" or "Dashboard 128" in its place. The following will also work:

```
exit DESKTOP
```

(Note: if used in a startup or exec file, remember to

terminate the filename with the up-arrow.)

erase

This will erase the directory of the disk or partition of the currently active drive. A prompt will appear asking if you wish to complete the operation. You can use this as a quick format if you know the disk is in good shape otherwise. It's the quickest way to delete every file from a disk.

format

This will format any disk, partition, or ramdisk used in Wheels. You can supply a disk name as a parameter, or if used without any parameter, a dialogue box will appear asking you for the disk name. The difference between this and the older `format` command is that it uses the built-in Wheels format routines to do the work. The older `format` command doesn't know about all the different devices used in Wheels, so be sure to replace your old command with this one.

makedir

You can still use the DOS wedge command `@MD` to create subdirectories on CMD devices, but you can't use it on a native ramdisk. That's where this command comes in. You can also use the command on CMD devices as well as the 1581 when using native FD disks. A subdirectory name must be supplied when using the command. Example:

```
makedir subdirname
```

ncopy

This command takes the place of the "`dcopy`" command and can be installed in its place using the "`external`" and "`internal`" commands. You can rename `ncopy` to `dcopy` when you do so. Refer to your `geoSHELL` manual on how to use those commands. Or you can just keep it as a separate external transient command and use it as such.

This command can copy whole disks, ramdisks, or partitions. The source and destination must be of compatible types. The source disk is the currently active drive and the destination is supplied as a parameter. The following example will copy the disk in the current drive to drive D.

```
ncopy d
```

If you wish to copy to a particular partition, add a partition number to the parameter as such:

```
ncopy d3
```

You can also use the letters "f", "h", and "r" to copy to the FD, HD, or RL. If you have more than one FD or HD, only the first one found will be used. When using f, h, or r as a parameter, you must also supply the desired partition number. To copy the

current disk or partition to partition 5 on the RamLink, use the following:

```
ncopy r5
```

nswap

The old geoSHELL swap command had one bad limitation and it was due to the way the RamLink 1581 partitions were implemented in GEOS 2.0. The old RL1581 disk driver conflicted with any 1571 type device if the 1571 device was used as drive D. For this reason, geoSHELL wouldn't let you swap a RamLink to D if a 1571 device was in use, and this included the RAM1571. Wheels doesn't have this conflict, but geoSHELL doesn't know it. There are also some other things that geoSHELL doesn't know about when swapping drives. Therefore, always use this new command in its place. Use it just like the old one. As an example, to swap drives A and D:

```
nswap ad
```

parentdir

You can still use the "parent" command with CMD devices, but it doesn't work with native ramdisks or the native 1581 driver. This new command takes its place.

rootdir

You can still use the "root" command with CMD devices, but it doesn't work with native ramdisks or the native 1581 driver. This new command takes its place.

subdir

You can still use the DOS wedge command "@cd" to move to a subdirectory, but it doesn't work with native ramdisks or the native 1581 driver. This new command works with all native directories. If used by itself without a subdirectory name, a dialogue box will pop up allowing you to select the subdir to open up. Or if you supply a subdirectory name, then that subdir will open without the dialogue box popping up.

validate

This command will validate the disk in the current drive. This works with every disk, partition, or ramdisk that is used in Wheels.

ORDERING INFORMATION

CREATIVE MICRO DESIGNS

GEOS 2.0 and all the fine products manufactured by CMD such as the HD Series hard drive, FDSeries floppy drive, RamLink, Turbo232, 1750XL, SuperCPU, and many other hardware and software products are available direct from:

Creative Micro Designs, Inc.
15 Benton Dr.
P.O. Box 646
East Longmeadow MA 01028

(800) 638-3263 (Orders only)
(413) 525-0023 (All other inquiries)

CLICK HERE SOFTWARE CO.

Software products such as geoSHELL, geoFAX, and the Wheels upgrade for GEOS may be ordered directly from:

Maurice Randall
%Click Here Software Co.
P.O. Box 606
Charlotte MI 48813

(517) 543-5202

