

The Graphic[™] Exchange

The Graphics Conversion Utility for the Apple® IIGS

by John MacLean

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Table of Contents

Chapter 1: Introduction

- 1 Uses For The Graphic Exchange
- 2 System Requirements

Chapter 2: Backing Up Your Graphic Exchange Disk

- 3 Making a Backup
- 4 Graphic Exchange Disk Files

Chapter 3: Tutorial

- 6 Starting The Graphic Exchange
- 8 How To Load A Graphic
- 9 Transferring A Graphic
- 11 Saving A Graphic
- 13 More About Batch Transfer
- 15 Batch Saves
- 15 Other Transfer Modes
- 16 Standard Transfer Mode
- 20 Scaled Transfer
- 21 Full Screen Transfer
- 22 Quitting The Graphic Exchange

Chapter 4: More Menu Choices

- 23 List Boxes
- 23 Graphic Formats
- 24 Original & Destination Graphics

Chapter 4: More Menu Choices (continued)

- 25 File Menu
- 25 Close
- 25 Open Original & Destination
- 26 Save, Save As
- 27 New Graphic
- 27 Dispose
- 27 Slide Show
- 28 Initialize Disk
- 28 Quit

- 29 Edit Menu
- 29 Undo
- 29 Clear
- 29 Invert
- 29 Paint
- 30 Custom

- 31 Display Menu
- 31 Memory Available
- 32 Format Information
- 32 Original & Destination Graphic

- 32 Transfer Menu
- 32 Standard
- 33 Scaled
- 34 Full Mode
- 34 Batch

Chapter 4: More Menu Choices (continued)

- 35 Options Menu
- 35 Adjust Color Translation
- 35 Sort Original & Destination Graphics
- 35 Destructive Warnings
- 35 Configure Auto Load
- 36 Load & Unload Formats

Chapter 5: Graphics Modes

- 37 Graphics Modes Supported

Appendix A: Special Uses: Version 3.6

- 47 Using the Older Version of Graphic Exchange

Chapter 1: Introduction

The Graphic Exchange is a program for the Apple IIGS that allows you to interconvert most types of Apple II and MacPaint graphics from one to another.

If you have a graphic file, you now have the power to exchange that graphic from whatever type it is (including Print Shop, AppleWorks GS, or even MacPaint pictures!) to whatever type you desire. Change Lo-Res to Double Hi-Res, and back again! Change all your favorite Hi-Res images to take advantage of the IIGS's powerful new Super Hi-Res! The Graphic Exchange even preserves your colors wherever possible!

When moving to a higher resolution screen, you can have The Graphic Exchange fix the picture so it fills out the new screen completely, or you can accept the natural reduction in size. You even have the power to convert, reposition, and even scale only a selected part of the screen!

With abilities like these, anyone who uses graphics won't want to be without it!

Uses for The Graphic Exchange

There are many different ways to take advantage of this power. Here's a list of a few of the more obvious. Experiment with the samples on The Graphic Exchange disk to see some applications and explore possibilities.

- 1) Transfer Print Shop libraries and HyperStudio clip art.
- 2) Transfer PublishIt! clip art to AppleWorks GS.
- 3) Create your own Print Shop and HyperStudio clip-art libraries by extracting portions of the screens from collections of full screen graphics. Transfer AppleWorks clip-art and Print Shop graphics into your own drawings for use with painting programs like Dazzle Draw, Blazing Paddles, GS Paint, Deluxe Paint II, and 816 Paint.

- 4) Convert Print Shop graphics into standard graphic formats for use with animation packages such as Take 1 and Animate.
- 5) Transfer graphic images to Super High Resolution for use with desktop publishing software such as GraphicWriter.

System Requirements

The Graphic Exchange is written specifically for the Apple IIGS, taking advantage of its enhanced memory, speed, and graphic modes. The following hardware is required:

- Apple IIGS.
- Minimum 1Mb memory.
- Apple mouse.
- Apple 3.5 Drive or Unidrive 3.5.

Chapter 2: Making a Backup Copy

Although the chances of physically damaging a disk in normal daily use are fairly small, it is still a good idea to make a duplicate copy, or "backup disk", of the original disks provided in the Graphic Exchange package. This process is very easy, takes only a few minutes, and is a very worthwhile "insurance" provision for the possibility that something does ever happen to the disks you use on a daily basis. Please take a moment now to make a backup copy of your Graphic Exchange disk using whatever disk copying software you normally use. If you are unfamiliar with making copies of disks, see the instructions that came in the booklet that was supplied with your Apple IIGS.

Once you have made the backup, label it with the extra label included in the Graphic Exchange package, and then put the original diskette in a safe place. That way if anything should ever happen to the original, you can easily make a new copy for your daily use.

Before going any further, please take a moment to fill in the software registration card for the Graphic Exchange in the front of this manual. By returning this card, you'll let us know you're a Graphic Exchange owner, and in return, we can automatically notify you of any updates to the software, and also of the availability of other graphics software products from Roger Wagner Publishing, Inc. as they become available. This card is the *only* way we have of knowing who you are, or contacting you, and you can't always count on magazine advertisements, etc. to inform you of all products.

Quite often the information you receive will not only tell you about new products, but will usually offer substantial discounts on useful software. So, please make that special effort to complete and return the registration card now - you'll be glad you did!

Graphic Exchange Disk Files

The following files are on the Graphic Exchange Disk:

ProDOS
System
Icons
TGE.Start.Sys16
TGE.Sys16
TGE.Title
TGE.TOOLS
TGE.System
Exchange.P8
Sample.Pics:
 BATS
 CHARLIE.LORES
 MAGNETIC.DISKS
 THE.RAVEN
 COLOR

PRODOS and System are the system files from Apple Computer that allow the Graphic Exchange disk to startup.

TGE.START.SYS16 is a small launcher program that decides whether to launch the new GSOS version of the Graphic Exchange program, or the older ProDOS 8 version (version 3.6), depending on whether the Option key is held down or not.

TGE.SYS16 is the actual Graphic Exchange program. TGE.Title is the Graphics Exchange title screen, TGE.Tools is a subdirectory that holds modular conversion tools for the Graphic Exchange.

TGE.System is a "loader" program for the older version of Graphic Exchange that may prove useful to you at some point. Although not extensively documented in this manual (see Appendix A), this alternate version of Graphic Exchange is a ProDOS 8 version that can directly read both Newsroom and Print Shop DOS 3.3 disks and some Macintosh disks.

The folder Sample.Pics contains the files BATS, CHARLIE.LORES, MAGNETIC.DISKS, THE.RAVEN and COLOR, which are sample graphics in a variety of formats that you can experiment with, and which are used in this manual.

When you are moving the Graphic Exchange software to a hard disk, the easiest setup is to create a folder called "TGE" and move all the files except for the PRODOS, System, TGE.Start.Sys16 and Icons files to your new folder.

To launch the GSOS version of Graphic Exchange from your hard disk program selector, launch the file TGE.Sys16. For the ProDOS 8 version, launch the file TGE.System.

You may also want to move the file Icons.TGE from the Icons folder on the Graphic Exchange to the Icons folder on your hard disk.

Chapter 3: Tutorial

This tutorial begins by leading you through the transfer of a Double High Resolution graphic to the Apple IIGS Super High Resolution mode. This is exactly the process you might use later to transfer pictures created by any of the Apple IIe Double High Resolution paint programs like Dazzle Draw or Blazing Paddles to AppleWorks GS or HyperStudio.

You'll also learn that you don't always have to deal with the whole graphic. You can convert only that part of the screen you want to capture, and you can use the Scaled Transfer, which increases or decreases the size of the final graphic as part of the conversion process.

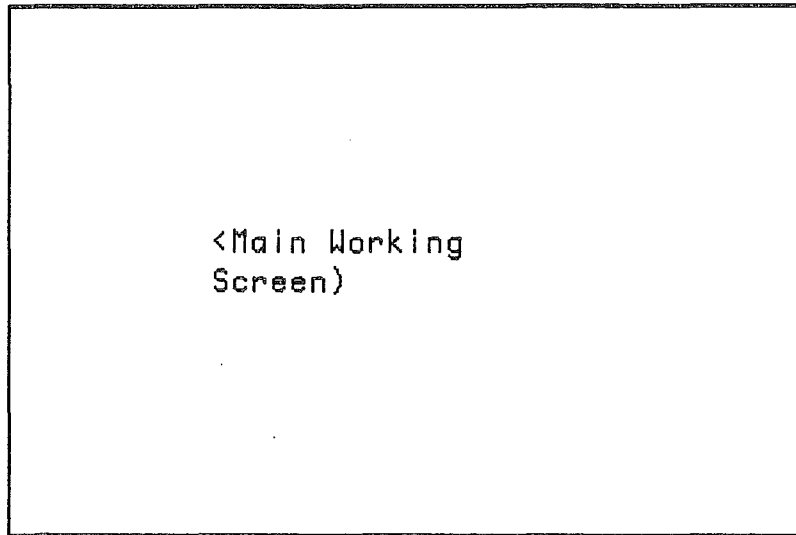
You'll also get comfortable with how The Graphic Exchange operates overall, and how to convert a group of files all at once. With all that to learn, we'd better get going!

Starting The Graphic Exchange

We'll start by assuming your Apple IIGS is turned off, with nothing in the 3.5" startup disk drive. Place the Graphic Exchange disk into your drive, and turn the Apple IIGS computer on. The disk drive will start spinning, and in a little while the startup screen will be displayed. In a few more moments, the main working screen of Graphic Exchange will appear.

There are three main columns of information, with a menu bar of possible operations at the top of the screen.

The first column on the left is a list of all the possible graphic file formats currently supported by Graphic Exchange. This list can be made longer by adding new graphic conversion toolsets to your Graphic Exchange disk (available separately from Roger Wagner Publishing, Inc.) You can also shorten the list by removing file formats that you don't frequently use. This will make Graphic Exchange start up a faster, and make more memory available for the graphic files you're converting. Configuring this list is described later in this manual.

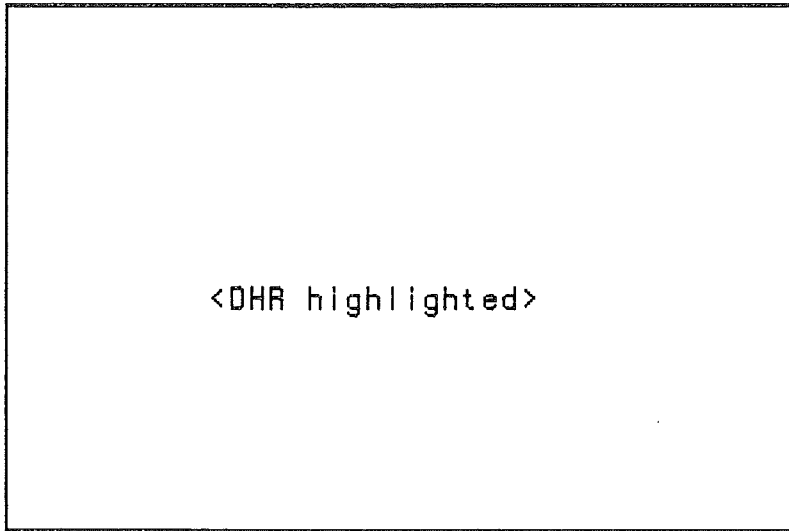


The second column indicates which graphic files to be converted (*original graphics*) you've already loaded. This gives you the option of working with more than one file (of one or more different formats) at the same time.

The third column holds the *destination graphics* files. These can either be existing graphics into which you want to paste a portion of another graphic, or the output from converting existing graphics.

How to Load A Graphic

To load an existing graphic file, you must first tell Graphic Exchange what type of file you're interested in. For this example, let's load a Double Hi-Res color graphic, coincidentally enough, named COLOR, and located on the Graphic Exchange disk.



To indicate the file format, click on the entry titled **Double High Res (col)** in the first column. Now you can load files of this type.

At the top of the screen is a menu bar with an entry titled **File**. This menu is used to load and save files, initialize data disks, and other disk and file operations.

Move the mouse down so that **Open Original** is highlighted, then release the mouse button. When you do this, a new dialog box will appear. Having chosen Double High Res (DHR), only folders, or files that are likely to be DHR are shown in the *Standard File Interface* box that appears. You should see the folder **Sample.Pics**. Click on this to select the folder, then click on the button marked **Open**. You could also just double-click on **Open** as a shortcut.



<File menu here>

In the Sample.Pics folder, there is only one file on the Graphic Exchange disk of the Double Hi-Res type, i.e., COLOR. To load this file, **click on the name COLOR** with the mouse, and then click on Open. A shortcut is to just double-click on the file COLOR.

After just a moment, the graphic COLOR will appear on the screen, showing you which file you've loaded. Click the mouse (or press any key) to return to the main screen.

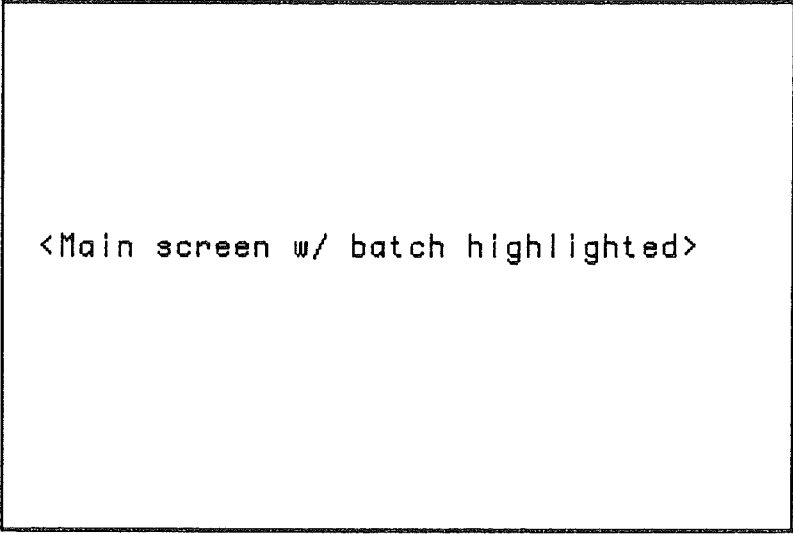
Note: If you wanted to see the graphic again, click on the name COLOR to select that image, then choose **Original Graphic** from the **Display** menu. A faster way is to just double-click on the name COLOR, and the graphic will be re-displayed.

Transferring A Graphic

Now, let's see what's involved in converting the Double Hi-Res graphic to another format. The easiest way is to let Graphic Exchange completely automate the process, using the **Batch Transfer**. We'll try that first.

First, select the graphic to be converted. Click on the file **COLOR** in the Original Graphics column.

Next, select the graphic format to which you want the **COLOR** image converted. Click on **640 Res Screen (dit)**. This is the graphic format used by HyperStudio and AppleWorks GS. The method here is that you are converting a full-screen DHR graphic to a full screen (not *page*, which is taller), Super High Res image. "Dit" refers to the "dithered" colors used in the 640 mode by AppleWorks GS and HyperStudio.



<Main screen w/ batch highlighted>

Finally, choose **Batch** from the **Transfer** menu. Batch is also used to convert a group of files all at once, but in this case we are using it to automate the entire conversion process.

During the conversion, a "thermometer" display will indicate the progress of the conversion. When the conversion is completed, double-click on the image **COLOR** in the third column.

Because the graphic is being expanded from 280 horizontal color pixels to effectively 320, a certain amount of "fringing" takes place during the conversion. This could be touched up in a paint program.

Click the mouse again to return to the main screen.

Saving A Graphic

To save our new Super High Resolution graphic, select the image in the Destination Graphics column you wish to save (**COLOR**). Although the name is the same as the graphic in the second column, the new file is in the 640 SHR mode. Graphics in the *Original* Graphics column cannot be saved back to disk.

Note: To un-select any item on the main screen, you can hold down the Apple key while you click on the item. Use this technique if you accidentally click on the wrong graphic name. Also note that when saving a file, any highlighted entries in the first or second columns are ignored, so don't worry if something is highlighted in these columns in addition to the graphic you intend to save.

Now, choose **Save As** from the **File** menu. The Standard File Interface will appear on the screen, showing the files on the current disk. Insert a disk other than the Graphic Exchange disk, with enough room on it (at least 32K) for the graphic file. Click on the **Disk** button to view other disks.

On the Apple IIGS, there are a variety of file formats used for storing Super Hi-Res pictures. Virtually every graphics program can load the **PNT: Preferred** format, which is a compressed file of the entire picture.

However, depending on which application program you wish to transfer your graphic to, you can select any one of the options offered in the right hand column. A detailed explanation of each of these file formats is given in Appendix B. For now, choose the **PNT: Preferred** format.

Since this is a new graphic image, you'll want to use a new name. Add to the **COLOR** already there to make the new name **COLOR.640**, and click on the **Save** button (or press **Return**). For those cases where you want to entire a completely new name, just press the **Clear** button on the keyboard to erase the default name before entering the new one.

If you do not already have a data disk, click **Cancel**, and see the inset on the next page on how to **Initialize** a disk. After you have a data disk prepared, repeat the steps above to save the new file.

You have now loaded, transferred, and saved a graphic. Congratulations!

Note: For most types of graphics, you will not have to choose a filetype to use when saving the graphic. Instead, the Graphic Exchange will just ask for the filename to use when saving the graphic.

Initializing a Data Disk

For those times when a disk with enough room to save your files is not available, the File menu provides a function for initializing new disks.

When you choose Initialize from the File menu, a list of your current disk devices (but not hard disks) will appear. For example, on most systems the first entry will be ".APPLEDISK3.5A" in slot 5, drive 1, which corresponds to your first 3.5 drive. Click on the drive you wish to use.

Insert the disk to be initialized into the drive you've chosen. If the disk has never been formatted before, click on "Physical Format" to tell Graphic Exchange you want to completely format the disk. If the disk has been used before, and you just want to erase it, leave Physical Format unchecked. Enter the name you wish to use for this disk on the line below the prompt "Volume Name:" Click on "More..." to continue.

If you're just erasing a disk, the next dialog box will confirm the name and capacity of the disk you're about to erase. If you have chosen Physical Format, The dialog box will offer a choice of disk interleave values. Unless you have some specific reason for doing otherwise, you should just click on "Initialize" and accept the default values.

When the process is complete, you will be returned to the main Graphic Exchange screen. You may now use your disk for saving files.

More About The Batch Transfer

The Batch Transfer mode is really at its best when converting a group of files. Let's explore how that works.

First, let's dispose of the COLOR images. Click on both COLOR entries to select them. Then, in the **File** menu, choose **Dispose**. This will free up memory for the next operation.

To load a group of files, first select the graphic mode to be used. For this example, we'll use **High Res 140 (col)**. click on this entry in the first column.

Now, choose **Open Original** from the **File** menu. You'll see two files listed: **Magnetic.Disks** and **The.Raven**.

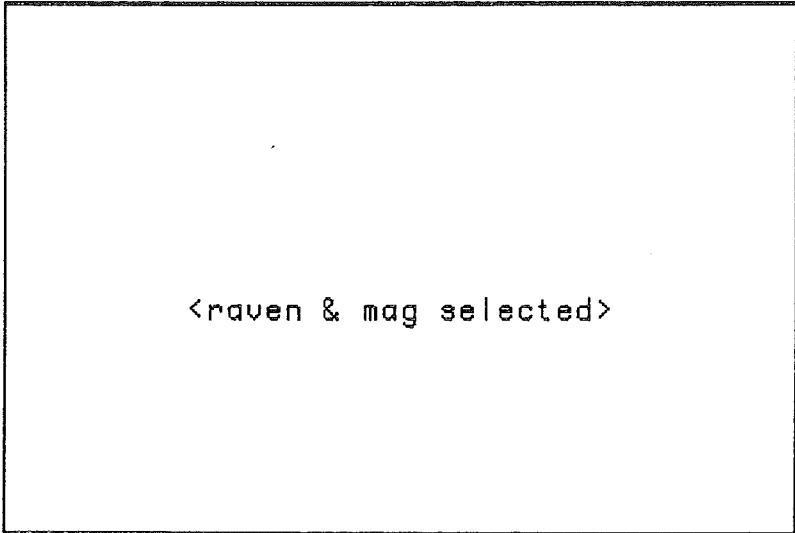
Now's the time to learn about some extended features in this file selection dialog box.

Rule #1: Hold down the shift key while clicking to select a range of names.

First click on the file **Magnetic.Disks**, but do not press **Return** or click on **Open**. Now, hold down the **shift** key while you click on **The.Raven**. You'll notice that all the files from **Magnetic.Disks** to **The.Raven** are selected. This is how you can select an entire group of files to be loaded at once. Since we don't want to load the file **System** or **TGE.Tools**, click once again on the **Magnetic.Disks** file (without holding the **shift** key) to re-select a single file.

Rule #2: Hold down the Apple key while clicking to add names to a list.

Hold down the **Apple** key while you click on **The.Raven**. Notice that only that file is added to the selected group. Try clicking on other files in the directory once, then once again with the **Apple** key. Notice how the files are individually selected. Finish with just **Magnetic.Disks** and **The.Raven** selected, and click on **Accept** (or press **Return**).



```
<raven & mag selected>
```

Note: For those who are used to keyboard equivalents of the dialog box buttons, pressing TAB is equivalent to the Disk button, Apple-O is equivalent to Open, Escape equivalent to Close, and Apple-period equivalent to Cancel.

When you choose Accept, all the selected files will be loaded, with each file displayed as it is brought into memory. Click the mouse (or press a key) after the final picture to return to the main screen.

Converting all these files is done just as before. First, select the files to be converted. To select the group of both Magnetic.Disks and The.Raven, hold down the Apple key while you click on each graphic name.

Having selected the files to be converted, select the destination graphic mode from the first column. Click on **Double High Res (col)** this time. In practice, this can be any of the available graphic formats, and you would choose the format to which you want all the selected graphics converted.

Finally, choose Batch from the Transfer menu. As each image is converted, you'll see the "Graphics Remaining" number count down. When the conversion is complete, click on either image name in the third column to view the result.

Batch Saves

The Graphic Exchange can also save files in a group. To see how this works, first select both the Destination Graphics files.

Now, choose Save As from the File menu. When the dialog box with the disk directory appears, insert a formatted data disk in the 3.5" drive, and click Disk to make that disk the active volume.

You now have the opportunity to enter a new name for the first file saved. Since this is a new disk, you can just click on Save (or press Return) to accept the default. After that file is saved, the dialog box will display the default name for the next file.

Save can also be used in the Batch mode, but you should be aware that it will replace the original files of with the same names in the current directory.

Other Transfer Modes

The Graphic Exchange also has some specialized transfer modes available for even greater flexibility in transferring your pictures.

These are the Standard, Scaled, and Full modes. Before describing them in detail, here's a short overview:

Standard transfer mode: Converts a graphic image pixel for pixel. If the destination graphic mode is of a different resolution, the image will appear to grow or shrink, depending on the size of the pixels in the destination mode. The standard mode is most useful for extracting just part of an image using the mask function, or when converting between High Res 140 (color) and Double High Res (color), which is also 140 pixels horizontally.

Scaled Transfer Mode: In this mode, you determine the physical size of the destination graphic, by scaling the image with the mouse. All or part of the source graphic can be transferred.

Full (Screen) Transfer Mode: In this mode, you do not select a portion of the source graphic to be transferred. Rather, a full-screen conversion is automatically done, and the new graphic fills the screen in the destination mode.

Let's take a look at each mode in some detail.

The Standard Transfer Mode

The first of these is the **Standard** transfer mode, in which the graphic is transferred to the new mode pixel-for-pixel. Before proceeding, dispose of any destination graphics by selecting the images in the third column, and choosing **Dispose** from the **File** menu.

The basic procedure in a standard transfer is to first create a name for your image in the destination graphic column, convert the image, and then save the final graphic.

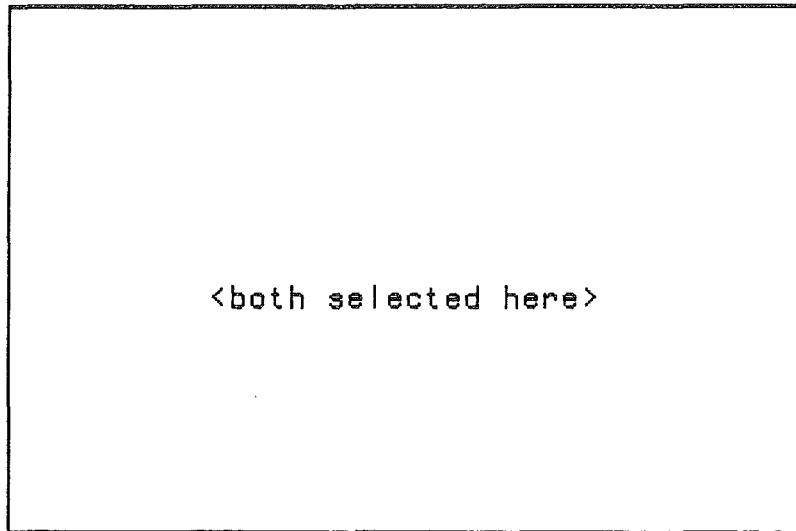
To start this example, first create a destination file in the desired format. To do this now, first choose the format: **Double High Res (col)**.

Next, go to the **File** menu and choose **New Graphic**. A dialog box will appear asking for a name for the new graphic. Enter **DHR.Test** for this example, and press **Return**.

Let's convert the **Raven**, which is a single Hi-Res image, to Double Hi-Res. If it isn't already in memory from the previous exercise on batch transfers, load the file **The.Reven** now as a High Res 140 (col) image. To do this, first select **High Res 140 (col)** in the first column (**Graphics Formats**). Then choose **Open Original** from the **File** menu, and load **The.Raven** from the **Graphic Exchange** disk.

Now you're ready for a transfer. Select the file **The.Raven** in the second column. Then click on **DHR.Test** for the **Destination** graphic. Both images should now be selected.

From the **Transfer** menu, choose **Standard**.

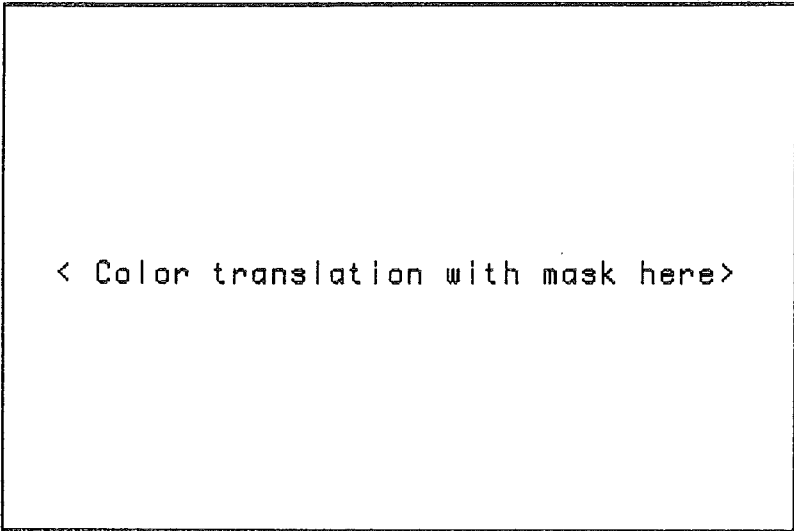


A Color Translation table will now appear. This lets you control exactly which colors will be converted to which final colors in the destination graphic.

Options:

Translation Colors: In the default translation, colors in the Hi-Res image will be transferred to an identical color in the Destination image. However, let's suppose you wanted orange translated to yellow. In the upper window, click on the orange bar. Now click on the yellow bar in the lower window. This will change the translation table for just that color.

Mask: This lets you filter out, or "hold back" one or more colors in the original graphic. Suppose you had a picture of a red airplane on a blue background, and wanted to convert just the airplane image, and not the background color. By first clicking on the blue bar in the upper window, and then clicking on the Mask button, a marker will appear indicating any blue pixels will not be transferred to the destination graphic. Marking more than one mask color can be useful when trying to extract a graphic from a background with a pattern made up of several different colors.



< Color translation with mask here >

When you click on "OK", the original graphic will appear, with the mouse active, and a cross-hair displayed with which you can start the selection of a portion of the graphic. Let's cut out just part of the picture - the bird itself. Move the mouse so that the upper line just clears the bird's head, and the vertical line is a little to the left of its tail.

Now press the mouse button down. Immediately, the selection rectangle is started with the lower-right corner at the bottom of the screen. You might have to move the mouse just a little to make the rectangle appear. While continuing to hold down the mouse button, move the mouse so that the rectangle surrounds the bird. The lower horizontal line should be just below his feet, the right-hand vertical line should be just to the right of his beak. Release the mouse button when the selection is correct.

When you release the mouse button, you'll immediately see a new rectangle on a black screen. You are now looking at your destination graphic. If you were copying onto a graphic that you had loaded as a destination graphic (or had converted earlier), you'd see that image now.

As you move the mouse, you can see the rectangle that represents where the converted image will be placed. Position the rectangle anywhere in the middle of the screen, and click the mouse. The actual conversion will now be done, and the thermometer will indicate the progress.

When the conversion is complete, you'll see the finished screen. Click the mouse to return to the regular menus.

To save the converted image, you would click on DHR.Test to select that image, and then choose **Save As** from the **File** menu.

Another example...

Let's try a conversion to the Super High Resolution screen. Before proceeding, let's free up the memory used by DHR.Test, by clicking on DHR.Test, and then choosing **Dispose** from the file menu. No other graphic names should be selected when you do this. Remember, you can use the Apple-key while clicking the mouse to de-select a name.

Use the mouse to select **320 Res Screen**, in the first column (Graphics Formats). Then, go to the **File** menu, and choose **New Graphic**. Enter the name **SHR.Test** for this example.

To convert **The.Raven** from High Res 140 (col) to 320 Res, just use the mouse to select both **The.Raven** in the Original Graphics column, and **SHR.Test** in the Destination Graphics column. Then, choose **Standard** from the **Transfer** menu.

As before, you'll first see the High Res image of the raven. Select roughly the same area as before: position the mouse so the lines are just above and to the left of the bird, hold down the mouse button, and drag up and to the left until the other lines are just below and to the right of the bird. Release the mouse button to go to the next step.

You will then be shown the Super High Resolution screen, with an empty rectangle drawn on the left hand side of the screen. This rectangle indicates the position, and the final size, of the graphic to be transferred. Move the rectangle to the middle of the screen, and click the mouse button. There will be a moderate pause while the Graphic Exchange converts the graphic from High Res to Super Hi-Res. In a couple of seconds your picture will appear, with all colors preserved.

At this point, you probably have a question: "Why was the destination rectangle, and the converted graphic, smaller than the original?"

The answer has to do with the fact that each graphic mode on the Apple II has a different *resolution*. Resolution refers to the number of pixels, both horizontally and vertically, in each graphic screen. In the High Res picture, there are 140 individual graphic "picture elements" (hence the term "pixels") across each horizontal line, and there are 192 lines from the top to the bottom of the screen. In 320 Super Hi-Res, there are 320 pixels horizontally, so the raven looks a little thinner since a full screen's worth of pixels in High Res (140) is a little less than half a screen at 320.

When you do a **standard transfer**, the graphic is converted to the destination mode on a *pixel-by-pixel* basis. Since the Super Hi-Res graphics mode has 200 lines with 320 pixels on each line, the entire High Res graphic fills less than half the screen from left-to-right, and leaves a total of 8 lines at the bottom unfilled ($200 - 192 = 8$ unused lines).

Note: Although the Double Hi-Res graphics mode on the Apple II is sometimes referred to as being the "560 mode", this is only in the monochrome, or black & white, mode, where color is not displayed. Color in the Double Hi-Res mode is created by grouping each set of four monochrome pixels together. $560 \text{ divided by } 4 = 140$ actual color pixels. The Graphic Exchange supports both the 140 and 560 Double High Res modes.

Does this mean that you cannot convert entire screens? Absolutely not. The Graphic Exchange is set up to give you a wide variety of choices in converting pictures, so that you can always get just the results you want.

What we need is a way to *scale* the graphic as it is being converted, and that's just what the next section covers!

The Scaled Transfer

To see how a scaled transfer works, select the **Raven** and the **SHR.Testnames** again, but this time, choose **Scaled** from the **File** menu.

Again, use the mouse to select just the bird from the raven picture.

This time, you'll notice that when you get to the destination graphic, you've got the cross-hairs of the selection rectangle again. Use the mouse to line up with the upper-right corner of the old raven image converted a little earlier.

Hold the mouse button down, and create a new rectangle that is the same height as the old raven image, but about twice as wide. Release the mouse button to start the conversion.

When the conversion is complete, you'll see that the raven image has been stretched to fill the rectangle you described. It may look a little chunkier than the original image, but that's because you're doubling each of the old pixels into two new ones. When you convert some images from a lower resolution to a higher resolution, there may be some distortion of the image.

Clicking the mouse will return you to the main menu screen of the Graphic Exchange. If you wanted to save your converted image at this point, you would select the name **SHR.Test**, and then choose **Save As** from the **File** menu.

To see how the original graphic can be automatically scaled to an entire screen as it is converted, let's look at the next transfer mode, the **Full Screen Mode**.

The Full Screen Transfer

The **Full Screen Transfer** mode converts an entire screen in one graphic mode to a complete screen in an alternate mode. Using it is easy.

For this example, we'll convert the full-screen image of the raven from **High Res** to **320 Super High Res**. If it isn't already in memory from previous exercises, load the file **The.Raven** now as a **High Res 140 (col)** image. To do this, first select **High Res 140 (col)** in the first column (**Graphics Formats**). Then choose **Open Original** from the **File** menu, and load **The.Raven** from the **Graphic Exchange** disk.

If you have not already created a receiving format, click first on **320 Res Screen** in the first column, and then choose **New Graphic** from the **File** menu. Name the new graphic **SHR.Test**.

Now you're ready for a transfer. Select the file **The.Raven** in the second column. Then click on **SHR.Test** for the **Destination** graphic. Both images should now be selected.

From the Transfer menu, choose Full Mode. The translation table will appear. Click on "OK" to start the transfer. You'll notice that no selection rectangle is necessary since the entire screen will be converted. A thermometer will indicate the progress of the conversion. When the conversion is complete, you'll see the final image. Click the mouse to return to the menu screen.

You would save the image at this point by clicking on the name SHR.Test, and then choosing Save As from the File menu.

Quitting The Graphic Exchange

To quit The Graphic Exchange choose Quit from the File menu (or press Apple-Q). This will return you to whatever program you used to launch the Graphic Exchange, such as the Finder, etc.

Once you have quit The Graphic Exchange, you can run your application program and load your transferred picture into your software.

If you only have one disk drive, and are concerned about having to leave the Graphic Exchange disk in the drive, or having to swap between the Graphic Exchange and your data disk, don't be. Once at the main menu screen of the Graphic Exchange appears, you can remove the program disk, put it in a safe place, and insert your data disk. Once started, the Graphic Exchange program disk is no longer required to be in the disk drive.

Chapter 4: More Menu Choices

This chapter covers the various menu choices in the Graphic Exchange. The previous chapter offered a tutorial on using the main functions of the Graphic Exchange in converting graphics. This chapter will explain the other additional features of the program that you should be aware of.

List Boxes

There are three columns of information, or *list boxes*, on the main menu screen of the Graphic Exchange.

Graphic Formats

The first list box is a list of all the graphic formats currently supported by the Graphic Exchange. Any of the formats listed can be disposed of at any time to make more room for other formats, or the general operation of the Graphic Exchange. To dispose of a graphic format (and free up the memory used by it), select one or more formats in the Graphic Format list, and then choose **Unload Formats** in the **Options** menu.

Formats not currently loaded can also be brought in from disk. To load a new format, choose **Load Formats** from the **Options** menu, and select the new format you wish to load. More than one format can be selected for loading by using the shift- or Apple-key as you click on format names.

Exactly which formats are loaded when you start up the Graphic Exchange can be specified with the **Configure Auto Load...** option under the **Options** menu. This is similar to the Load Formats option, except that this determines which formats are loaded when the Graphic Exchange starts up. As shipped, the Graphic Exchange loads all formats on the disk. However, you may want to shorten this list to remove formats you are not likely to use, or only use infrequently. When you choose Configure Auto Load, you'll see a dialog box with all the available formats highlighted. Use the Apple key while you click on an entry to deselect any formats you do not want loaded at startup. You can also click once with the mouse to deselect everything (except for the name just clicked on), and then use the Apple key while clicking to individually select the formats you want loaded.

Loading and unloading of graphic formats, and the configuration process is also described later in the section on the Options menu.

Each graphic format has a corresponding file in the subdirectory TGE.TOOLS on the Graphic Exchange disk. This subdirectory must be present in the same directory as the TGE.Sys16 file on any disk that you move the Graphic Exchange software to, such as a hard disk.

You can get more information about a graphic format by selecting a single name in the graphic format list, and then choosing **Format Information** in the **Display** menu (or just press Apple-I).

Original Graphics

Graphics in the original list are used as a source for all graphic transfers. Graphics can be loaded into this list, but they cannot be edited, or saved while in this list.

If you want to know what format is associated with a name in the Original Graphics list, just select a single name in the list. You will also have to de-select any entries in the other columns (use the Apple-key while clicking on any additional names). Once a single graphic name has been selected, choose **Format Information** from the **Display** menu (or just press Apple-I).

To remove a graphic item from the Original Graphics list, select one or more names, and choose **Dispose** from the **File** menu (or press Apple-D).

Destination Graphics

Graphics in the destination list are used as a destination for all graphic transfers. With the exception of the Batch mode, there must be a destination graphic available when doing a transfer, so that Graphic Exchange knows what the destination graphic mode will be. You can open a "dummy" destination graphic at any time by choosing a graphic format, and then choosing **New Graphic** from the **File** menu.

You can also load an existing graphic into the Destination Graphics list. This would be useful if you wanted to copy a portion of one graphic image, and paste it into another, even if the two graphics were in different formats.

Graphics can be edited with all options in the edit menu while in the destination list. Graphics *can* be loaded to, saved from, and newly created in the destination list.

If you want to know what format is associated with a name in the Destination Graphics list, just select a single name in the list. You will also have to de-select any entries in the other columns (use the Apple-key while clicking on any additional names). Once a single graphic name has been selected, choose **Format Information** from the **Display** menu (or just press Apple-I).

To remove a graphic item from the Destination Graphics list, select one or more names, and choose **Dispose** from the **File** menu (or press Apple-D).

File Menu

Close

Close is required so desk accessories can work (i.e. so you can close a desk accessory), but is not used by the Graphic Exchange.

Open Original

Loads a graphic of the selected type in the Graphic Formats list box into the Original Graphics list.

You also just press Apple-O after selecting a graphic format. The fastest way to open a new graphic is to simply double-click on a graphic format in the Graphic Formats list box.

In the Load Graphics dialog box you can make multiple selections by holding down the Apple key while clicking with the mouse. You can also hold down the Shift key while clicking the mouse to select an entire range of files.

Open Destination

Enables you to load a graphic file from disk to the Destination Graphics list box. There are no shortcuts. The main use of this option is to enable the use of a graphic that is on the disk as the background to a new graphic.

Once loaded into the Destination Graphics list box you are then able to paste other graphics from the Original Graphics list box onto it, using the Standard or Scaled transfer modes.

Save

Saves a selected graphic in the Destination Graphics list box to the current file, but only if that file has been loaded from disk, or already saved once before using Save As. Save is a fast way of re-saving a file to disk without using a dialog box. Save cannot be used to save Original Graphics, or Destination Graphics files created with the New Graphic menu choice before the new graphic has been saved to disk at least once. Keyboard shortcut is Apple-S.

Save As

When this is chosen, a dialog box, called the standard file interface, will appear. This lets you select the disk and subdirectory into which your file will be saved, and to give a name to your file. For some graphic types, it will also give you some different options as to exactly how you want the file saved.

To save a graphic, you first select a name in the Destination Graphic list box. Then choose Save As from the File menu. A list of files on the currently active disk drive will appear. If you want to save your graphic on that disk, enter a name, and click on the Save button. If you want to save the file in a different location, click on the Disk button to move to another disk.

On any given disk, a folder can be opened by clicking on the folder name (indicated by a small picture of a folder to the left of the filename), and clicking on the button marked Open.

If you wish to create a new folder in which to put your graphics files, first enter the name for your folder, and click on the button labeled "New Folder". A new folder will then be created on your disk, and will show up in the file list on the screen, although you may have to scroll up or down to see it. Once you've created the folder, enter the actual name you want to use for the graphic file to be saved, and then click on Save.

For certain graphic formats, there are a number of different ways the file can be saved to disk. The most common way will always be shown as the default. Do not change the setting if you do not have a specific reason for using an alternative file format.

New Graphic

This creates a new Destination Graphic of the selected format in the Graphic Formats list box. A dialog box will appear which allows you to enter a name for the graphic. You can also press Apple-N having previously selected a single graphic format.

Dispose

This disposes of any graphics that have been selected in the Original Graphics or Destination Graphics list box. This frees up memory for other operations, and should be done if you are finished with a given graphic. If the graphic has been changed, a warning dialog box will appear (this sort of warning can be configured under the Options menu). The keyboard shortcut is Apple-D.

Slide Show

This will automatically display all the graphics of a single format located on a disk. It's an easy way to see all the graphics you have on a disk. Before choosing this option, you must have selected a single Graphic Format in the first column. When this option is selected, a standard file interface dialog box will appear enabling you to select the directory that contains the graphics that make up the slide show. All sub-directories within the selected directory can also be scanned if you select the Show Subdirectories option within the dialog box.

You are also able to select the option to make a continuous slide show until the Escape key is pressed.

The option to retain graphics in memory keeps all the graphics in the slide show in the Original Graphics list box, up to memory capacity of the GS.

Initialize Disk

This option is provided so that you can format blank disks, or erase disks with existing files, right from within the Graphic Exchange.

The first dialog box to appear enables you to select the device to be formatted, and whether you want to have a physical format done. You also enter the volume name for the initialized device.

If you are using a disk that has never been used before, click on "Physical format". If the disk has been used before, and you want to erase *all the files* that are presently on that disk, you can proceed without checking "Physical format".

Having selected the device a second dialog box appears enabling you to select the operating system. The range of operating systems you have to choose from is determined by the range of *File System Translators* (FST's) you have installed. Unless you have a specific reason for choosing otherwise, you will format your disks as ProDOS 800K disks.

If you have selected "Physical format" earlier, you'll also be offered a choice of *interleave values* for the disk. The best value will generally be shown as the default choice. If you have the grey 3.5" drives, 2:1 is the best value. If you are using the older white 3.5" drives, 4:1 is the recommended value.

Quit

This exits the Graphic Exchange, giving a warning about modified graphics that you have not saved. It will then return you to the Finder, or whatever other program selector you used to launch the Graphic Exchange. The keyboard shortcut is Apple-Q.

Edit Menu

Undo

This undoes the last change to the Destination Graphic. If the graphic buffer exceeds 128K, then changes cannot be undone. Currently none of the Graphic Formats exceed 128 K, but this may change in the future. The keyboard shortcut is Apple-Z.

Cut, Copy and Paste are not used by TGE, but are there for use within Desk Accessories.

Clear

This clears the currently selected Destination Graphic to its default state. For most graphics, this will be a black background. For Mac and Print Shop graphics, it will be a white background. The default state is not configurable.

Invert

This exchanges black and white on the currently selected Destination Graphic, leaving color unchanged. The Destination Graphic will appear, giving you the option to select the rectangular area to be inverted. You first select the top left hand corner and then drag the rectangle to the desired size.

Paint

This lets you to do "touch ups" on a Destination Graphic. This option is not meant to replace full-featured paint programs, but enables you to do simple color editing. Its main expected use is for Icon editing and Print Shop graphics.

The Paint dialog box lets you select the brush size and any of the colors associated with the selected Destination Graphic. The selected graphic is then automatically displayed for you to edit. Press the Escape key to return to the main screen. The keyboard shortcut is Apple-P.

Custom

This is a special option that allows editing that is specific to a graphic format. The only Graphic Format supported by this option at present is the Icon Graphic Format. For icons, Custom lets you set the filename, filetype and auxatype that that icon be linked to by the Finder. You can also specify what application will be launched by the Finder if the user clicks on the icon you're created with this function.

For example, if you wanted to create a graphic icon for Print Shop graphics, and which in addition, would automatically launch the Graphic Exchange if someone clicked on it, you would enter the following parameters using the "Custom" option before saving the graphic file to disk.

File name: *

"*" means any name. If you wanted only files that ended in ".DHR" for example, you would use "*.DHR"

Filetype: \$0006

Auxatype: \$7800

This is the filetype and auxatype that is specific to the original print shop graphics.

Application pathname: /TGE.Disk/TGE.Sys16

This will depend on where you have stored the program Graphic Exchange. Typically, icons are set up in such a way that they are linked to a startup disk with no specific name, although the application is placed in a specified directory on the startup disk. For example, if you had put the Graphic Exchange on your hard disk in a directory named TGE, the application path for the icon would be: */TGE/TGE.Sys16

In this case, the asterisk stands for any startup disk.

You may want to load the icon files that came with other applications into the Graphic Exchange, and examine how they are set up using the Custom option. Remember to load the icons as a Destination Graphic if you want to use the Custom feature.

Display Menu

Memory Available

This displays a dialog box with a report about the memory usage in your computer at that moment. The entries are as follows:

Total Memory: This indicates the total RAM memory in your computer. In older ROM 01 machines, the value is likely to be 1???K (1000K is 1 Megabyte). In newer ROM 03 machines, the value is likely to be ???K. If you have expanded the memory in your computer with additional RAM, the value will be higher.

Free Memory: This value indicates the total amount of memory currently unused in the computer. However, more memory might be available if a certain amount of "housekeeping" were done. That larger value is indicated by the next value,

Real Free Memory: By freeing up parts of memory that are occupied by portions of the Graphic Exchange that were used earlier, but are not actually being used at that instant, more memory can be made available. This is the "Real Free Memory" value.

Largest Block: This value indicate how much memory is available in one continuous chunk. Although, for example, you might have 100K of RAM free, it would not help you if there weren't 32K of continuous memory available to load a given Super High Res graphic.

The available memory dialog box is provided mostly to give you a little insight into how your computer works, and to provide a clue in the event you should get a "not enough memory available" error message while trying to do something in the Graphic Exchange.

If you should get an error message like this, look at the available memory report, and consider the following options:

- 1) If it appears you have enough Free Memory to load a particular graphic, but the Largest Block is too small, try quitting the Graphic Exchange and restarting your computer. Many times this will be sufficient to "clean up" memory enough to do what you want.



2) You may also want to try Disposing of any unnecessary graphic format and graphic files you have loaded. This will free up memory for other uses.

3) Using the Finder, or other utility, you may want to disable desk accessories in the Desk Accessory folder on your startup disk. The Graphic Exchange disk as shipped has no desk accessories other than the Control Panel, so this is not an option if you are starting up on that disk.

Format Information

This brings up a dialog box that gives detailed technical information about a single selected Graphic Format. This also lists a few of the programs that support a given graphic mode. The keyboard shortcut is Apple-I.

Original Graphic

This displays the selected graphic in the Original Graphics list box. If there is more than one graphic selected, you are able to step through the displays by keypress or mouse click. You can also double-click on a graphic in the Original Graphic list box to display it.

Destination Graphic

This displays the selected graphic in the Destination Graphics list box. If there are multiple selected graphics, you can step through the displays by keypress or mouse click. You can also double-click on a graphic in the Destination Graphic list box to display it.

Transfer Menu

Standard

In order to use this option there must be one Original and one Destination graphic selected. When Standard Transfer is chosen, a color translation dialog box will appear. A default color translation is presented, but you are able to reassign any color translation using any of the Destination Colors. The selected Current Translation can be changed by selecting a different Destination Color.

You are also able to *mask out* any selected colors on the Current Translation table. Those masked colors will not be transferred.

When you click on "OK" in the translation dialog box, the Original Graphic is then displayed. The mouse is used select the area to be transferred, after which the Destination Graphic is displayed, and you are able to position the graphic wherever you wish on the Destination Graphic. The keyboard shortcut is Apple-T.

Note that for graphic formats that are larger than the Apple screen, the mouse is first used to scroll the image up or down so that the part you want to work with is in view. Click the mouse when the image is properly positioned. At that point, the mouse will be used as before to select a portion of the screen, or to position the transferred graphic.

Scaled

This lets you scale a graphic as it is being converted to a new format. In order to use this option there must be one Original and one Destination graphic selected. When Scaled Transfer is chosen, a color translation dialog box will appear. A default color translation is presented, but you are able to reassign any color translation using any of the Destination Colors. The selected Current Translation can be changed by selecting a different Destination Color.

You are also able to *mask out* any selected colors on the Current Translation table. Those masked colors will not be transferred. When you click on "OK" in the translation dialog box, the Original Graphic is then displayed. The mouse is used select the area to be transferred, after which the Destination Graphic is displayed, and you are able to position *and size* the graphic wherever you wish on the Destination Graphic.

Note that for graphic formats that are larger than the Apple screen, the mouse is first used to scroll the image up or down so that the part you want to work with is in view. Click the mouse when the image is properly positioned. At that point, the mouse will be used as before to select a portion of the screen, or to position the transferred graphic.

Full Mode

This transfers an entire screen from one graphic mode to another. To use this option there must be one Original and one Destination graphics selected. When the Full Translation is chosen, a color translation dialog box will appear. A default color translation is presented, but you are able to reassign any color translation using any of the Destination Colors. The selected Current Translation can be changed by selecting a different Destination Color.

You are also able to *mask out* any selected colors on the Current Translation table. Those masked colors will not be transferred. The translation takes a short time, after which the Destination Graphic will be displayed. The Keyboard shortcut is Apple-F.

Batch

This transfer mode converts a group of selected Original Graphics to corresponding Destination Graphics in whatever Graphic Format is currently selected. This is the only transfer method where it is not necessary to create a "receiving" Destination Graphic before doing the conversion. For each of the Original Graphics selected a corresponding Destination Graphic will be created in the selected format, with the same name as the Original.

During the batch transfer a dialog box will display the progress. The dialog box allows the option to abort the transfer at any stage. Batch always uses the default color translation. The keyboard shortcut is Apple-B.

If Save is chosen after a batch transfer, the original files on disk will be replaced with the converted files. If you want to use new names, select all the Destination Graphics to be saved, and choose Save As.

Options Menu

The Options menu contains various customizable features of the Graphic Exchange. These include control of warning messages, how the graphic names are displayed, and which graphic format conversion tools are loaded when the Graphic Exchange is started up.

Adjust Color Translation

If this option is not checked, then the default color translation is always used in the Standard, Scaled and Full mode translations. This means the translation color table dialog box will not appear when you choose any of the translations.

Sort Original & Destination Graphics

When these items are checked, the Graphic Exchange automatically alphabetizes names as they are added to either the Original or Destination Graphic list boxes. By choosing either of these menu items, the check mark is "toggled", that is, switches back and forth between being marked or not. When either item is not checked, names in the respective list box will be listed in the order loaded, and will not be alphabetized.

Destructive Warnings

Normally, the Graphic Exchange will display a dialog box warning you when you are about to do something that will change or dispose of a graphic that cannot be undone. If you are working with a lot of graphics, however, you may wish to turn off these dialog boxes. If this option is not checked, then the Graphic Exchange will not give warnings before a Destination Graphic is lost through the Dispose or Quit option, or before overwriting existing files in the list box.

Configure Auto Load

As the program is shipped, the Graphic Exchange loads all the available graphic translation tools on the disk. This is so that you will know what is available. However, each translator takes up memory, and there are some translators, such as the Double Low Res format, that you are unlikely to use very often.

The first list box is a list of all the graphic formats currently loaded by the Graphic Exchange. Any of the formats listed can be disposed of at any time to make more room for other formats, or the general operation of the Graphic Exchange. To dispose of a graphic format (and free up the memory used by it), select one or more formats in the Graphic Format list, and then choose **Unload Formats** in the **Options** menu.

Exactly which formats are loaded when you start up the Graphic Exchange can be specified with the **Configure Auto Load...** option under the **Options** menu. This is similar to the Load Formats option, except that this determines which formats are loaded when the Graphic Exchange starts up.

When you choose Configure Auto Load, you'll see a dialog box with all the available formats highlighted. Use the Apple key while you click on an entry to deselect any formats you do not want loaded at startup. You can also click once with the mouse to deselect everything (except for the name just clicked on), and then use the Apple key while clicking to individually select the formats you want loaded. Click on the Accept button to install the changes.

Load Formats

Formats not currently loaded can also be brought in from disk. To load a new format, choose **Load Formats** from the **Options** menu, and select the new format you wish to load. More than one format can be selected for loading by using the shift- or Apple-key as you click on format names. The keyboard shortcut is Apple-L.

Unload Formats

Currently selected Graphic Formats in the Graphic Formats list box are removed. You are not able to unload a graphic format if graphics of that format are listed in the Original Graphics or Destination Graphics list boxes. The keyboard shortcut is Apple-U.

Chapter 5: Graphic Modes

Although the Apple II family of computers boasts an enormous range of graphics modes, each type is very different. The actual resolution in any given mode is even affected by the amount of color used, as is evident in Double High Resolution where the 560 x 192 accuracy is sacrificed for the sixteen colors of 140 x 192!

The Graphic Exchange allows you to take advantage of the various modes, and transfer graphics easily from mode to mode. Color is maintained wherever physically possible across modes.

The standard Apple II colors used are:

Black, Magenta, Brown, Orange, Dark Green, Gray 1, Green, Yellow, Dark Blue, Purple, Gray 2, Pink, Blue, Light Blue, Aqua, White.

Graphic Modes Supported

The following is a brief summary of the currently supported Graphic Exchange formats. Others may be added to the disk from time to time. For information on any new formats, you can always load the format, select it in the Graphics Formats list box, and then choose Format Information from the Display menu.

Low Resolution

Resolution: 40 horizontal x 40 vertical.

Colors: 16 standard colors

Programs that use this:

Applesoft BASIC, Roger's Easel, Triple Dump, The Printographer.

Double Low Resolution

Resolution: 80 horizontal x 40 vertical.

Colors: 16 standard colors

Programs that use this:

Triple Dump

High Resolution 140 (col)

Resolution: 140 horizontal x 192 vertical.

Colors: Black, Purple, Green, Blue, Orange, White.

Programs tht use this:

Applesoft BASIC, Triple Dump, The Printographer, Fantavision, Print Shop Companion, Print Shop 3.0, Chart 'n Graph Toolbox, LOGO, MousePaint, Blazing Paddles, 8/16 Paint (std. mode), HyperScreen.

Notes: This is generally the best mode to use for loading a normal High Resolution graphic as your Original Graphic for subsequent conversion.

When converting Double High Res and Super High Res graphics to normal High Resolution, the 16 standard colors are mapped onto the 6 normal High Resolution colors using the following table:

Black	->	Black
Magenta	->	Purple
Brown	->	Orange
Orange	->	Orange
Dark Green	->	Green
Gray 1	->	Black
Green	->	Green
Yellow	->	Orange
Dark Blue	->	Blue
Purple	->	Purple
Gray 2	->	White
Pink	->	Purple
Blue	->	Blue
Light Blue	->	Blue
Aqua	->	Green
White	->	White

Some color loss can be expected when transferring from a higher resolution mode to the normal High resolution graphic mode.

High Resolution 280 (color)

Resolution: 280 horizontal x 192 vertical.

Colors: Black, Purple, Green, Blue, Orange, White.

Programs that use this:

Applesoft BASIC, Triple Dump, The Printographer, Print Shop Companion, Fantavision, Print Shop 3.0, Chart 'n Graph Toolbox, MousePaint, Blazing Paddles, 8/16 Paint (std. mode), HyperScreen, LOGO.

Notes: Transfers from this mode may appear 'striped' on the destination screen (try the Normal High Resolution 140 for better results). This is the best mode to use as a destination mode when transferring color pictures from Super Hi-Res to normal Hi-Res. Uses the same color translation table as Normal High Resolution Color (140 x 192).

High Resolution 280 (Mon)

Resolution: 280 horizontal x 192 vertical.

Colors: Black, White.

Programs that use this:

Applesoft BASIC, Triple Dump, The Printographer, Print Shop Companion, Fantavision, Print Shop 3.0, Chart 'n Graph Toolbox, MousePaint, Blazing Paddles, 8/16 Paint (std. mode), HyperScreen, LOGO, ComputerEyes, LightningScan, ThunderScan, Quickie.

Notes: During transfer all non-blacks are plotted as white. The main use for this mode is as an Original Graphic mode when you want to strip out color pixels.

Double High Resolution (col)

Resolution: 140 horizontal x 192 vertical.
Colors: 16 standard colors

Programs that use this:

Triple Dump, The Printographer, Animate, Dazzle Draw, Chart 'n Graph Toolbox, Medley, PublishIt!, Blazing Paddles, 8/16 Paint (DHR mode), TutorTech, ComputerEyes, LightningScan, ThunderScan, Quickie.

Notes: When viewing this mode, the display type on the control panel is automatically set to color.

Double High Resolution (Mon)

Resolution: 560 horizontal x 192 vertical.
Colors: Black and white.

Programs that use this:

Triple Dump, The Printographer, Animate, Dazzle Draw, Chart 'n Graph Toolbox, Medley, PublishIt!, Blazing Paddles, 8/16 Paint (DHR mode), TutorTech, ComputerEyes, LightningScan, ThunderScan, Quickie.

Notes: When viewing this mode, the display type on the control panel is automatically set to monochrome. All colors except black are considered white during transfer to the Double High Resolution mode.

320 Resolution Screen (Super High Resolution)

Resolution: 320 horizontal x 200 vertical.
Colors: 16 standard colors

Programs that use this:

PaintWorks Plus, PaintWorks Gold, Deluxe Paint II, Print Shop GS, Show Off, Fantavision GS, 8/16 Paint (320 mode), ComputerEyes, LightningScan, ThunderScan, Quickie.

Notes: This resolution is achieved using the Super High Resolution mode (320 horizontal x 200 vertical). Any standard Super High Resolution graphic screen can be loaded into this mode. Areas transferred from the normal High Resolution and Double High Resolution mode (140 x 192) to the Super High Resolution mode (160 x 200) will remain approximately the same size. The color palette can be changed by loading a graphic screen with the desired palette.

320 Resolution Page (Super High Resolution)

Resolution: 320 horizontal x 394 vertical.
Colors: 16 standard colors

Programs that use this:

PaintWorks Plus, PaintWorks Gold, Deluxe Paint II, Print Shop GS, Show Off, Fantavision GS, 8/16 Paint (320 mode), ComputerEyes, LightningScan, ThunderScan, Quickie.

Notes: The difference between this and the "screen" mode is that this accommodates page-size graphics created by many paint programs. The "screen" modes are more appropriate when literally converting a screen from one mode to another.

640 High Resolution Screen (dit)

Resolution: 320 horizontal x 200 vertical.
Colors: 16 standard colors (dithered)

Programs that use this:

HyperStudio, AppleWorks GS, PaintWorks Gold, Deluxe Paint II, Print Shop GS, 8/16 Paint (640 mode), ComputerEyes, LightningScan, ThunderScan, Quickie.

Notes: The palette consists of 16 dithered colors corresponding to the standard colors. The process of obtaining 16 colors on the 640 x 200 Super Hi-Res display is outlined in the Apple IIGS hardware reference manual. Transfers from or to this mode will only preserve the color when the standard palette is used.

640 High Resolution Page (dit)

Resolution: 320 horizontal x 394 vertical.
Colors: 16 standard colors (dithered)

Programs that use this:

HyperStudio, AppleWorks GS, PaintWorks Gold, Deluxe Paint II, Print Shop GS, 8/16 Paint (640 mode), ComputerEyes, LightningScan, ThunderScan, Quickie.

640 High Resolution Screen (col)

Resolution: 320 horizontal x 200 vertical.
Colors: 4 colors

Programs that use this:

HyperStudio, AppleWorks GS, PaintWorks Gold, Deluxe Paint II, Print Shop GS, 8/16 Paint (640 mode), ComputerEyes, LightningScan, ThunderScan, Quickie.

640 High Resolution Page (col)

Resolution: 320 horizontal x 394 vertical.
Colors: 4 colors

Programs that use this:

HyperStudio, AppleWorks GS, PaintWorks Gold, Deluxe Paint II, Print Shop GS, 8/16 Paint (640 mode), ComputerEyes, LightningScan, ThunderScan, Quickie.

Print Shop Graphic

Resolution: 88 horizontal x 52 vertical.

Colors: Black and White.

Notes: Print Shop is a popular printing program for which a large number of graphics are available. Print Shop graphics are sized so that they will appear correctly scaled when transferred to the Super High Resolution modes (320 x 200 and 640 x 200), the Double High Resolution (560 x 192) mode and the Newsroom clip art mode. When transferred to other graphic modes correct scaling may be lost.

Print Shop Graphics GS

Resolution: 88 horizontal x 52 vertical.

Colors: 16 standard colors

Notes: Print Shop GS is a new version of the popular printing program. For consistency, the following color translation table is used:

Black	->	Black
Magenta	->	Red
Brown	->	Orange
Orange	->	Orange
Dark Green	->	Green
Gray 1	->	Black
Green	->	Green
Yellow	->	Yellow
Dark Blue	->	Blue
Purple	->	Purple
Gray2	->	White
Pink	->	Purple
Mid Blue	->	Blue
Light Blue	->	Blue
Aqua	->	Green
White	->	White

Quickdraw Icon (col)

Resolution: 88 horizontal x 52 vertical.
Colors: 16 standard colors (dithered)

Notes: The display for a Quickdraw icon will show the graphic, its mask, and four views of the graphic - normal, inverted, highlighted and greyed. The shape of the icon mask can be controlled by masking out colors and is automatically created during transfer. The four views will show the actual size of the icon, as it would appear with different kinds of highlighting.

MacPaint Screen (Mono)

Resolution: 576 horizontal x 342 vertical.
Colors: Black and white

Notes: You cannot read or write directly to a Macintosh disk, but you can write to an Appleshare network to interchange a MacPaint graphic between GS and Macintosh computers, or use the Apple File Exchange to move a file to and from Macintosh disks.

MacPaint Document (mono)

Resolution: 576 horizontal x 720 vertical.
Colors: Black and white.

Notes: The MacPaint document is 576 pixels across by 720 lines high. A corresponding mode is not available on the Apple IIGS. This means that MacPaint documents must be displayed on the 640 x 200 mono Super Hi-Res screen. Only 200 of the 720 lines can be displayed at any one time. The area to be displayed is controlled by the scroll bar on the right hand side of the screen. Both the mouse and the arrow keys can move the scroll bar. The screen is not redrawn until you click the mouse or press the Return key. If you click on the mouse or press return without moving the scroll bar, you will be returned to the Main Menu.

Unrestricted 320 RGB

Resolution: 245 horizontal x 192 vertical.

Colors: 256 colors (16 unique per any given screen line).

Each pixel is stored as a full 12 bit RGB value. During display the Graphic Exchange automatically calculates the best possible 16 palettes and up to 256 colors to be used for display. This enables the simultaneous display of different color palettes.

Newsroom Clip Art (See Appendix A on TGE Version 3.6)

Resolution: 245 horizontal x 192 vertical.

Colors: Black and white.

Notes: A older version of the Graphic Exchange is included on the program disk that can read DOS 3.3 disks with Print Shop and Newsroom graphics. Use this to convert the raphics to one of the mode supported by the GSOS version of the Graphic Exchange (the one this manual describes), and then further convert the graphic as necessary.

Newsroom is a popular desktop publishing type of program for which a large number of graphics are available. Newsroom disks use a custom operating system which has been duplicated by the Graphics Exchange enabling users to load from and save to Newsroom clip art disks. All colors except black are considered white during transfer to Newsroom clip art mode. Newsroom graphics are sized so that they will appear correctly scaled when transferred to the Super High Resolution modes (320 x 200 and 640 x 200), the Double High Resolution (560 x 192) mode and the Newsroom clip art mode. When transferred to other graphic modes correct scaling may be lost.

Newsroom Photo Mono (See Appendix A on TGE Version 3.6)

Resolution: 231 horizontal x 168 vertical.

Colors: Black and white.

Notes: Newsroom photos are rectangular images of various sizes. The resolution shown above is only the maximum size. When an area is transferred to this mode, the Graphics Exchange automatically keeps track of the transfer so that when the picture is saved, only the transfer area is saved to disk.

Appendix A: Special Uses for Version 3.6

It's unusual to find an older version of a computer program included with the new version, but we've done just that with the Graphic Exchange for some very specific reasons. In upgrading the Graphic Exchange to work as a true GSOS program, we have had to give up a few features that were present in the old software, specifically:

- Ability to directly read DOS 3.3 and Macintosh disks.
- Ability to store as a workspace in SoftSwitch.

At some point in the future, Apple Computer may add the ability to GSOS to read both DOS 3.3 and Macintosh disks, but in the meantime, you can use the older version (3.6) of the Graphic Exchange should you need to directly read a DOS 3.3 Print Shop or Newsroom disk, or a Macintosh disk with a MacPaint file.

Once a graphic has been loaded from a DOS 3.3 or Mac disk, you can save it with the 3.6 version of the Graphic Exchange, quit that program, and then load it back into memory with the newer version of the Graphic Exchange provided in this package.

In regards to SoftSwitch: SoftSwitch is another software program from Roger Wagner Publishing, Inc., that lets you have up to nine different ProDOS 8 or DOS 3.3 programs in your computer at the same time, and to instantly switch between them. In addition, it can copy graphics from the Graphic Exchange (version 3.6) in one of the workspaces, and paste these graphics directly into other programs in the other workspaces. If you have the SoftSwitch software, see that manual for specific details.

Following is a tutorial taken from the original Graphic Exchange manual that will explain enough about how to use the older version to let you load the necessary graphics from a Print Shop or Newsroom data disk (DOS 3.3) or a Mac disk. Although there are many other features in the older version, they are not documented here, since this additional software is provided solely to perform the specific functions not addressed by the newer version. However, you'll find the older version similar enough to the new version, that with a little experimentation, you're likely to be able to use any of the features of version 3.6 while you're in that program.

Mini-Tutorial

This tutorial begins by leading you through the transfer of a Double High Resolution graphic to the Apple IIGS Super High Resolution mode. This is exactly the process you might use later to transfer pictures created by any of the Apple IIe Double High Resolution paint programs like Dazzle Draw or Blazing Paddles.

Starting The Graphic Exchange

Normally, when you start up the Graphic Exchange, it goes directly to the GSOS version of the program on the disk. However, an optional feature has been built into the disk. If you hold down the option key while the disk is starting up, the ProDOS 8 version (3.6) of the Graphic Exchange will be started up.

We'll start by assuming your Apple IIGS is turned off, with nothing in the 3.5" startup disk drive. Place the Graphic Exchange disk into your drive, and turn the Apple IIGS computer on. Hold down the Option key while the "thermometer" advances across the screen. After a while, you'll see the Graphic Exchange title screen for version 3.6.

Throughout this program, the lower left corner of the screen provides helpful prompts like this "Use arrows or mouse to select," or "Press any key to continue," etc. In the case of the title screen, the first prompt is "Press any key to continue." Press the spacebar or Return key now. This takes you to the Main Menu of the Graphic Exchange.

Display graphic is highlighted. In the top right hand corner of the screen, is a message that always tells you what pressing the Escape key does. Throughout the Graphic Exchange, the Escape key is used to "back out" of the current operation, and return to a previous level. In this case, the display shows that pressing the Escape key can be used to quit the Graphic Exchange, and return to the program selector, if any, that you are using.

Note: A *program selector* is a program launching utility such as the Finder, DeskTop, ProSel, or any other similar program.

The Graphic Exchange Copyright (C) 1988 Techflow Pty, Ltd. Esc : Quit

USER MENU

Standard transfer
Scaled transfer
Full screen transfer
Exchange black and white
Clear graphic
Restore standard palette
Set background color
Undo last change

Catalog
Load graphic
Save graphic
Slide show
Create data disk

Use arrows or mouse to select

Background color : None

Pressing Return or the mouse button will select the inversed choice. Pressing the up or down arrows, or moving the mouse in the corresponding direction, will cause the inversed choice to change.

Try using the up- and down-arrow keys, and the mouse, to move the highlighted bar up and down on the screen. Do not choose anything yet.

How to Load A Graphic

Move the mouse down so that **Load graphic** is highlighted, then click the mouse button. When you do this the sub-menu will be displayed as shown below:

Note: you can also use the arrow keys and Return to select any menu item. These instructions, will for the most part, refer to using the mouse to select an item, but you can use either the keyboard or the mouse, depending on which you prefer.

The list of graphics types that you see on the right hand of the screen are all the various graphics types that the Graphic Exchange can load, save and manipulate. You'll even notice at the bottom of the list that the Graphic Exchange can even read Macintosh disks, and load MacPaint files.

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Display graphic	Normal lo-res / Col / 40 x 40
Standard transfer	Double lo-res / Col / 80 x 40
Scaled transfer	Normal hi-res / Col / 140 x 192
Full screen transfer	Normal hi-res / Col / 280 x 192
Exchange black and white	Normal hi-res / Mon / 280 x 192
Clear graphic	Double hi-res / Col / 140 x 192
Restore standard palette	Double hi-res / Mon / 560 x 192
Set background color	320 super-res / Col / 320 x 200
Undo last change	640 super-res / Col / 320 x 200
	640 super-res / Mon / 640 x 200
Catalog	Print Shop / Mon / 88 x 52
Load graphic	Print Shop GS / Col / 88 x 52
Save graphic	Newsroom clip / Mon / 245 x 192
Slide show	Newsroom photo/ Mon / 231 x 168
Create data disk	Macpaint doc / Mon / 576 x 720

Select graphics mode to load

Background color : None

Move the mouse now, and the highlight bar on the right column follows your every motion. Highlight **Print Shop**, and click the mouse button. The following screen will appear:

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Current prefix	Volume name	Slot	Drive
/TGE	/RAM	3	2
	/HARD1	7	1
Review online volumes	/HARD2	7	2
	/TGE	5	1
Current subdirectories			
SAMPLE.PICS			

Select volume or prefix

Background color : None

The screen shown above displays the current prefix in inverse, and a list of the available drives by name in the right column. Just by clicking on one of

the other devices, you can select it to be the new prefix. If the disk you want isn't there, you can put a disk in a drive, and then click on **Review online volumes**. The Graphic Exchange will then re-scan all the disk drives, and then display the name of the new disk.

Important: If you had not already placed a disk with your graphics in the drive (including DOS 3.3 or Mac disks) when you started up the Graphic Exchange, "Review Online Volumes" should be done when you put a new disk in the drive.

Insert a Print Shop data disk with some graphics on it (sorry, but Graphic Exchange cannot read the original copy-protected Print Shop disk itself), and choose Review Online Volumes. You'll see a new entry in the disk device column labeled DOS.3.3.

Use the mouse to move the highlight the DOS 3.3 name, and then click the mouse. The DOS 3.3 Print Shop disk now becomes the current prefix, and is highlighted.

Be sure that **DOS.3.3**, under the phrase "Current Prefix" on the left side of the screen, is highlighted and click the mouse. A list of all the Print Shop graphics on that disk should then appear.

You can now use the mouse or the up- and down-arrow keys to select a graphic to load. Click the mouse (or press Return) when the graphic you want has been selected. The graphic will be loaded and displayed. Click the mouse to return to the main menu.

To view the picture again, you can highlight **Display graphic**, and click the mouse button (or press Return). When you do, you'll see the display on the following page.

The checkmark next to the Print Shop entry indicates that a picture of this type is now currently in memory. The Graphic Exchange will allow you to load one of each type of possible graphic format, provided you have sufficient memory in your computer.

The Graphic Exchange Copyright (C) 1988 Techflow Pty, Ltd. Esc : Main menu

<u>U</u> se <u>E</u> scape to go back to main menu	<u>N</u> ormal lo-res / Col / 80 x 40
Standard transfer	Double lo-res / Col / 80 x 40
Scaled transfer	Normal hi-res / Col / 140 x 192
Full screen transfer	Normal hi-res / Col / 280 x 192
Exchange black and white	Normal hi-res / Mon / 280 x 192
Clear graphic	✓ Double hi-res / Col / 140 x 192
Restore standard palette	Double hi-res / Mon / 560 x 192
Set background color	320 super-res / Col / 320 x 200
Undo last change	640 super-res / Col / 320 x 200
	640 super-res / Mon / 640 x 200
Catalog	Print Shop / Mon / 88 x 52
Load graphic	Print Shop GS / Col / 88 x 52
Save graphic	Newsroom clip / Mon / 245 x 192
Slide show	Newsroom photo / Mon / 231 x 168
Create data disk	Macpaint doc / Mon / 576 x 720

Select graphics mode to display

Background color : None

For now, let's see what's involved in converting a Double Hi-Res graphic to another format. Press the Escape key to go back to the Main Menu list of options. (Notice that in the upper right corner of the screen, the Graphic Exchange reminds you that pressing Escape will activate the Main Menu!)

Transferring A Graphic

Back at the Main Menu, select the option **Standard transfer**. Once you've chosen this item, the list of picture types appears again. Notice the check mark beside the Print Shop entry. At the lower left of the screen, the message "Select source graphics mode" appears.

The Graphic Exchange is ready to transfer, and needs to know what graphic screen you want to be your source graphic. Use the mouse to select **Print Shop** (the one with the checkmark).

Your Print Shop graphic will appear with a tiny rectangle in the top left corner of the image area. This small rectangle now acts as the cursor for your mouse. Move the mouse to see how the cursor moves, but don't click the mouse yet. Because a Print Shop graphic is not a full-screen image, the mouse movement is limited to the area of the graphic itself.

For this example, position this cursor at the top left of the graphic area. This spot will be the upper left corner of the graphic to be transferred.

Press the mouse button, and keeping the mouse button down, move the mouse diagonally down to the lower right corner of the screen. You will notice that a rectangle is created, following your movement. This indicates the part of the graphic that you would like to transfer. Continue to move the mouse down to the right till the rectangle forms a frame around the entire graphic. Then release the mouse button.

When you release the mouse button, the screen will return to the text menus, and you will again be presented with the list of graphic types. This time, however, the prompt at the bottom of the screen now asks you to "Select destination graphics mode". Now The Graphic Exchange wants to know what screen you wish to transfer the graphic to.

Let's try the Super High Resolution screen. Move the mouse down to select **640 super-res / COL / 320 x 200** mode, and click the mouse. This is the mode that HyperStudio and AppleWorks GS use.

You will then be shown the Super High Resolution screen, with an empty rectangle drawn on the left hand side of the screen. This rectangle indicates the position, and the final size, of the graphic to be transferred. Move the rectangle to the middle of the screen, and click the mouse button. There will be a moderate pause while the Graphic Exchange converts the graphic to Super Hi-Res. In a couple of seconds your converted picture will appear.

Saving A Graphic

To save our new Super High Resolution graphic, select **Save graphic**. When the graphic list appears, select **640 super-res / COL / 320 x 200** mode. You will then be presented with the Super High Resolution save screen as shown on the following page.

On the Apple IIGS, there are a variety of file formats used for storing Super Hi-Res pictures. Virtually every graphics program can load the PIC format, which is an uncompressed ("unpacked") 32K file of the entire picture.

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Display graphic	BIN / Packed / Apple Preferred
Standard transfer	PNT / Packed / Paintworks
Scaled transfer	PNT / Packed / PackBytes
Full screen transfer	PIC / Unpacked / Picture
Exchange black and white	BIN / Unpacked / Binary
Clear graphic	\$E1 / Unpacked / Graphickriter
Restore standard palette	
Set background color	
Undo last change	
Catalog	
Load graphic	
Save graphic	
Slide show	
Create data disk	

Select filetype to save as

Background color : None

However, depending on which application program you wish to transfer your graphic to, you can select any one of the options offered in the right hand column. For now, choose the PIC format.

Note: For most types of graphics, you will not have to choose a filetype to use when saving the graphic. Instead, the Graphic Exchange will just ask for the filename to use when saving the graphic.

After you choose your file type you will be prompted to select your ProDOS prefix. For now, use the mouse to select the Graphic Exchange disk by highlighting TGE in the disk device list, and clicking the mouse.

When /TGE/ is listed as the "current prefix", click on "Sample.Pics" to select that folder. Finally, click the mouse with "/TGE/SAMPLE.PICS/" highlighted.

If there were any Super Hi-Res graphic files on the disk, a list of the other pictures already saved to the disk would be displayed so that you do not accidentally duplicate file names. You will then be prompted for a filename in the bottom left hand corner. Enter the name PS.TEST for now. Press Return when you've entered the name and are ready to save the file. You have now transferred and saved a graphic. Congratulations! The graphic can now be

used in HyperStudio, AppleWorks GS, or any other program that uses 640 mode Super High Res clip-art.

You can also just load a Print Shop graphic from a DOS 3.3 disk, and then save it back to a ProDOS disk as a Print Shop graphic, without having to convert the image to a new format at all. Some ProDOS programs can import Print Shop graphics once they've been transferred to a ProDOS disk.

Converting MacPaint documents from a Mac disk (400K or 800K, HFS or MFS - but not disks written to by a Mac II) is done the same way. Just put the Mac disk in your 3.5" drive, and choose Macpaint doc as the graphic format to load.

Quitting The Graphic Exchange

To quit The Graphic Exchange press the Escape key from the Main Menu. The prompt **Quit The Graphic Exchange now (Y/N)?** will appear. Press "Y" to quit the program. Press "N" to go back to the main menu screen.

If you have started up using the 3.5" Graphic Exchange disk, you will then go back to the usual GSOS version of the program, where you can work further with your graphics.

When you are done using the Graphic Exchange disk, you can just remove the disk from the drive, and turn off the power, or press Control-Apple-RESET to restart the computer with another disk.

Once you have quit The Graphic Exchange, you can run your application program and load your transferred picture into your software. If you are using the program switcher SoftSwitch, be sure to quit the Graphic Exchange from the Main Menu. Do not just discard the switched program (clearing the workspace). Quitting the Graphic Exchange "properly" is necessary so that the Graphic Exchange can release the memory it has requested for the storage of all the various graphics pictures.

If you only have one disk drive, and are concerned about having to leave the Graphic Exchange disk in the drive, or having to swap between the Graphic Exchange and your data disk, don't be. Once at the Main Menu of the Graphic Exchange appears, you can remove the program disk, put it in a safe place, and insert your data disk. Once started, the Graphic Exchange program disk is no longer required to be in the disk drive.