

Graphic Workshop for Windows

FROM ALCHEMY MINDWORKS INC.



Graphic Functions



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File Formats

PFS: First Publisher ART

OS/2 BGA

Windows 3 BMP / DIB

Casio Digital Camera CAM

Corel Draw Preview CDR

Corel PhotoPAINT CPT

Halo CUT

DLL and VBX DLL

Self-displaying EXE pictures

Iterated Systems FIF

Flexible Image Transport System FITS

AutoDesk FLI and FLC animation FLI

Ventura GEM/IMG

CompuServe GIF

SSTV HRZ

Windows ICO Icons ICO

Deluxe Paint IFF/LBM

JPEG JPG

Kodak Digital Science Camera KDC

MacPaint

QuickTime MOV

MPEG MPG

Microsoft Paint MSP

Kodak Photo-CD PCD

PC Paintbrush PCX

PC Paint Pictor PIC

PNG Portable Network Graphics PNG

Photoshop PSD

Sun raster RAS

Windows 3 RLE

Truevision Targa

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Slideshow

You can set up a sequence of images to display unattended under Graphic Workshop. Click on each graphic you'd like to include in your slide show and select Slide Show from the Image menu, or hold down the Shift key and click on the View button. A dialog will appear to allow you to configure the slide show options.

The duration value for the slides can range between one and 255 seconds. If the Loop option is enabled, the slide show will run continuously -- when it gets through all your selected images, it will return to the first image in the sequence and start over.

The Show Titles option will determine whether the name of each file in the slide show is displayed below the image.

The Zoom option will cause images larger than your screen to be scaled to fit.

When a slide show is running, hitting Enter will cause the next slide to be loaded immediately, ignoring the remaining display time. Clicking your right mouse button or hitting Esc will end the slide show.

Note that the slide show function will skip over animation files.

Catalog

The Graphic Workshop Catalog function will create pictures of your pictures. Tag a number of images and hit F10. One or more files will be generated containing thumbnails of the selected images. These can be very helpful in keeping track of a lot of picture files.

Files created by the catalog function will be named CAT00001, CAT00002, CAT00003 and so on. The catalog function will not overwrite existing files... if the file CAT00001 exists, for example, it will begin with CAT00002.

When you create a catalog you can select one of a number of sizes for the final catalog files, in eight or twenty-four bit colour, with the individual thumbnails set in either portrait or landscape frames. Choosing twenty-four bit colour will create nicer catalog images, but they'll be sort of huge.

If you create eight-bit catalogs you can choose to either remap or dither the thumbnail images. As a rule, remapped images won't represent the colours of your source graphics all that well and dithered images will lose a bit of resolution. Bayer dithering is faster than Floyd-Steinberg dithering, but the latter looks better.

Catalog files can be created with with a three-dimensional appearance or with a flat black background.

If you catalog animation files, such as AVI or FLI/FLC, the image catalogged will be the first frame in the file.

Crop

This function will scale your selected file or files to fit your display window if they're too large. You can select areas of the displayed image by dragging a rectangle around the bits you like with your mouse. Select **Save** from the **Picture** menu to save the selected fragment.

Having drawn a selection rectangle, you can fine tune it with the arrow keys of your keyboard. Hold down the left Shift key and use the arrow keys to move the upper left corner of the rectangle. Hold down the right Shift key and use the arrow keys to move the lower right corner of the rectangle. Use the arrow keys by themselves to move the entire rectangle.

Cropping is a batch function. Note that if you use **Esc** to abort one cropped file in a batch, the rest of the batch will be aborted.

Dither

Dithering is a sort of magical process by which colour images can be converted into pretty attractive black and white versions for reproduction on a monochrome screen or a black and white laser printer. The girl's eye in the index of this help file was created by dithering a colour image to black and white with Graphic Workshop.

Note that source files for dithering must have more than one bit of colour information.

Dithering often works a lot better if you scale the original image up. Graphic Workshop lets you dither with images of anywhere from "size as" up to 500 percent expansion if you have enough memory.

Note that the Dither only dithers to monochrome. Colour dithering is handled by one of the functions of **Effects** button and menu selection.

Dithering is a fairly slow process, and the better the dithering algorithm, the slower it gets. Big files and really good dithering can take half an hour or more on a slower computer, although the results are usually worth it.

At its best, dithering can look better than halftoning, and a dithered file can be printed on both PostScript and LaserJet printers. Dithered files sent to a PostScript printer will print faster than halftoned files.

If you have Graphic Workshop dither a file, it will create a new file for you of the type selected and with "D_" before the name. Thus PICTURE.GIF could be dithered to D_PICTUR.IMG, for example. PICTURE.GIF would be left untouched.

The simplest... and fastest... form of dithering is a **Bayer** dither. This doesn't produce great results, but it's extremely quick.

The remaining three dithering algorithms use what is called "error diffusion". These produce really nice looking dithers, but they're quite slow. The fastest... and least attractive... is **Floyd-Steinberg**. The best... and by far the slowest... is **Stucki**. The **Burkes** dither is somewhere in the middle.

All three of these dithers come in two flavours, ... **unidirectional** and **bidirectional**. These options will produce slightly different results.

Dithering scans an image line by line, starting in the upper left corner and working down to the lower right corner. For this reason, you will find that if you rotate an image by ninety degrees, dither it and then rotate the dithered version by a further two hundred and seventy degrees, you'll get different results than you would have had you dithered the original image.

In addition to true dithering, the Dither function also provides for thresholding. This will reduce a colour or grey scale image to black and white by setting a white threshold. The results will usually be an exceedingly contrasty image. The higher you set the threshold value, the darker your image will become. The threshold is point below which pixels in the source image will be considered to be black in the destination image.

Dithering is a batch function. You can tag a number of files and then set them up to dither unattended while you go for a Coke.

Effects

This function has a dialog box which will allow you to access a number of special tools for working with colour image files under Graphic Workshop.

All of these are batch functions. The destination files will have "X_" in front of their names. Note that these functions require substantial amounts of memory.

Colour reduction

This function allows you to create destination files with fewer colours than the source files they're derived from. You can use this function, for example, to reduce a 256-colour file down to a 16-colour one. It's particularly useful for reducing twenty-four bit files down to 256-colour files.

Whenever you reduce the number of colours in a file, some image information will get lost. The simplest form of colour reduction is "remapping". This simply means that the destination image will have the best colour palette it can, and that all the pixels in it will be replaced with colours from that palette. The results aren't usually very attractive.

Colour dithering, also available in this function, can produce decidedly better results. With colour dithering, you can reduce 24-bit files down to eight bits with very little loss of detail or colour resolution.

Colour dithering can work to either a "quantized" or "fixed" palette. A quantized palette is one which is selected from the image itself. A fixed palette is one which is the same for all images. In theory a quantized palette is preferable, but in practice it can produce poor results in images with small areas of widely differing colour or brightness. The **256-colour orthogonal palette** will often provide the best possible results. In addition, it's faster.

By default, Graphic Workshop tries to use fifteen-bit quantization and falls back to twelve-bit quantization if there's a shortage of memory. Fifteen-bit quantization provides a better final palette, but it may be objectionably time consuming on slower systems. You can force Graphic Workshop to use twelve-bit quantization by default by turning off the Quantize 15 bit switch.

The 16-colour fixed Windows palette should be used to create images which are to be used in a 16-colour Windows environment, such as for Windows wallpaper.

The 240 plus 16 colour palette consists of a 240 colour quantized palette followed by the sixteen-colour Windows fixed palette. If you select this option, your image will be dithered or remapped to only the first 240 colours.

The Custom palette option will allow you to choose the palette with which colour reduction or dithering will be performed. Click on the Select button and select a graphic file which contains the palette you'd like to use as the destination palette for your dithered or remapped graphics. Note that this selected file won't be altered -- it will just be read as the source of a palette. The source palette file can be in any graphic file format supported by Graphic Workshop, but it must contain between four and 256 colours. Use the Get Info function to ascertain the number of colours in a file.

Grey scale

This function creates a grey scale destination image from a colour source image. The

number of bits of colour will remain the same.

Sharpen

This function will create a destination image with more contrast than its source image.

Soften

This function will create a destination image with less contrast than its source image. This function is particularly useful for minimizing the effects of scanning moire patterns caused when you attempt to scan a previously screened original. In less technical terms, if you scan pictures of nude women from magazines, softening the image files will reduce the interference patterns.

Smudge

This function will create a destination image which looks like it's being viewed through water drops.

Spatial posterization

This function will create a destination image in which the image is made up of large square areas. This effect is similar to the one used by television news to obscure the faces of people whose identities are to be kept secret.

Promote to twenty-four bits

This function will create a twenty-four bit file with the same image information as a file with fewer colours.

Get Information

This box will show you some basic information about one or more selected files. Some file formats actually contain a lot more information than can be displayed in the normal Info box. **TIFF** files, for example, can contain the name of the artist responsible for them, the type of software used to create them and so on. You can get at this sort of optional information for formats which support it by clicking on the Details button of the Info box when it's available. The arrow keys will scroll you through the detail window. Details are available, for example, if you get information about **GIF**, **TIFF** or **PNG** files.

You may need some external assistance in fully interpreting the details. For more information about the details of image file formats, consult the book **Graphic File Toolkit** by Steve Rimmer, published by Addison Wesley, ISBN 0-201-60846-4.

Print

Printing is a batch function. If you tag multiple files and then click on Print, each will be printed. Printing can render your graphics as eternal works of art or kill a lot of trees... quite the responsibility.

Graphic Workshop's printing facilities will be determined by the printing capabilities of your print driver. It will print in colour, print to unusual printers and so on if you have an appropriate printer driver installed in Windows.

You can set up your current printer by clicking on the Setup button of the Print box... you'd probably expect this. You can also select the size of your printed pictures using the Print box. The available percentage values represent the degree of expansion based on the resolution of your printer.

Consult the section on the Setup box to choose setup options which best suit your printer.

Under the Windows 95 and NT build of Graphic Workshop, printing can be handled using either Integral sizes or Scaled sizes. This feature is not available in Graphic Workshop for Windows 3.1, wherein all printing is handled using integral sizes.

Integral Printing Sizes: The Autosize option in the Print box will select one of the eight size options to best fill your page. Note that this will choose the best integral expansion factor -- it will not scale your images arbitrarily to fill your page, as this could introduce scaling aberrations into them. The Integral Printing option will usually give you the best print quality, but not the best fit to your page.

Scaled Print Sizes: The Scale to Fill the Page option will automatically size your printed image to precisely fill the printable area of your page in one dimension. This will not include any printer margins. If this item is not selected, the printing size will be determined by the Scale Factor control. Setting this value to 100 will print your graphic at precisely one pixel of your image to one pixel of your printer. This is usually very small. Setting it to 200 will double the size. Setting it to 50 will print at half size -- a handy feature for creating your own postage stamps. The Scaled Print Sizes option may introduce scaling aberrations into your graphics, and it can be exceedingly slow.

Note: Scaled printing can entail the use of a lot of memory. It will not work at all for graphics which are loaded into virtual memory, as discussed elsewhere in this document. If you encounter memory errors using Scaled Print Sizes, you might have to print using Integral Printing Sizes, or get more memory.

Reverse

This function will create a reversed version of any image file. The new file will have the same name as the original file, with "R_" appended to the front of it. Thus, reversing PICTURE.MAC will leave you with R_PICTUR.MAC. If you reverse a colour image, you'll get a colour negative. These look weird... we haven't found a use for them as yet.

Reversing is a batch function.

Scale

This function will allow you to scale files from 25 to 500 percent.

Your original files will not be altered when you scale them. New files with the prefix "S_" will be created. Thus, PICTURE.GIF will produce S_PICTUR.GIF after scaling.

Scaling a picture can produce some really ugly results, depending on what you scale. Bear in mind that scaling by integral values... down to seventy five or fifty percent, up to two hundred percent and so on... will produce less ugly results than scaling by arbitrary values.

The scaling values you enter will be rounded to the nearest lower integral value. Thus, 42.5 percent will really be 42 percent.

Scaling is fairly time consuming.

You should probably avoid scaling dithered monochrome pictures down. Nothing terribly bad will happen, but for reasons which will become obvious if you think about it, the results will almost always be really ugly.

Note that the scaling percentage you enter determines the size of the destination image relative to the source image, not the actual percentage of scaling. Thus, entering 25 will produce a destination image which is one quarter... 25 percent... of the original image. Entering 200 will create a destination image twice as big... 200 percent of... the original. Entering 100 will produce a destination image identical to the source image.

By default, scaling will be the same in both dimensions. If you select the **Anamorphic** option you will be able to enter independent horizontal and vertical values.

You can also scale pictures to a specific size. If you select the **By Size** option and then enter the dimensions in pixels into the Scaling box, Graphic Workshop will calculate the appropriate scaling factors to make you pictures come out to the size you've selected.

The Interpolated / Integrated Scaling option will cause Graphic Workshop to apply some image processing to certain scaled images if it's enabled. This is a bit complicated. In normal image scaling, making a picture larger involves duplicating its pixels to fill the extra space. Making one smaller involves throwing away some of the pixels. In both cases, noticeable image degradation can result.

When an image is scaled up with interpolation, the extra pixels required for the new image are calculated as a gradation between the existing pixels. When an image is scaled down through integration, the new pixels are calculated as a weighted average of the source pixels. Neither process completely eliminates scaling aberrations, but they can reduce them considerably.

Interpolated / Integrated Scaling can only be used in certain situations -- if you ask Graphic Workshop to apply it to images which do not meet these criteria, it will revert to conventional scaling. Specifically:

- Only 24-bit true colour or eight-bit grey scale source images can be scaled with interpolated / integrated scaling. It will not work with palette-colour or monochrome images.

- The entire image -- plus up to two copies -- must fit in the available physical memory of your computer. Interpolated / integrated scaling does not use virtual memory.

Interpolated / integrated scaling is a usually two-pass process -- you'll see the status bar move twice for each image being scaled. It also requires lots of memory, and unlike conventional scaling, its memory requirements increase with the final size of your scaled image. If you use interpolated / integrated scaling to scale large pictures up to make still larger pictures, Windows might have to do a lot of internal memory management. This can often take a long time and result in considerable hard disk activity. Be patient.

Interpolated / integrated scaling is not all that fast at the best of times.

Note that if you promote a palette-colour image to 24 bits or convert it to a grey-scale image and then run it through interpolated / integrated scaling, some really peculiar image artifacts will probably appear in the final scaled bitmap.

Scaling is a batch function.

Transform

This function will pop up a dialog box offering you five image transformations. You can **rotate** an image in ninety degree increments and you can flip it **horizontally** or **vertically**. These functions work on images of any number of colours.

Note that the ninety and two hundred and seventy degree rotation functions will take a very long time if your images are large. Them's the breaks.

Transformed images will be stored in files with "T_" in front of the names. Thus PICTURE.GIF will become T_PICTUR.GIF after any of the five transformations have been wrought upon it. If you rotate it and then flip the rotated image, for example, it will become T_T_PICT.GIF, and so on, with intermediate files along the way.

Transforming is a batch function.

View

If you double click on a file name or select one and then click on the View button, Graphic Workshop will display the selected file. Select multiple files and click on View to show several files one after another. The View function will start by showing you a wait box, which has a bar graph in it to indicate the status of what you've asked Graphic Workshop to do. When the picture is fully unpacked, Graphic Workshop will open a display window and show you the picture.

If the picture is larger than your screen, the cursor keys will allow you to pan around it. Normally you will pan around in small increments. If you hold down either shift key when you hit a cursor key, you will move around in larger increments.

There are also scroll bars to move around with.

Hitting Esc or Enter will return you to the main screen. If you have selected multiple files to view at once, Enter will display the next file and Esc will abort any further files and return you to the main screen. Clicking with the right mouse button is equivalent to hitting Enter. If you hold down the shift key on your keyboard when you exit View mode, Graphic Workshop will show you the comments for the file you've just seen if any are present.

You can delete files from within View mode, either by selecting Delete from the Picture menu or by hitting the Del key on your keyboard. If you hold down the Ctrl key and do this, you will not be prompted to confirm that you wish to delete the file in question. Once a file has been deleted, View mode will automatically terminate. If you want to sort out a lot of files, tag them all, click on the View button and use this feature to kill the ones you don't want to keep.

If your graphic requires more colours than your current Windows screen driver can display, Graphic Workshop will display a dithered version of your graphic. Graphic Workshop will use an eight-colour dither if you have a sixteen-colour display and a 256-colour dither if you have a 256-colour display. These dithers have been optimized for speed rather than for image quality, although the 256-colour dither can look pretty respectable.

You can get information about an image while you're in View mode by selecting Get Info from the Picture menu.

If you're viewing a small image, select Tile from the Picture menu to have it duplicated over the entire view window. This is handy for seeing what tiled BMP files will look like if you use them as wallpaper.

The Filters function of View mode allows you to process images. This is dealt with in a separate Help item.

Filters

You can perform a variety of image processes on graphics in the View mode by selecting the Filters item from the Picture menu. A dialog will appear -- select the filter type you wish to use and adjust its parameters accordingly. Click on Preview to see what the effect of your parameter selection looks like, and OK when you're happy with the results. The scroll bars around the example image will let you see different areas of your adjusted graphic. The button to the lower right of the example image will return to the centre of your graphic.

Graphic Workshop regards images to be filtered as being of four types:

- Monochrome images, which have two colours.
- Palette images, which have between four and 256 colours.
- Grey scale images, which have 256 levels of grey
- True colour images, which have sixteen-million colours.

Some filters are only available for specific image types, and will not appear if you attempt to filter an image to which they are not applicable.

Note: 256-colour photorealistic images got that way by being dithered from true-colour images. If you promote them to true colour, a lot more of the filters will be available to work with them. However, doing so does not "undither" them, and you'll probably find some pretty strange things happening when you try to filter them. Be warned. The same is true if you convert a dithered 256-colour image to grey scale.

Here are the filters:

Average -- softens images.

Blurr -- blurs images.

Colour and Intensity -- allows you to interactively adjust the colour and intensity of an image.

Contrast and Brightness -- allows you to adjust the contrast and brightness of an image.

Convert to Grey -- converts images to grey scale.

Convert to Mono -- dithers and thresholds images to two colours.

Convert to RGB -- promotes images to true colour.

Edge Trace and Fatten -- traces the edges of monochrome images or fattens their details.

Emboss -- creates embossing effects.

Enhance Edges -- locates the edges of objects in image and makes them more noticeable.

Equalize -- interactively redistributes the shadows and highlights of images.

Obscure -- makes images look like they're about to enter the witness protection program.

Reverse -- makes negatives.

Scale -- resizes images. See the [Scale](#) section of this document for more about scaling.

Sharpen -- sharpens images.

Transform -- flips and rotates images.

Water Drops -- makes image look like they're being viewed through water drops.

Waves -- adds waves to images. This one can look truly wierd.

The Free Rotate feature of the Transform filter allows for rotation by any angle from zero through 360° in one-degree increments. It will rotate either clockwise or counter-clockwise. Note that because free-rotating will result triangular margins around your rotated image, you

can select the destination image background colour in this mode. The background colour is used to fill in the margins. Click on the Background colour button to select a background colour. The available background colours are drawn from the image palette for images with 256 or fewer colours. True colour background colours can be selected from an evenly dispersed 256-colour palette.

Free rotation looks pretty reasonable when it's applied to grey scale and true colour images -- applying it to dithered images can introduce some aberations into your rotated graphic.

Free-rotating an image will usually leave it with at least slightly jagged edges.

By default, the size of a rotated image will be increased to allow the whole image to be visible. The Preserve Size feature of the Free Rotation function will crop the destination image to fit within the dimensions of the source image.

Rotation always takes place around the centre of the source image, and is rotated to the centre of the destination image.

You can save a filtered picture to a new file by selecting Save As from the Picture menu.

The Filters option is not available for images which have been unpacked into virtual memory.

The Undo item in the Picture menu will be active once you have used the Filter function. It will undo the most recent filter operation.

Note that if you want to apply more than one filter to the image, you must invoke the Filter function multiple times.

About

This function will display an About box with the version number of your copy of Graphic Workshop, our address and some other dogma. It will also include a display of the available memory. Note that this memory value may include virtual memory available to Windows but not of much use to Graphic Workshop, and as such be artificially high. This box also appears when you exit an unregistered copy of Graphic Workshop.

The About box will tell you the maximum number of colours your current Windows screen driver can display before Graphic Workshop will dither or remap your pictures in the View mode. If you see coarse dithered images, compare this value to the number of colours for the image you are attempting to view, as found with the Get Info function.

See the section on [Registering Graphic Workshop](#) for more information about shutting off this box.

Clear All

This button untags any previously selected files. See also [Tag All](#).

Delete

This button deletes all the currently selected files. A prompt will appear to make sure you really want to do this.

Quit

This function terminates Graphic Workshop. It will save any changes made to the Setup box.

If you're using an unregistered copy of Graphic Workshop, you'll get another look at the About box when you quit. This will not happen to registered copies.

You can disable the prompt which asks you if you want to quit in the Setup box.

Rename

This button will prompt you to rename each of the currently selected files.

Setup

Graphic Workshop offers a wealth of options to allow you to best configure it to meet your requirements. All its configuration options are stored in the GWS.INI file in your \WINDOWS directory. The ones which you're most likely to find useful can be accessed through the Graphic Workshop Setup dialog. To alter the more obscure ones, open \WINDOWS\GWS.INI with the Windows Notepad application and modify the lines in question. Don't change anything you don't understand. Deleting \WINDOWS\GWS.INI will return Graphic Workshop to its default state. Note that this will delete your registration number as well, requiring that it be re-entered.

You should not have Graphic Workshop when you modify GWS.INI directly with Notepad.

Consult GWS Documentation for a complete list of configurable options. This section will outline the options accessible through the Graphic Workshop Setup dialog.

Auto create thumbnails

Causes Graphic Workshop to create a THN thumbnail file whenever it writes an image file to disk.

Graphic Button Bar

If this item is enabled, the main window of Graphic Workshop will display a button bar with graphic buttons. If it's disabled, the button bar will use conventional text buttons.

Check for Photo-CD

Causes Graphic Workshop to look for the standard Kodak Photo-CD files and directories when it logs in a new drive. This must be enabled for thumbnails to work for Photo-CDs.

Centre View Images

Displays images which smaller than the view window centred. If this option is disabled, images will display in the upper left corner.

Compress EXE pictures

Causes DOS EXE pictures to be compressed.

Create GIF 89a files

Causes GIF files written by Graphic Workshop to be stored using the 89a specification. If this is disabled, the 87a specification is used. Make sure this item is enabled if you want to use GIF comment blocks.

Compress IFF/LBM/PSD files

Causes IFF, PSD and LBM files written by Graphic Workshop to be compressed.

Font (combo box)

This item defines the name of the font to be used to display text in Graphic Workshop. Set this to Default for the old style chunky Windows font.

FontCaptionSize [12]

This is the font size in points for the captions on TTF font sample bitmaps. Set this value to zero to disable the captions.

FontDepth [480]

This is the depth of TTF font sample bitmaps.

FontWidth [640]

This is the width of TTF font sample bitmaps.

FontSampleSize [36]

This is the font size in points for TTF font sample bitmaps.

FontSampleText [The quickbrown fox obfuscated the lazy dog...]

This is the text used in TTF font samples after the characters set has been displayed.

LBM files with PBM packing

Causes 256-colour IFF and LBM files written by Graphic Workshop to use Deluxe Paint PBM packing.

Mac files with Macbinary header

Causes MacPaint files written by Graphic Workshop to have a Macbinary file header.

Create Targa 16 file

Causes Targa files with more than 256 colours to be written using sixteen-bit colour, rather than 24.

Create colour TIFF files (16-bit version only)

Causes TIFF files to be written as colour TIFFs, rather than as grey scale TIFFs.

Expand grey TIFF files (16-bit version only)

Causes grey scale TIFF files to have the contrast of their images expanded.

Thumbnail Write Mode (combo box)

Tells Graphic Workshop how to generate thumbnails.

File name underbars

Causes Graphic Workshop to create new file names using underbars.

Invert Text Files

If this item is enabled, text files converted to bitmaps will be inverted black for white.

JPEG Quality (spin button)

This value determines how much detail Graphic Workshop can discard when it writes a JPEG file. Set it to 100 to create nearly lossless JPEG files.

Long File Names

If this item is enabled and Graphic Workshop is running under Windows 95 or NT, long file names will be supported.

MCI 16-bit Drivers (32-bit build only)

If this item is enabled, animation files play through MCI drivers -- such as AVI and MOV -- will use 16-bit calls. If it's disabled they'll use 32-bit calls. Some of the 32-bit MCI drivers available as of this writing are somewhat unstable.

Multiple Image GIF Files

If this item is set to zero, Graphic Workshop assumes that all GIF files contain a single image. If it's set to one, it will troll for multiple images.

Password Protect PNG

If this item is enabled, any function that writes PNG files will prompt you for an encryption password. See the section of GWS Documentation that deals with PNG files for more

information about this feature.

Photo-CD read option (combo box)

Defines which resolution and colour model will be used to read Photo-CD images.

PNG Compression (spin button)

This item defines how hard Graphic Workshop will try to compress PNG files. It can range between one and nine. If it's set to one, PNG files written with Graphic Workshop will not be all that well compressed, but they'll write quickly. If it's set to nine, Graphic Workshop will usually manage to create smaller PNG files, but it will take a lot longer to do so. Intermediate settings will represent a tradeoff between these two extremes. Note that this setting will not affect the quality of an image stored in a PNG file -- it only deals with the compression effectiveness and the time it takes to write a PNG file.

Prompt before overwrite

Causes Graphic Workshop to prompt you before it overwrites an existing file.

Prompt before quitting

Causes Graphic Workshop to plead for its life when you try to quit, just like Windows does.

Prompt for destination

Causes Graphic Workshop to prompt you for a new directory to write files to.

Prompt for file name

Causes Graphic Workshop to ask you for a new file name every time it creates a file.

Prompt for filter options

Causes Graphic Workshop to prompt you if you attempt to access a file which requires an external filter if the filter supports an options dialog. If this is not enabled, the filters default values will be used.

Prompt for file comments

Causes Graphic Workshop to ask you for text for a comment block whenever it writes a file in a format that supports comments.

Quit after association

Causes Graphic Workshop to terminate after viewing if it was started with a command line argument.

Read CDR Bitmaps

If this option is enabled, CDR files that contain bitmap images will be displayed as bitmaps rather than thumbnails. If more than one bitmap exists in a CDR file, a dialog will appear to allow you to select the one you're interested in. Thumbnails will be displayed if no bitmaps exists. If this option is disabled, thumbnails will always be displayed.

Read JPG as RGB

Causes JPEG files to be read as 24-bit true colour images.

Relaxed UUE Decoding

If this option is enabled, the UUE decoder will decode any line which checks out as valid UUE data. If it's disabled, it will look for begin and end markers in multiple section UUE files. Having this option enabled will make Graphic Workshop less likely to produce incorrect images from multiple section UUE files.

Show hidden directories

If this item is enabled, hidden directories will appear in the file selection window of Graphic Workshop. If it's disabled, they will be ignored.

Show startup logo

Causes the startup logo to appear while Graphic Workshop wakes itself up.

Start in thumbnail mode

Causes Graphic Workshop to start in thumbnail mode.

TIFF write options (combo box)

This is the current TIFF write option.

Vector read options (combo box)

This is the current resolution and colour depth setting for rasterizing vector files.

View file comments

Causes a dialog to appear with file comments after viewing an image in any format which supports comments, such as GIF and CDR.

Zoom when viewing

Causes the view mode to come up with images zoomed, rather than in normal mode. The Zoom toggle will toggle back to normal mode.

View mode borders

Causes a menu bar and scroll bars to appear in the view mode.

Virtual memory drive (combo box)

This is the drive where large spill files are to be written.

Windows EXE pictures

Causes Graphic Workshop to create Windows EXE pictures when images are written to the EXE format.

Write file comments

If this item is enabled, Graphic Workshop will include a comment block when it writes file formats that support comments, such as GIF and PNG. Note that file comments will only be written to GIF files if the CreateGIF89 switch is enabled.

Write GIF Internlaced

If this item is set to one, Graphic Workshop will write interlaced GIF files.

Write OS/2 BMP files

Causes BMP files created by Graphic Workshop to be stored for OS/2, rather than for Windows.

Write Progressive JPEG

This item causes JPEG files written by Graphic Workshop to be stored in the progressive JPEG format.

Tag all

This button selects all the currently available files, save for drive and directory names.

MacPaint

MacPaint files can come in two flavours. The most common one is straight ported MacPaint files, that is, files having a "MacBinary" header. The other is "headerless" files, these being the ones used with **PFS:First Publisher**. Graphic Workshop reads both types, but if you convert a file from a different format to MacPaint format the file will be written in accordance with the setting of the MacBinary header field in the Setup box.

Files converted to the MacPaint format from other formats will be cropped or padded out as necessary to fit in the MacPaint format's 576 by 720 format. Only monochrome files can be converted to MacPaint files, since MacPaint is a monochrome-only format.

Ventura GEM/IMG

There are actually quite a few variations on IMG files... they handle monochrome and grey level images. The primary application for IMG files is as the bitmapped image file format of **Ventura Publisher**. Graphic Workshop supports files with up to 256 levels of grey and 24-bit IMG files with up to sixteen-million colours. Note that 24-bit IMG files are only supported by **Ventura 4.0** and better.

PC Paintbrush PCX

PCX files are the files used to hold images for Z-Soft's PC Paintbrush package. These can range from monochrome to 24-bit images. All the various formats are supported by Graphic Workshop.

CompuServe GIF

GIF Files can range from monochrome to 256-colour images in any size you can find 'em. Graphic Workshop supports both the 87a and 89a versions of the GIF standard. It will read the first image of GIF files having multiple images.

The Details function of the Get Info box will display the entire structure of a GIF file. Many newer GIF files contain text information along with their images.

If you enabled the **Prompt for GIF comments** and the **Create GIF 89a files** options of the Setup box, you'll be prompted for text to install in a comment block for each GIF file created by Graphic Workshop. This will allow you to insert your own comments, which will turn up in the Details function of **Get Info**.

Rather than typing text into the **Get Comments** box, you can type in the path to a text file, preceded by an @ character. In this case, Graphic Workshop will load the contents of the text file into memory and use it as a comment. The text file must be plain ASCII, rather than a proprietary word processor document.

By default, if you attempt to view an animated GIF file, Graphic Workshop will display it as such. It can alternately be configured to prompt you to select which of its discrete images you'd like to look at. If you don't want to have it automatically view animated GIF files, open the Setup dialog and turn on Prompt to View Animation. If you leave this switch off, you can hold down the Shift key when viewing animated GIF files to call for the View prompt. Note: The Multiple Image GIF Files switch in Setup must be on to view animated GIF files.

TIFF

The TIFF facilities of Graphic Workshop can get a bit involved. The TIFF format offers lots of options to make it applicable to a wide variety of applications... which entails a certain amount of confusion, as well. Registered users of Graphic Workshop are welcome to contact us for help in unraveling the TIFF options if needs be.

Note that due to the wide variations among the programs which produce TIFF files, Graphic Workshop would be lying rather badly if it claimed to be able to read all TIFF files.

The Graphic Workshop Setup dialog includes a field for TIFF Write Options, which allows you to define the type of compression to be used in creating TIFF files. Each line in this field has three items, specifying the compression type for monochrome files, palette colour files with up to eight bits of colour and true colour 24-bit files respectively. The options are:

None	-	No compression
PBits	-	Simple PackBits compression
LZW	-	High efficiency LZW compression
Group 3	-	Group 3 FAX compression (32-bit build only)
Group 4	-	Group 4 FAX compression
JPEG	-	Lossy JPEG compression (32-bit build only)
PNG	-	Lossless PNG deflate compression (32-bit build only)

TIFF files with no compression are fast to read and write, and are all but certain to be accepted by any application that reads TIFF files. However, they can result in huge disk files. TIFF files with LZW compression take somewhat longer to read and write, but they usually result in smaller files. There are many applications which read TIFF files but which do not support LZW compression. PackBits compression is somewhere in the middle. Group 4 FAX compression can deal with some line drawings more effectively than LZW compression can, but it creates files that almost no TIFF readers will handle. Don't use Group 4 unless you're certain your target application will read them.

The Group 3, JPEG and PNG compression types are only supported in the 32-bit build of Graphic Workshop. JPEG compression is identical to the compression used by the JPG file format -- it discards a specified amount of image detail to achieve more effective compression. The amount of detail to be discarded can be set using the JPEG Quality control in the Graphic Workshop Setup dialog.

PNG compression uses the same compression as is found in the PNG format, the PKZIP Deflate compression. Note that while they are legal TIFF compression types, JPEG- and PNG-compressed TIFF files are supported by very few other applications as of this writing.

You can change the default style of the TIFF details by opening GWS.INI in your \WINDOWS directory and setting the TiffAlternateDetails item to one. This alternate style is useful if you want to better understand the structure of a TIFF file.

TIFF files created by Graphic Workshop carry XResolution and YResolution tags. These tags are interpreted by some applications as indicating the absolute size of the image in a TIFF file. Corel Draw, for example, uses these tags as an indication of how large it should initially import TIFF bitmaps. By default this value is 300, that is, 300 dots per inch. You can change this by opening GWS.INI in your \WINDOWS directory with the Notepad application and changing the TiffResolution item to a different value. This will not affect the images stored in a TIFF file created by Graphic Workshop, but only how some applications that import TIFF files will interpret them. Resolution values which are even multiples of 75 are usually a safe

choice.

The 32-bit build of Graphic Workshop supports multiple-image TIFF files -- if you attempt to read one, a dialog will appear prompting you to select the image you're interested in working with. It supports TIFF 6.0 multiple-image TIFF documents, as used by some Microsoft imaging products.

WordPerfect WPG

WPG is the native import graphic files for **WordPerfect**. These files can contain both bitmaps and line art, or vector graphics. Graphic Workshop can only deal with the bitmapped parts of them. If you view, print or convert a WPG file containing both bitmapped and vector elements, the vector elements will be discarded.

WPG files which refuse to read with Graphic Workshop are usually those which contain only vector elements and no bitmaps. If you use the Get Info function on a WPG file which does not read, the comments field of the file information box will say "**Vector file**" if this is the case.

Graphic Workshop will deal with WPG files having one, four or eight bits of colour information, that is, monochrome files, sixteen-colour files and 256-colour files.

The WPG specification allows for 256-colour files. As of this writing, some versions of **WordPerfect** itself would not read them. If you wish to use 256-colour images in a **WordPerfect** document, you might want to either reduce them to sixteen colours or dither them to monochrome, depending upon what you'll be outputting them to.

Microsoft Paint MSP

MSP files are the image files used by the paint program which came with **Microsoft Windows** version 2. Don't confuse these with PCX files... some versions of Windows 2 came with a Windows implementation of **PC Paintbrush** from ZSoft as well. The two programs... and the two file formats... are not compatible. MSP files are monochrome only.

Deluxe Paint IFF/LBM

The IFF format started out on the **Amiga**. The IFF file standard is extremely flexible, and allows all sorts of things besides images to be stored in IFF files. IFF files are found on the PC having been ported from Amiga systems. They are also created on the PC by several applications such as Electronic Arts' **Deluxe Paint** package and Digital Vision's **Computer Eyes** video scanner board. In the first case they are given the extension LBM. In the second they are given the extension CE. The basic file structure is the same, however.

Note that Graphic Workshop only reads "pure" IFF files, and will not handle the countless variations on the format which have appeared on the Amiga. Specifically, it does not read hold and modify, or HAM, files.

See GWS Documentation for more about IFF/LBM files.

Windows BMP / DIB

BMP files are used as "wallpaper" under **Windows 3**. They can be created using the Paint application supplied with Windows. DIB files are identical to BMP files internally, and are used for some programming and multimedia applications.

BMP files use no image compression, as the intention appears to be to make them fast to load. Plan on your BMP files being very large.

There is a very important aspect of colour BMP files which you should bear in mind when you use this format. Windows uses a fixed palette which Windows Paint cannot go about changing, as doing so would make the screen and border colours change too. This means that transferring an image to the BMP format may result in some colour shifts when BMP files are imported into Windows applications.

The BMP format can support 24-bit files, which Graphic Workshop does generate. However, as of this writing importing a 24-bit BMP image into Windows Paint results in a noticeable colour shift. This appears to be a peculiarity of Windows Paint.

Windows RLE

The RLE format is actually a variation on the BMP format. It has two primary uses under Windows. It can be used to create compressed wallpaper files and it can be used to replace the opening Windows logo screen with one of your own choosing.

The RLE format uses compression, unlike BMP files, and as such wallpaper created as RLE files will occupy less space on your disk. At least, it should. If you store very complex scanned or dithered images in the RLE format, they may confuse the run length encoding procedure and actually result in larger files than they would have created as BMP files.

See GWS Documentation for more about RLE files.

Pictor PIC

These should not be confused with Lotus 1-2-3 PIC drawing files.

PIC files are created by **PC Paint / Pictor** (not PC Paintbrush) and are used by **Grasp**, among other things.

See GWS Documentation for more about PIC files.

Truevision Targa

The Truevision Targa format is used by several high end paint programs and things like ray tracing packages. It can handle images with up to sixteen million unique colours. You might want to read the discussion of images with 24-bit colour in GWS.DOC for more information about this.

You can reduce the amount of space true colour Targa files occupy by selecting the **Write Targa 16** option in the Setup box. This will reduce the file size by about a third, with some loss of colour resolution.

SSTV HRZ

Images in the HRZ format always have 24 bits of colour and the fixed dimensions 256 by 240 pixels. Images with differing dimensions will be padded or cropped to fit in this space when they're translated to HRZ. Images with fewer colours will be promoted to 24 bits. This is a fairly specialized format... if you aren't using slow scan television, you probably don't need it.

EXE Self-displaying Pictures

You can convert images with between two and 256 colours to files with the extension EXE. Such files are self displaying pictures. For example, if you have a file called PICTURE.GIF and you use Graphic Workshop to translate it to PICTURE.EXE, typing PICTURE from the command line will cause the picture to display on your screen.

The EXE pictures created by Graphic Workshop for Windows can be either DOS or Windows applications. You can define which type of picture to create with the Windows EXE Pictures switch in the Setup dialog.

Pictures written into the EXE format can subsequently be read back into any other format. However, note that Graphic Workshop can only read EXE files which it has created. Use the Get Info function to check out EXE files if you aren't sure whether they're pictures or programs.

Graphic Workshop will not read self displaying pictures written by other applications.

See GWS Documentation for more about EXE files.

Text Files

Graphic Workshop will create a 640 by 400 pixel, two colour image from any ASCII text file. The text will be truncated at 80 columns and 25 lines if it exceeds either dimension. It can contain both alphabetic characters and high order IBM block graphic characters. Tabs are expanded and all other control characters except for carriage returns are ignored.

Note that a suitable text file must be in pure ASCII, not a proprietary word processor format. It must have the extension TXT.

If you convert another file to the TXT format, the image information about the file can be written as an ASCII graphic or ... its dimensions and such... can be written to the appropriately named TXT file. Use the Setup dialog to define how this function should behave. There's a more complete discussion of ASCII graphics in the Graphic Workshop documentation.

Note that as long as you're attempting to read files, you can treat text files just like other monochrome graphic files from within Graphic Workshop. As such, you can view them, convert from TXT and so on.

Halo CUT

The CUT format is exceedingly awkward, and Graphic Workshop makes a few assumptions about how CUT files will be used in order to make it workable. To begin with, CUT files don't know how many colours they have in them. They rely on a second file, called a PAL file, to define their colours.

Graphic Workshop looks for a PAL file to decide whether a CUT file has two bits or eight bits of colour. If it doesn't find a PAL file with the same name as your CUT file, it assumes that the CUT file in question only has two bits of colour. Otherwise, it assumes that there are 256 colours in the file.

Files written to the CUT format from Graphic Workshop will appear as two-colour files if they started out that way or as 256-colour files if they had more than two colours initially.

If you're using CUT files and have any suggestions to improve Graphic Workshop's handling of them, or if you encounter problems with its CUT files, please get in touch with us. The CUT format, while occasionally requested, turned out to be very weird.

PFS:First Publisher ART

The ART format is used to import graphics into **PFS:First Publisher** documents. It only supports monochrome pictures. Graphic Workshop will only read and write **uncompressed** ART files. If you encounter an ART file that will not read, use the [Get Info](#) function of Graphic Workshop to see if it's a compressed file.

JPEG (Joint Picture Experts Group) JPG

The JPEG format is actually a combination of several elements, and it's important that you understand what it does before you use it. The JPEG algorithm reduces the amount of space a compressed image will occupy on disk by selectively removing details from the image. Pictures with fewer details compress more effectively. The amount of detail removal is defined by the **JPEG quality** item of the Setup dialog box.

At the default value of 75, relatively little picture degradation will take place, but a significant amount of compression will be obtained. At lower values you'll experience still better compression, but with a marked loss of image quality.

Note that several other programs, such as **Lead Tools** and **Image Alchemy** have defined their own formats with the extension JPG. They are not compatible with the JPEG functions in Graphic Workshop. If you encounter an error reading a JPG file, you probably have a file from one of these sources.

Once an image has been converted to JPEG, its lost details are lost for good. Note also that repeatedly reading and writing the same image in the JPG format will successively degrade it.

If you convert an image from another format, such as GIF, to JPG and then from JPG back to GIF, the final GIF file will usually be smaller than the original.

Note: All colour JPEG files are 24-bit images, having sixteen-million colours. Because many systems can only display 256 colours directly, JPEG files can be read as 256-colour images. This actually means that they'll be dithered when they're read. To have your JPEG files read as 24-bit images, enable the **Read JPEG as RGB** item in the Graphic Workshop Setup dialog. Disable this item to have them read as 256-colour images. The number of colours displayed in the Get Info box will reflect the setting of this switch.

The best way to convert from JPEG to a 256-colour format, such as GIF, is to enable the **Read JPEG as RGB** switch and then use the **Colour Reduction** option of **Effects**, rather than doing a straight conversion.

BGA Files

The BGA format is used by some OS/2 Warp applications. It can contain multiple images, and is actually a variation on the OS/2 BMP format. If you attempt to read a BGA file which contains multiple images, a dialog will appear to allow you to select the image you're interested in.

Converting an image to the BGA format will result in a single-image BGA file.

Kodak Photo-CD PCD

Kodak Photo-CDs allow you to have conventional photographs converted to Kodak's proprietary CD-ROM format. The resulting files can be viewed, converted and treated like other PC file formats. In effect, having your photographs made into Photo-CDs will avail you of very high grade scanning, even if you don't own a scanner.

Not all CD-ROM drives can access Photo-CDs... you might want to contact Kodak for a list of those that can. We use Sony CDU-31A drives in house.

Photo-CD image files always reside in a directory named \PHOTO_CD\IMAGES on a Photo-CD. They're named by the following convention:

IMGxxxx.PCD

where xxxx is a four digit number, beginning with one for the first image.

Each PCD file contains a number of scans of the same image at different resolutions. The very low resolution images are used for thumbnail previews. Medium-level images are useful to view and work with Photo-CD scans in a PC environment. Very high resolution images can pose a problem for PC applications running under Windows at the moment, as will be discussed.

You can tell Graphic Workshop to read Photo-CD images at a specific resolution through the Setup box. If you choose one of the 256-colour options you'll see attractive images even if your display card only supports 256 colours. If you choose one of the RGB options you may see coarse dithered images when you view a Photo-CD image, but you'll be able to convert PCD files to high quality true colour images for use with colour separation and desktop publishing software, photographic retouching packages like PhotoStyler and so on.

If you use Graphic Workshop to convert from PCD files to another format, you must enable the Prompt for destination option in the Setup box. If you don't do this, Graphic Workshop will attempt to write its converted files to your CD-ROM drive, which would be a bit tricky, CD-ROMs being read-only.

See GWS Documentation for more about Photo-CD files.

Sun raster RAS

Sun raster files are native to the Sun unix environment. They can be uncompressed or run length compressed. There are also a number of obscure compression standards which Graphic Workshop does not support at present. These rarely turn up... the Get Info function will tell you if you've encountered one.

Sun raster files appear with a variety of file extensions. Graphic Workshop uses the extension RAS. You might have to rename your files to use this extension if they're named something else. Extensions for Sun raster files on a unix system can include **.ras**, **.rast**, **.im1**, **.im8**, **.im24** and **.im32**.

Note that some 24-bit Sun raster files were created with their red and blue colour values erroneously interchanged.

CPT files -- Maximum bits: 24

The CPT format is used by Corel PhotoPAINT version five and better. The CPT format can preserve individual "objects" from Corel PhotoPAINT. Note that Graphic Workshop will only read the most recently created object from a CPT file having multiple objects. Prior to using Graphic Workshop to read a CPT file, have Corel PhotoPAINT merge all the objects into the source image.

While you can write images having less than twenty-four bits of colour to the CPT format, it's not advisable to do so. Due to the structure of palette CPT files, some colour degradation may occur. This is not a problem for twenty-four bit images written to the CPT format.

CDR files

Graphic Workshop's use of CDR files is a bit peculiar. You'll save yourself a degree of frustration if you read this section before working with CDR files. Note that there are two distinct modes under which Graphic Workshop can read CDR files.

Corel Draw's CDR files are vector graphics, but they contain small preview or thumbnail images which appear in the Corel Draw File Open dialog and in the Mosaic application. Graphic Workshop will read these preview images -- it will not read the actual line art graphics in CDR files. The preview images are very coarse, but they're useful for quickly ascertaining what's in a CDR file.

Alternately, Graphic Workshop can be instructed to search CDR files for bitmap objects. If one or more bitmaps are found, Graphic Workshop will read these as if they were conventional bitmap images. This is handy, for example, should you wish to extract a bitmap from a CDR file with no loss of resolution. If no bitmaps are present, Graphic Workshop will show you the CDR thumbnail preview for the file. If more than one bitmap is present, a dialog will appear to prompt you to choose one of the available images. Note that the preview images in the dialog may be cropped to fit the dialog window.

Turn the **Read CDR Bitmaps** switch in the Setup dialog on to have Graphic Workshop troll CDR files for bitmaps, or off to always have it display thumbnails.

See GWS Documentation for more about CDR files.

UUE uuencoded Internet graphics

The UUE format isn't a graphic file format at all. Rather, it's a way of encoding binary files, such as graphics, so they can be sent over text-only electronic mail systems, such as Internet e-mail and Usenet newsgroups. The process of uuencoding a graphic turns it into text... albeit fairly mysterious-looking text... which can be mailed. The received uuencoded file would be uudecoded to return it to its former state.

If this means almost nothing to you, you're probably not involved with the Internet, and can safely ignore this section.

Graphic Workshop will read the images from uuencoded text. The file extension for your uuencoded text must be UUE. The text itself can contain multiple sections if you like... Graphic Workshop will attempt to figure out where the breaks are and assemble the original graphic into a correct file.

Graphic Workshop's UUE decoder can work in strict or relaxed mode. This has to do with how it works with UUE files having multiple sections.

In strict mode, the standard begin <mode> <filename> fields must precede the first uuencoded block in your source text file. Each subsequent section for multiple section uuencoded files must start with a BEGIN line of some sort and end with an END line. A uuencoded graphic that appears as multiple sections must have all the sections concatenated into a single UUE file. Note that Graphic Workshop does very little validity checking for uuencoded data... damaged source data, sections out of sequence or incorrectly formed uuencoded headers or trailers may cause Graphic Workshop's uudecoder to create an incorrect final binary file, and hence a mangled graphic.

In relaxed mode, Graphic Workshop will decode any line which checks out as valid uuencoded data, ignoring all the BEGIN and END markers save for the first one. If it doesn't find the END marker of the current file being decoded, it will prompt you for the next file in the current sequence.

The strict mode guarantees you a correct decode if you UUE files have the correct section markers, but not all uuencoded data has these. The relaxed mode can usually handle files without headers properly, but some pathological cases will crop up in which spurious data is decoded. The strict mode does not prompt for multiple sections of a UUE file.

The UUE decoder mode can be set using the Relaxed UUE Decoding item in the Graphic Workshop Setup dialog. If you encounter a UUE file that doesn't display properly, try toggling this switch. In most cases you'll want to leave it in relaxed mode.

Keep in mind when you're using the uudecoder in Graphic Workshop that whereas human beings can easily distinguish between the header and other flotsam which often appears before and after uuencoded graphics in e-mail, software is much less adept at this sort of thing. If you encounter uuencoded files that won't read, look at them with a text editor to see if there's something obviously peculiar about them. Should one of your images appear incomplete or obviously damaged, your UUE source file probably hasn't been created to the above specification... and perhaps the relaxed mode of the decoder can't quite figure out what's happening to it. In this case, you'll have to open it with a text editor and do a bit of hand massaging between the section breaks. Specifically, just delete all the intermediate text and leave the uuencoded data as one long block.

If you use a news reader that will append multiple messages to the same file, you should be

able to create suitable source UUE files for Graphic Workshop to read with no difficulty.

Note that when it decodes a UUE file, Graphic Workshop will ascertain the file type for the internal file name stored in the begin header of the first section, but it will form the body of the destination file name for translation or other processes from the body of the UUE file name.

You can treat UUE files like any other graphic file format so long as they contain graphics in a format that Graphic Workshop recognizes. For example, you can convert from UUE to a conventional bitmap format.

About multiple section UUE files: If you download uuencoded files from newsgroups, you'll probably encounter some postings with section numbers, witten as [1/3], [2/3], [3/3] and so on. This designation indicates that the original uuencoded graphic was too large to fit in a single Usenet posting, and has been split up among several consecutive postings. To view these files with Graphic Workshop, you can do one of several things:

1. Make sure you have the Relaxed UUE Decoding switch turned on. Double click on the first file in the sequence you downloaded. If this is not a complete uuencoded graphic -- that is, if it doesn't end with an END marker -- Graphic Workshop will prompt you to select the next file in the sequence. When the Next File dialog appears, double-click on the name of the next file. Click on OK if you think all the sections have been read or click on Cancel to abort reading the current file. You'll be prompted once for each section of the file, until a file with an END marker is read. Note that it's your responsibility to select the correct UUE file sections and to select them in the correct order.

2. Alternately, use a text editor to inhale each section into a single larger text file. Be careful not to change any of the uuencoded data.


3. You can concatenate files at a DOS prompt using an obscure variation on the DOS COPY command. Here's how it works:

```
COPY SECTION1.UUE+SECTION2.UUE+SECCTION3.UUE PICTURE.UUE
```

In this example, SECTION1.UUE, SECTION2.UUE and SECCTION3.UUE are the partial uuencoded graphics downloaded from Usenet and PICTURE.UUE is the complete graphic, ready for Graphic Workshop to view. You can have as many sections as you like on a command line like this.

In most cases you'll want to use the first approach discussed here.

ICO Files - Maximum bits: 4

ICO files are used to contain Windows icons. They're very small bitmaps. If you convert a larger bitmap to ICO, only the upper left corner of the source image will appear in your icon. Investigate the Graphic Workshop Scale and Crop modes if you're creating icons. You might also have recourse to the Effects Colour Reduction function if your source images have more than sixteen colours. 

ICO files consist of a bitmap and a transparency mask. When you view an ICO file with Graphic Workshop, the transparent colours will be replaced with a solid colour... by default it will be grey. You can change this colour by opening `\WINDOWS\GWS.INI` with the Windows Notepad application and changing the value of the `IconTransparentColor` item.

Graphic Workshop will read icons of any size and colour depth recognized by Microsoft Windows. It will only write 32 by 32 pixel, sixteen-colour icons.

FITS Files

The FITS format is used to store images from telescopes and other astronomical sources. Graphic Workshop supports a subset of FITS. Specifically, it will only handle images with two axis correctly. FITS files can contain more than eight bits of grey scale information, but as no PC display hardware exists that can display it, images with higher resolution will be reduced to eight bits of grey for display and conversion.

It won't take you much work to find FITS files that Graphic Workshop will not display. FITS files are often used to contain images which aren't simple two-dimensional flat graphics.

If you do encounter a FITS file which Graphic Workshop will not display, or will not display correctly, but which you think contains a simple two-axis image, please send us a copy of it. We're still fine tuning the FITS reader.

If you write an image to a FITS file, it will be stored as an eight-bit grey scale picture.

Apple QuickTime MOV Files

QuickTime movies are a tragic tale, and Graphic Workshop's involvement with them will prove very cursory. It will play MOV files, but it will not convert to or from MOV, a situation that's not likely to change in the foreseeable future.

Without getting into all the hoary details of our brief flirtation with Apple, adding complete QuickTime support proved to be prohibitively expensive. As we weren't prepared to raise the price of Graphic Workshop to deal with what is in reality a pretty obscure animation format, we decided to forgo this feature.

We have included hooks in Graphic Workshop which will allow it to play QuickTime movies if you have the QuickTime MCI drivers installed in your system. If you do not have these drivers installed, attempting to play a QuickTime movie will generate an error message.

See GWS Documentation for more about MOV files.

PNG Files - Maximum bits: 24

The PNG, or Portable Network Graphics, format was created as a successor to GIF. It features lossless compression for images with up to twenty-four bits of colour, and most of the other features of GIF. In most cases it will provide at least slightly better compression than GIF.

PNG files can be interlaced or non-interlaced. This won't affect how PNG images look in Graphic Workshop, but interlaced PNG files will cause Graphic Workshop to pause momentarily before its status bar begins to indicate that something's happening.

MPG Files

Graphic Workshop will display MPEG animations. At present, that's all it will do with them. MPEG data streams are fairly complex and processor-intensive to decode -- you must have a 32-bit implementation of Windows available to use the MPEG viewing facility of Graphic Workshop. This means that you'll need Windows 95, Windows NT or WIN32 installed under Windows 3.1.

See GWS Documentation for more about MPEG files.

DLL and VBX files - Maximum bits: 24

You'll probably find a lot of files about your hard drive with the extensions DLL and VBX. These are not actually graphics per se -- they're dynamic link libraries used by Windows and its applications. They often contain small graphic images, however. For example, many of the bitmap buttons that appear in the dialogs of Graphic Workshop are contained in the file BWCC.DLL.

Graphic Workshop will let you go trolling for graphics in Windows' DLL files. Because it can only read DLL and VBX files, and not write them, you can't damage anything by doing this. Many DLL and VBX files will prove not to contain any graphics -- you'll see a "No bitmap in this file" error if you try to read them.

Note that Graphic Workshop can't read OS/2 DLLs, and there are some peculiar Windows DLLs it won't handle either. If you encounter an error message when you attempt to view a DLL or VBX, try a different file.

To extract graphics from a DLL or VBX file, convert from it to a more common format, like PNG or BMP. A selector window will appear to let you select the graphics to be converted.

XBM Files - Maximum bits: 2

The XBM format is used to store small bitmaps -- it's actually a C-language definition of a bitmap. XBM files are associated with UNIX systems, wherein they often store icons.

Casio CAM files - Maximum bits: 24

These files are created by Casio's digital cameras. They are, in fact, just JPEG files with a proprietary header stuck on. Graphic Workshop will read these files and convert them to other formats, but it will not write to the CAM format.

Kodak KDC files - Maximum bits: 24

These files are created by Kodak's digital cameras. Graphic Workshop will read these files and convert them to other formats, but it will not write to the KDC format.

Graphic Workshop for Windows 3.1 will read KDC files created by Kodak DC20, DC30, DC40 and DC50 cameras. Graphic Workshop for Windows 95 and NT will read KDC files created by Kodak DC30, DC40, DC50 and DC120 cameras

FIF files - Maximum bits: 24

FIF files are created by software from Iterated Systems' fractal compression technology. They can be thought of as being similar in nature to JPEG files, in that fractal compression deletes some of the detail from a compressed image in order to achieve better compression. The visible nature of the image degradation of FIF files will vary somewhat from that of JPEG files.

Graphic Workshop is only able to read FIF files -- due to licensing restrictions by Iterated Systems, it will not convert files from other formats to FIF.

As with JPEG files, you can tell Graphic Workshop to treat FIF files as being either eight- or 24-bit entities. The Read JPEG/FIF as RGB switch in Setup defines this -- turn it on for 24-bit reading. Reading a FIF file with this switch off will cause it to be dithered down to 256 colours.

By default, Graphic Workshop reads FIF files using internal buffers, which is fast but memory hungry. As FIF files don't usually contain really huge images, this is safe. If you encounter a FIF file that won't read because of memory problems, set FastFifRead in GWS.INI off. Note that this switch is ignored if Read JPEG/FIF as RGB in Setup is turned off.

Adobe Photoshop PSD files - Maximum bits: 24

The PSD format is native to Adobe Photoshop. It can store images having up to 24 bits of colour -- it also supports transparency and several other options which are not supported by Graphic Workshop. PSD files can be stored either uncompressed or compressed using run-length compression. The latter is typically not very effective on photorealistic subjects. See the Setup section of this document for more about selecting PSD file compression.

Silicon Graphics SGI files - Maximum bits: 24

The SGI format is used by Silicon Graphics workstations. Graphic Workshop supports most of the format. Specifically, it does not recognize SGI files with obsolete line formats. All graphics written to the SGI format will be stored as uncompressed 24-bit files, no matter what their source colour depth was. Graphic Workshop also recognizes files with the extension RGB as being SGI files.

Contacting Alchemy Mindworks Inc.

We hope you'll contact us to register Graphic Workshop... see the section about [Registering Graphic Workshop](#).

You can contact us by mail by writing to us at:

Alchemy Mindworks Inc.
P.O. Box 500
Beeton, Ontario
LOG 1A0
Canada

We will attempt to answer questions from unregistered users who write to us to the extent that their answers are needed for you to fully determine whether Graphic Workshop will suit your requirements.

Our order line is available 24 hours a day at 1-800-263-1138 for callers from within the United States and Canada and at 1-905-936-9500 from other areas. There is no one at this number who can answer technical questions about Graphic Workshop.

We can also be reached through the Alchemy Mindworks bulletin board. It's available twenty-four hours a day at 1-905-936-9503. As of this writing, the protocol was 300, 1200 or 2400 baud, or 9600 baud *v.32bis*, eight data bits, no parity and one stop bit.

The bulletin board always has the most recent versions of all our shareware on it, plus bug fixes, drivers and other relevant information. It only exists to support Alchemy Mindworks' shareware... it does not have a general file area.

If you encounter problems with a file, you're welcome to upload the errant file to our bulletin board. Actually, you can upload any picture files you like to the board... we enjoy getting pictures.

If you have a question about Graphic Workshop, feel free to leave it on the bulletin board. We try to answer all questions within twenty-four hours. Note that you must call back to retrieve your answer... please don't ask us to phone you or to leave the answer on another bulletin board.

Registered users of Graphic Workshop will receive our voice number for immediate technical support. The voice number is only available for use from 10:00am to 5:00pm EST. If you call and get our answering machine... it does happen... please leave us a message or call back later. We are only able to return long distance calls if we can call you collect. In this regard, please note that as of this writing Canada has a very peculiar electronic voice mail collect call system... if the phone company's computer starts talking when you pick up the phone, it's probably us returning your call.

We ask that in contacting us you appreciate that we are a small company with limited resources. If you have not registered Graphic Workshop we will not tell you to go to hell, but please don't ask us for half an hour of free technical support.

Registering Graphic Workshop

If you like this program and find it useful, please support it by sending us \$40.00. This will entitle you to telephone support, notification of updates, a free copy of the latest version of Graphic Workshop for Windows, the GWS Camera screen capture application, the Multimedia Browser application and other worthwhile things. More to the point, though, it'll make you feel good. We've not infested the program with excessive beg notices, crippled it or had it verbally insult you after ten days. We trust you to support Graphic Workshop if you like it.

At such time as you do register Graphic Workshop, the **About** box will stop appearing when you exit the program.

If you want to see additional features in Graphic Workshop, register your software. If we had an Arcturian mega-dollar for everyone who has said they'd most certainly register their copy if we'd add just one more thing to it, we could buy ourselves a universe and retire.

Oh yes... should you fail to support this program and continue to use it, a leather winged demon of the night will tear itself, shrieking blood and fury, from the endless caverns of the nether world, hurl itself into the darkness with a thirst for blood on its slaving fangs and search the very threads of time for the throbbing of your heartbeat. Just thought you'd want to know that.

Our address is:

**Alchemy Mindworks Inc.
P.O. Box 500
Beeton, Ontario
LOG 1A0
Canada**

Our **order line** is available 24 hours a day at:

- **1-800-263-1138** for callers from within the **United States** and **Canada**.
- **0800 89 7355** for callers from **Great Britain**.
- **1-800-554-082** for callers from **Australia**
- **1-905-936-9500** from other areas.

There is no one at this number who can answer technical questions about Graphic Workshop. Our operators cannot check order status, cancel or modify orders, provide customer service, pass messages along to other departments or transfer your call. They only take credit card orders.

You can register through the Alchemy Mindworks **bulletin board**. It's available twenty-four hours a day at **1-905-936-9503**. As of this writing, the protocol was 300, 1200 or 2400 baud, or 9600 baud v.32*bis*, eight data bits, no parity and one stop bit.

You can also **FAX** us your order at **1-905-936-9502**.

You can register Graphic Workshop for Windows on CompuServe by typing **GO SWREG**. As of this writing, the shareware registration code for Graphic Workshop for Windows 3.1 is 1403. The registration code for Graphic Workshop for Windows 95 and NT is 10491.

If you have previously registered Graphic Workshop for Windows you can **update** your copy

for \$20 plus \$5.00 shipping.

Canadian users

The registration fee for Graphic Workshop is \$40.00 (CDN) plus seven percent GST (we were shocked when they didn't scrap it like they promised too), plus \$5.00 shipping, or \$47.80. We sincerely regret collecting this tax on behalf of several levels of government which will only squander it. If you sincerely regret having to pay it, we urge you to express your regret by voting in the next federal and provincial elections.

American users

The registration fee for Graphic Workshop is \$40.00 (US) plus \$5.00 shipping.

Other users

The registration fee for Graphic Workshop is \$40.00 (US) plus \$5.00 shipping. If you pay us by cheque, please make sure that it's a cheque drawn on an international bank, and that it will be negotiable in Canada. If there's no bank clearance number along the bottom of the cheque, it will not clear.

Paying by credit card

We can accept payment by **American Express, Mastercard** and **Visa** only. We need your card number and expiry date and the name which appears on your card. We also need written authorization to debit your Visa account for the specific amount you're sending us.

We cannot accept other credit cards. We are not able to ship registered copies of software prior to receiving payment for them. We cannot accept **purchase orders**.

Reporting Problems

While we have tested Graphic Workshop thoroughly, it's possible that you may encounter a situation we haven't anticipated, and perhaps a file which will not read. If this happens, we would be interested in knowing about it so we can deal with it in the next release of Graphic Workshop. Here's how to report a problem to us.

Copy your WIN.INI, SYSTEM.INI, GWS.INI, CONFIG.SYS and AUTOEXEC.BAT files onto a floppy. Copy the image files which resulted in the problem and provide a description of what you did and what happened. Tell us in as much detail as possible what sort of hardware you're using.

Alternately, ZIP up the relevant files and upload them to our bulletin board.

If we can't recreate it, we probably won't be able to fix it.

Before you contact us with a problem in Graphic Workshop, please make sure you've read this document thoroughly and that you understand how the software should work. Many problem reports which receive aren't problems with the software at all.

Distributors Outside North America

See GWS Documentation for a complete list of overseas distributors.

Add Thumbnails

If you select one or more files in Thumbnail mode and then select **Add Thumbnails** from the **Thumbnails** menu, thumbnail images will be created for each of the selected images. These will replace the default no picture symbols, the red circles. Each thumbnail is stored in a THN file, and requires about nine kilobytes of hard drive space.

If two images exist with the same file name but different extensions, they will share a common thumbnail.

This function is only available when Graphic Workshop is in its thumbnail mode.

Delete Thumbnails

The **Delete Thumbnails** function of the **Thumbnails** menu will remove the thumbnail images, comments and key words for all the selected images. The thumbnail images will be removed from Graphic Workshop's window, to be replaced by red circle icons, indicating that thumbnail images are not available.

This function is only available when Graphic Workshop is in its thumbnail mode.

Thumbnail Details

The **Details** function of the **Thumbnails** menu will allow you to add comments and key words to an image. This information will actually be stored in the THN thumbnail file associated with the image in question.

You can store anything you like in the **Comments** field of the **Thumbnail Details** box. The key words should contain information to search by. For example, in adding key words to pictures of animals, you might use key words such as BIRD, AMPHIBIAN, INSECT, ELEPHANT, POLITICIAN and so on. See the section on [Thumbnail Search](#) for more information.

Thumbnails Search

The **Search** function of the **Thumbnails** menu will allow you to search through all the images with thumbnail entries in your current directory by key words. Any entries which match the key words you specify will be selected. You can subsequently view, print, examine or change the details and otherwise perform the usual Graphic Workshop batch functions on them.

If you enter more than one key word into the Thumbnails Search box, you can select how the search should treat them using the **And** and **Or** buttons. With **And** selected, only those entries having all the key words you've entered will be matched. With **Or** selected, any entry having at least one of the key words you've entered will be matched.

If you disable the **Clear tags before search** option, any currently selected entries will be left selected by the search.

You can search for partial matches of keywords if you enable the Partial Matches option in the Search dialog. Thus, for example, you could find all the wombats by searching for WOM or BAT. This option can be used in conjunction with the And and Or functions.

Use Thumbnails

The Use Thumbnails item of the Thumbnails menu and the Use Thumbnails button will toggle between the normal text mode and the graphic thumbnail mode of Graphic Workshop. Both modes offer the same functionality, except that the text mode does not allow for the thumbnail-specific features of the package to be accessed.

You can define which mode Graphic Workshop will boot up in using the **Start in thumbnail mode** item of the Setup box.

Changing Drives and Directories

In the text file name selection mode of Graphic Workshop for Windows you can change drives by double clicking on the drive letter you wish to select. The drive letters are in square brackets after the file names.

You can change directories by clicking in the directory name you wish to move into or on the entry with two dots to move up by one level in your directory tree. These entries will also appear after the file names in the selection box.

In the thumbnail mode, you can change drives by double clicking on the appropriate drive icon. You can change directories by double clicking on the appropriate directory icon, as indicated by an image of a tree of folders. These items will appear at the end of the list of thumbnails.

You can also change drives and directories by selecting the Change Directories item from the File menu and by clicking on the Change Directory button. This will present you with a conventional Windows file selection dialog.

Note: if you are running on a Novell network, the two dot entry used for moving up a directory tree may not be present. In this case, you must use the Change Directories dialog.

Animation and Multiple Image Formats

Some graphic file formats, such as FLI and AVI, are actually animation sequences... that is, each file contains multiple frames or images. Some conventional still graphic file formats can contain multiple images as well.

If you attempt to view or process a file with multiple images in it, the Select Image dialog will appear to prompt you for the image to unpack from your file. The selected image will subsequently behave as if it had come from a conventional single-image format.

The Select Image dialog will allow you to view the entire animation for those formats which contain animated sequences. Click on View to do so.

If you use the View function with an AVI file, the animation will be handled through the Windows MCI interface. You must have the Video for Windows MCI drivers installed for this to work. If AVI files refuse to display, check your Windows Control Panel to make sure the appropriate drivers are installed. Note that most AVI files contain sound tracks as well. You must have a sound card and the MCI sound drivers installed to hear them.

Other animation formats, such as FLI, are displayed using Graphic Workshop's internal animation drivers. Written to be memory-efficient rather than particularly fast, Graphic Workshop's internal animation drivers will run on machines having very little memory but they will slow down noticeably if you attempt to view animation on systems with slower processors, or if you attempt to view animated images with a lot of detail in them. There's the breaks... Windows is a less than ideal environment for animation.

Graphic Workshop may not correctly display non-MCI animation sequences which contain palette changes part way through the sequence.

FLI Animation

The FLI and FLC formats are a DOS-based animation protocol developed by AutoDesk. All FLI files are constrained to have the dimensions 320 by 200 with eight bits of colour, and most FLC files do as well. At present the FLI and FLC formats do not support sound.

The FLI and FLC formats use simple run length compression. Note that complex frames which don't compress well can result in really huge FLI or FLC files. The raw data for a 100-frame FLI file would require over six megabytes of storage.

WMF Windows Metafiles

The WMF format contains vector graphics. Graphic Workshop will rasterize WMF files into bitmaps. You can set the colour depth and approximate image dimensions of the rasterized bitmaps this feature will create using the Vector Read Options control of the Setup dialog.

Graphic Workshop will not write to the WMF format.

When you read a WMF file with Graphic Workshop, the result will be a bitmap. Unless your source WMF file was black and white, the image will probably be dithered. While you can use all the functions of Graphic Workshop with WMF files, scaling, dithering and colour-reducing them may result in noticeable aberrations in your destination images.

Formats

The Supported Formats dialog will allow you to disable any of the file formats Graphic Workshop supports. Files in disabled formats will not appear in the main file selector of Graphic Workshop.

Enabled formats are shown in the Supported Formats dialog with a cross to the left of their entries. Click on any format entry to toggle it from enabled to disabled.

Moving and Copying Files

The Move and Copy Files function will copy files to another drive or directory, optionally deleting the source files when it's done. Specifically, Copy will copy files and leave the source files in place. Move will copy files and then delete the source files. In the latter case you'll be prompted to allow it to do so. The Move and Copy Files function includes optional verification of the copied files, using a 32-bit CRC check. This reduces the likelihood of incorrectly copied files to something less than the odds of winning a state-run lottery.

Scanning

Graphic Workshop can acquire images through a TWAIN device. The TWAIN interface is typically used by scanners, but it's also applicable to things like digital cameras. Note that your system must have suitable TWAIN drivers installed for your scanner to use the Acquire function of Graphic Workshop. Scanners which are not TWAIN-compliant are not supported by the software.

If the Acquire function in Graphic Workshop is disabled, your TWAIN driver could not be located.

NOTE: Some TWAIN drivers do not work properly unless your scanner is switched on before your computer boots up. If you have trouble with the Acquire function, check this.

To scan a graphic using Graphic Workshop, select Acquire -> Scan from the Image menu or click on the Acquire button. A dialog will pop up to drive your scanner.

The Acquire dialog is resident in your TWAIN driver, and is not part of Graphic Workshop. Its contents will vary with the capability of your scanner. Consult your scanner documentation for a discussion of its use. It will also probably look cosmetically different from the rest of Graphic Workshop.

When you have completed a scan, Graphic Workshop will prompt you for a destination format and a file name to save it to.

Graphic Workshop takes images your scanner created and writes them to files with no correction or modification. Some TWAIN drivers offer options that can be used to create pretty ugly images. This is especially true of what purport to be 256-colour scanning modes. If you want to scan graphics and wind up with 256-colour image files - such as to write your pictures to GIF files - you should scan into 24-bit true-colour files and then use the Graphic Workshop Effects -> Colour Reduction functions to reduce your source images to 256 colours.

If you have multiple TWAIN devices in your system, you can choose the one you want to scan with by selecting Acquire -> Select from the Image menu or by holding down Shift and clicking on the Acquire button.

Note that Graphic Workshop does not use virtual memory to scan. If you want to scan a twelve-megabyte image, your system must have at least twelve megabytes of available memory.

See GWS Documentation for more about TWAIN.

TrueType TTF

TTF files are TrueType fonts. Graphic Workshop will display these as font samples. If you convert from TTF to another format, you'll have a bitmapped image with a sample of the font. The size of the bitmaps, the example text and other features of the font samples can be configured -- see the [Setup](#) section. Graphic Workshop will not create TTF files.

