Graphic Workshop for Windows
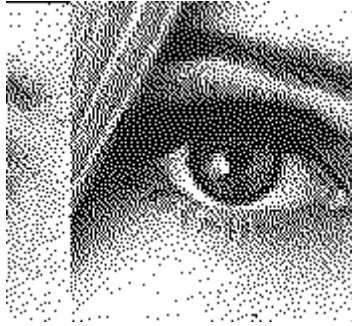
FROM ALCHEMY MINDWORKS INC.

If you like this program, please send us $40.00, the normal user fee for Graphic Workshop.

If you encounter difficulties with this software, please read this document... especially the Frequently Asked Questions section... and get in touch with us if you don't find an answer herein.

Registered users of Graphic Workshop are entitled to phone support, notification of upgrades and good karma. When you register it, we'll send you a copy of the latest version. Please tell us the
version number of your copy of Graphic Workshop when you register. Our address can be found in the Registration section of this document.

NOTE: You can register Graphic Workshop with an American Express or Visa card by calling
1-800-263-1138 (toll free) from the United States or 1-416-729-4969 from other places.

NOTE: All of Alchemy Mindworks' non-800 telephone numbers will change from area code 416 to area code 905 as of October 4, 1993.

Overseas distributors:
Australia: Manaccom Pty Limited, 3/9 Camford Street, Milton, Queensland 4064, Australia, Telephone (61)-7-368-2366, FAX (61)-7-369-7589

Austria: PEARL AGENCY Österreich, Grünburgerstr. 7a, A-4540 Bad Hall, Tel 07258 53 33, Fax 07258 5315.

Britain: The Public Domain & Shareware Library Ltd., Winscombe House, Beacon Road, Crowborough, Sussex, TN6 1UL, England, telephone 0892 663298, FAX 0892 667473, BBS 0892 661149.

Denmark: Prof Shareware, Benloese Skel 4 G, DK 4100, Ringsted, Denmark.

France: DP Tool Club, 102 rue des fusilles, 59650 Villeneuve d'Ascq, France, telephone (33) 20 56 55 33, fax (33) 20 56 55 25.

Germany: PEARL AGENCY Deutschland, Tel 07631 120 91-99, Fax 07631 120 08-9, BTX *PEARL#

Japan: P&A Shareware, 302 Bellwins, 1367-23, Nakagami, Akishima, Tokyo, JAPAN 196, telephone (81) 425-46-9141, FAX (81) 425-46-9142

Switzerland: PEARL AGENCY Schweiz, Großmattstr. 16, CH-8964 Rudolfstein, Tel 05731 70 20, Fax 05731 70 30.

NOTE: We have a bulletin board system. See the section on contacting Alchemy Mindworks for more information.

Please share this package with your friends and upload it to any bulletin boards you feel are worthy of it. However, when sharing Graphic Workshop, please distribute the whole, unmodified package. Thanks...

Graphic Workshop requires Windows 3.1 or better to install and run.

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Introduction
Graphic Workshop is a program for working with computer bitmapped graphic files. It will handle most of the popular file formats, as listed in the contents section of this document.

Graphic workshop is a simple, menu driven environment which will let you perform the following operations on the aforementioned files.

     View them.
     Convert between any two formats (with a few restrictions).
     Print them.
     Dither the colour ones to black and white.
     Reverse them.
     Rotate and flip them.
     Scale them.
     Reduce the number of colours in them and do colour dithering.
     Sharpen, soften and otherwise wreak special effects on them.
     Crop them down to smaller files
     Adjust the brightness, contrast and colour balance of the colour ones.
     Capture Windows screens or portions thereof.

Using Graphic Workshop, you can have your image files in the formats that your software recognizes, all without keeping track of numerous funky utilities. In addition, using the halftoning and dithering facilities of Graphic Workshop, you can convert full colour digitized photographs for use as superb black and white clip art, suitable for inclusion in your documents.

Graphic Workshop will handle image files of any size your computer has enough memory to work with. Hopefully, it lacks even the merest vestiges of bugs... a likely story, but we hope so.

Graphic Workshop will drive your monitor and printer through the Windows hardware drivers. If you have screen and printer drivers for Windows, you have them for Graphic Workshop for Windows.

One of the important distinctions between shareware and commercial software is that we can release new versions of Graphic Workshop for Windows as often as necessary to keep up with changes in the file formats it works with, and with suggestions from its users. New versions of this software appear about every two months. We invite you to use of bulletin board to keep up with the latest features of Graphic Workshop, or to contact us for a copy of our Alchemical News newsletter.

Registered users of Graphic Workshop will receive periodic mailings about its new features.

Hardware and software
Graphic Workshop will run on any system which is capable of running Windows 3.1 or better. Four megabytes or more of memory is recommended.

GWS.EXE	The Graphic Workshop program itself.
GWS.WRI	Yes, you're reading it now.
GWS.HLP	The on-line help file.
EXAMPLE1.IMG	A monochrome picture file.
EXAMPLE2.GIF	A sixteen-colour picture file.
EXAMPLE3.GIF	A 256-colour picture file.
EXAMPLE1.THN	Thumbnails for the examples
EXAMPLE2.THN	
EXAMPLE3.THN	
BWCC.DLL	Custom controls DLL.
PCDLIB.DLL	Photo-CD support DLL.
ORDER.FRM	A text order form to register Graphic Workshop with.
ORDER.WRI	A Windows Write order form.

There is no EXAMPLE4, a 24-bit picture file, as the smallest one we could find ran to over 400 kilobytes. There are several 24-bit files on our bulletin board, should you want one to look at.

Registered users of Graphic Workshop for Windows will also have:

CAMERA.EXE	The screen capture program
CAMERA.WRI	The documentation thereof
PCONFIG.EXE	The Windows executable picture configuration tool.
PCONFIG.WRI	The documentation for Picture Configuration and the Windows EXE pictures.

DOS and Windows Versions of Graphic Workshop

Graphic Workshop is available in versions to run under MS-DOS and under Microsoft Windows 3.1 or better. With certain exceptions, both applications have essentially the same capabilities. Their user interfaces are similar, within the confines of the environments they run under. Here's a brief overview of the differing capabilities of these two packages.

The DOS version provides limited EPS support, which the Windows version does not.

The DOS version includes scanner support. The Windows version does not.

The DOS version drives all display cards directly. The Windows version does not... it drives all displays through Windows. It can optionally dither images which have more colours than your display can handle.

All printer support is handled through Windows in the Windows version of the software. The printing facilities differ slightly between the two versions of Graphic Workshop.

Here's a beg notice. Graphic Workshop for Windows took a long time to write, and almost none of the code which comprises the DOS version of the software was of much use in a Windows environment. As such, we hope that if you use the Windows version as well as the DOS version, you'll regard them as two distinct applications and register them.

New features of release 1.1
This release of Graphic Workshop constitutes a major rewrite of the software. Here are some of the more important changes and additions:

Support for JPEG compression and the Independent JPEG Group's JFIF file format.

Support for Kodak Photo-CDs.

The creation of Windows executable pictures, as well as DOS ones.

Additional colour reduction and dithering options.

Better memory management.

Context sensitive help.

PFS:First Publisher ART file support.

Sun raster file support

Expanded TIFF options.

Resizeable main window.

Thumbnail image mode.

Key word search and comment fields for each image.

Easier setup.

File formats
Graphic Workshop works primarily with bitmapped image files. This is as opposed to vector or line art files. Vector files include DXF, GEM, CDR, Harvard Graphics, Lotus PIC and CGM files, among others. Graphic Workshop has limited support for vector graphics... see the section on Rasterizing Vector Graphics later in this document.

In most cases, the specifications for image files are pretty standardized, and Graphic Workshop will reliably import image files in its supported formats without difficulty. There are a few exceptions to this, as will be discussed in detail throughout this section.

Each of the formats listed here also includes the maximum number of bits of colour the format will support. You can work out the number of colours this represents as two to the power of the number of bits. Hence, an eight-bit file has 2^8 possible colours, or 256. Twenty-four bit files have essentially an infinite number of possible colours... 16,777,216 colours, which is near enough to infinity for a computer.

MacPaint files - Maximum bits: 1
These 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 in a monochrome-only format.

GEM/IMG files - Maximum bits: 24
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.

PCX files - Maximum bits: 24
These 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.

GIF files - Maximum bits: 8
These 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, such as comment blocks, along with their images.

Note that you can include comment blocks in GIF files which are created by Graphic Workshop for Windows. These can take three forms... you can be prompted for comments whenever a GIF file is created, you can have the contents of a comment read from a text file each time you're prompted or you can have a comment block created from the contents of a text file automatically every time Graphic Workshop writes an image to the GIF format.

You must enable the Create GIF 89a Files option in the Graphic Workshop Setup box to create comments.

To have Graphic Workshop prompt you for a GIF comment, open the Setup box and enable the Prompt for GIF Comments option.

To have Graphic Workshop prompt you for the path to a text file to use for a GIF comment, use the same procedure as you would to have it prompt you for a comment. Enter an @ character followed by the path to your text file in the GIF comment box.

To have Graphic Workshop use your text file for its GIF comment blocks automatically, use the Windows Notepad application to open the \WINDOWS\ GWS.INI file and locate the line that begins

GifCommentPath =

Add a complete path to your text file after the equal sign and save the file. Graphic Workshop should not be running when you do this.

Note that GIF comments stored as text files must be pure ASCII files, such as those created by Windows Notepad, rather than proprietary word processing documents. You should keep the comments fairly short.

TIFF files - Maximum bits: 24
The TIFF options in 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.

Graphic Workshop supports monochrome, colour and grey scale TIFF files. Grey scale TIFF files can be created by converting any colour format into TIFF with Graphic Workshop set up to produce grey scale TIFF files using the appropriate options of the Setup box. These import into desktop publishing packages such as Ventura for sharp looking PostScript halftones.

Colour TIFF files are useful in Corel Draw, among other places. Corel Draw 2.0 will import colour TIFF files for inclusion in CDR graphics. This is preferable to importing colour PCX files, as the size of a TIFF file in Corel Draw is preserved.

Some applications have trouble reading grey scale TIFF files which have been compressed. Others read 'em fine. For this reason, Graphic Workshop defaults to

creating compressed grey scale TIFF files but you can tell it not to compress them if you're not sure that whatever you'll be importing them into will read them. See the section which discusses the Setup box.

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.

When you're creating grey scale TIFF files which will be used as desktop publishing art or in other situations wherein they'll be printed to a PostScript printer, you should create them with greyscale expansion enabled. If they will be displayed on a monitor or edited in a paint program, you may want to create them with greyscale expansion disabled.

The amount of grey scale expansion should be adjusted to best suit your output device and your desktop publishing software. You can do this by using the Notepad application to open \WINDOWS\GWS.INI and modifying the **TiffBrightness** and **TiffContrast** items in this file. Do not change anything else. These set the base brightness level and the amount by which the contrast of an image converted to TIFF grey scale will be expanded. You can use the original TIFF contrast expansion map by setting these values to 65535.

When you're creating colour TIFF files... especially if they're to be used as art in a desktop publishing package... you might want to adjust the image gamma to compensate for a particular output device. You can do this by opening GWS.INI in your \WINDOWS directory with the Notepad application and changing the value of the **TiffGamma** item. This value should be set to 100 times the gamma value you want. As such, a gamma of 1.0 would be **TiffGamma = 100**. Gamma values in the range of 0.2 through 2.0... or
TiffGamma = 20 through **TiffGamma = 200...** are sensible gamma values for most output devices. The low end of the range will produce lighter images images.

The default value is a gamma of 1.0, or **TiffGamma = 100.** At this setting, **TiffGamma** will have no effect on your TIFF files. Note that the setting of **TiffGamma** only applies to colour TIFF files. It will not affect monochrome or grey scale images.

If you aren't sure what gamma is, you probably have no need to meddle with this setting.

Whether you create colour or grey scale TIFF files will be largely dependant on the application you want your TIFF files to be read by. Here are a few guidelines:

   If you want to import TIFF files into Ventura or PageMaker so they'll output as halftones to a PostScript printer, use grey scale TIFF files with grey scale expansion enabled.

   If you want to import colour TIFF files into Corel Draw to print to a colour output device, use colour TIFF files... the grey scale expansion doesn't matter.

   If you want to import colour TIFF files into Corel Draw to print to a monochrome output device, use grey scale TIFF files with the grey scale expansion enabled.

If you want to import grey scale TIFF files into a paint or image editing package, such as ImageIn or Desktop Paint 256, use grey scale TIFF files with the grey scale expansion disabled.

Note also that Graphic Workshop packs TIFF files with an eye to maximum unpacking speed, rather than for optimum compression. As such, pictures with between 32 and 256 colours will be promoted to 256 colours. Pictures with between four and sixteen colours will be promoted to sixteen colours.

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, specifiying 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 4   -   Group 4 FAX compression

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.

You can change the default style of the TIFF details by opening GWS.WRI 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. Note that as of this writing Corel Draw seems to behave oddly if it's confronted with TIFF files having resolution values over 300.

WPG files - Maximum bits: 8 (or maybe 4)
These are 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.

MSP files - Maximum bits: 1
These 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.

IFF/LBM files - Maximum bits: 8
These 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.

Deluxe Paint is a bit of a problem in the way it deals with IFF files, actually. This affects 256 colour files. Its native format is a subclass of IFF called PBM, and compresses its images as bytes. It's somewhat unique to Deluxe Paint, and Electronic Arts won't tell anyone quite how it works. You can actually work it out to a large degree, but every so often a file created in this format in the way it seems like it should be done refuses to load into Deluxe Paint.

The standard form for IFF image files is called ILBM, compressing all images as planes. This is much slower, but it means that files thus compressed will be readable by pretty well all IFF readers... even if you port 'em back to the Amiga. This is how Graphic Workshop creates IFF files. Unfortunately, there's a problem with old versions of Deluxe Paint which will occasionally cause them to stop reading one of these files part way through the image. This happens to IFF files from sources other than Graphic Workshop, so it's probably a bug in these versions of Deluxe Paint. It appears to have been rectified in more recent releases.

If you encounter an image which, when converted into an IFF file will not read into Deluxe Paint, use the Setup box to configure Graphic Workshop to produce an uncompressed IFF file. Uncompressed files read into Deluxe Paint with no difficulty.

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.

BMP/DIB files - Maximum bits: 24
BMP files are used as "wallpaper" under Windows 3. They can be created using the Paintbrush application supplied with Windows, among other things. The BMP and DIB formats are identical... DIB files are used in some programming and multimedia applications.

BMPand DIB files use no image compression, as the intention appears to be to make them fast to load. Plan on your 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.

RLE files - Maximum bits: 8
The RLE format is actually a variation on the BMP format discussed previously. 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.

To use an RLE file as wallpaper, place the file you wish to use in your \WINDOWS subdirectory. Use the Windows control panel to select your wallpaper file as you normally would... the only difference is that you will have to type in the name of the RLE file you wish to use, as the file selector in the control panel only looks for BMP files.

Technically, RLE files used as wallpaper should take a little longer to load. In practice, this is rarely noticeable.

Using an RLE file to change the startup Windows logo is a bit tricky, but it's arguably worth the effort if you're tired of looking at the Microsoft ad. You will need a sixteen-colour RLE image of the dimensions 640 by 480... 640 by 350 if you use an EGA card. The RLE file should be no larger than 40 or 50 kilobytes, and smaller if possible. For this example, we'll allow that the file is called NEWLOGO.RLE, located in the \WINDOWS subdirectory.

Go to the \WINDOWS\SYSTEM subdirectory and issue the following command at the DOS prompt.

    COPY /B WIN.CNF+VGALOGO.LGO +C:\WINDOWS\NEWLOGO.RLE C:\WINDOWS\WIN2.COM

This will create a new program called WIN2.COM. If you start Windows by typing WIN2, rather than WIN, you will see your logo rather than Microsoft's. This will not affect your normal WIN.COM program.

There are several things to be aware of in this procedure. The most important is that the resulting WIN2.COM cannot be bigger than 65535 bytes, which is why you must keep your RLE file down to a modest size. If it exceeds these limits, WIN2.COM will refuse to run.

Secondly, if your RLE file is of dimensions other than those of your screen, it will appear incorrectly placed.

Thirdly, if you will be using an EGA card, replace the VGALOGO.LGO file, above, with EGALOGO.LGO.

Note that when a file is converted to the sixteen-colour RLE format by Graphic Workshop for Windows, it is permanently remapped to the Windows default palette. This may result in a noticeable colour shift for some images.

Graphic Workshop for Windows will read most RLE files from other sources. One known exception is the VGALOGO.RLE file provided with Windows 3.1.

PIC files - Maximum bits: 8
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.

PIC files are structured exceedingly weirdly, especially in their sixteen-colour manifestations. For this reason, it's necessary for Graphic Workshop to create a temporary scratch file while it's packing or unpacking a sixteen-colour PIC file. You will note that upon beginning to read or write one, the bar graph will appear to pause for a few seconds before it starts to move.

By default, the temporary file will be written to the current directory. However, you can direct it to somewhere else by including the following line in your environment, for example:

    SET TEMP=H:\

This will cause the temporary file to be written to the root directory of drive H:. You can, of course, specify any path you like. If drive H: is a RAM drive, this will speed up the packing and unpacking of sixteen-colour PIC files considerably.

TGA files - Maximum bits: 24
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 elsewhere in this document.

EXE files (self displaying pictures) - Maximum bits: 8
You can convert images having 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.

The DOS EXE pictures are compatible with the EXE pictures created by Graphic Workshop for DOS.

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.

Windows EXE Multimedia Pictures
If you have Graphic Workshop create EXE pictures with the **Windows EXE Pictures** option of the Setup dialog enabled, the resulting EXE files will be stand-alone Windows applications. Click on the icon for one and your picture will appear in a Window. Double click on the system menu to send it away.

Using the **Picture Configuration** tool provided with the registered version of Graphic Workshop for Windows, you can enable a number of advanced features of the Windows EXE pictures created by Graphic Workshop. These include:

    - Have your pictures play wave files, MIDI music or Video for Windows AVI files.
    - Maximize your pictures on startup.
    - Set the background matt colour of your pictures.
    - Set a time delay, after which a picture will terminate automatically.
    - Disable the title bars of your pictures.
    - Have your pictures terminate if a mouse is clicked.
    - Change the About box text of your pictures.
    - Chain EXE pictures together to form a slide slow.

Complete instructions for using the advanced features of the Windows EXE pictures can be found in PCONFIG.WRI, included with registered versions of Graphic Workshop.

Note that if you click on one of the Graphic Workshop application files, such as GWS.EXE, you'll see the unicorn bitmap that appears in its About box. While these are not strictly speaking EXE pictures... they're applications... they do contain bitmaps in their resource files.

DOS EXE Pictures
In order for a DOS EXE picture to display, the system which you attempt to run it on must have a card which supports enough colours to show the picture under

Graphic Workshop. Specifically, you will need a VGA card to display an EXE picture with 256 colours, at least an EGA card to display one with 16 colours and so on.

EXE picture files support CGA, EGA, VGA and Hercules cards in autodetect mode. In addition, you can use command line overrides to display 256-colour pictures at 640 by 480 pixel resolution on selected super VGA cards, as noted below.

Pictures displayed by converting them to EXE files and running them can't be panned around, even if they're larger than your screen. Hitting any key will return you to DOS.

An EXE picture created by Graphic Workshop will attempt to autodetect the display card type in the machine it's run on. Some cards are sufficiently weird that this isn't always possible. To get around this, you can run EXE pictures with display card command line overrides. These are the command line switches an EXE picture will accept:

/CGA Assume there's a CGA card in the system.
/EGA Assume there's an EGA card in the system.
/VGA Assume there's a VGA card in the system.
/HER Assume there's a Hercules card in the system.
/VER Display the version number of the EXE file.
/PAR Assume there's a Paradise card in the system.
/ATI   Assume there's an ATI card in the system.
/TNG Assume there's a Tseng 4000 card in the system.
/TRI   Assume there's a Trident 8900 card in the system.
/OAK Assume there's an Oak card in the system.
/VSA Assume there's a VESA card in the system
/DIS   Disable the return to text mode.
/Wnn Wait nn (00 through 99) seconds.
/KEY Allow keyboard hits to abort waiting
/FAD Fade in and out (VGA cards only)

The command line switches assume that you're using DOS 3.0 or better. You must have a space between each switch if you're using more than one of them.

In its standard VGA or autodetection modes, an EXE picture will only display 256 colours at 320 by 200 pixels. If you use one of the super VGA override switches from the list above, your picture will display in 640 by 480 pixels at 256 colours. This assumes that you select the appropriate switch, that your card has at least 512 kilobytes of memory in board and that your monitor will sync at this resolution.

Note that when you hit a key to end the display of a picture, the ASCII code of the key will be returned as a DOS error level, which can be trapped in a batch file. If your picture terminates because of the /Wnn switch instead, the error level will be zero.

You can create EXE picture files either compressed or uncompressed. This can be selected through the Graphic Workshop Setup box. Uncompressed files display quickly but take up a lot of disk space. Compressed files usually occupy

less space but display a bit slower. Note that especially in complex scanned or dithered images, you might find that compression actually results in a larger file than leaving an image uncompressed.

Note that EXE pictures will not autodetect the super VGA card modes. You must have at least 512 kilobytes of memory on your super VGA card to use the super VGA modes.

If you run an EXE picture with a question mark as its command line argument, it will display a list of its command line switches.

You can use the /DIS, /Wnn, /KEY and /FAD switches to create slide shows and interactive displays. Use a batch file to set up the pictures you want to work with. The /DIS switch will make the transition between images clean... just make sure you omit it from the last image you display.

Here's a typical batch file:

```
ECHO OFF
PICTURE1 /FAD /DIS /W10
PICTURE2 /FAD /DIS /W10
PICTURE3 /FAD /W10
```

Note that if you use the /W00 switch, your image will return immediately to DOS or to whatever application spawned it. This is useful, for example, should you want to use an EXE picture to display an image and then have the program that called it further modify the screen contents.

The /FAD switch times its fades based on the vertical refresh rate of your monitor, something which doesn't change from system to system. As such, its fades should take about the same amount of time no matter what machine you run your EXE pictures on. Likewise, the time delays set by the /Wnn switch are based on the system clock, and are processor independent.

TXT files (text files) - Maximum bits: 24
Graphic Workshop will create a 640 by 400 pixel, two colour image from any ASCII text file. The text will by truncated at 80 columns and 25 lines if 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... its dimensions and such... will be written to the appropriately named TXT file. If the file format in question supports details, the details will be written to the text file too.

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 files - Maximum bits: 8
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 - Maximum bits: 1
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 - Maximum bits: 24
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.

The Independent JPEG Group, from whom this JPEG algorithm was obtained, have also defined a file format to hold JPEG files in, called JFIF. It's typically stored with the extension JPG.

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.

At present all images converted into the JPG format will have 256 colours.

The legal requirement for using IJG's code is that we state: *This software is based in part on the work of the Independent JPEG Group.* (Thanks, lads... it was a fine bit of work.)

Kodak Photo-CD PCD files - Maximum bits: 24
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 specfic 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, such as PhotoStyler. Choose one of the grey scale options if you will be outputting your Photo-CD images to a monochrome device, such as a laser printer.

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.

By default, Graphic Workshop will check your current drive whenever you change drives to see if it's a Photo-CD, and will automatically log you into the \PHOTO_CD\ IMAGES directory, where the PCD files are. You can disable this feature by turning off the Check for Photo-CD option in the Setup box if you like.

The higher resolution images in a PCD file may require more memory than your system can provide under Windows. Under Windows 3.1, no more than sixteen megabytes of memory can be allocated, no matter how much is in your system. Typically you'll have about twelve megabytes at most free to store images in. If you want to use high resolution true colour Photo-CD images you must have Graphic Workshop configured for virtual memory. This requires that you have sufficient disk space to buffer your image. See the sections of this document entitled *A Word About Memory* and *Setup*.

The thumbnails for PCD files are not handled like thumbnails for other file formats. Specifically, there are no THN files used... the images are actually the lowest-resolution scans in the PCD files in question. This means that you cannot use the Details and Search functions with PCD thumbnails. The thumbnails will not appear if you have the Check for Photo-CD option in the Setup box switched off.

Sun raster RAS files - Maximum bits: 24
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.

HRZ Slow Scan Television - Maximum bits: 24
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. You might well ask what slow scan television is... damned if we know. Conventional television seems slow enough.

Twenty-four bit files
Most of the image file formats commonly found in use on a PC which support colour do so using a palette structure, as this is the way most PC full colour display cards work. An image stored in a palette structure file will have a maximum of 256 unique colours, drawn from a potential palette of 16 million.

For practical purposes this colour arrangement is sufficient to reproduce pretty convincing colour photographs. However, for a number of reasons, high end photographic manipulation software, colour separation software and so on works better with a non- palette image, one in which every pixel is represented as a distinct colour. In these images, every pixel consists of three bytes of colour information, one each for the red, green and blue components of the pixel's colour. Such pictures are referred to as RGB or twenty-four bit pictures.

Among the formats which currently support 24-bit images are Targa, PCX, JPG, BMP,

IMG and TIFF.

In order to convert twenty-four bit images into palette driven formats, such as GIF,, Graphic Workshop must "quantize" and then "dither" them. Quantizing a twenty-four bit image involves finding the 256 most unique colours in the image. Dithering involves replacing each RGB pixel in the image with a palette value which is more or less the same colour, allowing for the limitations of a 256 colour format. In addition, dithering adjusts the colours of surrounding pixels to make the image as a whole look as much like the original twenty-four bit image as possible.

In order to convert a twenty-four bit image into a palette based format... for example, to convert a twenty-four bit PCX file into a GIF file... you must use the colour reduction function of Effects. This will perform a full 256-colour dither, which will usually result in a 256-colour image which is almost as good as the original twenty-four bit image was.

The colour reduction function also contains options to allow you to reduce a twenty-four bit file to lesser numbers of colours. Choosing fewer than 256 colours will produce a smaller file in some cases, but it will also leave you with a less faithful representation of your original colour image.

Rasterizing Vector Graphics
In addition to the bitmapped graphics that Graphic Workshop deals with, there is a second body of graphic files called vector graphics. These include such file types as Windows Metafiles, CGM files, GEM files, DXF files and so on.

Graphic Workshop is expanding to allow some vector graphic files, initially Windows Metafiles, to be rasterized. This means that the contents of a vector graphic file are drawn on a bitmap. The result is a bitmapped rendition of the original graphic. Note that this sort of bitmap will not have the scaling flexibility or object structure of a vector graphic.

The size and colour depth of rasterized vector graphics can be set with the Vector Image Options combo box in the Graphic Workshop Setup dialog. Note that rasterized vector images are constrained to fit within the frame size you specify, but they will rarely occupy the entire frame. One dimension will usually be smaller than the maximum frame size, as defined by the aspect ratio of the source vector graphic.

Graphic Workshop will convert from a supported vector format to a bitmap. It will not convert from one vector graphic to another vector format, nor will it convert bitmaps to vectors.

As a rule, if you want to import vector graphics into an application that supports both vectors and bitmaps you'll get decidedly better results if you import them as vectors. The rasterizing capability of Graphic Workshop is useful if you want to use a vector graphic in a situation that only allows for bitmaps, such as for Windows wallpaper.

Thumbnails
The thumbnail mode of Graphic Workshop is an alternate way of selecting files to work with. In thumbnail mode you can see small previews of each file in your

current directory, in addition to the file names. This makes it easier to see what files look like before you open them. It also means, however, that you'll be able to see fewer files at a time.

In order to use the thumbnail mode, you must explicitly create thumbnails for those files you wish to have previews for. Each thumbnail is stored in a file with the extension THN. As such, the thumbnail for PICTURE.GIF will be PICTURE.THN.

Note that the thumbnail for PICTURE.PCX will also be PICTURE.THN. Files in different formats will share the same thumbnail. This will save some disk space, but it may cause you some confusion in using the comments and key word features of the thumbnails, as discussed later in this section. As there is little reason to keep multiple copies of the same image in the same directory, this will not usually crop up.

Each thumbnail THN file requires about nine kilobytes of disk space.

If Graphic Workshop encounters a file for which there is no corresponding thumbnail, it will display a grey box with a red circle in it.

The drive and directory entries in thumbnail mode are displayed with canned icons as well... a tree of folders for directories and hard and floppy drives for other devices. These behave just like their corresponding entries in the list box mode of Graphic Workshop.

Thumbnails are managed using the Thumbnails menu of Graphic Workshop.

Whether or not you use the thumbnail mode of Graphic Workshop is entirely your choice. If you turn it off in the Setup box, Graphic Workshop will subsequently come up in its list box mode, and will ignore all apprehensions of thumbnails.

You can have Graphic Workshop automatically create new thumbnails for files it writes to disk by enabling the Auto-create thumbnails option in the Setup box. It will not create new thumbnails when it converts files unless you specify a different destination directory, as these would be the same as the ones for the source files being converted from. It will also not create thumbnails for files saved from the View and Crop functions.

If you create a new thumbnail for an image which already has one, the comments and key words in the old thumbnail will be overwritten.

You cannot use the Details and Search features with thumbnails for Kodak Photo-CD PCD files.

Note: As of Graphic Workshop 1.1c the colour map for the THN files was changed to improve the thumbnail image quality. Thumbnail images from older versions of Graphic Workshop will still display correctly, but they'll take fractionally longer to load. Graphic Workshop will update them to the new format if you load and save them with the Details function of the Thumbnail menu.

Here's what the thumbnail menu options do:

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.

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.

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.

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.

Use Thumbnails

The Use Thumbnails item of the Thumbnails menu 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.

Screen Capture

The screen capture function is provided with registered versions of Graphic Workshop only. We ask that registered users do not distribute it.

In adding screen capture to Graphic Workshop for Windows, we decided that it would be more useful to implement it as a small, stand alone program than as an adjunct to GWS.EXE. The CAMERA.EXE file requires about thirty kilobytes of memory, as opposed to several hundred for GWS.EXE.

The GWS Camera application is a simple, easy to use, blindingly fast screen capture for Windows. When you run it, it will hook into Windows and watch for a predefined key combination. Upon finding it, GWS Camera will capture that portion of the screen that you've set it up for to a PCX file. Note that you must have installed Graphic Workshop on your system for Camera to work. Specifically, the BWCC.DLL file must be available.

GWS Camera can capture the whole screen, the active window on the screen or the client area of that window.

Complete details of GWS Camera can be found in CAMERA.WRI.

Associating Graphics with Graphic Workshop
You can create Program Manager icons which, when clicked on, will boot Graphic Workshop for Windows and display a specific picture. The procedure for doing so is a bit inelegant, but fairly easy to master.

To begin with, you must use the Notepad application to add one or more lines to the WIN.INI file in your \WINDOWS directory. Locate the [Extensions] section. Add a line like this one for each graphic file format you wish to associate with Graphic Workshop. The extensions must be ones that Graphic Workshop can actually recognize.

    gif=c:\gwswin\gws.exe ^.gif

Next, return to Program Manager. Select the New item from the File menu. Select New Item. Select Browse. Select All Files from the resulting File Open dialog box. Locate the graphic file you'd like to associate with Graphic Workshop. It must be of a type you have previously defined in the [Extensions] section of WIN.INI. Click on OK.

An icon should appear for your graphic.

By default, if you click on an associated image, Graphic Workshop for Windows will display the picture and then boot up normally. You can configure it to display the graphic and then return you immediately to the program manager... see the section on the Setup box. You should also disable the Prompt Before Quitting option in the Setup box.

Frequently Asked Questions and Problems
Why do I see a coarse dithered image if I'm viewing images under Graphic Workshop for Windows when I have a super VGA card in my system?
Graphic Workshop for Windows displays its images by handing them to the Windows screen driver. As Windows comes out of the box, it's set up with a sixteen-colour screen driver on VGA and super VGA systems. As such, even if your card can support 256 colours, Windows thinks you have a sixteen-colour card. In this case, Graphic Workshop can only display images with up to sixteen colours. It must remap or dither images with more than sixteen colours down to sixteen colours to display them. You can correct this problem by obtaining and installing the 256-colour Windows screen driver for your display card.

Why are all the JPEG files I attempt to view dithered?
You either have a sixteen-colour Windows screen driver installed or you have the Read JPRG files as RGB item in the setup box enabled. With this item enabled, JPEG files will read as 24-bit images. With it disabled they'll read as eight-bit images.

Why do I get black and white hard copy when I print colour pictures to my colour printer from Graphic Workshop?
You have the Expand Printed Halftones option in the Setup box.switched on This should be disabled for colour printing.

Why does the hard copy I print from Graphic Workshop to my PostScript printer look flat and washed out?
You have the Expand Printed Halftones option in the Setup box switched off. This should be enabled for monochrome printing.

Why can I perform functions in the list box mode that I can't perform in the thumbnail mode?
The thumbnail mode requires significantly more memory to maintain its window than the list box mode does. If you're short on available memory, this might be enough to keep some functions from operating.

If I save an image file of scanned text to a TXT file from Graphic Workshop, will the text file I create be the words from the scanned image?
No. This requires an optical character recognition package.

Will Graphic Workshop support CDR, WMF, CGM or EPS files in the future?
It's not likely. In creating Graphic Workshop, we chose to have it do one thing well... working with bitmapped graphics... rather than several things badly. Formats such as CDR, WMF, CGM and EPS are vector graphics, which require completely different applications.

Why will some WPG files read under Graphic Workshop and some won't?
The WPG format can support both bitmapped and vector graphics. Graphic Workshop will deal with the bitmapped ones only. The Get Info function will tell you which files contain bitmaps and which one only have vector graphics in them.

Why does attempting to read some EXE files, such as GWS.EXE itself, fail?
The extension EXE is normally used to indicate actual application files, that is, programs. Graphic Workshop uses it to indicate pictures which it has converted into programs as well... which it must do, such that DOS will recognize them as programs when you choose to run them. Unfortunately, one file name looks pretty much like another when Graphic Workshop is assembling its file list, and it can't tell which EXE files are programs and which are pictures.

Why won't Graphic Workshop read some TIFF files?
The TIFF standard is a huge, fairly confusing thing which allows applications which create TIFF files to do so in an almost limitless variety of ways. It's probably technically impossible to write software that will read all of them... at the very least, such an application would be huge. Graphic Workshop attempts to read a sensible range of TIFF files, and we improve on its TIFF handling frequently. However, there will probably always be unusual TIFF files it won't be able to handle. In creating TIFF files to be read by Graphic Workshop, we recommend that you begin by trying the

simplest defaults, such as no compression.

Why can't I use the Details and Search functions of the Thumbnails menu with a Photo-CD.
When you create a thumbnail for a normal file, it's written to the current directory as a THN file. Photo-CD thumbnails are actually handled totally differently, and because a CD-ROM is read-only, it's impossible to write the updated details to the directory where your image is.

A word about memory
Graphic Workshop for Windows expects Windows to supply it with the memory it requires. If insufficient memory exists to handle a file, it will say so. This is a bit awkward, in that Windows does not provide a realistic way to ascertain how much real memory is available. As such, the free memory value in the About box may be misleading if you have a permanent swap file, for example.

If you attempt to perform a function which requires more memory than Graphic Workshop can allocate on your system, it will use a virtual memory spill file. This means that it will store your image on disk while it's being processed. Virtual memory is very much slower than real memory, and requires a lot of free disk space. It's a last resort when insufficient memory is available.

Not all the Graphic Workshop functions can use virtual memory. Specifically, if you attempt to crop or rotate an image by 90° or 270° and virtual memory is required, Graphic Workshop will tell you that these functions cannot be performed.

When virtual memory is used you'll see the message "Creating spill file" in the status window before each image is read.

Because virtual memory is very slow, you might want to disable it entirely. See the section of this document that deals with Setup.

If you encounter a problem
While we have tested Graphic Workshop thoroughly, it's possible that you may encounter a situation we hadn'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.IKON, GWS.IKON, 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.

Using the main window
Graphic Workshop can boot up in either its list box or thumbnail mode. It will initially use the thumbnail mode... you can choose the mode it will subsequently use in the Setup box. The list box mode will show you each file as a name in a large multiple column list box. The thumbnail mode will show you each file as an icon or thumbnail image, with its name beneath it. Both modes work the same way.

You can switch between modes by selecting the Use thumbnails item of the Thumbnails menu.

You can access the functions of Graphic Workshop either through the buttons at the top of its window or through its menus, as you prefer. The functions which pertain specifically to thumbnails are only available in the Thumbnails menu.

Graphic Workshop will always show you all the names of the image files it knows how to deal with in the current directory, along with all the visible subdirectory names, if any are present. If you are in a subdirectory, you will also see a subdirectory entry which is two periods.

Click on an entry to select it. If you double click on a directory entry or a drive letter... shown in square brackets... you will move into that directory or drive. If you double click on the two period entry, you will move back up your directory tree by one step.

If there are too many files in your current directory to see all at once, Graphic Workshop will allow you to scroll through them using a scroll bar at the bottom of the file name selector box.

If you double click on a file name, Graphic Workshop will display the file.

Clicking once on a file name will select it. You can select multiple files and then select a function to be applied to all of them using one of the function buttons at the top of the Graphic Workshop window.

Whenever Graphic Workshop is processing a file, a status box will appear in the middle of the main window. Click your mouse at any time while this box is visible to abort the current file and any as yet unprocessed files.

Here are the Graphic Workshop function buttons and what they do. There are equivalent items in the main menu... use whichever you prefer.

Clear All
Untags any previously selected files.

Tag All
Selects all the currently available files, save for drive and directory names.

Rename
Allows you to rename all the currently selected files.

Delete
Deletes all the currently selected files. A prompt will appear to make sure you really

want to do this.

Help
Invokes the on-line help for Graphic Workshop. The Windows help application and GWS.HLP must be available.

About
This button 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 spill file space 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.

Quit
This button exits Graphic Workshop. It may prompt you to see if you really want to quit, depending on how you've configured this feature in the Setup box.

If you hold down the Shift key and select Quit, your current Graphic Workshop configuration will be written do disk but Graphic Workshop will not terminate. (Should you not have encountered it before, this works if you hold down the Shift key and exit Windows, too. Your current Desktop settings will be written to disk and Windows won't terminate.)

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.

Depending upon the Setup box settings, Graphic Workshop will dither pictures with more colours than your display can manage. It may also warn you if you attempt to view a twenty-four bit image without dithering enabled, as this function can take a long time and cannot be aborted once the display begins to refresh. These options are discussed in dealing with the Setup box.

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.

In the sixteen and 256 colour display modes, you can make adjustments to the VGA colour palette while a picture is being displayed. This can be handled either by opening the Adjust box from the Picture menu or by using the colour adjustment keys, as follows. The 'r' and 'R' keys will increase and decrease the amount of red in a picture, the 'g' and 'G' keys will adjust the amount of green, the 'b' and 'B' keys will adjust the amount of blue. The 'i' and 'I' keys will adjust the overall intensity of the picture. The 'c' and 'C' keys will adjust the contrast. The '=' key will return the picture to its normal state. Note that these adjustments only affect the original picture that you're viewing... they do not alter the palette in the file on your disk unless you save the changes to a new file.

You can save an adjusted picture to a new file by selecting Save from the Picture menu. Note that if you are viewing a dithered version of an image, the file you save with the Save function will be dithered too.

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

Professional graphic users might want to adjust Graphic Workshop's viewing mode to compensate for the gamma of a specific monitor.

You can do this by opening GWS.INI in your \WINDOWS directory with the Notepad application and changing the value of the **ViewGamma** item. This value should be set to 100 times the gamma value you want. As such, a gamma of 1.0 would be **ViewGamma = 100**. Gamma values in the range of 0.2 through 2.0... or **ViewGamma = 20** through **ViewGamma = 200...** are sensible gamma values for most display devices.

The default value is a gamma of 1.0, or **ViewGamma = 100.** At this setting, **ViewGamma** will have no effect on yourdisplay.

If you aren't sure what gamma is, you probably have no need to meddle with this setting.

Note: If you set the **ViewGamma** value to something other than 100, such that some gamma correction is imposed on your displayed images, images saved from the view mode will embody your gamma correction.

Print
Printing is a batch function. If you tag multiple files and then click on Print, each will be printed.

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 this 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.

The Autosize option in the Print box will select one of the eight size options to best fill your page.

Printing under Windows is a lot slower than it is under DOS.

Note: in order to print correctly to most black and white laser printers, colour and grey scale images must be "expanded", that is, their grey scales must be adjusted to compensate for the non-linear grey scale of the output device. The amount of compensation varies among different laser printers. The compensation values for Graphic Workshop have been chosen to suit an average PostScript laser printer. However, you can fine tune these by opeing the GWS.INI file in your \WINDOWS directory with the Windows Notepad application and editing the values for PrintContrast and PrintBrightness. These values should range from zero to about sixty-four, with twenty or thirty being about right for most output devices.

The Expand printed halftones option in the Graphic Workshop Setup box must be enabled for these values to affect your printed images.

In editing GWS.INI, make sure you don't change anything else in the file. The PrintContrast and PrintBrightness values are not checked for validity... put something meaningless in these fields and your pictures will print peculiarly.

If you liked the older fixed contrast expansion curve from previous versions of Graphic Workshop, change both these fields to 65535.

Convert
Graphic Workshop allows you to convert a file of any format into a file of any other format... with a few restrictions. The new file will have the same name as the original but a new extension. Converting PICTURE.MAC into an IMG file will create PICTURE.IMG. PICTURE.MAC will not be affected.

You can batch convert any mixture of file types using Graphic Workshop. Any files which are inappropriate for the conversion you've requested will simply be ignored. The ongoing status will appear in the status box.

You cannot convert pictures having more bits of colour than the destination format can handle. For example, you cannot convert a 24-bit Targa file directly to an 8-bit GIF file. You would have to use the Effects colour reduction facility to do this. Likewise, to convert a colour file to a monochrome one, you'd have to use the Dither function.

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.

Note that source files for dithering must have more than two colours.

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 the Effects box.

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 does not 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.

You should plan to experiment with the dithering options of Graphic Workshop a bit to see what it's capable of.

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 dithering an image, the original brightness levels of the source graphic will be expanded a bit to improve the quality of the dither. The amount by which the grey levels are expanded is set by the DitherBrightness and DitherContrast items in the GWS.INI file in your \WINDOWS directory. You can change these values with Notepad if you aren't happy with the quality of the dithered images Graphic Workshop is producing. Note that you can use the original expansion map by setting both these values to 65535.

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.

Info
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 IFF/LBM files.

Note that the Info and details information for EPS files actually pertain to the TIFF preview.

You may need some external assistance in fully interpreting the details.

You can save the details of a file to a text file by converting the file to the TXT format.

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.

If your source image has more colours than your Windows driver can display directly, you'll see a coarse approximation of your picture in the cropping window. Any fragments cropped from it will be saved correctly, however.

The menu bar will display the location of your mouse cursor relative to the upper left corner of the image you're cropping if no area is selected and the dimensions of the selected area otherwise. These latter values will represent the dimensions of your cropped file when you save it. Note that these may not be quite the same as the screen co-ordinates of the mouse cursor if your picture has been scaled to fit in the cropping window.

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.

The crop function cannot be used with virtual 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.

Transform
This function will pop up a menu 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.

The 90° and 270° rotate functions cannot be used with virtual memory.

Scale
This function will allow you to scale files from 25 to 500 percent, or to specific sizes. Select "By factor" to scale files by a percentage or "By size" to scale pictures to specific dimensions.

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 by factors will be the same in both dimensions. If you select the Anamorphic box, 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 minimum size for scaling by size 16 pixels.

Scaling is a batch function. Note that if you select multiple files... possibly of varying sizes... and scale them by size, they will all be scaled to the same fixed dimensions.

Effects
This function has a submenu 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.

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. Note that this may cause a noticeable colour shift for some images. For technical reasons, when it's uncertain how to remap a colour, this function errs toward green.

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

Sharpen
This function will create a destination image with more finely resolved details

than its source image.

Soften
This function will create a destination image with less finely resolved details 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.

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.

Setup
You can configure Graphic Workshop by clicking on the Setup button. This will open a dialog box with the available setup options. Any changes you make will be saved when you exit Graphic Workshop, and will be in place the next time you boot it up. The current configuration is saved in a file called GWS.INI in your \WINDOWS directory.

In most cases the default values will prove applicable to typical Windows hardware.

Untag After View
If this option is enabled, all the tagged file names will be cleared after executing a View command using the View button. Note that this does not affect viewing by double clicking on a file name.

Pause After Functions
If this option is enabled, Graphic Workshop will pause after batch operations even if no errors have occurred. Normally it will only pause if one or more files were not processed due to errors.

Create GIF 89a Files
If this option is enabled, GIF files created by Graphic Workshop will be type 89a, and will include a comment block. If it's not enabled, Graphic Workshop will create type 87a GIF files.

MacPaint with MacBinary header
If this option is enabled, MacPaint files created by Graphic Workshop will include a MacBinary header. Disable this option if you are creating MacPaint files for use with PFS:First Publisher.

Warn Before Viewing RGB
If this option is enabled, attempting to view a twenty-four bit image without

dithering enabled will cause Graphic Workshop to display a message telling you that the viewing procedure will take a long time, and will not be abortable. Disable this option if you have a fifteen- or twenty-four bit display card, or if you have enabled one of the view dithering options.

Create IFF Files with PBM Pack
If this option is enabled, 256-colour IFF/LBM files will be created using the proprietary packing format used by Deluxe Paint. This provides files which read faster and usually compress better, but which will not be readable by other applications that accept IFF files. Disable this option if you plan to port IFF files created by Graphic Workshop to an Amiga.

Dither Files When Viewing
If this option is enabled, all colour files will be dithered prior to viewing them. This will produce the most faithful colour representation possible on a sixteen-colour display, but at a considerable loss of resolution.

Dither Extra Colours Only
If this option is enabled, only those colour images with more colours than your display can handle will be dithered. If you enable this option, make sure to disable the Dither Files When Viewing Option. Most users will want to have this option enabled.

Expand Grey Scale TIFF Files
If this option is enabled, Graphic Workshop will create grey scale TIFF files which are suitable for printing from within a desktop publishing chapter or word processing document to a PostScript laser printer. Disable this option if you plan to use your TIFF files with a grey scale editing or retouching package. This option is ignored if you have Graphic Workshop set up to produce colour TIFF files.

Create Colour TIFF Files
If this option is created, images with between four and 256 colours written to the TIFF format will be stored as colour files. If it's disabled they'll be stored as grey scale files. Twenty-four bit images will always be stored as colour TIFF files.

Create Compressed EXE Pictures
If this item is enabled, images written to the EXE self-displaying pictures option will be stored using run-length compression. If it's not enabled they'll be stored without compression. Note that complex scanned images may result in smaller EXE files if they're stored uncompressed.

Create Compressed IFF Files
If this item is enabled, images written to the IFF/LBM format will be stored using PackBits run length compression. If it's not enabled, IFF/LBM files will be written uncompressed.

Create OS/2 Bitmaps
If this switch is enabled, Graphic Workshop will write BMP files in a format suitable for use with OS/2 applications, rather than Windows applications. The OS/2 bitmap format is not read by most Windows applications... leave this option off unless you specifically require OS/2 bitmaps.

Dither Printed Halftones
If this item is enabled, colour or grey scale images will be dithered prior to printing. Enable this option if you are using a printer driver which cannot support halftones.

Expand Printed Halftones
If this item is enabled, colour pictures being printed will be algorythmically converted to grey scales and expanded to compensate for the contrast loss in PostScript printers. Enable this option if you're using a monochrome printer which can produce true halftones. Disable it if you're driving a colour printer.

Create Targa 16
If this item is enabled, true colour images written to Targa (TGA) files will be stored with sixteen bits of colour per pixel, rather than 24 bits. This will reduce the file size by a third, with some loss of colour resolution. See the section on Targa files for more information.

Auto Create Thumbnails
If this item is enabled, a new thumbnail file will be created whenever a new file is written to the disk by Graphic Workshop.

Prompt for GIF Comments
If this item is enabled, a dialog box will appear whenever Graphic Workshop writes a GIF file, allowing you to add a comment block to the file. The Create GIF 89a option must be enabled. See the section on GIF files.

Dither on JPEG Read
If this item is enabled, files read in the JPG format will be dithered. This usually offers the best representation of JPEG files.

Read JPEG as RGB files
If this item is enabled, JPEG files will be read as 24-bit images. This will provide you with true colour pictures, but it will mean that they'll be dithered for viewing unless you're using a high colour or true colour Windows screen driver. In addition, you will not be able to convert them directly to colour mapped formats, such as GIF... the colour reduction function of Effects will allow you to do so, however. If you disable this feature, JPEG files will be read as 256-colour images, suitable for normal viewing and conversion. In most applications you'll want this item disabled.

Quit after Association
If this item is enabled, Graphic Workshop will quit immediately after displaying an image if it has booted up because the image was associated with it.

Allow Directory Extensions
If this item is enabled, the main file finder screen will look for directory names with extensions, such as PICTURES.DIR. If it's not enabled, such directories will be ignored. Searching for directory extensions takes longer in a crowded directory.

Write OS/2 Bitmaps
If this item is enabled, files written to the BMP format will be created for use with OS/2 applications. If it's not enabled, BMP files will be created for use with

Windows. Note that most Windows applications can't read OS/2 BMP files. (Graphic Workshop can, of course.)

Prompt before Overwrite
If this item is enabled, Graphic Workshop will prompt you before it overwrites an existing file.

Prompt for File Name
If this item is enabled, Graphic Workshop will prompt you for a new file name every time it creates a file. This is very tedious.

File Name Underbars
If this item is enabled, Graphic Workshop will precede the file names its creates when it's dithering, reversing, transforming, scaling and creating special effects with a letter and an underbar, such as S_ for scaled files. If you don't have this option enabled, it will use the original source file name for its destination file name. **Note that if you dither, transform, scale and so on to the same file format in the same directory with this item switched off, your source file will be overwritten by your destination file. Be warned!** It's a really good idea to leave this option enabled unless you're certain you want to do otherwise.

View Mode Borders
With this option enabled, images displayed in View mode will have scroll bars and a menu, allowing you to pan around them, adjust the colour balance and so on. If you disable this option, images displayed in the View mode will appear beginning in the upper left corner of your monitor. In the border-less mode, none of the keyboard commands will work, except for Esc, Enter and F1.

Startup Directory
If you fill in a path specification in this field, Graphic Workshop will log into the specified directory when it boots up. Note that this field is not checked for validity... if it does not specify a valid path it will be ignored. It should end with a backslash.

Windows EXE Pictures
If you enable this option, files written to the EXE format will be created as Windows applications. If you don't, they'll be created as DOS applications.

JPEG Quality
This item will let you set the amount of detail JPEG compression is allowed to discard in compressing files. See the section on JPEG files for more information.

Check for Photo-CD
If this option is enabled, Graphic Workshop will automatically find the images on a Kodak Photo-CD if you log into one.

Prompt for Destination
If this option is enabled, Graphic Workshop will prompt you for a destination directory for the images it writes. You must enable this option if you want to convert files from a read-only medium, such as a CD-ROM.

TIFF Write Options

This field will allow you to set the type of compression Graphic Workshop will use when it creates TIFF files. The three items in each line define the compression type for monochrome, palette colour and true colour images respectively. Note that this field has no effect on how Graphic Workshop reads TIFF files.

Photo-CD Read Options

This field will define how images will be read from Photo-CD PCD files. See the section on Kodak Photo-CDs for more information.

Virtual memory drive

This field will define which drive to use to create a spill file if insufficient real memory is available to buffer an image. Set it to the drive you wish to use, or to None to turn virtual memory off.

Register

When you register Graphic Workshop, click on the Register button and type in the registration number provided with your confirmation letter in the registration number field and your name as it is in the letter in the registration name field. This will disable the About box when you exit Graphic Workshop and list you as a registered user of the software when you click on the About button. See the section on Registration elsewhere in this document.

Disabling File Formats

You can instruct Graphic Workshop for Windows not to display files in selected formats. For example, you might not want to look at files with the EXE extension, as in addition to being self-executing pictures, files with this extension can also be applications. To disable one or more file types, use the Notepad application to open the GWS.INI file in your \WINDOWS directory. You'll find a section that looks like this:

MAC = 1
IMG = 1
PCX = 1
GIF = 1
TIF = 1
WPG = 1
PIC = 1
TGA = 1
CUT = 1
BMP = 1
MSP = 1
LBM = 1
EXE = 1
TXT = 1
RLE = 1
JPG = 1
ART = 1
PCD = 1
RAS = 1

Change the 1 to a 0 for any file type you'd like to eliminate from Graphic

Workshop's selector window. Note that this will also disable it in the destination file type dialog.

Changing Drives and Directories
You can log into a new drive or directory in one of two ways under Graphic Workshop. The simplest is to click on the [..] entry in the main file finder window to move up a directory, or one of the subdirectory name entries to mode down. Click on one of the drive letters to change drives.

There are cases wherein this might be inconvenient, such as if you have a lot of files in your current directory and the drive and directory entries are at the end of the list. Network users may find that the [..] entry is missing, making it impossible to navigate a directory tree this way. The alternate approach to change drives and directories is to select the Change Directory item from the File menu, which will pop up a conventional Windows dialog for selecting a new directory.

Note that if you enable the Prompt for destination item in the Setup box, you will be prompted for a drive to have files written to when you go to convert, dither, transform and so on.

Ventura publisher tricks
Graphic Workshop is great for getting images into Ventura Publisher documents. Here are a few tips for getting the most out of it.

Monochrome bitmapped images should be converted into IMG files for use with Ventura. Note that while Ventura will import colour PCX files with up to 16 colours, the results are rarely pretty. You'll do much better to halftone or dither colour PCX files for use with Ventura.

Having poured an image into a frame, use the Sizing and Scaling box in the Frames menu to select "By Scale Factors." Set the scale width to the natural size of the image... as it defaults to... or to some integral multiple of it. This will eliminate distortion or plaiding of the image.

You can create halftones from colour images by converting them to grey scale TIFF files. Ventura allows you a great deal of control over the way the grey scale and screening information is handled in a TIFF file.

You can also create halftones in Ventura by converting colour and grey scale files to IMG files and importing these. The only drawback to this over using grey scale TIFF files is that the grey scale and screening information will not be adjustable.

If you use the Define Colours option of the Frame menu to display colours as shades of grey rather than as colours grey scale TIFF files will appear in your chapters as pretty slick little photographs.

Note that if you will be creating grey scale TIFF files for use with Ventura, you should enable grey scale TIFF and grey scale expansion.

CorelDRAW tricks
If you import bitmapped images into Corel Draw, you can decide how they'll be handled once they get there by choosing the image type you use. Imported PCX

files will be scaled to an arbitrary size upon entering Corel Draw, with the result that it's almost impossible to adjust them to get a one to one relationship between the image pixels and the printer pixels. This will make many PCX files print badly.

TIFF files, on the other hand, import initially with one to one scaling. If you use TIFF files and leave them at their initial size, or stretch them to integral multiples of their original sizes, they'll print without distortion or plaiding.

Grey scale TIFF files imported into Corel Draw come up as PostScript halftones... these can look very slick as part of a line drawing. Colour TIFF files are useful if you'll be outputting your Corel Draw files to a colour output device or if you'll be getting them separated.

You might want to check out **Mastering Corel Draw 3** by Steven William Rimmer, published by Sybex Books (Sybex book 1154) or **Corel Draw It 4**, published by Addison Wesley.

Contacting Alchemy Mindworks Inc.
We hope you'll contact us to register Graphic Workshop for Windows... see the section about registering your software elsewhere in this document.

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

> **Alchemy Mindworks Inc.**
> **P.O. Box 500**
> **Beeton, Ontario**
> **L0G 1A0**
> **Canada**

You can register Graphic Workshop for Windows with an American Express or Visa card by calling 1-800-263-1138 from the United States or 1-416-729-4969 from other places. Please note that this number is for ordering only... there is no one at it who can answer technical questions.

NOTE: The area code for Alchemy Mindworks' non-800 numbers will change from 416 to 905 after October 4, 1993.

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 this software will suit your requirements.

We can also be reached through the Alchemy Mindworks bulletin board. It's available twenty-four hours a day at (416) 729-4609. 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 for Windows, 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 for Windows 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 this software we will not tell you to go to hell, but please don't ask us for half an hour of free technical support. We have not built the price of technical support into the cost of Graphic Workshop, as few users require it. We believe very strongly in not making everyone pay for something that only a small group needs. If our various governments felt the same way, our various economies wouldn't be in the midst of melting down.

Registration

If you like Graphic Workshop for Windows and find it useful, you are requested to 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 this software and other worthwhile things. It will also avail you of a registration number to shut off the closing beg notice. More to the point, though, it'll make you feel good. We've not infested Graphic Workshop with excessive beg notices, crippled it or had it verbally insult you after ten days. We trust you to support this software if you like it.

If you want to see additional features in Graphic Workshop, register it. 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 slavering 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
    L0G 1A0
    Canada

You can register Graphic Workshop with an American Express or Visa card by calling 1-800-263-1138 from the United States or (416) 729-4969 from other places.

NOTE: The area code for Alchemy Mindworks' non-800 numbers will change from 416 to 905 after October 4, 1993.

If you have previously registered Graphic Workshop you can update your copy to the current release for $20.00.

If you have a FAX number, please include it in your registration. We're hoping to be able to handle notification of future updates of this software by FAX where we can. This is both considerably faster and a lot cheaper than mail.

You can FAX your order to us at (416) 729-4156. You'll find an order form in this ZIP to make this easier.

When you register Graphic Workshop please specify the disk size you require.

Please note that we are not able to accept purchase orders for fewer than six copies of Graphic Workshop at a time. We cannot ship software COD. Please contact us prior to submitting purchase orders.

Canadian users
The registration fee for Graphic Workshop for Windows is $40.00 (CDN) plus seven percent GST, or $42.80. 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 for Windows is $40.00 (US). The exchange on US funds pretty well covers the extra postage to the States.

Please note that when you send us your order... and then when we send you your update back... two distinct post offices get to deal with the ensuing mail. It can take a few weeks for things to get through this system... we ask that you be patient. We don't fully understand why it takes less time for a package to get to Australia than it does to send one to Cleveland... some things are best left as mysteries.

Other users
The registration fee for Graphic Workshop for Windows is $40.00 (US). 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. We cannot accept Eurocheques.

Payment from countries outside Canada must be in US dollars.

Paying by credit card
We can accept payment by **American Express** or **Visa** only. We need your card number and expiry date and the name which appears on your card.

We cannot accept MasterCard or other credit cards.

Source code availability and books
It isn't.

After considerable meditation and several bad experiences, we have decided not to release the source code for Graphic Workshop for Windows. We do license parts of it for specific applications... if you want more information about using some of the functions of this package in your software, please contact us.

If you're interested in writing programs which use graphics, you'll find everything you need to know in **Bitmapped Graphics, second edition**, by Steven William Rimmer. It's published by TAB Books, (TAB book 3558). It features code to pack and unpack MacPaint, IMG, PCX, GIF and TIFF files, as well as chapters on screen drivers, dithering and printing.

An additional book on this subject, **Supercharged Bitmapped Graphics**, (TAB Book 4102), discusses the GIF 89a, WordPerfect, BMP, IFF/LBM, TGA, MSP, 24-bit PCX and colour TIFF file formats, as well as such subjects as colour dithering and colour printing.

If you'd like to write applications which use menus, icons, windows and all the other paraphernalia of a graphical user interface, you might find the book **Graphical User Interface Programming** handy. It's published by TAB Books (TAB Book 3875). It includes the C source for a complete graphical user interface library, related code to manage fonts and bitmaps and a tiny paint program.

Bitmapped Graphics for Windows, by Steven William Rimmer, published by TAB Windcrest (TAB Book 4265), deals with the most popular image file formats in a Windows environment.

Super VGA Graphics, by Steven William Rimmer, published by TAB Windcrest (TAB book 4413), will provide you with extensive source code to work with super VGA graphic functions. It deals with sixteen, 256 and 32,768 colour displays. It will show you how to read and write GIF and PCX files, draw graphic objects, manage buttons and a mouse cursor, use image fragments, print graphics to a number of output devices and write a 256-colour arcade game, among other things.

A complete discussion of graphic file formats for use in word processing documents and desktop publishing chapters can be found in **The Graphic File Toolkit**, by Steven William Rimmer, published by Addison-Wesley. This is an invaluable reference for anyone who wants to use graphic files but does not want to become a

programmer in the process.

If your local bookstore doesn't have these books, they can be mail or phone ordered from Christies of Cookstown, P.O. Box 392, Cookstown, Ontario L0L 1L0, Canada. Their phone number is (705) 458-1562. It has a FAX machine on it after hours. As of this writing, they're open seven days a week.

Bundling Graphic Workshop for Windows
If you'd like to include Graphic Workshop for Windows with your product, please get in touch with us. We have several ways to help you do this so your users get the most out of our software and we won't have to set our leather winged demon of the night on 'em.

Shareware Distributors
We will, at our discretion, send out disks of our shareware applications to shareware distributors. Alternately, you can download the current versions of our applications from CompuServe in the PICS forum or from our bulletin board at (416) 729-4609.

We encourage you to use our bulletin board, as it will allow you to keep your copies of our applications up to date.

If you obtain current copies of our shareware, you have our permission to distribute them under the following terms. No written permission from us is required if you abide by these terms.

> That nothing be added to, deleted from or changed in the archive files which contain our packages. This includes adding ZIP file comments to them.

> That our shareware is not included in or bundled with other hardware or software without our written permission.

> That no printed documentation regarding our shareware is included with the package without our written permission.

> That hard copy explaining that our packages are shareware is included with the disks.

> That no more than $10.00 (US) be charged for the distribution of whatever package our applications are part of. If you will be charging more than this, please get in touch with us for bundling rates.

You do have our permission to copy the ZIP files from our quad density disk to multiple lower density disks for distribution.

Please note that if you would like to distribute Graphic Workshop for Windows in "rack" packaging, that is, in a store rather than directly from a shareware distributor, we request that you contact us for permission to do so. We will require a proof copy of the packaging you intend to use prior to giving our consent for rack packaging.

Other Alchemy Mindworks shareware
The following are the other shareware packages we have available as of this writing. Our newsletter, available for the asking, will list all the current ones.

Graphic Workshop for DOS
This is the last word in image programs. It converts, prints, views, dithers, transforms, flips, rotates, scales, crops, colour adjusts, scans, quantizes and wreaks special effects on MacPaint, GEM/Ventura IMG, PCX, GIF, TIFF, WPG, MSP, IFF/LBM, BMP, RAS, HRZ, RLE, Halo CUT, Targa, EXE, TXT and EPS files. It drives CGA, Hercules, EGA, VGA and pretty well all super VGA cards. It will drive PostScript and LaserJet Plus laser printers, colour PostScript printers, colour inkjets and most dot matrix printers. It features batch processing, extended and expanded memory support, an intuitive user interface and easy to follow menus. It allows you to convert colour image files into superb black and white clip art for desktop publishing, among other things. The registered version includes a powerful VGA and super-VGA screen capture utility.

Graphic Workshop for Windows (release 1.1)
Offering the same functionality as Graphic Workshop for DOS, the Windows implementation of this package offers a traditional Windows interface, multitasking and lots of things to click on. It converts, prints, views, dithers, transforms, flips, rotates, scales, crops, colour adjusts, scans, quantizes and wreaks special effects on MacPaint, GEM/Ventura IMG, PCX, GIF, TIFF, WPG, MSP, IFF/LBM, BMP, RLE, JPEG, ART, RAS, Halo CUT, Targa, text and EXE picture files. Graphic Workshop for Windows will display and print on any card and printer respectively that can be driven by Windows. It features batch processing, an intuitive user interface and easy to follow menus. Includes several unicorns.

Image Gallery (release 1.1e)
Image Gallery is a visual database to help you keep track of a large number of image files quickly and effectively. It will create database files... galleries... of any combination of bitmapped image files, displaying them as small ``thumbnail'' images. It works with all the file formats supported by Graphic Workshop, with the exceptions of EPS, EXE and TXT. You can search a gallery visually or by key words. Each entry in a gallery supports key word and comment fields, as well as the dimensions, location and other specifics of each image. You can also print all or part of a gallery, producing hard copy catalogs of your images when you need them. Image Gallery will run with any VGA card. It uses a Microsoft compatible mouse and will drive any PostScript or LaserJet Plus compatible laser printer, and most dot matrix printers. Release 1.1 includes a full colour view function, exporting, colour thumbnails and multiple selection.

Desktop Paint 256 (Release two)
This is a complete rewrite of our popular super VGA paint package. Desktop Paint 256 is a powerful painting application. It will let you create and edit pictures stored in the MacPaint, GEM/Ventura IMG, PCX, GIF, TIFF, WPG, MSP, IFF/LBM, BMP, Halo CUT, and Targa formats. It features a rich selection of drawing and image manipulation tools, XMS and EMS support to work on large images and a user friendly interface. Looking very much like monochrome Desktop Paint in colour, it's a powerful application which will be equally useful for picture collectors, artists and desktop publishing users. It supports Paradise (and compatibles), Headland Video 7, Tseng Labs 4000 series cards, Trident cards which use 8900 series chips, Oak Technologies cards, ATI VGA Wonder cards and all cards with VESA capabilities. Note that you must have one of these super-VGA cards to use Desktop Paint 256... it does not run in the standard 320 by 200 pixel "standard" VGA mode. Desktop Paint 256 requires a Microsoft-

compatible mouse.

Desktop Paint 16
Desktop Paint 16 is a VGA paint package for use with images having up to sixteen colours. As with the monochrome implementation of Desktop Paint, it will read and write image files in the MacPaint, GEM/IMG, PCX files, GIF, TIFF, WPG, MSP, IFF/LBM, BMP and PIC formats. It has EMS and XMS support to handle images of virtually any size, an intuitive user interface and a wide selection of image creation and manipulation tools. Desktop Paint 16 can utilize fonts from many other sources, including Ventura Publisher, Macintosh FONT and NFNT resources and Windows FNT files. It requires a VGA card and a Microsoft-compatible mouse.

Desktop Paint (Release three)
Desktop Paint is a powerful monochrome paint package fine tuned for use with desktop publishing applications. It will read and write image files in all the formats Graphic Workshop supports with the exceptions of EPS and RLE. It has EMS and XMS support to handle images of virtually any size, an intuitive user interface and a wide selection of image creation and manipulation tools. Desktop Paint can utilize fonts from many other sources, including Ventura Publisher, Macintosh FONT and NFNT resources and Windows FNT files. Desktop Paint requires a Microsoft- compatible mouse.

GrafCat (Release 3.1)
GrafCat prints a visual catalog of your image files, with fifteen or sixteen pictures to a page, depending on the image orientation you choose. It supports all the file types that Graphic Workshop handles, and will drive any PostScript or LaserJet Plus compatible laser printer, including LaserJet II and LaserJet III series printers. This is a complete re-write of GrafCat... it now supports a file finder screen like the one in Graphic Workshop and numerous print options. It has an internal view mode like Graphic Workshop, and it can create thumbnail catalog graphics.

If you can't obtain them from the usual sources of shareware, they're available from us for $40.00 each preregisterd. They're also all available for downloading from our bulletin board at (416) 729-4609.

NOTE: The area code for Alchemy Mindworks non-800 numbers will change from 416 to 905 after October 4, 1993.

Revision History
Version 1.1h - Added the option to create Windows multimedia EXE pictures as well as DOS EXE pictures. Something to do with multimedia at last! Fixed a bug in the sixteen-colour PCX reader. Added an option to allow user-defined GIF comments for all GIF files created by Graphic Workshop. Added options to prompt before overwriting a file, prompt for a new destination file name and to eliminate the file name underbars in dithering, reversing, effects and so on. Added a feature to remember where we parked... Graphic Workshop's main window will restore its position from a previous session. Fixed a bug in the monochrome dither function. Modified the PCX reader to deal with illegal PCX files which are compressed across their line boundaries... a pox on them. Added DIB file support... not much of an undertaking, this, as they're just BMP files with

a different extension. Fixed a bug in the Scale dialog. Modified the View function to allow it to do virtual viewing if there isn't enough memory for real viewing.

Version 1.1g - Fixed a bug in the View Save and Crop functions which caused a stack overflow on some systems. Added configuration save without quitting.

Version 1.1f - Added virtual memory to allow for files larger than sixteen megabytes. Added 24-bit IFF reading and recognition of the IFF file extension, in addition to LBM. Added LZW and group four TIFF reading. Added Sun raster file support. Added a compression factor display in the Get Info dialog. Added an adjustment for display gamma... unleashing the dogs of chaos, this. Moved the registration fields into a dialog box of their own... Setup is getting rather full, me'thinks. Added configuration items for TIFF writingand image resolution. Added alternate TIFF details to display the type, length and offset values of each tag in a TIFF file in the Details box. Upgraded the Photo-CD software to version 1.40...this has reduced the image read time and improved the RGB image rendering of highlight details. Added 256-colour dithering to the view function. If you attempt to view 24-bit image with a 256-colour display, you'll see a pretty respectable 256-colour dither, rather than the old sixteen-colour dither. Added an option to display files in the view mode without the usual menus and scroll bars.

Version 1.1e - Fixed a bug in the contrast adjustment function. Fixed a bug in the monochrome WPG write code. Fined a bug in the OS/2-write option of the BMP format code. Fixed a bug in the thumbnail code that caused thumbnails for very small images to be created incorrectly. Added an option to remove selected file types from the Graphic Workshop selector window. Added grey scale reading for Photo-CD images.

Version 1.1d - Maintenance release. Fixed a bug in the crop function when writing to JPG files. Fixed a bug in the thumbnail search function that cause it to crash Graphic Workshop in directories with images having no thumbnails. Added controls to allow the dither and grey scale TIFF brightness and contrast to be adjusted. Added a control to allow the gamma of TIFF files being written to be adjusted.

Version 1.1c - Added a Change Directory function to the file menu, updated the EXE format to support VESA cards, added a functon to associate graphics with GWS.EXE. Added an option to write OS/2 BMP files. Added Huffman and Group 3 1D TIFF reading. Added Kodak Photo-CD support. Added an option to prompt for a destination directory. Updated the BWCC.DLL library to fix a cosmetic problem for users with some true colour displays. Added controls to allow the printer brightness and contrast to be adjusted. Tidied up the Print controls. Added larger print options and autosize printing. Alphabetized the Setup box. Added a line to the About box to display the maximum viewable colour depth before dithering.

Version 1.1b - Fixed a bug in the GIF write function that would occasionally cause it to write bad files. Fixed a bug in the Windows palette function of the Effects box, which would always cause it to write bad files. Fixed a bug in the TIFF read function that would cause it to consider some PackBits TIFF files corrupt when they were only a bit bent.

Version 1.1a - This is a major rewrite, with all sorts of new features, including a thumbnail preview mode, a resizeable application window, JPEG and ART file support, context sensitive help, better colour reduction features and so on.

Version 1.0f - Added scaling by size and interactive contrast adjustment in the viewing mode. Fixed a bug in the PCX format that caused the software to hang if it encountered a full disk while writing. Filled in the white dots between the buttons in the main window... vital stuff, this.

Version 1.0e - Added RLE format support, a remap to Windows palette option in the effects function and a unicorn in the About box.

Version 1.0d - Added a status display in the cropping mode. Fixed a cosmetic nasty in the main selector window and a bug in the BMP file format handler for 24-bit files.

Version 1.0c - Added a screen capture application to the Graphic Workshop for Windows package. Updated the EXE resource to create super VGA EXE pictures. Improved the BMP format code to handle a wider range of BMP files. Fixed several obscure bugs in the LBM and WPG resources.

Version 1.0b - Added some grey to the main screen. Fixed a bug in the 24-bit dithering functions. Fixed a bug which kept the Crop function from working in batch mode. Fixed a bug which caused 24-bit files to be saved from the View and Crop functions with their colours set incorrectly. Fixed a bug which caused the minimize box to jump around a bit when it was clicked on. Not bad for the first crop of bugs... the universe is a beta.

Version 1.0a - Graphic Workshop for Windows goes forth into eternity... sounds very zen-like, this.

Legal dogma
Neither the author nor Alchemy Mindworks Inc. assumes responsibility for any damage or loss caused by the use of these programs, however it comes down. If you can think of a way a picture program can cause you damage or loss you've a sneakier mind than mine.

All the registered trademarks used herein are registered to whoever it is that owns them. This notification is given in lieu of any specific list of trademarks and their owners, which would not be as inclusive and would probably take a lot longer to type.

If you register Graphic Workshop, we will assume that you are doing so having tested the shareware version and ascertained that it's suitable for your hardware and requirements. We cannot provide refunds for shareware registration if you subsequently change your mind.

Graphic Workshop, Desktop Paint, Image Gallery and GrafCat are trademarks of Alchemy Mindworks Inc.

That's it...