



Paint Shop
User's Manual
Version 2.02

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OVERVIEW

Over the last decade computer graphics has taken off. With this growth of computer graphics have come opportunities and problems.

Some of the opportunities include high quality desktop programs, scanners and painting programs. Today's word processors now incorporate the ability to include graphics within the document.

Scanners and painting programs have provided thousands of graphics to be used with viewers, desktop publishing programs and word processors.

The problem has been a standard within the graphics field. The Macintosh was the first to make extensive use of these graphics. As a result huge libraries of graphical clipart is available in the MAC file format. With the proper tool PC users can convert the MAC pictures to file formats that are supported by PC programs.

The scanners and painting programs usually create their own file format. Thus to port a picture from one painting program to another often requires a tool to convert the picture to the new format.

Paint Shop was designed to be that tool. But Paint Shop goes beyond that. In its simplest form Paint Shop can be used as a picture viewer. Taking it a step farther, Paint Shop may be used as a file format converter. Recognizing the need for some picture manipulation, Paint Shop includes the capabilities to alter the picture and its colors. And finally, for those with specialized needs Paint Shop can be used as a screen capture utility.

As a windows user you already have the programs necessary to create quality documents. As an example, you can use Paint Shop to open a TIFF file. Dither the picture to black and white. Mark off the area of the picture to be used, copy that area to the clipboard. Then paste the picture into Microsoft's Write. Use Write to put the text into your document and then print the document.

OPERATIONAL CONSIDERATIONS

Due to memory requirements for holding large pictures, Paint Shop will run the best in Windows 386 Enhanced mode. Paint Shop can be run in Windows' Standard mode. Remember that large pictures take quite a bit of memory. If you do not have enough memory to handle a picture a message telling you this will appear.

Pictures are handled by Paint Shop in one of two ways. After Paint Shop has read the picture's data from the file, it is up to your video driver to create a picture that can be displayed on your system. This picture will be referred to as a "bitmap". The resulting bitmap is what is then displayed.

In some cases the video driver will not be able to create the bitmap. The most common reasons are a lack of memory or the picture is too large.

If a bitmap can not be created Paint Shop will use the only alternative, drawing the picture. Drawing the picture is slower than displaying a bitmap. You will be able to tell the difference from the way the picture is displayed. A bitmap will be displayed from the top down. A drawn picture will be drawn from the bottom up.

In addition, drawing the picture method will be used for all 24 bit pictures. The reason for this is the time it takes most video drivers to create a bitmap of a 24 bit picture. As an example, during testing it was found that a 640x480 picture with 256 colors took less than a second for the video driver to create the bitmap. But the same video driver took over one minute to create the bitmap for a 24 bit picture.

Some operations of Paint Shop require additional memory to complete the operation. If additional memory is not available Paint Shop will attempt to recover the current picture and inform you that there was not enough memory to complete the operation. If Paint Shop can not recover your original picture Paint Shop will reset. Paint Shop resets by clearing the present picture from memory and the client area. Just re-open the picture file to get the original picture back into Paint Shop.

Loading and Saving of GIF pictures and dithering of any picture

is done in the background. This allows you to continue to work in Windows as Paint Shop is taking care of the processing of your picture.

Paint Shop does allow for multiple instances (more than one copy of Paint Shop may run at the same time).

MENU ITEM - FILE

File - New:

Clears the current picture from memory and the screen. This is useful if you need more memory for another application but do not want to shut down Paint Shop.

File - Open:

Opens a picture file and displays the picture. To open a file:

1. Select the file format of the picture that you would like to view. See the section File Formats for more information on the various file formats supported. The different file formats that are supported are aligned along the right side of the File Open dialog box.
2. Switch the drive or directory by double clicking the drive or directory in the "Directories" list box.
3. Select the file to open from the "Files" list box by double clicking on the file name.

File - Save As:

Saves a picture to a file. To save a picture:

1. Select the format that you would like to save the picture as. See the section File Formats for more information on the various file formats supported. The different file formats that are supported are aligned along the right side of the File Open dialog box.
2. Switch the drive or directory by double clicking the drive or directory in the "Directories" list box.
3. Alter the file name if you desire. The appropriate file name extension will be added for the type of file that you are saving, irregardless of what file name extension you provide.
4. Click on the OK button. Paint Shop will save the file using the file name and file format that you have specified.

File - Delete:

Deletes the file of the currently displayed picture. Before deleting the file you will be asked if you are sure that you want

to delete the file.

File - Print:

Prints the current picture. Paint Shop uses the printer resolution that you have selected. If your picture is too big for the size of your paper the picture will be shrunk to fit the paper.

The speed of the print operation depends on the type of printer used, picture size, and the selected printer resolution. The larger the picture and the higher the resolution the longer it will take. Just one step down in printer resolution will change your print time dramatically.

File - Printer Setup:

Activate the printer's setup dialog box. You can use this option to change the printer's configuration. Most printer setup dialog boxes have their own help system. Use this help system to get additional information on the various options available in the setup dialog box.

File - Exit:

Exit will shut down Paint Shop. If the current picture has been altered but not saved, you will be asked if you would like to save the picture. Select yes to save the picture. Select no to continue the shut down process.

MENU ITEM - EDIT

Edit - Copy:

Copies the currently marked area to the clipboard. If there is no marked area, Paint Shop will copy the entire picture to the clipboard. See Procedures-Marking for information on how to mark an area of the picture.

Edit - Paste:

Pastes the picture from the clipboard into Paint Shop. Once the picture is in Paint Shop, you can treat it as any other picture.

MENU ITEM - PICTURE

Picture - Flip:

Turns the picture upside down.

Picture - Mirror:

Creates a mirror image of the picture.

Picture - Rotate Right:

Rotates the picture 90 degrees to the right.

Picture - Rotate Left:

Rotates the picture 90 degrees to the left.

Picture - Stretch/Shrink:

Stretch/Shrink can be used to change the size of the picture. To change the size of the picture:

1. Select one of the standard VGA sizes, or Custom Size.
2. If you select Custom Size, enter the new width and height in the edit boxes.
3. Click the OK button.

If you do not want to change the size of the picture, select Cancel.

Picture - Trim:

Reduces the picture to include only the area that is marked. See Procedures-Marking for information on how to mark an area of the picture.

Picture - Prep for MAC:

Prepares a picture to be saved as a MAC file. MAC files should have a white background, Prep for MAC gives you the option to invert the picture colors during the prep operation.

The preparation process does four steps:

1. Reduces the picture so that neither the width or height exceed the maximum allowed by MAC pictures. If Paint Shop reduces the size of your picture, the aspect ratio will be maintained.
2. Dithers the picture, if necessary, to black and white. This

step will use a weighted palette, grey color and Floyd-Steinberg dithering. If you wish different options for the dithering, then dither the picture with Colors-Dither to 2 colors before using Prep for MAC.

3. Inverts the picture colors if you selected this option.

4. Pads any area outside of the picture with a white background to bring the picture to the proper size of a MAC picture.

MENU ITEM - COLORS

Paint Shop distinguishes between different types of pictures. These types are; black and white, greyscaled, and colored. Each menu item will indicate what type of picture maybe used with that menu item.

Colors - Dither to 2 Colors:

Dithers a colored picture to a black and white picture. When you select Dither to 2 colors a dialog box will allow you to select the way that the picture should be dithered. No single method for dithering will do a good job on all pictures. Thus Paint Shop gives you the options to have the picture dithered the way you would like it dithered. This allows for 24 different outcomes. The different possibilities are setup by the selections you make using the Dither-to 2 colors dialog box. Your choices fall into 3 categories. You must select one choice from each of the 3 categories.

These categories are: Palette weight, Palette color and Dither type.

Palette weight -

You may select weighted or non-weighted. A weighted palette will set more of the original colors to black and white, instead of dithering out the color to appear as different levels of grey. You will find that edges are usually sharper using a weighted palette.

Palette color -

You may select Grey, Red, Green or Blue. When a picture is dithered, it is done relative to the grey values of the original palette. You may obtain better dithered pictures if the picture is dithered relative to one of the components of the original palette. In otherwords, only using one of the components from Red, Blue or Green. For example, a picture with a lot of flesh tones comes out better if you only use the red palette component. A picture that is mainly Green will look better if you use only the green palette component.

Dither type -

Paint Shop uses a technique called error diffusion to do the dithering. Within error diffusion there are 3 algorithms that are

most popular. They are Floyd-Steinberg, Burkes and Stucki. They each give different results.

The best choice of each of the 3 categories is completely subjective. The best choice can usually be narrowed down by selecting a Weighted palette and using the Floyd-Steinberg Dither type. Then dither against Grey, Red, Blue and Green. This will tell you the best Palette Color with which to dither. After finding the best palette color then try a non-weighted palette. Since all the dither types will have about the same outcome for weighted and non-weighted palettes, you will now know the answer to Palette Weight and Palette Color. Next use your Palette Weight and Palette Color that you've found to be best and dither using the other 2 Dither Types.

The more you use the dithering option the better you get at knowing what will be the best selections without having to go through the above routine.

Colors - Dither to 16 Colors:

Dithers the colored picture down to 16 colors. The 16 colors that result will be the 16 default colors that Windows uses.

Colors - Greyscale:

Changes a colored picture's colors to the greyscale values of the original colors.

Colors - Red-Decrease:

Decreases the amount of red in the palette of a colored or greyscaled picture. Enter the percentage of change in the dialog box.

Colors - Red-Increase:

Increases the amount of red in the palette of a colored or greyscaled picture. Enter the percentage of change in the dialog box.

Colors - Green-Decrease:

Decreases the amount of green in the palette of a colored or greyscaled picture. Enter the percentage of change in the dialog box.

Colors - Green-Increase:

Increases the amount of green in the palette of a colored or greyscaled picture. Enter the percentage of change in the dialog box.

Colors - Blue-Decrease:

Decreases the amount of blue in the palette of a colored or greyscaled picture. Enter the percentage of change in the dialog box.

Colors - Blue-Increase:

Increases the amount of blue in the palette of a colored or greyscaled picture. Enter the percentage of change in the dialog box.

Colors - Brightness-Lighter:

Lightens the colors of the picture. You will be provided with a dialog box to enter the amount, on a scale of 1% to 100%. Lightening the colors too much may result in a changing of the original colors (i.e. yellow becomes green). Using 100% would cause the picture to become all white.

Colors - Brightness-Darker:

Darkens the colors of the picture. You will be provided with a dialog box to enter the amount, on a scale of 1% to 100%. Darkening the colors too much may result in a changing of the original colors (i.e. green becomes yellow). Using 100% would cause the picture to become all black.

Colors - Contrast-Decrease:

Decreases the contrast of colors of a greyscaled picture. It will move the grey colors closer together. Enter the percentage of change in the dialog box.

Colors - Contrast-Increase:

Increases the contrast of colors of a greyscaled picture. It will move the grey colors farther apart. Enter the percentage of change in the dialog box.

Colors - Negative Image:

Creates a photographic negative of the original picture. This option may be used with black and white or greyscale pictures. For a black and white picture black will become white and white will become black. Many pictures come with a black background. When printing these pictures the background will be printed. By using negative image the background would become white and the resulting picture would not have the background printed. For greyscaled pictures the picture will appear to be the photographic negative of the original picture.

Colors - Restore Orig. Colors:

Restores the original colors for the picture. This option may be selected after using one of the brightness options or one of the contrast options.

NOTE: The original colors of a 24 bit picture can not be restored.

MENU ITEM - CAPTURE

After selecting Capture-Area or Capture-Full Screen a dialog box will provide you with different options of what to do with Paint Shop. These options are; Hide Paint Shop, Make Paint Shop an icon, and Leave Paint Shop alone. Hide Paint Shop will make Paint Shop disappear from the screen during capturing. Make Paint Shop an icon will reduce Paint Shop to an icon during capturing. Leave Paint Shop alone will result in Paint Shop staying right where it is during capturing.

Capture - Area:

Area will allow you to capture a designated part of the screen. After making your selection on what to do with Paint Shop the cursor will turn into a "t".

To select the area to be captured:

1. Move the cursor to the upper left corner of the area to be captured.
2. Hold down the left mouse button.
3. Move the cursor to the lower right corner of the area to be captured.
4. Release the left mouse button.

During the selection of the area the area will be outlined and the size of the area will be displayed in the center of the area.

Capture - Full Screen:

Full Screen will capture the entire screen. After making your selection on what to do with Paint Shop, Paint Shop will capture the screen.

Capture Notes:

To capture just one window:

1. Select the window you want to capture by making it the active application.
2. Hold down the "Alt" key and press the "Print Screen" key.
3. Start Paint Shop, if it is not already running.
4. Select "Edit-Paste" from the Paint Shop menu.

To capture just one window with a menu down:

1. Select the window you want to capture by making it the active application.
2. Hold down the "Alt" key and press the letter of the menu to be

displayed (i.e. press the "E" key to display the edit menu). Do not release the "Alt" key.

3. While holding down the "Alt" key press the "Print Screen" key.
4. Start Paint Shop, if it is not already running.
5. Select "Edit-Paste" from the Paint Shop menu.

MENU ITEM - VIEW

View - Full Screen:

Displays the picture outside of a window. Press any key or mouse button to return to windowed operations.

Note: The cursor keys, Page up, Page down, Home and End keys may be used to scroll the picture and will not return you to windowed operation.

MENU ITEM - HELP

Help - Index:

Index will call up Paint Shop's built in help system. If you are unfamiliar with using built in help systems, select the Help-Using Help option.

Help - Keyboard:

Keyboard will display the list of short cut keys that may be used in Paint Shop.

Help - Using Help:

Using Help will explain how to use built in help systems.

Help - About:

Displays general information about Paint Shop. Press the OK button to close the About box.

File Association

Picture files may be opened using file association. File association is the association of the file name extension within File Manager. See your Windows manual for information on how to setup associations to file name extensions in File Manager.

Marking

Marking is the procedure of defining a specific area of the picture for a future copy or trim operation.

To mark an area of a picture:

1. Move the cursor to the upper left point of the area to be marked.
2. Holding down the left mouse button.
3. Move the cursor to the lower right corner of the area to be marked.
4. Release the left mouse button.

The area that is marked will be outlined. The size of the area is displayed on the title bar.

PAINT SHOP KEYS

Keyboard keys can be used as a short cut method to selecting menu commands with the mouse. The following is a list of the keys that have special uses. As an example, to open a file the list shows Ctrl + O. This means hold down the Ctrl key and press the "O" key.

File:

Open - Ctrl + O
Save As - Ctrl + S
Exit - Alt + F4

Edit:

Copy - Ctrl + Ins
Paste - Shift+ Ins

Picture:

Flip - Ctrl + F
Mirror - Ctrl + M
Rotate Right - Ctrl + R
Rotate Left - Ctrl + L

View:

Full Screen - Ctrl + V

Help:

Index - F1

Picture Movement:

You can scroll the picture by using the cursor keys. You can scroll the picture at greater increments by using the following.

Page up - vertical up
Page down - vertical down
Home - horizontal up
End - horizontal down

FILE FORMATS SUPPORTED

General Information:

Pictures that may be used by PC computers are saved in many different formats. Paint Shop supports a limited number of these formats.

It is the intention of Paint Shop to make the handling of these various formats as simple for the user as possible. Paint Shop will make all decisions possible about a file format.

Different picture file formats are capable of handling different quantities of colors. Each file format will have a reference to the number of bits per pixel that the format is capable of supporting.

1 bit per pixel refers to a picture with up to 2 colors.

4 bits per pixel refers to a picture with up to 16 colors.

8 bits per pixel refers to a picture with up to 256 colors.

24 bits per pixel refers to a picture with up to 16,777,216 colors.

Pictures can be saved in files using either raster data or vector data. Raster data pictures are made up of a series of dots. Raster data is most common with pictures from scanners and painting programs. Vector data pictures are made up of a series of objects (lines, circles, squares, ect.). Vector data is most common with pictures from CAD systems. Paint Shop only works with raster data.

This section explains the various file formats and the way Paint Shop will handle those formats.

BMP File Format:

The BMP format will support bits per pixels of 1, 4, 8 and 24. Paint Shop supports all possibilities.

The BMP files come in 2 different formats. These formats will be referred to as Windows and OS2.

OS2 BMPs were the first of the two different formats designed. The pictures that are saved using this format may be used with the OS2's Presentation Manager. An enhanced BMP file format was released with Microsoft Windows. This is the reason for the reference to Windows and OS2 BMP formats.

BMP files can be used as "wallpaper" for the background when running in Windows. See your Windows documentation on how to use a BMP file as wallpaper.

Within the Windows BMP format, two different types of encoding can be used. These are RGB and RLE. The OS2 format only supports one type of encoding, RGB.

Files that use the RGB encoding scheme have no compression done. The data that makes up the picture is simply saved to a file. This makes for some very large BMP files.

The RLE (run length encoding) scheme does some compression of the data that makes up the picture. The RLE encoding is further broken down into 2 different formats; RLE4 and RLE8. RLE4 is the RLE compression routine used for picture data of 16 or less colors. RLE8 is the compression routine that is use for pictures of 17 to 256 colors.

Paint Shop supports all formats and encoding schemes of BMP files.

When saving a file as a BMP, the user will have to select either OS2 or Windows. Since the OS2 format only supports the RGB encoding, all files saved as OS2 will use RGB encoding.

When saving as a Windows BMP, Paint Shop provides the option of saving the file as an RLE encoded file. If you select RLE encoding, Paint Shop will determine the proper RLE (RLE4 or RLE8) encoding to be used.

GIF File Format:

The GIF format will support bits per pixels of 1, 4 and 8. Paint Shop supports all possibilities.

GIF files were designed to create the smallest possible picture files for uploading and downloading from BBSs.

There are 2 GIF file versions; 87a and 89a.

Version 87a was the first of the two versions to appear.

Version 89a added new features to the 87a format. None of these new 89a features are used by Paint Shop.

Both of these versions may use an encoding method referred to as interlacing. Interlacing is when a picture is saved by using four passes instead of just one. On each pass certain lines of the picture are saved to the file. If the program decoding a GIF file displays the picture as it is decoded, the user will be able to see the four passes of the decoding cycle. This will allow the user to get a good idea of what the picture will look like before even half of the picture is decoded. Some communication programs allow the user to download GIF files and view them as they are downloaded. If the picture is interlaced, the user will be able to decide if the picture is one they like before half of the download is complete. If the user does not like the picture, the download can be aborted. This results in the saving of time and money for the person downloading the picture.

Paint Shop will read both 87a and 89a GIF files. Paint Shop will also read interlaced GIFs.

Since Paint Shop does not use any of the new features of the 89a version, all GIF files will be saved as 87a. This will allow older GIF viewers to display the pictures that are created by Paint Shop.

The user will have the opportunity to save the picture as an interlaced GIF. If you intend on uploading the picture to a bulletin board, it would be advantageous to save it as an interlaced picture.

NOTE: Some GIF files contain more than one picture. Paint Shop will only process the first picture in the file.

IMG File Format:

The IMG format will support bits per pixels of 1, 4 and 8. Paint Shop supports only 1 bit per pixel images.

IMG files were designed to work with the GEM environment. The files were originally the result of GEM Paint. Since the application Ventura Publisher worked in the GEM environment, it too supported the IMG file format. In order to maintain compatibility, various other desktop publishing applications have added support for the importing and exporting of this format.

There are 2 types of IMG files: "Old-style" and "New-style". Both of these types may be read.

When saving a file as a IMG Paint Shop will save the picture as an "Old-style". This will allow applications that have not added support for the "New-style" to use the pictures created by Paint Shop.

Since Paint Shop only supports 1 bit per pixel IMGs you will have to dither a colored picture to black and white before saving it as an IMG file.

MAC file Format:

The MAC format supports only 1 bit per pixel.
MAC files come from the Macintosh program MacPaint.

Mac pictures are very specific. They must have a width of 576 and a height of 720. MAC pictures are black and white.

Mac pictures should have a white background. You will be given the option of inverting the picture during the Prep for MAC operation. If your picture is using a black background, then you should select the invert option. If the picture is already on a white background then do not invert.
If you would like to see what the picture will look like when it is inverted, select the Colors-Negative Image menu option.

In order to save a picture as a MAC picture, the above requirements must be met. This can be accomplished by using the Picture-Prep for MAC menu command.

Paint Shop provides the option to saving the MAC picture without (W/O) a header. The MAC header is the information that is necessary for the picture to move back and forth (via BBS(s)) between the Macintosh and PC. Therefore, all pictures should be saved with the header.

The option to save without the header exists only because some PC applications want the MAC picture without the header.

Since Macintoshes were originally only black and white there is a large selection of clipart that is saved in the MAC file format. MAC file format was added to allow you to read these MAC pictures, trim them down to size and then save them in a file format that is supported by your programs. In this way you can build yourself a clipart library that rivals the Macintosh user's libraries.

PCX File Format:

The PCX format will support bits per pixels of 1, 4 and 8. Paint Shop supports all possible bits per pixel.

PCX files were originally created for use with the Zsoft Paintbrush program. With no standard to the industry the format became the standard by default. This format is supported by more applications than any other format.

There are 4 PCX file versions:

Version 0 - Black and white pictures.

Version 2 - 16 or less colors with palette information.

Version 3 - 16 or less colors without palette information.

Version 5 - 256 or less colors.

Paint Shop will read all PCX file versions.

If the file is a version 3 Paint Shop will use the default VGA colors used by Windows as the palette. This may result in a different looking picture than you would see when using some other picture viewer.

When saving a picture as a PCX file, Paint Shop will decide which version to use. The reasoning is to create the oldest version possible for that picture. This will allow older applications (which do not support the newer versions) to use the PCX files created by Paint Shop.

Paint Shop will use the following method to determine how to save a file as PCX file. If the picture is black and white then the version will be 0. If the picture is from 3 to 16 colors then the version will be 2. If the picture has more than 16 colors, version 5 will be used.

PIC File Format:

The PIC format will support bits per pixels of 1, 4 and 8. Paint Shop supports all possible bits per pixel.

The PIC files that are supported come from Pictor/PC Paint.

Paint Shop will read all PIC file versions.

Do to the lay out of the file, reading a Pictor 4 bit picture will take longer than the other PIC files.

When saving a picture as a PIC file, Paint Shop will decide which type of PIC to use. 1 bit pictures will be saved as a Pictor PIC. 4 bit pictures will be saved as a PC Paint PIC. 8 bit pictures will be saved as a Pictor PIC.

RLE File Format:

The RLE format will support bits per pixels of 4 and 8. Paint Shop supports both possibilities.

The RLE file format is used for the start up screen of Windows. The start up screen of Windows can be changed. There is a number of documents, on various BBSs, that explain how this can be done. Please refer to one of those documents for a complete explanation of how to do this.

RLE files are Windows BMP files that use one of the RLE compression routines. Thus saving a picture as a BMP using one of the RLE compressions would produce an identical file as saving the picture as an RLE. The only difference would be the filename extension.

For more information on the RLE encoding and Windows BMP file formats, please refer to the BMP file format.

TIFF File Format:

The TIFF format will support bits per pixels of 1, 4, 8 and 24. Paint Shop supports all possibilities.

The TIFF format was designed to become the standard format. In order to become the standard, the format was designed to handle just about any possibility. The result of this design was maximum flexibility in how a picture is saved. This results in an infinite number of possibilities of how a picture is saved. Therefore no application, including Paint Shop, can claim to support all TIFFs. The best that an application can do is to support as many TIFFs as possible, but there will always be the an obscure TIFF that will cause a problem for some application, including Paint Shop.

The TIFF format differentiates between types of pictures. These categories are: black and white, greyscaled and colored. Paint Shop supports all of these categories.

The TIFF format can use one of six encoding routines. These encoding routines are: No-compression, Pack bits, LZW, Huffman, CITT 3 and CITT 4.

Paint Shop will read files that use the encoding routines of: No-compression, Pack bits and LZW.

When saving a file as a TIFF the user can select compressed. If this selection is made the compression used will be Pack bits.

WPG File Format:

The WPG format will support bits per pixels of 1 through 8. Paint Shop will work with pictures that use 1, 4 or 8 bits per pixel.

The WPG format is the format used by Word Perfect. It showed up with the release of Word Perfect 5.0. With the release of version 5.1 the format was changed. Paint Shop will read either version of the WPG format.

A WPG file may contain a picture made up of vector data or raster data. Paint Shop will only process the raster data of the file. If there is no raster data to a WPG file then Paint Shop will indicate this.

When saving a picture as a WPG Paint Shop will save the picture using the old format. This is against the recommendation of Word Perfect Corp. The reason this is done is to allow older applications to use the WPG files created by Paint Shop.

QUESTIONS AND ANSWERS

This section is provided to answer the most commonly asked questions.

Q. Why are the colors wrong when I display a picture with Paint Shop?

A. Paint Shop will maintain the colors that are present in the picture file. There are some limits though. Windows maintains 20 colors for itself. If you are trying to display a 256 color picture you may have up to 20 colors that are incorrect. This type of error can rarely be detected.

A more common problem has to do with the video driver that is being used. Most of you are probably using a VGA card with your computer. You elected VGA for its 256 colors over EGA with only 16 colors. On a standard VGA system the 256 colors are only available in one mode. This mode is 320x200 (320 pixels (dots) across by 200 pixels down). The other modes of the VGA card only allow for 16 or less colors. With a standard VGA card Windows uses a mode that is 640x480 with only 16 colors.

As a result, you can use a DOS gif viewer to view a gif picture with 256 colors. But when you view the picture under Windows you will only get 16 of the 256 colors.

Color Ranges: The different modes have their own color ranges. The mode with 256 colors can select its palette of colors from 262,144 different colors. The mode with 16 colors selects its colors from only 64 different colors.

If you have a 16 color picture the colors may still be different. In a 256 color mode you could view a picture that has 16 different shades of grey. But with a 16 color system, only 4 of those shades fall within its range of colors. Thus, even though the picture is made up of only 16 colors, not all of the 16 colors can be represented on a 16 color system. In this example you would see the 16 color grey scaled picture as only having 4 shades of grey.

Pictures that use 16 different colors (not grey shaded) have the same limits on them. If the picture uses any colors that are outside of the 64 color range, those colors will be different when viewed with in Windows.

Note: The same explanation holds true for people trying to view a 24 bit picture on a 256 color vga system. Even though the picture will be displayed, the colors will be wrong.

What to do...

In order to get your 256 colors back you would have to upgrade your video card to what is called SVGA (S stands for Super). This allows for 640x480x256. In addition, you need a video driver for Windows that allows you to run Windows at 640x480x256. The standard driver that comes with Windows is "vga.drv". You can check to see if you are using this by viewing "system.ini" with a text editor, and finding the line that says "display.driv=?????.drv", your line probably reads "display.driv=vga.drv". If you are using "vga.drv", then you are running in 640x480x16.

There are many video boards out that support 256 colors in Windows. To take advantage of the board, you need a Windows 3.0 driver with the video board (this will replace "vga.drv"). Most major video board makers have all ready produced this driver. By upgrading your video board, and changing the Windows video driver in "system.ini" you can run Windows at 640x480x256 instead of 640x480x16. It may be that your present video board can be upgraded. What I mean is that some video boards just need more memory added to them to allow for this new mode (you would still need a driver).

Your video board may already allow for 640x400x256 (check with the manufacturer). You will still need to obtain the video driver from the manufacturer to use this mode in Windows.

Q. Why do the colors of the wallpaper change as different pictures are displayed?

A. Windows can only handle so many colors at one time. When Paint Shop displays a picture, Windows lets Paint Shop change the palette of colors to match that of the picture Paint Shop is displaying. By allowing Paint Shop to have control of the palette of colors that are used, Windows can not maintain the colors of the wallpaper. Once Paint Shop is closed the wallpaper's colors should return to normal.

Q. Why does Paint Shop use the alternate method of drawing the picture to display a 24 bit picture?

A. Many video drivers where not designed for speed when handling a 24 bit picture. For example, one driver tested took 1 second to create the picture with 8 bit data but took over 1 minute to create the picture from 24 bit data. In addition, it was found that some drivers contained bugs when handling 24 bit pictures. This resulted in a UAE when trying to have the video driver create the picture for display. Therefore Paint Shop uses the

alternate method for speed and to avoid UAEs.

Q. Why doesn't Paint Shop print the picture in color on a color printer?

A. The printing of pictures in colors is the responsibility of the printer driver. At the time Paint Shop was released the only printer driver that would print pictures in color was the HP PaintJet.

Q. Why does Paint Shop refuse to load a WPG picture?

A. WPG pictures are saved using either vector data or bitmap data. Paint Shop will only handle bitmap data. If the WPG file that you tried to use only contains vector data, then Paint Shop will display a message indicating that the file did not contain a bitmap. A common source of vector only data are pictures created by Draw Perfect.

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You may obtain support by contacting JASC, Inc. at:
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or

CIS # - 72557,256

or

JASC, Inc.

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