

GRAPHICWORKSTM 1.1

Creative Tools To Paint, Draw, Write, Edit, And Print Professional Documents.



Developed by MacroMind, Inc. and Mike Saenz.

Version 1.1: Changes, Additions, and New Features

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Why We Changed a Good Thing

GraphicWorks 1.0 is one of the most flexible and powerful graphics tools ever produced for the Macintosh. However, over the course of the past several months, we listened to users' requests for additions and changes to make this great program even better. The result is GraphicWorks 1.1. GraphicWorks 1.1 extends and enhances Version 1.0. Many new features have been added, and the user interface has changed to allow you to work more quickly.

If you are already familiar with version 1.0, you will find things have changed enough that you will need to relearn a few habits. You will also find that many of the oddities and glitches in version 1.0 are gone. In general, you will probably find yourself back up to speed in a couple of work sessions.

This addendum does not attempt to replace the program documentation. Therefore, it should be used in conjunction with the rest of the book. The first thing to read is the section about the user interface; after that, if you come to a point where you are in unfamiliar territory and the regular manual does not apply, turn here for help. The addendum is broken down into a table of contents; an introduction to the new user interface; a discussion of high-resolution drawing and using TIFF files; a look at Quickdraw Primitives; a section on using color; a discussion of laser printing strategies; a summary of other new features; a list of important but less obvious changes from version 1.0; and finally, a brief overview of compatibility with other software.

Welcome to GraphicWorks 1.1, the most powerful paint, drawing, design, layout, and creativity tool yet for the Macintosh.

The GraphicWorks Show

We're currently amassing a library of customer-created **GraphicWorks** output. We want original work for our files as well as for use in future ads and promotional pieces. If you'd like to share your work with us, and if we're free to reproduce it at no charge (although we'll happily credit you with the creation), please send it, along with your name, address, and telephone number, to :

The GraphicWorks Show

Mindscape, Inc.

P.O. Box 1167

Northbrook, IL 60065

As with any Mindscape product, we're most interested in your feedback and in your

suggestions--suggestions both for improving our existing products and for developing new ones. Please communicate with us via the Registration Card, by letter, or by phone. It's only through close contact with our valued customers that we can continue to publish products the caliber of **GraphicWorks**.

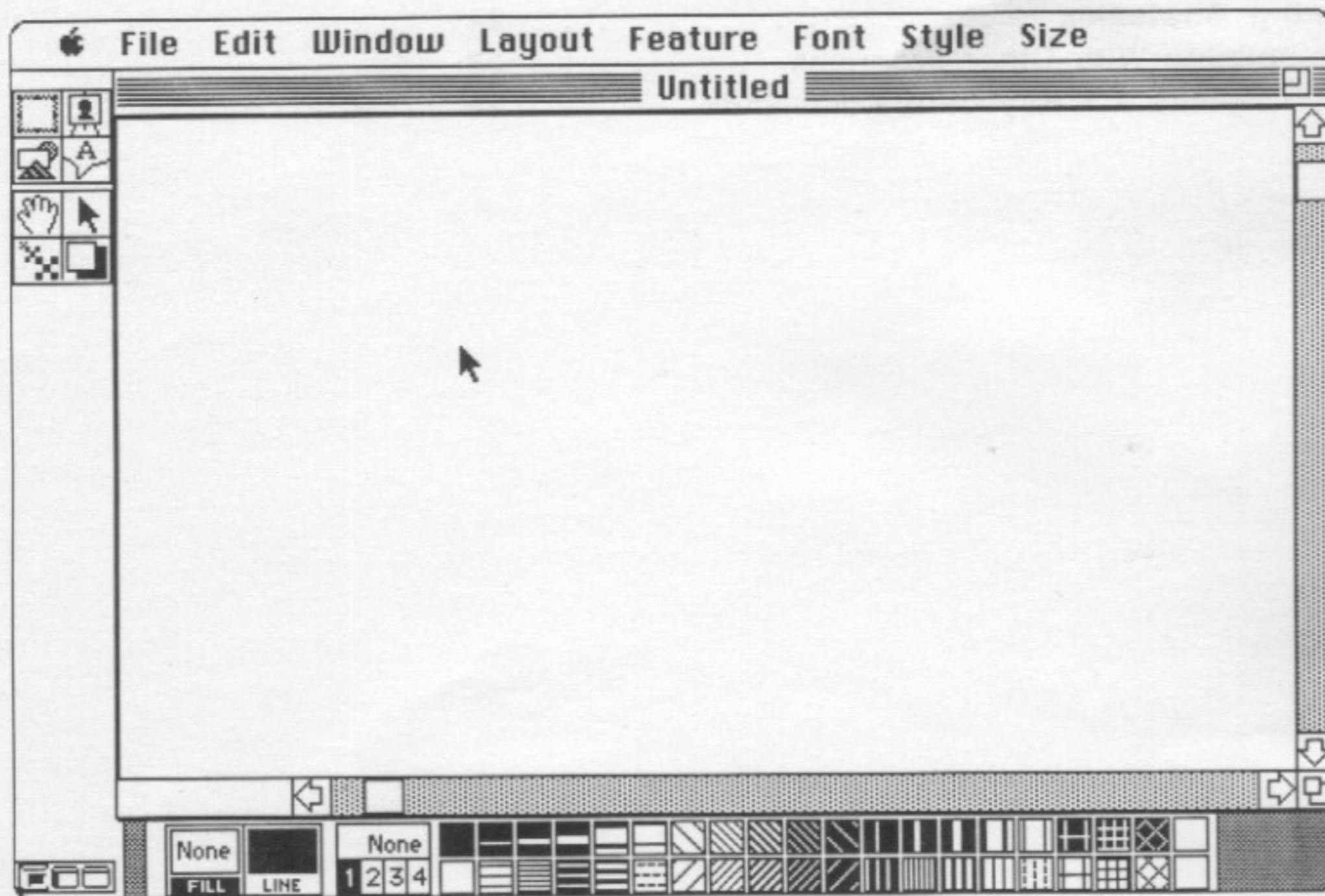
We're looking forward to hearing from you and receiving terrific output from you. Enjoy 1.1!

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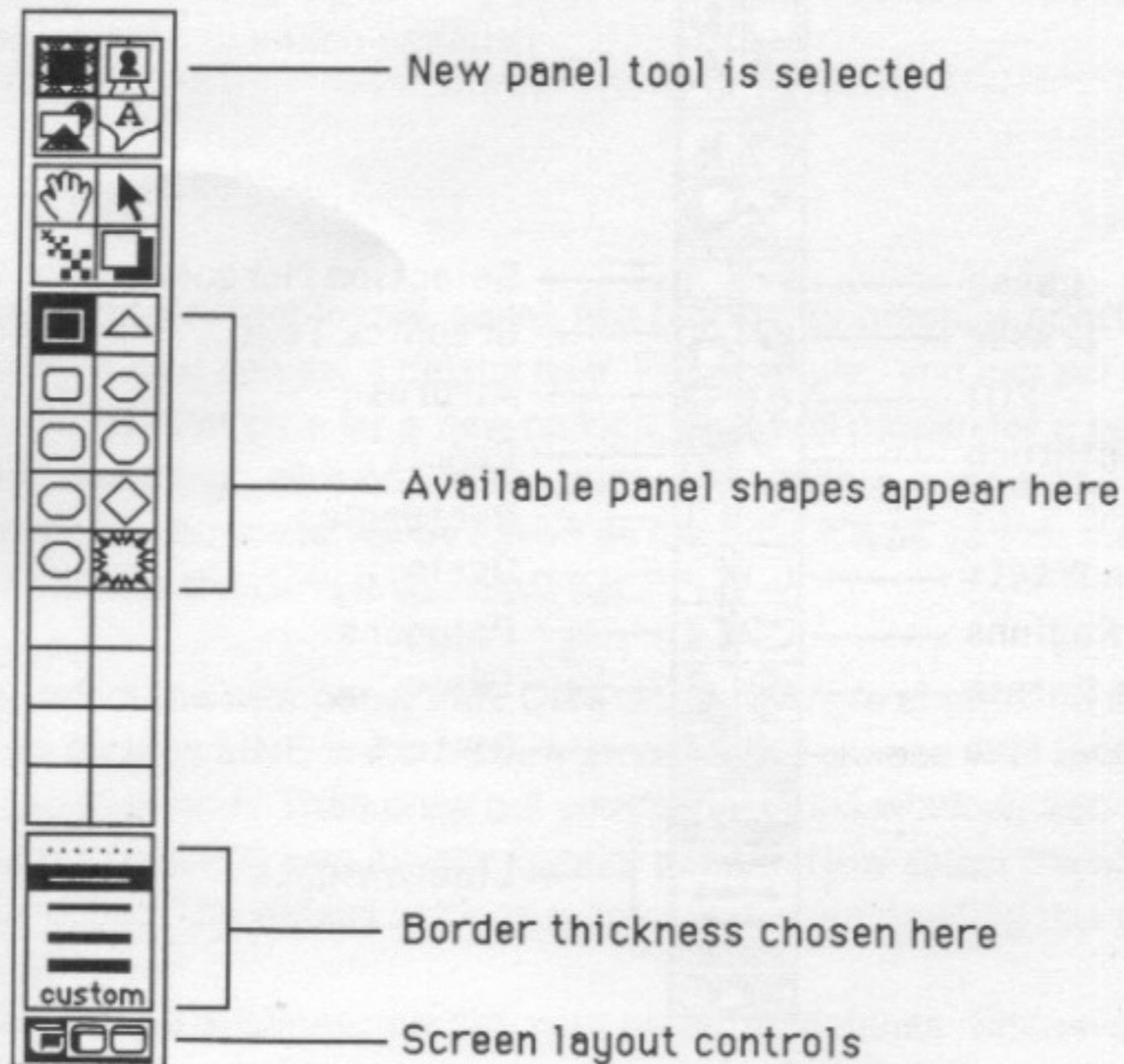
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The User Interface

The biggest change from version 1.0 is the streamlined user interface. GraphicWorks 1.1 uses a new "context-sensitive" tool window to eliminate the need for balloon and panel shapes windows.



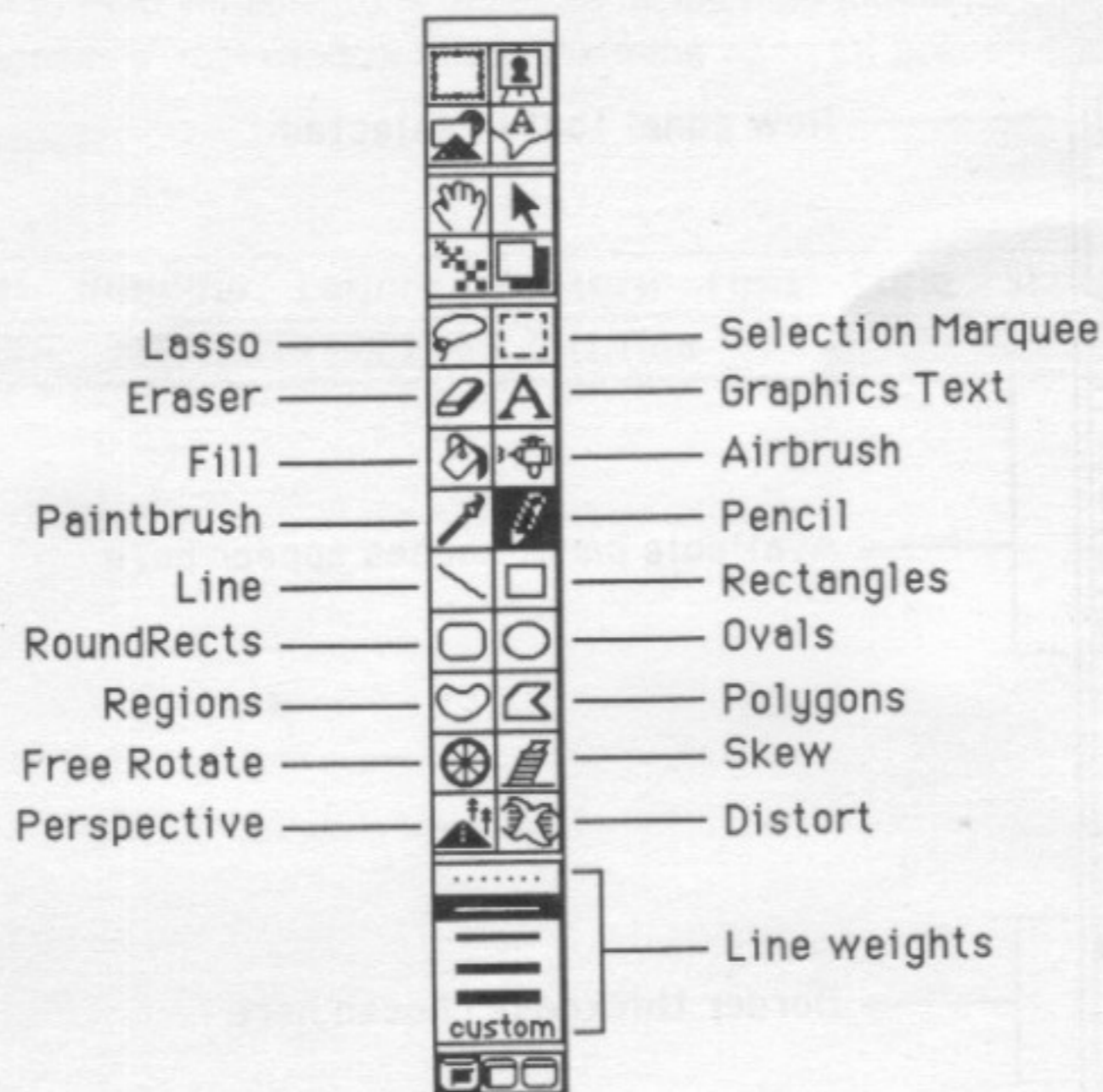
The Tool Window changes to reflect the currently selected item. For instance, if you select the new panel tool, the tool window will change to look like this:



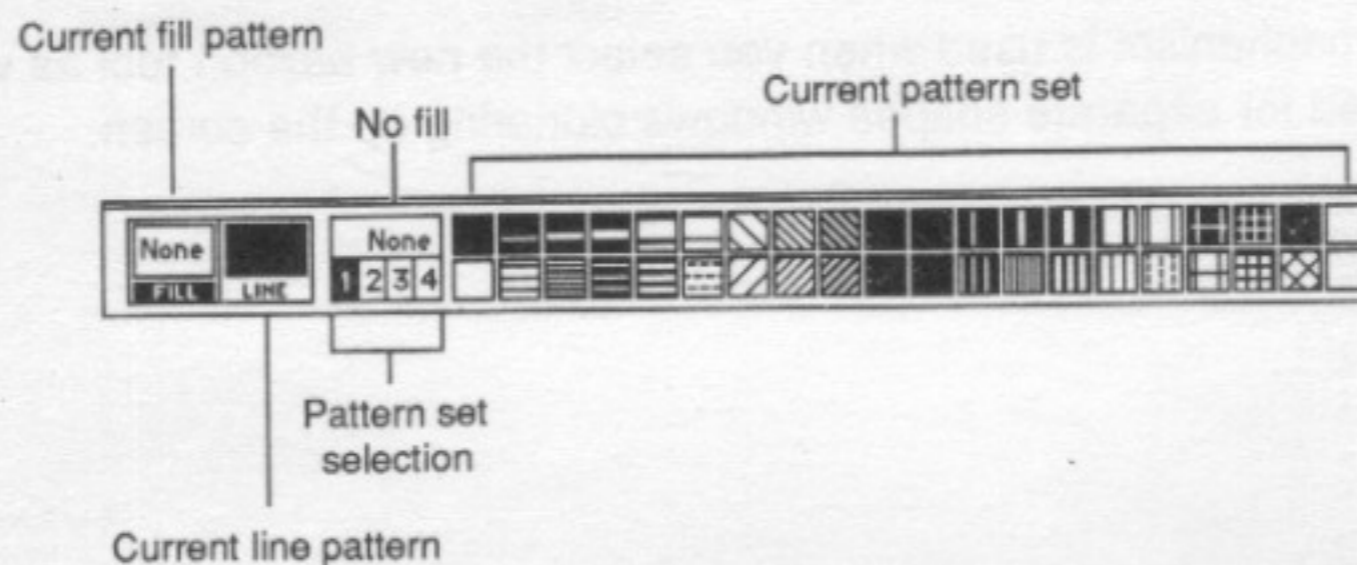
As noted, you select the shape of the panel from the shapes which appear in the Tool Window, and you select the border weight from the line weights area at the bottom.

This same basic mechanism is used when you select the new balloon tool as well. This eliminates the need for separate shapes windows cluttering up the screen.

You are probably wondering about the lack of drawing tools. They will appear as soon as an easel is created or selected. As soon as you create or select an easel, the following will appear:



As you can see, the full set of tools is present, and several new ones have been added. You may have noted that the filled shapes have been removed from the tools window. This brings us to another change of some importance, the pattern window.



The pattern window now controls whether or not a shape will be drawn filled. If you select

None and then draw a shape, it will consist solely of an outline. Any other pattern will produce a filled shape. You can draw lines and shapes with patterned borders by clicking on LINE and then on a pattern to use. Select from among the four pattern sets available by choosing 1,2,3 or 4. Note: When selecting a pattern, you now can drag through the pattern palette with the mouse button pressed to switch patterns.

Setting Defaults

After selecting a creator tool (panel, easel, text balloon, or graphics primitive) but before creating the object, you can set a default type. For example, you can set the line thickness for a new panel, the balloon style for a new balloon, or the fill pattern for a new primitive. Before you create the new thing, click on the line pattern, fill pattern, shape, line thickness, ink mode, or color. The choice you make will be saved as the default type so that the next time you make a new thing it will use the default you have set.

For example, select the new panel tool. Click on the triangle shape and the 4-pixel wide line thickness. Now click on LINE in the pattern window and choose your favorite pattern for a new border and click on it. Then draw out your panel in the window. You will get a triangular panel with a thick border drawn in your favorite pattern. Now select the new panel tool and make another panel. The default settings will be used when creating this panel as well.

GraphicWorks 1.1 can automatically set your preferred defaults whenever you first start the program. When the program starts, it looks for a file called Template. If it finds such a file, it opens it (as Untitled) and reads in all the default characteristics for new objects.

Other than these changes, the program is used in the same manner as before. The basic concepts of panel, easel and balloon have not changed.

Quickdraw Primitives and Pictures

Primitives

There is a totally new kind of object available in version 1.1: the **primitive**. Primitives are the elements of what most people call "object-oriented" drawing. If you have used MacDraw™, you are already familiar with primitives.

To create a primitive, you first click on the New Primitive Tool in the tools window.



Your cursor will change as shown, and the shapes available to you will appear in the tool window. To create a shape, simply select the one you wish to draw and then follow the standard click-and-drag method you use to create panels, easels, and balloons. The polygon and line tools behave exactly the same as their counterparts in easels, with the exception that they can be re-shaped and re-filled at any time.

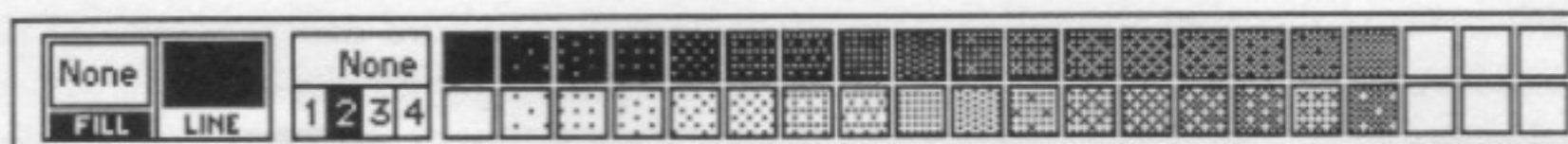
To change the size of a primitive, simply grab one of the small "handles" that appear at the corners of the object. To reshape polygons, use the **Reshape...** command from the **Layout** menu to activate the reshaping handles. Drag a handle to change the polygon's shape. Handles can be added or deleted in the same manner as for balloons.

Primitives can have any fill color and any line color or weight and these qualities can be changed at any time.

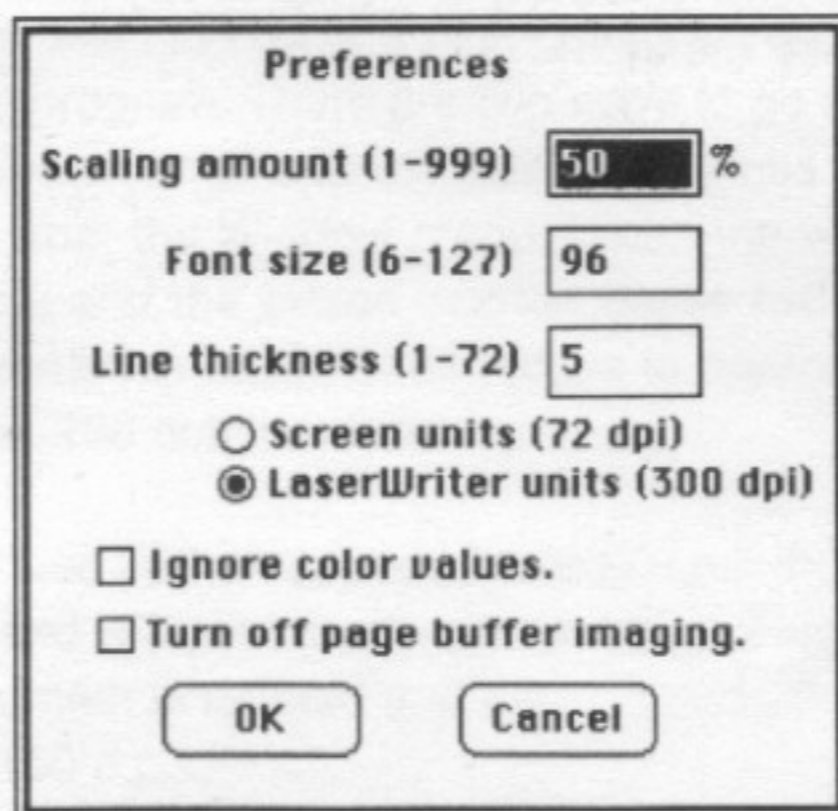
To set a primitive's patterns, simply click on the primitive to select it, click on the fill color you want, select the **LINE** area in the Pattern Window and select the line pattern you want. The primitive will be re-drawn with the new patterns.

The reason you might want to use primitives is that a quickdraw primitive is very memory efficient and will be printed at the full resolution of whatever output device you are using, whereas bitmaps are normally constrained to 72 d.p.i. (not always, though, as we'll see in a little while) and are very memory hungry.

Another advantage to using primitives in GraphicWorks 1.1 is that you can use the grays in the second pattern set in the Pattern Window (click on the number 2) to select a Postscript gray scale for your fills. These grays will print using the printer's standard grays instead of the on-screen patterns.



Yet another reason to use primitives is the availability (through the **Preferences** command) of true hairlines. You can set a custom line weight in the preferences window. If you click on **Screen units** and type a number for line weight, that number will represent 72nds of an inch (the Macintosh screen resolution). If, however, you choose **LaserWriter units**, the number will be interpreted as 300ths of an inch. Thus, selecting LaserWriter units and typing a 2 will produce a custom line thickness of 1/150 of an inch (2/300).



Primitives are just like any other object in GraphicWorks. They are owned by panels and have priority levels which can be adjusted with the Layout menu commands.

Primitives are affected by the **Ink** modes on screen and when printing as a bitmap or to an ImageWriter I or II, but not when printing to a Postscript device such as the LaserWriter. The current implementation of Postscript does not include ink modes for graphics other than bitmaps. Thus, this is a case where what you see on the screen may not be what you get on the printer. Since the most common use for primitives seems to be for the construction of borders and other highlighting devices, this will hopefully not be a major obstacle.

Pictures

Pictures are also available in GraphicWorks 1.1. A picture (known as a PICT in Mac-speak) is a standard Macintosh representation of an image which is treated as an object for scaling and printing. PICTs can come from any of a number of sources. For instance, a MacDraw™ or a Mac3D™ graphic transferred from the Clipboard or ScrapBook can be pasted in as a Picture. What this means is that the image can be scaled and moved around, but not edited by GraphicWorks 1.1. If you scale a picture to 50% of its original size, all the detail present in the original image is retained when it is printed or resized. This is similar to the way MacWrite treats graphics pasted in from another program. You can also paste a bitmapped image from another paint program (or even from within GraphicWorks 1.1 itself) as a picture. Note: You cannot set color for a PICT image that you bring into GraphicWorks 1.1; it must already be built into the picture by the creating program.

Whenever you want to paste in an image as a picture, use the **Paste as Picture** command in the **Edit** menu. The item will be identified in the lower left corner of the drawing window by the word Picture. You can convert a picture to a bitmap at any time by using the **Convert to Easel** command in the **Feature** menu.

High Resolution Drawing and TIFF Files

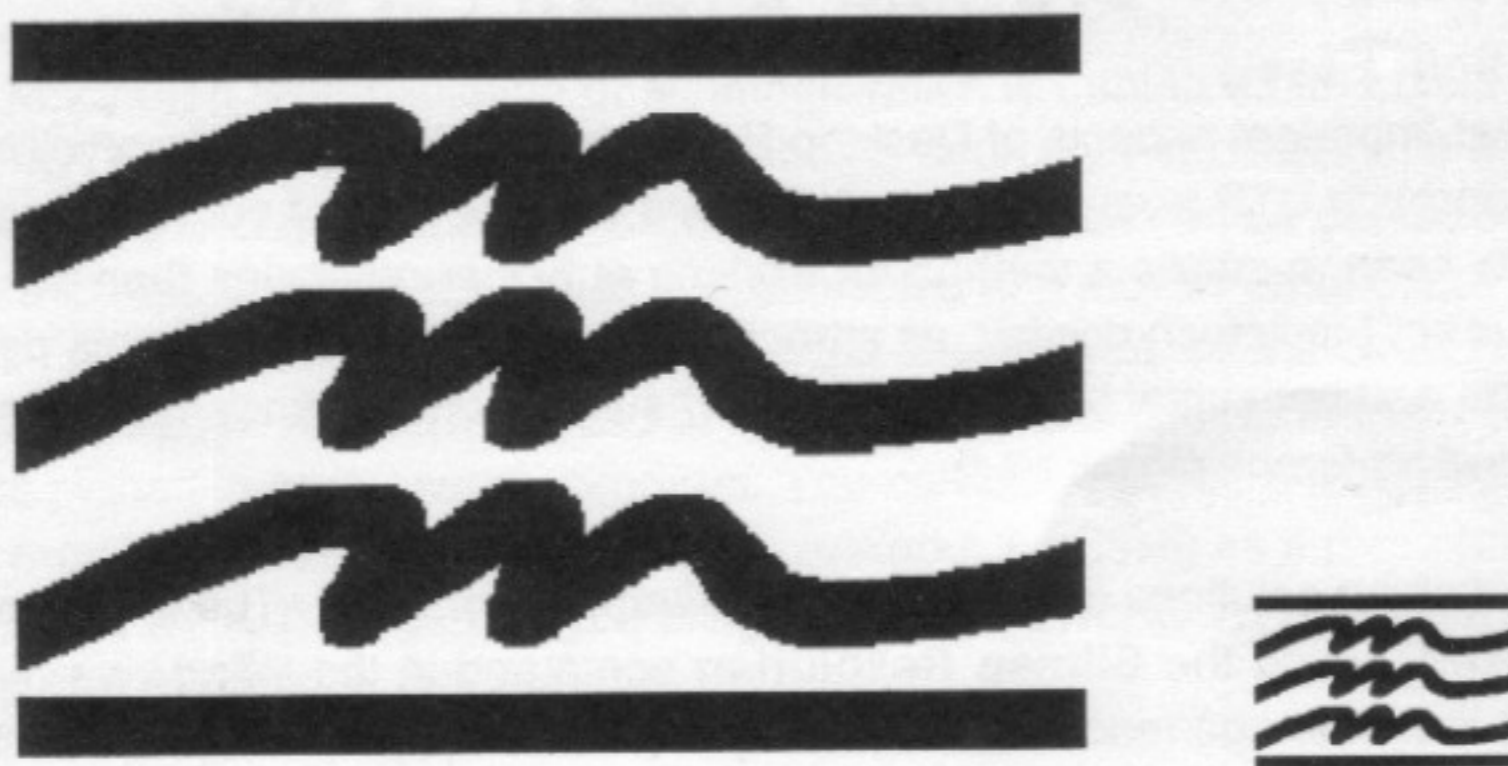
High resolution Easels

One of the most important aspects of Desktop Publishing is illustration. GraphicWorks was designed to approach DTP from the illustrator's point of view. One of our major goals with version 1.1 has been to create a method for working at higher resolution than the screen allows. The current Macintosh display, as attractive as it is, is limited to 72 dots per inch in both the vertical and horizontal axes. This is also the limitation of standard bitmap paint programs, including GraphicWorks 1.0.

There are two related solutions to this problem in GraphicWorks 1.1. The first involves "high-resolution" easels. Using the **Bitmap Resolution** command in the **Windows** menu, it is possible to set the bit image resolution from 72 dots per inch (d.p.i.) on up. Thus, if you have a 300 d.p.i. LaserWriter, you can create a bitmapped drawing using all of GraphicWorks great painting tools which will print at the full resolution of the printer.

As an example, assume you want to create a high-quality Mindscape logo using the high-resolution capabilities of the program. There are two ways to go about it. The first (and less precise) way would be to create a logo approximately four times the size you need, then select **Bitmap Resolution** from the Window menu. When the window appears, click the button for **288** dots per inch, and the button labeled **Same number of bits in image**. Now, when you deselect the hi-resolution easel, it will reduce to approximately 1/4 its size, but it will print to a Postscript device at 288 dots per inch.

NOTE: Usually, you should use 288 as opposed to 300 d.p.i. for the LaserWriter. This will produce a cleaner printout and will print much more quickly. This is because 288 is an even multiple of 72 and thus less math is needed and fewer round-off errors will be introduced. The same is true of 144 versus 150 d.p.i..



Change Bitmap Resolution

Resolution (dots per inch)

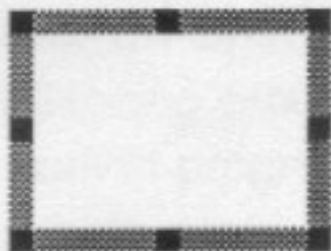
☐ 72 d.p.i. ☐ 144 d.p.i. ☐ 150 d.p.i.
☒ 288 d.p.i. ☐ 300 d.p.i.
 ☐ Other

☐ Maintain image size
☒ Same number of bits in image

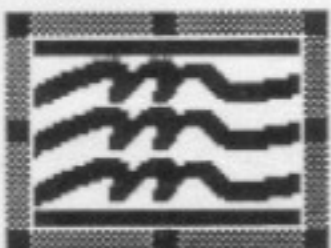
In the illustration, we show the original art and the finished 288 d.p.i. image. It is important to be sure to choose **Same number of bits in image** if you wish to go from the larger version to the smaller.


The second (and more precise) method of creating a high-resolution easel is to start from a smaller image which is exactly the size you need, and then to use the Bitmap Resolution command to scale it for you.

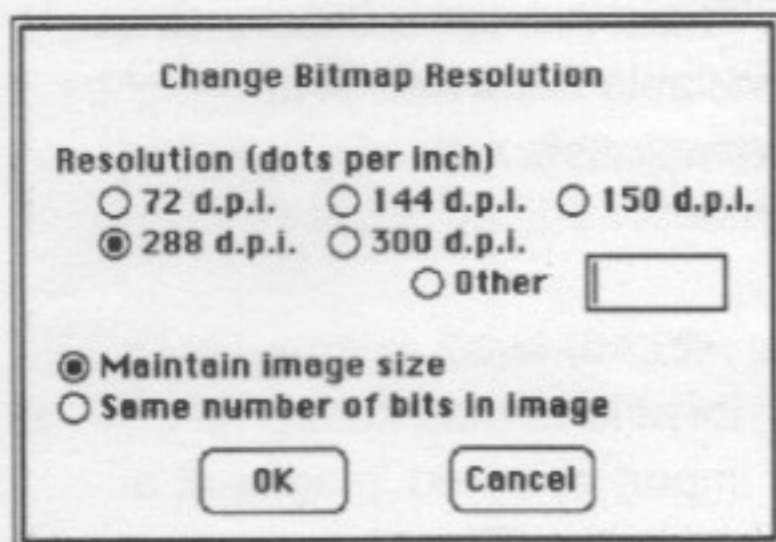
First, create an easel the size you need



and rough in a sketch of what you want to draw.

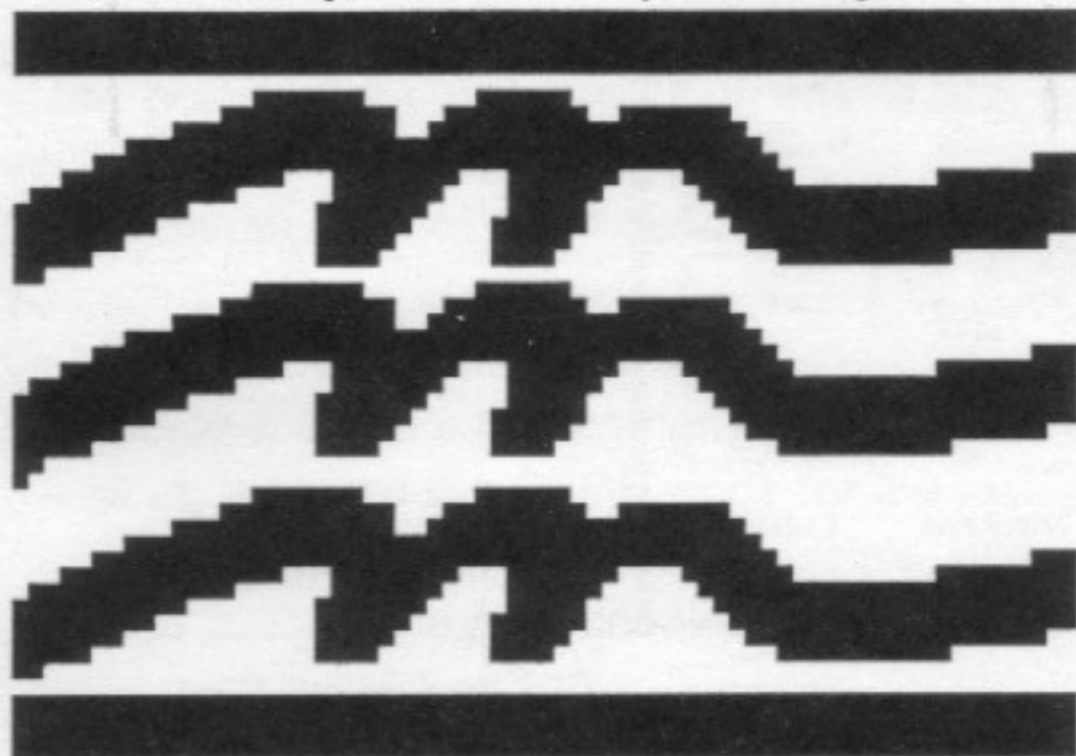


Like so. Next select **Bitmap Resolution** from the **Windows** menu (or double-click on the Laserbits tool ) and choose **288 d.p.i.** and **Maintain image size**.



and click **OK**.

The picture in the easel will change slightly. Now click on the Laserbits tool to expand the easel to allow you to clean up the image.



You can now use any of the art tools to clean up the image. When it is deselected, it will return to the smaller size. It will print out at 288 d.p.i. on any device capable of that resolution (or higher).



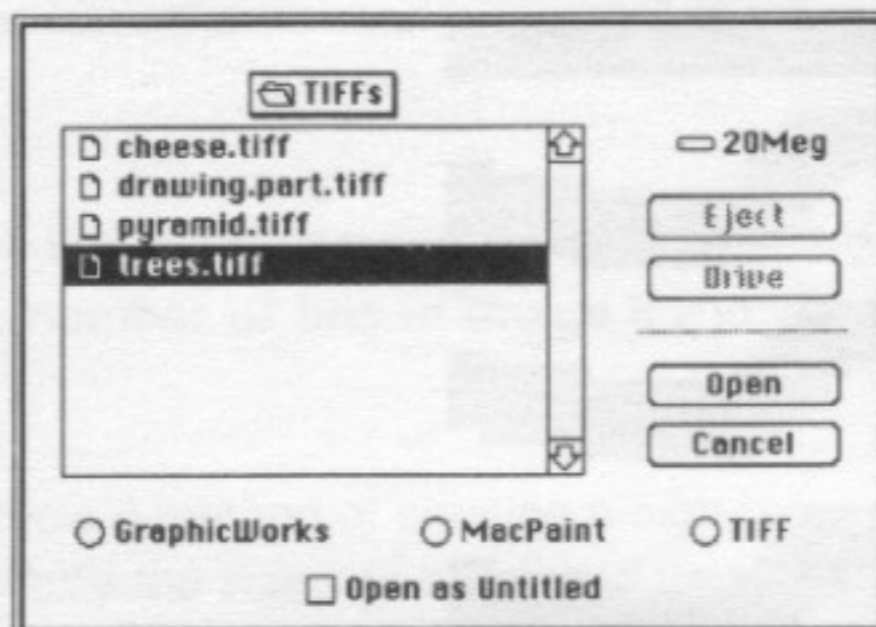
NOTE: An easel cannot be turned into a high-resolution easel until it contains artwork (even a single pixel). You cannot draw on a high-resolution easel until it has been expanded (by clicking on the laser bits tool).

Exactly the same methods can be used at any resolution you wish to enter. The preset values are 72 (the resolution of the screen), 144, 288, 150, and 300. There is a special area where you can enter any resolution you wish—the only limits are available RAM and your patience (after all, working an image at 2500 d.p.i. is going to get a little tedious!).

TIFF Files

A new standard for the transfer of high-resolution images has recently been adopted by nearly all the manufacturers of high-resolution scanners. Support for this file format, called TIFF (Tagged Image File Format), allows an application to directly import scanned images at a variety of resolutions. **GraphicWorks 1.1** has a new command in the **File** menu called **Place TIFF**.

When you select **Place TIFF**, you will be presented with the standard Macintosh file dialog with all available TIFF files displayed.



Double-click on the name of the TIFF file you wish to place (or click on the name and then click on **Open**) and the file will be read and processed. TIFF files can be quite large and the decoding process can be rather time-consuming, so a dialog will appear to apprise you of the work in progress as the image is translated

Reading TIFF file with 371 lines of data.
Currently processing line 16.
To Cancel press "⌘." (Command + period).

When the image has been processed, it will appear on the screen as a *standard high-resolution easel*. From here, the TIFF image behaves exactly like any other **GraphicWorks 1.1** high-resolution image. Use the Laserbits tool to expand the image to working size. All of the drawing tools work as normal on the TIFF image. You can even change the bitmap resolution from the default value read from the file.

TIFF files can also be loaded by using the **Open** command. This will create a new document consisting of a single panel which contains the TIFF image.

To prepare a file from your scanner for import to **GraphicWorks 1.1**, simply follow the instructions to scan and save as TIFF whatever portion of your document you want to import to **GraphicWorks**. When the file is imported, it will retain all information present in the scanned image, including size and resolution. It's that simple.

A few points about high-resolution easels that you should know. First, they are going to take a while to print. A single 8 x 10 inch image at 288 d.p.i. is the equivalent when printing of 16 MacPaint documents. Print speed can be enhanced in a number of ways, however. Whenever you are printing a high-resolution easel, be sure to turn off smoothing (from the Page Setup dialog). This will significantly speed the printing, and as you can't really gain much from smoothing a 300 d.p.i. image anyway, it should cause no hardship. Another method to speed things up is to use the **Or** ink mode for the high-resolution easel. This is the fastest ink mode when printing. Finally, whenever possible, use resolutions that are even multiples of 72 (i.e. 144 and 288) as the math involved in the image scaling is far simpler and faster than with odd values such as 150 or 300.

Color Printing

GraphicWorks 1.1 allows owners of ImageWriter II printers to print in color without additional software. Any object can be assigned both a foreground and a background color. This includes bitmaps, text balloons, primitives, and panels.

To print in color, you must have an ImageWriter II printer with a color ribbon attached to your Macintosh and selected from the Chooser.

You can assign a color to an object at any time. To choose a color for an object, select the object and then choose foreground and background colors for it from the **Colors** window. Note: You cannot change the color of a PICT image.

Colors							
ForeGround Color (black bits)				BackGround Color (white bits)			
black	white	red	green	black	white	red	green
blue	cyan	magenta	yellow	blue	cyan	magenta	yellow

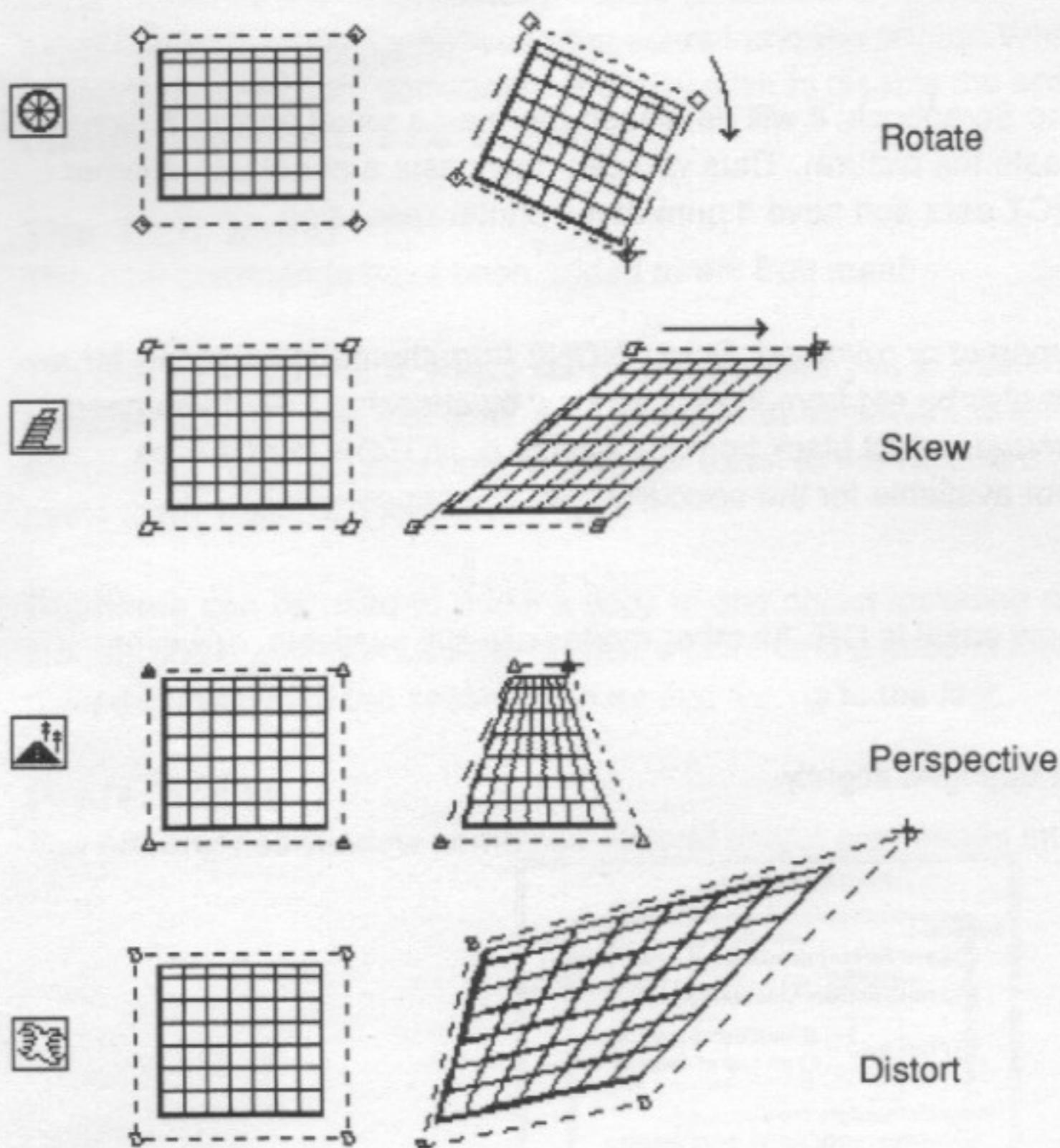
All of the black pixels in the image will be printed in the foreground color, and all of the white pixels will be printed in the background color. Note that changing the background color from white will seem to fill the area in question with black (at least until you get a color monitor!). This is because the Macintosh ROM will display all colors except white as black pixels on the screen. Don't worry though, the colors will print just fine. Note, however, that if you select **IGNORE COLOR VALUES** (from the Preferences window), images will be displayed normally on the screen (black and white — even on a color screen).

The ink modes all work for color as well as for black and white objects. The most important two modes are OR and MATTE. OR is the default mode. When an image is OR'd, only the black (or foreground color) dots are imaged. This means that setting the background color on an object to be OR'd is ineffective. If you wish to set a background color for an object and have it print properly, use MATTE which first erases the area under the object to white (background). Other ink modes have other effects which may not be immediately obvious., so experimentation is the key here.

Other Changes

Special Effects

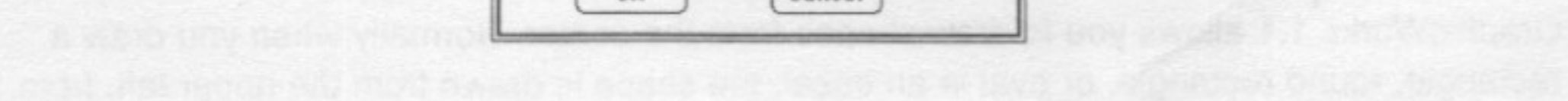
There are four new tools available for editing art in easels. They are known collectively as the special effects tools. Each of the four tools is used in the same way: click on the tool, use it to select an area within the easel, and 'grab' a corner and reshape the area. You can also copy the selected area to the clipboard. Any changes made to a selected area can be undone.



GraphicWorks 1.1 allows you to draw shapes from the center. Normally when you draw a rectangle, round rectangle, or oval in an easel, the shape is drawn from the upper left, from

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Most of the choices are self-explanatory. The last two, however mark changes from the previous version of the program.

The default print mode is now to print the page as a fully-detailed collection of objects (previously this was chosen by selecting **Print page detailed**). Choosing **Print page as bit image** chooses to print the page as if it were coming from MacPaint or FullPaint. While this mode can be faster and may be suitable for large paintings or rough layouts, it degrades the quality of text, primitive and high-resolution objects to what they appear as on screen.

GraphicWorks 1.1 automatically scales all objects by 96% when printing to correct for an aspect ratio discrepancy between the screen and the printer. While this allows better WYSIWYG operation, sometimes you may wish to disable the scaling. In that case, select **Disable automatic 96% scaling**.

The Edit Menu

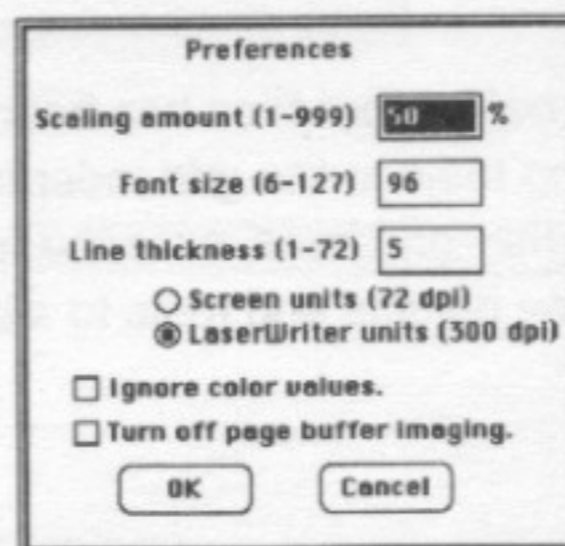
Two new commands have been added to the Edit menu.

The first new command, **Paste as Picture**, allows you to paste an image into a selected panel as a PICT. Use this command to paste art from MacDraw™ or Cricket Draw™ into your documents. You can also copy a panel or easel to the clipboard and use this command to paste them in as PICTs.

Duplicate can be used to make a copy of any object including panels. If you reposition the first duplicate and then use the duplicate command a second time, the new object will be placed in relation to the second item as that item is to the first.

Preferences

The preferences window combines several useful commands into one window.



Set the scaling amount exactly as you would in version 1.0. Simply type a number from 1 to

999. The percentage you type will become the percentage listed in the Edit menu. **Scale by xx%** can be used to scale selected areas in bitmaps or entire PICTs. In the first case, the original bits are lost once the scaling has been done. In the second case, all of the information contained in the PICT is retained.

Set the font size to add a size not listed in the standard **Size** menu. You can enter any integer between 6 and 127 as a font size. The number you enter will appear at the bottom of the **Size** menu.



Set the line thickness to control the size of lines and borders for panels, primitives, balloons and bitmap tools. Type an integer between 1 and 36 to set the width of the Custom line. Five is the default setting and represents the smallest line the screen can display (1/72 inch). The smaller numbers (1-4) represent hairlines. These thinner lines will only print on a PostScript device.

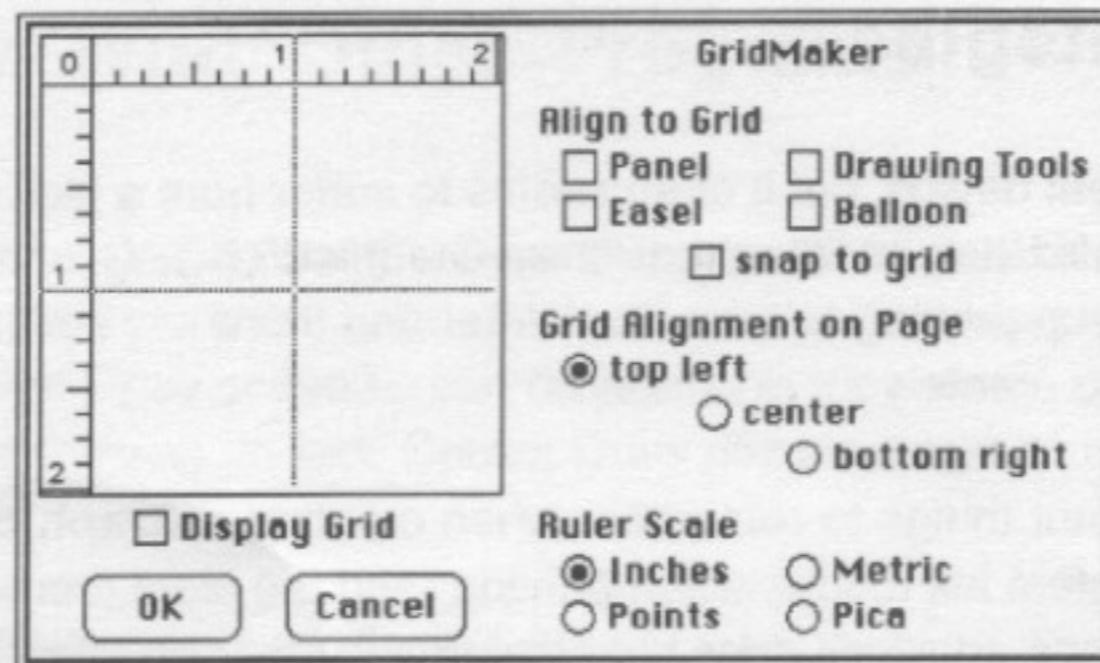
Ignore Color Values sets the colors on the screen to black and white even if other color values have been set. Images will print in color on the ImageWriter II even if Ignore Color Values has been selected.

Turn off page buffer imaging allows you to gain extra memory for your document at a considerable cost in scrolling and imaging speed. This has the effect of eliminating the in-memory copies of the page which are used for scrolling. Thus, the page must be re-built when new areas are scrolled into view. This feature allows you to see colors on-screen on those models that accommodate color.

Grid Maker and Rulers

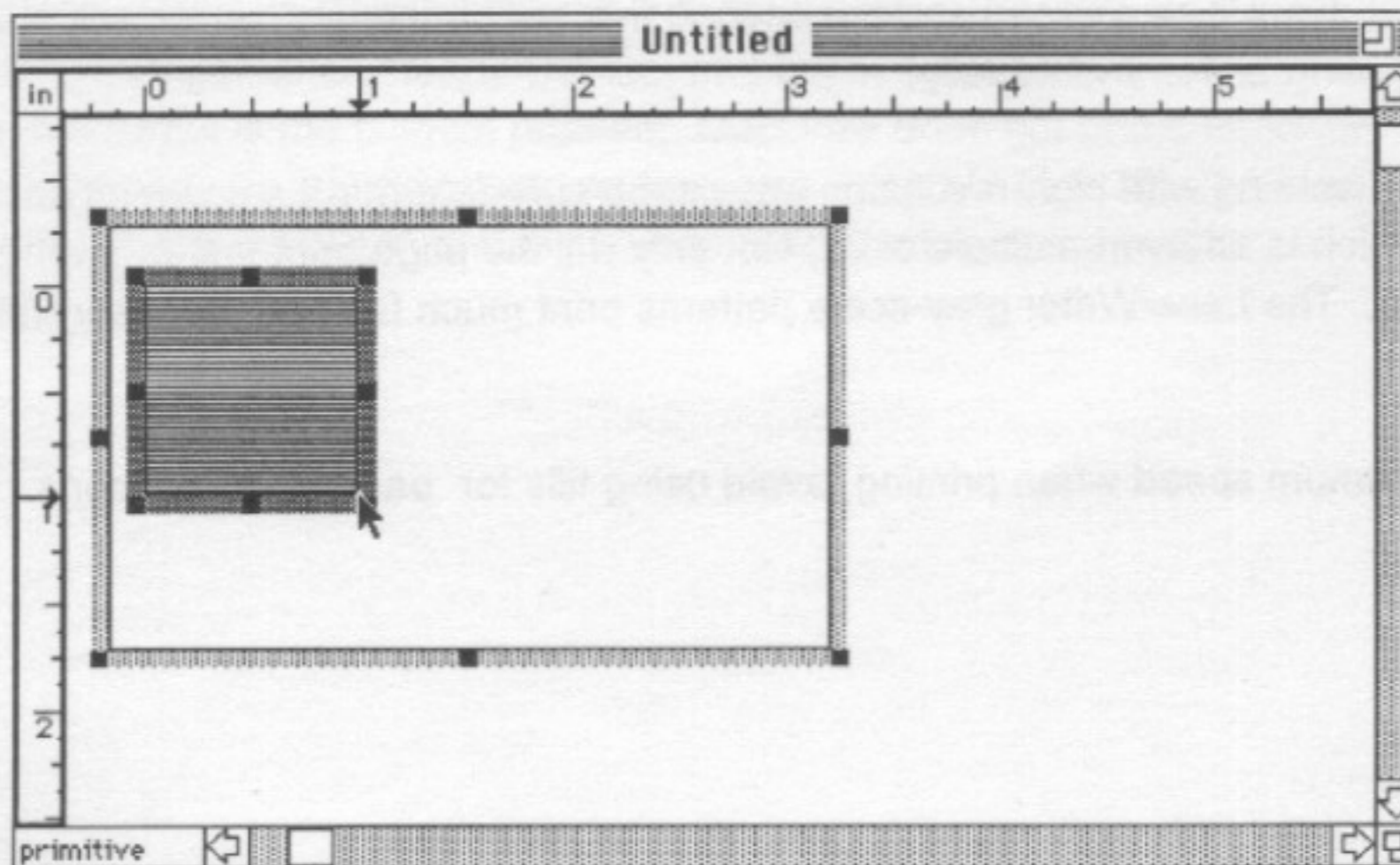
Grid Maker

Grid maker is used exactly as it did before, but Pica has been added as a scale choice. Also, you can now choose to align drawing tools to the grid independently of easels. Although you've always been able to align to the grid lines or to the halfway point between grid lines, a new option, "Snap to Grid," will cause objects and tools to align only to the grid lines themselves.



Rulers

Choose **Show Rulers** to display rulers along the top and side of the screen. Two small arrows continuously track the position of the cursor. You can align the zero points of the rulers by clicking and dragging guides from the small corner box (labeled with the current unit of measure). The **Show Rulers** command will change to **Hide Rulers** when it is chosen.



Printing Strategies

The LaserWriter is a great device, but it often seems to suffer from a lack of speed, especially when printing the complex documents created by GraphicWorks. **GraphicWorks 1.1** does several things to speed up printing to the LaserWriter and there are several other things you can do to help when you create your documents.

One of the most important things to remember when creating a **GraphicWorks 1.1** document is that the fastest ink modes when printing (and the least memory intensive) are COPY and OR. If you have art which does not overlap any other art, then use the OR mode. If your images overlap only on clean rectangular boundaries, consider using COPY. The default mode for all objects is now OR.

When creating a page containing multiple layers of bitmaps, try to keep as many as possible in immediate succession in the stack. If, for instance, there are ten separate bitmaps, one on top of the other, with no other objects in between, they will be merged in memory before printing. This speeds things up considerably. If a balloon is placed between the fifth and sixth layers, the first five will be merged and the second five will be merged, which will also be faster than printing all ten individually.

When you are working with high-resolution easels, be sure to turn off smoothing and use a d.p.i. factor which is an even multiple of 72. Not only will the page print faster, it will probably look better too. The LaserWriter gray-scale patterns print much faster on a LaserWriter than other patterns.

Note: For maximum speed when printing, avoid using fills for panels and balloons.

Compatibility With Other Programs

Input

GraphicWorks 1.1 is completely compatible with any kind of graphics which can travel through the clipboard. Art from MacPaint or Fullpaint can be pasted as easels or pictures. Art from MacDraw or Cricket Draw or Pro3D can be pasted in as pictures and thus retain all the original qualities of the drawing. In fact, Cricket Draw objects retain all PostScript attributes when printing.


In addition, **GraphicWorks 1.1** can directly open MacPaint and Fullpaint documents, ComicWorks and GraphicWorks 1.0 documents, and TIFF files created by most scanner manufacturers.

Output

GraphicWorks 1.1 can write files in its own proprietary format, as MacPaint documents, or as PICT files.

The PICT files created by **GraphicWorks 1.1** can be read by any program which can read PICT (MacDraw, PageMaker, Ready•Set•Go, etc) but in some cases, you won't see quite what you expect. MacDraw is the biggest problem. MacDraw does not understand any ink mode except OR. If you have a bitmap placed on the page using MATTE, MacDraw will process it as two images: the mask (all black) and the bitmap (OR'd on top of the mask).

GraphicWorks 1.1 Key Commands

 Keys	Command	Menu
A	Selected Panel	[Feature]
B	Bold	[Style]
C	Copy	[Edit]
D	Duplicate	[Edit]
E	Trace Edges	[Edit]
F	Format Text	[Layout]
G	Patterns	[Window]
H	Flop Horizontal	[Edit]
I	Italic	[Style]
J	Flip Vertical	[Edit]
K	Crop Work	[Feature]
L	Show Rulers	[Layout]
M	Switch Selection	[Feature]
N	New	[File]
O	Open	[File]
P	Plain	[Style]
Q	Quit	[File]
R	Rotate	[Edit]
S	Save	[File]
T	Transparent Paper	[Feature]
U	Underline	[Style]
V	Paste	[Edit]
W	Wrap Panel	[Feature]
X	Cut	[Edit]
Y	Tools	[Window]
Z	Undo	[Edit]
0	Center	[Layout]
1	Shuffle Up One	[Layout]
2	Shuffle Down One	[Layout]
3	Bring To Front	[Layout]
4	Send To Rear	[Layout]
5	Small Bits	[Feature]
6	Medium Bits	[Feature]
7	Large Bits	[Feature]
8	Clip Exception	[Feature]
9	Save As...	[File]
~	Show Grid	[Layout]
,	Up	[Layout]
/	Down	[Layout]
:	Scal by XX%	[Edit]
-	Left	[Layout]
=	Right	[Layout]
>	Increase Font Size	
<	Decrease Font Size	

NOTE: Bold Indicates a change from version 1.0



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Software that challenges the mind.