
PC Paintbrush IV Plus™

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*For IBM® Personal System/2™,
IBM PC/AT®, PC/XT and Compatibles*

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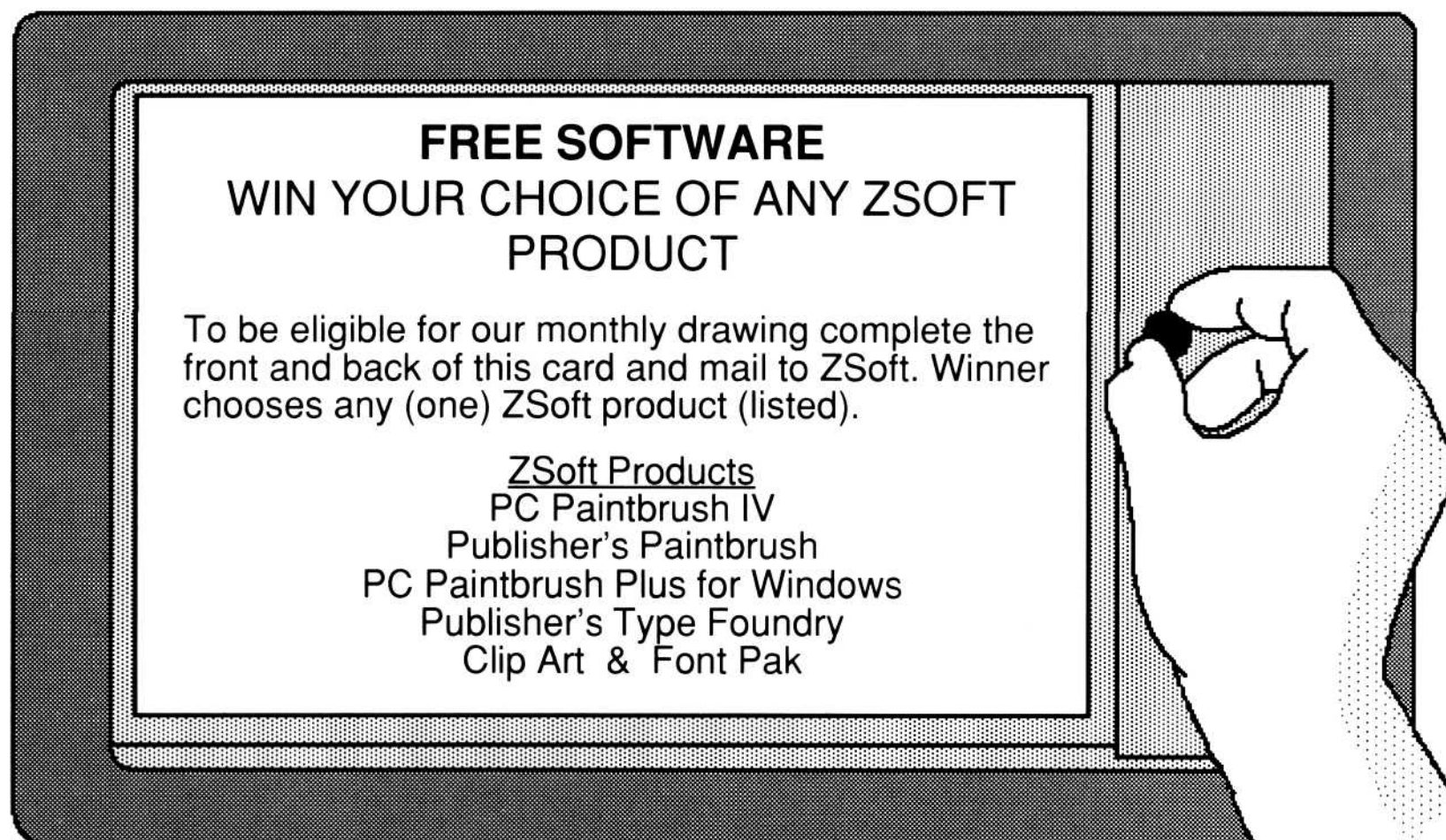
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Name: _____

Company Name: _____

Title: _____

Address: _____

City, State & Zip: _____

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Signature: _____ Date: _____

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Which magazines do you read frequently? (Check all that apply)

- | | | |
|--|--------------------------------------|--|
| <input type="checkbox"/> Personal Computing | <input type="checkbox"/> PC Magazine | <input type="checkbox"/> PC Week |
| <input type="checkbox"/> Graphics World | <input type="checkbox"/> PC World | <input type="checkbox"/> Byte |
| <input type="checkbox"/> Personal Publishing | <input type="checkbox"/> EP & P | <input type="checkbox"/> PC Resource |
| <input type="checkbox"/> Ventura Publishing | <input type="checkbox"/> Infoworld | <input type="checkbox"/> Publish |
| <input type="checkbox"/> Home Office Computing | <input type="checkbox"/> Pre | <input type="checkbox"/> PC Publishing |

How did you find out about PC Paintbrush IV Plus?

- | | | |
|---|-------------------------------------|---------------------------------|
| <input type="checkbox"/> Magazine Ad | <input type="checkbox"/> Trade Show | <input type="checkbox"/> Work |
| <input type="checkbox"/> Magazine Article | <input type="checkbox"/> Store | <input type="checkbox"/> Friend |

Others (please be specific): _____

Where will you use PC Paintbrush IV Plus? (Check all that apply)

- | | | | |
|-----------------------------------|-------------------------------|---------------------------------|-------------------------------------|
| <input type="checkbox"/> Business | <input type="checkbox"/> Home | <input type="checkbox"/> School | <input type="checkbox"/> Government |
|-----------------------------------|-------------------------------|---------------------------------|-------------------------------------|

Others: _____

How will you use PC Paintbrush IV Plus? (Check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Business Presentation | <input type="checkbox"/> Desktop Publishing |
| <input type="checkbox"/> Education | <input type="checkbox"/> Design/Engineering |

Others: _____

What products will you use with PC Paintbrush IV Plus?

- | | |
|---|--|
| <input type="checkbox"/> Harvard Graphics | <input type="checkbox"/> Ventura Publisher |
| <input type="checkbox"/> Auto Cad | <input type="checkbox"/> Freelance |
| <input type="checkbox"/> Word Perfect | <input type="checkbox"/> PC PageMaker |

Others: _____

What feature would you like to see added to PC Paintbrush IV Plus?

What feature do you like most in PC Paintbrush IV Plus?

Date Purchased: _____ Version: _____ Serial: _____

Mail to: ZSoft Corporation, P.O. Box 8123, San Francisco, California 94128

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Introduction

Welcome to ZSoft's fourth generation paint program - PC Paintbrush IV Plus.

PC Paintbrush IV Plus lets you take an artist's brush to the computer screen and create detailed, colorful pictures or striking black-and-white images that you can print on a dot matrix or laser printer or use with desktop publishing programs, word processing programs, and other software that supports graphics.

PC Paintbrush IV Plus includes a wide variety of tools to help you create detailed, complex images, and you can customize the colors and patterns you use in your drawings. With PC Paintbrush IV Plus's text tool, you can add labels, titles, and banners to a drawing in a variety of type styles and sizes. As you work, you can zoom in on a drawing to edit fine details, and then zoom out to see all of a large drawing on your screen at once.

PC Paintbrush IV Plus makes scanning more flexible than ever. You can easily control an image scanner, quickly set up scanning preferences, and with the prescan function, choose only the area you want to scan.

And you can create and scan large images because PC Paintbrush IV Plus takes advantage of your expanded memory as well as free space on your hard drive. You can use extended memory to increase PC Paintbrush IV Plus performance.

Because PC Paintbrush IV Plus takes full advantage of a digitizing device (mouse, drawing tablets, etc.) you can draw, choose commands, and get help simply by selecting options from drop-down menus and dialog boxes. If you prefer, you can also use keyboard shortcuts to choose commands.

To begin drawing with PC Paintbrush IV Plus, all you have to do is start the setup program to install the software on your computer. Once your scanner is installed and PC Paintbrush IV Plus is set up, you can begin scanning.

About this Manual

You can use this manual both as a tutorial to learn PC Paintbrush, and as a reference to return to after you've become familiar with the program.

This manual includes the following sections:

- Introduction - explains how PC Paintbrush uses memory, how to set up PC Paintbrush IV Plus on your computer, edit your CONFIG.SYS file so that PC Paintbrush IV Plus can recognize your scanner, start the PC Paintbrush IV Plus program, and run the scanning portion of PC Paintbrush IV Plus. You should read this first.
- Getting Started - describes the different features of the PC Paintbrush editing screen (such as the Color Pattern Set and the Toolbox).
- Tutorial - includes three lessons. The first is a sample drawing session to create a drawing yourself, the second focuses upon the Effects commands, the third includes a sample scanning session, with procedures you can follow to scan an image yourself.
- PC Paintbrush IV Plus Menus - includes two sections. The first explains all of the commands in the menus of the editing portion of PC Paintbrush IV Plus. The second explains all of the commands in the menus of the scanning portion of PC Paintbrush IV Plus.
- Reference - contains reference information, including a list of PC Paintbrush IV Plus error messages, a glossary of PC Paintbrush IV Plus terms, a description of the Frieze program and other diagnostic programs included with your package, lists of computers, monitors, printers, and scanners you can use with PC Paintbrush IV Plus, as well as specific information about installing scanner drivers.

Things to Keep in Mind

- Bulleted lists provide information, but not procedural steps.
- Numbered lists indicate a procedure with two or more sequential steps.
- Bold type indicates words and characters you type. Unless told otherwise, you can type the characters in uppercase or lowercase letters. You should always press Enter after typing a command.

For example, if a procedure tells you to type **pbsetup** to start the PC Paintbrush SETUP program, you should type **pbsetup** in either uppercase or lowercase letters, and then press Enter.

- The names of the keys you should press appear in normal type, and they are abbreviated, as they appear on the keyboard.

- If you need to hold down one key as you press another key, the key names will be joined by a plus (+) sign. For example, Alt+F means to press and hold down the Alt key and press F.
- If you need to press a sequence of keys, the key names will be separated by commas. For example, Alt+F,O means to press and hold down the Alt key and press F, release Alt and F, and then press O.
- Disk filenames and DOS commands are in all uppercase letters. You can type filenames and commands in uppercase or lowercase letters.
- If the manual text tells you to “click” an object, you should point to the object, and then quickly press and release the left mouse button.
“Double-click” means to press and release the left mouse button quickly two times.
- If the manual tells you to “drag,” you should point to the object, and then press and hold down the left mouse button as you move the pointer.
- If the manual tells you to “choose” or “use” a command, the menu name appears first, followed by the command name.
For example, “Choose the Options Set Brush Shape command” means open the Options menu by clicking the menu name, and then choose the menu’s Set Brush Shape command by clicking the command name.
- If you make a mistake, you can cancel the latest changes you made to your drawing by choosing Undo from the Edit menu. Undo cancels any change you’ve made since the last time you chose a tool from the Toolbox. If the last tool you used was the Scissors, Gadget Box, or Text tool, Undo cancels changes you made since you last pasted an object or text into the drawing area.
- If you need help on how to do something, press the F1 key or choose Help, and the Help menu appears.
- Since different types of drawing devices (such as mice, and digitizers) can be used with PC Paintbrush IV Plus, your drawing device is referred to as a mouse throughout this manual.
- If you need help using a tool, point to that tool and click the right mouse button.

Setting Up PC Paintbrush IV Plus

System Requirements

You need the following hardware and software to use PC Paintbrush IV Plus on your computer:

- Computer: an IBM PC/AT, IBM PC/XT with a hard disk, or an 80386 based computer with a hard disk.

OR a computer that is 100 percent compatible with those computers.
- Operating system: DOS, version 3.0 or later.
- Display adapter: For a list of adapters compatible with PC Paintbrush IV Plus see “Supported Hardware” in the Reference section of this manual and the PBREADME.DOC file.
- Optical scanner and device driver: If you want to scan an image into PC Paintbrush IV Plus, see “Supported Hardware” in the Reference section of this manual, and the PBREADME.DOC file, described below, for a list of scanner device drivers compatible with PC Paintbrush IV Plus and information on installing the device driver.
- Computer memory: sufficient RAM (random-access memory) to run PC Paintbrush IV Plus using the display adapter installed with your computer. For best results, you should have at least 640K of RAM.

If you have more than 640K of memory, see the section called “About Memory” in this chapter for information on allocating your memory.
- Pointing device: For a list of drawing devices compatible with PC Paintbrush IV Plus, see “Supported Hardware” in the Reference section of this manual and the PBREADME.DOC file.
- The PC Paintbrush IV Plus program disks and several blank, formatted disks (for making backups).
- Printer: If you want to print your PC Paintbrush drawings, see “Supported Hardware” in the Reference section of this manual and the PBREADME.DOC file, described below, for a list of printers compatible with PC Paintbrush IV Plus.

Reading the PBREADME.DOC File

The PC Paintbrush IV Plus program disk may include a file named PBREADME.DOC. You should read this file for additional information that became available after this manual was printed.

To read this file:

- 1 Put the PC Paintbrush IV Plus Setup disk into drive A of your computer.
- 2 At the DOS prompt, type **a:** to change the working drive to drive A.
- 3 Type **type pbreadme.doc** to display the contents of the file on the screen.

If you want to print the file, type **copy pbreadme.doc prn**

You can also read and print the file using your favorite word processing program.

Installing PC Paintbrush IV Plus on Your Computer

The PC Paintbrush IV Plus Setup program, PBSETUP, copies the PC Paintbrush IV Plus files from the master disks to your hard disk and creates a batch file to run Frieze (a memory-resident utility program described in “Using the Frieze Program” in the Reference section of this manual) and PC Paintbrush IV Plus.

Before starting the Setup program, you should know what kind of computer and peripherals (for example, display adapter and printer) you have.

Note If you plan on scanning in black-and-white, you can install PC Paintbrush IV Plus in black-and-white mode to save memory and speed up the program operation.

To install the PC Paintbrush IV Plus software on your computer:

- 1 Use DISKCOPY, or a similar program, to make a backup copy of the PC Paintbrush IV Plus disk set.

Refer to the DISKCOPY command in your DOS manual if you don't know how to do this.

- 2 If you haven't already installed your drawing device, follow the setup instructions for your drawing device.
- 3 Insert the Setup disk into drive A of your computer.
- 4 Type **a:** to change the working drive to drive A.
- 5 Type **pbsetup** to start the PC Paintbrush IV Plus Setup program.

Follow the instructions that appear on the screen. Setup will ask you to select the type of display adapter, printer, and drawing device you have installed with your computer. When you complete the installation procedure, Setup creates two batch files. PAINT.BAT runs PC Paintbrush IV Plus in the most recent mode you selected in PBSETUP. The name of the other batch file is based on the mode, resolution, and number of colors you choose in PBSETUP. This allows you to install once for any mode available to you and then run in that mode by typing the uniquely named batch file.

Installing a Scanner

Most scanners come with an interface card that fits inside your computer. Follow the hardware installation instructions included with your scanner. Be sure to set any jumpers or switches on the interface card. Scanners also require a program known as a device driver. For detailed instructions on installing device drivers supplied with PC Paintbrush IV Plus see “Scanner Installation” in the Reference section of this manual and the PBREADME.DOC file. If your scanner is not listed, call ZSoft to see if a driver is available.

To control your scanner from within PC Paintbrush IV Plus, you must add one or more lines to your CONFIG.SYS file. The CONFIG.SYS file tells your computer what types of devices, such as scanners, are installed in your system. The CONFIG.SYS file and scanner driver file must be in the root directory of your boot disk or hard drive. If you do not already have a CONFIG.SYS file, refer to your DOS manual for instructions about creating one.

To add the scanner entry to your CONFIG.SYS file:

- 1 See “Supported Scanners” in the Reference section of this manual to determine the scanner device driver file name for your scanner.
- 2 Add this line to your CONFIG.SYS file:

`DEVICE={scanner driver file name} {options}`

For example, if you have the Microtek scanner, the line you add to the CONFIG.SYS file might be:

`DEVICE=MICROTEK.SYS 200`
(Microtek.sys is the device driver file name and 200 is the port address)

For the options and settings available to you, see “Scanner Driver Options” in the Reference section of this manual.
- 3 After the entry is made in your CONFIG.SYS file, copy the device driver file into the same directory as your CONFIG.SYS file (your boot disk root directory).
- 4 Reboot your computer.

This ensures that CONFIG.SYS is read, and your computer recognizes your scanner.

About Memory

PC Paintbrush IV Plus takes advantage of your expanded and extended memory as well as using the free space on your hard drive. The amount of memory you'll need depends upon the size of the picture you want to edit, the size of the area you want to scan, and the number of colors you are installed for.

Allocating Expanded/Extended Memory

If you have more than 640K of memory you can increase the performance of PC Paintbrush IV Plus. Below is a list of ways to allocate your memory, depending upon the amount and type of memory you have.

- If you have enough extended or expanded memory and software to implement disk caching, follow the instructions for your disk caching software to create a cache of at least 256K. If you do not have enough memory, you can safely reduce the cache size.
- If you can create a disk cache of at least 256K and have enough expanded memory left for Paintbrush to store your image, you can increase PC Paintbrush IV Plus's performance even more. To calculate how much memory is needed by a picture, use this formula:

Height x width x colordepth

where height and width are in pixels
and color depth is:

black-and-white = 1/8

16 color = 1/2

256 color = 1

Examples:

A full page, 300 dpi black-and-white image requires about 1.2 MB.

A full page, 100 dpi, 256 color image requires about 1 MB.

And a full page, 300 dpi, 256 color image requires about 9 MB.

- If you have expanded or extended memory for a disk cache, but you do not have enough expanded memory remaining to store your average picture (see formula above), see the table below for some examples of how you can allocate your memory.



| With this memory in system... | ...make this disk cache size | ...and this ram disk size |
|--|---|---------------------------|
| Extended: 360k Expanded: none | 360k | none |
| Extended: greater than 360k Expanded: none | 256k | remainder |
| Extended: none Expanded: less than 512k | 256k | none |
| Extended: none Expanded: 512 - less than 2 mb | 512k | none |
| Extended: none Expanded: more than 2 mb | 512k | 1mb |
| 386 system | use as expanded memory and follow the example immediately above | |

Setting Your Virtual Memory

When PC Paintbrush IV Plus needs more memory than you have, it uses virtual memory - the available space on your hard drive - to store temporary files. It is best to have as much free hard drive space as possible.

To use your hard drive space most efficiently you can specify up to 4 drives for virtual memory. Add **set pbtemp=n:\s;n:\s;n:\s;n:\s** to your AUTOEXEC.BAT file; *n* represents the drive and *s* represents the path for temporary files. Each path should indicate a different drive (you can use your a: and b: drive, but PC Paintbrush IV Plus will run more slowly if it needs to access them).

PC Paintbrush accesses your disks in the order that you list them, so list your fastest drives first. For example, if you have a ram disk set as drive d: (fast), a local hard disk of c: (medium), and a network drive f: (slow), your AUTOEXEC.BAT file entry would be: **set pbtemp=d:\;c:\;f:\myhome**

NOTE PC Paintbrush IV Plus will make use of the **set temp=n:** or **set tmp=n:** command in your AUTOEXEC.BAT file, if you do not add the set pbtemp line (discussed above).

Running Low on Memory

If you are editing large pictures, scanning large areas, installed for many colors, or you don't have much expanded or extended memory or much free hard disk space, you may run into some memory problems. See the lists below for information about how PC Paintbrush IV Plus works differently when it is low on memory and how to keep memory at a maximum.

You can identify that PC Paintbrush IV is low on memory when:

- Your hard disk activity increases.
- Drop down menus are drawn on the screen rather than appearing all at once. If drop down menus remain on your screen after you have made your selection, immediately select Undo to remove the menu from your picture.
- Dialog boxes are removed from your screen from the bottom to the top.
- A cutout is drawn in the Gadget Box rather than appearing all at once.

When PC Paintbrush IV is very low on memory a cutout inside of the Gadget Box may not appear until it is pasted.

Keeping Memory at a Maximum

Below is a list of suggestions for keeping memory at a maximum.

- Choose NONE for printer when you install PC Paintbrush IV Plus (note that you cannot use FRIEZE to capture images in other applications with this mode).
- Install for the minimum number of colors you need. For example, if you're scanning in black-and-white mode or editing a black-and-white picture, install for black-and-white.
- Set your page with the File New command to the size of the intended image, with no surrounding white space.
- Don't select a font with the Font Select Font File command unless you need it for your picture.
- Choose the smallest acceptable font size. You set the size of an outline font with the Font Set Type Specs command.
- When creating a cutout, surround only the area you need.
- When scanning, use the Prescan option and then scan only what you need.

Starting PC Paintbrush IV Plus

After you have run the Setup program to install PC Paintbrush IV Plus, you're ready to start the program.

To Start PC Paintbrush IV Plus

- 1 Change your current directory to the one that contains the PC Paintbrush IV Plus program.

The Setup program automatically copies PC Paintbrush IV Plus to a subdirectory called PBRUSH unless you specify otherwise.

- 2 Type **paint** to start PC Paintbrush IV Plus.

An hourglass symbol appears on the screen along with a message telling you that the PC Paintbrush program is being loaded. After a few seconds, the PC Paintbrush IV Plus screen will appear. If the screen does not appear or if an error message appears, check "PC Paintbrush IV Plus Messages" in the Reference section of this manual. You can also try running PBSETUP again.

To Start Scanning

Choose File Scan Image and the PC Paintbrush IV Plus menus change, and the Toolbox and Color Pattern Set are removed from your screen. You use these menu options to set scanning preferences, scan, and rescan.

To return to the standard PC Paintbrush IV Plus menus and options choose File Edit Picture. In the editing mode you can save the scanned image to disk or edit the picture using all of the PC Paintbrush IV Plus menus and tools. See "The Scanning Menus" for information about the scanning menus and options.

Calling ZSoft Technical Support

If you have trouble getting your scanner to work properly, it is possible that there is a conflict between the scanner driver or scanner interface card and other boards or software that may exist in your computer. To isolate conflicts, remove possible conflicting components and test the scanner again. The scanners that offer switchable port, memory, interrupt, or DMA addresses give you a chance to resolve the conflicts. When changing any of these selections you may need to change a jumper or switch position on the scanner interface board and indicate the new specifications for the driver in your CONFIG.SYS file. (Refer to your scanner documentation for more specific information.)

If you can't install PC Paintbrush IV Plus correctly on your computer, or if you have a problem with PC Paintbrush IV Plus that you can't solve, call ZSoft Technical Support.

When you call, you should have the following information ready:

- The serial number on your PC Paintbrush IV Plus diskettes.
- The make and model of your computer.
- The amount of memory installed in your computer.
- The makes and models of peripherals you are using (such as printer and scanner).
- The version of PC Paintbrush IV Plus you have.
- The contents of your CONFIG.SYS file.
- The contents of your AUTOEXEC.BAT file.

Going On from Here

If you want to learn more about the PC Paintbrush IV Plus editing screen, continue to the next page. If you're already familiar with painting programs and want to start drawing right away, try the first two lessons in the Tutorial chapter in the next section or see "Editing Menus" in Part Four as a reference as you create a PC Paintbrush drawing.

If you're familiar with PC Paintbrush IV Plus and scanning programs, try the third lesson in the Tutorials chapter or see "Scanning Menus" in Part Four as a reference as you scan images.

The procedures in this manual assume you have a basic knowledge of how to use a mouse and how to type commands from the computer keyboard.

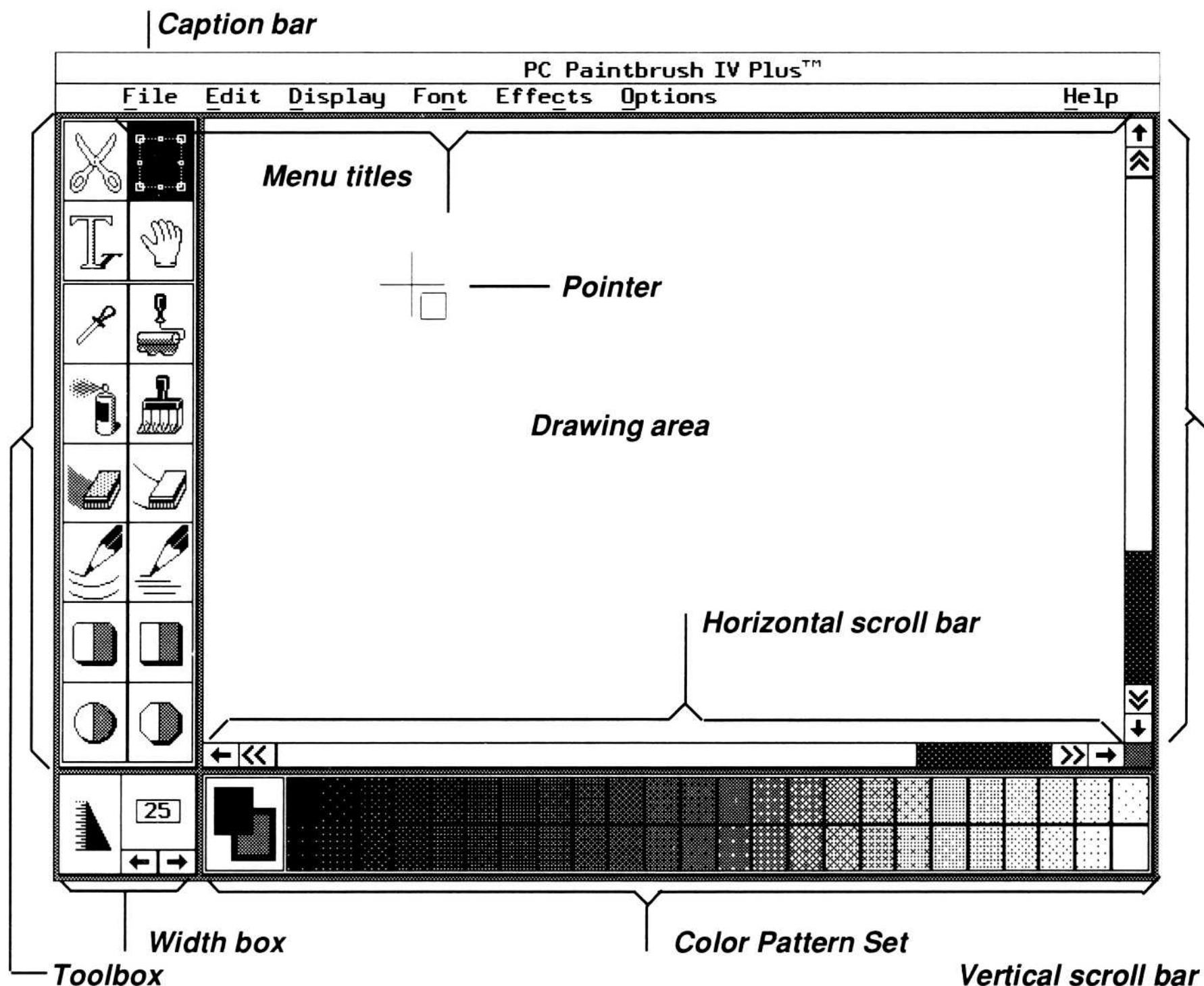
Getting Started

Now that you've installed PC Paintbrush IV Plus, you can start learning how to use the drawing tools. This chapter explains the different editing features of the PC Paintbrush IV Plus screen, such as the Color Pattern Set and the Toolbox.

If you've used PC Paintbrush IV Plus before, or if you want to jump right in, skip this chapter and go on to the Tutorials chapter in this section. The first two lessons take you through sample drawing sessions to acquaint you with the PC Paintbrush IV Plus features. If you want to try using PC Paintbrush on your own, you can use the "Editing Menus" section in Part Four as a reference while creating your drawings.

If you want to start scanning try the third lesson in the Tutorials chapter, and use the "Scanning Menus" in Part Four of this manual.

Learning About the PC Paintbrush Screen



The Drawing Area

The drawing area is the part of the PC Paintbrush screen where you create your drawing. The drawing area is bordered by the menu bar, the Toolbox, the horizontal scroll bar, and the vertical scroll bar. To move around the drawing area, use the Hand tool or the scroll bars.

If you want more on-screen drawing area, you can remove the Toolbox, the menu bar, the caption bar, the Color Pattern Set, and the scroll bars. To remove any or all of these items from the screen, choose the Display Set Screen Layout command, and then select the appropriate options in the dialog box. For more information about setting screen size, see "The Display Menu" in Part Four.

The Drawing Canvas

Your drawing's size isn't limited to just the size of the screen. The total drawing area, or "drawing canvas," extends beyond what you can see on the screen at one time. You can use the Hand tool in the Toolbox or the scroll bars to move part of the drawing canvas into the drawing area.

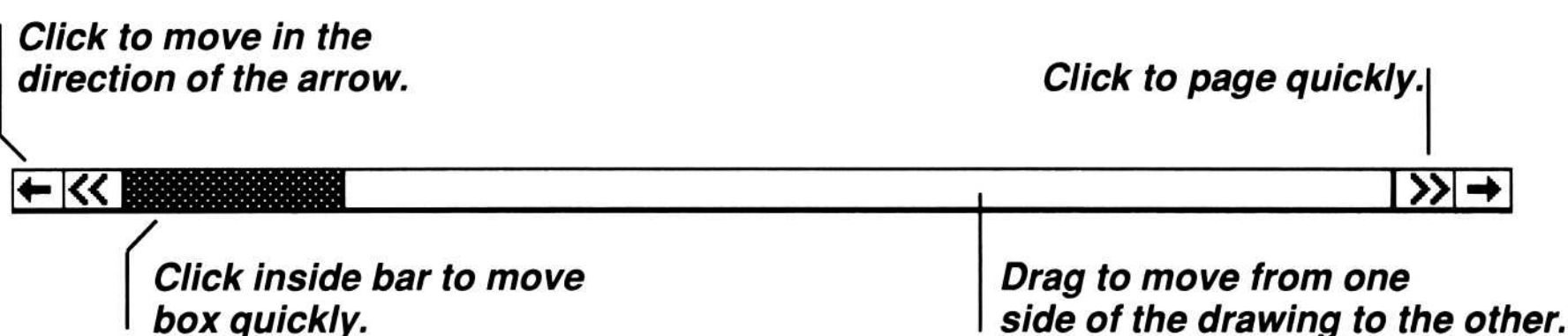
When you start a new drawing, you can specify the width and height you want the drawing to be. The size of the drawing canvas depends on how much RAM (Random Access Memory), extended memory, expanded memory, and disk space your computer has. The more memory available in your computer, the bigger the canvas and the larger the drawing you can create.

The Pointer

The PC Paintbrush pointer is the marker on the screen that moves when you move the mouse across your desk top. When the pointer is outside the drawing area, it becomes an arrow which you use to point to items on the screen, such as the Toolbox, Color Pattern Set, and menus. When it is inside the drawing area, the pointer takes on the shape of the tool you have selected. For descriptions of how the pointer looks when different tools are selected, see “The Toolbox” later in this chapter.

The Scroll Bars

The scroll bars allow you to move your drawing around on the screen, bringing different parts of the picture into the drawing area. You can move your drawing up, down, left, or right. There are four ways to move the drawing around the screen using a scroll bar. You can click a single arrow, a double arrow, a scroll box, or inside a bar itself. The single arrow moves the drawing slowly in one direction. The double arrow lets you page quickly in one direction. You can also move the drawing by dragging a scroll box between the double arrow, or by pointing inside a bar and clicking. The scroll box moves to the point where you clicked, and a new part of the drawing canvas moves into the drawing area.



The Caption Bar

The caption bar at the top of the screen displays information about PC Paintbrush. It can show the title of the PC Paintbrush software, a line of data about the Pointer's position, the color currently selected, or other information.

To display information in the caption bar, choose the Help Information Line command. A check mark appears next to that item on the menu, indicating that Information Line has been chosen.

The caption bar now shows the position of the pointer in the drawing canvas. Position 0,0 is the upper-left corner of the drawing canvas. Units are in pixels - or dots - on the screen unless you select another unit of measure by choosing the Options Set Units command. The caption bar also displays other information, depending on the tool or option you have chosen.

If you want to turn off the Information Line, choose the Help Information Line command again. The check mark disappears, and the title reappears.

The Information Line cannot be chosen when you are in the scan mode.

The Menu Bar

The titles across the top of the PC Paintbrush screen below the caption bar are the names of the drop down menus. Each menu contains a list of commands you can choose. The commands on the menus allow you to choose how to operate the tools in the Toolbox, load and save files, use special drawing effects, adjust the colors in the Color Pattern Set, change settings for your scanner, and scan images.

To open a menu, just click its name. The menu appears on the screen below its name. To choose a command on a menu, click the command name, and the menu disappears. To close a menu, click anywhere in the drawing area, press Esc, or open another menu.

You can also open a menu by holding down Alt and pressing the letter corresponding to the shortcut key for that menu. For example, Alt+F opens the File menu. This technique works even when you remove the menus from the screen by using the Display Set Screen Layout command.

For detailed information on all of the commands on the PC Paintbrush menus and a list of the shortcut keys, see PC Paintbrush IV Plus Menus, later in this manual.

The Color Pattern Set

The Color Pattern Set is the area of the PC Paintbrush screen where you select the primary, secondary, and background color you want to use in your drawing. The number of colors that appear on your screen depends on the type of display adapter attached to your computer and the display adapter mode you selected in PBSETUP.

PC Paintbrush normally paints with the primary color when you use the Paint Roller, Spraycan, Paintbrush, Curved Line, and Line tools. PC Paintbrush also uses the primary color to draw the borders of objects created by the Text, Rounded Box, Box, Ellipse, and Polygon tools.

PC Paintbrush uses the secondary color to fill shapes created with the Text, Filled Rounded Box, Filled Box, Filled Ellipse, and Filled Polygon tools. The Color Eraser also paints with the secondary color.

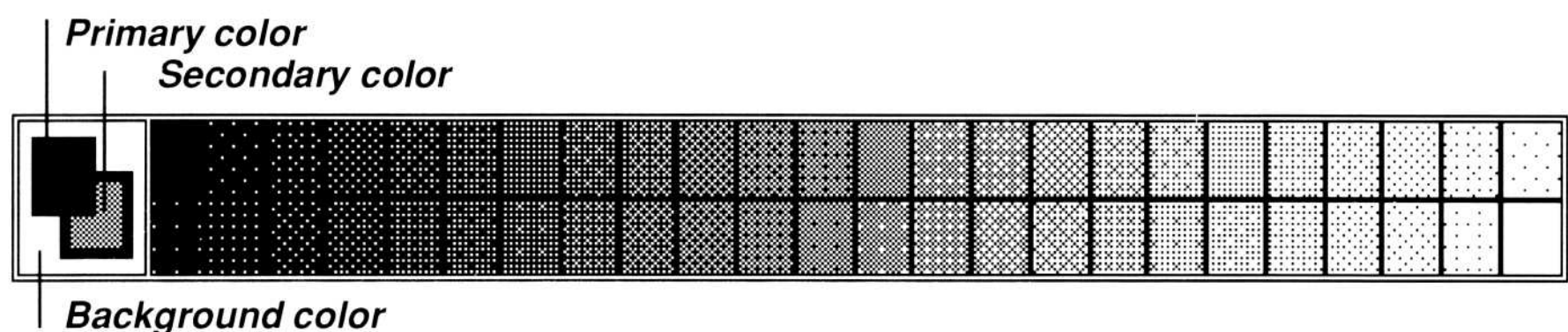
PC Paintbrush uses the background color with the Eraser tool, the Gradient effect, and shadowed text.

Summary:

| Color | Used for | Mouse Button |
|------------|-----------------------------|--------------|
| Primary | drawing tools | Left |
| Secondary | inside of filled objects | Right |
| Background | paper color (erase to, New) | Shift+Left |

To choose primary, secondary, and background colors:

- 1 Point to the color you want to use as the primary color.



- 2 Click the left mouse button once.

The color you selected appears in the upper box in the color selection box to the left of the Color Pattern Set.

- 3 Point to the color you want to use as the secondary color.

- 4 Click the right mouse button once.

The color you selected appears inside the lower box in the color selection box to the left of the Color Pattern Set.

- 5 Point to the color you want to use as the background color.

- 6 Hold down Shift and press the left mouse button once.

The color you selected fills the background of the color selection box to the left of the Color Pattern Set.

The Width Box

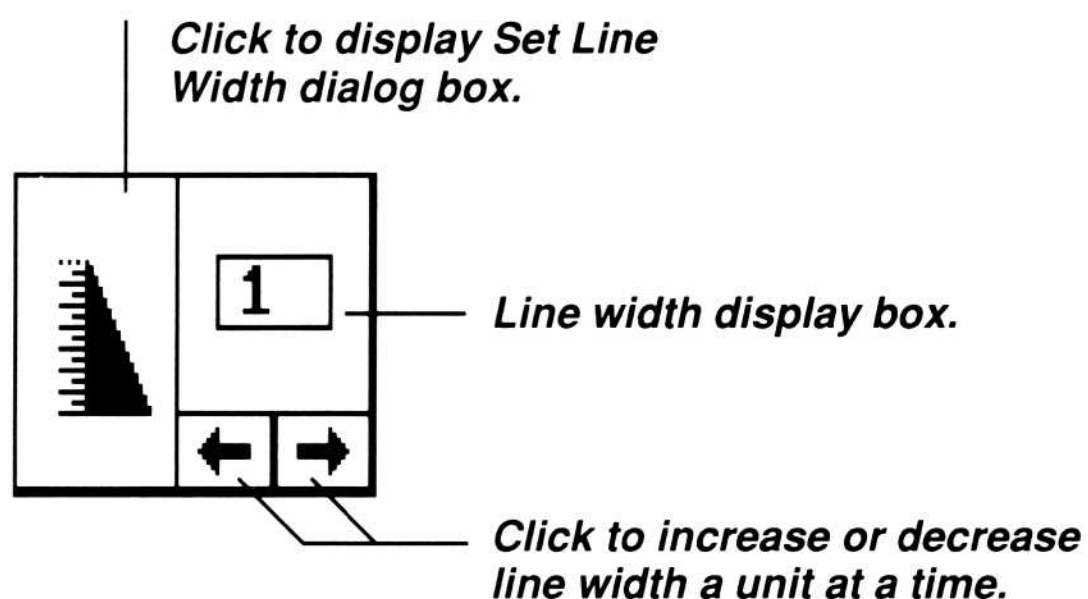
The Width Box lets you specify the size of the line that the Paintbrush, the Curve, the Line, the Box, the Ellipse, and the Polygon tools use for drawing boxes, curves, lines, and other shapes. The Width Box also lets you specify the size of the Color Eraser, Spraycan and Eraser tools. You can specify any line width from 0 to 40 pixels. The current line width appears in the display box. The value in the

Width Box is always displayed in pixels even if you select another unit of measure.

You change the line width by selecting the number in the display box (by dragging across the number) and typing a new line width. You can also change the line width by clicking the arrows under the display box, or by using the Options Set Line Width command. Clicking the width triangle also displays the Set Line Width dialog box.

To change the line width by using the arrows:

- 1 Point to one of the arrows under the display box.



- 2 Hold down the left mouse button, or click the arrow to change the width one unit at a time.

Watch the number inside the display box change, indicating different line widths. Higher numbers correspond to thicker lines.

To change the line width by using the display box:

- 1 Point to the display box.
- 2 Drag across the number in the display box to select the number.
- 3 Type the number corresponding to the line width you want to use and press Enter.

To change the line width by using the width triangle:

- 1 Click the width triangle.

The Set Line Width dialog box appears.

- 2 Click a scroll bar or arrow next to the Line Width box to increase or decrease the width of the line.

The diagram in the dialog box shows you the actual width of the line as you change the numbers in the Line Width box.

- 3 Choose OK when the line width is the size you want.

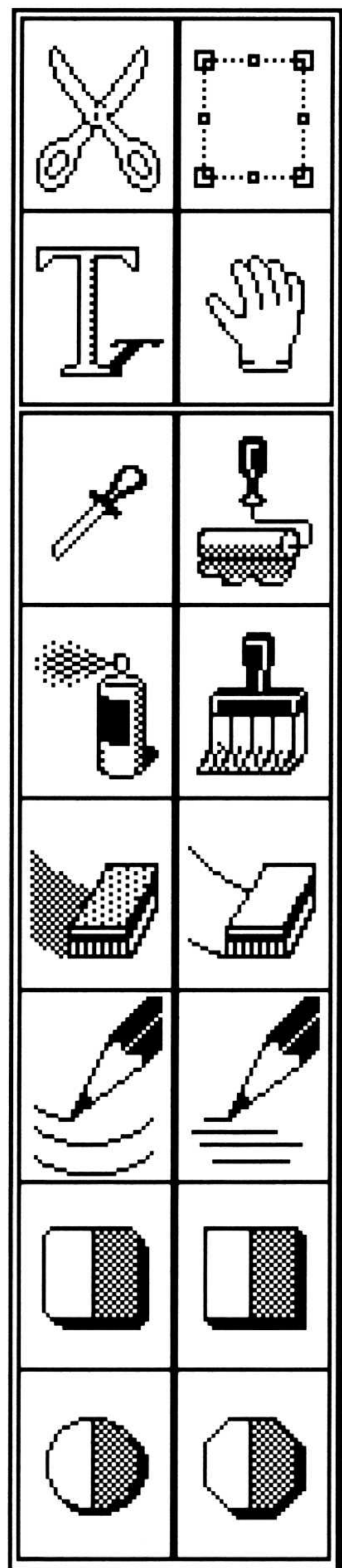
The Set Line Width dialog box includes a Set Unit button. Click this button to set the type of units you want: inches, centimeters, points, picas, or pixels.

| This unit... | equals this many inches... | ...and this many centimeters. |
|--------------|-------------------------------|----------------------------------|
| Inch | 1 | 2.54 |
| Centimeter | 0.394 | 1 |
| Point | 0.014 (1/72 of an inch) | 0.035 |
| Pica | 0.167 (1/6 of an inch) | 0.423 |

There are 12 points in a pica. A pixel is equal to one dot on the computer screen or printer.

The Toolbox

The Toolbox contains the drawing tools you use to create drawings. The Toolbox includes the following items:



Scissors: Cuts and manipulates irregular parts of your drawing.

Text: Adds text to drawing.

Eyedropper: Picks up a color from the screen.

Spraycan: Adds shading effect to drawing.

Color Eraser: Replaces primary color with secondary color.

Curve: Draws single or joined curves.

Hollow/Filled Rounded Box: Draws outlined or filled-in rounded boxes and squares.

Hollow/Filled Ellipse: Draws outlined or filled-in ellipses and circles.

Gadget Box: Manipulates part of the drawing.

Hand: Moves drawing vertically, horizontally, or diagonally on the screen.

Paint Roller: Fills in an area with selected color.

Paintbrush: Draws freehand shapes.

Eraser: Removes part of a drawing.

Line: Draws single or joined straight lines.

Hollow/Filled Box: Draws outlined or filled-in boxes and squares.

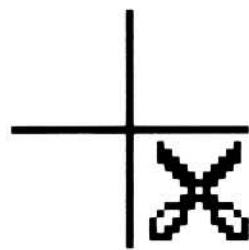
Hollow/Filled Polygon: Draws outlined or filled-in polygons.

Choosing a Tool from the Toolbox

Before you can begin creating or modifying a drawing, you must choose a tool from the Toolbox.

To choose a tool simply click the tool you want to use. The tool is highlighted on the screen to indicate that it's selected. When you move the pointer back to the drawing area, the pointer changes shape to remind you of which tool you've selected.

For example, if you've selected the Scissors, the pointer looks like this:



Scissors tool pointer as it appears in drawing area.

To use a tool:

- 1 Point to the tool you want to use and click the left mouse button.
- 2 Point to the place on the screen where you want to start using the tool.
- 3 Click or drag to start using the tool.
- 4 Choose another tool from the toolbox when you have finished using the current tool.

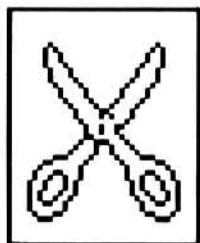
If you want detailed help about how to use any of the tools in the Toolbox, point to the tool and click the right mouse button. A Help screen appears.

For most drawing tools, you can press Esc to cancel drawing, while the mouse button is down.

For some tools, double-clicking is a quick way to modify some PC Paintbrush settings or to select some options. The following table shows the effect of double-clicking certain tools.

| Tool | Double-click effect |
|--------------|--|
| Gadget Box | Show Screen dialog box appears |
| Paintbrush | Set Brush Shape dialog box appears |
| Color Eraser | Changes primary to secondary color (no dialog box) |
| Eraser | New dialog box appears |
| Line | Set Line Width dialog box appears |

The Scissors Tool



You use the Scissors tool to “cut” an irregular part of your drawing and manipulate it using the Gadget Box. You can “paste” the cutout into another file, or move it to another part of your drawing. You can also leave behind a single copy of the cut area as you move the cutout, leave behind a trail of copies, as if you were brushing with the image in the cutout, and outline, invert or apply filters to the cutout.

When you define the cutout, the Scissors tool works somewhat like the Polygon tool. You draw a series of lines around the area you want to cut until the entire area is enclosed in a polygon. Then you use the Gadget Box to move, manipulate, or copy the cutout (see the explanation of the Gadget Box for more information). You may draw a polygon with up to 100 sides around the area you want to cut. If you hold down Shift as you use the Scissors, you can “constrain” the lines the Scissors creates so they are vertical, horizontal, or at a 45-degree angle (see the explanation of the Line tool for more information).

NOTE If you want to manipulate a rectangular area, it’s usually faster to use the Gadget Box directly to outline the area, instead of first surrounding the shape with the Scissors.

To define the cutout with the Scissors:

- 1 Click the Scissors tool.
- 2 Point to the drawing area near the edge of the object you want to cut.
- 3 Click the left mouse button to mark the starting point of the cut.
- 4 Point to where you want the first side of the polygon to end and click the left mouse button again.
- 5 Repeat step 4, moving the pointer around and clicking, until you’ve enclosed the entire area you want to cut.
- 6 Double-click to complete the polygon.

The Gadget Box appears around the cutout. You can now manipulate the cutout (see “The Gadget Box Tool” for more information).

To move the cutout:

- 1 Move the pointer inside the Gadget Box.

The pointer becomes a hand.

- 2 Drag to move the cutout.

If you hold down the left mouse button as you drag, the cutout is opaque - it covers objects under it.

If you hold down the right mouse button as you drag, the background color of the cutout is transparent - objects show through the cutout.

- 3 Release the mouse button when the cutout is where you want it.
- 4 Click outside the Gadget Box or choose a new tool to permanently paste the cutout.

To move a copy of the cutout, leaving the original behind:

- 1 Follow the steps to define a cutout.
- 2 Hold down Shift and drag the Gadget Box.

A copy of the cutout remains behind as the cutout moves with the pointer.

If you hold down the left mouse button as you drag, the cutout is opaque - it covers objects under it.

If you hold down the right mouse button as you drag, the background color of the cutout is transparent - objects show through the cutout.

To leave a trail of copies behind as you move the cutout:

- 1 Follow the steps to define a cutout.
- 2 Hold down Ctrl and drag the Gadget Box. Copies of the cutout remain behind as the cutout moves with the pointer.

If you hold down the left mouse button as you drag, the trail of cutouts is opaque - it covers objects under it.

If you hold down the right mouse button as you drag, the background color of the cutout is transparent - objects show through the trail of cutouts.

To invert the cutout:

- 1 Follow the steps to define a cutout.
- 2 Select Edit Invert.

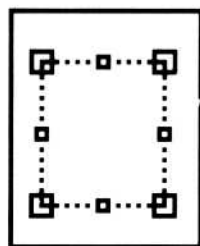
To outline the objects in the cutout:

- 1 Follow the steps to define a cutout.
- 2 Select Edit Outline.

To apply filters to the cutout:

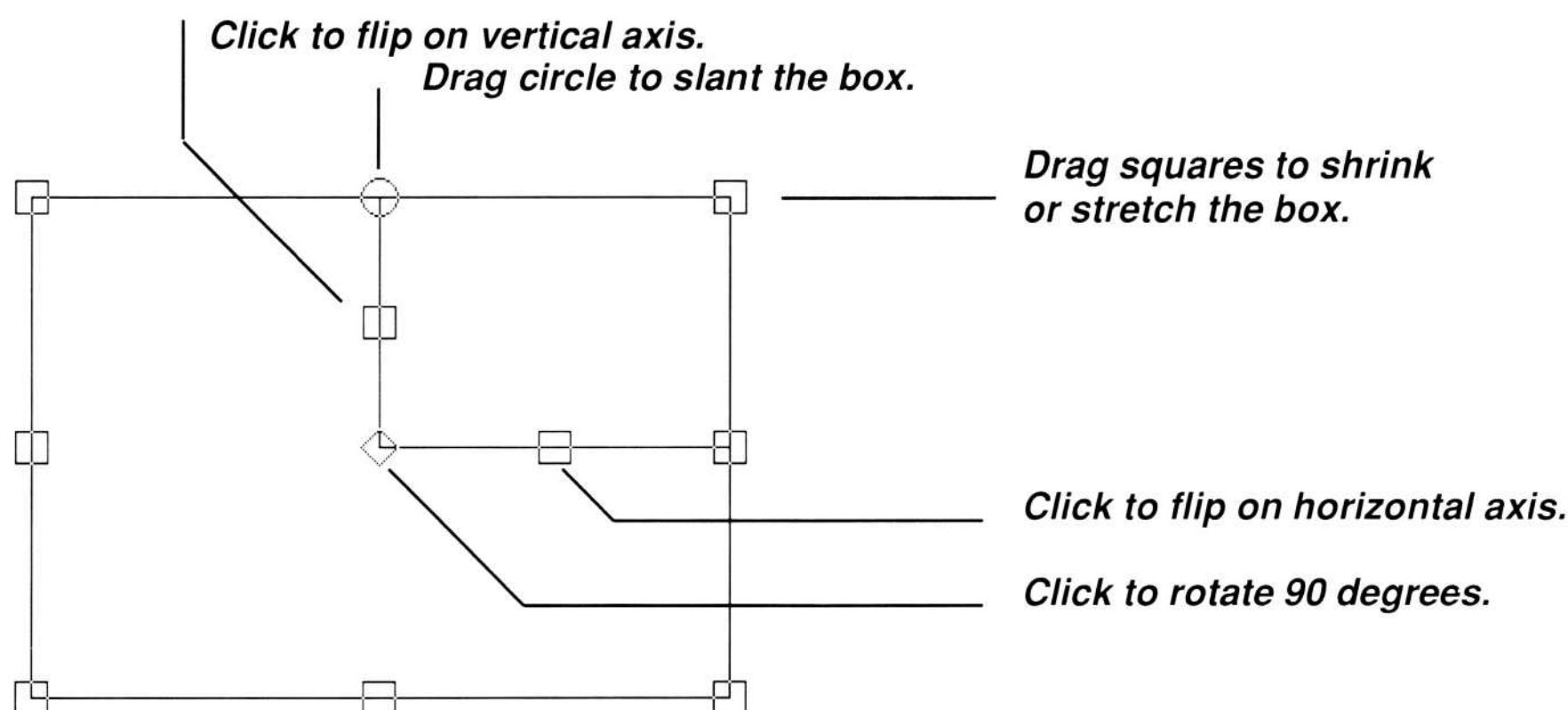
- 1 Follow the steps to define a cutout.
- 2 Select Edit Filter.
See the Edit Filter command in the “PC Paintbrush IV Plus Menus” section for more.

The Gadget Box Tool



You use the Gadget Box to move, copy, cut, stretch, shrink, tilt, rotate, or flip art you've enclosed within its borders. You can also paste, invert, outline, and apply filters to the cutout. To use the Gadget Box, you define the area you want to manipulate, and then you click or drag one or more of the handles on the Gadget Box to manipulate the area.

The Gadget Box includes several handles. When the pointer is on a handle it becomes a crosshair (see the picture below for information about each handle and how to use it). When the pointer is inside the Gadget Box, but not on one of the Gadget Box handles, it becomes a Hand, which works like the Hand tool. If you drag the Hand, the area within the Gadget Box moves around the drawing area.



To use the Gadget Box:

- 1 Click the Gadget Box tool.
- 2 Point to the area you want to manipulate.
- 3 Drag until the Gadget Box encloses the area you want to manipulate.
- 4 Release the mouse button.

The Gadget Box surrounds the area you selected.

- 5 Drag or click the handles that produce the effects you want.

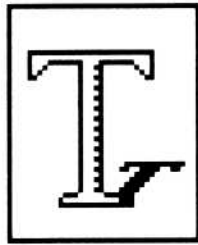
To move the cutout or to make copies of the cutout, see “The Scissors Tool” for more information.

To invert the cutout select Edit Invert.

To outline the objects in the cutout, select Edit Outline.

To apply filters to the cutout, select Edit Filter (see Edit Filter for more).

The Text Tool



You use the Text tool to add text to your drawing. PC Paintbrush IV Plus includes several fonts and special effects to make text distinctive and eye-catching. You can choose the primary color for the color of the outline, the secondary color for the character color, and the background color for the color of the shadow.

You type text in the Enter Text box and use the Text Frame to adjust where lines break. You use the Font Set Type Specs and Font Set Type Style commands to change the text's characteristics.

It's important to make sure you've finished editing the text before you paste it into the drawing area. Once you have pasted the text into the drawing, it becomes an image just like any other part of your drawing, and you can use the Gadget Box tool to expand, shrink, or rotate it.

PC Paintbrush IV Plus comes with bitmap and outline fonts.

Bitmap fonts

Bitmap fonts appear on the Font menu with "(Bit)" after their names. You should use bitmap fonts for small labels such as the names of streets on a map, and when you want typographic quality output in small letter sizes. When you use a bitmap font, PC Paintbrush lets you adjust the space between characters (kerning) and the space between lines (leading). You can also outline a bitmap font and fill the letters with the secondary color. You change the size of a bitmap font by loading a new font with a different size.

Outline fonts

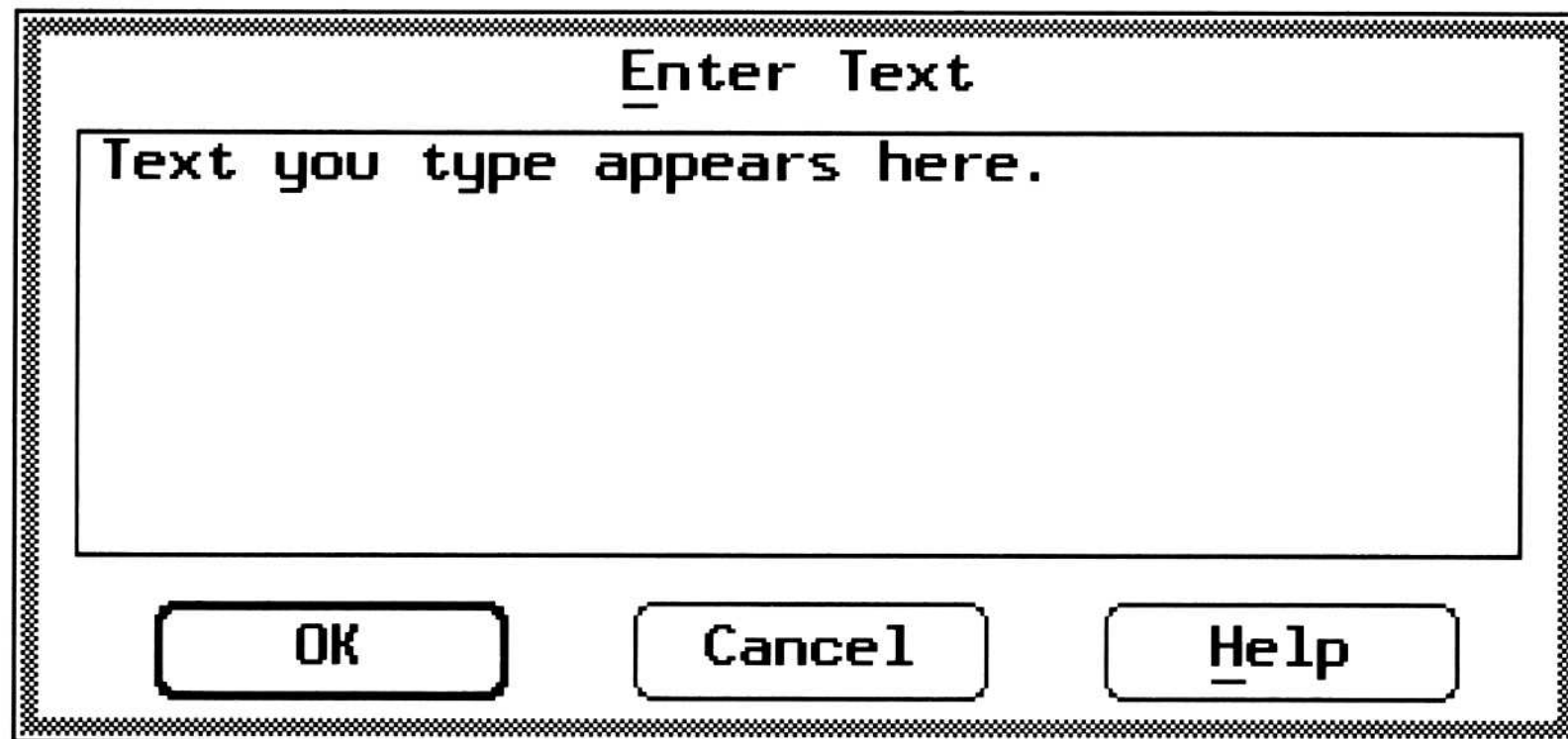
Outline fonts are indicated by "(Otl)" after their names on the Font menu. Outline fonts look good in large sizes as headlines or banners. Use the Font Set Type Specs command to set the size of an outline font.

To add text to your drawing:

- 1 Choose a font or use the current font.
If you choose an outline font, indicate a point size in Font Set Type Specs.
- 2 Choose a color from the Color Pattern Set.
The secondary color is the character color.
The primary color is the color of outlined text.
The background color is the color of the shadow.

- 3 Click the Text tool.

The Enter Text dialog box appears.



- 4 Type the text you want to include in your drawing.

Text wraps automatically at the end of each line. If you make a mistake, press Backspace and retype the text. If you want to start a new line before the text wraps, press Ctrl+Enter.

- 5 When the text is typed, press Enter or click OK.

The Enter Text dialog box disappears.

- 6 Point to the area where you want to place your text and drag the text cursor until the Text Frame is the size you want.

When you release the mouse the Text Frame appears on screen, enclosing the text you just typed. You can now change the margins into which the text fits by using the Text Frame.

Drag or click the handles on the Text Frame until the margins are correct.

Press the space bar to edit the text before you paste it.

Click on the Text Frame to see any changes you make to your text before you paste it.

- 7 To paste the text into your drawing after you have used the Text Frame, choose a tool in the Toolbox.

The Hand Tool



You use the Hand tool to move your drawing or scanned image around on the screen, in the same manner that you'd use your hand to move a drawing on a drawing table. The Hand works much like the Scroll Bars, except that you can also move diagonally with the Hand.

To use the Hand:

- 1 Click the Hand tool.
- 2 Move the pointer to the drawing area.
- 3 Drag the pointer in the direction you want to move the screen.

As you move the pointer, the screen redraws and a new part of the drawing canvas appears in the drawing area.

The Eyedropper Tool



You use the Eyedropper tool to “pick up” a solid color from your drawing and set it as your primary, secondary, or background color. The Eyedropper can pick up only solid colors, not patterns.

This tool is useful if, for example, you saved a drawing yesterday and want to make sure you use exactly the same shade of green when you begin drawing today. Using the Eyedropper, you can pick up that green shade from your drawing and set it again as your drawing color.

To use the Eyedropper:

- 1 Click the Eyedropper tool.
- 2 Point to the color on your drawing that you want to pick up.
- 3 Set the color as the primary, secondary, or background color.

To set the color as primary, click the left mouse button.

To set the color as the secondary color, click the right mouse button.

To set the color as the background color, hold down Shift and click the left mouse button.

The Paint Roller Tool



You use the Paint Roller tool to fill in an area of your drawing with the primary color. The Paint Roller pointer has a drop on the end of the roller. Only the drop has to fit inside the area you want to fill, not the entire pointer, so you can use the Paint Roller to fill even small areas.

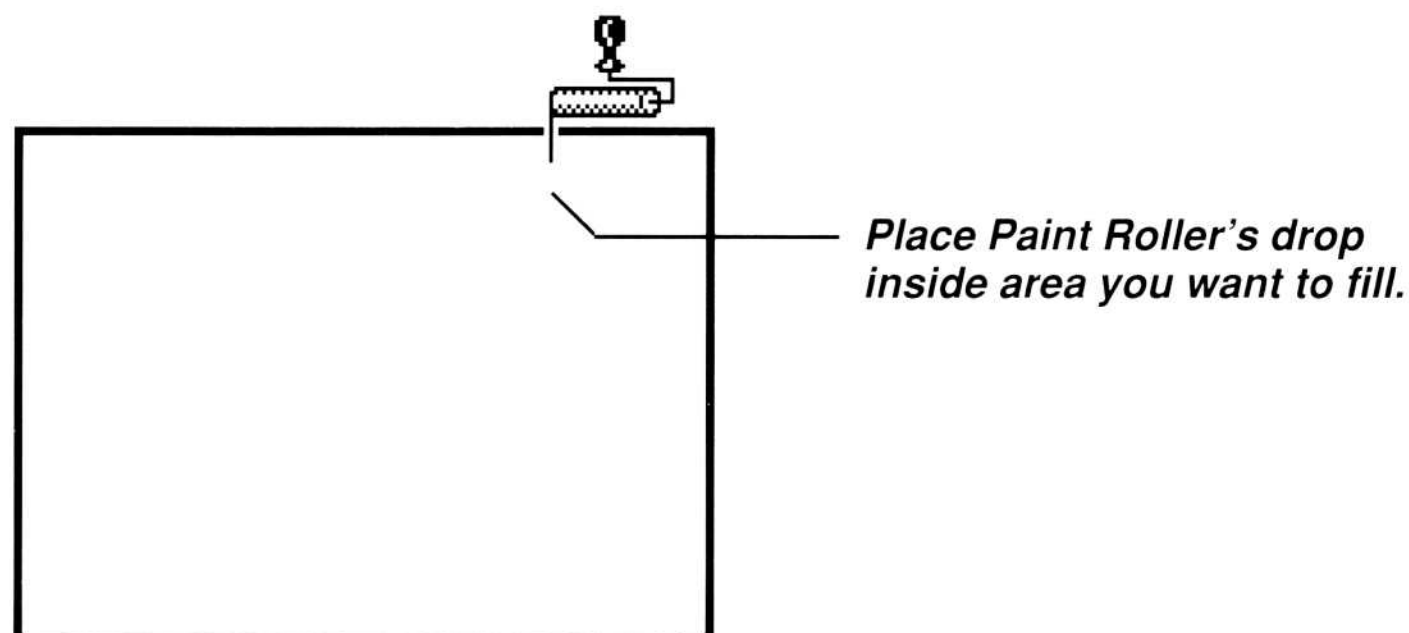
If you want to fill in over an area of solid color, click the left mouse button. If you want to fill in over a pattern, click the right mouse button.

If the area you want to fill is not completely enclosed by a solid line, the color “leaks out” to other areas of your drawing. If this happens, press Esc to stop the fill, and then choose Edit Undo. Next, use the Display Zoom In command to connect the dots of the outline so that you can fill the area.

To use the Paint Roller:

- 1 Choose the color you want the Paint Roller to use from the Color Pattern Set.
- 2 Click the Paint Roller tool.
- 3 Point to the area you want to fill.

The Paint Roller “drop” marks the point where the color will begin to fill.



- 4 Click the left mouse button to fill over an area of solid color, or click the right mouse button to fill in over a pattern.

The area fills with the color you've selected as the primary color.

NOTE To fill small areas use the Display Zoom In command and follow the steps above.

The Spraycan Tool



You use the Spraycan to shade areas of your drawing and add depth. You can use the Spraycan to paint with either the primary or the secondary color. You can adjust the size of the spray pattern by changing the value in the Width Box, but the minimum diameter is three pixels.

To use the Spraycan:

- 1 Choose the colors you want to spray with from the Color Pattern Set.
 Point to the color you want to use as the primary color and click the left mouse button.
 Point to the color you want to use as the secondary color and click the right mouse button.
- 2 Specify the size of the spray you want by using the Width Box or by using the Options Set Line Width command.
- 3 Click the Spraycan tool.
- 4 Point to where you want to spray.
- 5 Drag the pointer to spray the area.
 Hold down the left mouse button to spray with the primary color. Hold down the right mouse button to spray with the secondary color.

The Paintbrush Tool



You use the Paintbrush for freehand drawing, such as sketching the shape of a cloud or a tree. You can use the Paintbrush to draw with either the primary or secondary color. You can adjust the width and shape of the Paintbrush's stroke.

To use the Paintbrush:

- 1 Choose the primary and secondary colors you want to use from the color Pattern Set.
 Point to the color you want to use as the primary color and click the left mouse button.
 Point to the color you want to use as the secondary color and click the right mouse button.
- 2 Specify the brush width in the Width Box.
 You can also use the Options Set Line Width command to set a brush width.

- 3 Specify the brush shape by using the Options Set Brush Shape command.

You can also open the Set Brush Shape dialog box by double-clicking the Paintbrush tool.

- 4 Click the Paintbrush tool.
- 5 Point to where you want to start drawing.
- 6 Drag the pointer to start drawing.

Hold down the left mouse button to draw with the primary color. Hold down the right mouse button to draw with the secondary color.

The Color Eraser Tool



You use the Color Eraser to replace the primary color with the secondary color. As you drag the Color Eraser over an area filled with the primary color, the area beneath the Color Eraser changes to the secondary color. In effect, the Color Eraser replaces the primary color with the secondary color. You can adjust the width of the Color Eraser.

If you want to replace all of the primary color in the drawing area with the secondary color, double-click when choosing the Color Eraser tool.

To use the Color Eraser:

- 1 Choose the primary color (the color you want to replace) from the Color Pattern Set.

Point to the color in the Color Pattern Set, and then click the left mouse button.
- 2 Choose the secondary color (the color you want the Color Eraser to use) from the Color Pattern Set.

Point to the color in the Color Pattern Set, and then click the right mouse button.
- 3 Specify the size of the Color Eraser by using the Width Box or by choosing the Options Set Line Width command.
- 4 Click the Color Eraser tool.
- 5 Move the pointer to where you want to start replacing the primary color.
- 6 Drag the pointer over the area.

The Eraser Tool

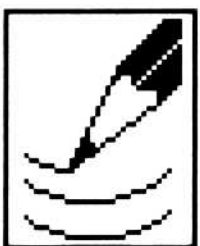


You use the Eraser to remove parts of your drawing by using the background color to color in the area you erase. It works like the Paintbrush, but it uses the background color, not the primary or secondary color. You can adjust the width of the Eraser.

To use the Eraser:

- 1 Choose the background color (the Eraser's color) from the Color Pattern Set.
Point to the color in the Color Pattern Set and hold down Shift while clicking the left mouse button.
- 2 Specify the size of the Eraser by using the Width Box or the Options Set Line Width command.
- 3 Click the Eraser tool.
- 4 Point to the area where you want to start erasing.
- 5 Drag the pointer over the area you want to erase.

The Curve Tool



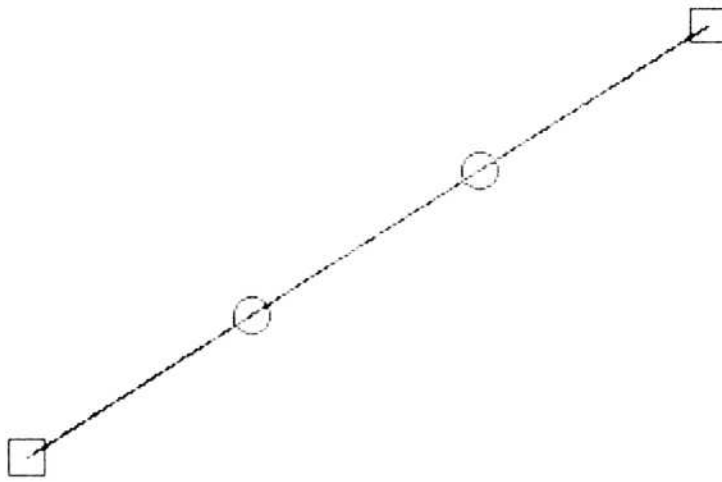
You use the Curve tool to add curved lines to your drawing. You draw a curve by marking the ends of the line and then dragging handles on the line to adjust the curve to the shape you desire. You can adjust the width of a curved line, draw joined curves, and draw joined curves with a single starting point.

To draw a curve:

- 1 Choose the primary color you want to use from the Color Pattern Set.
Point to the color and click the left mouse button.
- 2 Specify the width of the curve by using the Width Box or the Options Set Line Width command.

- 3 Click the Curve tool.
- 4 Point to where you want the curve to start.
- 5 Press and hold the left mouse button to mark the beginning of the curve.
- 6 Drag the pointer to the point where you want the curve to end, and then release the mouse button.

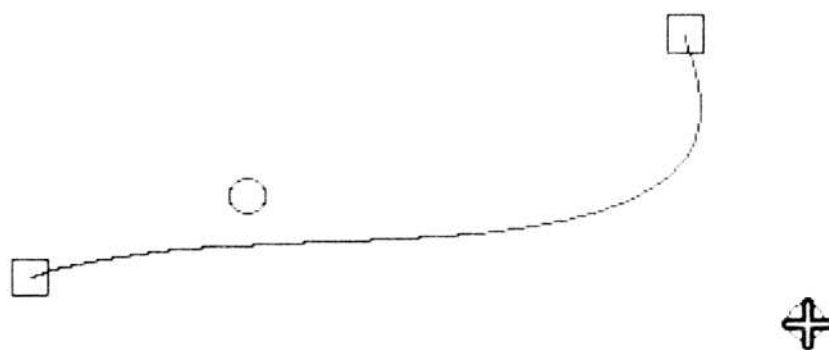
A line appears between the two points. Two circle handles appear along the line, and square handles mark the ends.



Line with handles.

- 7 Drag one of the circle handles to bend the first part of the curve into the shape you want.
- 8 Drag the other circle handle to bend the second part of the curve into the shape you want.
- 9 If you want to reposition the ends of the curve, drag the square handles.
If you want to start over, you can erase the curve by pressing Esc before you paste the curve into the drawing.
- 10 Paste the curve by choosing a tool from the Toolbox or clicking outside the curve.

Press Esc to cancel the start of a new curve.



Drag handles to bend line.

To draw joined curves:

- 1 Draw the first curve as described in the previous procedure, but do not paste it.
- 2 Point to the area where you want the adjoining curve to end, and then hold down the right mouse button.

A line appears between the end of the first curve and the point where you clicked the right mouse button.

- 3 Drag until the end of the second curve is exactly where you want it to be, then release the mouse button.
- 4 Bend the curve into the shape you want by dragging the circle handles on the new line.
- 5 Continue adding curves, each joined to the end of the previous curve, until your drawing is complete.

To draw curves joined at a single starting point:

- 1 Draw the first curve as described above, but do not paste it.

The starting point of the first curve will be the starting point for each curve.

- 2 Point to the area where you want the second curve to end, and then hold down Ctrl and click the right mouse button.

A line appears between the point where you clicked the right mouse button and the beginning of the first curve.

- 3 Bend the curve into the shape you want, as described above.
- 4 Continue adding curves, each curve joined at a single point, by following steps 2 and 3.

The Line Tool



You use the Line tool to add straight lines to your drawing. You can draw lines at any angle, or “constrain” the Line tool and make it draw only horizontal or vertical lines, or lines at 45-degree angles. You can also adjust the width of a line, draw joined lines to create irregular shapes, and draw lines joined at a single point. The Line tool uses the current brush shape, which you can specify by using the Options Set Brush Shape command. For more information, see the discussion of the Options Set Brush Shape command in “Editing Menus.”

To draw a line:

- 1 Select the primary color you want to use from the Color Pattern Set.
Point to the color and click the left mouse button.
- 2 Specify the width of the line by using the Width Box or the Options Set Line Width command.
- 3 Click the Line tool.
- 4 Point to where you want to start drawing.
- 5 Press and hold the left mouse button to mark the beginning of the line.
- 6 Drag the pointer to where you want the line to end and release the mouse button.

If you want to start over, you can erase the line by pressing Esc before you release the mouse button to paste the line into the drawing.

To draw a vertical, horizontal, or 45-degree line:

- 1 Choose the color and line width you want to use, as described in the previous procedure.
- 2 Click the Line tool.
- 3 Point to where you want to start drawing.
- 4 Press and hold the left mouse button to mark the beginning of the line.
- 5 Hold down Shift to constrain the Line tool and drag the pointer to where you want the line to end.

If you move the pointer vertically, you will draw a vertical line.

If you move the pointer diagonally, you will draw a 45-degree line.

If you move the pointer horizontally, you will draw a horizontal line.

- 6 Release the mouse button when the line is the length you want.

To draw joined lines:

- 1 Draw the first line as described in the previous procedure.
- 2 Point to the area where you want the adjoining line to end, and then hold down the right mouse button.

A line appears between the end of the first line and the point where you clicked the right mouse button.
- 3 Drag until the pointer is exactly where you want the line to end, and then release the mouse button.
- 4 Continue adding lines, each joined to the end of the previous line until your drawing is complete.

If you choose Help Information Line, the caption bar displays information about the line as you draw it. “Pos” shows the current position of the pointer. “Start” shows the position of the first point on the line. “Delta” shows the changes in the *x* and *y* coordinates of the pointer as you draw the line. “Dist” displays the length of the line as you draw, and “Angle” shows the angle at which you are drawing the line.

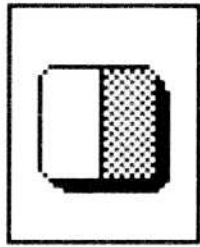
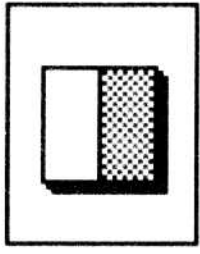
To draw lines joined at a single starting point:

- 1 Draw the first line as described above.

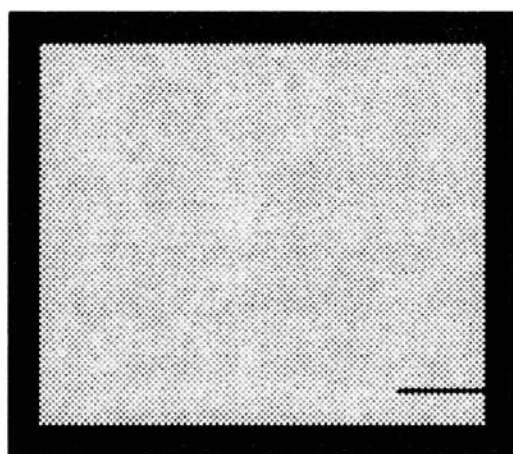
The starting point of the first line will be the starting point for each line.
- 2 Point to the area where you want the second line to end, and then hold down Ctrl and click the right mouse button.

A line appears between the point where you clicked the right mouse button and the beginning of the first line.
- 3 Continue adding lines, each line joined at a single point, by following steps 2 and 3.

The Hollow/Filled Box Tools



You use the Box tools to draw hollow and filled-in boxes with square or rounded corners. A box can be of any width or height that fits in the drawing area. You can draw rectangular boxes, or hold down the Shift key to “constrain” a box tool to draw square boxes. You can make square boxes appear correct on screen or when printed by using the Options Set Aspect command to change the aspect ratio. Choose the option you prefer before you begin to draw.



Primary color

Secondary color

To draw a rectangle:

- 1 Choose the primary color (and the secondary color, if you’re using a Filled Box tool) from the Color Pattern Set.

To choose the primary color, point to the color in the Color Pattern Set and then click the left mouse button.

To choose the secondary color, point to the color in the Color Pattern Set and then click the right mouse button.
- 2 Specify the width of the border you want around the box by using the Width Box or the Options Set Line Width command.
- 3 Click the Box tool you want to use.

Click the left side of a Box tool to draw a hollow box. Click the right side of a Box tool to draw a filled box.
- 4 Point to where you want to start drawing.
- 5 Press and hold down the left mouse button to mark the first corner of the box.

- 6 Drag the pointer until the box is the size you want.

If you want to start over, you can erase the box by pressing Esc before you release the mouse button to paste the box.

- 7 Release the mouse button to paste the box.

To draw a square:

- 1 Follow steps 1-4 in the previous procedure.

- 2 Press and hold down Shift and hold down the left mouse button to mark the first corner of the square.

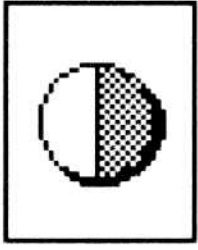
- 3 Drag the pointer until the square is the size you want.

If you want to start over, you can erase the box by pressing Esc before you release the mouse button to paste the box.

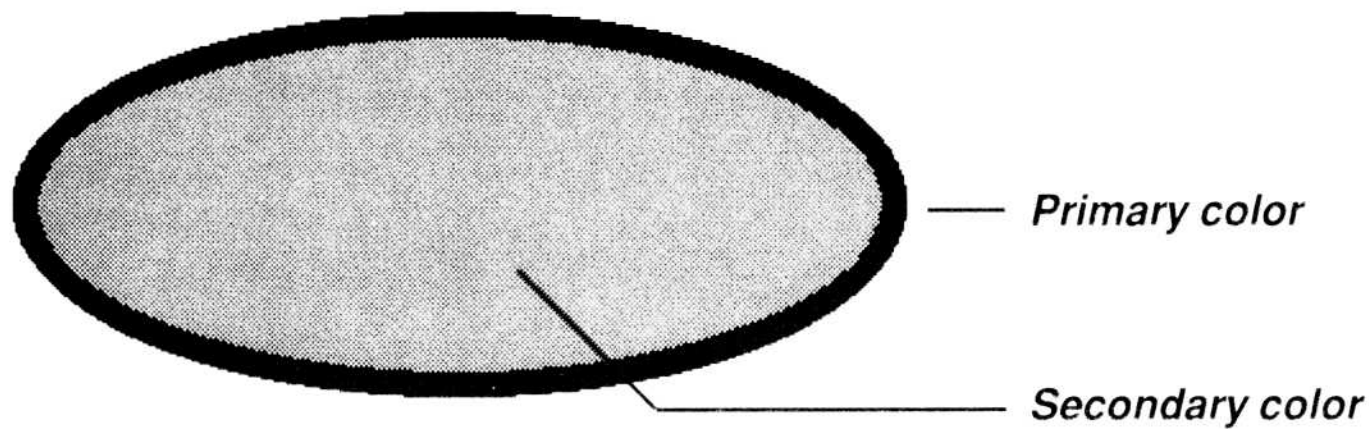
- 4 Release the mouse button.

If you choose Help Information Line, the caption bar displays information about the box as you draw it. “Pos” shows x and y coordinates of the current position of the pointer. “Start” shows the x and y coordinates of the first corner of the box. “Delta” shows the changes in the x and y coordinates of the pointer as you draw the box.

The Hollow/Filled Ellipse Tools



You use the Ellipse tools to draw hollow and filled-in ellipses of any width or height that fits in the drawing area. You can also “constrain” the Ellipse tools to draw circles, and you can draw concentric ellipses or circles.



To draw an ellipse:

- 1 Choose the primary color (and secondary color, if using the Filled Ellipse tool) from the Color Pattern Set.

To choose the primary color, point to the color in the Color Pattern Set and then, click the left mouse button.

To choose the secondary color, point to the color in the Color Pattern Set, and then click the right mouse button.
- 2 Specify the width of the border around the ellipse by using the Width Box or the Options Set Line Width command.
- 3 Click the Ellipse tool you want to use.

Click the left side of the Ellipse tool to draw a hollow ellipse. Click the right side of the Ellipse tool to draw a filled ellipse.
- 4 Point to where you want the center of the ellipse.
- 5 Drag the pointer until the ellipse is the size and shape you want.

The center does not move, but you can move the outline of the ellipse in any direction on the screen.

If you want to start over, you can erase the ellipse by pressing Esc before you release the mouse button.
- 6 Release the mouse button to paste the ellipse.

To draw a circle:

- 1 Follow steps 1-4 in the previous procedure.
- 2 Hold down Shift and point to where you want the center of the circle.
- 3 Drag the pointer until the circle is the size you want.

The center will not move, but you can move the outline of the circle in any direction on the screen.

If you want to start over, you can erase the circle by pressing Esc before you release the mouse button.

- 4 Release the mouse button.

To draw concentric ellipses or circles:

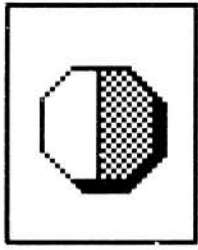
- 1 Use the previous procedures to draw a hollow or filled ellipse or circle.
- 2 Point to where you want the center, and drag with the right mouse button. Release the right mouse button when the ellipse is the size you want.

A new ellipse or circle appears with the same center as the first shape.

- 3 Repeat step 2 to draw as many concentric ellipses as you want.

If you choose Help Information Line, the caption bar displays information about the ellipse or circle as you draw it. “Pos” shows the x and y coordinates of the current position of the pointer. “Center” shows the x and y coordinates of the position of the center of the ellipse or circle. “Radii” shows the x and y coordinates of the radii as you draw the ellipse or circle.

The Hollow/Filled Polygon Tools



You use the Hollow and Filled Polygon tools to draw many-sided, geometric shapes by drawing connected lines.

To draw a polygon:

- 1 Choose the primary color (and secondary color, if you're using the Filled Polygon tool) from the Color Pattern Set.

To choose the primary color, point to the color in the Color Pattern Set, and then click the left mouse button.

To choose the secondary color, point to the color in the Color Pattern Set, and then click the right mouse button.
- 2 Specify the width of the border you want around the polygon by using the Width box or the Options Set Line Width command.
- 3 Click the polygon tool you want to use.

Click the left side of the Polygon tool to draw an empty polygon. Click the right side of the Polygon tool to draw a filled polygon.
- 4 Point to where you want the first side of the polygon to begin.
- 5 Hold down the left mouse button to mark the starting point of the polygon.
- 6 Drag to where you want the first side of the polygon to end, and then release the left mouse button.

You can draw vertical lines, horizontal lines, or lines at a 45-degree angle if you hold down Shift while dragging.
- 7 Drag to where you want the next side of the polygon to end, and then click the left mouse button.
- 8 Continue moving the pointer and clicking, until you've completed the polygon.
- 9 Double-click to complete the polygon.

If you choose Help Information Line, the caption bar displays information about the polygon as you draw it. "Pos" shows the *x* and *y* coordinates of the current position of the pointer. "Start" shows the *x* and *y* coordinates of the position of the first point on the polygon. "Delta" shows the changes in the *x* and *y* coordinates of the pointer as you draw the polygon. "Dist" displays the length of the line as you draw, and "Angle," shows the angle at which you are drawing the line.

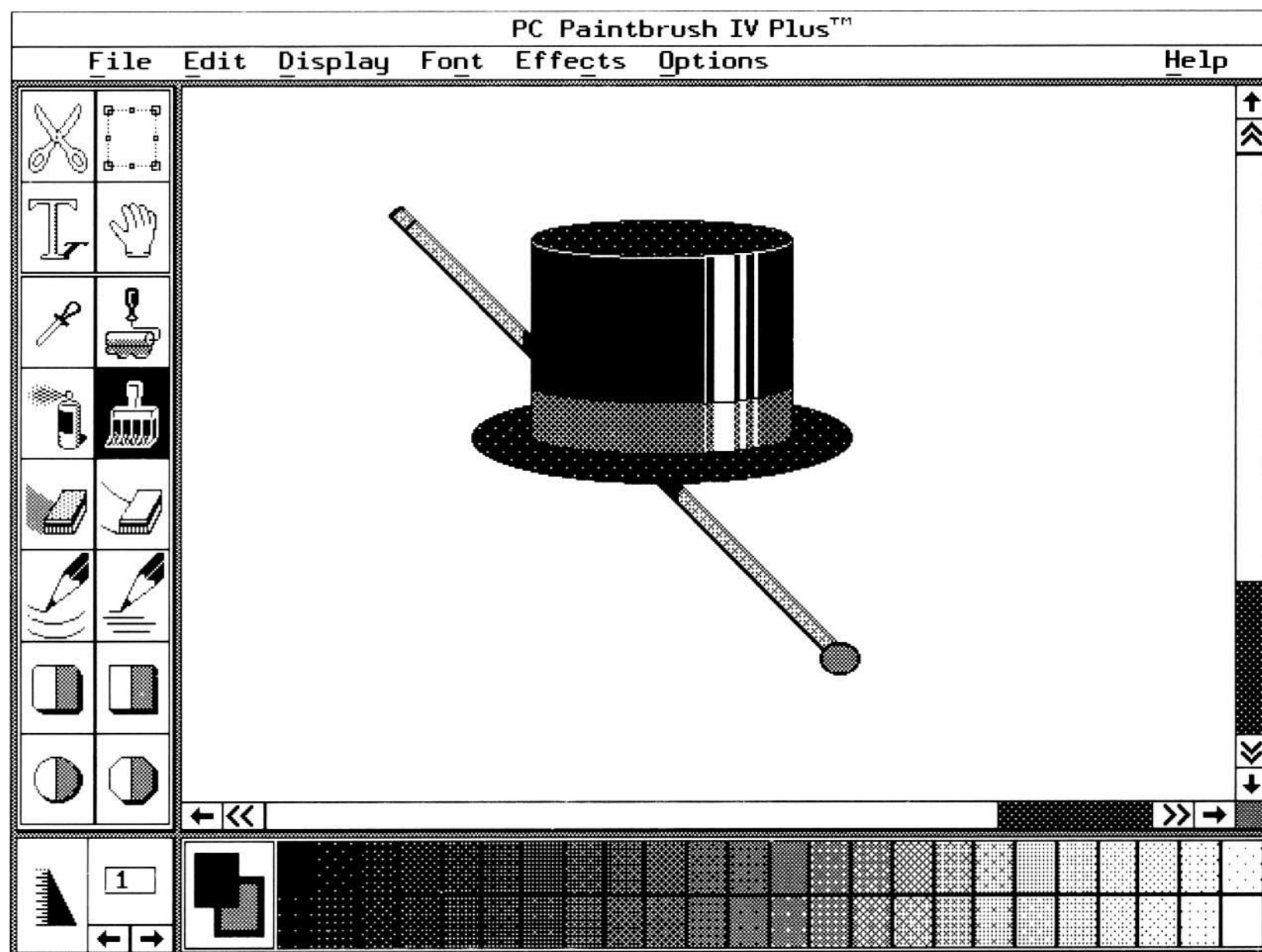
Tutorials

Now that you've learned about the PC Paintbrush IV Plus screen and the Toolbox, you can try your hand at creating your own drawings and scanning an image. This section includes three tutorials:

- The first tutorial, "Creating a Logo", shows you how to choose tools and colors, create your own drawing, and save and print your drawing.
- The second tutorial, "Retouching a Picture", shows you how to load a 16 gray level image, use effects to improve its appearance, and add color to a gray scale picture.
- The third tutorial, "Scanning an Image", takes you through the procedures of setting scanner preferences and scanning an image.

Creating a Logo

This tutorial shows you how to draw a dancer's top hat and baton - a logo that could be used for a dance studio. You could add this design to a newsletter or advertisement created with a word processing program or desk top publishing program.



Clearing the Drawing Area

Let's start with a clean drawing area in which to draw the top hat and baton.

If the drawing area is already cleared, you can go to the next topic "Choosing a Line Width".

To clear the drawing area:

- 1 Point to the white-colored box in the Color Pattern Set.
- 2 Hold down Shift and click the right mouse button to select white as your background color.
- 3 Choose File New to display the New drawing dialog box.
- 4 Verify that the width and height are the dimensions you want for your drawing.
- 5 Choose OK.

The drawing area clears and repaints with the white background.

(Because the New command repaints the screen in the background color, you could make the drawing area any color you want.)

Choosing a Line Width

Before starting to draw, you need to specify the width of lines used in your drawing.

To specify a line width for your drawing:

- 1 Click the Width Triangle.

The Set Line Width dialog box appears.

- 2 Click Set Units.

The Set Units dialog box appears.

- 3 Select Pixels and choose OK to return to the Set Line Width dialog box.

You've now told PC Paintbrush that the line width and all measurements will be in pixels, or dots, on the screen.

- 4 Select the number in the Line Width box and type the number 1.

This sets the line width at one pixel.

- 5 Choose OK.

NOTE If you want to print the picture you create in this Tutorial, you should choose the Options Set Aspect command and select the For Printer option before you begin drawing. This step ensures that circles and squares you create will print correctly.

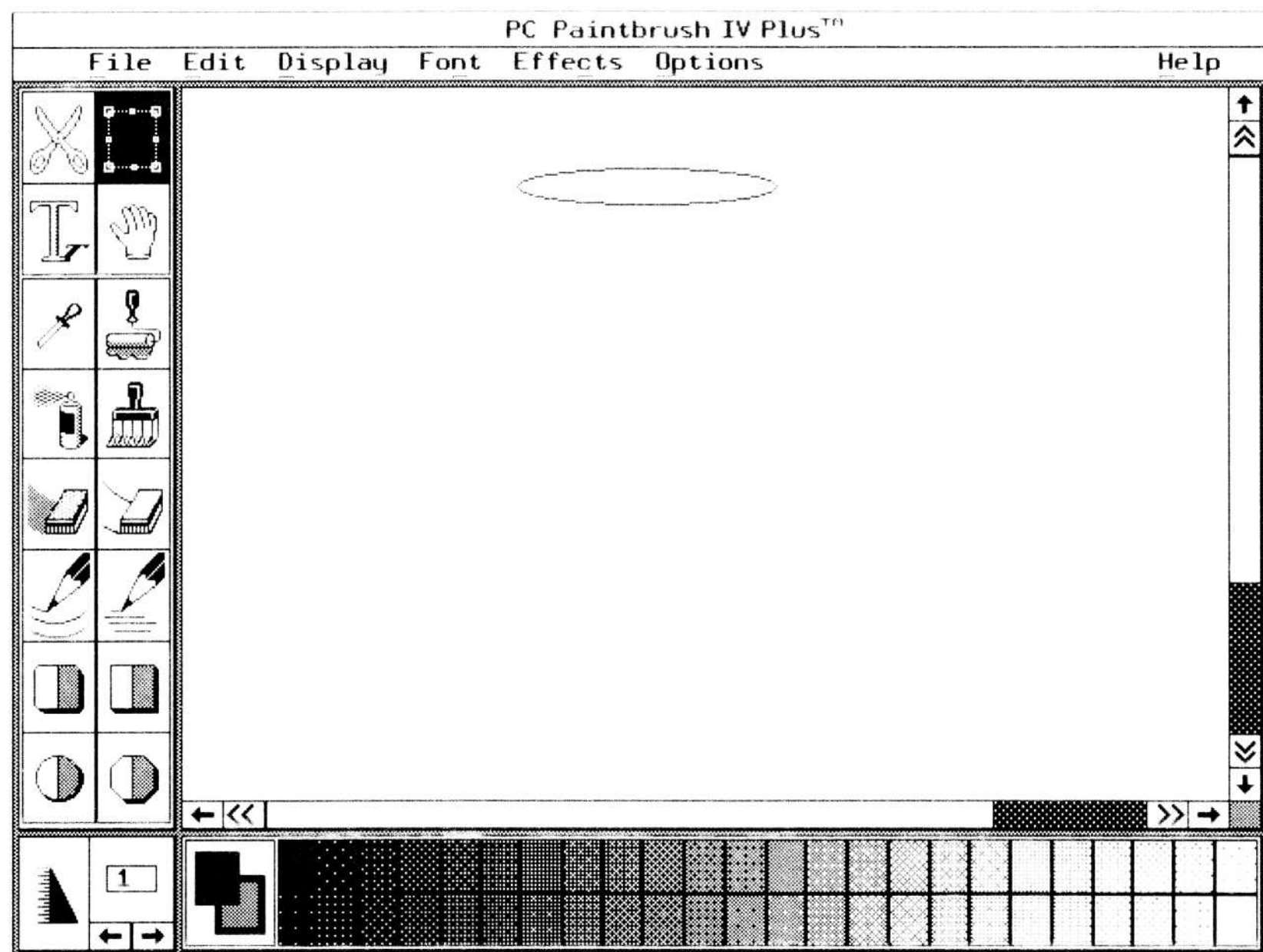
Drawing the Dancer's Top Hat

Now that you have cleared the drawing area and specified the line width, you can start your drawing. First you'll draw the outline of the dancer's top hat, and then you'll add detail, shading, and color.

Drawing the Top of the Hat

To draw the top of the hat:

- 1 If you have turned off the Information Line, choose Help Information Line.
PC Paintbrush now displays information in the caption bar about the mouse's position. You can use this information to make sure the parts of the top hat line up correctly.
- 2 Choose the Hollow Ellipse tool.
- 3 Point to the black-colored box in the Color Pattern Set and click the left mouse button.
This action chooses black as your primary color.
- 4 Move the pointer to the center of the upper third of the drawing area, as shown below.
- 5 Press and hold down the left mouse button to mark the ellipse's center.
Write down the information showing the position of the center of the ellipse.
- 6 Drag the pointer down and to the right.
- 7 When the ellipse is the correct size, release the mouse button to draw the ellipse on the screen.



The top of the dancer's hat.

Saving the Ellipse

Now you can copy the ellipse to a disk file so you can use it to draw other parts of the hat.

To save a copy of the ellipse:

- 1 Choose the Gadget Box tool.
- 2 Point to the area just above and to the left of the upper-left part of the ellipse.
- 3 Hold down the left mouse button and drag the Gadget Box down and to the right until the ellipse is completely enclosed.
- 4 Release the left mouse button.

The Gadget Box surrounds the ellipse.

- 5 Choose Edit Copy To.

The Copy To dialog box appears.

- 6 Select the contents of the Filename box and type a name for the file where the ellipse will be stored - for example, ELLIPSE.

- 7 Choose Copy.

The ellipse is saved to a disk file.

Making the Sides of the Hat

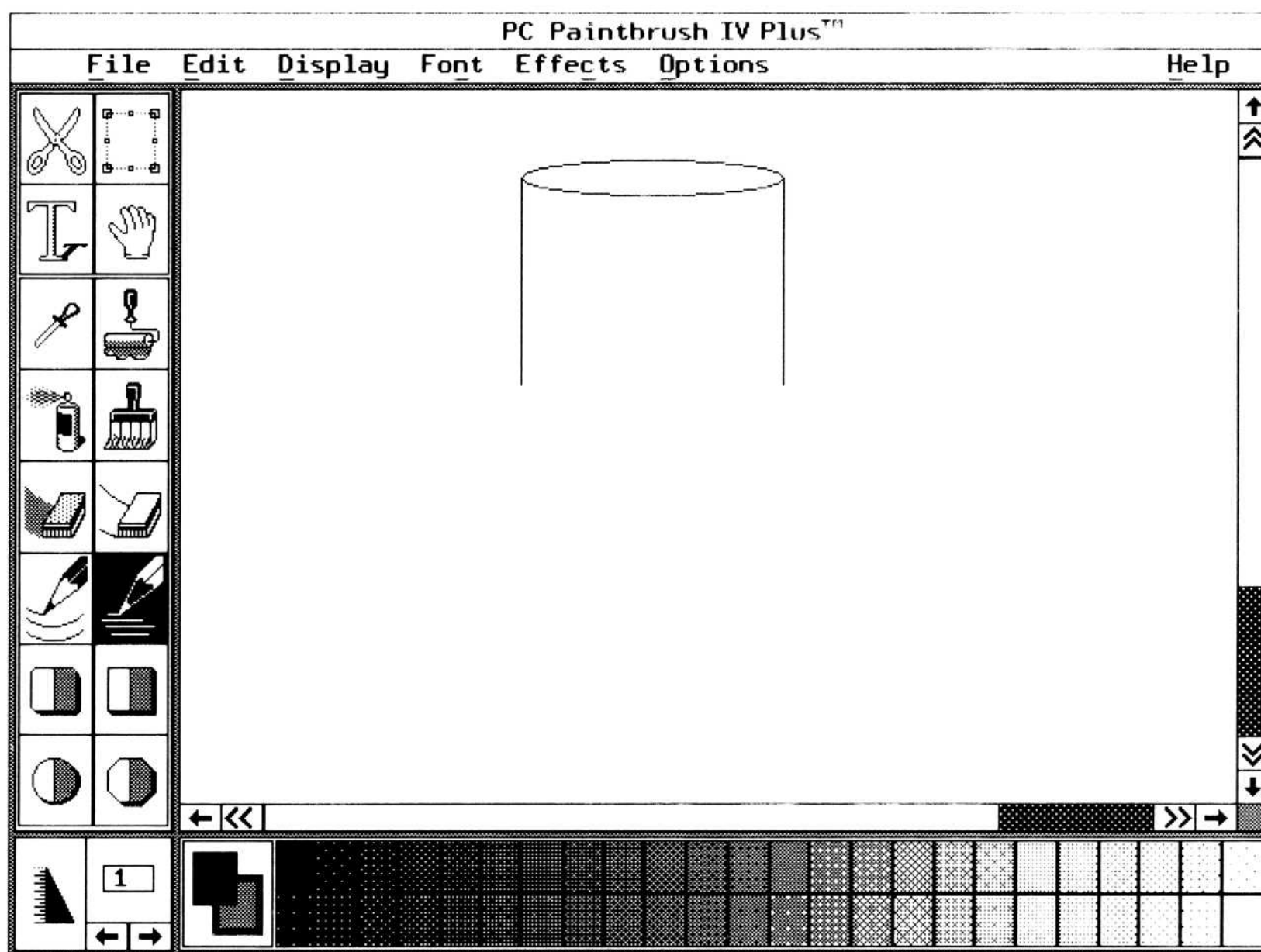
Now you can switch tools and create the sides of the hat.

To draw the sides of the hat:

- 1 Choose the Line tool.
- 2 Point to the left end of the ellipse.
- 3 Hold Shift to constrain the Line tool to draw a vertical line.

When the pointer is aligned vertically, the top part of the cross hair is transparent.

- 4 Drag the pointer down until the side of the hat is the length you want.
- 5 Release the mouse button, and then the Shift key.
- 6 Repeat steps 2-5 to draw the right side of the hat.



The top and sides of the hat.

Drawing the Bottom of the Hat

Now you can paste the ellipse you drew to create the bottom of the hat.

To insert the ellipse:

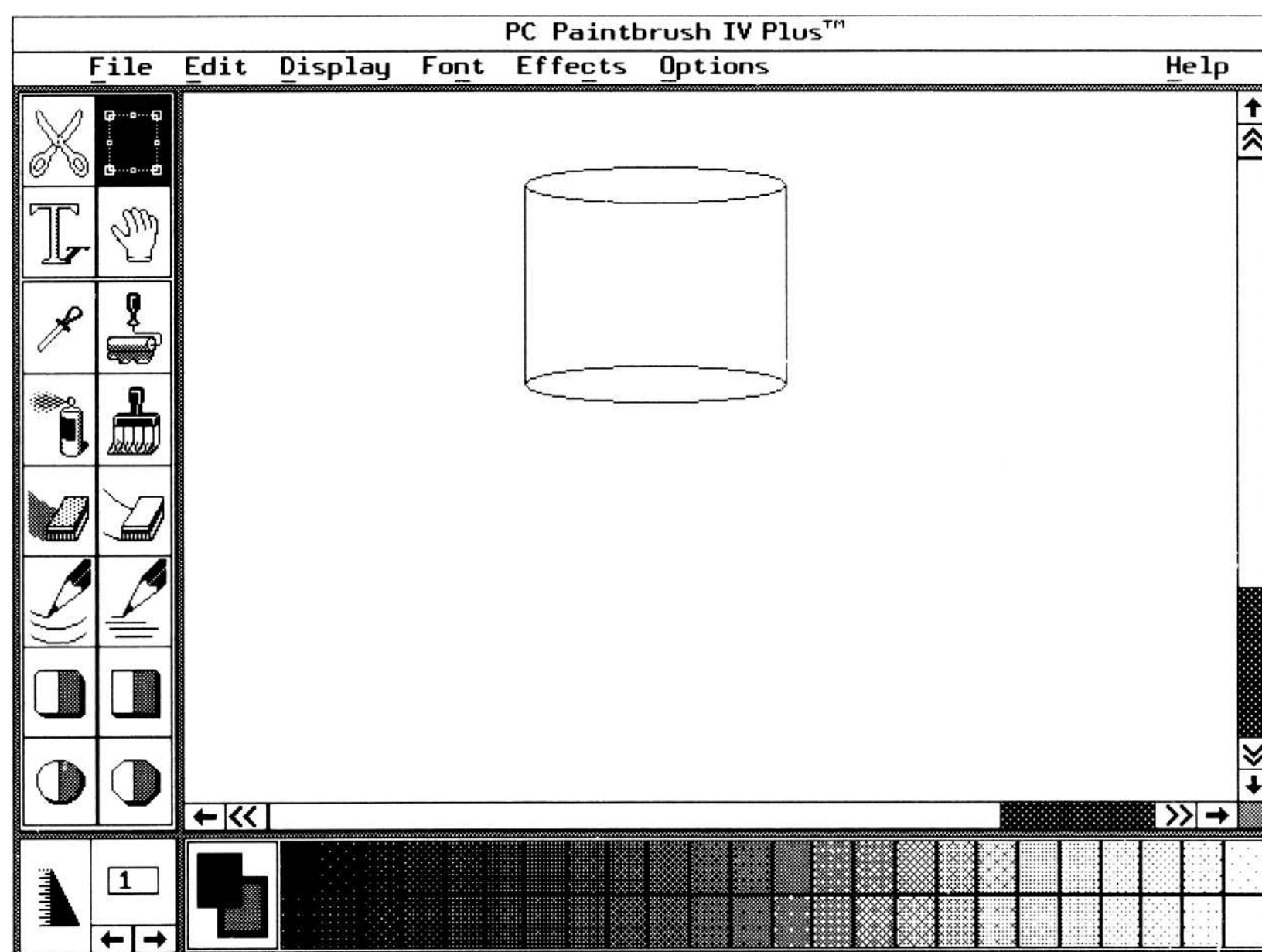
- 1 Choose Edit Paste From.

The Paste From dialog box appears.

- 2 Select the file from the Files list box you saved earlier, or select the contents of the Filename box and type the name of the file.
- 3 Choose Paste.

The dialog box disappears, and the ellipse you drew earlier appears in the drawing area, surrounded by the Gadget Box.

- 4 Move your pointer inside the Gadget Box and press the right mouse button to make the Gadget Box transparent.
- 5 Drag the ellipse into the position for the bottom of the hat.
- 6 Release the right mouse button.
- 7 Move the pointer outside the Gadget Box, and click the right mouse button to paste the ellipse.



Copy the top ellipse to create the bottom of the hat.

Saving Your Drawing

You should periodically save your drawing to disk to prevent losing it if you make a mistake or if there is a momentary power loss.

To save your drawing for the first time:

- 1 Choose File Save As.

The Save a Picture to Disk dialog box appears.

- 2 Select the contents of the Filename box, and type a name for the file; for example, TOPHAT.

The filename may contain up to eight characters. PC Paintbrush will automatically attach a .PCX extension to the filename unless you choose another format option in the Save As dialog box.

The file will be saved on your hard disk in the subdirectory you've set up for PC Paintbrush, unless you include a DOS pathname for another directory or choose another disk and directory from the Directories list box.

If you want to save to a floppy disk, select [-B-] from the Directories list box to save the file on the disk in drive B.

- 3 Choose Save to save the file.

The filename appears in the caption bar at the top of the PC Paintbrush screen.

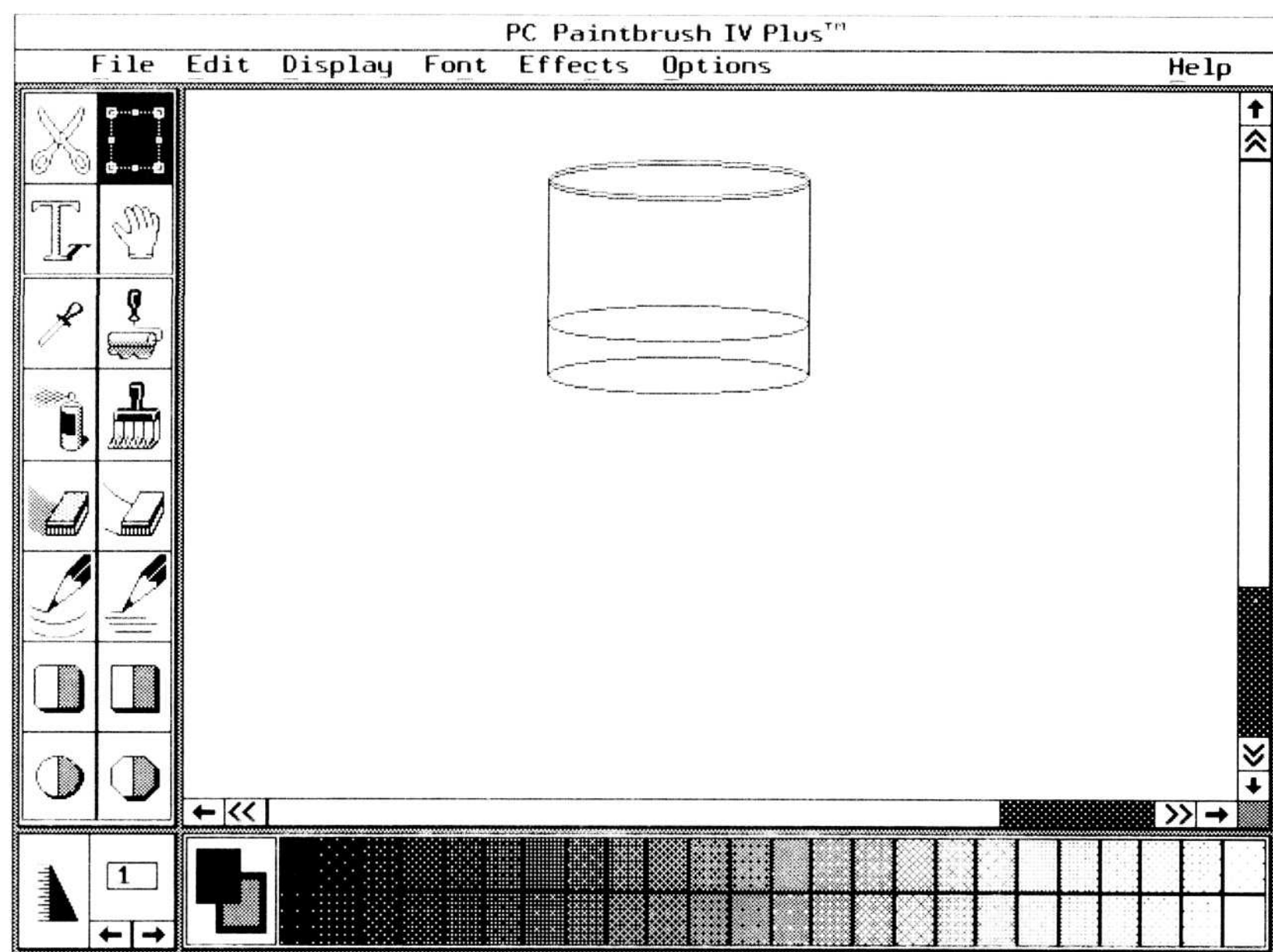
To save the file periodically as you're working, choose File Save.

Highlighting the Hat and Adding the Hatband

You have drawn the top, sides, and bottom of the hat, and now you can add the ellipse that will later form the highlight on the top of the hat. (See the picture of the top hat at the beginning of this chapter).

To add the highlight to the top of the hat:

- 1 Make sure the Gadget Box is still the active tool.
- 2 Use the Gadget Box to enclose the ellipse you pasted from disk.
- 3 Hold down Shift and the right mouse button.
Shift leaves a copy behind.
The right mouse button makes the Gadget Box transparent.
- 4 Drag the ellipse into position just below the top of the hat.
- 5 Release Shift and the mouse button.
- 6 Move the pointer outside the Gadget Box, and then click the right mouse button to paste the ellipse.
- 7 Repeat steps 2-6 to copy the ellipse to create the hatband at the bottom of the hat.



Copy the ellipse two more times to make the band and the highlight of the hat.

Cleaning Up the Drawing

Now it's time to use the Eraser tool to remove extra lines from your drawing.

To clean up the drawing:

- 1 Choose the Eraser tool.
- 2 Set the line width to four pixels.

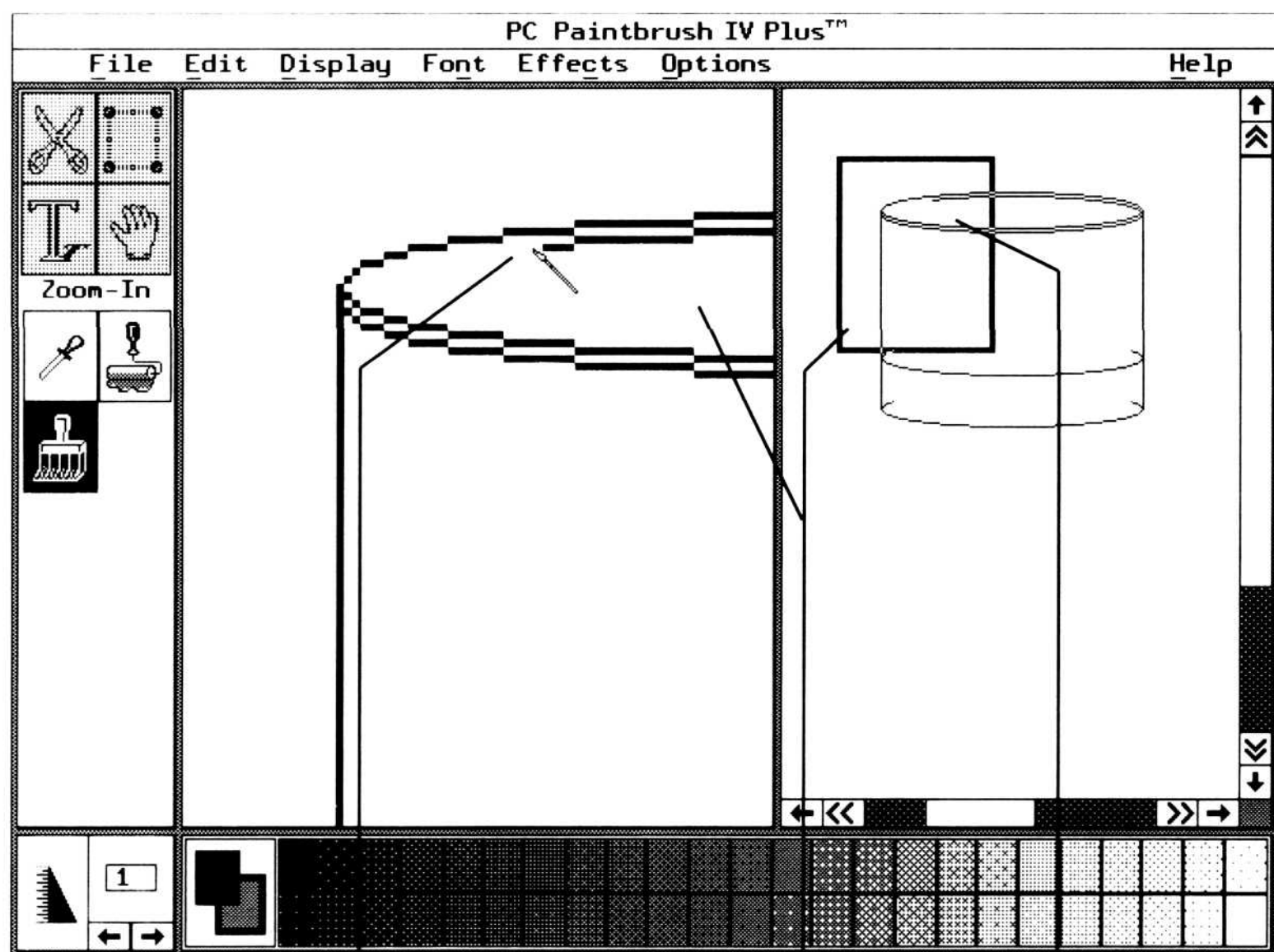
Using a greater line width creates a bigger Eraser, making cleanup easier.

- 3 Point to where the ellipses go “behind” the hat.
- 4 Press and hold the left mouse button and erase the lines behind the hat.
- 5 Erase the copy of the ellipse you pasted into your drawing.

If you make a mistake, choose Edit Undo.

- 6 When you have used the Eraser to remove large portions of the unwanted lines, choose Display Zoom In to edit the finer details of the hat.

The screen splits into two windows, one showing the full drawing, the other showing a magnified view of part of the hat.



Click the right button to change black dots to white.

The area enclosed by the box appears in the left window.

Drag the box to move around the window.

- 7 Choose black as the primary color and white as the secondary color.

If you are using other colors to create the hat, choose the hat's outline color as the primary color and make sure the secondary and background colors are the same.

- 8 Choose the Paintbrush tool.

The pointer becomes a narrow paintbrush when it is in the zoomed-in window. It becomes a hand when it is in the unzoomed window.

- 9 Move the box in the unzoomed window over the area of the hat that needs cleanup.

The area enclosed in the box appears in the zoomed-in window.

- 10 Point to a dot on a line you wish to erase and click the right mouse button.

The black dot turns white. If you make a mistake, click the left mouse button to make a white dot turn black.

- 11 Repeat steps 9 and 10 until you have removed the unwanted lines.

- 12 Choose Display Zoom Out to return to the normal PC Paintbrush screen.

Adding the Hat Brim

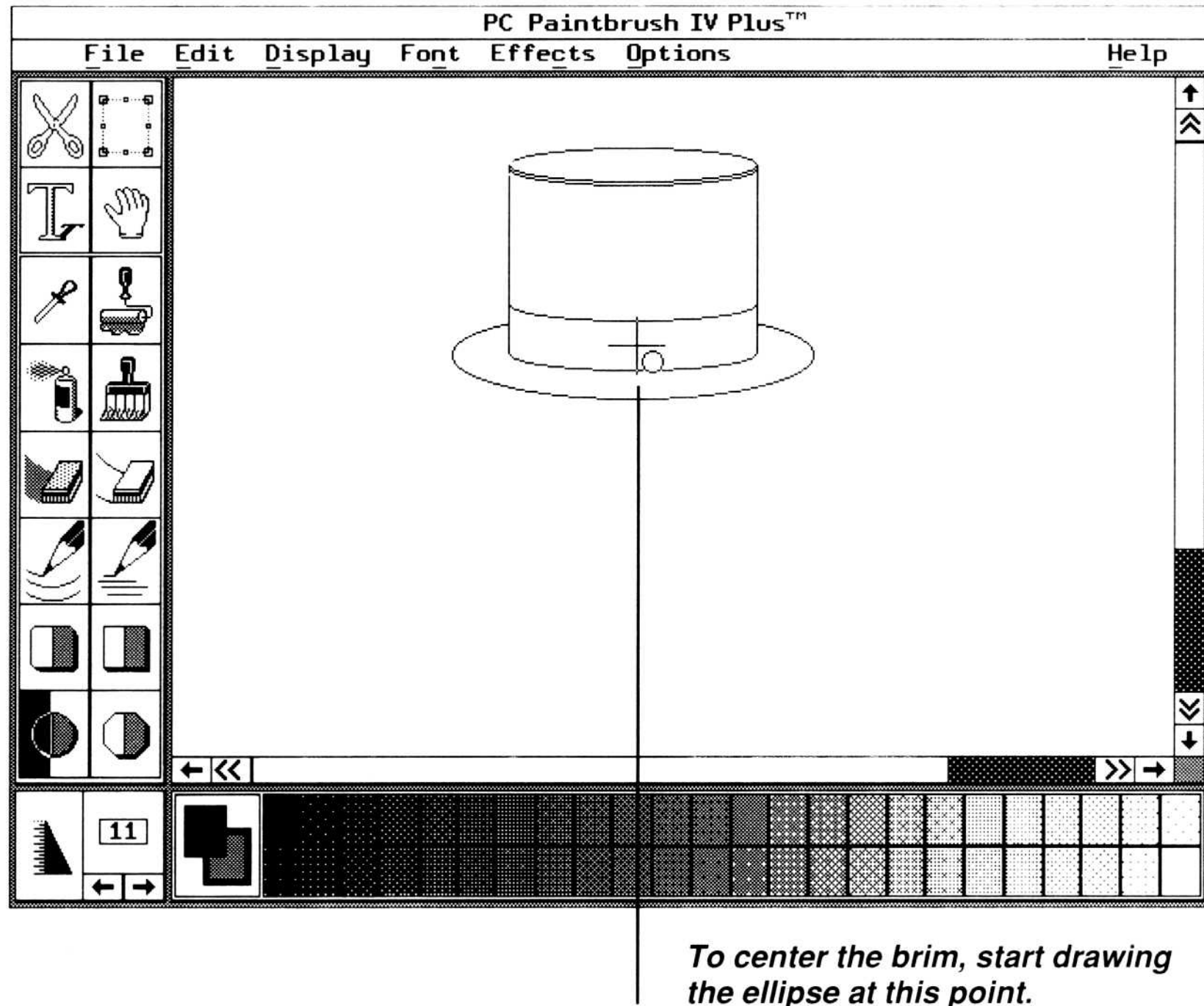
Now that you've cleaned up the hat, you can add the brim.

To draw the brim of the hat:

- 1 Choose the Hollow Ellipse tool.

- 2 Move the pointer to the center point between the ellipses forming the band of the hat, as shown below.

Use the position information you wrote down earlier to align the center correctly.



- 3 Drag the pointer right and down to draw the shape of the hat brim.
- 4 Release the mouse button to add the brim to the hat drawing.
- 5 Follow the steps in the previous procedure to clean up the new lines.

Filling In Spaces

Before you can fill the hat with color, you need to zoom in on the picture to make sure that the shapes are defined by a solid black line. If there are any gaps in the lines, the color will “leak through” when you use the Paint Roller.

To fill in the spaces:

- 1 Choose Display Zoom In.
- 2 Choose black as the primary color and white as the secondary color.

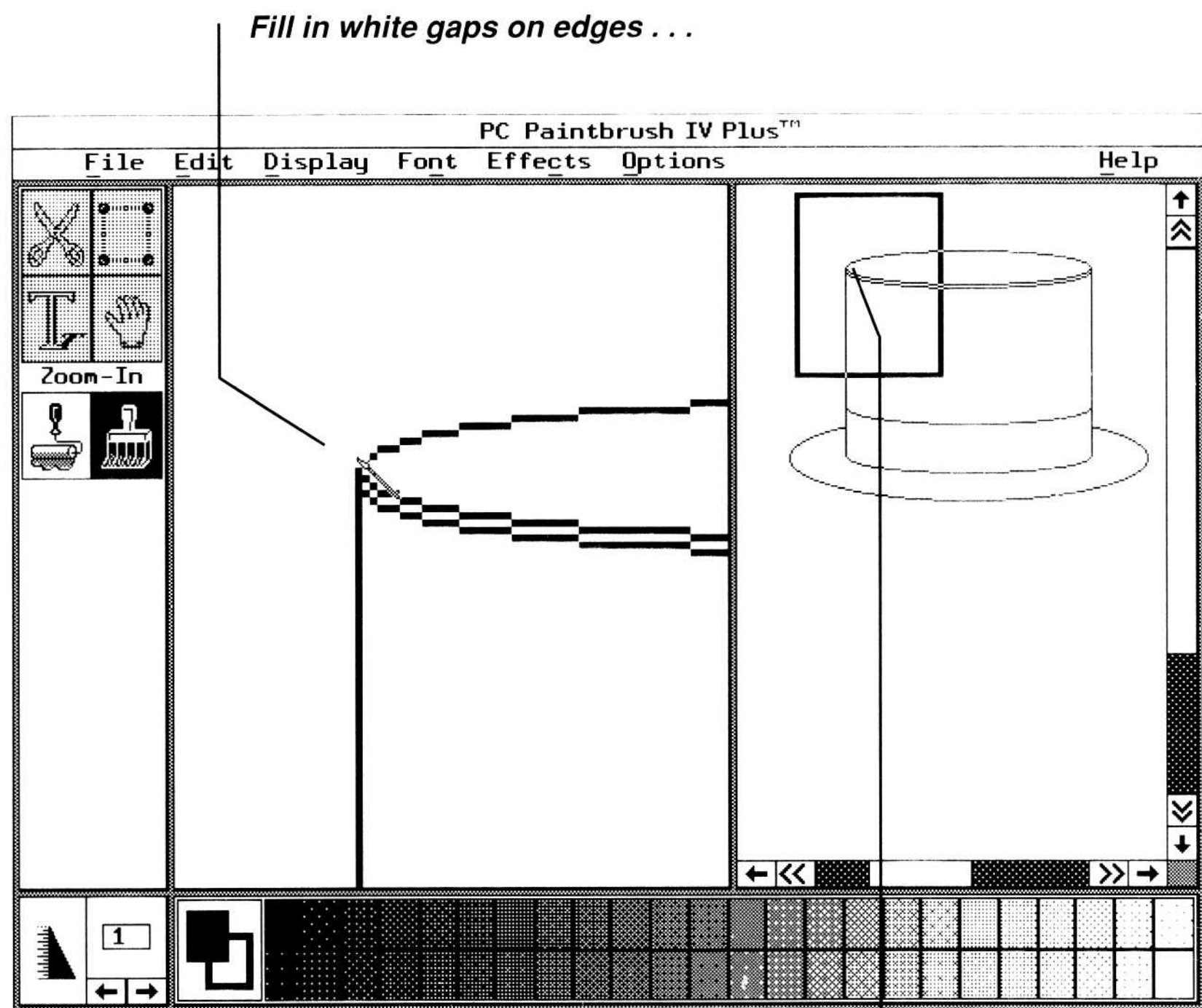
If you are using other colors to create the hat, choose the hat's outline color as the primary color and make sure the secondary and background colors are the same.

- 3 Drag the box in the unzoomed window over a part of the drawing that needs to be filled.

- 4 In the zoomed-in window, move the paintbrush's tip inside a dot that needs to be filled with black, and click the left mouse button.

The white dot changes to black. If you make a mistake, click the right mouse button and the black dot turns white.

- 5 Repeat step 4 until you've filled in all the gaps in the lines.
- 6 Choose Display Zoom Out to return to the main PC Paintbrush screen.
- 7 Choose File Save to save your drawing.



. . . the jagged edges will fill in on the unzoomed window.

Drawing the Dancer's Baton

Now you can add the second part of the design - the dancer's baton.

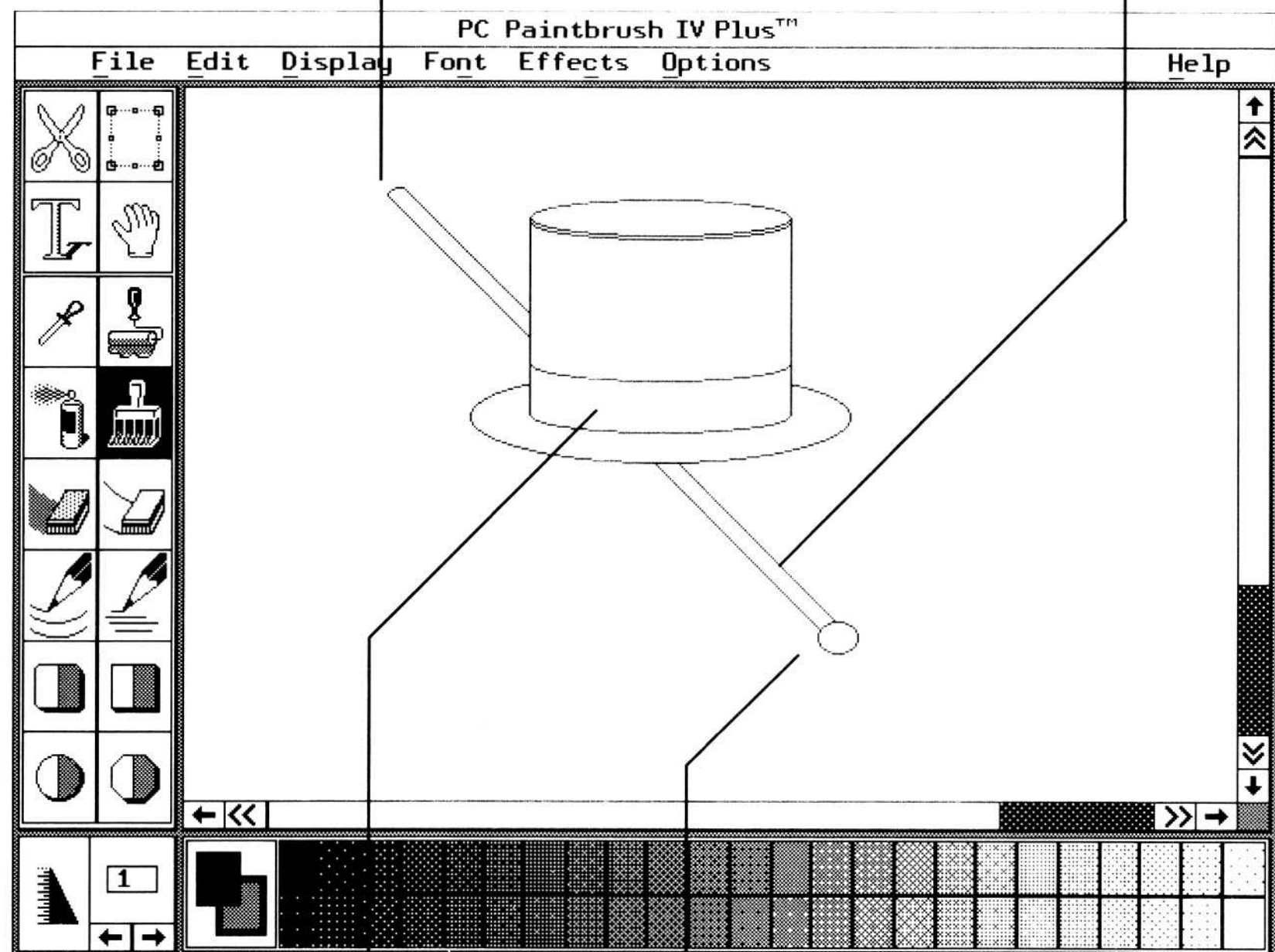
To draw the baton:

- 1 Change the line width to one pixel.
- 2 Choose the Line tool.
- 3 Point to where you want to start drawing the baton.
- 4 Hold down Shift to constrain the Line tool and drag the pointer diagonally.
PC Paintbrush draws a line at a 45-degree angle.
- 5 Release the mouse button when the line is the length you want.
- 6 Repeat steps 4 and 5 to draw a second line parallel to the first line.
- 7 Using the Eraser, erase the parts of the baton that pass under the hat.
If you need to, use Zoom In again.
- 8 Choose the Hollow Ellipse tool.
Make a small ellipse at the top end of the baton.
- 9 Point to the bottom of the baton.
- 10 Hold down Shift to make PC Paintbrush draw a circle, and draw the ball of the dancer's baton.

- 11 Use the Zoom In command to clean up the ends of the baton and fill in the spaces of the outlines.

Use the Hollow Ellipse tool to draw the end of the baton.

Draw the sides of the baton using the Line tool while holding down Shift.



Erase the part of the baton behind the hat.

Draw the end of the baton with the Hollow Ellipse tool while holding down Shift.

Coloring the Hat and Baton

To color your drawing:

- 1 Choose the Paint Roller tool.
- 2 Choose a color for the top and brim of the hat.

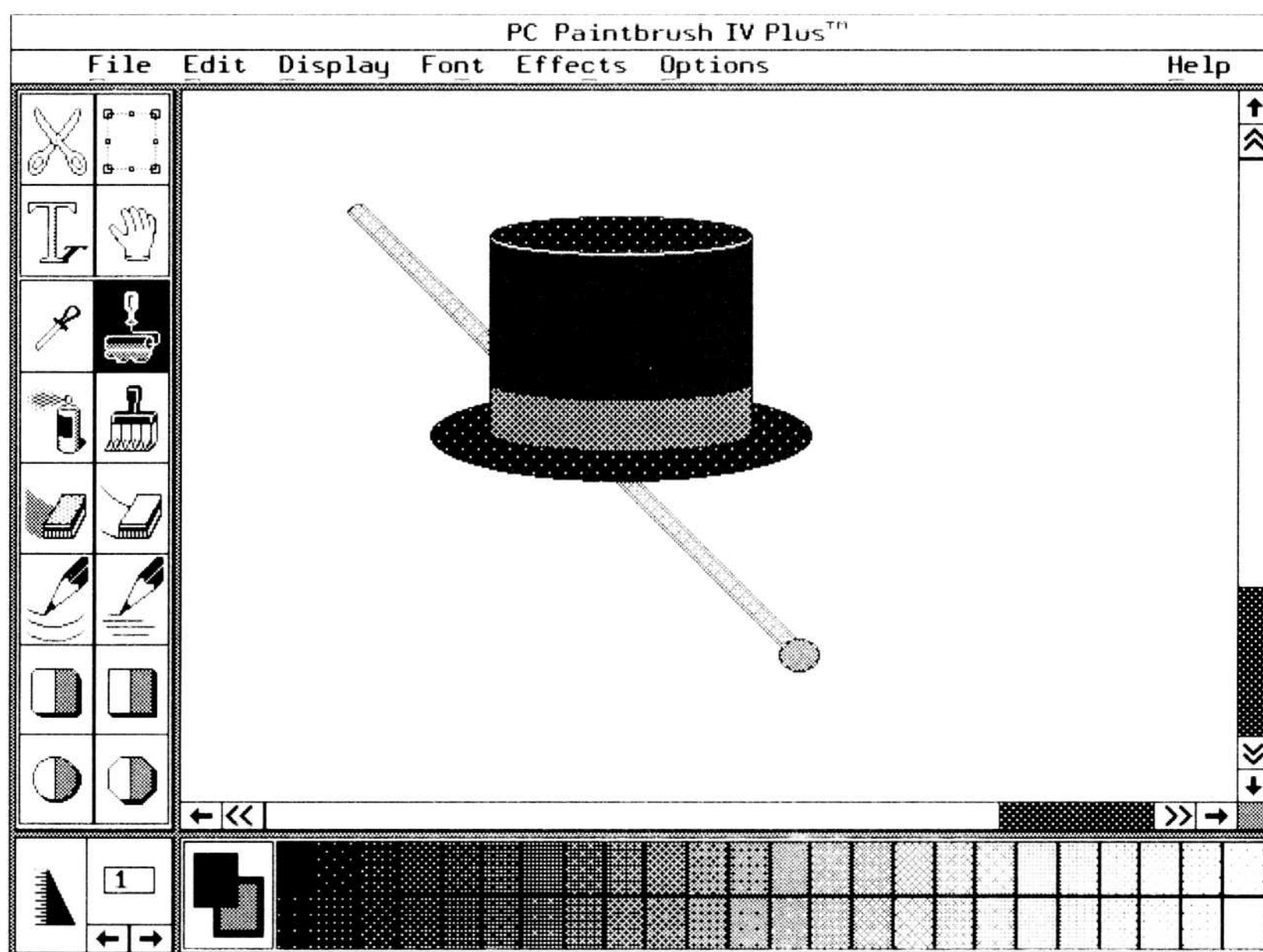
Our drawing uses a dark pattern, but you can try any color you like.

- 3 Point inside the ellipse that forms the top of the hat.
- 4 Click to fill the ellipse with the color you chose.
- 5 Fill in the brim of the hat.

- 6 Choose a color for the side of the hat.

Our drawing uses black, but you can use any color you'd like.

- 7 Fill in the sides of the hat, but leave the narrow highlighted area empty.
- 8 Choose a color for the hatband and fill it in.
- 9 Choose a color for the baton and fill it in.



Use the Paint Roller to fill in all of the hat.

Adding the Final Touches

When you have finished drawing and filling in the basic shapes for the hat and baton, you can add details to the drawing to give it depth and texture.

To add vertical highlights:

- 1 Choose white as the primary color.
Point to white in the Color Pattern Set and click the left mouse button.
- 2 Use the Width Box or the Options Set Line Width command to set the line width to 1.
- 3 Choose the Line tool.
- 4 Draw a single vertical line on the right of the hat's centerline from the top of the hat to the bottom of the hatband.
Remember to use the Shift key to constrain the Line tool.
- 5 Use the Width Box or the Options Set Line Width command to set the line width to 4.
- 6 Repeat step 4 to create a wider white vertical line to the right of the first vertical line.
- 7 Continue drawing vertical lines using different line widths until you create a highlight like that shown below.

To add shading using the Paintbrush:

- 1 Choose the Paintbrush.
- 2 Point to where the baton emerges below the hat.
- 3 Use the Paintbrush to add shading to the baton.
- 4 Use the Paintbrush to add shading to the portion of the baton that emerges above the hat.

To add shading using the Spraycan:

- 1 Choose the Spraycan.
- 2 Choose a very light color and spray the ball and tip of the baton.

If you'd like to refine your drawing, try using some of the other special effects such as Gradient to soften its look.

To use the Gradient option:

- 1 Choose Effects Gradient.
The Toolbox changes to show only the gradient tools.

2 Choose Options Set Gradient.

3 Select Horizontal.

This option tells PC Paintbrush to add shading from left to right on the screen.

4 Choose OK.

5 Choose the Filled Box tool.

6 Point to the upper-left corner of the rectangle that forms the highlight on the side of the hat.

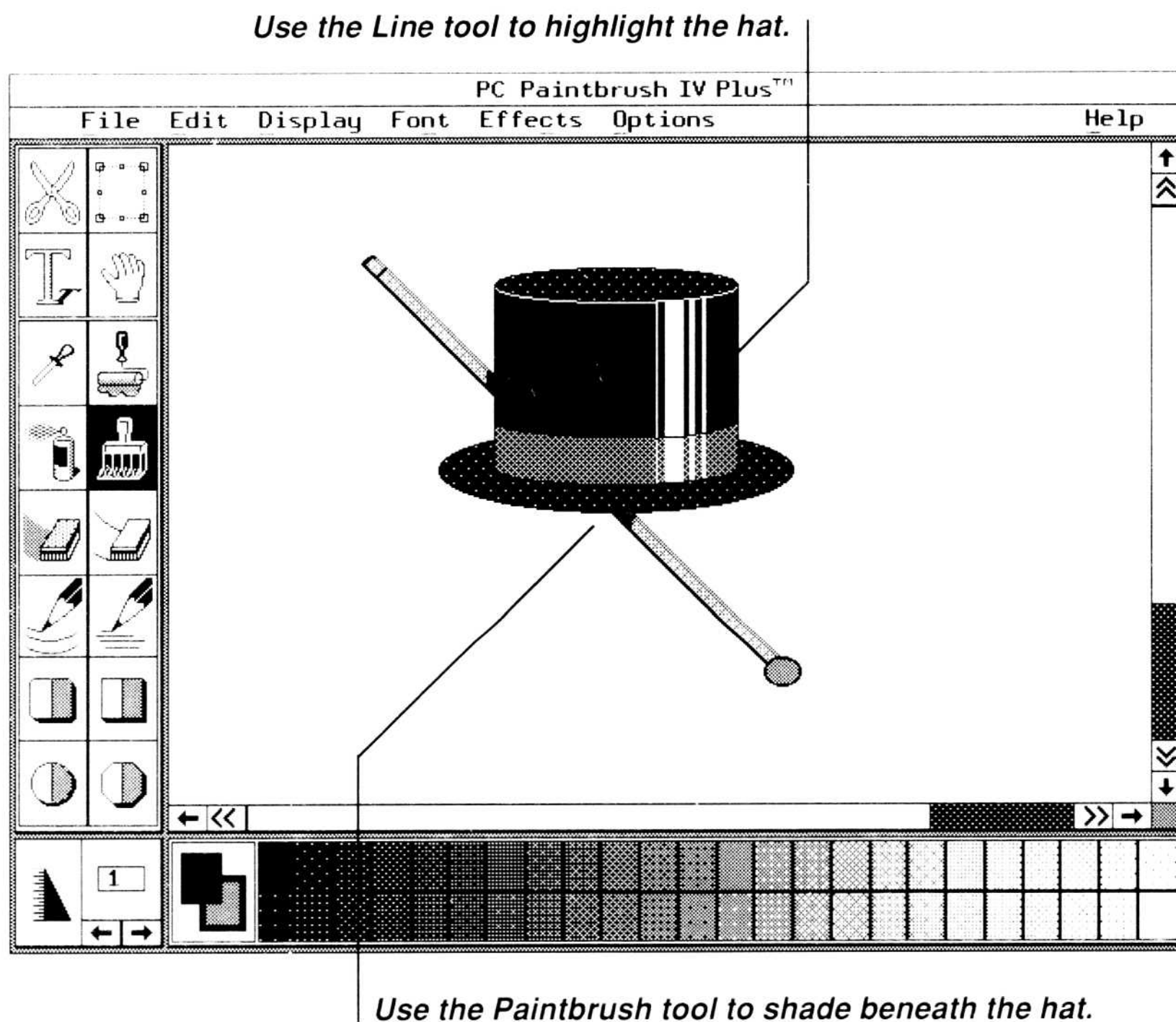
7 Drag the pointer to the bottom of the hatband.

8 Release the mouse button.

The Paintbrush shades the area defined by the rectangle that forms the highlight.

9 Choose Effects Standard to return to the normal PC Paintbrush IV Plus screen.

When you've finished, you can print the drawing.



Printing Your Drawing

To print a PC Paintbrush drawing, you must have a printer that PC Paintbrush IV Plus supports. “Supported Hardware” in the Reference section of this manual contains a list of these printers.

Before trying to print your drawing, you should make sure your printer is properly set up, connected to your computer, and on-line.

To print your drawing:

- 1 Choose File Print.

The Print dialog box appears.

- 2 Click Set Units.

- 3 Select Inches.

- 4 Choose OK.

- 5 Specify the size of your computer screen in the Print Width and Print Height boxes.

You can measure your screen with a ruler to determine the proper values.

- 6 Choose OK to print your drawing.

Retouching a Picture

This tutorial shows you how to use many of PC Paintbrush IV's commands in the Effects menu to retouch a 16 gray level picture called TUTORIAL.PCX.

You can use the processes you follow in this tutorial to retouch gray scale images that appear dirty or lack contrast and luster.

You can load a sixteen level gray scale image in EGA mode; however, you will only see four levels of gray on your screen. Installing for VGA, 16 colors is the best way to retouch a 16 gray level picture.

If you have the hardware to run in VGA, 16 color mode, but have not yet installed for it, run PBSETUP now, and reinstall in this mode.

If you have a CGA display adapter, you cannot work with sixteen levels of gray - skip this tutorial and continue to Part Four of this manual, "PC Paintbrush IV Plus Menus". If you have a scanner you can go on to the following scan tutorial.



Loading the Image

As you work through the steps that follow, you will change TUTORIAL.PCX. If you want to keep the picture in its original form, you load the original picture and then save it with a different name. You'll edit the newly named picture.

To load TUTORIAL.PCX:

- 1 Choose File Open.

The Load a Picture from Disk dialog box appears.

- 2 Select PCX.

A list of filenames in the Files list box, shows all files having a PCX format in the current directory. Unless you indicated otherwise, PC Paintbrush IV Plus created a directory called PBRUSH when you ran PBSETUP. If you're not in the directory containing the original PC Paintbrush IV Plus files, select it from the Directories list box.

- 3 Double-click on the file named TUTORIAL.PCX in the Files list box.

If TUTORIAL.PCX is not visible in the Files list box, use the scroll bar to move through the list of filenames.

You can also type the name of the file in the Filename box and choose Open.

Making a Working Copy

Now that you've opened the picture created for this tutorial, you can save it with a different name.

If you do not want to keep TUTORIAL.PCX in its original form, you can go to the next topic, "Creating the Highlights".

To save TUTORIAL.PCX with a new name:

- 1 Choose File Save As.

The Save a Picture to Disk dialog box appears on your screen.

- 2 Select the contents of the Filename box, and type a name for the file you will use for the rest of this tutorial; for example, LEARN.

The filename may contain up to eight characters. PC Paintbrush IV Plus will automatically attach a .PCX extension to the filename unless you choose another format option in the Save As dialog box.

- 3 Choose Save to save the file.

The new filename appears in the caption bar at the top of the PC Paintbrush IV Plus screen.

You can now save the new file periodically as you're working on the tutorial, by choosing File Save, and TUTORIAL.PCX will not change.

Refining Hamilton's Face

Now that you have loaded the picture you'll be working with you can start using the PC Paintbrush IV Plus commands on the Effects menu. First you'll create a more realistic looking face, and then you'll add an additional color to your picture.

Throughout this tutorial you will work with the original scanned image of Hamilton (Before) using the modified picture of Hamilton (After) as a reference.

Adding the Highlights

Let's start by increasing the brightness on the portions of the face that are currently light. This creates a more three dimensional look, showing where light reflects off the face.

To highlight portions of the face:

- 1 Choose Effects Brightness.

The Toolbox shows only those tools available while Brightness is turned on, and the Color Pattern Set shows the levels of brightness available.

- 2 Choose the Paintbrush.
- 3 Select a width for your Paintbrush that is about the size of the lines of brightness you want to add.

A width of 6 works well.

- 4 Select a level of brightness that is slightly brighter than the light portions of the picture.

The levels of brightness are relative to the area you want to change. For example, a light level of brightness changes black areas to gray while it changes gray areas to almost white.

The brightness level seventh from the right works well.

- 5 Drag your Paintbrush along the ridge of the nose.

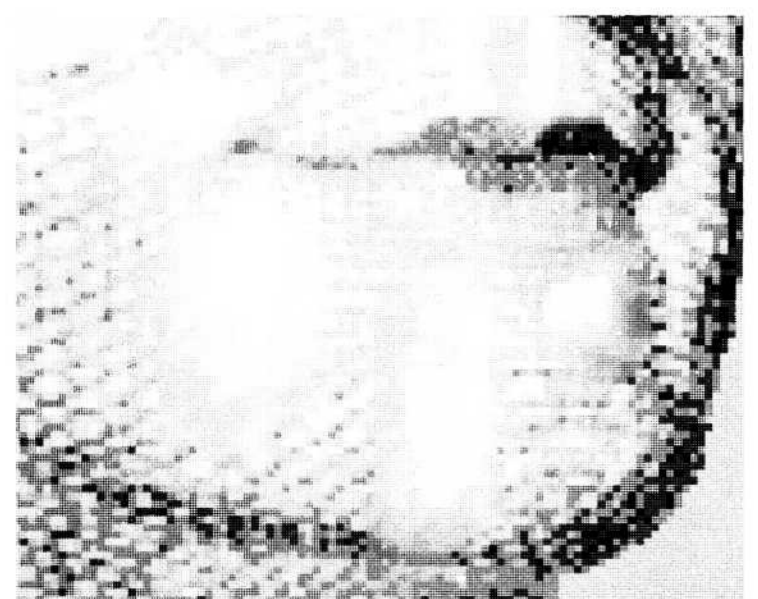


The area is brightened when you first drag the Paintbrush.

If you are not satisfied with the level of brightness, continue to select darker or lighter levels of brightness and to use the Paintbrush, until you have the look you want.

The levels of brightness you paint with are relative to the colors in your picture when you chose the Paintbrush, not the colors you've changed using Brightness. This allows you to consistently lighten or darken other areas to the same intensity.

- 6 Reselect the Paintbrush to “paste” the changes you made.
- 7 Using the current brightness level and the After picture as a reference, continue to bring out the highlights of the face by dragging your Paintbrush down the furrow of the brow, across the rim of the cheekbone, and down the cleft of the chin.



Smoothing the Skin

Now it's time to smooth out Hamilton's face. You use the Effects Blend and Effects Smudge commands for this purpose.

If you want to spend time making the skin look as realistic as possible, you will need to Blend and Smudge several times before you are finished. Once you are satisfied, go to "Adding Life to the Face".

To blend Hamilton's skin:

- 1 Choose Effects Blend.
The Toolbox shows only those tools available while Blend is turned on.
- 2 Choose the Filled Box.
- 3 Point to the bottom right side of the face, where Hamilton's profile meets the background color.
- 4 Drag the pointer until the box surrounds the entire skin area.
Press Esc before you release the mouse button if you want to start over.
- 5 Release the mouse button.
The colors inside of the box are blended.
- 6 Repeat steps 3 - 5 until you are satisfied with the results.



Removing Unwanted Blending

Before you select another tool or option, you can use the Edit Local Undo command to return blurry areas to their “preblended” look.

To remove unwanted blending:

- 1 Choose Edit Local Undo.

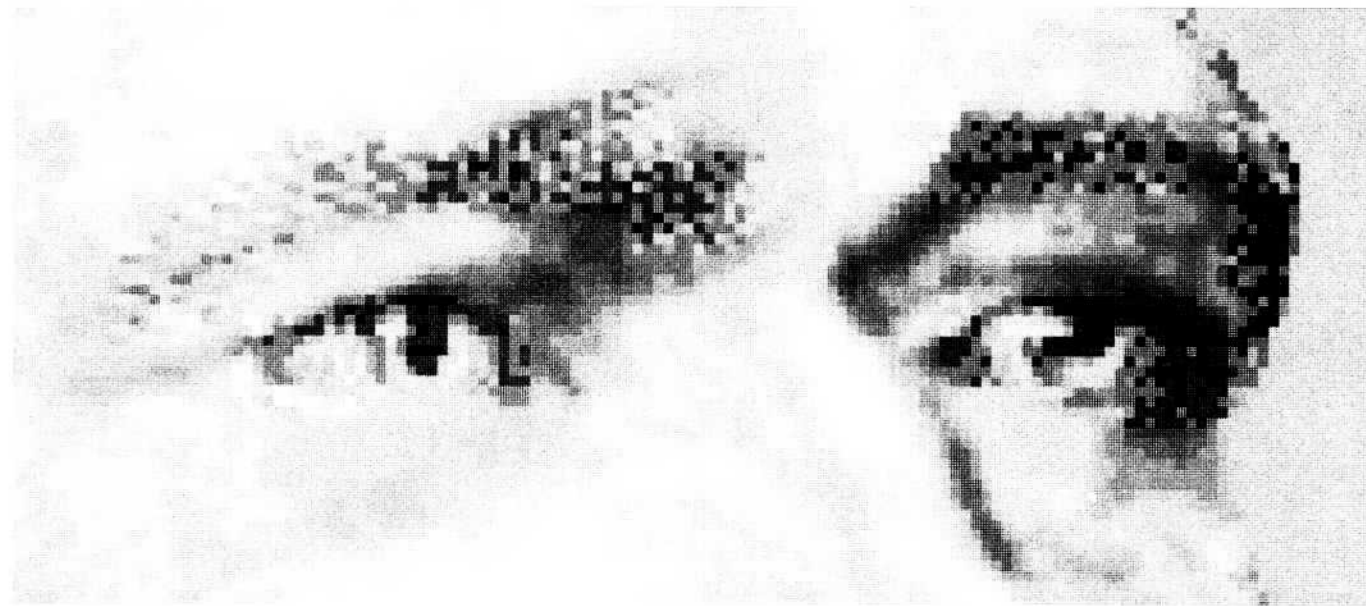
You can also use the accelerator keys Ctrl+L to choose Local Undo.

The Pointer turns into an eraser with an “X” inside.

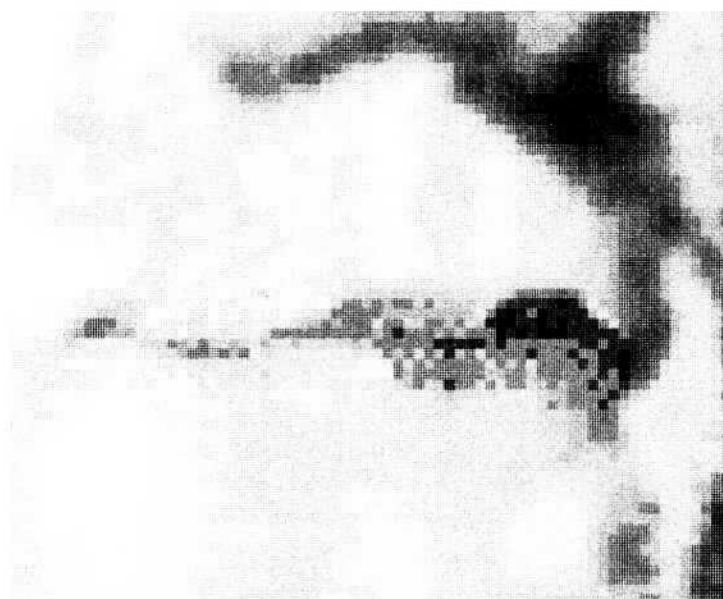
- 2 Adjust the width so that the pointer fits inside the eyes.

A width of 3 works well.

- 3 Drag the pointer over the eyes.



- 4 Continue dragging the pointer over any areas you want to return to their “preblended” state; for example, the mouth, edges of the face, eyebrows, and hair.



- 5 Choose Edit Local Undo to exit Local Undo.

Mixing Skin Colors

You have begun to create a smoother look to Hamilton's face by blending the skin. Now you can continue the smoothing effect by mixing uneven areas together with Smudge.

To smudge areas of the face:

- 1 Choose Effects Smudge.
- 2 Choose the Filled Box.

Point to the bottom left side of the face.

- 3 Set the width for the Filled Box.

The width settings for the Filled box work similarly to the width settings for the Spraycan; the higher the width setting the more smudging occurs.

A width setting of 4 or 5 works well.

- 4 Drag the pointer until the box surrounds the left side of the face; the height of the box ending below the eye and the width of the box ending at the hair and nose.

Be careful not to include the background area when you draw your boxes. If you do, the background color will be introduced into the face.

If you want to start over, you can erase the box by pressing Esc before you release the mouse button.



- 5 Release the mouse button.
The colors inside of the box are smudged.
- 6 Continue surrounding skin areas with the box until the skin texture appears more uniform.
- 7 Follow the procedures described in “Removing Unwanted Blending”, to undo any areas you do not want smudged.

To smudge small areas on the face:

- 1 Choose the Spraycan.
- 2 Choose a width for the spray.
Point to where you want to spray.
- 3 Drag the pointer to smudge the area.
- 4 Continue using the Spraycan until you are satisfied with the results.
Use the Edit Local Undo command to remove any unwanted smudges.



Adding Life to the Face

Reflection in the eyes and on the mouth help bring a picture to life. Increasing the contrast can change Hamilton's eyes from flat to lifelike; it adds definition to his mouth. Since the eyes and mouth are small areas to retouch, you need to zoom in to work with them.

To increase the contrast in portions of the picture:

- 1 Choose Display Zoom In.

The screen splits into two windows, one showing the drawing in normal view, the other showing a magnified view of part of Hamilton.

If you want a grid in your zoomed-in window choose Display Set Zoom, select 4 or higher from the Zoom In options, make sure Grid is selected, and click OK.

- 2 Drag the box in the unzoomed window over the left eye of the "Before" picture.

- 3 Choose Effects Contrast.

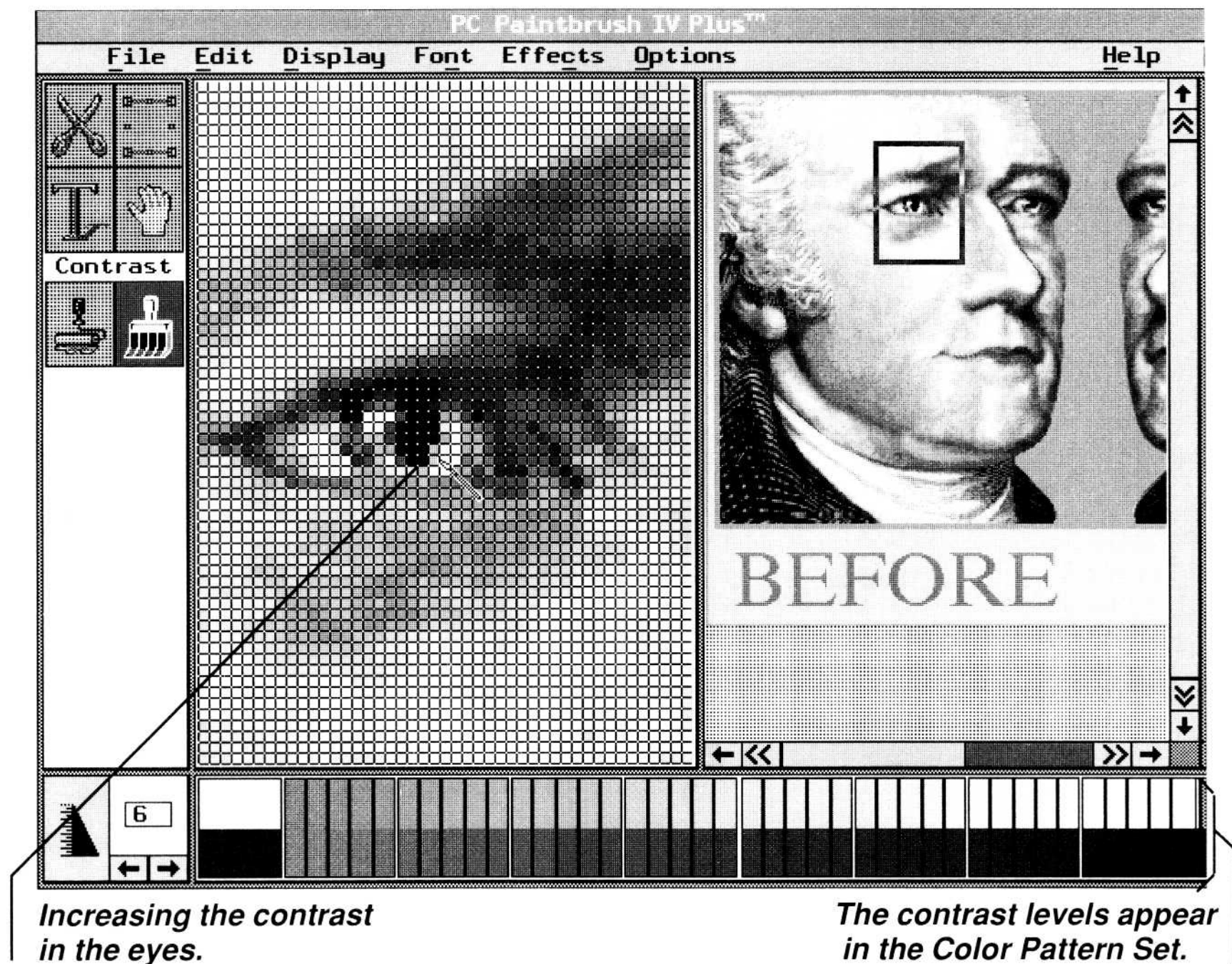
The Toolbox shows only those tools available while Contrast is turned on, and the Color Pattern Set shows the levels of contrast available.

- 4 Choose the Paintbrush.
- 5 Set the Paintbrush width to 6.
- 6 Choose a high level of contrast.

The higher the level of contrast you use, the greater distinction there is between light and dark pixels.

The group of contrast levels on the right side of the Color Pattern Set offers the highest levels of contrast.

- 7 Point to the bottom of the eye.



- 8 Drag the Paintbrush across the eye.

The levels of contrast you paint with are relative to the colors in your picture when you chose the Paintbrush, not the colors you've painted using Contrast.

If you are not satisfied with the level of contrast, choose another level and drag again.

- 9 Use the same level of contrast for the right eye and the mouth.
- 10 Choose Display Zoom Out to return to the regular editing screen layout.
- 11 Choose Effects Standard.

Adding Color to a Gray Scale Palette

Now you're ready to change one of the grays in your Color Pattern Set to green, and then use the new color to fill the letters at the bottom of your picture.

First, you'll replace a gray with a similar color so that you do not introduce green into Hamilton's face, then you'll change the gray you removed from your picture to green, and finally you'll add the color to the text.

To replace one gray with another:

- 1 Choose Display Solid Colors Only to display only solid colors in your Color Pattern Set.

Decide which two grays you want to work with. The grays should be as similar as possible. For example, two light grays.

- 2 Click the left mouse button on the gray in the Color Pattern Set that you want to change.

This will be the color you remove from your picture. For example, click the left mouse button on the darker of the two light grays.

- 3 Click the right mouse button on the gray in the Color Pattern Set you want to use as the replacement color. For example, the lighter gray.

- 4 Double-click the Color Eraser.

The secondary color (the light gray) replaces the primary color (the darker gray) throughout your picture.

To change a color:

- 1 Choose Options Set Palette.

The Set Palette dialog box appears.

You will change the color of the currently selected primary color - the gray you removed from your picture.

- 2 Use the scroll bars to change the selected gray to green.
- 3 Click OK.

Dark green replaces the gray in your Color Pattern Set.

The colors in the Toolbox or menus may also change colors if the color you've chosen to adjust is also used there.

To change the gray text to green:

- 1 Choose the Eyedropper.
- 2 Move the pointer inside of the text.
- 3 Click the left mouse button.

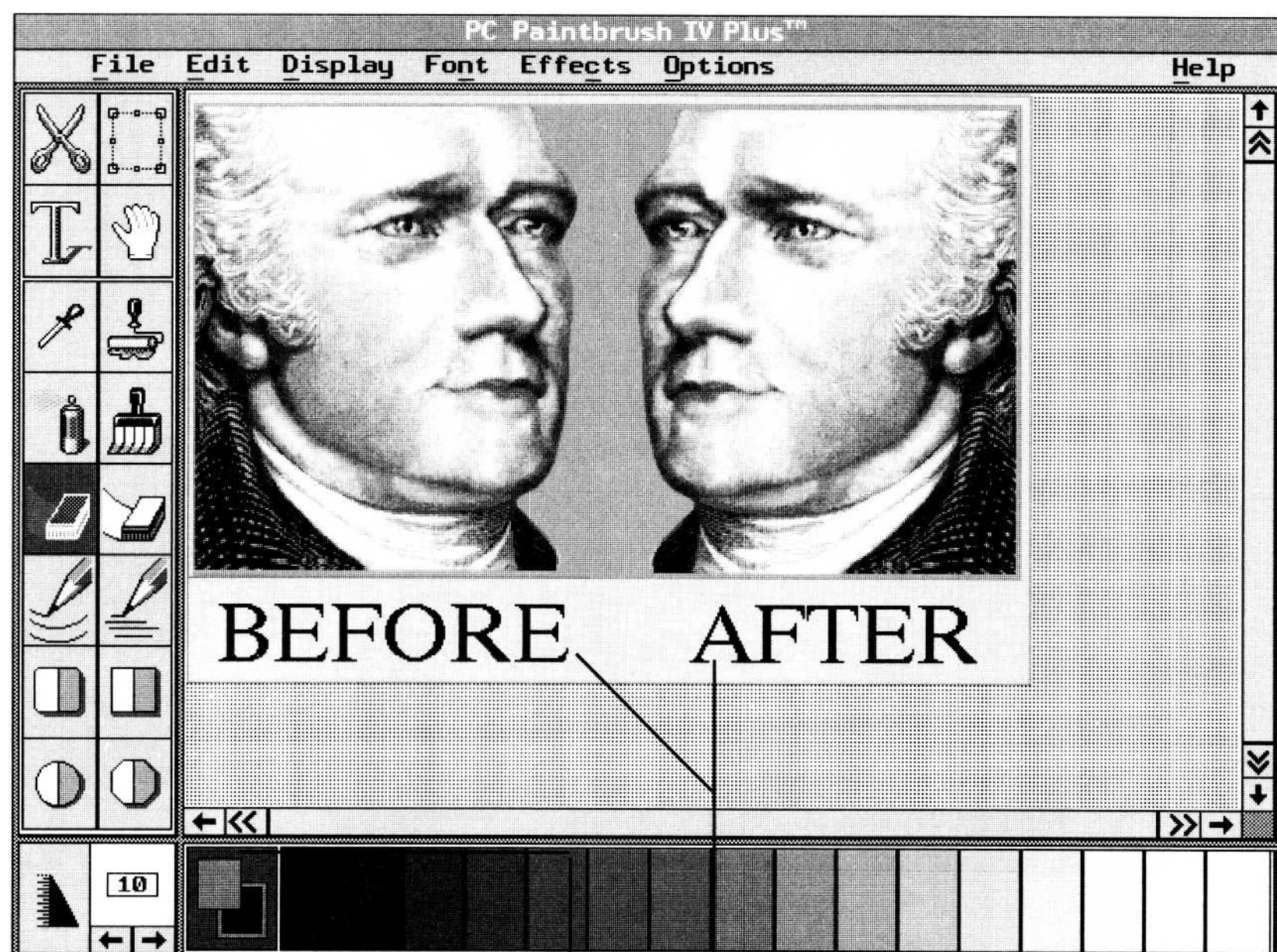
The gray inside the text is now selected as your primary color.

- 4 Choose the Color Eraser.
- 5 Click the right mouse button on the dark green in your Color Pattern Set.

The green is now selected as the secondary color, the replacement color used by the Color Eraser.

- 6 Change the width of the Color Eraser to about 10.
- 7 Drag the Color Eraser over the text.

The text turns to dark green.



Use the Eyedropper tool to select the color inside of the text.

Use the Color Eraser tool to replace one color with another.

Scanning Tutorial

This tutorial takes you through a sample scanning session to acquaint you with the scanning features. If you want to try scanning on your own, you can use the “Scanning Menus” section of this manual as a reference.

Before you begin this tutorial make certain that:

- Your scanner is properly installed.
- PC Paintbrush IV Plus is installed and is running.
- This page is ready for scanning.

The picture below is for the purposes of this tutorial.



Changing Scanner Settings

You select scanner settings based upon the type of image you are scanning and how you want the scanned picture to look. For example if you have a color picture, you can set your scanner to gray scale or color (if your scanner has the ability), you can use halftone patterns, or create a high contrast black-and-white image.

In this tutorial you will scan the example picture in black-and-white, first changing some of the scanning settings.

To begin:

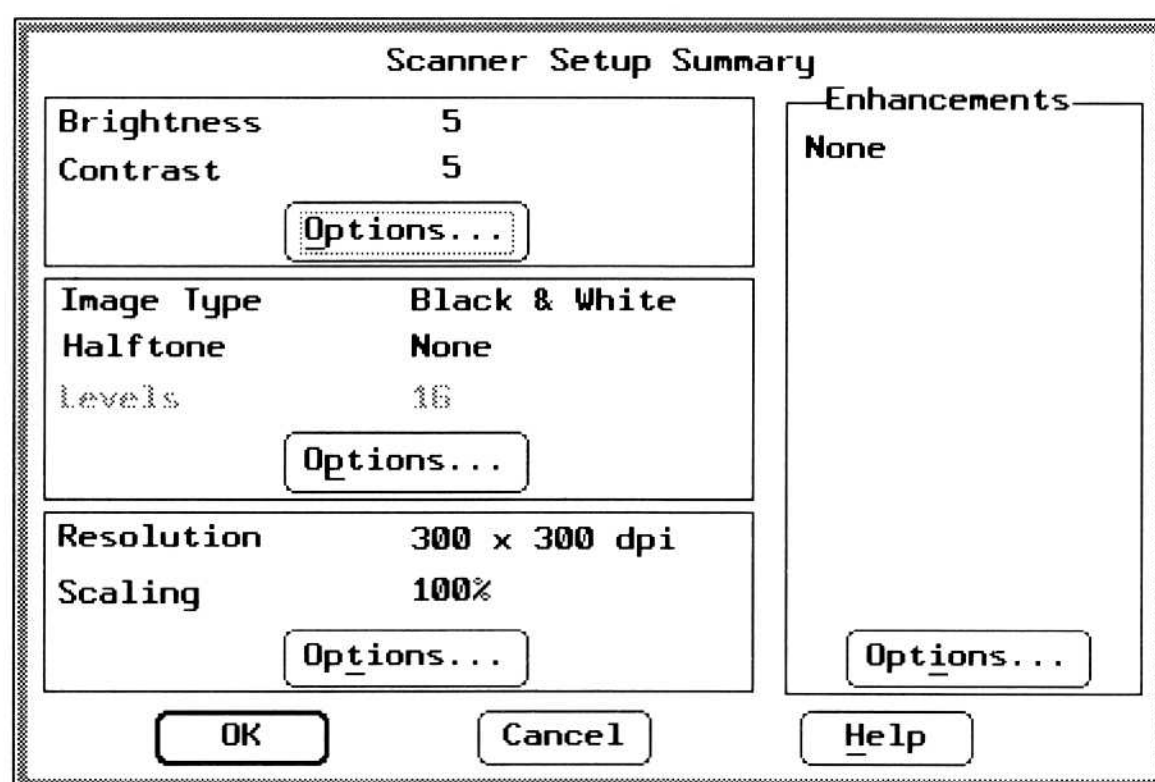
- 1 Remove the previous page from the manual and place the page on your scanner.
- 2 Choose File Scan Image if you're in the editing portion of PC Paintbrush.

The menus across the top of your screen change and the Toolbox and Color Pattern Set are removed from your screen.

Viewing and Choosing Settings

You use the Scan Option Summary command to see some of the current scanner settings. The Options buttons in this dialog box are a handy way to change the current settings. Simply click the Option button for the setting you want to change and that dialog box appears on your screen.

Once you make the changes you want, click OK, and the Option Summary dialog box reappears showing the new settings.



Click an Options button to change the corresponding setting.

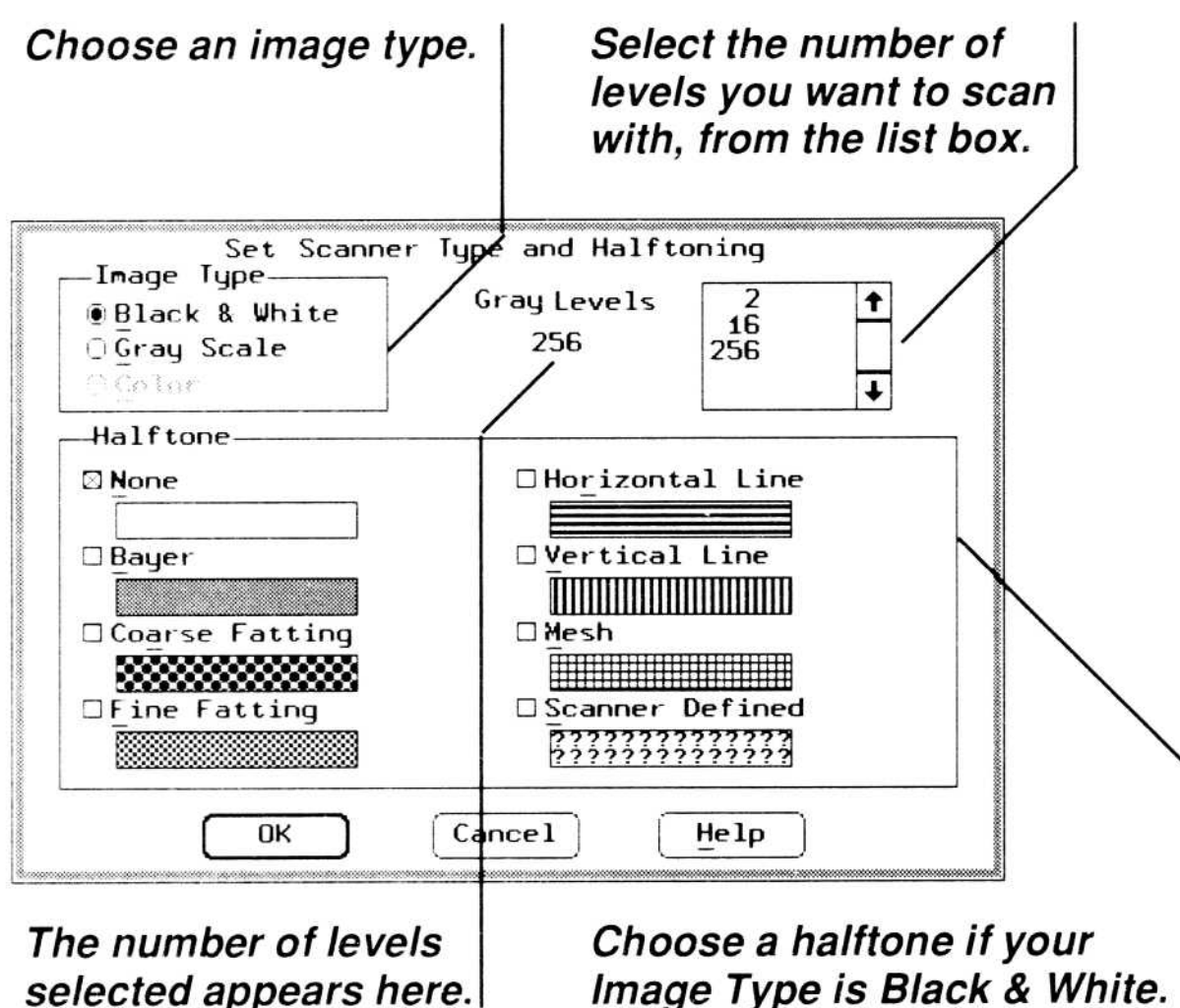
To set the image type for the car:

- 1 Choose Scan Options Summary.

The Scanner Setup Summary dialog box appears.

- 2 Click the Image Type Options button.

The Set Image Type and Halftoning dialog box appears.



- 3 Change the Image Type to Black & White.

Choose Bayer as the halftone pattern.

Only halftone patterns available to your scanner appear in the Image Type box, or unavailable patterns are dimmed.

See the Set Image Type and Halftone command in the “PC Paintbrush IV Plus Menus” section of this manual for more about halftone patterns.

- 4 Click OK.

The Scanner Setup Summary dialog box reappears with the new settings.

To set brightness and contrast:

- 1 Click the Options button for Brightness & Contrast.

The Adjust Scanner Brightness and Contrast dialog box appears.

- 2 Change the brightness by either moving the scroll bar or by typing a number in the Brightness box - toggle *off* Auto.

Change the contrast setting the same way you changed the brightness setting. If your scanner only has 1 brightness or contrast setting, you cannot adjust brightness.

- 3 Click OK to see the new settings in the Scanner Setup Summary dialog box.

To set resolution and scaling:

- 1 Click the Resolution & Scaling Options button.

The Set Resolution and Scaling Factor dialog box appears.

- 2 Change the resolution to 300 x 300.

You can move the scroll bar or type a number in the resolution box.

- 3 Click the Scaling 100% button.

- 4 Click OK.

The Scanner Setup Summary dialog box appears showing the new settings.

To choose enhancements:

- 1 Click the Enhancements Options button.

The Set Scanning Enhancements dialog box appears.

- 2 Choose Border Erase if it is available to your scanner.

Border Erase adds a white margin, eliminating dark edges.

- 3 Choose OK.

The Scanner Setup Summary dialog box appears showing the new settings.

To save the new settings and scan the picture:

- 1 Make certain the settings in the Options Summary dialog box are the ones you want.

- 2 Choose OK.

The Select Scan Area dialog box appears on your screen.

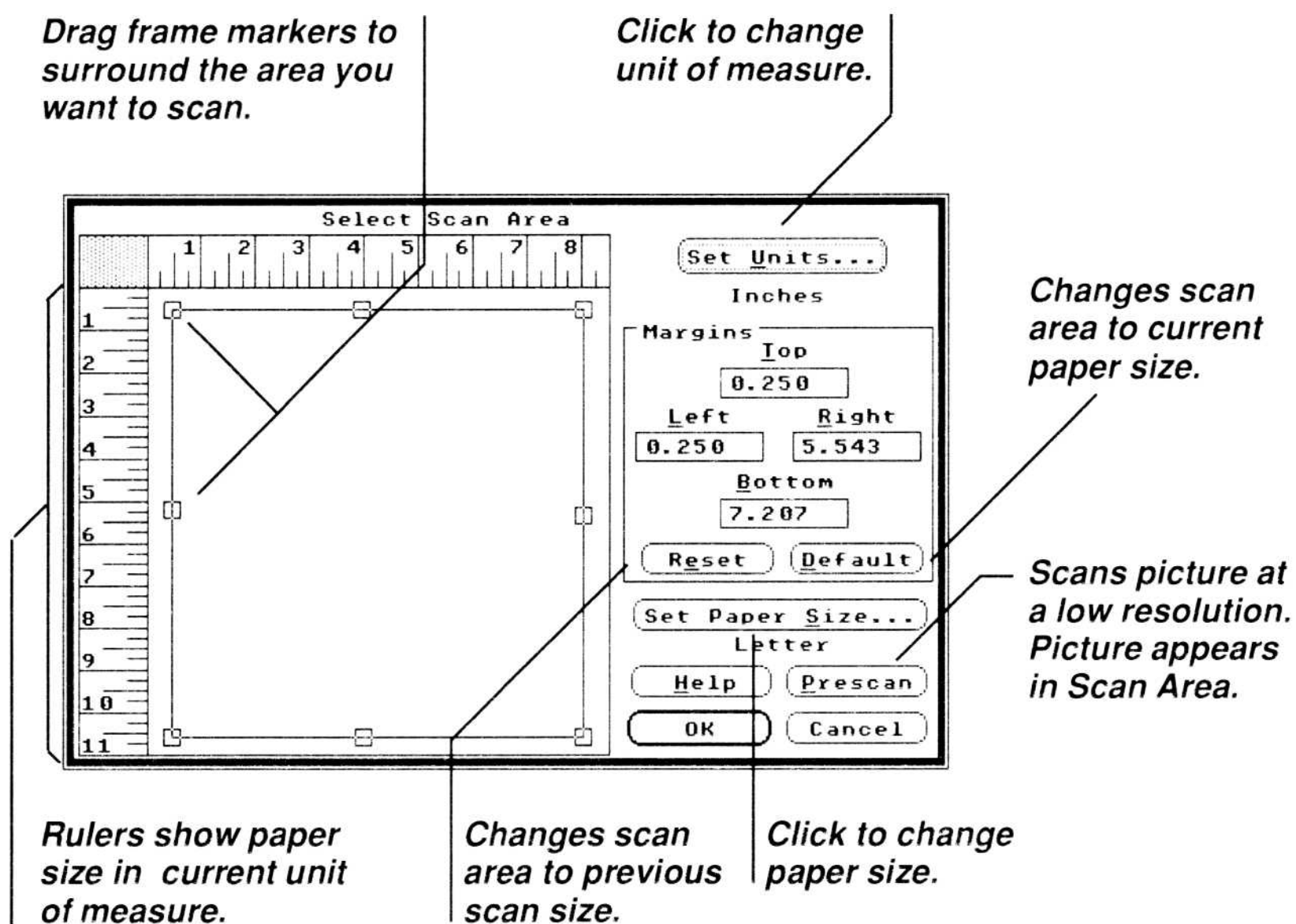
You can also choose Scan Scan to access the Select Scan Area dialog box.

Scanning an Image

The Select Scan Area dialog box shows the selected unit of measure and paper size. For this tutorial you will keep the current unit of measure and paper size. You can select a new setting by clicking the appropriate buttons.

Setting the Scan Area

It is best to scan only the portion of the page you want. You can use the Prescan button to scan the entire page at a low resolution. The image appears in the image box on the left side of the Scan Area dialog box. You use the frame markers to surround the area of the page you want to scan.



To set the scan area and scan the image:

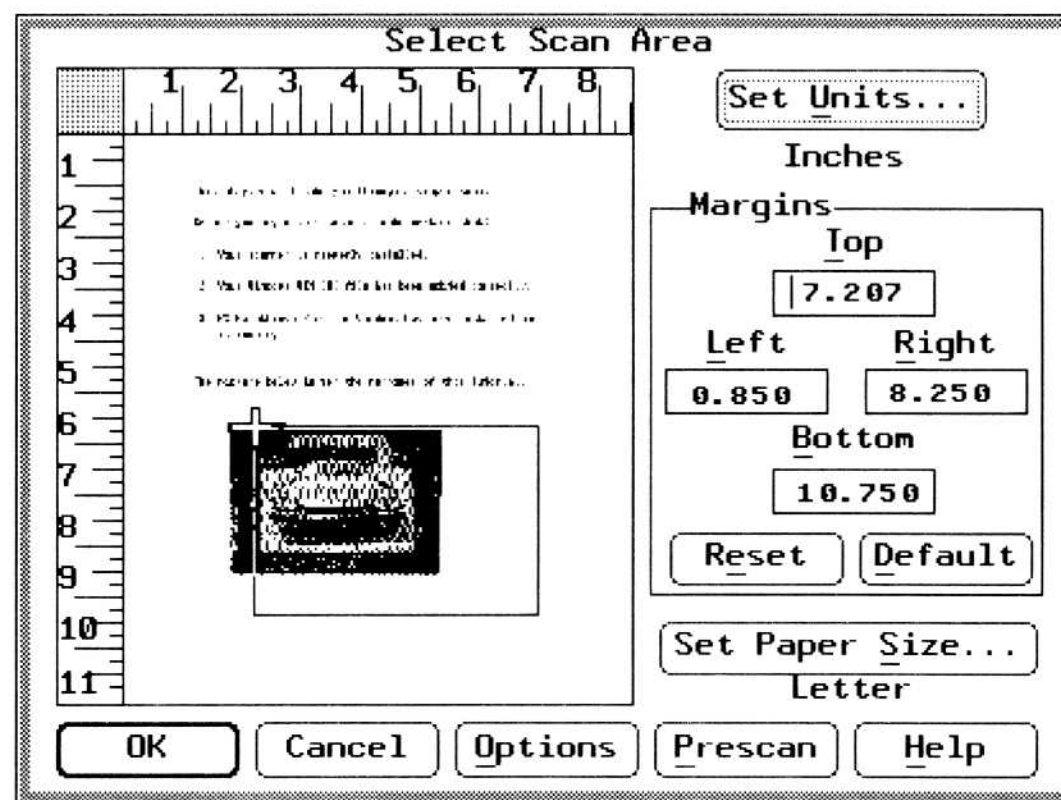
- 1 Choose Prescan.

The image is scanned at a low resolution and appears in the image box.

- 2 Drag the frame markers until only the photograph of the car is surrounded.

When your cursor is on top of a frame marker it looks like a cross, allowing you to shrink and stretch the frame.

When your cursor is a hand you can move the frame to a different location without changing dimensions of the frame.



Set the scan area for the final scan.

- 3 Click OK to start the scan.

When the scan is complete the image appears on your screen. The image may be larger than the drawing area. Use the Hand or scroll bars to move around the picture.

If you want, try scanning at different resolutions or use different halftone patterns, change the settings, then choose Scan Rescan to scan the picture again.

Saving a Configuration File

Now you can save your settings in a configuration file so you can use them again. PC Paintbrush IV Plus saves configuration files with a .CNF extension on the filename.

To save the current scanning settings in a configuration file:

- 1 Choose the File Save Configuration As command.
The Save Configuration to Disk dialog box appears.
- 2 Name this file TUTORIAL.CNF.
- 3 Choose Save.

The name of the configuration file appears at the top of your screen.

Editing a Scanned Image

Once you're satisfied with the scan, choose File Edit Image to return to standard PC Paintbrush IV Plus editing mode. The scanned image appears in the drawing area.

In the editing mode you can save the scanned picture and use all the PC Paintbrush tools and menu options to edit the scanned image.

For information about editing a picture try the tutorial lessons earlier in this chapter and see "Editing Menus" in the PC Paintbrush IV Plus Menus chapter.

To edit the scanned image, choose File Edit Image.

PC Paintbrush IV Plus Menus

This chapter explains each of the menus and commands in PC Paintbrush IV Plus, listed in the order they are found on the screen. The menus used to edit a picture are listed first, followed by the menus used to set scanning preferences and to scan an image.

To understand all of the capabilities of PC Paintbrush IV Plus, you should use this chapter along with the explanations of the Toolbox in “Getting Started”.

A quick reference table showing all the menus and commands follows this introduction.

```

graph TD
    FileMenu[File] --> FileItems["New...  
Open...  
Save ^S  
Save As...  
Print...  
Scan Image ^G  
Open Workspace...  
Save Workspace...  
Exit ^X"]
    EditMenu[Edit] --> EditItems["Undo ^U  
Local Undo ^L  
Cut  
Copy  
Paste  
Copy To...  
Paste From...  
Invert  
Outline  
Filter...  
Change Entire Image..."]
    DisplayMenu[Display] --> DisplayItems["Zoom In ^Z  
Zoom Out ^O  
Set Zoom...  
Show Screen...  
Alternate Layout ^A  
Set Screen Layout...  
Solid Colors Only"]
    FontMenu[Font] --> FontItems["1. Roman (Otl)  
2. Helv6 (Bit)  
3. Helv8 (Bit)  
4. Cour10 (Bit)  
Select Font File...  
Set Gradient...  
Set Shadow...  
Set Type Specs...  
Set Type Style..."]
    EffectsMenu[Effects] --> EffectsItems["Standard  
Blend  
Brightness  
Contrast  
Gradient  
Smudge  
Tile Pattern  
Tint"]
    HelpMenu[Help] --> HelpItems["Help Topics... F1  
Short Cuts...  
Context Sensitive Help  
Information Line  
Statistics...  
About..."]
    OptionsMenu[Options] --> OptionsItems["Set Aspect...  
Set Brush Shape...  
Set Color Pattern...  
Set Entire Palette...  
Set Gradient...  
Set Halftone...  
Set Line Width...  
Set Palette...  
Set Tile Pattern...  
Set Units...  
Get Palette...  
Save Palette..."]
  
```

The diagram illustrates the menu structure of a software application. The menu bar includes File, Edit, Display, Font, Effects, and Help. Each menu is expanded to show its contents and keyboard shortcuts.

- File**
 - New...
 - Open...
 - Save ^S
 - Save As...
 - Print...
 - Scan Image ^G
 - Open Workspace...
 - Save Workspace...
 - Exit ^X
- Edit**
 - Undo ^U
 - Local Undo ^L
 - Cut
 - Copy
 - Paste
 - Copy To...
 - Paste From...
 - Invert
 - Outline
 - Filter...
 - Change Entire Image...
- Display**
 - Zoom In ^Z
 - Zoom Out ^O
 - Set Zoom...
 - Show Screen...
 - Alternate Layout ^A
 - Set Screen Layout...
 - Solid Colors Only
- Font**
 - 1. Roman (Otl)
 - 2. Helv6 (Bit)
 - 3. Helv8 (Bit)
 - 4. Cour10 (Bit)
 - Select Font File...
 - Set Gradient...
 - Set Shadow...
 - Set Type Specs...
 - Set Type Style...
- Effects**
 - Standard
 - Blend
 - Brightness
 - Contrast
 - Gradient
 - Smudge
 - Tile Pattern
 - Tint
- Help**
 - Help Topics... F1
 - Short Cuts...
 - Context Sensitive Help Information Line
 - Statistics...
 - About...
- Options**
 - Set Aspect...
 - Set Brush Shape...
 - Set Color Pattern...
 - Set Entire Palette...
 - Set Gradient...
 - Set Halftone...
 - Set Line Width...
 - Set Palette...
 - Set Tile Pattern...
 - Set Units...
 - Get Palette...
 - Save Palette...

```

graph TD
    File[File] --> NewConfig[New Configuration...]
    File --> OpenConfig[Open Configuration...]
    File --> SaveConfig[Save Configuration]
    File --> SaveConfigAs[Save Configuration As...]
    File --> EditImage[Edit Image]
    File --> Exit[Exit]
    
    Edit[Edit] --> Undo[Undo]
    
    Filters[Filters] --> Blend[Blend...]
    Filters --> Equalize[Equalize...]
    Filters --> Mosaic[Mosaic...]
    Filters --> RemoveSpots[Remove Spots...]
    Filters --> ResponseCurve[Response Curve...]
    Filters --> Sharpen[Sharpen...]
    
    Scan[Scan] --> OptionSummary[Option Summary...]
    Scan --> Scan[Scan...]
    Scan --> Rescan[Rescan...]
    
    Options[Options] --> SetBrightness[Set Brightness & Contrast...]
    Options --> SetEnhancements[Set Enhancements...]
    Options --> SetImageType[Set Image Type & Halftone...]
    Options --> SetPaperSize[Set Paper Size...]
    Options --> SetResolution[Set Resolution & Scaling...]
    Options --> SetUnits[Set Units...]
    Options --> SetPreferences[Set Preferences...]
  
```

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Using Keyboard Shortcuts

You can choose PC Paintbrush IV Plus commands and select options either by clicking the mouse or by using shortcut keys. Each menu name and command contains one underlined letter indicating the key you should press to open the menu or choose the command using the keyboard.

To open a menu using the keyboard, hold down Alt and press the key corresponding to the underlined letter for that menu. For example, to open the File menu, you would press Alt+F.

To choose a command on a menu using the keyboard, press the key corresponding to the underlined letter in that command after you open the appropriate menu. For example, to choose New from the File menu (File New), you would press Alt+F to open the menu, and then press N to choose the New command.

You can also use the keyboard to select some options in dialog boxes. The names of these options contain one underlined letter indicating the key you should press to select the option. For example, in the Set Line Width dialog box, you can press U or Alt+U to select the Set Units option.

The Editing Menus

This section explains each of the menus and commands used to edit a picture, listed in the order they are found on the screen. See “The Scanning Menus” section of this chapter for information about setting scanning preferences and scanning a picture.

The File Menu

| File | |
|-------------------|----|
| New... | |
| Open... | |
| Save | ^S |
| Save As... | |
| Print... | |
| Scan Image | ^G |
| Open Workspace... | |
| Save Workspace... | |
| Exit | ^X |

You use the commands on the File menu to create a new drawing file or open an existing one, save and print files, access the scanning mode to select settings and activate your scanner, and exit the PC Paintbrush IV Plus program.

You can work with three kinds of files: .PCX, .TIF, and .TIF uncompressed files. PC Paintbrush normally saves files with a .PCX extension attached to the filename. You can use these standard PC Paintbrush .PCX files with word processing programs such as Microsoft Word (version 5.0), PageMaker, Ventura Publisher, and other programs that can read .PCX files.

PC Paintbrush can also work with normal and uncompressed TIFF files. PC Paintbrush saves both types of TIFF files with a .TIF extension attached to the filename. Because there are many TIFF “formats”, you may find some programs cannot read some PC Paintbrush IV Plus .TIF files. Similarly, PC Paintbrush IV Plus cannot read all .TIF files. Black-and-white images and 8 bit gray scale images are the most standardized and usually work well with other programs such as Aldus PageMaker. For more about TIFF file compatibility, see TIFFDUMP in the Reference section of this manual.

To tell PC Paintbrush which type of file you want to save, select the appropriate option in the dialog box that appears when you choose File Save As.

New

You use the New command to create a new drawing or clear the drawing area to the background color. When you choose New, the Create a New Picture dialog box appears. It lets you specify the size of the drawing area and select units of measure and the number of colors PC Paintbrush displays on your screen. The New dialog box also shows you how much memory PC Paintbrush requires to begin the new drawing. Each option in the New dialog box is described below.

Width and Height: Type numbers in the width and height boxes to specify the size of the drawing on the screen. The numbers you enter here do not necessarily determine the final size of the drawing when you print it. You should use the Options Set Aspect command to tell PC Paintbrush if you want the drawing's aspect ratio (the ratio between the drawing's width and height) on screen to match its printed aspect ratio. Choose File Print to set the size of the drawing when it's printed.

For the best quality when you print, create a drawing with the same dimensions you want the printed image to have. You can change the print size in the Print dialog box, but the drawing may be distorted.

Set Units: Click Set Units to select the unit of measure PC Paintbrush uses in your drawing. PC Paintbrush lets you select inches, centimeters, points, picas, or pixels. As soon as you select a new unit of measure, those units appear in the Width and Height boxes in the New dialog box.

Number of Colors: Select the 2-color option if you want only black and white tones in your drawing. Select the other option for a full-color screen. Selecting the 2-color option can save memory if PC Paintbrush shows a message saying it does not have enough memory when you try to create a full-color drawing. The number of colors available in the color option depends on the type of display adapter you have and the particular video mode you chose in PBSETUP.

Memory Required: PC Paintbrush shows how much memory it needs to create a new drawing. The memory required depends on the size of the drawing and the number of colors it contains. If you reduce the size of the drawing or the number of colors it contains, the drawing will require less memory.

NOTE If you want to print a drawing, you should choose the Options Set Aspect and select the For Printer option before you start to draw. This step ensures that circles and squares will print correctly.

Open

You use the Open command to open a drawing file stored on a disk. You can open either .PCX or .TIF files. You can also load PC Paintbrush drawings saved on other computer systems. For example, if you save a PC Paintbrush drawing created on a 4-color system, you can also open it on a 16-color system running PC Paintbrush. Although the colors might not match those on the original 4-color drawing, PC Paintbrush will attempt to re-create the original image as faithfully as possible.

To open an existing file:

- 1 Choose File Open.

The Load a Picture from Disk dialog box appears.

- 2 Select either PCX or TIF, depending on the file format you want to use.

The list of filenames in the Files list box changes to show only the files having the format you've selected.

If the name of the file you want to open is not visible in the Files list box, use the scroll bar to move through the list of filenames in the directory or disk you're working in.

If the file you want to open isn't in the current directory or on the current disk, choose another directory or disk from the Directories list box. Click [..] or one of the drive designations, such as [-A-], and then choose a directory. The list of files in that directory or drive appear in the Files list box.

- 3 Double-click the name of the file you want to open.

You can also type the full name and path of the file in the Filename box. Choose Open after you have typed the name of the file.

If you load a picture with a different number of colors than the mode you are currently running, a dialog box appears. Choose the option you want.

Click the Set Halftone button to choose the halftone pattern and brightness level you want PC Paintbrush to apply when you load the picture.

Below is an example of each halftone pattern when loading a 256 color picture (ROSE.PCX) in black-and-white mode.

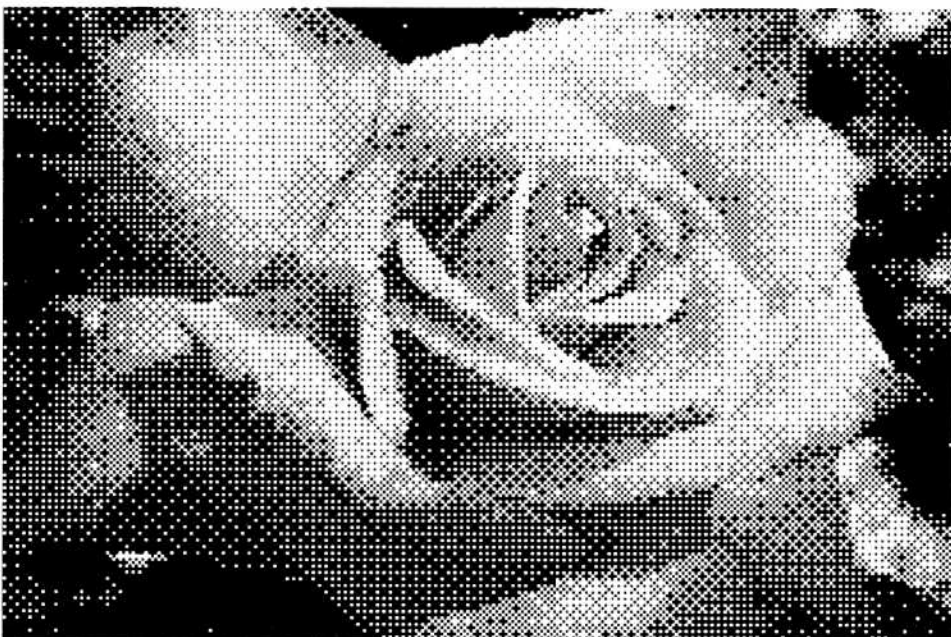
See the Options Set Halftone command, in Part Four of this manual, for more about halftone patterns and their uses.



None



Enhanced



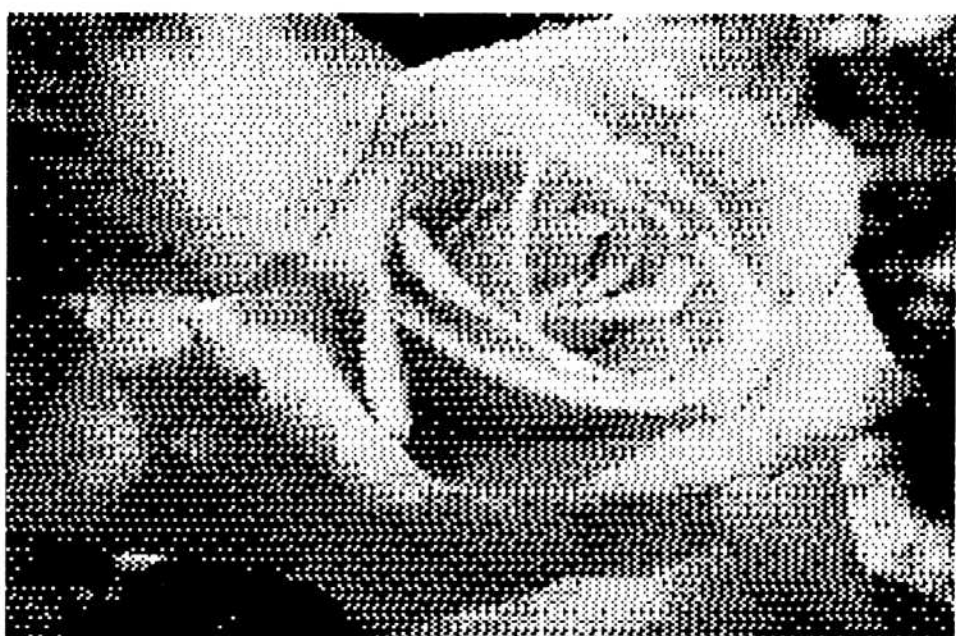
Bayer



Fattig



Diffused



Hex Bayer

Save

You use the Save command to save a drawing you previously saved to a disk, and then continue working on your drawing. You should choose File Save frequently as you work on a drawing.

If you want to save a drawing for the first time or save an existing drawing under a new name, you should choose File Save As.

To save an existing drawing:

- 1 Choose File Save.
- 2 Choose Yes to save over the existing file, or choose No if you want to cancel the command.

Save As

You use the Save As command to save a drawing for the first time or save a new version of an existing drawing without losing the original.

To save a drawing for the first time:

- 1 Choose File Save As.
The Save a Picture to Disk dialog box appears.
- 2 Select PCX, TIF, or TIF Uncompressed, depending on the file format you want to use.
- 3 Select the directory or disk you want to save the file to, from the Directories list box.
The name of the current directory is displayed below the Filename box.
- 4 Type a name for the file in the Filename box.
You can include a drive or a pathname for the file.
- 5 Choose Save to save the file.

Print

You use the Print command to print a PC Paintbrush IV Plus drawing. By selecting the appropriate options, you can control the size and shape of the printed drawing, specify how many copies to print, change the printing quality, and select the halftone method used to print color pictures on a black-and-white printer. You can also choose to print a color picture using a color separations process.

Before you print a PC Paintbrush drawing, you should be sure PC Paintbrush supports your printer and that you have installed the printer correctly. "Supported Printers" in the Reference chapter of this manual lists the printers that PC

Paintbrush IV Plus can work with.

To make sure a drawing is printed in the best height-to-width ratio, choose Options Set Aspect and select For Printer **before** creating your drawing. With the For Printer option selected, the drawing tools create circles and squares with the correct proportions, even though the drawing may appear elongated on the screen.

Top Margin/Left Margin: Type numbers in the Top Margin and Left Margin boxes to specify the amount of white space to appear around the printed drawing. Keep in mind which units of measure you are using when you specify the top and left margins.

Set Units: Click Set Units to select the unit of measure for the drawing. PC Paintbrush lets you select inches, centimeters, points, picas, or pixels. When you select a new unit of measure, that unit appears in the Top Margin, Left Margin, Print Width, and Print Height boxes.

Print Width/Print Height: Type numbers in the Print Width and Print Height boxes to change the drawing size. These numbers represent the size at which the drawing will be printed, not its size on screen.

To print the drawing at the same size it appears on screen, measure your screen using a ruler and then set the width and height at those measurements.

Number of Copies: Type a number in this box to tell PC Paintbrush how many copies of the drawing to print. You can specify any number from 1 to 99.

Quality: Select either draft or proof quality, depending on how quickly you want your drawing to be printed and the level of quality you need. Draft quality will print your drawing faster, but the image may appear coarse or blocky.

Print Proportional: Turn on this option if you want to maintain a specific ratio between the width and height of your drawing. If the Print Proportional option is turned on (a check mark is in the box), PC Paintbrush will automatically adjust the dimensions of your printed drawing to guarantee that the height and width are in the same proportion as in the original image.

Print Color Seps: Turn on this option to tell PC Paintbrush to print individual pages of single colors that make up your picture. These pages are overlays used by printers to print a color picture. Choose Set Color Seps to change the options used by PC Paintbrush when printing color separations. This option is available when you have a color picture you want to use with a black-and-white printer.

Set Halftones: Click Set Halftones to select halftone options when your picture is gray scale or color and you are using a black-and-white printer. You can select a halftone pattern, the screen size, and the brightness for the printed picture. See Options Set Halftone command for more information about these settings.

Set Color Seps: Click Set Color Seps to change the color separations options. In the Color Separations box, choose the number of colors you want separated. Turn

on Print Registration Marks if you want marks that allow you to align the color separations. Turn on Print Separation Names if you want the name of the color printed on the page. Most print shops need registration marks and color names.

Scan Image

You use the Scan Image command to set scanning preferences and scan a picture.

When you choose File Scan Image the menus change and the Toolbox and Color Pattern Set are removed from the screen.

See the “Scanning Menus” section of this chapter and the scanning lesson in the previous chapter for information about scanning a picture.

Open Workspace

You use the Open Workspace command to recall many PC Paintbrush IV Plus editing settings that you saved at the end of a previous drawing session by selecting File Save Workspace. The editing settings are stored in a workspace file, which has an .INI extension. You can use File Open Workspace to begin the next drawing session where you left off, without having to re-specify many PC Paintbrush editing settings such as aspect ratio, print size, and screen layout.

If you do not choose File Open Workspace, PC Paintbrush will start with its built-in settings, which are set when you install PC Paintbrush IV Plus on your computer. These settings are stored in the file PBRUSH.INI. (Scanning settings are stored configuration files with a .CNF extension.)

When you choose File Open Workspace, PC Paintbrush automatically recalls the following features:

| | | |
|---------------------------|-------------------------------|-------------------------------------|
| Screen layout | Zoom In and Zoom Out settings | Brush shape |
| Cutout file directory | Font directory, size, style | Unit of measure |
| Color Model (RGB or HLS) | Line width | Aspect ratio |
| Palette file | Image type (PCX or TIF) | Effects (set with Effects commands) |
| Active font names | Currently selected font | Color Pattern Set |
| Printing Halftone options | | |

PC Paintbrush also recalls the name and path of a Tile Pattern file if you have used the Options Set Tile Pattern command.

To recall PC Paintbrush settings stored in a workspace file:

- 1 Choose File Open Workspace.

The Open Workspace from Disk dialog box appears.

- 2 From the Files list box, double-click the name of the workspace file you want to open.

If the workspace file you want to open is not visible in the Files list box, use the scroll bar to move through the list of files in the current directory.

If the workspace file you want to open isn't in the current directory or on the current disk, choose another directory or disk from the Directories list box. Click [...] or one of the drive designations, such as [-A-], and then choose a directory. The list of files in that directory or drive appear in the Files list box.

You can also type the full pathname of the workspace file in the Filename box. Choose Open after you have typed the name of the workspace file.

Save Workspace

You use the Save Workspace command to save many PC Paintbrush editing settings for use during a future drawing session. You recall these settings by choosing File Open Workspace. See the Open Workspace topic to determine which settings PC Paintbrush IV Plus saves.

PC Paintbrush saves the editing settings in a workspace file. Workspace files have an .INI extension. Scanning settings are saved in configuration files. Configuration files have a .CNF extension.

To save PC Paintbrush settings in a workspace file:

- 1 Choose File Save Workspace.
The Save a Workspace to Disk dialog box appears.
- 2 Type the name you want to give the workspace file in the Filename box.
Remember that workspace files must have an .INI extension.
- 3 Choose Save.

Exit

You use the Exit command to quit the PC Paintbrush IV Plus program and return to DOS. To quit PC Paintbrush IV Plus, choose File Exit.

If you have changed your drawing since the last time you saved it, a dialog box appears asking if you want to save your changes before you exit PC Paintbrush. Choose Yes to save the changes before exiting; choose No if you don't want to save the changes. Choose Cancel if you want to continue working.

The Edit Menu

| Edit | |
|---|----|
| U <u>ndo</u> | ^U |
| L <u>ocal Undo</u> | ^L |
| C <u>ut</u> | |
| C <u>opy</u> | |
| P <u>aste</u> | |
| C <u>opy To...</u> | |
| P <u>aste From...</u> | |
| I <u>nv</u> ert | |
| O <u>u</u> tline | |
| F <u>i</u> lter... | |
| C <u>h</u> ange <u>E</u> ntire Image... | |

You use the commands on the Edit menu to change your entire drawing or a defined area of your picture, correct mistakes, and copy or cut out part of a drawing for use with another program.

Undo

You use the Undo command to correct mistakes by canceling changes you have made to a drawing. Undo can cancel all changes you've made since the last time you chose a tool from the Toolbox. When you choose Edit Undo after using the Text, Scissors, and Gadget Box tools, PC Paintbrush cancels all changes made since you last pasted part of the image into the drawing area.

For example, if you draw a box using the Hollow Box tool and then use the Paint Roller tool to fill it with a color, Undo can remove the color from the box.

However, Undo cannot remove the box from the drawing, because after drawing the box, you chose the Paint Roller tool.

To cancel changes before you switch tools, choose Edit Undo.

Local Undo

You use the Local Undo command to erase some of the changes you have made to your drawing since the last time you changed tools. Local Undo works like an eraser that affects only the last "layer" of your drawing. You can use Local Undo to touch up new details before you switch tools.

For example, suppose you have drawn a box with the Hollow Box tool, filled it in with the Paint Roller, and then added details inside the box with the Paintbrush tool. Local Undo lets you erase some or all of the details you added with the Paintbrush without affecting the borders of the box or the color inside.

Remember that Local Undo can only erase changes made with the currently selected tool. As soon as you switch tools, reselect the same tool, or use the scroll bars the changes can no longer be erased.

To erase some changes before you switch tools:

- 1 Choose Edit Local Undo.

The pointer turns into an eraser with an “X” inside. You can adjust the size of the eraser by using the Width Box or the Options Set Line Width command.

- 2 Drag the pointer over the parts of the drawing you want to erase.

The eraser removes only those parts of the drawing you added with the last tool you selected.

- 3 Choose Edit Local Undo to resume drawing with the last tool you chose.

NOTE Local Undo is very useful for restricting your edits to an object. For example, if you draw a box around a foreground object and then lighten it with Effects Brightness, you can then use Edit Local Undo to remove the “brightened” background.

Cut

You use the Cut command to delete parts of a drawing which you have defined with the Scissors or Gadget Box tool. Remember that Cut removes part of the drawing and stores it on the PC Paintbrush IV Plus clipboard. If you want to copy part of your drawing, you should choose Edit Copy.

To cut part of your drawing:

- 1 Choose the Scissors or Gadget Box tool.
- 2 Use the Scissors or Gadget Box to define the area you want to cut.
- 3 Choose Edit Cut.

The image is removed to the PC Paintbrush IV Plus clipboard.

Copy

You use the Copy command to copy parts of a drawing which you have defined with the Scissors or Gadget Box tool to another drawing. (You can use the Gadget Box to copy parts of a drawing quickly to another area of the same drawing). You use the Copy command together with the Paste command to make a copy.

To copy part of your drawing:

- 1 Choose the Scissors or Gadget Box tool.
- 2 Use the Scissors or Gadget Box to define the area you want to copy.
- 3 Choose Edit Copy.

The image is copied to the PC Paintbrush IV Plus clipboard.

- 4 Choose Edit Paste to insert the copy.

Paste

You use the Paste command to insert a portion of a PC Paintbrush drawing you've cut or copied to the PC Paintbrush clipboard. (You can use the Gadget Box to copy parts of a drawing quickly to another area of the same drawing.)

To paste a part of a drawing from the clipboard:

- 1 Cut or copy part of your drawing to the clipboard.
- 2 Choose Edit Paste.

The area you saved to the clipboard appears on the screen, enclosed by the Gadget Box.

- 3 Drag the Gadget Box to where you want to paste the cutout.
- 4 Release the mouse button.

You can move the cutout until you click outside the Gadget Box or choose another tool.

Copy To

You use the Copy To command to copy a portion of your drawing to a separate file. You can use this feature to build a library of clip art that you can paste into other PC Paintbrush drawings or use with other applications.

NOTE PC Paintbrush files can be saved in three forms. Standard PC Paintbrush files are saved with a .PCX extension. You can also save PC Paintbrush files in .TIF or .TIF Uncompressed format for use with programs such as Ventura Publisher and Aldus PageMaker (Ventura Publisher and PageMaker cannot use compressed .TIF files). For more information about .PCX and .TIF files, see the explanation of the New and Save As commands in the File topic, earlier in this chapter.

To save part of your drawing to a separate file:

- 1 Define the area you want to copy with the Scissors or the Gadget Box.
- 2 Choose Edit Copy To.
The Copy a Picture to Disk dialog box appears.
- 3 Select a file format from the Image Format box.
- 4 Type a filename in the Filename box.
You can include a path for the filename.
- 5 Click Copy to complete the command.

Paste From

You use the Paste From command to paste a .PCX or .TIF image from a disk into the PC Paintbrush IV Plus drawing area.

If you are pasting a picture with a different number of colors than the mode you are currently running, use the Options Set Halftone command to choose the halftone pattern and brightness level you want **before** you paste the picture. See File Open and Options Set Halftone for more.

To paste an image from a disk into the drawing area:

- 1 Choose Edit Paste From.
The Paste a Picture from Disk dialog box appears.
- 2 Select a file format from the Image Format box.
- 3 Double-click the name of the file in the Files list box, containing the image you want to add to the drawing area.
The image, enclosed in the Gadget Box, appears in the drawing area.

Invert

You use the Invert command to reverse colors in the area on screen that you have enclosed with the Scissors or the Gadget Box. After you choose Invert, light areas appear dark, and dark areas appear light. Colors are reversed as if on a photographic negative. For example, red becomes cyan.

To invert the colors in an area:

- 1 Enclose the area you want to invert with the Scissors or the Gadget Box.
- 2 Choose Edit Invert.

Outline

You use the Outline command to outline an area of your drawing so that only outlines of shapes appear on the screen. After you choose Edit Outline, only the traced edges of your drawing remain. Everything else within the Gadget Box is the background color.

To outline your drawing:

- 1 Enclose the area you want to outline with the Scissors or the Gadget Box.
- 2 Choose Edit Outline.

Filter

You use the Filter command to apply a filter to an area you define with the Gadget Box. Use the commands on the Filters menu in the scanning mode to apply a filter to the entire picture.

You should keep the following in mind when using the filters:

- In general, the effects the filters produce work best when you are using 256 colors or at least 16 levels of gray.
- PC Paintbrush provides default filter settings for optimum results and speed. In 256 color mode you will notice a substantial decrease in speed when you use most of the filters. Blend and Sharpen are the slowest. Mosaic and Equalize are almost as slow.
- You can repeatedly choose a filter or apply several filters to a defined area to alter the effect.
- Undo cancels everything you've done since you defined the area with the Gadget Box.
- You will lose your filtering effects if you use the handles on the Gadget Box. Instead, redefine the area and then use the filters, or paste the effects and then redefine the area you want to manipulate.
- You can run out of memory if the area you apply filters to is too wide.

To apply filters to a defined area:

- 1 Define the area you want to alter, with the Gadget Box tool or Scissors tool.
See the Gadget Box and Scissors tools in the "Getting Started" section of your manual for information about defining areas.
- 2 Choose Edit Filter.
A list of options appears.

- 3 Select the filter you want.
Choose Blend to smooth the colors in the defined area.
Choose Equalize to redistribute the gray shades.
Choose Mosaic to create a blocklike effect.
Choose Remove Spots to erase spots and blotches.
Choose Response Curve to adjust the brightness, contrast, and colors without changing your palette.
Choose Sharpen to increase the contrast between the dark and light colors.
See the Scanning Mode, Filters menu for an explanation and example of each filter.
- 4 If you want to change the settings of the selected filter choose Options and make the changes.
- 5 Choose OK.
The defined area is changed.

Change Entire Image

You use the Change Entire Image command to flip, rotate, or change the size of your entire picture.

To change your picture:

- 1 Choose Edit Change Entire Image.
The Change Entire Image dialog box appears on the screen.
- 2 Click Set Units to change the unit of measure.
- 3 Choose the options you want.
Flip Horizontal flips the entire picture on a horizontal axis. The right side of your picture becomes the left side, like a mirror image.
Flip Vertical flips the entire picture on a vertical axis. The picture is upside down.
The buttons in the rotate box rotate your image clockwise by the degrees you choose.
If you want to increase or decrease the size of your picture type new sizes in the Width and Height boxes. Select the Proportional option to keep the same height and width ratio as the original picture.
- 4 Choose OK to complete the command.

The Display Menu

| Display | |
|------------------------------|------|
| Zoom <u>I</u> n | ^Z |
| Zoom <u>O</u> t | ^O |
| Set <u>Z</u> oom... | |
| <hr/> | |
| <u>S</u> how Screen... | |
| <u>A</u> lternate Layout | ^A |
| Set Screen <u>L</u> ayout... | |
| <hr/> | |
| Solid <u>C</u> olors | Only |

You use the commands on the Display menu to control how your drawing appears on screen. You can zoom in to see and edit the fine details of your drawing, zoom out to shrink a large drawing and display it on one screen, remove the Toolbox and Color Pattern Set to increase the drawing area, and change the colors and patterns available. While you are zoomed in on a drawing, you can move around the drawing area by dragging the box in the unzoomed window or using the scroll bars.

Zoom In

You use the Zoom In command to magnify a drawing. It shows you a small part of the drawing area so you can edit the fine details of a drawing dot by dot.

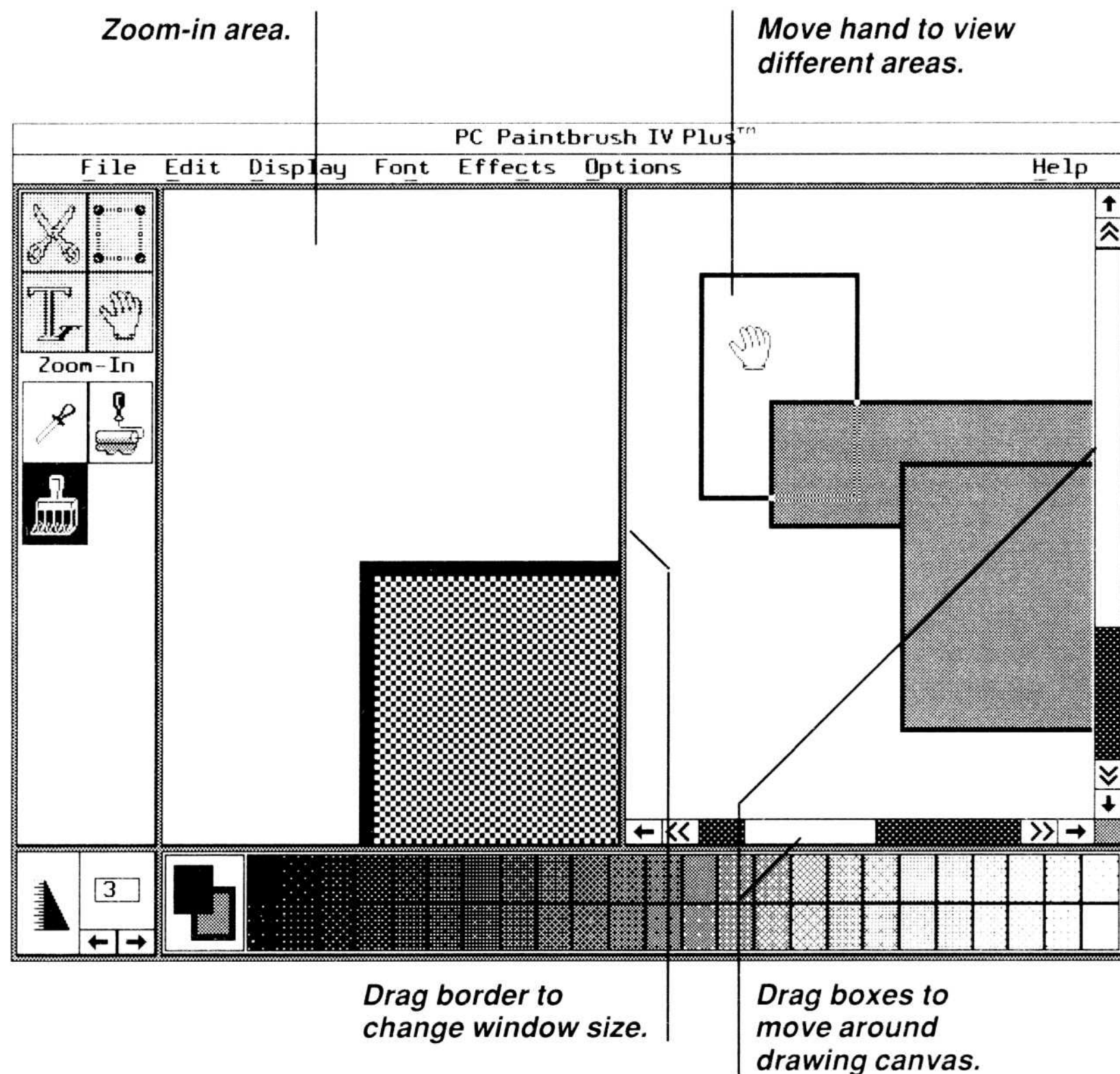
You use the Set Zoom command to set the magnification factor and split the screen either vertically or horizontally.

To magnify a drawing, choose Display Zoom In.

The PC Paintbrush screen splits into two windows, and you can edit your drawing in the zoomed window. See “Cleaning Up the Drawing” in the first tutorial for more information.

While you are zoomed-in, you can use the Eyedropper, Paint Roller and Paintbrush tools. The Paintbrush has the current line width and brush shape. You can also use the Blend, Brightness, Contrast, Tint, and Standard commands on the effects menu.

To return to the normal display, choose Display Zoom Out.



Moving the Zoomed-In Window

You can use the Hand or the scroll bar to move around your drawing in the unzoomed window. You move the box in the unzoomed window to change the portion of your drawing in the zoomed window.

Changing the Size of the Zoomed-In Window

- 1 Move the pointer to the narrow area between the windows.
When the pointer is between the windows, it is a double arrow.
- 2 Drag the pointer to where you want the new boundary to be.
- 3 Release the mouse button.

Returning to Regular PC Paintbrush Screen

Choose Display Zoom Out.

Zoom Out

You use the Zoom Out command to shrink a drawing so you can see the entire picture on screen, and to cut and paste a large cutout. Zoom Out works like Zoom In. You choose Display Set Zoom to specify the reduction factor and split the screen either vertically or horizontally.

Moving in the Zoomed-Out Window

You can use the Hand or the scroll bar to move around your drawing in the zoomed-out windows. You can use the Gadget Box to copy, cut, or move part of the zoomed-out image.

Changing the Size of the Zoomed-Out Window

- 1 Move the pointer to the narrow area between the windows.

When the pointer is at the proper place between the windows, it changes into a double arrow.

- 2 Drag the pointer to where you want the new boundary of the zoomed-out window to be.
- 3 Release the mouse button.

The screen redraws with the new window boundaries.

Returning to the Regular PC Paintbrush Screen

Choose Display Zoom In.

Set Zoom

You use the Set Zoom command to set the magnification factor for the Zoom In command and the reduction factor for the Zoom Out command. You can also use Set Zoom to tell PC Paintbrush IV Plus whether to split the screen vertically or horizontally when you choose a zoom command.

Zoom In: Select one of the options in the Zoom-In box to set the factor by which you want to magnify the drawing. You can select a factor of 2, 3, 4, 6, or 8. Select Grid to distinguish individual pixels in the Zoom In window. The grid is available only when you set the Zoom In magnification factor to 4 or greater. You can click the Zoom In button to leave the dialog box and immediately zoom in on your drawing.

Zoom Out: Select one of the options in the Zoom-Out box to set the factor by which you want to shrink the drawing. You can select a factor of 2, 3, 4, 6, 8, or 16. You can click the Zoom Out button to leave the dialog box and immediately zoom out on your drawing.

Show Screen

You use the Show Screen command to remove the pointer and all the tools and menus from the screen so you can see the entire screen. This feature is useful for taking photographs of your drawings.

If you want to increase your drawing area but leave some tools or the menus visible on screen, choose Display Set Screen Layout.

To remove all tools and menus from the screen:

- 1 Choose Display Show Screen.

The Show Screen dialog box appears.

- 2 Choose OK to view the entire screen.

You can also double-click on the Gadget Box to show the screen.

To return to the normal PC Paintbrush screen, press Esc.

Alternate Layout

You use the Alternate Layout command to return quickly to the last screen setup you had selected, without having to choose commands and select options.

To switch quickly between the present layout and the previous layout, press Ctrl+A.

Set Screen Layout

You use the Set Screen Layout command to add or remove the scroll bars, Toolbox, Color Pattern Set, menus, and the caption bar so you have more room on screen to view your drawing. You can remove some or all of the items from the screen.

To remove an item from the PC Paintbrush screen, turn off the appropriate option in the Set Screen Layout dialog box. You can also display or hide all items by clicking the All On or All Off button.

To remove items from the PC Paintbrush screen:

- 1 Choose Display Set Screen Layout.

The Set Screen Layout dialog box appears. It shows all the items you can turn off and on. There is an "X" in the checkbox next to each item that currently appears on the PC Paintbrush screen.

- 2 Turn off the appropriate option to remove the item from the PC Paintbrush screen.
- 3 Choose OK.

When the drawing screen reappears, the items you removed no longer appear on the PC Paintbrush screen.

To return an item to the PC Paintbrush screen:

- 1 Choose Display Set Screen Layout.
The Set Screen Layout dialog box appears.
- 2 Turn on the appropriate option to restore the item to the PC Paintbrush screen.
- 3 Choose OK.

To restore the menu to the PC Paintbrush screen:

- 1 Press Alt+D to open the Display menu.
- 2 Choose Set Screen Layout.
- 3 Click the box next to Menu.
- 4 Choose OK.

Solid Colors Only

You use the Solid Colors Only command to make only solid colors available in the Color Pattern Set. This command makes it easy to create drawings with only solid colors. Using only solid colors in your drawing generally improves the quality of the image when you print it. A drawing that uses color patterns may have a “plaid” appearance when printed.

The Font Menu

| Font | |
|---------------------|-------|
| 1. Roman | (Otl) |
| 2. Helv6 | (Bit) |
| 3. Helv8 | (Bit) |
| 4. Cour10 | (Bit) |
| Select Font File... | |
| Set Gradient... | |
| Set Shadow... | |
| Set Type Specs... | |
| Set Type Style... | |

You use the commands on the Font menu to change the type style, size, and format of the text you add to your drawings. The first four items on the Font menu are fonts, which you add to the menu by using the Font Select Font File command.

Select Font File

You use the Select Font File command to show a list of the available fonts and font sizes. You can have up to four fonts on the Font menu.

When you choose a font file from the Select Font File dialog box, it appears as the first item on the Font menu and the font is selected (a check mark precedes it). You can add the fonts you use most often, and when you want to change fonts, all you have to do is choose a new font from the Font menu. For example, to choose font number one, you press Alt+N and then press the 1 key.

For information about bitmap and outline fonts see “The Text Tool” in Part Two of this manual.

To add a font to the Font menu:

- 1 Choose Font Select Font File.
- 2 Select an option under Font Format.

For more information about font format, see “The Text Tool” in Part Two.

- 3 Double-click the name of the font you want in the Files list box.

You can also select the font name and choose the Open button.

If necessary, scroll the list to see more font names.

The font name you chose appears on the first line of the Font menu and is selected (it has a check mark beside it). Any previously selected fonts will move down one row on the list of fonts.

If the font file you want isn't in the current directory or disk, choose another directory or disk from the Directories list box. Click [..] or one of the drive designations, such as [-A-], and then choose a directory. The list of fonts in that directory or drive appear in the Files list box. (You can also type the name of the file, by selecting the contents of the Filename box and then typing the filename.)

Set Gradient

You use the Set Gradient command to select the shading effect for lettering. The gradient can be vertical, horizontal, or radial within the letters.

The option you select takes effect when you use the Font Set Type Style command. You use the Set Halftone button to choose the halftone pattern and brightness level for gradient letters.

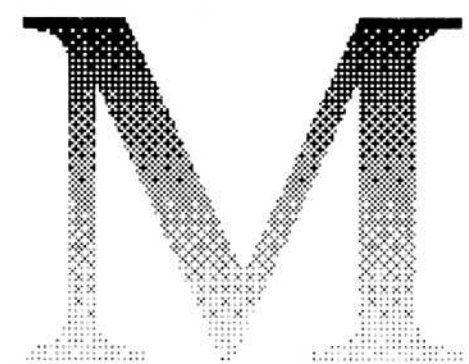
Below is an example of a black-and-white horizontal gradient "M" using each of the halftone patterns.



None (no halftoning)



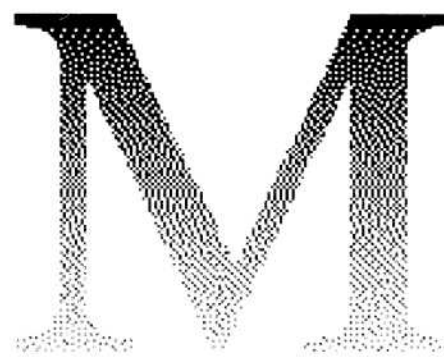
Enhanced



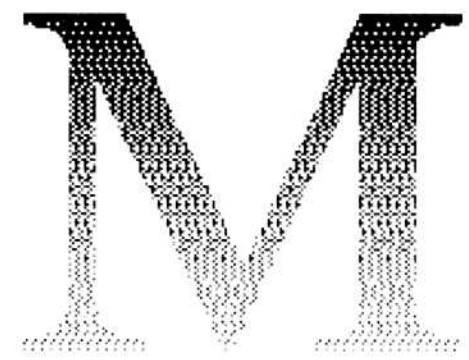
Bayer



Fatting



Diffused



Hex Bayer

To set a gradient effect:

- 1 Choose Font Set Gradient.

The Set Gradient dialog box appears.

- 2 Select the option you want.

Use the Set Halftone button to set the halftone pattern and level of brightness you want to use for the gradient.

- 3 Choose OK.

Set Shadow

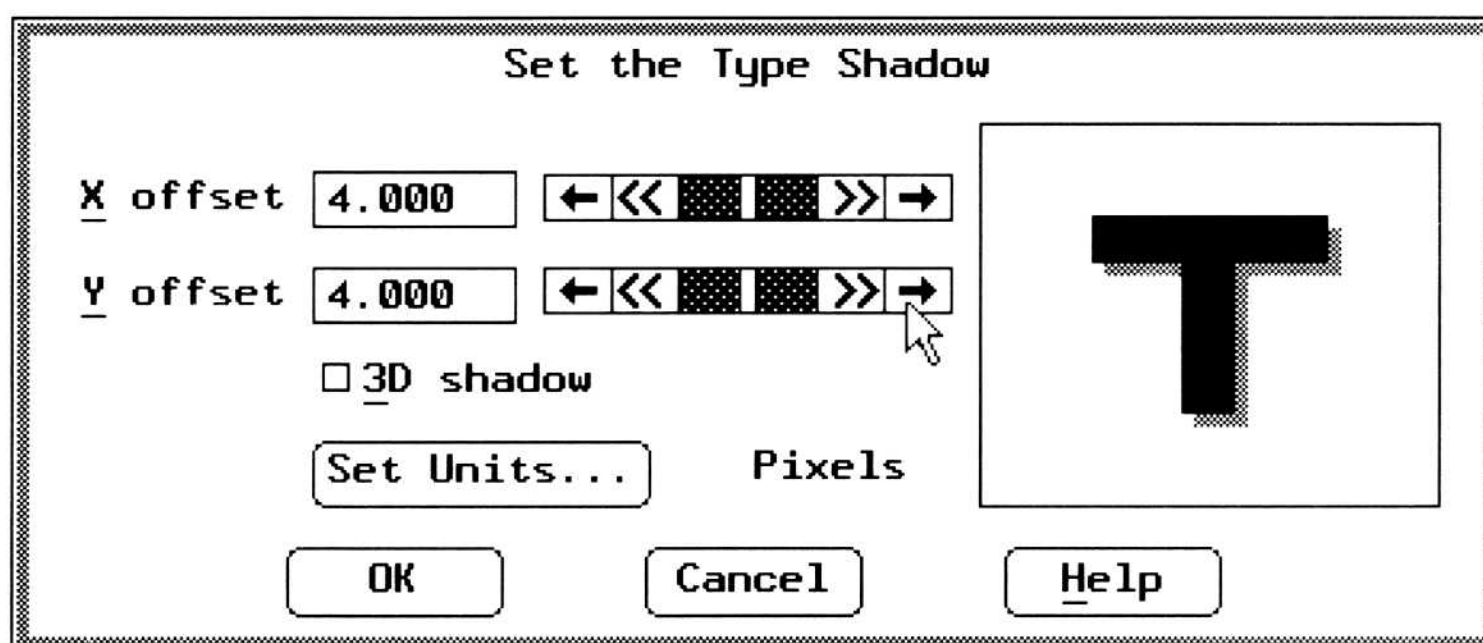
You use the Set Shadow command to set the position of the shadow you want for lettering. You can move the shadow left, right, above or below the letters, or you can create an attached shadow for a 3-D effect.

The settings you select take effect when you choose Shadow in the Set Type Style dialog box. The shadow is filled with the background color.

To set the shadow for text:

- 1 Choose Font Set Shadow.

The Set the Type Shadow dialog box appears.



- 2 Use the scroll bars to change the position of the shadow.

Use the scroll bar next to the X Offset box to move the shadow horizontally.

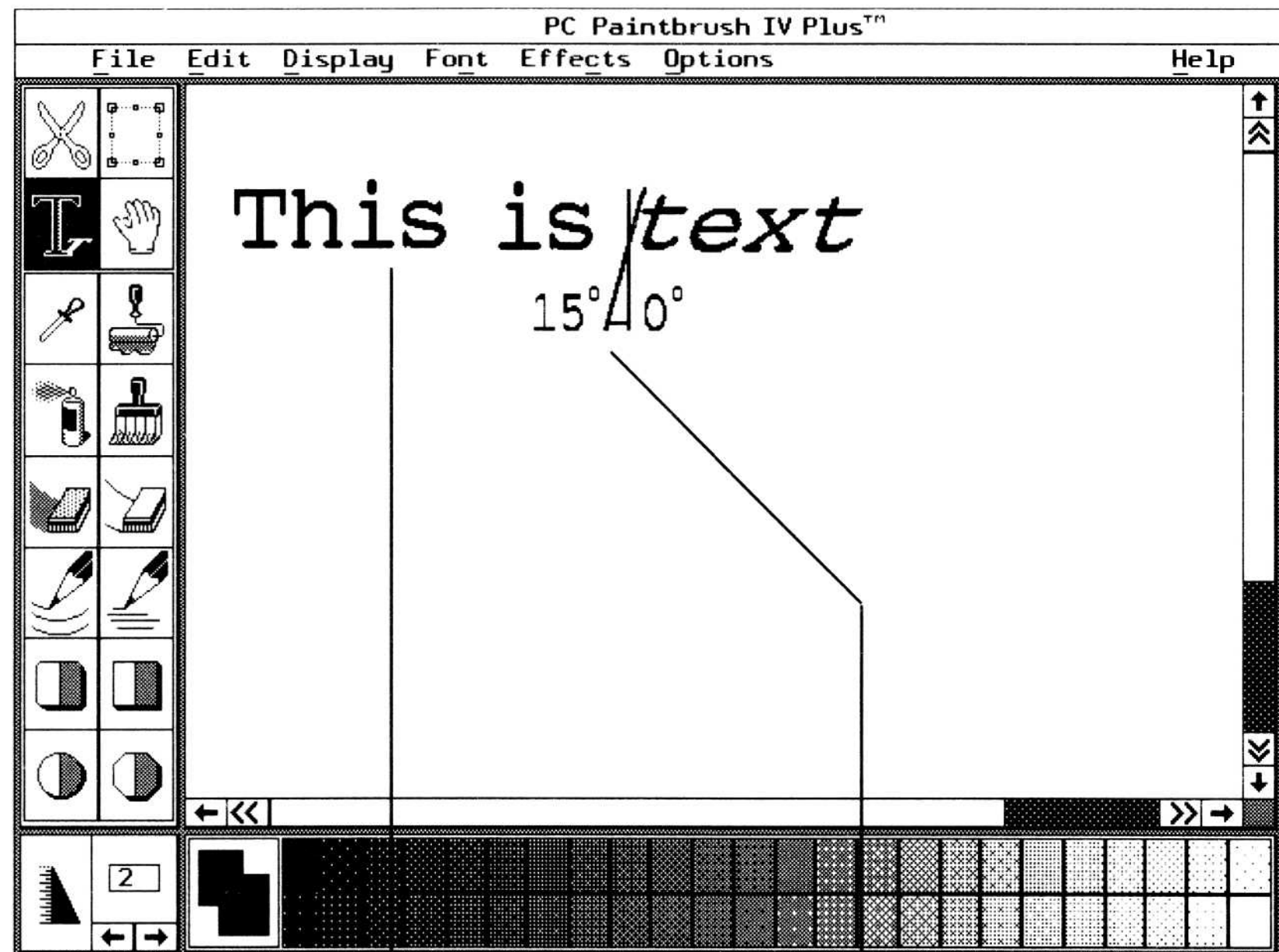
Use the scroll bar next to the Y Offset box to move the shadow vertically.

Select 3D Shadow to create an attached shadow.

- 3 Choose OK when the shadow is in the correct position.

Set Type Specs

You use the Set Type Specs command to adjust letter spacing (kerning) and line spacing (leading). This command affects the text that is not yet pasted down.



Intercharacter spacing

Italic slant

To set type specs:

- 1 Choose Font Set Type Specs.
The Adjust Font and Type Specifications dialog box appears.
- 2 Click Set Units to change the unit of measure.
The unit currently in use is indicated below the Set Units button.
The Set Unit of Measure dialog box appears.
- 3 Select the unit you want to use.
- 4 Choose OK.
- 5 Select the contents of the box next to the type specification you want to change.
- 6 Type the value of the new specification.

- 7 Choose OK when you have selected all of the type specifications you want to change.

If you want to reset the specifications to the standard PC Paintbrush IV Plus values, click Default.

Following is an explanation of each option in the Adjust Font and Type Specifications dialog box.

The Set Type Specs Dialog Box

Character Size: Specifies the screen-display size of text created with outline fonts. The maximum size is 300 points. Keep in mind that the size of a character that can fit on your screen is dependent upon the resolution of your monitor; a 300 point character may not fit on your screen. This option applies only to outline fonts.

Intercharacter Spacing: Specifies the amount of space between each pair of letters (kerning). The default is no space; that is, all letters are set close together in the text. You can set a negative value for even tighter spacing.

Interline Spacing: Specifies the amount of space between each line of text on the screen (leading). You can set a negative value for even tighter spacing.

Italic Slant: Specifies the angle of italic text on the screen. The angle is measured clockwise, with vertical equal to zero degrees. For example, if you specify an angle of 30 degrees, italic text slants 30 degrees to the right of vertical. This is used only when Italic is selected in the Set Type Style dialog box.

Base Angle: Specifies the orientation of the text. This option applies only to outline fonts. For example, if you specify a base angle of 90 degrees, your text is rotated 90 degrees counter-clockwise. The first character of your text is on its left side and the following characters continue up the page.

Set Units: Specifies the units used to measure the text: inches, centimeters, points, picas, or pixels. You select the units in the Set Units dialog box.

Set Type Style

The Set Type Style command lets you add special effects to text.

To set type style:

- 1 Use the Font Set Type Specs command to set the type specifications you want to use, or use the default PC Paintbrush settings.

See the procedure in the preceding topic, “Set Type Specs,” for more information.

- 2 Choose Font Set Type Style.

The Select Type Style dialog box appears.

- 3 Select the style options you want to use.
- 4 Choose OK when you have selected all the styles.

The following topic explains each option in the Set Type Style dialog box.

The Select Type Style Dialog Box

STYLE OPTIONS

Plain: Uses standard characters.

Gradient: Applies a color gradient, like a shadow, inside the letters. To set the way the shading appears, choose Font Set Gradient.

Outline: Outlines text. When PC Paintbrush draws the letters, they’re filled with secondary color and outlined with primary color.

ALIGNMENT OPTIONS

Flush Left: Aligns text left.

Flush Right: Aligns text right.

Justified: Aligns text on both sides, like a newspaper column.

Centered: Centers each line of text.

OTHER OPTIONS

Bold: makes text bold.

Shadow: Makes text appear with the shadow you select in the Set Shadow dialog box. The shadow is filled with background color.

Transparent: Makes the background show through outline text.

Italic: Makes text italic.

Underline: Underlines text.

The Effects Menu



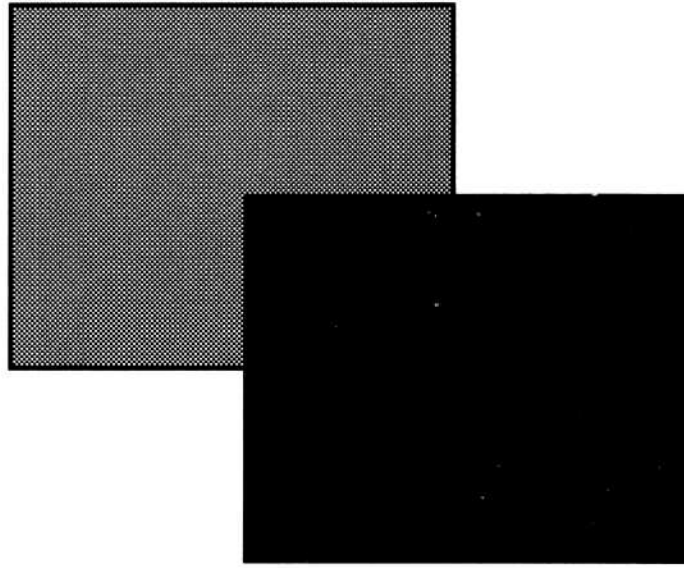
You use the commands on the Effects menu to add special coloring and shading effects to your drawing. For more information on using the commands on the Effects menu, try the “Retouching a Picture” tutorial in Part Three of this manual.

You should keep the following in mind when using coloring options:

- Some of the tools in the Toolbox become inactive when you choose some of the commands on this menu. Inactive tools disappear from the screen or are dimmed and can’t be used.
- To return to normal drawing mode choose Effects Standard.
- The Hand tool is not a coloring tool, so it is always available, no matter which coloring effect you select.

Standard

You use the Standard command to paint with basic coloring effects. PC Paintbrush automatically starts with the Standard command turned on.



Standard coloring effect.

Blend

You use the Blend command to average colors in an area. You can blend an area using either the Paintbrush or Filled Box tool.

To use Blend:

- 1 Choose Effects Blend.

The Toolbox shows only those tools available while Blend is turned on.

- 2 Choose the tool you want to blend with: either the Paintbrush or the Filled Box.

- 3 Drag the Paintbrush or the Filled Box to paint over the area.

If you use the Paintbrush, the colors are blended as you drag the Paintbrush.

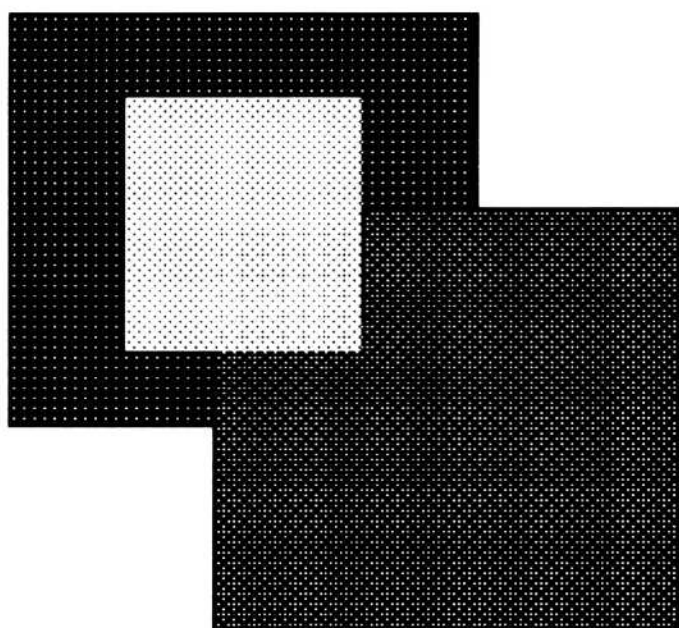
If you drag the Filled Box, the colors are blended in that area when you release the mouse button.

- 4 Repeat step 3 until the colors are blended as much as you want.
- 5 Choose Effects Standard to restore the full Toolbox.

Brightness

You use the Brightness command to change the intensity of the colors on screen. It works like the brightness control on a television. This effect works best if your display can show a large number of colors.

Repeated brushes with the Paintbrush have no effect. Only the first pass changes the effect. To change the level of the effect, select a different level from the settings in the Color Pattern Set, or click the Paintbrush again to save the changes, and then brush. This is designed to provide better control of the brightening effect.



Brightness coloring effect.

To use Brightness:

- 1 Choose Effects Brightness.

The Toolbox shows only those tools available while Brightness is turned on, and the Color Pattern Set shows the levels of brightness available.

- 2 Choose the tool you want to use: the Paintbrush or the Filled Box.
- 3 Choose a level of brightness from the Color Pattern Set.
- 4 Drag the Paintbrush or the Filled Box over the area.

If you use the Paintbrush, the colors are brightened or darkened as you drag the Paintbrush.

If you drag the Filled Box, the colors are brightened or darkened when you release the mouse button.

- 5 Repeat steps 3-4 until the colors are brightened or darkened as much as you want.
- 6 Choose Effects Standard to restore the Toolbox and Color Pattern Set.

Contrast

You use the Contrast command to change the contrast of the image on the screen much as the contrast control on a television works; making bright areas brighter and dark areas darker.

This effect works best if your display can show a large number of colors.

Repeated brushes with the Paintbrush have no effect. Only the first pass changes the image. To change the level of the effect, select a different level from the settings in the Color Pattern Set, or click the Paintbrush again to save the changes, and then brush. This is designed to provide better control of the contrast effect.

To use Contrast:

- 1 Choose Effects contrast.

The Toolbox shows only those tools available while Contrast is turned on, and the Color Pattern Set shows the levels of contrast available.

- 2 Choose the tool you want to use, the Paintbrush or the Filled Box.
- 3 Choose a level of contrast from the Color Pattern Set.
- 4 Drag the Paintbrush or the Filled Box over the area.

If you use the Paintbrush, the contrast changes as you drag the Paintbrush.

If you drag the Filled Box, the contrast changes when you release the mouse button.

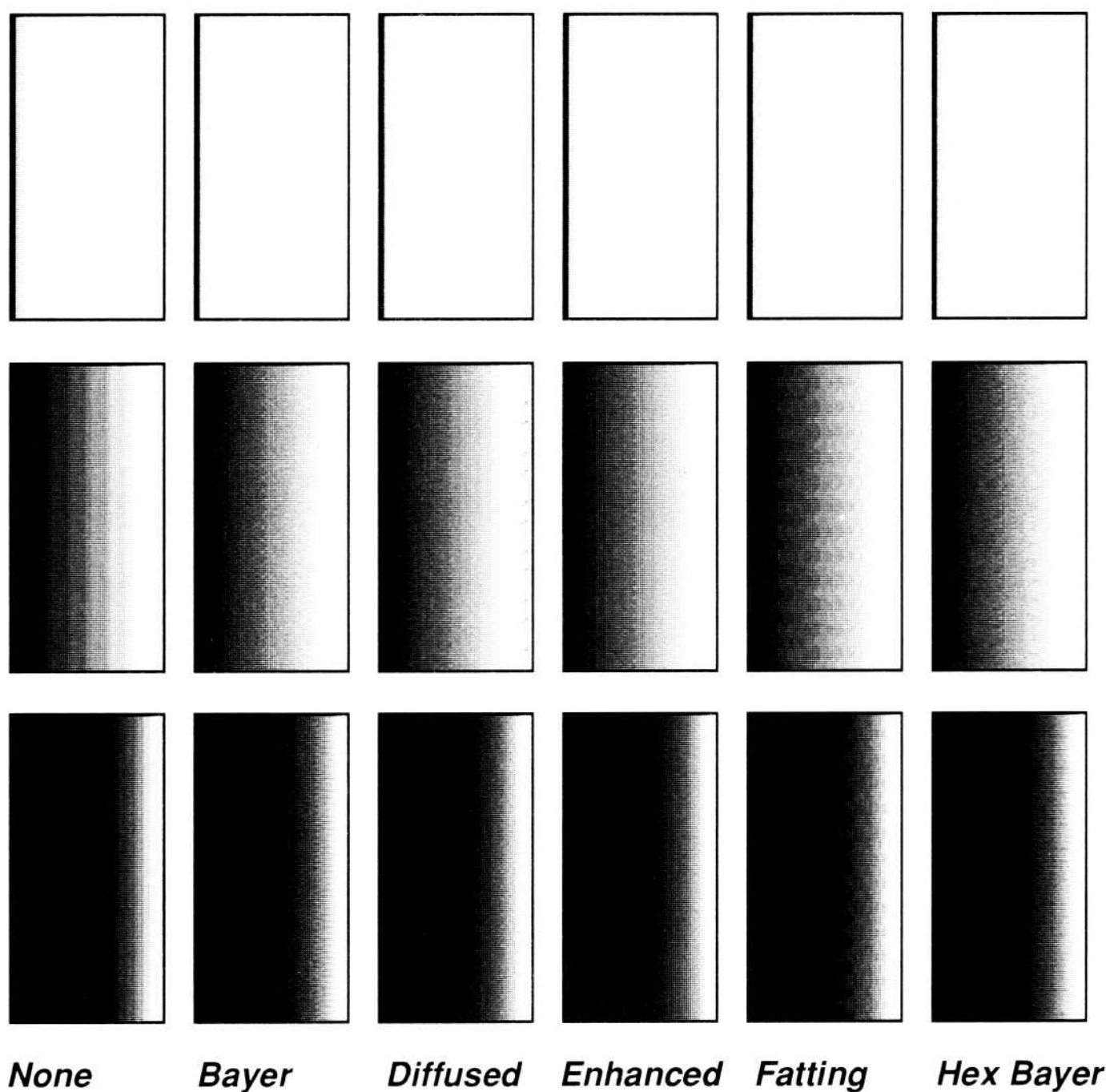
- 5 Repeat steps 3-4 until the contrast is adjusted as much as you want.
- 6 Choose Effects Standard to restore the Toolbox and Color Pattern Set.

Gradient

You use the Gradient command to draw shapes filled with a color that is graduated from light to dark. When you draw a shape or fill an area while Gradient is turned on, the background color fills the background, the primary color is used for the boundary of the shape, and the secondary color is used for shading.

Set the halftone and brightness level for the gradient with the Options Set Halftone command. Set the type of gradient with Options Set Gradient.

The picture below shows the horizontal gradient effect with six halftone settings using three levels of brightness.



To use Gradient:

- 1 Choose Options Set Gradient.
- 2 Select the gradient you want to use.

For samples of the different gradient effects, see the description of the Set Gradient command in “The Options Menu,” later in this chapter.

- 3 Choose OK.
- 4 Choose the tool you want to use, either the Paint Roller or the Filled Box.

- 5 Choose the primary, secondary, and background colors.

To choose the primary color, point to the color and click the left mouse button.

To choose the secondary color, point to the color and click the right mouse button.

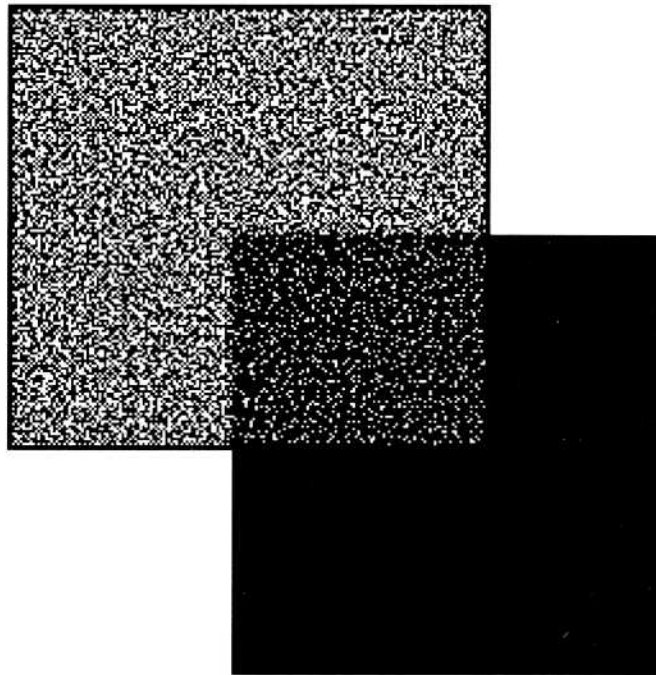
To choose the background color, point to the color, hold down Shift and press the left mouse button.

- 6 Use the Paint Roller to fill an area or the Filled Box to draw a shaded box.

NOTE Gradients are smoothest when the colors have the same hue (e.g., dark red and light red). To get the smoothest gradients, first use Options Set Palette and create a range of colors with the same hue or use Options Get Palette and load a different palette (several palettes are included with PC Paintbrush IV Plus).

Smudge

You use the Smudge command to randomly mix dots (pixels) on the screen. Smudge works like an artist who mixes colors.



Smudge coloring effect.

To use Smudge:

- 1 Choose Effects Smudge.
- 2 Choose the drawing tool you want, either the Spraycan or the Filled Box.
- 3 Use the Spraycan to spray over an area, or the Filled Box to enclose an area.
If you use the Filled Box, PC Paintbrush IV Plus smudges the colors within the area when you release the mouse button.
You can increase or decrease the amount of smudging by changing the drawing width.
- 4 Repeat step 3 until the colors are smudged as much as you want.

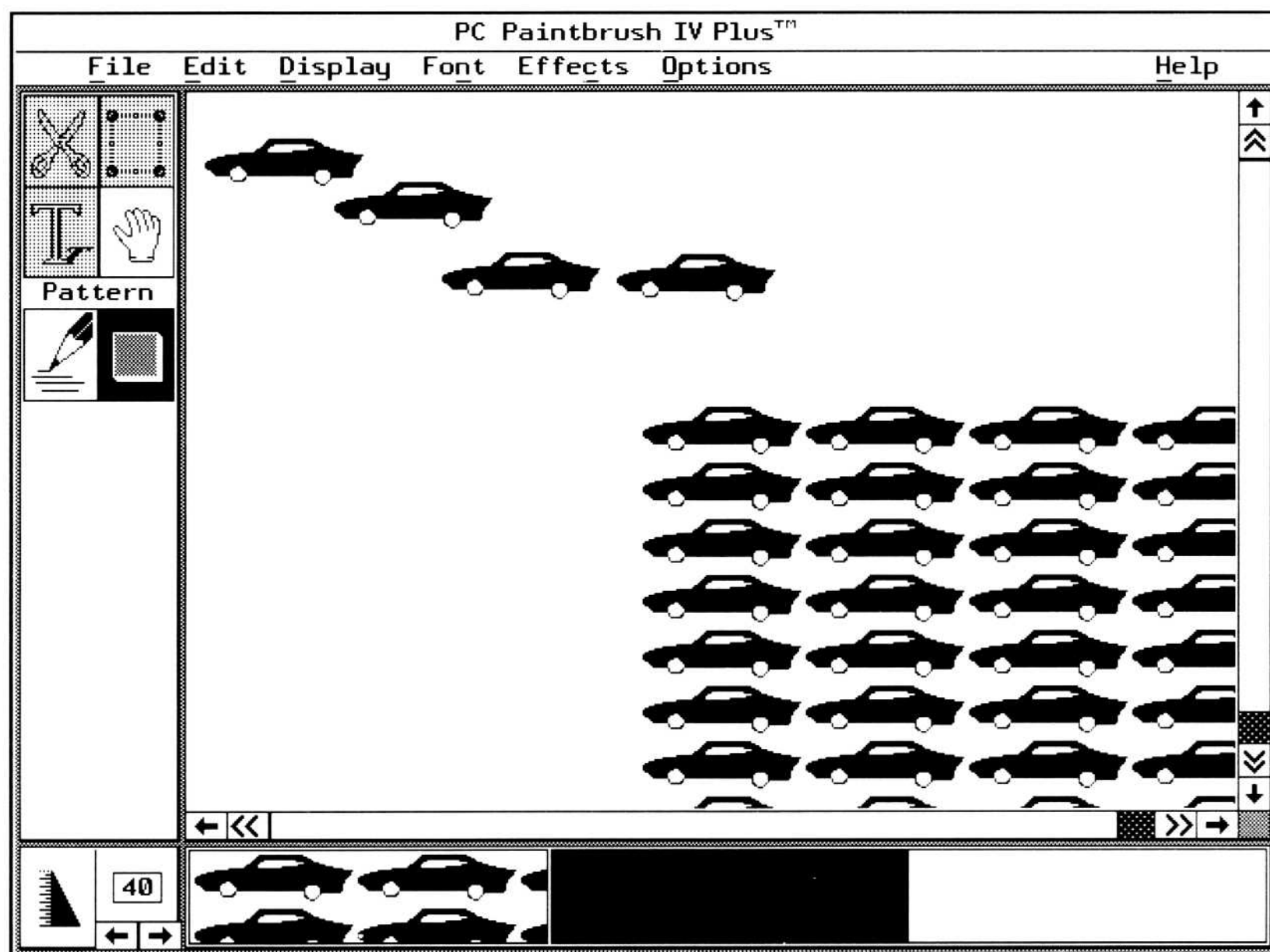
Tile Pattern

You use the Tile Pattern command to paint with a tile pattern that you load from disk by using the Options Set Tile Pattern command. The tile pattern can be any small .PCX or .TIF file. Tile patterns can be like geometric designs on wall or floor tile, and you can use Tile Pattern to paint a background in your drawing and add a 3-D effect. When you use the Tile Pattern command, the selected background is set to be transparent. You can select your background color while in the Effects mode, the same way you would in standard mode.

Several tile patterns are included with PC Paintbrush IV Plus. They are automatically copied to a subdirectory called TILES. See the Options Set Tile Patterns for information about loading one of these files.

Changing the line width with the Options Set Line Width command alters the distance between the tiles when using the Line tool.

If you double-click on the tile pattern in the Color Pattern Set, while using the Effects Tile Pattern command, the Load Tile Pattern dialog box appears.



Tile pattern effect.

To use the Tile Pattern:

- 1 Use Options Set Tile Pattern to load a tile pattern from disk or the clipboard.
- 2 Choose Effects Tile Pattern.
- 3 Choose the tool you want to paint with, either the Line or the Filled Box.
- 4 Use the tool to paint with the tile pattern.

The Line tool draws a string of patterns, spaced by the selected drawing width.

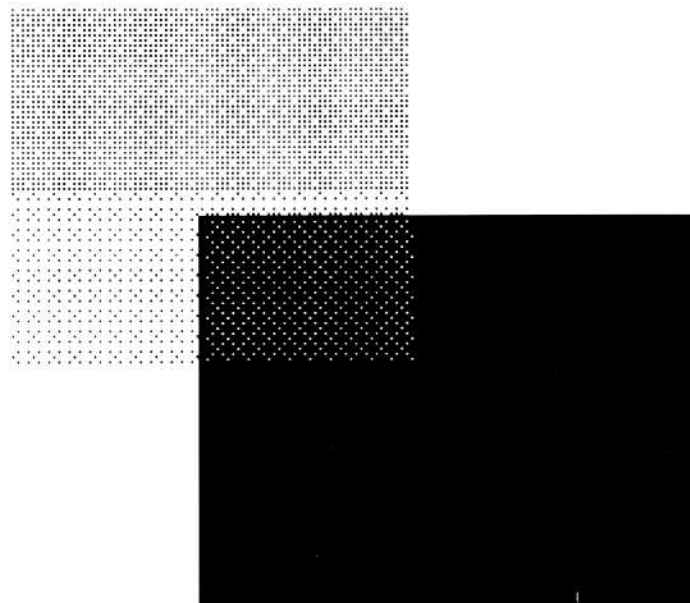
The Filled Box tool repeats the tile pattern within the area of the box.

- 5 Choose Effects Standard to return to the normal PC Paintbrush screen.

Tint

You use the Tint command to alter the shade of the colors in your drawing. Tint makes the colors look as though they are being viewed through colored sunglasses; the image is tinted with the selected color. This effect works best if your display can show a large number of colors.

Repeated brushes with the Paintbrush have no effect. Only the first pass changes the effect. To change the tint that is applied, select a different level from the settings in the Color Pattern set, or click the Paintbrush again to save the changes and then brush.



Tint coloring effect.

To use Tint:

- 1 Choose Effects Tint.
- 2 Choose the tool you want to use, either the Paintbrush or the Filled Box.
- 3 Use the Paintbrush to paint over the shape, or the Filled Box to enclose the area you want to tint.

If you use the Filled Box, PC Paintbrush tints the colors within the area when you release the mouse button.

NOTE Use Options Set Color Pattern to precisely control the tint that is applied.

The Options Menu



You use the commands on the Options menu to set a wide range of drawing options, from selecting the brush shape and line width to setting the appearance of the colors on your screen. After you set these options, you can save them for use in a later drawing session by choosing File Save Workspace.

Set Aspect

You use the Set Aspect command to adjust the width-to-height ratio of your drawing to make sure it is created with the proportions you want. You can use this feature when you are drawing to make circles and squares look correct and to ensure that horizontal and vertical line widths are the same. When you select For Screen and hold down Shift to constrain the box or ellipse tools, circles and squares will look correct on screen. They will print correctly when you select For Printer. You should select the option you want to use before you begin drawing.

To use Set Aspect:

- 1 Choose Options Set Aspect.
The Adjust the Aspect Ratio dialog box appears.
- 2 Select the option you want to use: Custom Ratio, For Screen, or For Printer.
- 3 Choose OK to set the aspect ratio.

Custom Ratio: Select Custom Ratio if the printer you chose in the PC Paintbrush IV Plus Setup program is not the one you want to use to print your drawing. To find the aspect ratio for supported printers, see “Supported Printers” in the Reference chapter of this manual.

For Screen: Select For Screen if you are concerned only with the appearance of your drawing on the screen. For example, select For Screen if you are using PC Paintbrush to produce a slide show and won't be printing the drawing.

For Printer: Select For Printer to draw your picture with your printer's aspect ratio. Although circles and squares may be elongated on the screen, they will have the correct proportions when printed.

Set Brush Shape

You use the Set Brush Shape command to change the shape and size PC Paintbrush uses to draw with the Paintbrush and Line tools. You can set the brush shape to round, square, diamond, or one of four different angled lines.

To change the brush shape:

- 1 Choose Options Set Brush Shape.
The Select a Brush Shape dialog box appears.
- 2 Click the shape you want to use.
- 3 Click Set Size and choose a line or brush width.

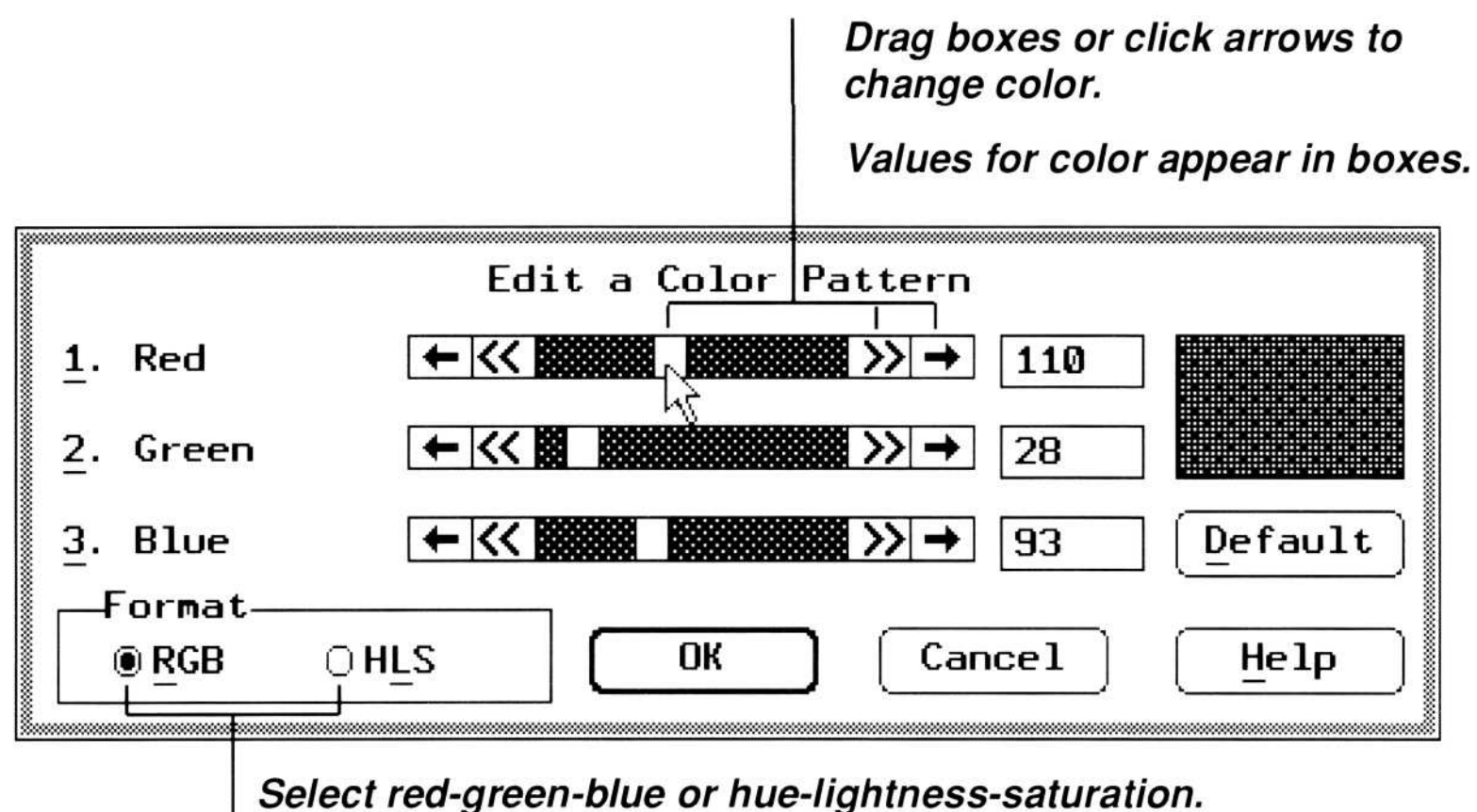
You can also set the width for your brush by adjusting the value in the Width Box (located below the toolbox).

- 4 Click OK - the shape becomes the current brush shape.

Double-clicking the brush shape also selects the shape.

Set Color Pattern

You use the Set Color Pattern command to change the color patterns in the Color Pattern Set. Color patterns are combinations of the solid colors your computer can display. Since these combinations are patterns of dots, even though they may appear solid on your display, color patterns may not print smoothly.



To change a color pattern in the Color Pattern Set:

- 1 Choose the color pattern in the Color Pattern Set that you want to change.
- 2 Choose Options Set Color Pattern.

The Edit a Color Pattern dialog box appears, and the color you choose from the Color Pattern Set fills the box on the right.

- 3 Select the color model in which you want to edit your color, either RGB or HLS.

RGB, or red, green, and blue, adjusts colors by changing the levels of red, green, and blue in the selected color.

HLS, or hue, lightness, and saturation, adjusts the various values in the selected color.

- 4 Use the scroll bars to change the level of each factor in the color.
If you make a mistake, click **Default** to restore the original color. To undo any color changes you've made and return to the main PC Paintbrush screen, click **Cancel**.
- 5 Choose **OK** to return to the main PC Paintbrush screen when the color is the shade you want.

The new color pattern appears in the Color Pattern Set.

NOTE The Help system includes a list of common colors and their RGB values. Select the "Mixing RGB Colors" topic in General Information to see this list.

Set Entire Palette

You use the Set Entire Palette command to adjust the set of colors, or "palette", your computer hardware uses to display colors on the screen. This palette is the set of solid colors used to create your drawing. The Set Entire Palette command works like the controls on your television. PC Paintbrush saves the changes you make with Set Entire Palette along with your drawing.

This command is useful if, for example, you draw a sunset scene and want to make all the colors in the drawing a deeper red. You can also use Set Entire Palette to adjust the colors on printouts.

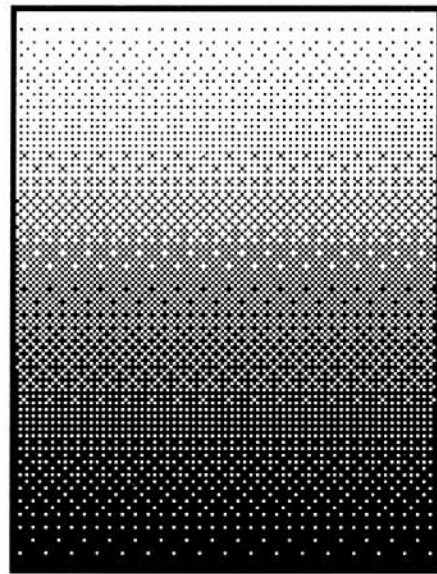
To adjust your computer's color palette:

- 1 Choose **Options Set Entire Palette**.
The Set Entire Palette dialog box appears.
- 2 Use the scroll bars to change the settings for **Brightness** and **Contrast**.
Brightness adjusts the lightness of the entire palette.
Contrast adjusts the range between the lightest and darkest colors on the entire palette.
- 3 Use the scroll bars in the **Color** box to change the color settings.
Hue selects the color you want to "add" to your drawing. The spectrum is arranged in a circle where red is 0, yellow is 60, green is 120, cyan is 180, blue is 240, purple is 300, and red, again, is 360.
Amount selects the amount of hue you want to add.
If you make a mistake, click **Default** to restore the original color palette.
- 4 Choose **OK** when you have finished adjusting the color palette.

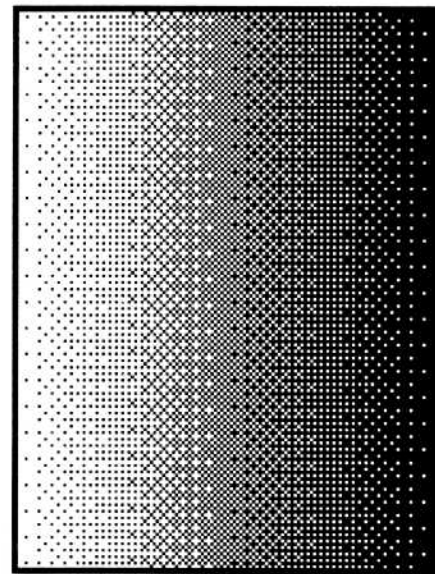
Set Gradient

You use the Set Gradient command to change the orientation of the shading effect. You can set the gradient to shade vertically, horizontally, or radially.

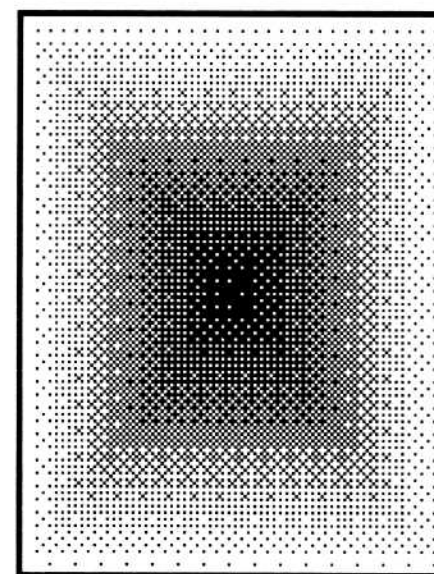
Use the Set Halftone button to choose the halftone pattern and level of brightness for the gradient.



Vertical gradient



Horizontal gradient



Radial gradient

To change the orientation of the gradient:

- 1 Choose Options Set Gradient.

The Select a Gradient Effect dialog box appears.

- 2 Select the gradient effect you want.

- 3 Click Set Halftone to change the halftone pattern and brightness level used with the gradient.

See Effects Gradient for information about using the halftone settings with gradients.

- 4 Choose the options you want and click OK.

The Set Gradient dialog reappears.

- 5 Choose OK to change the gradient effect.

Set Halftone

You use the Set Halftone command to change the look of pictures you load and paste from disk when the number of colors in your picture is different from the mode you are running, to print color pictures on a black-and-white printer, and for gradient fills and characters. Each option in the Set Halftone dialog box is described below. See File Open, Font Set Gradient, or Effects Gradient for more about the effects of the Set Halftone settings.

Halftone Pattern: Halftoning is a method of using a pattern of black and white dots to produce a visual shade of gray.

Brightness: Brightness works much like the brightness control on a television set. You use the brightness scroll bar to lighten or darken your picture. You can also type a number from 0 to 255 in the brightness box, to the right of the scroll bar.

Halftone Screen Size: Use the Halftone Screen Size scroll bar to change the number of lines per inch (LPI), or type a number between 30 and 150 in the box. A smaller number produces a coarser pattern, but shows more gray levels. A larger number produces finer detail, but shows less gray levels.

NOTE Some of the gray scale printers that do not use the halftone settings are Postscript, DPTEK, and Intel Visual Edge.

| This halftone pattern... | ...produces this effect |
|--------------------------|--|
| None | High contrast black-and-white picture. Good for line art, text, and pictures that have already been halftoned. |
| Bayer | Produces fair output on a printer. It creates a crisp look, but does not copy well on a duplicating machine. It has less contrast than some of the other halftone patterns and the criss-cross nature of this pattern may sometimes be apparent. Produces best results for 150 or lower dpi printers (most dot matrix printers). |
| Diffused | Does not use a pattern; rather, the halftoning process tends to follow the contours of the picture. It produces good results when your picture contains many levels of gray, but produces poor results when your picture contains large even gray areas and does not copy well on a duplicating machine. |
| Enhanced | Similar to diffused but appears to have more contrast. |
| Fatting | (Also known as spiral.) Generally looks good on laser printers. The dots are coarse, sometimes producing a “blotchy” look to your printed picture. Similar to a picture seen in a newspaper or magazine. This pattern copies well on a duplicating machine. |
| Hex Bayer | Similar to Bayer, but uses a hexagonal halftone pattern, creating a triangular pattern that may be apparent. |

Set Line Width

You use the Set Line Width command to change the width of the lines (including using the Line tool with a tile pattern), curves, and borders PC Paintbrush draws on your screen. You can also use Set Line Width to change the size of the Eraser, Color Eraser, Local Undo eraser, Spraycan, and tools used with the Effects commands.

You can also change the line width by adjusting the value in the Width Box. For more information, see the description of the Width Box in the chapter called “Getting Started”.

To set the line width:

- 1 Choose Options Set Line Width.

The Set the Line Width dialog box appears.

- 2 Click the scroll bar next to the Line Width box to increase or decrease the line width.

You can also select the contents of the Line Width box and type a new value for the line width.

The crossed lines in the box next to the scroll bar change to show the size of the line that will be drawn.

- 3 Choose OK when the line is the width you want to draw with.

Set Palette

You use the Set Palette command to change the red, green, and blue components of a single solid color on the screen. Like the Set Entire Palette command, this command affects the color your computer system displays on screen, but Set Palette lets you adjust one color at a time. This command is useful if you need to change the tint of one color on the screen or if a color is not being printed correctly. Remember that solid colors print best.

You can adjust the individual palette color in either RGB (red, green, blue) or HLS (hue, lightness, saturation) format.

To adjust an individual hardware palette color:

- 1 Choose Options Set Palette.

The Set Palette dialog box appears and the Color Pattern Set changes to show only solid colors.

- 2 Choose a color either in the drawing or in the Color Pattern Set.
- 3 Select the color format you want to use, RGB or HLS.

If you select RGB, the Red, Green, and Blue options appear.

If you select HLS, the Hue, Lightness, and Saturation options appear.

- 4 Use the scroll bars to change the settings in the RGB or HLS boxes.

If you make a mistake, click Default to restore the original hardware palette color.

- 5 Choose OK when you have finished adjusting the color.

NOTE The Help system includes a list of common colors and their RGB values. Select the “Mixing RGB Colors” topic in General Information to see this list.

Set Tile Pattern

You use the Set Tile Pattern command to load from disk a tile pattern that you’ve created. A tile pattern can be any small .PCX or .TIF file. You use the Set Tile Pattern command to select the tile pattern you want to use. Then you choose Effects Tile Pattern and use either the Line or Filled Box tool to draw with the tile pattern you chose.

PC Paintbrush IV Plus includes several tile patterns that you can look at and use. During the installation process they are copied into a subdirectory called TILES.

To load a tile pattern from disk:

- 1 Choose Options Set Tile Pattern.

The Load a Tile Pattern from Disk dialog box appears.

- 2 Using the scroll bars, move down the Files list box to the file you want to open.

Pattern files in the current directory are displayed in the Files list box. If the file you want isn’t in the current directory or disk, choose another directory or disk from the Directories list box. Click [..] or one of the drive designations, such as [-A-], and then choose a directory. The list of files in that directory or drive appear in the Files list box. You can also type the name of the file, by selecting the contents of the Filename box and then typing the filename.

- 3 Double-click the name of the pattern file you want to load.

You can also select the filename and choose Open.

If the tile pattern you’ve saved is on the clipboard, click Load From Clipboard.

Set Units

You use the Set Units command to set the unit of measure you want to use in your drawing. You can use inches, centimeters, points, picas, or pixels.

To change the unit PC Paintbrush uses:

- 1 Choose Options Set Units.

The Set Unit of Measure dialog box appears.

- 2 Select the unit you want to use.
- 3 Choose OK to set the unit.

The table below shows the unit equivalents.

| This unit... | equals this many inches... | ...and this many centimeters. |
|--------------|----------------------------|-------------------------------|
| Inch | 1 | 2.54 |
| Centimeter | 0.394 | 1 |
| Point | 0.014 (1/72 of an inch) | 0.035 |
| Pica | 0.167 (1/6 of an inch) | 0.423 |

A pixel is equal to one dot on the computer screen or printer.

Get Palette

You use the Get Palette command to load a custom set of hardware color palette settings that you saved by using the Set Entire Palette command. Get Palette also lets you load color patterns you have saved with the Set Color Pattern command. If you load a hardware color palette, the colors in your picture will change.

Color patterns are combinations of solid colors that make up the Color Pattern Set. The hardware color palette is the set of solid colors your computer system uses to create the color patterns in the Color Pattern Set. For more information about hardware color palettes or color patterns, see the discussions of the Set Entire Palette and Set Color Pattern commands earlier in this chapter.

PC Paintbrush IV Plus includes several hardware palettes that you can load and use. These palettes contain information for many video modes. When you create a new palette with the Options Save Palette command, it contains information for only the video mode you are installed for. You will get an error message if you try to load a palette that is not compatible with the video mode you are installed for.

To load a custom hardware palette:

- 1 Choose Options Get Palette.

The Load a Palette from Disk dialog box appears.

- 2 Select the item you want to load under Items.

You can load color patterns, a hardware color palette, or both.

- 3 Use the scroll bars to move down the Files list box to the file you want to open.

Pattern files in the current directory are displayed below the Files list box. If the file you want isn't in the current directory or disk, click [..] or one of the drive designations, such as [-A-], in the Directories box. The list of files contained in that directory or drive appear. You can also type the name of the file, by selecting the contents of the Filename box and then typing the filename.

- 4 Double-click the name of the file you want to load.

You can also select the file and choose Open.

Save Palette

You use the Save Palette command to save a Color Pattern Set. PC Paintbrush saves color pattern files with a .PAL extension on the filename.

This command saves both the color patterns in the Color Pattern Set and the hardware color palette. For more information about hardware color palettes or color patterns, see the discussions of the Get Palette, Set Entire Palette, and Set Color Pattern commands earlier in this chapter.

To save a Color Pattern Set:

- 1 Choose Options Save Palette.

The Save Color Patterns to Disk dialog box appears.

- 2 Type a name for the pattern file in the Filename box.

When you save, PC Paintbrush IV Plus automatically attaches a .PAL extension to the filename.

You can include a path when you type the filename.

- 3 Choose Save to save the file.

You can also select the filename and choose Save.

The Help Menu

| Help | |
|--|--|
| <u>H</u> elp Topics... F1 | |
| <u>S</u> hort Cuts... | |
| <u>C</u> ontext Sensitive Help Information Line | |
| <u>S</u> tatistics... | |
| <u>A</u> bout... | |

You use the Help menu to select the type of Help you want PC Paintbrush IV Plus to display on screen, and it lets you look up information on PC Paintbrush IV Plus commands, options, and tools.

Help Topics

You use the Help Topics command to display a list of PC Paintbrush topics from which you can choose.

To display a list of Help topics, choose Help Help Topics or press F1. The Help Topics dialog box appears.

To select a Help topic:

- 1 Use the scroll bar or the mouse to scroll through the list of topics.
- 2 Double-click the topic you want Help on or click once on a topic to highlight it and click View.

A Help screen appears. Use the scroll bar to scroll through the text in the Help screen.

- 3 Click one of the buttons at the bottom of the Help screen when you've finished reading the information.

Click Topics to go back to the list of Help topics.

Click Next to go to the next page of Help.

Click Previous to go back to the previous page of Help.

Click Done to return to the main PC Paintbrush IV Plus screen.

Short Cuts

The Short Cuts command shows you a screen that explains many keyboard and mouse shortcuts for choosing PC Paintbrush IV Plus commands and selecting options. For example, you can double-click the Paintbrush to select a new brush shape instead of choosing Options Set Brush Shape.

To view explanations of the Paintbrush shortcuts, choose Help Short Cuts.

Context Sensitive Help

You use the Context Sensitive Help command to display a single line of Help in the caption bar. The Help line changes automatically as you choose different menus and tools and select different options. PC Paintbrush IV Plus displays the Help line unless you turn it off. The Caption Bar option in the Set Screen Layout command must be on to view this information.

If you do not want the Help line to appear in the caption bar, choose Help Context Sensitive Help, and the Help line disappears.

If you want to redisplay the Help line, choose Help Context Sensitive Help again.

Information Line

You use the Information Line command to display the mouse position and other data when you're drawing with a tool. This command is useful if you are creating technical drawings or if you need precise measurements on screen. The Caption Bar option in the Set Screen Layout command must be on to view this information.

PC Paintbrush IV Plus displays the Information Line unless you turn it off. The information appears in your current unit of measure. Displaying the information requires extra calculations that may slow system performance. For faster response, you can turn off the information display.

If you do not want the Information Line to appear in the caption bar, choose Help Information Line, and it disappears.

If you want to redisplay the Information Line, choose Help Information Line again.

NOTE This option is unavailable and is dimmed when you are in the scanning portion of PC Paintbrush IV Plus.

Statistics

The Statistics command displays information about the image on the screen, your computer, your monitor, your scanner, and your printer. Statistics shows you how much memory is installed in your computer, and how much RAM, EMS memory, extended memory, and disk space remains for PC Paintbrush to use. To display statistics about your drawing and computer, choose Help Statistics. The Statistics dialog box appears.

Image: Shows you the size and resolution of your drawing and the number of colors that can be displayed on your monitor.

Screen: Shows you which type of video adapter you have installed on your computer system. It also shows the number of dots that the screen can display. The higher the number, the sharper your display.

Printer: Shows the type of printer you chose when you set up PC Paintbrush IV Plus on your computer. It also shows the number of dots per inch that the printer can print. The higher the number, the sharper your printout will be.

Scanner: Shows you the name of the scanner you have installed and the version number of the scanner driver.

Computer Memory

The information in the Computer Memory box shows you how much memory and disk space is installed in your computer and how much remains for PC Paintbrush IV Plus to use. For example:

| | Installed | Remain |
|-----------|-----------|--------|
| RAM (DOS) | 640K | 32K |
| EMS | 2MB | 1.2MB |
| EXTENDED | 256K | 128K |
| DISK | 30MB | 7810K |

About

The About option shows you which version of PC Paintbrush IV Plus you have. This information is useful when you call ZSoft's Technical Support for assistance.

The Scanning Menus

This section explains each of the menus and commands used for scanning, listed in the order they are found on the screen. To understand all of the scanning capabilities of PC Paintbrush IV Plus you should use this section and the scanning tutorial. For information about the menus used to edit a picture see the section called “Editing Menus” earlier in this chapter.

You should keep the following in mind when scanning:

- The Toolbox and Color Pattern Set are inactive and are removed from the screen while in the scanning mode of PC Paintbrush IV Plus.
- You can move around the screen while in the scanning mode with the scroll bars or the Hand. Use the Hand and scroll bars as you would in the editing mode of PC Paintbrush IV Plus.
- To use the tools and commands in the editing portion of PC Paintbrush IV Plus and to save a scanned image, select File Edit Image or use the accelerator keys Ctrl+G.

The File Menu

| File | |
|--------------------------|----|
| New Configuration... | |
| Open Configuration... | |
| Save Configuration | |
| Save Configuration As... | |
| Edit Image | ^G |
| Exit | ^X |

You use the commands on the File menu to create, save, and retrieve configuration files, return to the editing mode of PC Paintbrush IV Plus, and exit the program. A configuration file contains the settings you choose within the scanning portion of PC Paintbrush IV Plus. Once you create a configuration file, you can open it, place your image on the scanner, and scan with a single click of a button. PC Paintbrush IV Plus configuration files are saved with a .CNF extension.

New Configuration

You use the New command to change all settings to their default values. Select File New Configuration and you see the message “Are you sure you want to replace settings with defaults?”.

Click Yes to use the default settings, click No to cancel. When you use the PC Paintbrush IV Plus default settings, no configuration file is loaded; the Save option is dimmed.

Open Configuration

You use the Open Configuration command to load configuration files containing previously saved scanning preferences.

To open an existing configuration file:

- 1 Choose File Open Configuration.

The Load Configuration from Disk dialog box appears.

- 2 Select a .CNF file.

If the name of the file you want to open is not visible in the Files list box, use the scroll bar to move through the list of filenames in the directory or disk you're working in.

If the file you want to open isn't in the current directory or on the current disk, choose another drive or directory from the Directories list box. Click [..] or one of the drive designation, such as [-A-], and a directory. The files in that directory appear in the Files list box.

- 3 Double-click the name of the configuration file you want to open in the Files list box.

You can also type the full name and path of the file in the Filename box. Choose Open after you have typed the name of the file.

Save Configuration

You use the Save Configuration command to save a configuration you previously saved to a disk.

If you want to save a configuration file for the first time or save an existing configuration under a new name, you should choose File Save Configuration As.

If you save your settings to STANDARD.CNF, PC Paintbrush IV Plus will automatically load those settings when you start the program.

To save an existing configuration file choose File Save Configuration.

Save Configuration As

You use the Save Configuration As command to save a scanning configuration for the first time or save a new version of an existing configuration without losing the original. PC Paintbrush IV Plus saves configuration files with a .CNF extension on the filename.

NOTE You can use the Save Configuration As command to save your settings in a file named STANDARD.CNF. PC Paintbrush IV Plus will then automatically load STANDARD.CNF when you choose File Scan Image in the editing mode of PC Paintbrush IV Plus.

To save a configuration for the first time:

- 1 Choose File Save Configuration As.

The Save Configuration to Disk dialog box appears.

- 2 Select the directory or disk you want to save the file to from the Directories list box.

The name of the current directory is displayed below the filename box.

- 3 Type a name for the file in the Filename box.

You can include a drive or a pathname for the file.

- 4 Choose Save to save the file.

Click Help for on-line help.

Edit Image

You use the Edit Image command to return to the editing mode of PC Paintbrush IV Plus. You can use all the PC Paintbrush tools and menu options to edit the scanned image.

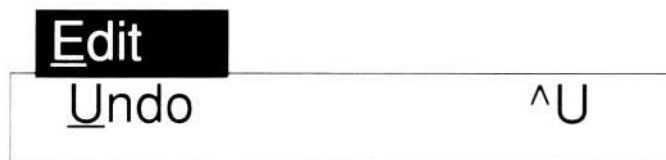
To edit the scanned image, choose File Edit Image.

Exit

You use the Exit command to quit the PC Paintbrush IV Plus program and return to DOS.

To quit PC Paintbrush IV Plus, choose File Exit.

The Edit Menu



You use the Edit menu to correct mistakes and remove changes you've made with the Filters commands.

Undo

You use the Undo command to correct mistakes by canceling changes you have made to your scanned image with the Filters commands. Undo can cancel all changes you've made since the last time you selected a filter.

For example, if you select the Filters Blend command once and then use the Filters Remove Spots command, Undo can return the spots removed from your image. However, Undo cannot remove the blending that occurred, because after you blended, you chose Filters Remove Spots.

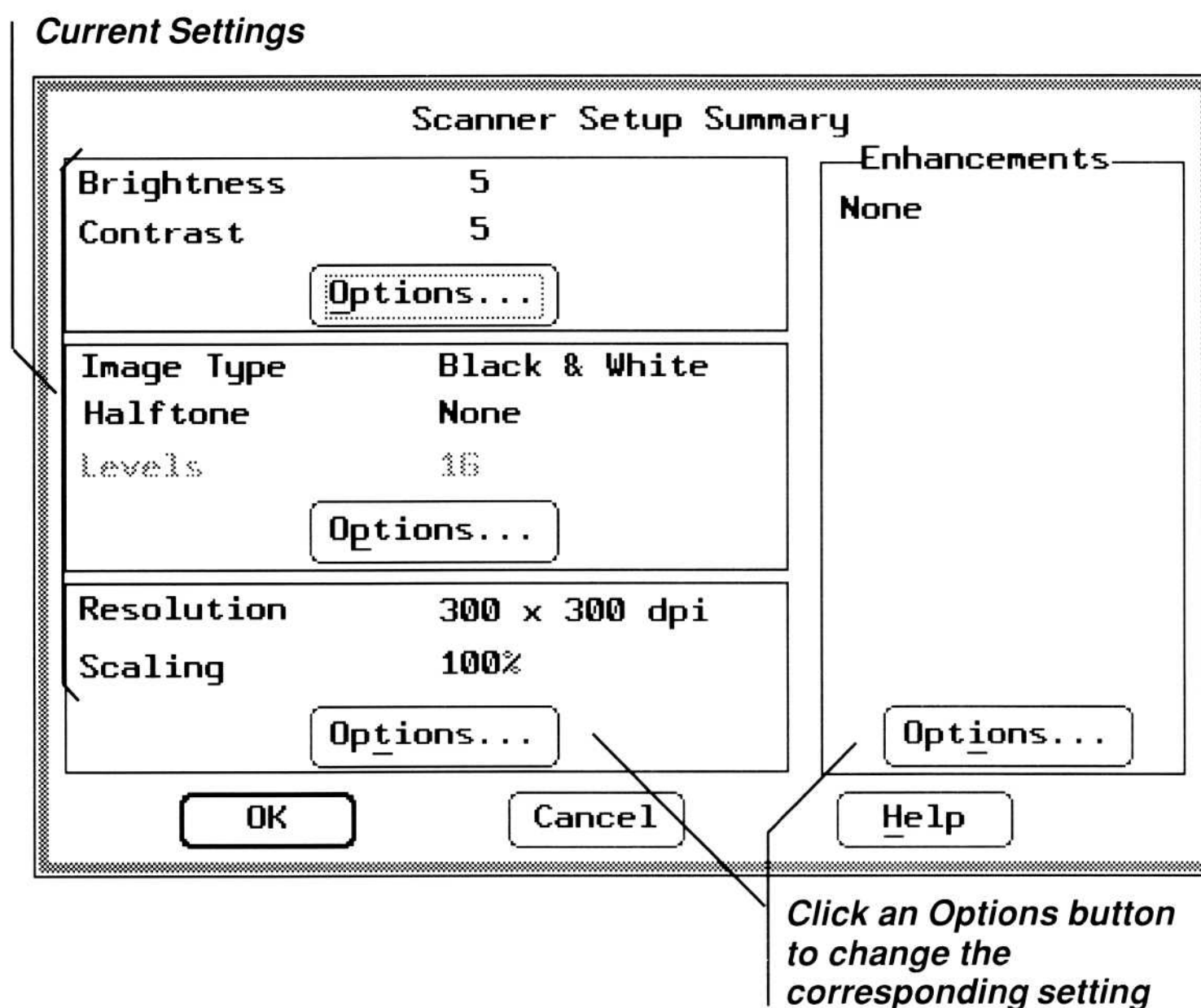
The Scan Menu

| Scan | |
|-------------------|----|
| Option Summary... | ^O |
| Scan... | ^S |
| Rescan | ^R |

You use the commands on the Scan menu to view and change your current scanning settings, set margins, and scan your picture.

Option Summary

You use the Option Summary command to see your current scanner settings. You can change any of the settings by selecting the appropriate Options button. Each option in the Option Summary dialog box is described below.



Brightness and Contrast: Click this Options button to change the current brightness and contrast settings. The brightness and contrast settings are similar to the brightness and contrast settings for a television. Change the brightness to darken or lighten your image. Change the contrast to increase or decrease the intensity of your image. See “Options Menu” in this section for more information.

Image Type and Halftone: Click this Options button to change the current image type and halftone settings. Choose Black & White when the image consists mostly of text and line art or you want to scan your image using halftone patterns. Choose Gray Scale to scan using levels of gray, and set the levels of gray you want to scan with. Choose Color to scan in color, and set the levels of color you want to scan with. See “Options Menu” in this section for more information.

Resolution and Scaling: Click this Options button to change the current resolution and scaling settings. If your scanner supports multiple resolutions, a list of supported resolutions appears in the resolution box . When choosing a scaling setting keep in mind that increasing or decreasing the size of the image may change the look of the image, especially when you are using a halftone pattern. To quickly set Scaling to 100%, use the 100% button above the Scaling scroll bar. See “Options Menu” in this section for more information.

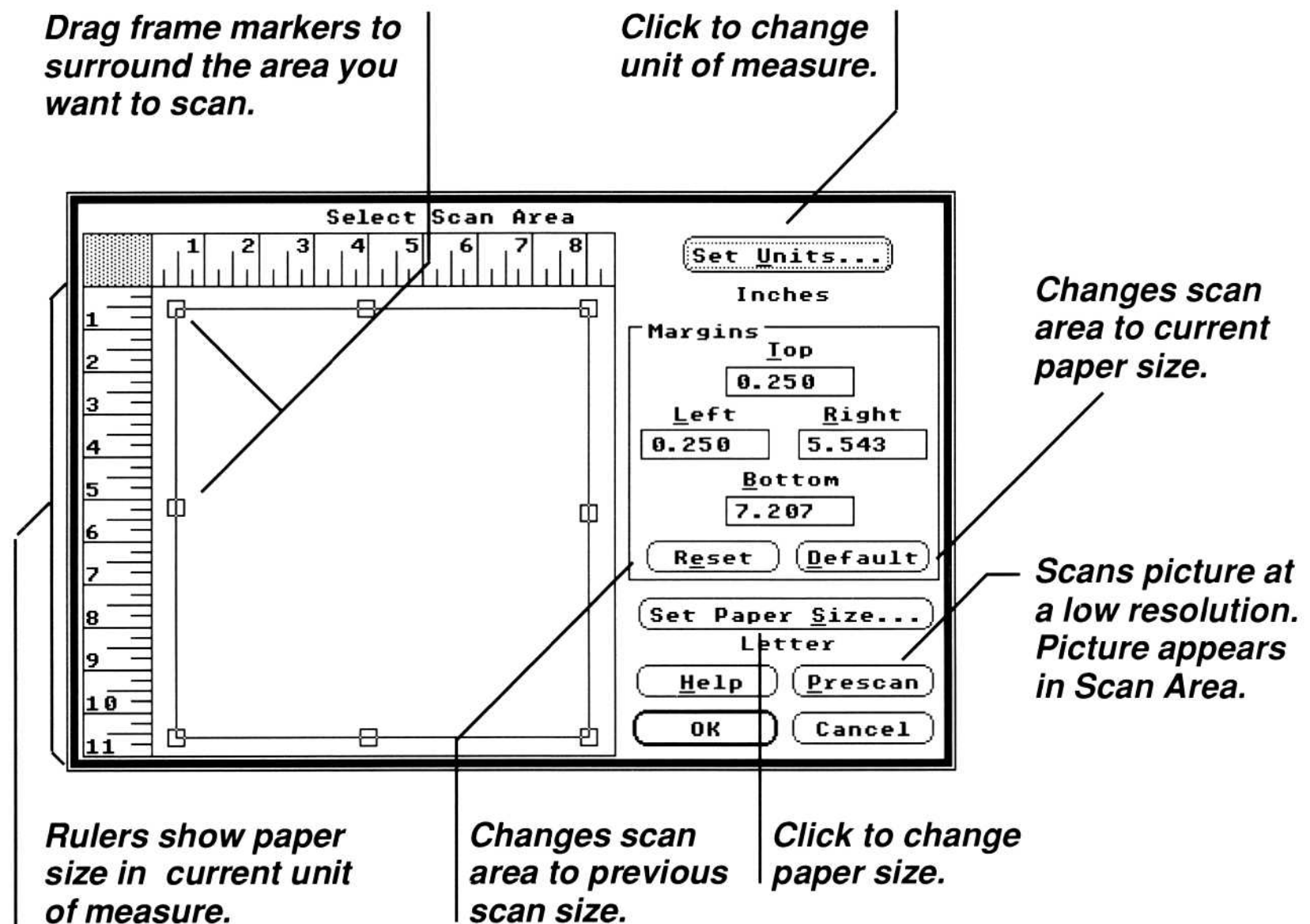
Scanning Enhancements: Click this Options button to change the current scanning enhancements. Select the enhancements you want from the list. See the Options menu for more about enhancements and their uses.

Choose OK to accept the scanning settings shown in the Option Summary dialog box and display the Scan dialog box. You use the Scan dialog box to set the paper size, indicate margins, and activate your scanner. See the Scan Scan command for more information.

Choose Cancel if you are not yet ready to scan. Any changes you made to the Margins setting will be canceled. All other option changes remain.

Scan

You use the Scan command to set the area of the page you want to scan. You can use the “buttons” to change the other settings. Each option in the Scan dialog box is explained below.



To set margins using the mouse:

- 1 Choose Scan Scan.

The Select Scan Area dialog box appears.

- 2 Click Set Paper Size to choose a different paper size.

The paper size is listed below the Set Paper Size button.

- 3 Click Set Units to choose a new unit of measure.

The unit of measure is listed below the Set Units button.

The rulers in the image box change to the new unit of measure.

- 4 Click the Options button to quickly change Brightness, Contrast, Image Type, Halftone, Resolution, Scaling, and Enhancement settings.

- 5 Click the Prescan button.

The image is scanned at a low resolution and displayed in the image box.

- 6 Adjust the frame so that it surrounds only the portion of the image you want for your final scan.

Point to a frame marker to resize the frame. Your pointer looks like a cross hair.

Point inside the frame to drag the frame from one location to another. Your cursor looks like a hand.

Click the Default button to quickly change the scan area to the current paper size minus 1/4 inch margins.

Click the Reset button to quickly change the scan area to the dimensions used for the previous scan.

- 7 Choose OK when the frame is in the correct position.

The image is scanned and appears on your screen.

If you are not ready to scan, choose cancel. Any changes you made to the margins are canceled. All other option changes remain.

If your scanner is not properly installed, you may receive an error message. Click OK and check your scanner installation.

To change a margin value using the keyboard:

- 1 Choose Scan Scan.

The Select Scan Area dialog box appears.

- 2 Choose Set Paper Size to choose a new paper size.

The paper size is listed below the Set Paper Size button.

- 3 Choose Set Units to choose a new unit of measure.

The unit of measure is listed below the Set Units button.

The rulers in the image box change to the new unit of measure.

- 4 Choose the Options button to quickly change Brightness, Contrast, Image Type, Halftone, Resolution, Scaling, and Enhancement settings.

- 5 Tab to the margin boxes you want to change and type numbers to specify the amount of white space that surrounds your image which you do not want included in your scan.

It is best to remove as much white space as possible.

Keep in mind your unit of measure and paper size when you specify margins.

- 6 Choose OK when the margin settings are correct.

The image is scanned and appears on your screen.

Rescan

You use the Rescan command to quickly scan an image using the current settings. When you select Scan Rescan a message appears. Click Yes to begin scanning. Click No to cancel the scan.

To scan an image using the current settings choose Scan Rescan.

The Filters Menu



You use the commands on the Filters menu to alter the look of your picture *after* it is scanned.

See the Options menu commands for information about setting preferences during the scanning process.

See the Edit Filter command in the editing mode for information about applying filters to parts of your picture.

You should keep the following in mind when using the filtering options:

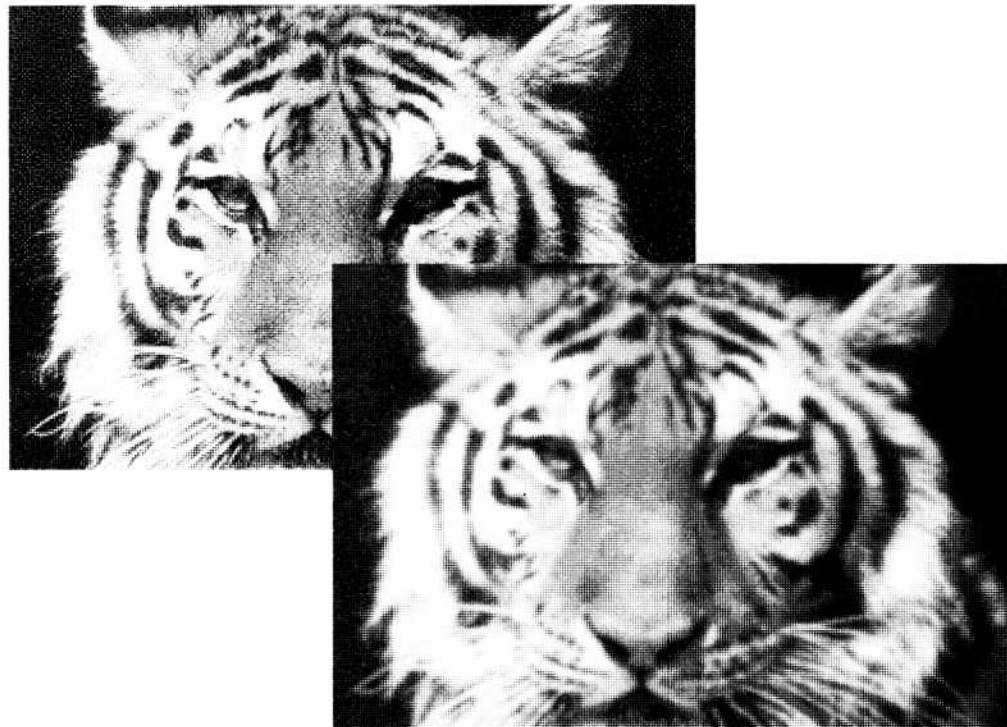
- In general, the effects the filters produce work best when you are using 256 colors or at least 16 levels of gray.
- PC Paintbrush provides default filter settings for optimum results and speed. In 256 color mode, you will notice a substantial decrease in speed when you use most of the filters. Blend and Sharpen are the slowest; Mosaic and Equalize are almost as slow.
- You can repeatedly choose a command to increase the effect. Undo, however, can cancel only the changes you've made since the last time you chose a command.

For example, if you choose Filters Blend and then choose it again, Undo can remove the most recent blending. Undo cannot, however, remove all of the blending, because after you chose Filters Blend, you chose it again.

- You can use the commands on this menu to edit any picture you can load into PC Paintbrush IV Plus. Simply load the picture, enter the scanning portion of PC Paintbrush, and choose the filters you want.

Blend

You use the Blend command to smooth the colors in your image. You can blend your image as many times as you want.



Blend filtering effect.

To use blend:

- 1 Choose Filters Blend.

The Blend Image dialog box appears on your screen.

- 2 Set the amount you want to blend your image.
- 3 Click Screen Preview.
- 4 Choose OK.

The portion of your image on the screen shows you how your image will look, and you are asked whether you want to make the changes.

- 5 Choose Yes to change your image.

Choose No if you do not want to make the changes.

The following section explains each option in the Blend dialog box.

The Blend Dialog Box

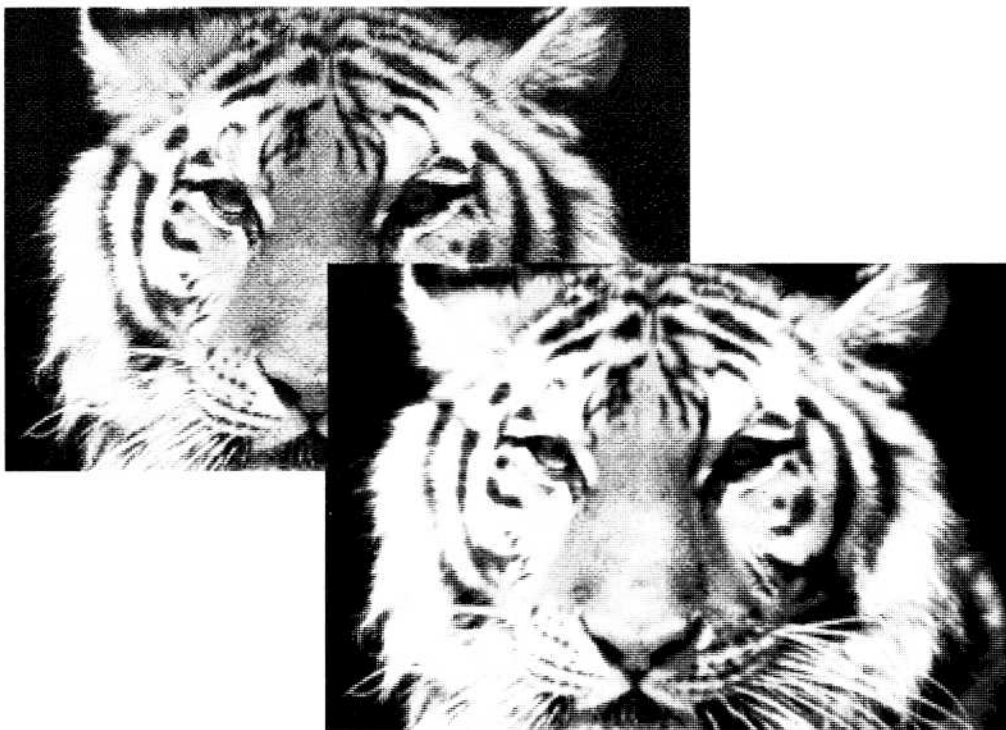
Blending amount: Type a number in the Blending amount box to set the percentage of blending you want. The higher the number the greater the blending. A number above 100 can be used to produce special effects.

Wide aperture: PC Paintbrush IV Plus decides how to blend your picture by looking at one small area at a time. The Wide aperture option tells PC Paintbrush to enlarge the area it looks at, creating a smoother effect. It takes more time for PC Paintbrush IV Plus to look at larger areas.

Screen Preview: Choose the Screen Preview option to see how the filter will alter your picture. When you click OK the area on your screen shows you how your picture will look, but the change has not yet occurred. A second box appears asking if you want to make the changes. To make the changes you must choose Yes. To tell PC Paintbrush IV Plus you don't want the changes, choose No.

Equalize

You use the Equalize command to redistribute the gray shades in your image, giving you better overall results.



Equalize filtering effect.

To use equalize:

- 1 Choose Filters Equalize.

The Equalize dialog box appears on your screen.

- 2 Set the amount of highlights and shadows you want to keep.
- 3 Click Screen Preview.
- 4 Choose OK.

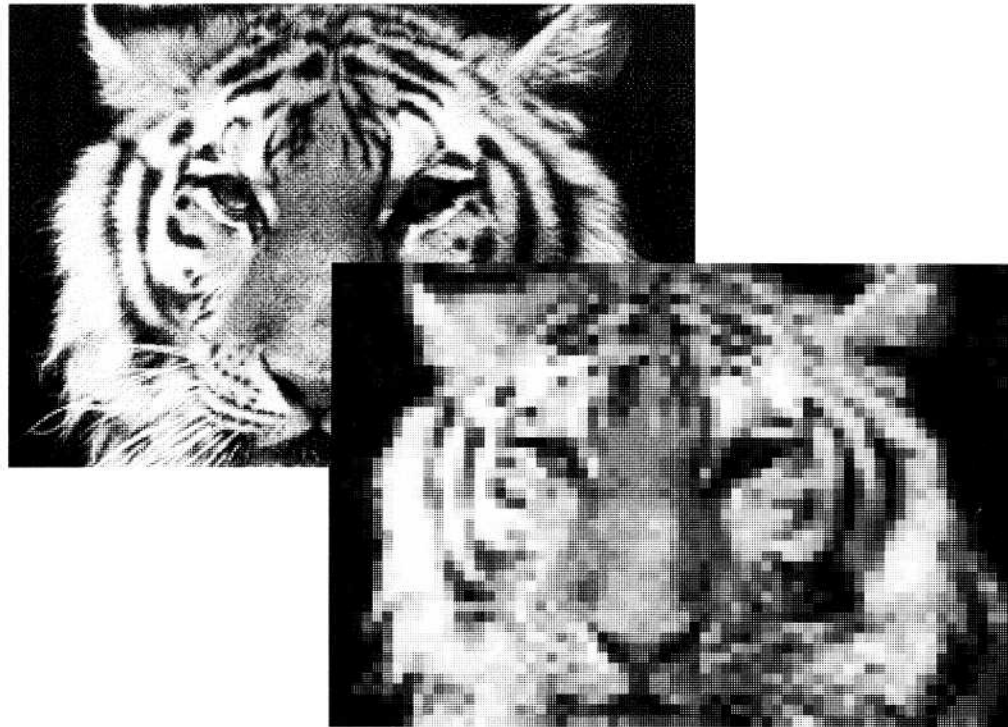
The portion of your image on your screen shows you how your image will look, and you are asked whether you want to make the changes.

- 5 Choose Yes to change your image.

Choose No if you do not want to make the changes.

Mosaic

You use the Mosaic command to create a blocklike effect. The pixels in your picture seem larger; individual colors are increased and detail is reduced.



Mosaic filtering effect.

To use Mosaic:

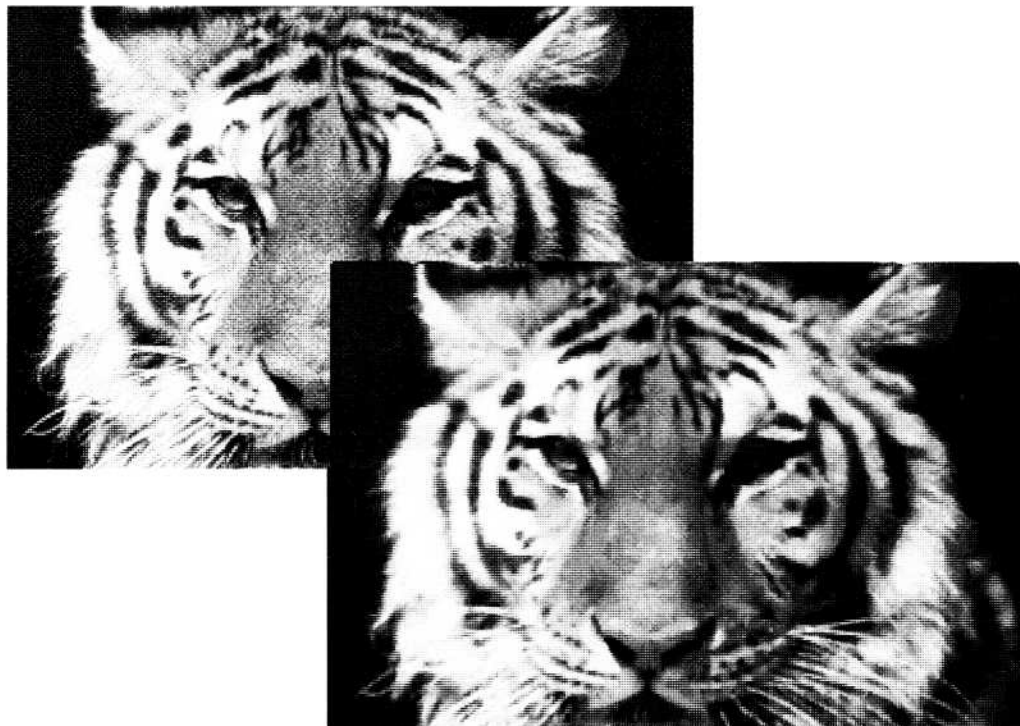
- 1 Choose Filters Mosaic.
The Mosaic Image dialog box appears.
- 2 Type the width of the mosaic size in the Width box.
- 3 Type the height of the mosaic size in the Height box.
- 4 Click Screen Preview.
- 5 Choose OK.

The portion of your image on the screen shows you how your image will look, and you are asked whether you want to make the changes.

- 6 Choose Yes to change your image.
Choose No if you do not want to make the changes.

Remove Spots

You use the Remove Spots command to erase spots and blotches that occur during the scanning process. You can tell PC Paintbrush to remove small, medium, or large spots. It takes more time to remove larger spots.



Remove Spots filtering effect.

To remove spots from your image:

- 1 Choose Filters Remove Spots.

The Remove Spots from Image dialog box appears.

- 2 Select the spot size.
- 3 Click Screen Preview.
- 4 Click OK.

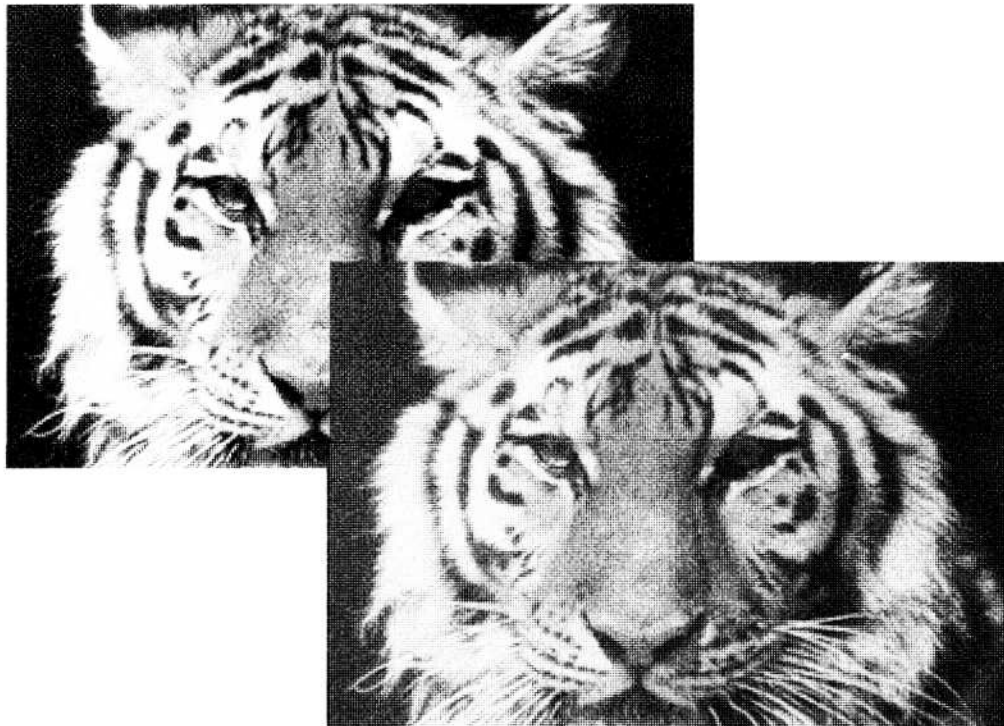
The portion of your image on the screen shows you how your image will look, and you are asked whether you want to make the changes.

- 5 Choose Yes to change your image.

Choose No if you do not want to make the changes.

Response Curve

You use the Response Curve command to adjust the brightness, contrast and colors without changing your palette.



Response Curve filtering effect.

To use Response Curve:

- 1 Choose Filters Response Curve.

The Response Curve dialog box appears on your screen.

- 2 Use the scroll bars to change the settings for Brightness and Contrast.

Brightness adjusts the lightness of the entire image.

Contrast adjusts the range between the lightest and darkest colors in the image.

- 3 Use the scroll bars in the Color box to change the color settings.

Hue selects the color you want to “add” to your picture.

Amount selects the amount of hue to add.

This works best with 256 colors. If you are running in gray scale the color box settings have no effect.

Click Reset to quickly change your settings to 0.

- 4 Click Screen Preview.

- 5 Choose OK.

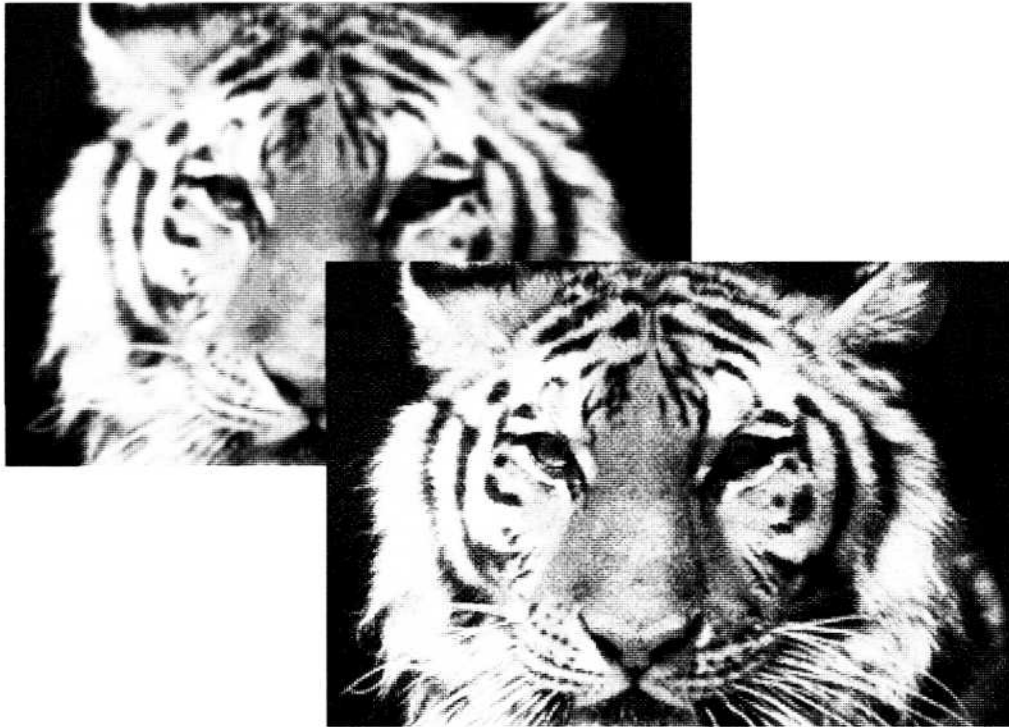
The portion of your image on the screen shows you how your image will look and you are asked whether you want to make the changes.

- 6 Choose Yes to change your image.

Choose No if you do not want to make the changes.

Sharpen

You use the Sharpen command to increase the contrast between the dark and light areas of your image.



Sharpen filtering effect.

To use sharpen:

- 1 Choose Filters Sharpen.

The Sharpen Image dialog box appears on your screen.

- 2 Type a number in the Sharpen amount box to change the percentage you want PC Paintbrush to sharpen your picture.
- 3 Click Screen Preview.
- 4 Choose OK.

The portion of your image on the screen shows you how your image will look and you are asked whether you want to make the changes.

- 5 Choose Yes to change your image.

Choose No if you do not want to make the changes.

The following section explains each option in the Sharpen dialog box.

The Sharpen Dialog Box

Sharpening amount: Type a number in the Sharpening amount box to set the percentage of sharpness you want. The higher the number, the greater the sharpness.

Wide aperture: PC Paintbrush IV Plus decides how to sharpen your picture by looking at one small area at a time. The Wide aperture option tells PC Paintbrush to enlarge the area it looks at, creating greater contrast between the dark and light portions of your image. It takes more time to look at larger areas.

Screen Preview: Turn on the Screen Preview option to see how the filter will alter your picture. When you click OK the area on your screen shows you how your picture will look, but the change has not yet occurred. A second box appears asking if you want to make the changes. To tell PC Paintbrush IV Plus to make the changes you must choose Yes. To tell PC Paintbrush IV Plus you don't want the changes, choose No.

The Options Menu



You use the commands on the Options menu to set the scanning mode, adjust the look of the scanned image, and indicate the paper size and unit of measure. All of these options can be accessed from the Scan menu with push buttons in the Option Summary and Scan dialog boxes.

All of the settings on this menu are used during the scanning process. For information about changing the look of the image once it is scanned, see the Filters Menu.

Set Brightness & Contrast

You use the Set Brightness & Contrast command to lighten or darken your image and increase or decrease the intensity of your image when it is scanned. These settings work much like the brightness and contrast controls on a television.

Most scanners provide only 3 to 8 brightness and contrast levels. Other scanners provide only automatic control. If your scanner does not offer an option, it does not appear in the dialog box or the “slider” in the scroll bar cannot be moved.

To set brightness and contrast:

- 1 Choose Options Set Brightness & Contrast.
The Adjust Scanner Brightness and Contrast dialog box appears.
- 2 Use the Brightness scroll bar to lighten or darken your image.
If Auto is available, turn it on to have your scanner automatically choose the appropriate setting.
- 3 Use the Contrast scroll bar to increase or decrease the intensity of your image.
If Auto is available, turn it on to have your scanner automatically choose the appropriate setting.
- 4 Choose OK when you have finished adjusting the brightness and contrast.

Set Enhancements

You use the Set Enhancements command to change your picture during the scanning process. For example, if you are scanning a negative and want to change it to a positive image, turn on Mirror Image and Negative Image. You also use the Set Enhancements command to compensate for error during your scan. For example, if you want to remove dark lines that may appear around the edges of your picture during the scanning process, turn on Border Erase.

You can use as many enhancements as you want. Options not available to your scanner are dimmed. Each option in the Set Enhancements dialog box is explained below.

The Set Enhancements Dialog Box

Border Erase: Select Border Erase to add a white border to your picture. This can be used to eliminate dark lines that may appear around the edges of a scanned image.

Edge Enhance: Select Edge Enhance to increase the definition between the dark and light areas of your picture.

Gamma Correct: Select Gamma Correct to give the appearance of greater contrast, allowing you to see more shades of gray. You can use the BLDGRAY utility, explained in the Reference section of this manual, to create gamma corrected palettes that you can load to make your scanned image look and print like the original.

Line Art Detect: Select Line Art Detect to preserve the high contrast black-and-white areas of your image, and use a halftone pattern on the multi color areas of your image. For example, select Line Art Detect to scan a page containing text and a gray scale photograph. The text is scanned in a high black-and-white contrast mode, and your selected halftone pattern is applied to the gray scale photograph.

Mirror Image: Select Mirror Image to flip the picture. The right side of your picture becomes the left side of the scanned image, like a mirror image.

Negative Image: Select Negative Image to reverse the colors of your picture. For example, when you scan a page of black text on a white background the image appears on your screen as white text on a black background.

Outline: Select Outline to trace the edges of objects in your pictures. Only the outlines of shapes appear in the scanned image, everything else is white.

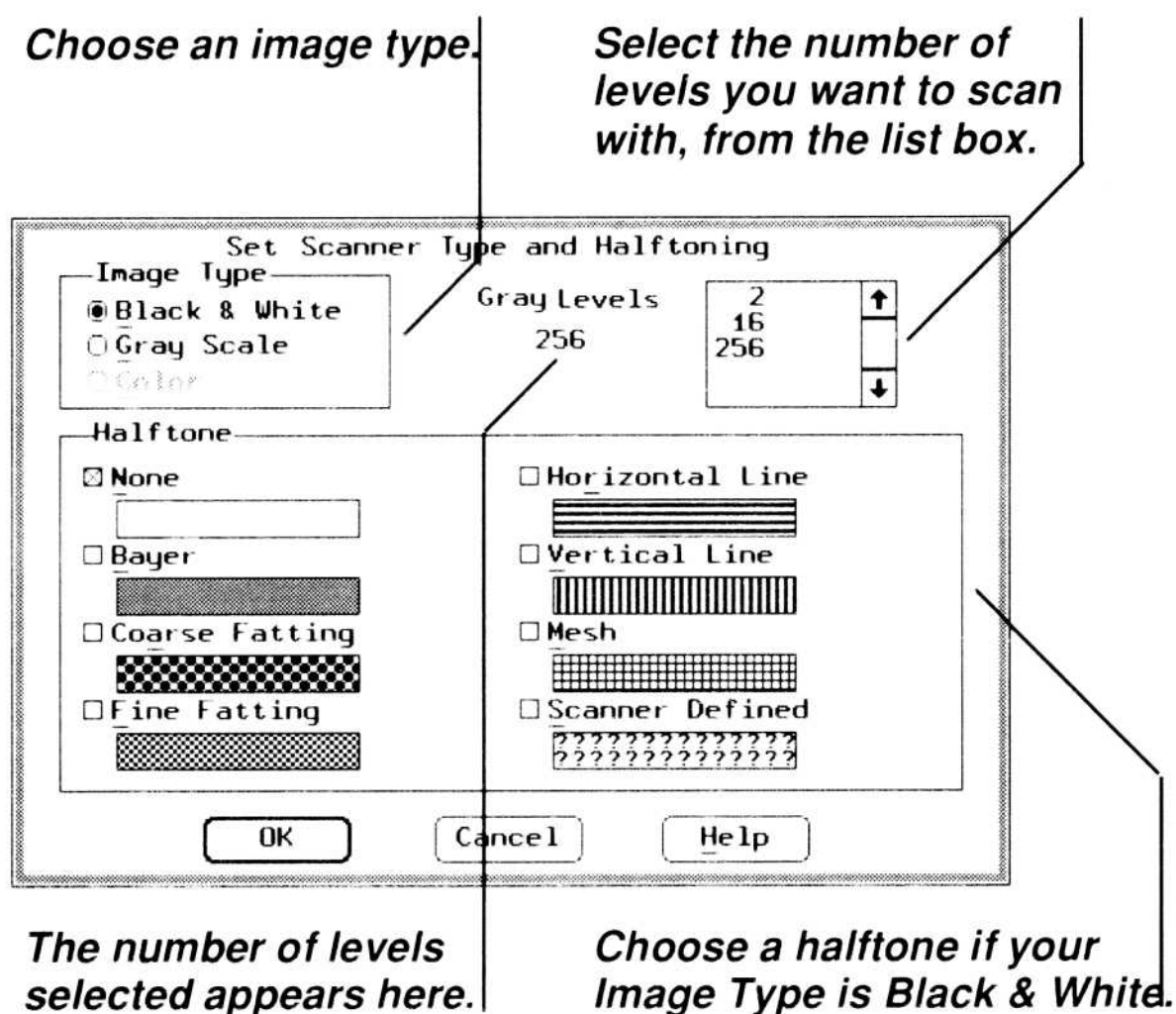
Set Image Type & Halftone

You use the Set Image Type & Halftone command to set the scan mode. PC Paintbrush IV Plus supports scanning in color, gray scale, and black-and-white, as well as offering halftone patterns. Any scanning mode not supported by your scanner is dimmed.

To set the image type and halftone pattern:

- 1 Choose Options Set Image Type & Halftone.

The Set Scanner Type and Halftoning dialog box appears.



- 2 Choose an image type.

See "Image Types and Halftone Patterns" below for more.

- 3 Choose OK to use your image type and halftone pattern selections.

Choose Cancel to keep the previous settings.

Image Types and Halftone Patterns

Black & White: Select this option to scan an image that consists mostly of text and line art or to create a black-and-white image using halftone options. For example, you might choose this option when you want to print the picture from an application or printer that does not support color or gray scale. Select a halftone pattern from the Halftone Pattern box when you choose this image type.

Gray Scale: Select this option to scan using gray levels. When you choose this option the gray levels available to your scanner appear in the list box. Choose the levels of gray you want to scan with. If your scanner does not support this option the Gray Scale button and list box are dimmed.

Color: Select this option to scan in color. When you choose this option the numbers of color available to your scanner appear in the list box. Choose the number of colors you want to scan with. If your scanner does not support color the Color button is dimmed.

Halftone: Halftoning is a method of using a pattern of black and white dots to produce a visual shade of gray. The halftoning process is similar to the halftoning technique used by newspapers and magazines, producing an image that appears very much like a black-and-white photograph. The Halftone Pattern box shows the types of halftone patterns you can choose from. See the chart below for information about the look and use of each halftone pattern.

The halftone patterns are:

| This halftone pattern. . . | . . . produces this effect |
|----------------------------|--|
| None | High contrast black-and-white image. |
| Bayer | Pattern which generally looks good on-screen and produces fair output on a printer. It creates a crisp look, but does not copy well on a duplicating machine. It has less contrast than some of the other halftone patterns (adjust the Contrast setting accordingly), and the criss-cross nature of this pattern may sometimes be apparent. |
| Coarse Fatting | (Also known as spiral). Generally looks good on a laser printer, but looks large and coarse on most computer screens. With Coarse Fatting there are more shades of gray and the dots are larger than with Fine Fatting (below); however, the image is not as crisp. This copies well on a duplicating machine. |
| Fine Fatting | Similar to Coarse Fatting. The dots are smaller, however, giving a crisper look to the image (less noticeable halftoning), but there are fewer gray shades. This copies well on a duplicating machine. |
| Horizontal Line | Best used when you want to preserve the horizontal properties of the image. This halftone pattern preserves the details of an image fairly well, but not as well as Bayer, and looks average when photocopied. |
| Vertical Line | Best used when you want to preserve the vertical properties of the image. This halftone pattern preserves the details of an image fairly well, but not as well as Bayer, and looks average when photocopied. |
| Mesh | A halftone pattern using square dots. |
| Scanner Defined | Any one additional halftone pattern available with certain scanners. For example your scanner may be able to halftone in a diagonal line pattern. |

Note The appearance of halftone patterns varies depending upon the scanner. Most scanners do not offer all types of halftoning. Halftone patterns unavailable to your scanner are dimmed.

Set Paper Size

You use the Set Paper Size command to indicate the size of the page to be scanned. Paper sizes unavailable to your scanner are dimmed.

To change the paper size:

- 1 Choose Options Set Paper Size.
The Set Paper Size dialog box appears.
- 2 Click Set Units to choose a new unit of measure.
The current unit of measure is listed below the Set Units button.
The size of the paper is indicated in the chosen unit of measure.
- 3 Select the paper size you want to use.
If you want a paper size other than those listed, choose Custom Size and type the Horizontal Size and Vertical Size you want in the appropriate boxes.
- 4 Choose OK to set the paper size.
Choose Cancel to keep the previous paper size.

The table below shows available paper size choices.

| This button . . . | . . . is this size |
|-------------------|---|
| Letter | the US standard letter size, 8.50 x 11.00 inches |
| Legal | the US standard legal size, 8.50 x 14.00 inches |
| B Size | 11.00 x 17.00 inches |
| A3 | a standard European size, 29.70 x 42.00 centimeters |
| A4 | a standard European size, 21.00 x 29.70 centimeters |
| A5 | a standard European size, 14.80 x 21.00 centimeters |
| B5 | a standard European size, 17.60 x 24.00 centimeters |

Set Resolution & Scaling

You use the Set Resolution & Scaling command to adjust the sharpness and size of the scanned image.

To adjust the resolution and scaling settings:

- 1 Choose Options Set Resolution & Scaling.
The Set Scanner Resolution and Scaling Factor dialog box appears.
- 2 Click Set Units to change the unit of measure.
The unit of measure is listed next to the Set Units button.
- 3 Choose a scanner resolution.

The available resolutions are dependent upon your scanner. Some scanners allow you to set a custom resolution. If you want to set a custom resolution, and it is available, choose Custom Resolution and type the Horizontal and Vertical resolutions you want in the appropriate boxes. If your horizontal resolution is different from your vertical resolution, the scanned image may appear distorted (see your scanner manual for the exact range of resolutions it provides).

Keep in mind that although a higher scan resolution produces a finer image, the memory requirement of the scanned image grows very quickly when the resolution is increased (see the section called "About Memory" in Part One for more about memory requirements).

Use a low resolution like 100 when you have very little memory available or you just want an idea of how your image will look.

- 4 If variable resolutions are supported by your scanner, use the scroll bar to adjust the scaling factor.

Increasing or decreasing the scaling factor may change the look of the scanned image, especially when you are using a halftone pattern.

To quickly adjust the scaling factor to 100%, click the 100% button.

- 5 Choose OK to use the resolution and scaling factors.

Choose Cancel to keep the previous settings.

Set Units

You use the Set Units command to set the unit of measure you want to use for all measurements in the scanning portion of this program.

To change the unit of measure:

- 1 Choose Options Set Units.

The Set Units dialog box appears.

- 2 Select the unit you want to use.
- 3 Choose OK to set the unit.

The table below shows the unit equivalents.

| This unit . . . | equals this many inches . . . | . . . and this many centimeters. |
|-----------------|----------------------------------|-------------------------------------|
| Inch | 1 | 2.54 |
| Centimeter | 0.394 | 1 |

A pixel is equal to one dot on the computer screen or printer.

Set Preferences

You use the Set Preferences command to choose the palette you want to use for your scanned image and to prescan in black and white.

To load a palette for scanning:

- 1 Choose Options Set Preferences.
The Set Preferences dialog box appears.
- 2 Choose Load palette for Scan.
- 3 Type the name of the palette you want to load for scanning in the File box.
- 4 Choose OK.

To scan in black and white:

- 1 Choose Options Set Preferences.
The Set Preferences dialog box appears.
- 2 Choose Prescan in black and white
Prescanning in black and white requires less memory and reduces the amount of time it takes PC Paintbrush IV Plus to scan the image.
Your final scan will be in the mode you've selected.
- 3 Choose OK.

Reference

This section contains technical and background information you may find useful while setting up and using PC Paintbrush IV Plus. It is divided into five parts:

- PC Paintbrush IV Plus Messages
- Glossary
- Using the Frieze Program
- Other Utility Programs
- Supported Hardware (a list of printers, display adapters, drawing devices, and scanners you can use with PC Paintbrush IV Plus, and detailed instructions about installing scanner drivers).

PC Paintbrush IV Plus Messages

Below is a list and explanation of messages that may appear when you are using PC Paintbrush IV Plus. Each message is followed by a description and a suggested action you can take to correct a problem. See the file PBREADME.DOC on your PC Paintbrush IV Plus disks for additional information that became available after this manual went to press.

| Message | Meaning | What to do |
|---|---|--|
| Are you sure you want to replace settings with defaults? | You're attempting to use default scanner settings. | If it's OK to replace your current scanner settings with default values choose Yes. If not, choose No. |
| Are you sure you want to rescan image? | You're attempting to scan using the current settings. | If you want to rescan the image using your current settings choose Yes. If not, choose No and adjust your scanner settings. |
| Are you sure you want to save to the current Configuration File? | You're attempting to resave a configuration file that you have changed. | If it's OK to lose the old version, choose Yes. If not, choose No and choose File Save Configuration As to save the file under a different name. |
| Can't create file <i>filename.nnn</i> | Your disk is out of directory space, or is write-protected, or does not have enough space to create a new file. | Delete some unneeded files to make more room. |
| Can't open file <i>filename.nnn</i>. | PC Paintbrush can't locate the file you've typed. | Make sure you typed the name correctly. If you have a hard disk, check which subdirectory the file is in. If this error reoccurs after you've checked these things, there may be a problem with the file - try your backup copy instead. |
| Config file is invalid. | PC Paintbrush can't read the configuration file. | The configuration file is in the wrong format. |

| Message | Meaning | What to do |
|---|--|---|
| Config file open failed. | PC Paintbrush can't locate the file you've typed. | Make sure you typed the name correctly. If this error reoccurs, there may be a problem with the file - try your backup copy instead. |
| Config file write failed. | The filename is invalid or your disk is out of directory space, or is write-protected, or does not have enough space to create the configuration file. | Check your DOS manual for information about naming files. If the name is correct, delete some unneeded files to make more room. |
| Could not init virtual memory! | PC Paintbrush will not run. | <p>You may not have a path set for PC Paintbrush to store temporary files. See "About Memory" in Part One for information.</p> <p>If you have a path set, try exiting to DOS and removing unnecessary memory resident programs. Reboot and run PC Paintbrush again.</p> |
| Error Closing scanner. | PC Paintbrush IV Plus completed the scan, but cannot scan again. | Turn your scanner off and then turn it back on. |
| File <i>filename.nnn</i> exists. Overwrite it? | You're attempting to save a file with a name another file already has. | If it's OK to lose the old version, choose OK. If not, choose Cancel and choose File Save As to save the file under a different name. |
| File <i>filename.nnn</i> not found. | Paintbrush can't locate the file you've typed. | Make sure you typed the name correctly. If you have a hard disk, check which subdirectory the file is in. |
| Help System Internal Error. | PC Paintbrush IV Plus cannot load the help file. | Copy your backup PBRUSH.HLP and PBSCAN.HLP files to your PC Paintbrush Plus subdirectory. |
| Hue must be a number between -1.0 and 360.0 | You've specified a hue value out of the allowed range. | Change the value to one within the allowed range. |

| Message | Meaning | What to do |
|--|---|--|
| <i>filename.nnn</i> is not a valid picture. | PC Paintbrush can't open a drawing file. | The file may be from an application which is not compatible with PC Paintbrush, or it may be from an older version of PC Paintbrush. Make sure you typed the name correctly; if you have, then the file cannot be used. |
| Lightness and saturation must be a number between 0.0 and 1.0 | You've specified values out of the allowed range. | Change the value to one within the allowed range. |
| Load a new image without saving <i>filename.nnn</i>? | You're trying to load a new image before you've saved the current image. | If it's OK to lose the current image, choose OK. Choose Cancel to go back to the drawing. |
| Not enough memory for the image. | There isn't enough free memory or disk space available to scan the image. | To increase available memory and disk space, remove unnecessary memory resident programs, delete unneeded files, reboot, and run PC Paintbrush again. To reduce the amount of memory required for your scan, decrease the scanning resolution and reduce the number of colors/gray scale levels. |
| Not enough memory to create image. | There isn't enough free memory available to create a new picture. | Reduce the size of the image (smaller drawings use less memory) or change to 2-color mode. |
| Not enough memory to load <i>filename.nnn</i>. | You don't have enough RAM available to run PC Paintbrush. | Remove utility programs from RAM before you start PC Paintbrush. |
| Not enough memory to use Help. | You do not have enough memory to use help. | If you want to use Help, click OK, then exit to DOS, remove unnecessary memory resident programs, reboot and run PC Paintbrush again. To run without help, choose OK and continue. |

| Message | Meaning | What to do |
|---|---|--|
| Out of disk space for <i>filename.nnn</i>. | The file you're trying to save is too big to fit on disk. | Try saving part of the file as a cutout. Delete some files to free space. |
| Out of memory. | You don't have enough free memory or disk space. | To increase available memory, remove unnecessary memory resident programs, reboot, and run PC Paintbrush again. To increase disk space delete unneeded files. |
| Scanner initialization error. | PC Paintbrush doesn't recognize your scanner. | Make sure your scanner is turned on. If it is then check for hardware conflicts in your system. |
| Scanner - Read Error. | You have attempted to scan an image, but PC Paintbrush is not receiving data from your scanner. | Make sure all of your cable connections are secure. If this does not work you may have a hardware conflict in your system. |
| The aspect ratio must be a number between <i>xx</i> and <i>yy</i>. | You've typed in an invalid number in the Set Aspect Ratio dialog box. | Change the number so that it is in the range listed. |
| Unable to find Help file | Paintbrush can't locate one of your help files. | Exit PC Paintbrush and type dir to check the contents of the directory to make sure the PBRUSH.HLP and PBSCAN.HLP files are there. If they're not there, copy them from the PC Paintbrush IV Plus Setup disk. |
| Width must be a number greater than zero when entering an image. | You've specified a drawing width of zero. | Change the width to a number greater than zero. |
| Write over existing file? | You're attempting to save a file with a name another file already has. | If it's OK to lose the old version, choose Yes. If not, choose No and choose File Save Configuration As to save the file under a different name. |
| X/Y shadow must be number between - 500 and 500 pixels. | You've specified shadow for text and selected a number out of the allowed range. | Change the value to one within the allowed range. |

Glossary

| Term | Description |
|-----------------|--|
| Aspect ratio | The ratio between the width and height of the dots on the screen. The aspect ratio of your screen may not match the aspect ratio of your printer, so images which appear correct on screen may appear stretched or flattened when they print. You can use the Options Set Aspect command before you begin drawing to choose the aspect ratio you want for your image. If you want your drawing to look correct on screen, choose For Screen. If you intend to print your drawing, choose For Printer. You can also choose a custom aspect ratio. |
| Click | Quickly press and release the left mouse button. |
| CONFIG.SYS | The CONFIG.SYS file tells your computer what types of devices (such as scanners) are installed in your system. The CONFIG.SYS file <i>must</i> be in the root directory of your boot disk or hard drive. |
| Constrain | Force some PC Paintbrush tools to draw horizontal, vertical, or 45-degree lines, or circles or squares. To constrain a tool, press Shift while using the tool. You can change the type of constraint on some tools by pressing Spacebar. |
| Dialog box | A window that appears when you choose certain commands. A dialog box contains options that let you control the effects of some commands. For example, when you choose File New, the New File dialog box appears. |
| Display adapter | A board which plugs into your computer to control the monitor. The display adapter in your system controls how many colors your monitor can display and the resolution at which images appear. |
| Dpi | <i>Dots-per-inch</i> . Designates how many dots per inch a printer or scanner can produce. The higher the dpi, the sharper the printed drawing will be. |
| Drag | Hold down the left mouse button while moving the mouse. |

| | |
|---------------|---|
| Drawing area | The part of your drawing that appears on the screen. The drawing area is part of the drawing canvas, which is the total area available for drawing. |
| Font | A complete set of letters and symbols of a certain type style. This manual, for example, is set in Times Roman. PC Paintbrush IV Plus uses two kinds of fonts: bitmap and outline. See “The Text Tool” in Part Two of this manual for information about the uses of bitmap and outline fonts. |
| Frame Markers | The small squares that appear on the scan frame. You drag them to manipulate the size of the frame. |
| Halftoning | Halftoning is a method of using a pattern of black and white dots to produce a visual shade of gray. The halftoning process is similar to the halftoning technique used by newspapers and magazines, producing an image that appears very much like a black-and-white photograph. |
| Handles | The small geometric symbols that appear on certain tools. You click or drag handles to manipulate your drawing on the screen. For example, handles appear on the screen when you draw a curve, and you use them to bend a curve into the shape you want. |
| HLS | <i>Hue-lightness-saturation.</i> A way to refer to colors by their amount of lightness and saturation and their hue. The hue is the spectrum arranged in a circle where red is 0, yellow is 90, cyan is 180, blue is 240, magenta is 300 and red is 360 again. Lightness and saturation are values ranging from 0.0 to 1.0. You can edit colors using either HLS or RGB values. |
| Icon | A symbol representing a tool, command, or option. The symbols in the Toolbox are icons. |
| Kerning | A typographic term for the amount of spacing between characters. In PC Paintbrush, kerning is called intercharacter spacing. You use the Font Set Type Specs command to adjust intercharacter spacing. |

| | |
|---------|---|
| Leading | A typographic term for the amount of spacing between lines of type. In PC Paintbrush, leading is called interline spacing. You use the Font Set Type Specs command to adjust interline spacing. |
| Palette | The colors your display adapter and monitor can show. You use the Options Set Entire Palette and Options Set Palette commands to adjust the characteristics of these colors. Your system's hardware palette determines which colors appear in the Color Pattern Set, the area at the bottom of the PC Paintbrush screen where you choose the colors and patterns you want to use as you draw. |
| Pica | A unit of measure used in typography. There are twelve points in a pica. |
| Pixel | One dot on the computer screen, printer, or scanner. |
| Point | A unit of measure used in typography. There are 72 points in an inch and 12 points in a pica. |
| RAM | <i>Random access memory.</i> RAM is the memory your computer uses for programs and data. Your computer loads the PC Paintbrush IV Plus software and some, or all, of the drawing you want to work on into RAM each time you start PC Paintbrush IV Plus. You should have at least 640K of RAM installed on your computer to run PC Paintbrush IV Plus efficiently. |
| RGB | <i>Red-green-blue.</i> A way to refer to colors by their amount of red, green and blue. The RGB values range from 0 to 255, where 0 is black and 255 is the maximum amount of a particular color. You can edit colors using either RGB or HLS values. |
| Scanner | An input device that reads printed or typed information directly into your PC. This information can be pictures, text, or a combination of both. PC Paintbrush IV Plus supports many black-and-white, gray scale, and color scanners. |

Using the Frieze Program

This section describes how to use the Frieze utility program to capture screens from other applications and add them to your PC Paintbrush IV Plus pictures.

What is Frieze?

Frieze is a memory resident program linked to PC Paintbrush and your computer's operating system (DOS). Frieze is loaded each time you start PC Paintbrush, and it is removed from memory when you exit the program.

Because Frieze works with DOS, you can use it to capture and store graphic images from other DOS applications. For example, you can use Frieze to copy a part of a Microsoft Word document you created in graphics mode to a disk file. You can then open the image as a PC Paintbrush picture, which you can edit and include in other PC Paintbrush drawings.

Graphics vs. Character-based Applications

The images that you see on your computer screen are composed of either characters (letters and symbols) or individual dots (pixels). Applications whose screens are composed of characters, such as most spreadsheet programs, are called "character-based" programs. Applications whose screens are composed of pixels, like PC Paintbrush IV Plus, are called "graphics-based" programs. Some applications let you run the program in either mode.

Frieze can capture only graphics-based screens. If you are not sure whether the application you are using is graphics - or character - based, check to see which type of mouse pointer the program displays. If the pointer on the screen appears as a box, then the application is probably character-based. If the pointer appears as an arrow or some other type of image (such as the Spraycan pointer in PC Paintbrush), the application is graphics-based.

NOTE Frieze and the application from which you want to capture a screen must be installed in the same graphics mode. If you want to print a copy of your screen while using a character-based application, you should choose the PrtSc command.

Using Frieze

Using Frieze is a three-step process. First you load the Frieze program into your computer's memory. Then you start the application from which you want to capture a screen. Finally, you run Frieze to capture the screen. Detailed explanations of the Frieze commands follow the procedures.

Loading Frieze

The Frieze command line is one of the first lines of this file. To view the file, change to the directory or disk where the PC Paintbrush program files are stored, then type **type paint.bat**.

To load Frieze into your computer's memory:

- 1 Change to the hard disk directory or disk drive that contains the Frieze program.
- 2 Type the Frieze command line exactly as it appears in the PAINT.BAT file, the setup program created when you installed PC Paintbrush.

If you have a VGA adapter, Frieze can capture the palette with the image. To enable the palette capture, you must change the last digit in the fourth parameter on the Frieze line to 4.

For example, if your PAINT.BAT file has a Frieze command line that looks like this: `FRIEZE HP300P P1 0000 ACNQ 640 480 4`
you would type this: `FRIEZE HP300P P1 0004 ACNQ 640 480 4`

NOTE If you want to capture a screen in super VGA mode (640 x 480, 256 colors; 800 x 600, 16 colors; or higher), call ZSoft for a special version of FRIEZE.

Capturing a Screen

To capture a graphics image after loading Frieze into memory:

- 1 Start the application from which you want to capture a graphics screen.
- 2 Choose the appropriate commands to make the screen you want to capture appear on your monitor.
- 3 Press Shift+PrtSc to start the Frieze program.

Some applications may require that you press Enter after you press Shift+PrtSc.

The main Frieze menu will appear at the top of the screen.

- 4 Choose Viewport to specify the area of the screen you want to capture.

- 5 Use the direction keys to move the border until it surrounds the area of the screen you want to capture.

Press Spacebar to change which corner of the border moves when you press a direction key.

Press Enter when you have defined the area of the screen you want to capture.
- 6 Press Shift+PrtSc to return to the main Frieze menu.
- 7 Choose Save.
- 8 Type a filename for the screen you want to capture, and then press Enter.

Remember to add a .PCX extension to the filename.

Frieze saves the captured screen to disk and the Frieze menu disappears.
- 9 Repeat steps 3-8 to capture additional screens from the current application, or exit the application.

Removing Frieze from Memory

Removing Frieze from RAM is not the same as exiting the program. When you exit Frieze, the program remains in memory, ready to capture another image when you press Shift+PrtSc. If you remove Frieze from memory, you must load the Frieze program again before you can capture another image. You should remove Frieze from memory only when you've finished capturing screen images.

To remove Frieze from memory:

- 1 Type **frieze** at the DOS prompt.
- 2 Press Enter.

The message "Removing FRIEZE from memory at user's request" will appear. You cannot remove Frieze from memory if you have loaded other memory-resident programs after loading Frieze.

Loading a Captured Screen into PC Paintbrush IV Plus

You load a screen image you captured with PC Paintbrush just like any other PC Paintbrush drawing, and you can use all the PC Paintbrush tools and commands to modify it for use in a PC Paintbrush drawing or with another application that can read PC Paintbrush files.

To load a captured screen into PC Paintbrush:

- 1 Start PC Paintbrush.
- 2 Choose File Open and select the name of the file you want to use with PC Paintbrush.

Frieze Commands

The Frieze commands are listed below. Because some commands should be used in a specific order, be sure to read the detailed explanation of each command.

| Use this command... | to... |
|------------------------|---|
| Exit | Exit Frieze and return to the regular application screen. Frieze remains in memory. |
| PrtSc | Use the normal DOS printscreen function. |
| Save | Save the current screen onto a disk file. |
| Viewport | Set the portion of the screen to capture. |

You can choose Frieze commands three ways:

- You can move the mouse pointer to the command you want and click.
- You can use the keyboard direction keys to move to the desired command and press Enter.
- You can type the first letter of the command.

For example, you can press E to choose the Exit command.

Viewport

The Viewport command lets you specify which part of the screen you want to capture.

To use Viewport:

- 1 Choose Viewport.

The Viewport menu appears.

- 2 Use the direction keys to move the border lines until the area you want to capture is outlined.

Press Spacebar to change which corner of the border moves when you press a direction key.

Press Enter when you have defined the area of the screen you want to capture.

- 3 Press Shift+PrtSc to return to the Frieze menu.

Read the following section, “Saving a Screen,” for information on saving the screen you just specified.

Saving a Screen

After you have used the Viewport option to set the size of the screen you want to save, you can save a screen to disk.

To save screen to disk:

- 1 Follow the steps in the preceding procedure to specify which part of the screen you want to save.
- 2 Choose Save on the Frieze menu.

The message "Save to" appears.

- 3 Type the name of the file you want to use for the screen dump file.

Remember to add a .PCX extension to the filename.

You can specify a pathname for the file. For example, to save a file called graph.pcx into a subdirectory called cutouts, you would type

c:\cutouts\graph.pcx

Other Utility Programs

This section describes the utility programs included with PC Paintbrush IV Plus. These programs are designed to help you take full advantage of PC Paintbrush IV Plus and your computer system, peripherals, and other applications.

To use a utility program, make sure you are in the directory where the utility is located or include the drive and path when you type the appropriate command line instructions at the DOS prompt.

You should also keep in mind the following conventions used in the command line format:

- Include file extensions when filenames are called for.
- Separate multiple options with a space.
- Square brackets “[]” enclose optional parameters that must be replaced.
- Braces “{ }” enclose required parameters that must be replaced.

BLDGRAY

Use this utility to create gamma corrected gray scale palettes and Color Pattern Sets for your scanned images, so they look like the original, either on screen or in print.

If you're using PC Paintbrush IV Plus to print, you can simply load the screen palette to adjust the look of your picture on screen and then use the Brightness option in the Halftoning Options dialog box to adjust the printed picture. If you're planning to print your picture with a different application, you may want to load a gamma corrected palette you create for printing before saving the image.

To create a gray scale palette for your scanned image, use this command line:

BLDGRAY {gammafactor} [drive:][path] {OutputPalFilename}

where gammafactor is a value between 0.01 and 10 and OutputPalFilename is the name of the new gamma corrected palette.

CHKMEM

Use this utility to check your memory statistics. The more available DOS RAM, hard drive space, and EMS memory you have, the larger the image you can load and scan into PC Paintbrush IV Plus.

To check your memory statistics, use this command line:

CHKMEM

GRAYTOBW

Use this utility to convert gray scale images to black-and-white (called halftoning). This is useful for applications that read only black-and-white images. Other options with GRAYTOBW allow you to convert color and black-and-white images to gray scale. You can also adjust the aspect ratio of an image for use with Ventura Publisher.

GRAYTOBW Options

| | |
|-----|---------------------------------------|
| B | Bayer with gamma correction |
| BG | Bayer using gray palette |
| BU | Bayer uncorrected |
| BUG | Bayer uncorrected using gray palette |
| S | Spiral with gamma correction |
| SG | Spiral using gray palette |
| SU | Spiral uncorrected |
| SUG | Spiral uncorrected using gray palette |
| T | Text or Line Art (unhalftoned) |
| C | Color (stays color but resizes image) |
| CG | Convert color to gray scale |
| R | Resize B/W image for Ventura import |
| G | Convert B/W to 16 gray scale |
| EB | Expand B/W picture using Bayer |
| ES | Expand B/W picture using Spiral |
| ET | Expand B/W picture using Text |
| U | Uncompressed file output |
| OFF | Turn palette off |

TERMS FOR GRAYTOBW OPTIONS

| | |
|------------------|--|
| Bayer | Use any of the Bayer halftone options to preserve detail with a crisscross appearance. Bayer produces best results for 150 dpi printers or lower (most dot matrix printers), but does not copy well on duplicating machines. See the File Open command in “PC Paintbrush IV Plus Menus” for an example of Bayer. |
| Spiral | Use any of the Spiral (also known as Fattening) halftone options for good results on laser printers and duplicating machines and a less detailed look on screen. See the File Open command in “PC Paintbrush IV Plus Menus” for an example of Spiral. |
| Text or Line Art | Use Text or Line Art for high contrast images that consist mostly of black-and-white. |

| | |
|-----------------|---|
| Gamma corrected | Use gamma correction so that your image appears to have more contrast. Your image will look better because you can see more shades of gray. Note that most of our new gray scale scanner drivers automatically perform gamma correction. |
| Gray palette | Use any of the gray palette options to convert a color picture to gray scale. This is useful if you have a gray scale scanner but not a gray scale display. For example, an HP ScanJet can scan 16 gray levels into an EGA display in 16 color mode. Although there are only 4 shades of gray available, the PCX file really contains full gray scale information (so the picture appears in pseudo-color). |
| Resizing | Use the resizing option to adjust the aspect ratio of an image so that it works better with other applications, notably Ventura Publisher. This process reformats a PCX file by making the bytes per line even and by adding white data to the end of each line. |

To convert an image using GRAYTOBW, use this command line format:

GRAYTOBW [drive:][path] {filename} [drive:][path] {filename} [option]

For example, if you want to convert GRAY.PCX to BW.PCX using a spiral halftone, type this command line:

GRAYTOBW GRAY.PCX BW.PCX SG

NOTE GRAYTOBW provides help if you type **GRAYTOBW ?**

HP2PCX

Use this utility to convert Hewlett Packard LaserJet compatible print files to PCX files. This is useful if you want to use all or part of a document as a picture file. You can edit a PCX with PC Paintbrush IV Plus and use it with major desktop publishing packages. See your application's manual for information on printing to a file.

To use HP2PCX you must have a total of 1.5 Mb free disk space or EMS memory with over 1.5 Mb free memory (very complex documents with many fonts may require additional disk or EMS memory). If you have EMS memory, HP2PCX will run more quickly. If you have less than 1.2 Mb of EMS memory available it is used only for font storage.

HP2PCX Options

Options may be indicated in any order and in either upper or lowercase letters.

-bn Eliminates or preserves the white border in the conversion process. Eliminating the white border creates a smaller PCX file, requiring less disk space. If you do not use this option, the default is -b0.
-b0 eliminates the white border.
-b1 preserves the white border.

For example, if your command line is **HP2PCX 88PRICES.PIC -b1**, the white border of 88PRICES.PIC is preserved.

-nnn Identifies the page to be converted. If you do not use this option, page 1 of the indicated document is the default.

For example, if your command line is **HP2PCX 88PRICES.PIC -n27**, page 27 is converted.

-tpath Sets the path for temporary files, which are created during the conversion process if you do not have enough EMS memory (around 1.5 Mb). Use this option if you have filenames (that you do not want overwritten) that match any of the possible temporary filenames in the current default directory.

Your temporary files will be named TEMP???.IMG, where ??? is replaced with 0-9 and A-F.

For example, if your command line is **HP2PCX -t:\PBRUSH**, your temporary files will be located in the PBRUSH directory of the default disk drive.

-opcx file Specifies the PCX output filename you want. If you do not use this option, your input filename with a PCX extension is the default.

For example, if your command line is **HP2PCX -oNEWCOSTS.PCX**, the PCX output filename will be NEWCOSTS.PCX.

-pportrait font Specifies the portrait font you want. If you do not use this option, the downloaded font is the default. Include

the path and filename if the font is not in the default directory.

For example, if your command line is **HP2PCX -pA:\FONTS\HELV10.XFR**, the font will be HELV10P.XFR, located in the FONTS directory of drive A.

-l*landscape font*

Specifies the landscape font you want. If you do not use this option, the downloaded font is the default. Include the path and filename if the font is not in the default directory.

For example, if your command line is **HP2PCX -lA:\FONTS\HELV10.XFR**, the font will be HELV10P.XFR, located in the FONTS directory of drive A.

-f*font file*

Specifies a file that contains a list of available fonts. Use this option if you use an application that can select fonts for a document (by characteristics or by ID numbers), yet cannot download the font (either it doesn't have download capabilities or the fonts are not available to that application). This option will tell HP2PCX where to find those fonts. See "Creating a Font File List" below and your *HP LaserJet Printer Family Technical Reference Manual* for more.

For example, when your command line is **HP2PCX -fC:\FONTS\FONT.TXT**, the available fonts will be those listed in the FONT.TXT file, located in the FONTS directory of drive C.

Creating a Font File List

To create a font file list using any text editor, type one line for each HP compatible font, using the following format: {Id Number} {Font File Name including Path}

For example, your list file might look like this:

```
21 C:\FONTS\COURIER10.SFP
25 C:\FONTS\TROMANI.FNT
```

If the application selects fonts by description, HP2PCX will search through the fonts specified in this list file and then select the font that is most similar to the description embedded in the document. In this case

the ID number you assign to a font is arbitrary (but must be included in the list file).

If, however the application selects fonts by ID number, HP2PCX will search through the fonts specified in the list file and select the font whose ID number matches the ID number selected by the HP LaserJet command embedded in the document. In this case you must assign the correct ID number to the font.

While running HP2PCX you are told what font ID number HP2PCX could not find. You can then go back to the list file, assign the correct ID number, and run the program again.

To find out what ID number an application has assigned to a font, check your application's user guide. Some applications document the ID numbers they assign to their fonts.

You can edit the HP compatible print file by searching for HP's Select Font ID command and then changing the font ID number to the one you have assigned in the list file (see your HP LaserJet Printer Family Technical Reference Manual for more information).

HP2PCX will load the descriptions of each font listed in this file. Keeping your list of fonts to a minimum will reduce the amount of memory required.

To convert a print file to a PCX file, use this command line format:

HP2PCX {input file} [options]

PCL2XFR

Use this utility to translate HP LaserJet fonts (PCL) to ZSoft Bitmap fonts (XFR) for use with PC Paintbrush IV Plus. ZSoft fonts are orientation independent, so you don't need to translate both a portrait and landscape font of the same typeface. See "The Text Tool" in this manual for information about bitmap fonts.

To translate an HP font to a ZSoft Bitmap font, use this command line format:

PCL2XFR [drive:][path] {hpfilename} [drive:][path] {xfrfilename}

For example, to translate an HP font called TMS13012.SFP, which is in your Ventura directory on drive D, to a ZSoft Bitmap font in your PB4 directory on drive C, type:

PCL2XFR D:\VENTURA\TMS13012.SFP C:\PB4\TMSRMS12.XFR

NOTE You cannot use DOS wildcards with PCL2XFR.

PCXHDR

Use this utility to view header information about your PC Paintbrush IV Plus images. Also, if you are unsatisfied with the results of loading an older version PCX file into PC Paintbrush IV Plus, you can use this utility to turn off the palette information. Listed below is the header information that PCXHDR reports:

Palette On or Off

number of bits per pixel

number of planes

width of image in pixels

height of image in pixels

number of bytes per line

Hardware Color Palette (The Hardware Color Palette information is invalid when your PCX file is a 256 color image.)

To view the header information of a PCX file, use this command line format:

PCXHDR [drive:][path] {pcxfilename} [paletteon\paletteoff]:

For example, if you want to view the header information for ROSE.PCX, which is in your current directory, and if you also want to turn off the palette information, type:

PCXHDR ROSE.PCX OFF

The number of bits per pixel and the number of planes in your PCX file indicate the color mode used to create this image (see the list below).

1 bit per pixel, 1 plane = Black-and-white image

1 bit per pixel, 2 planes = 4 color image

1 bit per pixel, 3 planes = 8 color image

1 bit per pixel, 4 planes = 16 color image

2 bits per pixel, 1 plane = 4 color image

2 bits per pixel, 4 planes = 256 color image

4 bits per pixel, 1 plane = 16 color image

8 bits per pixel, 1 plane = 256 color image

NOTE If you type only **PCXHDR** at the DOS prompt, PCXHDR will prompt you for the PCX filename. However, using this method does not allow you to turn the palette on or off.

TIFFDUMP

Use this utility to view information about images in TIFF format (Tag Image File Format).

PC Paintbrush IV Plus can read a TIFF file if the following three tags are included: Image Width, Image Length, and Strip Offset. Listed below is the information that TIFFDUMP reports for each tag in the specified TIFF file:

tag number
data tag type
length of data in tag
tag value number

After the tag-by-tag listing, TIFFDUMP gives an executive summary of the TIFF file that includes the following:

Image Width
Image Length
Samples Per Pixel/Bits Per Sample
Approximate Size
TIFF Class
Compression Scheme

TIFFDUMP Terms

| | |
|-----------------------------------|--|
| Image Width | If the Image Width is zero, PC Paintbrush IV Plus cannot read your TIFF file. |
| Image Length | If your Image Length is zero, PC Paintbrush IV Plus cannot read your TIFF file. |
| Samples Per Pixel/Bits Per Sample | Values used in the calculation of Approximate Size (see below). |
| Approximate Size | The approximate amount of DOS RAM needed to load the image. |
| TIFF Class | PC Paintbrush IV Plus can read the following 5.0 TIFF classes: B - black-and-white G - gray scale R - color (only when created with a PC Paintbrush product). |
| Compression Scheme | PC Paintbrush IV Plus can read the following 5.0 TIFF compression schemes: Uncompressed, Packbits (compressed), and LZW (compressed). |

The information TIFFDUMP reports may scroll across your screen too quickly to read the tag-by-tag listing. You can run TIFFDUMP and read the executive summary or you can re-route the TIFFDUMP output to a text file that you can load into your word processor.

To view the summary information of a TIFF file, use this command line format:

TIFFDUMP [drive:][path] {tiffilename}

For example, to read the summary information about SPACEMAN.TIF (to see how much memory you need to load the image, or to find the TIFF class or compression scheme) type this command line:

TIFFDUMP SPACEMAN.TIF

To re-route TIFFDUMP to a text file, use this command line format:

TIFFDUMP [drive:][path] {tiffilename} >[drive:][path] {textfilename}

For example, if you are in the directory that contains a TIFF file called SPACEMAN.TIF and you want to re-route the output of TIFFDUMP into a file called SPACEMAN.TXT, located in the same directory, type the following command line:

TIFFDUMP SPACEMAN.TIF >SPACEMAN.TXT

Supported Display Adapters

Following is a list of display adapters compatible with the PC Paintbrush IV Plus software:

| Display Adapter | Resolution | Color Capability |
|-------------------------------------|-------------|------------------------|
| AT&T Display Enhancement Board | 640 x 400 | 2,16 color |
| ATI EGAWonder800+ | 640 x 480 | 2, 4, 8, 16 color |
| | 752 x 410 | 2, 4, 8, 16 color |
| | 800 x 560 | 2, 4, 8, 16 color |
| ATI VIP | 800 x 560 | 2, 4, 8, 16 color |
| ATI VGAWonder | 800 x 600 | 2, 4, 8, 16, 256 color |
| | 640 x 400 | 256 color |
| | 640 x 480 | 256 color |
| COMPAQ standard graphics monitor | 640 x 200 | 2 color |
| Cornerstone DualPage | 1600 x 1280 | 2 color |
| | 800 x 1280 | 4 color |
| Cornerstone SinglePage XL | 768 x 1008 | 2 color |
| ETAP ATRIS | 1440 x 720 | 2 color |
| ETAP NEFTIS | 720 X 728 | 2 color |
| Everex Viewpoint VGA | 800 x 600 | 2, 4, 8, 16, 256 color |
| | 1024 x 768 | 2, 4, 8, 16 color |
| | 640 x 400 | 256 color |
| | 512 x 480 | 256 color |
| | 640 x 480 | 256 color |
| Genoa SuperEGA HiRes+ | 640 x 480 | 2, 4, 8, 16 color |
| | 640 x 528 | 2, 4, 8, 16 color |
| | 752 x 410 | 2, 4, 8, 16 color |
| | 800 x 600 | 2, 4, 8, 16 color |
| | 912 x 480 | 2, 4, 8, 16 color |
| Genoa SuperVGA | 720 x 512 | 2, 4, 8, 16 color |
| | 640 x 350 | 256 color |
| | 640 x 480 | 256 color |
| | 720 x 512 | 256 color |
| Hercules Incolor | 720 x 348 | 4, 8, 16 color |
| Hercules Graphics Card (monochrome) | 720 x 348 | 2 color |
| IBM CGA | 320 x 200 | 4 color |
| | 640 x 200 | 2 color |
| IBM EGA | 640 x 200 | 2, 16 color |
| | 640 x 350 | 2, 4, 8, 16 color |
| IBM EGA with gray converter | 640 x 350 | 2, 4, 16 grays |
| IBM PCjr | 320 x 200 | 4, 16 color |
| | 640 x 200 | 2 color |

| Display Adapter | Resolution | Color Capability |
|--|-------------|------------------------|
| IBM PS/2 VGA | 640 x 480 | 4, 16 color |
| IBM PS/2 VGA/MCGA | 640 x 480 | 2 color |
| | 320 x 200 | 2, 4, 256 color |
| | 640 x 200 | 2 color |
| Matrox VGO-AT | 640 x 480 | 2, 4, 8, 16 color |
| | 720 x 480 | 2, 4, 8, 16 color |
| MDS Genius VHR | 736 x 1008 | 2 color |
| NEC GB-1 | 640 x 480 | 2, 4, 8, 16 color |
| NEC Monograph | 1024 x 1024 | 2 color |
| Number Nine Pepper 1600 | 1600 x 1200 | 2 color |
| Number Nine Pepper SGT | 640 x 480 | 256 color |
| Number Nine Pro 1280 | 1280 x 1024 | 256 color |
| Number Nine Revolution | 512 x 480 | 256 color |
| Olivetti M24 standard graphics adapter | 640 x 400 | 2 color |
| Orchid Designer VGA | 640 x 480 | 256 color |
| Paradise EGA 480 | 640 x 480 | 2, 4, 8, 16 color |
| Paradise VGA Plus | 800 x 600 | 2, 4, 8, 16 color |
| Paradise VGA 16-bit Plus | 800 x 600 | 2, 4, 8, 16 color |
| | 640 x 400 | 256 color |
| Paradise VGA Professional | 800 x 600 | 2, 4, 8, 16 color |
| | 640 x 480 | 256 color |
| | 640 x 400 | 256 color |
| Princeton LaserPage | 1200 x 1600 | 2 color |
| Princeton Publishing Labs MultiView | 800 x 1600 | 16 grays |
| Quadram Quadcolor I/II | 640 x 200 | 2, 16 color |
| | 320 x 200 | 4 color |
| Quadram Quadcolor II | 640 x 200 | 16 color |
| Quadram QuadVGA Spectra | 800 x 600 | 2, 4, 8, 16, 256 color |
| | 1024 x 768 | 2, 4, 8, 16 color |
| | 640 x 350 | 256 color |
| | 640 x 480 | 256 color |
| Sigma Color 400 | 640 x 400 | 2, 4, 8, 16 color |
| | 320 x 200 | 4 color |
| Sigma EGA 480 | 640 x 480 | 2, 4, 8, 16 color |
| | 752 x 420 | 2, 4, 8, 16 color |
| Sigma L-View | 1664 x 1200 | 2 color |
| | 1024 x 780 | 2 color |

| Display Adapter | Resolution | Color Capability |
|----------------------------|-------------|------------------------|
| Sigma VGA/H | 800 x 560 | 2, 4, 8, 16 color |
| | 800 x 600 | 2, 4, 8, 16 color |
| STB Graphix Plus II | 640 x 200 | 4 color |
| STB Multi Res II | 640 x 480 | 2, 4, 8, 16 color |
| | 704 x 519 | 2, 4, 8, 16 color |
| STB Multi Res | 640 x 480 | 2, 4, 8, 16 color |
| | 752 x 410 | 2, 4, 8, 16 color |
| STB Super Res 400 | 640 x 400 | 2, 4 color |
| | 320 x 200 | 16 color |
| STB VGA EM/512 | 800 x 600 | 2, 4, 8, 16, 256 color |
| | 1024 x 768 | 2, 4, 8, 16 color |
| | 640 x 480 | 256 color |
| Tandy 1000 | 320 x 200 | 4, 16 color |
| | 640 x 200 | 2 color |
| Tandy 1200, 3000 | 640 x 400 | 2, 4 color |
| | 640 x 200 | 4 color |
| | 320 x 200 | 16 color |
| Taxan Crystal View | 1280 x 960 | 2 color |
| Tecmar Graphics Master | 640 x 400 | 2, 4, 16 color |
| | 640 x 200 | 4, 16 color |
| | 720 x 352 | 2, 4 color |
| | 720 x 704 | 2, 4 color |
| | 720 x 400 | 4 color |
| | 720 x 200 | 4 color |
| Tecmar VGA/AD | 640 x 400 | 2, 4, 8, 16, 256 color |
| | 800 x 440 | 2, 4, 8, 16 color |
| | 800 x 600 | 2, 4, 8, 16, 256 color |
| | 640 x 350 | 256 color |
| | 640 x 480 | 256 color |
| | 1024 x 768 | 2, 4, 8, 16 color |
| Toshiba T3100 computer | 640 x 400 | 2 color |
| Tseng Labs EVA/480 | 640 x 480 | 2, 4, 8, 16 color |
| Tseng Labs EVA/1024 | 800 x 600 | 2, 4, 8, 16, 256 color |
| | 640 x 480 | 256 color |
| | 1024 x 768 | 2, 4, 8, 16 color |
| Tseng Labs Monochrome | 720 x 348 | 2 color |
| Ventek PS2000 | 1280 x 960 | 2 color |
| | 1280 x 1024 | 2 color |
| Vermont Microsystems PM100 | 1024 x 1024 | 2 color |
| Verticom 2Page Display | 1280 x 960 | 2 color |

| Display Adapter | Resolution | Color Capability |
|-------------------------|------------|------------------------|
| Video Seven FastWrite | 752 x 410 | 2, 4, 8, 16 color |
| | 720 x 540 | 2, 4, 8, 16 color |
| | 800 x 600 | 2, 4, 8, 16 color |
| | 640 x 400 | 256 color |
| | 640 x 488 | 256 color |
| Video Seven Vega Deluxe | 640 x 480 | 2, 4, 8, 16 color |
| | 752 x 410 | 2, 4, 8, 16 color |
| Video Seven V7VGA | 720 x 540 | 2, 4, 8, 16 color |
| | 800 x 600 | 2, 4, 8, 16 color |
| Video Seven V-RAM VGA | 640 x 480 | 256 color |
| | 640 x 400 | 256 color |
| | 720 x 540 | 2, 4, 8, 16, 256 color |
| | 800 x 600 | 2, 4, 8, 16, 256 color |
| | 756 x 410 | 2, 4, 8, 16 color |
| | 1024 x 768 | 2, 16 color |
| Wyse 700 Display | 1280 x 800 | 2 color |
| | 640 x 800 | 4 color |
| | 640 x 400 | 4 color |
| Xerox 6065 High res | 640 x 400 | 2 color |
| Xerox 6065 w/EGC | 640 x 400 | 16 color |
| Xerox Full Page | 720 x 992 | 2 color |
| Xerox 19" LFS VX 222C | 1152 x 860 | 2 color |

NOTE The PC Paintbrush IV Plus screen appears different depending on what kind of display adapter you use with your computer system. The screens in this manual are shown as examples only.

Supported Printers

Following is a list of printers supported by the PC Paintbrush IV Plus software:

| Printer | Resolution | Aspect Ratio |
|--|----------------|--------------|
| Apple LaserWriter | 300 dpi | 1.000 |
| AST Turbolaser | 300 dpi | 1.000 |
| AT&T 477 | 180 dpi | 1.000 |
| Brother (IBM compatible) | 120 dpi | .833 |
| Calcomp ColorMaster(B&W and color) | 200 dpi | 1.015 |
| Canon BJ-80 series | 120/240 dpi | .833/1.667 |
| Canon BJ-130 series | 180/360 dpi | 1.000 |
| Canon LBP-8 series | 150/300 dpi | 1.000 |
| Canon LBP-8IIR series | 75/150/300 dpi | 1.000 |
| Canon PJ-1080A | 84 dpi | 1.000 |
| Citizen 120D | 120 dpi | .833 |
| C.Itoh 8510 | 144 dpi | 1.000 |
| Cordata LP-300X | 300 dpi | 1.000 |
| Dataproducts 8050 (color) | 168 dpi | 1.000 |
| Diablo Inkjet (color) | 120 dpi | 1.000 |
| Diconix C150 Inkjet | 80/160 dpi | 1.667 |
| Diconix 300x Inkjet | 60/120 dpi | 1.667 |
| DP-TEK LaserPort (B&W and gray scale) | 300/1200 dpi | 1.000 |
| Epson FX series | 240 dpi | 1.666 |
| Epson JX, EX color | 120 dpi | .8333 |
| Epson LQ series | 180 dpi | 1.000 |
| Epson FX, MX, LX, RX models | 120 dpi | .833 |
| Epson GQ-3500 | 300 dpi | 1.000 |
| Fujitsu FPG Plotter A and B | 102 dpi | 1.000 |
| Fujitsu (color) | 180 dpi | 1.000 |
| Gemini X series | 120 dpi | .833 |
| Houston Instruments Plotter A and B | 102 dpi | 1.000 |
| Hewlett Packard DeskJet | 150/300 dpi | 1.000 |
| Hewlett Packard LaserJet | 75/100 dpi | 1.000 |
| Hewlett Packard LaserJet+ | 150/300 dpi | 1.000 |
| Hewlett Packard LaserJet Series II | 150/300 dpi | 1.000 |
| Hewlett Packard PaintJet | 90/180 dpi | 1.000 |
| Hewlett Packard ThinkJet | 96/192 dpi | 2.000 |
| Hewlett Packard 7475A Plotter A and B | 102 dpi | 1.000 |
| Howtek Pixelmaster | 240 dpi | 1.000 |
| IBM Color Impact | 144 dpi | .857 |
| IBM Color InkJet | 100 dpi | 1.042 |
| IBM Graphics Printer | 120/240 dpi | .833/1.667 |
| IBM LaserPrinter | 300 dpi | 1.000 |
| IBM Pageprinter | 300 dpi | 1.000 |
| IBM ProPrinter | 120 dpi | .833 |
| IBM ProPrinter X series | 180 dpi | .923 |
| IBM Quietwriter II, III | 240 dpi | 1.000 |
| IDS Prism | 84 dpi | .750 |
| Intel Visual Edge (B&W and gray scale) | 300/1200 dpi | 1.000 |
| Kyocera F series | 150/300 dpi | 1.000 |
| LaserMaster DoubleJet | 300 dpi | 1.000 |

| Printer | Resolution | Aspect Ratio |
|---------------------------------------|---------------------|--------------|
| LaserMaster DDPI | 300/600 dpi | 2.000 |
| Mitsubishi G-500 | 240 dpi | 1.000 |
| Mitsubishi G-650 | 150/300 dpi | 1.000 |
| NEC 8023 | 144 dpi | 1.000 |
| NEC P6, P7 | 180 dpi | 1.000 |
| NEC Pinwriter P5XL, P9XL (color) | 180 dpi | 1.000 |
| NEC Pinwriter P5XL, P9XL (B & W) | 180 dpi | 1.000 |
| NEC Pinwriter CP6, CP7 (B & W, color) | 180 dpi | 1.000 |
| Okidata 84, Series B | 103 dpi | .669 |
| Okidata 92, 93 | 72 dpi | .500 |
| Okidata 192, 193 | 120 dpi | .833 |
| Okidata 292, 293 (B&W and color) | 120 dpi | 1.666 |
| Okimate 20 (B&W and color) | 72 dpi | .833 |
| Panasonic KX-P1080, KX-P1090 series | 120/240 dpi | .833/1.667 |
| Panasonic KX-P1524 | 180 dpi | 1.000 |
| Panasonic KX-P1592 | 120/240 dpi | .833/1.667 |
| Panasonic KX-P1595 | 240 dpi | 1.667 |
| Panasonic KX-P4450 | 300 dpi | 1.000 |
| PostScript | 300 dpi | 1.000 |
| Quadram Quadjet | 84 dpi | 1.000 |
| Quadram QuadLaser | 300 dpi | 1.000 |
| QMS Big Kiss | 300 dpi | 1.000 |
| QMS PS-800 | 300 dpi | 1.000 |
| Radio Shack CGP-220 | 84 dpi | 1.000 |
| Ricoh LP4080R | 300 dpi | 1.000 |
| Roland DXY Plotter A and B | 64 dpi | 1.000 |
| Sharp Imagejet JX series | 180 dpi | 1.000 |
| Tall Tree JLaaser | 300 dpi | 1.000 |
| Tandy CGP-220 (color) | 84 dpi | 1.000 |
| Tandy DMP series | 120 dpi | .833 |
| Taxan Crystal Jet | 75/100, 150/300 dpi | 1.000 |
| Tektronix Inkjet (color) | 120 dpi | 1.000 |
| Texas Instruments 855 | 144 dpi | 1.000 |
| Toshiba P300 series | 180 dpi | 1.000 |
| Toshiba P1300 series | 180 dpi | 1.000 |
| Xerox 4045 | 300 dpi | 1.000 |
| Xerox Inkjet (color) | 120 dpi | 1.000 |

Supported Drawing Devices

PC Paintbrush IV Plus supports most mice and mouse compatible drawing devices. If your drawing device is not listed below, use the software included with your drawing device and follow the directions for installing.

Following is a list of drawing device drivers included in the PC Paintbrush IV Plus software:

Key Tronic KB5153 keyboard

Kurta Penmouse+

SummaSketch MM961, MM1201, and MM1812

GTCO drawing tablets

Below is a list of other drawing devices currently supported by PC Paintbrush IV Plus:

Calcomp 2300/2500

IBM mouse

Logitech mouse

Microsoft mouse

Xerox 6065 keyboard mouse

NOTE Choose one of the “Preinstalled” options in the setup program, if your drawing device driver is in your AUTOEXEC.BAT or CONFIG.SYS files (the driver is automatically run).

Supported Scanners

Following is a list of supported scanners and the appropriate scanner driver file. See the next sections for specific information about installing your scanner.

| Scanner | Scanner Driver File | Addl. Notes |
|--|---------------------|-------------------------|
| Advanced Telecommunications Video Grabber | GRABBER.SYS | |
| AT&T OverView | ATTOVER.SYS | gray scale |
| Canon IX-12 | CANON.SYS | w/ Canon interface card |
| IX-12 | JLASPLUS.SYS | w/ JLASERPLUS card |
| Chinon N-205 | CHINON.SYS | serial or w/ |
| N-207 | CHINON.SYS | parallel adapter |
| The Complete PC Hand Scanner 400 | COMPLETE.SYS | EMS memory highly |
| Half Page Scanner | COMPLETE.SYS | recommended |
| Half Page Scanner 400 | COMPLETE.SYS | |
| Datacopy 220 | DATACOPY.SYS | sheetfeed-type scanner |
| 230 | DATACOPY.SYS | flatbed-type scanner |
| 730 | DATACOPY.SYS | flatbed-type scanner |
| 730GS | DATACOPY.SYS | |
| DEST PC Scan | SCANDRVR.SYS | also uses IMIGINF.SYS |
| PC Scan Plus | SCANDRVR.SYS | and IMIGINF.COM |
| PC Scan 1000 | SCANDRVR.SYS | drivers come with DEST |
| PC Scan 2000 | SCANDRVR.SYS | IMAGE PAC or |
| | | PUBLISH PAC software |
| DFI Handy Scanner 2000 | DFI.SYS | EMS recommended |
| Handy Scanner 3000 | DFI.SYS | EMS recommended |
| Handy Scanner 3000 PLUS | DFI.SYS | EMS recommended |
| VC1000 video capture board | DFI.SYS | EMS not required |
| Howtek color scanner | SHARP.SYS | see Sharp 450 |
| Hewlett Packard HP ScanJet | HPSCANER.SYS | also run SJDRIVER.SYS |
| HP ScanJet+ | HPSCANER.SYS | |
| IBM 3117 | IBM3117.SYS | w/ 3117 interface card |
| 3117 | IBM3117.SYS | w/ Microchannel card |
| 3119 | IBM3119.SYS | w/ Microchannel card |
| Logitech ScanMan | LOGITCH.SYS | EMS recommended |
| ScanMan Plus | LOGITCH.SYS | EMS recommended |

| Scanner | Scanner Driver File | Addl. Notes |
|--------------------|---------------------|---|
| MicroTek | | w/ interface card |
| MS300A | MICROTEK.SYS | |
| MS300C | MICROTEK.SYS | |
| MSF300C | MICROTEK.SYS | |
| MSF300G | MICROTEK.SYS | |
| MSF300A | MICROTEK.SYS | |
| Niscan | NISCAN.SYS | 4 settable port addresses |
| NUMAX UF32 | NUMAX.SYS | see settings for Serius-32 |
| Panasonic | | |
| FX-RS505 | PANAS506.SYS | flatbed-type scanner |
| FX-RS506 | PANAS506.SYS | |
| Pentax | PENTAX.SYS | |
| Princeton Graphics | | |
| LS-300 | LS300.SYS | also run LS300A.COM |
| Ricoh | | w/ ISI-8 interface, also uses SCN8.COM |
| IS-30 | RICOH8.SYS | |
| SS-30 | RICOH8.SYS | |
| MR-2 | RICOH8.SYS | |
| RS-320 | RICOH.SYS | |
| RS-312 | RICOH.SYS | |
| IS-11 | RICOH.SYS | |
| Shape Scan SS-240 | SHAPE.SYS | EMS memory is recommended |
| Sharp | | w/ GBIP interface |
| 450 | SHARP.SYS | |
| 300 | SHARP.SYS | with /1 option |
| Sirius-32 | NUMAX.SYS | |

Scanner Installation

The following information tells you specifically how to install our device drivers. See “Scanner Driver Settings” for specific information about options and settings.

Editing your CONFIG.SYS file

Most scanners come with an interface card that fits inside your computer. Follow the hardware installation instructions included with your scanner. Be sure to set any jumpers or switches on the interface card, if required.

Scanners also require a program known as a device driver. For detailed instructions on installing device drivers supplied with PC Paintbrush IV Plus, see your specific scanner driver listed on the following pages and the PBREADME.DOC file. If your scanner is not listed, call ZSoft’s Technical Support to see if a driver is available.

A few scanners require running a second driver or other program, so be sure to check for that information.

To control your scanner from within PC Paintbrush IV Plus, you must add a line to your CONFIG.SYS file. The CONFIG.SYS file tells your computer what types of devices, such as scanners, are installed in your system. The CONFIG.SYS file and scanner driver file must be in the root directory of your boot disk or hard drive. If you do not already have a CONFIG.SYS file, refer to your DOS manual for instructions about creating one.

To add the scanner entry to your CONFIG.SYS file:

- 1 Determine the scanner device driver file name for your scanner from the “Supported Scanners” list on the previous pages.

Determine the correct options for your device driver from the “Scanner Driver Settings” list on the following pages.

- 2 Add this line to your CONFIG.SYS file:

`device={ scanner driver file name } { options }`

For example, if you have the Microtek scanner, the line you add to the CONFIG.SYS file might be:

device=MICROTEK.SYS 200

MICROTEK.SYS is the device driver file name and 200 is the port address. (Most device drivers require a “/” before the option, this one does not.)

- 3 Copy the device driver file and the CONFIG.SYS file into your boot disk, root directory.
- 4 Reboot your computer.

This ensures that CONFIG.SYS is read, and your computer recognizes your scanner.

Now you are ready to use your scanner with PC Paintbrush Plus. A few scanners require running a second driver or other program, so be sure to check the “Scanner Drivers Settings” section in this chapter for more information about your particular scanner.

Using PC Paintbrush with Hand Scanners

The way you select scanner settings and the memory requirements for scanning an image change when you use a hand scanner.

Normally, when a scanned picture requires more RAM memory than is available, PC Paintbrush pauses during the scanning process and uses your available hard drive disk space. With hand scanners PC Paintbrush cannot control the scanning speed, so you must have enough available DOS RAM or EMS memory to hold the entire scanned image. See “Memory Requirements” below for more information.

As well, certain scanner settings must be physically set on the scanner. See “Using PC Paintbrush with a Hand Scanner” for information about setting scanner settings.

Memory requirements

ZSoft hand scanner device drivers directly use any available EMS memory - either version 3.x or version 4.0 LIM EMS memory. These drivers require LIM 4.0 level EMS drivers to work with Microsoft Windows based scanning applications. If there is not enough memory for the scanner driver to hold the entire image (EMS or standard DOS), you may get a “Scan Open Error” message. In this case, either scan a smaller area or switch to a lower resolution.

To save memory, it is highly recommended that you run PC Paintbrush in a black-and-white mode when using your hand scanner (most hand scanners only scan in black-and-white). If you want to add color to your black-and-white scanned picture reinstall PC Paintbrush for color after you’re done scanning.

Use this formula to figure the memory required for a black-and-white scan:

Size in Bytes = (DPI x Scan Width) x (DPI x Scan Length) / 8

For example, a 200 DPI scan, 4 inches wide and 3 inches long requires: $200 \times 4 \times 200 \times 3 / 8 = 60000$ bytes or 60K bytes

Installation Information

To use a hand scanner, first install the scanner driver according to the instructions in the previous section of this chapter (you should also check the “Scanner Driver Settings” section for specific driver setting information). When you edit your CONFIG.SYS file make sure that the ZSoft scanner driver entry comes **after** the EMS driver entry.

If the scanner driver is installed correctly, a message is displayed when you boot, identifying the driver, and possibly providing additional information. For example, if the /W option for LIM 4.0 is used, the driver will state whether the EMS version is LIM 4.0 or not.

Choosing Scanner Settings

When you choose File Scan Image, PC Paintbrush initializes your hand scanner. Your hand scanner’s illumination lights will turn on briefly, verifying that your scanner is properly installed.

With hand scanners, the image quality is dependent on the speed at which the hand scanner is moved. A steady slow movement of about 2 seconds per inch, is recommended for the best results. If a scan is too fast the image will appear squashed in the vertical direction, and the distance that is actually scanned will be more than that chosen in the Scanning Area dialog box.

During the scan, be sure to hold the button down until the hand scanner light turns off.

There are physical adjustments that must be set on the hand scanner. Be sure to set all the controls on the scanner before attempting to scan. Below is a list of settings that PC Paintbrush treats differently with hand scanners.

| PC Paintbrush Setting | What to do |
|-----------------------|--|
| Resolution | Set the resolution on the scanner and inside PC Paintbrush. You set the resolution in PC Paintbrush with the Options Set Resolutions & Scaling command. A mismatch of resolution settings will severely distort a hand scanner image. |
| Contrast | Usually selected on the scanner itself. |
| Brightness | Usually selected on the scanner itself. |
| Scan area | <p>Use PC Paintbrush’s Scan Scan command to specify the area to scan. You can use the frame within this dialog box to set the scan area or type numbers into the margin boxes. Regardless of how far you physically move the scanner, PC Paintbrush will scan only the specified size, and the picture will not appear on your screen until you scan the entire area specified.</p> <p><i>Using the Frame</i></p> <p>The frame starts in the upper left hand corner of the scan area box and is as wide as the maximum scanning width of the hand scanner. The length of the scan is determined by the height of the scan area you set.</p> <p><i>Typing Margin Values</i></p> <p>You can set left and right scan margins, but right margins greater than the scanner’s width have no affect. If the left margin is set greater than the maximum width of the hand scanner, no image will be scanned at all because the window is outside of the scanner’s range. Top margins can be set, but it is unnecessary. PC Paintbrush assumes that the hand scanner will be placed at the top of the area to scan. The bottom margin is very important because it determines the scan length.</p> |
| Prescan | The Prescan setting is not available with hand scanners. |

Scanner Driver Settings

Below is a list of supported scanners, the scanner driver names, installation requirements, options, and settings.

Advanced Telecommunications Video Grabber:

Captures gray scale frame from a video camera in 1/60th of a second.

| | |
|---------------|---|
| Port address: | 3EF hex |
| Resolutions: | Screen Set - (default) 32x38, 40x33, 80x58, 80x80 for camera, CGA, EGA, VGA Print Set - (with /p option in CONFIG.SYS) 32x32, 180x180, 200x200, 300x300 for camera, dot matrix, FAX, laser printer |
| Contrast: | 10 settings |
| Brightness: | 10 settings |
| Gray levels: | B&W, 4, 16, and 64 |

To use default screen resolutions, use this CONFIG.SYS entry:
device=GRABBER.SYS

To use printer resolutions, use this CONFIG.SYS entry:
device=GRABBER.SYS /p

AT&T OverView Scanner

| | |
|---------------|----------------------------------|
| Resolutions: | 300x300, 200x200, 180x180, 80x80 |
| Port address: | 3E8 hex |
| Contrast: | 10 settings in single bit modes |
| Brightness: | 10 settings in single bit modes |
| Halftones: | 4 options |
| Gray levels: | B&W, 4, 16, and 64 |

CONFIG.SYS entry:
device=ATTOVER.SYS

If your scanner interface board supports the option /p parameter, you can select programmed I/O instead of DMA. For example:
device=ATTOVER.SYS /p

Canon IX-12 Used With the Canon Scanner Interface Board

When you use Canon's scanner interface card, you must run IXHND2.COM, which ZSoft provides with the scanner driver. After you have installed the IX-12, copy the file IXHND2.COM from disk to the root directory of your boot disk. Once IXHND2.COM has been run, it does not need to be run again until the machine is rebooted. If you add IXHND2.COM to your AUTOEXEC.BAT file, the program runs automatically each time you boot.

Canon has upgraded its interface card to allow you to change the memory and I/O port addresses, since the default memory address conflicts with the address of EGA cards. The old-style interface cards (they have only 2 sets of jumpers) require a hardware modification to change their memory address. Step-by-step modification instructions are available from Canon or ZSoft.

If you have a new interface card, you must run the new version 1.02 IXHND2.COM program, including the memory address information in the command line. See your Canon manual for more information.

| | |
|-------------------|----------------------------------|
| Port addresses: | 308, 318, 1A8 hex |
| Memory addresses: | C000, C400, D000, D400 hex |
| Resolutions: | 300x300, 200x200, 150x150, 75x75 |
| Contrast: | Automatic setting |
| Brightness: | 3 settings |
| Halftone: | 2 options |
| Gray levels: | B&W only |

CONFIG.SYS entry:
device=CANON.SYS

To use default 307 and C000 addresses, use this AUTOEXEC.BAT entry:
IXHND2

To specify port and memory addresses, use this AUTOEXEC.BAT entry:
IXHND2 [/xy]

where x = port address and y = memory address

- $x = 0$ use port address 307 hex
- $x = 1$ use port address 318 hex
- $x = 2$ use port address 1A8 hex
- $y = 0$ use memory address C000 hex
- $y = 1$ use memory address C400 hex
- $y = 2$ use memory address D000 hex
- $y = 3$ use memory address D400 hex

Note Using an address other than the default requires a hardware jumper or switch change.

Canon IX-12 Used With the JLASERPLUS Interface Card

Use JLASPLUS.SYS instead of CANON.SYS as the scanner device driver file. You **do not** need to run IXHND2.COM. Make sure that JBOOT.BIN and JLASER3.BIN are both copied into the root directory on your boot disk and that they both are loaded by the CONFIG.SYS file before JLASPLUS.SYS. The Tall Tree drivers version 4.01 or later are most compatible.

| | |
|--------------|-------------------|
| Resolution : | 300x300 |
| Contrast: | Automatic setting |
| Brightness: | 3 settings |
| Halftone: | 2 options |
| Gray levels: | B&W only |

CONFIG.SYS entries (your system may require additional options):

device=JBOOT.BIN 640k

device=JLASER3.BIN /g

device=JLASPLUS.SYS

Chinon models N-205 and N-207

The N-205 (also called Chinon 2000) is a 200 dpi serial, overhead style scanner. The N-207 (also called Chinon 3000) is the same model with 300 dpi capability. CHINON.SYS is used for both models; the **/p** switch on the CONFIG.SYS entry must be used with the parallel interface. The serial scanners plug into COM1 or COM2. The NCS Parallel Interface Board is available on both scanners.

| | |
|--------------|--|
| Serial port: | COM1 or COM2 |
| Resolutions: | N-205 -200x200, 150x150, 120x120, 100x100 N-207 -300x300, 200x200, 150x150, 75x75 |
| Contrast: | 5 settings and automatic |
| Brightness: | Automatic |
| Halftone: | 1 option |
| Gray levels: | B&W only |

CHINON.SYS supports several command line switches:

| | |
|--------------|---|
| /a | Specifies Chinon 3000 (N-207) The default is Chinon 2000 (N-205) |
| /c | Specifies serial port COM2 The default is COM1 |
| /p | Used with parallel board (data is not compressed) The default is serial |
| /sxxx | Specifies serial baud rate xxx can be 2400, 4800, 9600, or 19200 The default is 19200 |
| /tn | Specifies data transmission mode n can be 1, 2, or 3. The fastest is 1 The default is 3 |
| /u | Uncompressed data transfer mode The default is compressed |

There are DIP switches on the scanner that must be set to match these command line switches. Refer to the proper Chinon manual for information about setting the DIP switches on the scanner. The tile markers are not supported. This driver uses interrupts and other peripherals, such as mice and net cards. If there is a conflict with other components in your system, you may need to reconfigure the interface card.

Sample CONFIG.SYS entry for Chinon 3000 (N-207):

device=CHINON.SYS /p /t1 /u /a

Sample CONFIG.SYS entries for Chinon 2000 (N-205):

device=CHINON.SYS

device=CHINON.SYS /c /s9600

The Complete PC Hand and Half Page scanners:

These scanners work only with the COMPLETE.SYS driver - not with any of the other drivers included with the scanner. For best results, use EMS memory but if EMS memory is not available, choose a small scan size and use slow hand movements. Install PC Paintbrush IV Plus to run in a B&W video mode for maximum free memory. When the driver is started during boot-up, a message is displayed that shows the current options. When you run PC Paintbrush IV Plus, the scanner lights flash quickly when the scanner is installed correctly. If this doesn't happen, make sure the DIP switches agree with the CONFIG.SYS command line options. Halftone and Brightness are set on the scanner itself, not from inside PC Paintbrush IV Plus. Resolution depends on the scanner model:

| Scanner | Resolution in dpi |
|--------------------------------|-------------------|
| Complete Hand Scanner/400 | 400, 300, 200 |
| Complete Half Page Scanner | 200 |
| Complete Half Page Scanner/400 | 400, 300, 200 |

See the table below for available port address values and DIP switch settings.

| Port | #1 | #2 | #3 | #4 | #5 | #6 | #7 | #8 |
|------|-----|-----|-----|------|------|------|------|------|
| | | | | N.A. | IRQ2 | IRQ3 | IRQ4 | IRQ5 |
| 3E0H | off | off | off | off | off | off | off | off |
| 3A0H | off | off | on | off | off | off | off | off |
| 360H | off | on | off | off | off | off | off | off |
| 320H | off | on | on | off | off | off | off | off |
| 2E0H | on | off | off | off | off | off | off | off |
| 2A0H | on | off | on | off | off | off | off | off |
| 260H | on | on | off | off | off | off | off | off |
| 220H | on | on | on | off | off | off | off | off |

NOTE DIP switch on = up. Make sure that only one IRQ is on.

CONFIG.SYS options are:

- /1 Specifies Complete Hand Scanner/400
The default is Complete Hand Scanner/400
- /2 Complete Half Page Scanner
The default is Complete Hand Scanner/400
- /3 Complete Half Page Scanner/400
The default is Complete Hand Scanner/400
- /cn Specifies DMA channel
n can be 1 or 3
The default is 3
- /d Uses double buffering switch (for some EMS boards)
- /hxxx Specifies hex port address value
xxx can be any of the above hex port values
The default is 3E0 hex
- /w Selects Windows (LIM 4.0 EMS memory)
The default is LIM 3 EMS memory, if available

To specify a port address value of 220 hex and select the Windows option, use this CONFIG.SYS entry:
device=COMPLETE.SYS /h220 /w

Datacopy Models 220, 230, 730, and 730GS

The model 220 is a sheetfeed scanner, and the models 230 and 730 are flatbed scanners. DATACOPY.SYS works with the model 111 interface card only.

- Port address: 2E8 hex
- Resolutions: 220, 230, and 730 - 300x300, 240x240, 200x200, 150x150
730GS with /6 option - 450x450, 300x300, 200x200, 100x100
- Contrast: Automatic setting
- Brightness: 3 settings
- Halftone: 2 options
- Gray levels: B&W and 16

To use the 730GS model, use this CONFIG.SYS entry:
device=DATACOPY.SYS /6

To use the 220, 230, and 730 models, use this CONFIG.SYS entry:
device=DATACOPY.SYS

NOTE Datacopy 730GS has a 6 bit gray scale capability, use a 256 gray mode.

DEST PC Scan, PC Scan Plus, PC Scan 1000, PC Scan 2000:

The DEST scanners require SCANDRVR.SYS, IMAGEINF.SYS, and IMAGEINF.COM, included as part of DEST's IMAGE PAC and PUBLISH PAC software. If you did not receive installation instructions and copies of the drivers with your scanner, contact DEST.

DFI Handy Scanner 2000, 3000, and 3000 PLUS

For best results, use EMS memory. If EMS memory is not available, choose a small scan size and use slow hand movements. Install PC Paintbrush IV Plus to run in a B&W video mode for maximum free memory. All models offer B&W scanning only. Halftone and Brightness are set on the scanner itself, not from inside PC Paintbrush IV Plus. Resolutions depend on the scanner model:

| Scanner | Resolution in dpi |
|-------------------------|--------------------------|
| Handy Scanner 3000 | 400, 300, 200 |
| Handy Scanner 3000 Plus | 400, 300, 200 |
| Handy Scanner 2000 | 200 |

CONFIG.SYS options are:

| | |
|----|--|
| /a | Specifies Handy Scanner 2000 The default is Handy Scanner 3000 |
| /m | Selects microchannel interface adapter board |
| /w | Selects Windows option (LIM 4.0 EMS memory) The default is LIM 3 EMS memory, if available |

To use the Handy Scanner 3000, use this CONFIG.SYS entry:
device=DFI.SYS

To use the Handy Scanner 3000 with Microchannel and LIM 4, use this CONFIG.SYS entry :
device=DFI.SYS /w /m

If the driver doesn't work or a bad image is scanned in, check for interference with a printer port set as LPT2. Be sure that PC Paintbrush IV Plus and the switches on the scanner are set for the same resolution, or there may be "garbage" on the side of the scanned image. Image quality is very dependent on scanning speed. Scanning too fast will squash the image. The Handy Scanner 3000 Plus has a scan overrun light, that goes out if you are scanning too fast. If the light goes out, stop scanning and release the scan switch momentarily. The overrun light will come back on, then you may continue scanning.

DFI VC-1000 Video Capture Board

The VC-1000 works with the VC1000.SYS driver and uses the same address as the second printer port LPT2, so make sure you don't have another LPT2 in your system. Brightness and halftone are controlled by the switches on the VC1000 hand held control unit. You must press and hold the image capture button for 2 or 3 seconds to complete the scan.

Resolutions: 512x400
Port address range: 272H to 27B hex

CONFIG.SYS entry:
device=VC1000.SYS

HP ScanJet and HP ScanJet+

To use ScanJet you install SJDRIVER.SYS, which Hewlett Packard supplies with the scanner, and HPSCANER.SYS, which ZSoft supplies. HPSCANER.SYS will automatically use all the features of both the ScanJet and the ScanJet+.

| | |
|--------------|---|
| Resolutions: | ScanJet and ScanJet+ - 300x300, 200x200, 180x180, 150x150, 75x75, 50x50 |
| Contrast: | ScanJet - Automatic setting ScanJet + - 255 settings |
| Brightness: | ScanJet - 3 settings ScanJet+ - 255 settings |
| Halftone: | ScanJet and ScanJet+ - 4 options |
| Gray levels: | ScanJet - B&W and 16 ScanJet+ - B&W, 16, and 256 |

The two CONFIG.SYS entries **must appear together in the following order** in your CONFIG.SYS file:

device=SJDRIVER.SYS
device=HPSCANER.SYS

CONFIG.SYS options:

| | |
|----|--|
| /d | Specifies dot matrix scanning resolution range |
| /h | Specifies high resolution range (600 dpi) |
| /o | Specifies 0-9 brightness settings for older products |

Sample CONFIG.SYS entry for ScanJet+:
device=SJDRIVER.SYS

IBM 3117 with 3117 Standard 8 bit PC-Bus Interface Board

The address of the scanner interface board can be changed from the factory preset of DE000 hex to D8000 hex by changing a jumper on the board. If you change the address from the factory preset, you must add the **/d** parameter to the scanner entry in your CONFIG.SYS file.

| | |
|-----------------|---------------------------|
| Port address: | 228 hex |
| Memory address: | DE00, D800 hex |
| Resolutions: | 240x240, 240x120, 120x120 |
| Contrast: | 10 settings |
| Brightness: | 10 settings |
| Halftone: | 4 options |
| Gray levels: | B&W only |

To use the default DE00 address, use this CONFIG.SYS entry:

device=IBM3117.SYS

To specify a port address of D800 hex, use this CONFIG.SYS entry:

device=IBM3117.SYS /d8

IBM 3117 with Microchannel Interface Board

All the information above is correct for the Microchannel Interface Board, except the **/d** option. Also, to indicate the Microchannel Interface Board, you must use the **/m** option.

CONFIG.SYS entry:

device=IBM3117.SYS /m

IBM 3119 with Microchannel Interface Board

This is a 300 dpi gray scale scanner. Note that you must run the installation disk that IBM supplies with the scanner before you can use the scanner.

| | |
|---------------|---|
| Port address: | Automatically installed |
| Resolutions: | 300x300, 200x200, 150x150, 75x75, 48x48 |
| Contrast: | 3 settings |
| Brightness: | 3 settings |
| Halftone: | 3 options |
| Gray levels: | B&W, 16, and 128 |

CONFIG.SYS entry:

device=IBM3119.SYS

Logitech ScanMan and ScanMan Plus

LOGITECH.SYS is the only scanner device driver you need to install. Use EMS memory for hand held scanners, but if EMS memory is not available, choose a small scan size and use slow hand movements. Install PC Paintbrush IV Plus to run in a B&W video mode for maximum free memory.

| | |
|--------------|------------------------------------|
| Resolutions: | 400x400, 300x300, 200x200, 100x100 |
| Brightness: | Set on scanner |
| Halftone: | Set on scanner |
| Gray levels: | B&W only |

CONFIG.SYS options are:

| | |
|-------|--|
| /cn | Specifies channel for DMA <i>n</i> can be 1 or 3 The default is 3 |
| /d | Uses double buffering switch (for some EMS boards) |
| /hxxx | Specifies hex port address value The default is 3E0 hex |
| /w | Selects Windows option (LIM 4.0 EMS memory) The default is LIM 3 EMS memory, if available |

To use the default configuration, use this CONFIG.SYS entry:

device=LOGITECH.SYS

To specify a port address value of 3E0 hex and use LIM 4.0 memory, use this CONFIG.SYS entry:

device=LOGITECH.SYS /h3e0 /w

MicroTek MS-300A, MS300C, MSF300C, MSF300G, MSF300A

The Microtek scanner driver, MICROTEK.SYS, requires a port address at the end of the CONFIG.SYS entry. The port address must agree with the address selected on the interface card. See your MicroTek manual for information about available scanner settings.

To specify a port address value of 200 hex, use this CONFIG.SYS entry:

device=MICROTEK.SYS 200

Niscan Hand-Held Scanner

The Niscan driver allows you to set your scanning options with the scanning menu commands in PC Paintbrush IV Plus and works with the NISCAN.SYS driver.

Resolutions: 200x200, 100x100
 Brightness: 9 settings
 Halftone: 3 options

The Niscan can be addressed at four different locations using a combination of command line and jumper settings.

| Address | Command line setting | Jumper setting |
|---------|----------------------|------------------|
| 258h | /0 | default |
| 278h | /1 | jumper JB2 only |
| 358h | /2 | jumper JB3 only |
| 378h | /3 | jumper JB2 & JB3 |

To specify a port address value of 258 hex, use this CONFIG.SYS entry:
device=NISCAN.SYS /0

Panasonic FX-RS505 and FX-RS506

The I/O port address of the scanner interface board is set by DIP switches on the board to 100 hex and DMA use. If you change the address of the board from the factory preset, you must add the **/p** parameter to your CONFIG.SYS entry. The fourth DIP switch selects one of two possible DMA channels. To use programmed I/O instead of DMA, add the **/dn** option to the CONFIG.SYS entry. To use the model 505 scanner, add the **/5** option to the CONFIG.SYS entry.

Port addresses: 100, 110, 120, 130, 140, 150, 160, or 170 hex
 DMA channels: 1 or 3
 Resolutions: 400x400, 300x300, 200x200
 /L option - 300x300, 150x150, 100x100, 75x75
 Contrast: Automatic setting
 Brightness: 7 settings
 Halftone: 2 options
 Gray levels: Model 505 - B&W only
 Model 506 - up to 16

To use model FX-RS506, specifying a port address value of 100 hex and a DIP switch selected DMA channel, use this CONFIG.SYS entry:
device=PANAS506.SYS

To use model FX-RS506 with a new port address and programmed I/O, use this CONFIG.SYS entry (where *xxx* is 100 to 107 hex):
device=PANAS506.SYS /p_{xxx} /dn

To use model FX-RS505 with the default configuration, use this CONFIG.SYS entry:

PANAS506.SYS /5

Pentax

| | |
|--------------|----------------------------------|
| Resolutions: | 300x300, 240x240, 180x180, 90x90 |
| Contrast: | 10 settings |
| Brightness: | 2 settings |
| Halftone: | 4 options |
| Gray levels: | B&W and 16 (only at 300 dpi) |

To use gamma correction, add the **/Gn** option to the CONFIG.SYS command line. See your Pentax scanner manual for all of the available gamma correction values.

To use a gamma correction value of 3, use this CONFIG.SYS entry:

device=PENTAX.SYS /G3

Princeton Graphics Systems LS-300

When you use the scanner driver LS300.SYS, you must run LS300A.COM, which ZSoft provides with the scanner driver. After you have installed the LS-300, copy the file LS300.COM from disk to the root directory of your boot disk. Once LS300.COM has been run, it does not need to be run again until the machine is rebooted. If you add LS300.COM to your AUTOEXEC.BAT file, the program runs automatically each time you boot.

| | |
|-------------------|----------------------------------|
| Memory addresses: | C000, C400, D000, D400 hex |
| Resolutions: | 300x300, 200x200, 150x150, 75x75 |
| Contrast: | Automatic setting |
| Brightness: | 3 settings |
| Halftone: | 2 options |
| Gray levels | B & W only |

CONFIG.SYS entry:

device=LS300.SYS

AUTOEXEC.BAT entry:

LS300A

The LS-300's interface card can be reconfigured for a different I/O address and/or DMA channel. The card is factory set to an address of 200h (the game port) and DMA channel 1. If one or both of these settings conflict with other components in your system, reconfigure the interface card according to the manufacturer's instructions. If you do reconfigure the card, you must add parameters to the file name LS300A.COM in your AUTOEXEC.BAT file, where **/d** sets the DMA channel to 3 and **/i** sets the I/O address to the value represented by *xxx*.

LS300A /d /ixxx

Ricoh IS-30, SS-30 and MR-2

The model SS-30 is a sheetfeed scanner. The model IS-30 is a flatbed scanner. The MR-2 is an IS-30 with an optional Automatic Document Feeder (ADF). The RICOH8.SYS driver works only with SCN8.COM, available only from Ricoh, and the ISI-8 scanner interface board.

| | |
|--------------|------------------------------------|
| Resolutions: | 300x300, 240x240, 200x200, 180x180 |
| Contrast: | Automatic setting |
| Brightness: | 3 settings |
| Halftone: | 2 options |
| Gray levels: | B&W and 16 |

CONFIG.SYS entries should appear in this order:

device=SCN8.COM

device=RICOH8.SYS

Even though the SCN8.COM driver file has a COM extension, it is a device driver, not an executable program. It must be run from your CONFIG.SYS file, not AUTOEXEC.BAT. Also, SCN8.COM creates a DOS device called "SCANNER." If you have any files or directories with this name, they may be destroyed if you try to access them while the SCN8.COM program is installed.

Ricoh RS-320, RS-312, and IS-11

These models of Ricoh scanners use RICOH.SYS, not RICOH8.SYS. They also use the new version of the ISI-8 interface board that has eight I/O port addresses and a new version of SCN8.COM that allows you to select all eight port addresses.

There are two CONFIG.SYS entries required, one for SCN8.COM that Ricoh supplies with the scanner and one for RICOH.SYS that ZSoft supplies. The CONFIG.SYS entry for SCN8.COM is always the same: **device=SCN8.COM**. The CONFIG.SYS entries for RICOH.SYS are in the table below.

| Scanner | CONFIG.SYS entry | Scanner modes |
|--------------|----------------------------|-----------------------------|
| Ricoh RS-320 | device=RICOH.SYS | B/W; halftone |
| Ricoh RS-312 | device=RICOH.SYS /1 | B/W; halftone; 16 gray |
| Ricoh IS-11 | device=RICOH.SYS /2 | B/W; halftone; 16 & 64 gray |

| | |
|--------------|---|
| Resolutions: | 300x300, 240x240, 200x200, 100x100 |
| Gray levels: | Ricoh RS-320 - B&W, halftone Ricoh RS-312 - B&W, halftone, 16 Ricoh IS-11 - B&W, halftone, 16, and 64 |

NOTE The IS-11 requires the new version of Ricoh's SCN8.COM for full functionality. If you only have the old version of SCN8.COM, you can still scan in B&W and 16 gray levels, but not in 64 gray levels. The RS-320 and RS-312 work with the old version of SCN8.COM. The old version of SCN8.COM is 1451 bytes long, and the new one is 3557 bytes long.

Even though the SCN8.COM driver file has a COM extension, it is a device driver, not an executable program. It must be run from your CONFIG.SYS file, not AUTOEXEC.BAT. Also, SCN8.COM creates a DOS device called "SCANNER." If you have any files or directories with this name, they may be destroyed if you try to access them while the SCN8.COM program is installed.

CONFIG.SYS entries should appear in this order:

device=SCN8.COM

device=RICOH.SYS

(There may be a /1 or /2 option on the **device=RICOH.SYS** line)

Shape Scan SS-240

Our scanner driver SHAPE.SYS **requires** true EMS memory. Without EMS memory, Shape's stand alone program can be used to scan to disk. If SHAPE.SYS is used, optional parameters can be added to the CONFIG.SYS entry to specify the CPU speed and port address of the interface card. See your ShapeScan user's manual for a complete list of all the port addresses and their corresponding DIP switch settings.

| | |
|-----------------|---------------------------|
| Port addresses: | 300 to 370 hex |
| DMA channel: | 1 |
| Resolutions: | 240x240, 200x200, 100x100 |
| Contrast: | Manual setting |
| Brightness: | Automatic setting |
| Gray levels: | B&W only |

To specify a port address value of 300 hex and a 4.77 MHz clock speed, use this CONFIG.SYS entry:

device=SHAPE.SYS

To include the speed of your computer (4, 6, 8, or 10 MHz) and the I/O port address of the scanner interface board (where x is the speed and yyy is the I/O port address), use this CONFIG.SYS entry:

device=SHAPE.SYS /sxx /pyyy

Sharp 450 and 300, Howtek color scanner

SHARP.SYS can be used with the Howtek color scanner or the Sharp 300 and 450 scanners. The scanner communicates with the computer through the GPIB interface. Each device on the GPIB bus is given an individual name. This allows many units to connect with each other and operate simultaneously.

SHARP.SYS interfaces with a GPIB talker/receiver card, made by National Instrument Corp., called the GPID-PCII. This card comes with a configurable driver that SHARP.SYS communicates with. The program is called GPIB.COM.

If the GPIB device name is not the default "DEV 7", you can name the GPIB device from the CONFIG.SYS command line:

device=SHARP.SYS /'HTSCAN'

Single quotation marks and uppercase letters **must** be used to name the device.

| | |
|--------------|---|
| Resolutions: | 300x300, 200x200, 150x150, 100x100, 75x75 |
| Contrast: | 256 settings |
| Brightness: | 256 settings |
| Halftone: | 1 option |
| Gray levels: | B&W and 256 |
| Colors: | 256 |

Use the /1 option for the Sharp 300 scanner.

Use the /O option to limit brightness and contrast to 1-9.

CONFIG.SYS entries should appear in this order:

device=GPIB.COM

device=SHARP.SYS

Make sure that the scanner is set at device address 7, by sliding the scanner bed to the left and checking the DIP switches underneath.

The DIP switches should be set as follows:

| | | | | | |
|----|----|----|-----|-----|-----|
| 1 | 2 | 4 | 8 | 16 | 32 |
| ON | ON | ON | OFF | OFF | OFF |

Then, run IBCONF.EXE, supplied with the GPIB-PCII card. GPIB.COM must be in the same directory as IBCONF.EXE, or you must include the path on the command line. For example if GPIB.COM is on your C drive in a directory called SYS, you would type: **IBCONF C:\SYS\GPIB.COM**

Use the default configuration for the card as "GPIB0", and set DEVICE 7 to "DEV7".

Reboot your computer and run PC Paintbrush IV Plus in 256 color mode. Note that scanning in color requires several megabytes of disk or EMS space.

Sirius-32 and NUMAX UF32

The Sirius-32 and NUMAX UF32 scanners work with the NUMAX.SYS driver.

| | |
|-----------------|---|
| Port addresses: | Suggested range is 200 to 3F0 hex The default is 330 hex |
| DMA channels: | 1 or 3 |
| Resolutions: | 300x300, 200x200, 150x150, 75x75 |
| Contrast: | 9 settings |
| Brightness: | 9 settings |
| Halftone: | 1 option |
| Gray levels: | B & W only |

To specify a port address of 330 hex, use this CONFIG.SYS entry:

device=NUMAX.SYS

To use I/O, indicate speed, and specify a port address (where **p** specifies I/O, **s** specifies the speed of 1, 2, or 3, and **n** specifies the port address) use this CONFIG.SYS entry:

device=NUMAX.SYS /pxx/sxx/nxx

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