

# Image Capture and Manipulation

After completing this chapter, you will be able to:

- Install the shareware version of Paint Shop Pro for Windows or Graphic Converter for the Macintosh
  - Capture screens and import images from any software application
  - Convert images from one file format into another, such as from BMP into GIF
  - Resize images and make color adjustments
  - Create special effects with image filters
- Graphics come in a lot of different shapes, sizes, and formats. Developers such as you sometimes need to be able to manipulate an image to make it suitable for use in a multimedia application. An image might be too large or too small, for example, or you might want to grab part of an image instead of the whole picture. You may need to reduce the number of colors to save disk space or to make an image load more quickly over the Internet. You might want to apply some special effect to the image, such as emboss, chisel, bevel, weave, sharpen, or soften it.

This chapter teaches you how to do these things with two of the most popular graphics packages in the world: Paint Shop Pro for Windows and Graphic Converter for the Macintosh. Both are excellent, all-purpose image-editing programs that can import a picture in dozens of different image file formats, provide you with powerful tools for editing the image, and export it in any one of dozens of available image file formats. If you have lots of images to convert, there are batch-conversion capabilities that can convert multiple images automatically.

## Installing the Imaging Software

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**Show-Me Movie:**

“Creating a Blank Presentation”

Paint Shop Pro and Graphic Converter are **shareware**, which is software that you can try out before you buy it. If you continue using the programs for more than the free trial period, you must pay the license fee. Please respect the shareware license by paying the license fee if you continue using the programs beyond the free trial period.

## Paint Shop Pro (Windows)

### Show-Me Movie:

"Installing Paint Shop Pro"

The shareware version of Paint Shop Pro is on the *Multilit* CD in the *psp* directory. By the time you read this, a more advanced version of Paint Shop Pro will probably be available. Follow the *Multilit* Web site links to Paint Shop Pro to find out. For the tutorial printed here, however, you should use the version on the *Multilit* CD so the software matches the instructions in the tutorial. Once you master the basics, you can proceed to more sophisticated versions of Paint Shop Pro. To install Paint Shop Pro from the *Multilit* CD, follow these steps:

- ▶ Click the Start button and choose Run; the Run dialog appears.
- ▶ In the Run dialog, assuming your CD-ROM drive is D, type the following (if your CD-ROM drive is not D, use the letter of your CD-ROM): **d:\psp\setup.exe**
- ▶ Press **[Enter]**, and the Paint Shop Pro setup program will begin.
- ▶ Follow the on-screen instructions to install Paint Shop Pro.

The first time you run Paint Shop Pro, you must set up the hot key that you will use to capture graphics. Follow these steps:

- ▶ Double-click the Paint Shop Pro icon to run Paint Shop Pro.
- ▶ Pull down the Capture menu and choose Setup.
- ▶ Figure 34-1 shows how the Capture Setup dialog appears.
- ▶ Notice how the Capture group lets you set up to capture an area, the full screen, the client area of the current window, the entire current window, or an object. Set it to capture an area.

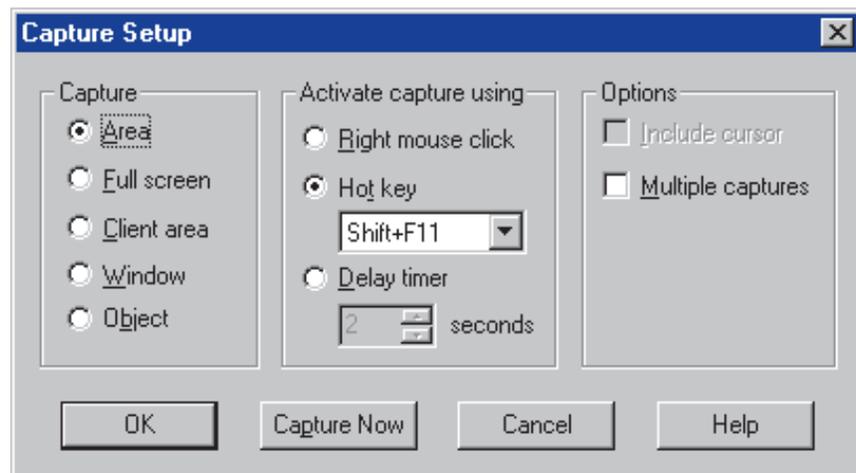


Figure 34-1 The Paint Shop Pro Capture Setup dialog.

- ▶ In the Activate Capture group, click the option to activate via Hot Key, and set the hot key to something you never use in any other application; the author recommends you set the hot key to `⇧-F11`, which is the hot key this tutorial will use.
- ▶ Click OK to close the dialog.

## Graphic Converter (Macintosh)

### Show-Me Movie:

"Installing Graphic Converter"

Graphic Converter is a shareware program that you download from the Internet and then install onto your computer. If you have a Macintosh, follow these steps:

- ▶ Follow the *Multilit* Web site link to Graphic Converter.
- ▶ Click the Download option.
- ▶ Download the version appropriate for your computer (probably the U.S. version, which is in English).
- ▶ The download manager will transfer the program to your computer.
- ▶ When the download is finished, there will be a Graphic Converter icon on your desktop. Double-click the Graphic Converter icon. Stuffit Expander will expand the downloaded file and put a second Graphic Converter icon on your desktop. *Note:* If your computer tells you that it does not have Stuffit Expander, follow the *Multilit* Web site link to Stuffit Expander and download it. Then double-click the Graphic Converter icon to expand the downloaded file.
- ▶ Double-click the second Graphic Converter icon to install the software. When the Install dialog appears, set it to install the software to Macintosh HD, then click the Install button.
- ▶ To put a Graphic Converter launch icon on your desktop that will make it quick and easy to start Graphic Converter, double-click the Macintosh HD icon, and when the Macintosh HD contents appears, double-click Graphic Converter to open the Graphic Converter folder. Control-click the Graphic Converter launch icon and choose the option to Make Alias, then drag the alias to your desktop.
- ▶ To save disk space, at your option, you may drag the first two Graphic Converter icons into your trash can. Control-click the trash can and choose Empty Trash to free the disk space.
- ▶ Anytime you want to start Graphic Converter, double-click its alias on your desktop.

## Capturing Images

### Show-Me Movie:

"Capturing Images"

A basic skill important to all multimedia developers is the ability to capture an image, or part of an image, and get it into the window of Paint Shop Pro (Windows) or Graphic Converter (Macintosh). Follow the steps in Table 34-1.

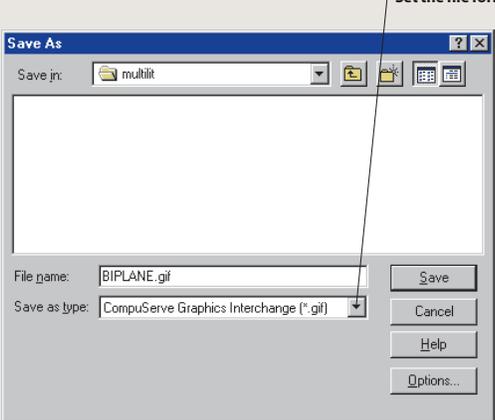
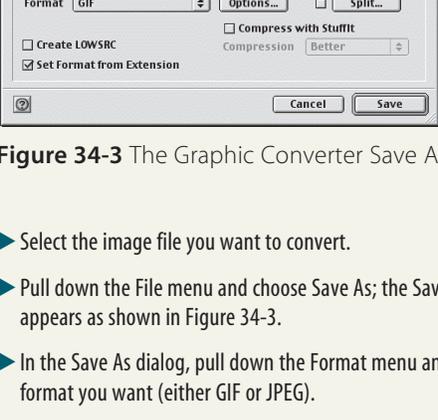
**Table 34-1** Capturing Images

Windows	Macintosh
<ul style="list-style-type: none"> <li>▶ Run the program from which you want to capture a graphic. For example, suppose you want to capture one of the figures on the title screen of the NECC keynote presentation. Use the Windows Explorer to look in the <i>Necc</i> folder on the <i>Multilit</i> CD, and double-click the <i>NECCKeynote</i> to get it running.</li> <li>▶ Get Paint Shop Pro running, if it is not running already.</li> <li>▶ Hold down <b>Alt</b>, and keep pressing <b>Tab</b> until Paint Shop Pro appears. <b>Alt-Tab</b> is a special Windows key for switching among programs running simultaneously on your computer.</li> <li>▶ Pull down Paint Shop Pro's Capture menu and select Start; immediately, Paint Shop Pro will disappear.</li> <li>▶ If the image you want to capture is not visible on your screen, hold down <b>Alt</b>, and keep pressing <b>Tab</b> until the screen you want to capture appears.</li> <li>▶ Press the capture hot key (<b>Shift-F11</b>); the cursor turns into a crosshair.</li> <li>▶ Click and drag to select the area of the screen you want to capture, then release the mouse button.</li> <li>▶ The captured image will now appear in the Paint Shop Pro window. To save the image, pull down the File menu and choose Save As.</li> <li>▶ In the Save as Type box, select the image format in which you want to save the image.</li> <li>▶ In the File Name field, type the name you want the image to have. You do not need to type a filename extension, because Paint Shop Pro will supply one automatically, based on the file type you set in the List Files of Type box.</li> <li>▶ Click the Save button to save the file, then pull down the File menu and choose Exit to leave Paint Shop Pro.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Run the program from which you want to capture a graphic. For example, suppose you want to capture one of the figures on the title screen of the NECC keynote presentation. Use the finder to look in the <i>Necc</i> folder on the <i>Multilit</i> CD, and double-click the <i>NECCKeynote</i> to get it running.</li> <li>▶ To capture a rectangular area of an image, press <b>Command-Shift-4</b> and your cursor will change into a crosshair, indicating it is ready to capture something.</li> <li>▶ Drag the crosshair over the area you want to capture. As you drag, the rectangle expands or contracts to show what will be captured when you release the mouse button.</li> <li>▶ When you release the mouse button, you will hear a clicking sound, indicating that you just grabbed an image.</li> <li>▶ Get Graphic Converter running, if it is not running already.</li> <li>▶ Pull down the File menu, and choose Open.</li> <li>▶ When the Open dialog appears, use it to look on the Macintosh HD for the image you just captured; the image will be called something like Picture 1 or Picture 2, depending on how many images you captured so far. Double-click the name of the image to open it.</li> <li>▶ The captured image will now appear in the Graphic Converter window. To save the image, pull down the File menu and choose Save As.</li> <li>▶ Use the Format menu to select the image format in which you want to save the image.</li> <li>▶ In the Name field, type the name you want the image to have. <i>Important:</i> Make sure the filename extension matches the type of file you selected via the Format menu.</li> <li>▶ Click the Save button to save the file, then pull down the File menu and choose Quit to leave Graphic Converter.</li> </ul>
<p><b>Note:</b> To capture the full screen or the contents of a window, pull down the Capture menu, choose Setup, and set the Capture option accordingly.</p>	<p><b>Note:</b> In addition to the <b>Command-Shift-4</b> command that captures a rectangular region of an image, you can also use <b>Command-Shift-3</b> to capture the entire screen, or <b>Command-Shift-Caps Lock-4</b> to capture the contents of a window.</p>

## Converting Images

Sometimes you encounter situations in which you need to convert an image from one file format into another. If you plan to put an image on a Web page, for example, the best formats to use are *.gif* if the image has 256 colors or less, or *.jpg* for images with up to 16 million colors. To convert an image from one file format into another, follow the steps in Table 34-2.

**Table 34-2** How to Convert Images from One File Format into Another

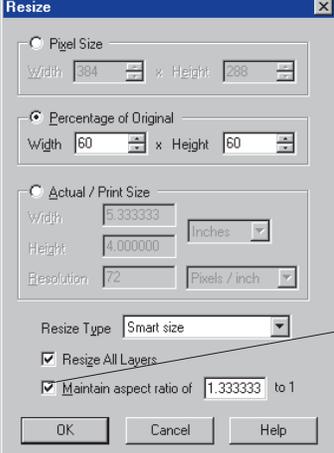
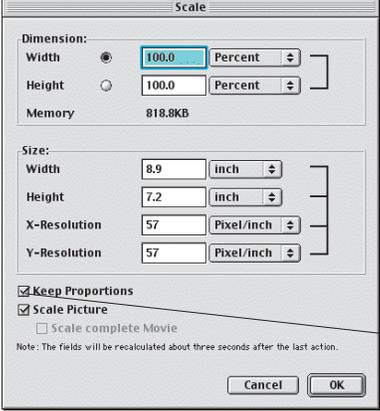
Paint Shop Pro (Windows)	Graphic Converter (Macintosh)
<ul style="list-style-type: none"> <li>▶ Pull down the Paint Shop Pro File menu and choose Open; the Open Image dialog appears.</li> <li>▶ In the List Files of Type field, pull down the choices and select the file format of your original image.</li> <li>▶ Browse to the image and click OK to open it; the image will appear on-screen.</li> <li>▶ To convert the image, pull down the File menu and choose Save As; the Save As dialog appears as shown in Figure 34-2.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Pull down the Graphic Converter File menu and choose Open; the Select a File dialog appears.</li> </ul>
	
<p><b>Figure 34-2</b> The Paint Shop Pro Save As dialog.</p> <ul style="list-style-type: none"> <li>▶ In the Save as Type field, pull down the choices and select either GIF or JPG.</li> <li>▶ Save the file in the folder of your choice (probably your <i>Multitit</i> folder).</li> <li>▶ Make sure the name you give the image has the same filename extension as the file format you selected (GIF or JPG).</li> </ul>	<p><b>Figure 34-3</b> The Graphic Converter Save As dialog.</p> <ul style="list-style-type: none"> <li>▶ Select the image file you want to convert.</li> <li>▶ Pull down the File menu and choose Save As; the Save As dialog appears as shown in Figure 34-3.</li> <li>▶ In the Save As dialog, pull down the Format menu and choose the format you want (either GIF or JPEG).</li> <li>▶ Click the Save button to save the file in the folder of your choice (probably your <i>Multitit</i> folder).</li> </ul>

## Resizing Images

**Show-Me Movie:**  
“Resizing Images”

Images may be the wrong size for placement on a multimedia screen or Web page. To resize an image, follow the steps in Table 34-3.

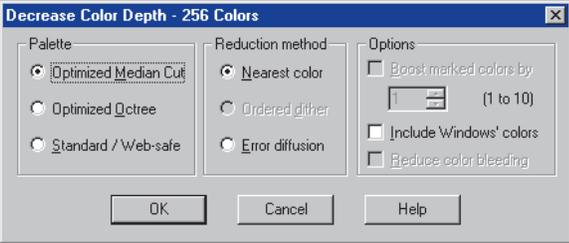
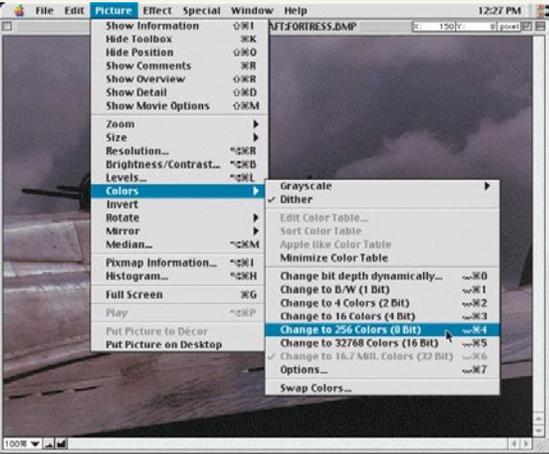
**Table 34-3** How to Resize Images

Paint Shop Pro (Windows)	Graphic Converter (Macintosh)
<ul style="list-style-type: none"> <li>▶ Pull down the Paint Shop Pro File menu and choose Open; the Open Image dialog appears</li> <li>▶ In the List Files of Type field, pull down the choices and select the file format of your original image</li> <li>▶ Browse to the image and click OK to open it; the image will appear on-screen.</li> <li>▶ To resize the image, pull down the Image menu and choose Resize; the Resize dialog appears as shown in Figure 34-4.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Pull down the Graphic Converter File menu and choose Open; the Select a File dialog appears.</li> <li>▶ Select the image file you want to resize.</li> <li>▶ Pull down the Picture menu and choose Size, then Scale; the Scale dialog appears as shown in Figure 34-5.</li> </ul>
	
<p><b>Figure 34-4</b> The Resize dialog in Paint Shop Pro.</p> <ul style="list-style-type: none"> <li>▶ Click a size option, such as Percentage of Original, then make the numbers larger or smaller, depending on whether you want the image to be larger or smaller. Check the Maintain Aspect Ratio box if you want the resized image to have the same proportions as the original.</li> <li>▶ Click OK; the resized image appears.</li> <li>▶ Pull down the File menu, and either choose Save to save this file under the same name as the original (this will replace the original file), or choose Save As to save it under another name.</li> </ul>	<p><b>Figure 34-5</b> The Scale dialog in Graphic Converter.</p> <ul style="list-style-type: none"> <li>▶ Set the width and height you want the resized image to be. You can do this by dimension or size.</li> <li>▶ Check the Keep Proportions box if you want to maintain the aspect ratio.</li> <li>▶ Click OK.</li> <li>▶ Pull down the File menu, and either choose Save to save this file under the same name as the original (this will replace the original file), or choose Save As to save it under another name.</li> </ul>

## Reducing the Color Depth

Unless you have a special reason for wanting to keep your images encoded in 16 million colors (24-bit), you should convert the images to 256 colors (8-bit), which will make them load faster and reduce considerably the file space occupied by the image. To convert a 24-bit image into an 8-bit image, follow the steps in Table 34-4.

**Table 34-4** How to Reduce the Color Depth of an Image

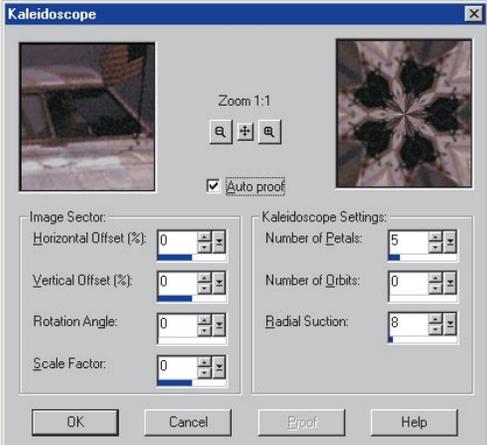
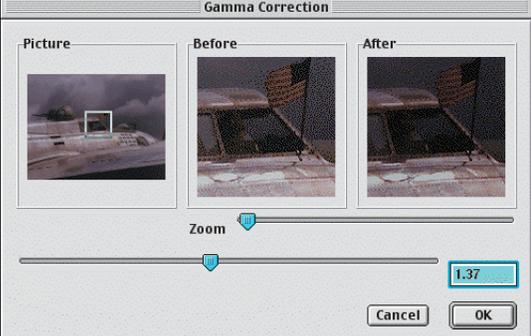
Paint Shop Pro (Windows)	Graphic Converter (Macintosh)
<ul style="list-style-type: none"> <li>▶ Pull down the Paint Shop Pro File menu, choose Open, and open the image, which will appear on-screen.</li> <li>▶ Pull down the Colors menu, choose Decrease Color Depth, and see if the 256-colors option is active. If it is not active, your image does not need to be reduced in color depth, so close the image and skip the rest of these instructions.</li> <li>▶ If the 256-colors option is active, select it; the Decrease Color Depth dialog appears as shown in Figure 34-6.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Pull down the Graphic Converter File menu, choose Open, and open the image, which will appear on-screen.</li> <li>▶ Pull down the Picture menu, choose Colors, then Change to 256 Colors, as shown in Figure 34-7.</li> </ul>
	
<p><b>Figure 34-6</b> The Decrease Color Depth dialog in Paint Shop Pro.</p> <ul style="list-style-type: none"> <li>▶ If you choose one of the Optimized palette settings, click the option to Include Windows Colors. If you plan to publish this image to the Web, choose Standard/Web-safe.</li> <li>▶ Whether to choose Nearest Color or Error Diffusion is up to you. Click OK to close the dialog.</li> <li>▶ Pull down the File menu, and either choose Save to save this file under the same name as the original (this will replace the original file), or choose Save As to save it under another name.</li> </ul>	<p><b>Figure 34-7</b> Decreasing the color depth with Graphic Converter.</p> <ul style="list-style-type: none"> <li>▶ Pull down the File menu, and either choose Save to save this file under the same name as the original (this will replace the original file), or choose Save As to save it under another name.</li> </ul>

## Image Special Effects

**Show-Me Movie:**  
"Image Special Effects"

Both Paint Shop Pro and Graphic Converter have a wide range of image special effects. You can sharpen or soften an image, for example, or emboss, chisel, weave, or bevel it. To apply special effects to an image, follow the steps in Table 34-5.

**Table 34-5** How to Create Image Special Effects

Paint Shop Pro (Windows)	Graphic Converter (Macintosh)
<ul style="list-style-type: none"> <li>▶ Open the image with Paint Shop Pro.</li> <li>▶ If the image is not already 16 million colors, pull down the Colors menu, choose Increase Color Depth, and increase the colors to 16 million. The special effects work only on 16-million-color images.</li> <li>▶ Pull down the Image menu and choose the kind of effect you want. On the menu, you will find deformation filters, edge effects, blur, sharpen, and so on.</li> <li>▶ Depending on the effect you choose, a dialog box may appear. If you choose Effects, Kaleidoscope, for example, the dialog in Figure 34-8 will appear.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Open the image with Graphic Converter.</li> <li>▶ Pull down the Effect menu and choose the kind of effect you want. On the menu, you will find deformation filters, gamma correction, and several kinds of dither.</li> <li>▶ Depending on the effect you choose, a dialog box may appear. If you choose Effects, Gamma Correction, for example, the Gamma Correction dialog in Figure 34-9 will appear.</li> </ul>
	
<p><b>Figure 34-8</b> The Kaleidoscope dialog box.</p> <ul style="list-style-type: none"> <li>▶ Play with the settings in the dialog box until you achieve the desired effect. If you have a fast computer and you want the full-size image to update automatically as you adjust the settings, click the Auto proof box.</li> <li>▶ If a dialog box opened, click OK to close it, or click Cancel to cancel the effect.</li> <li>▶ If you want to save the modified image, pull down the File menu and choose Save As to save the image under the filename you want it to have.</li> </ul>	<p><b>Figure 34-9</b> The Gamma Correction dialog box.</p> <ul style="list-style-type: none"> <li>▶ Play with the settings in the dialog box until you achieve the desired effect. If you play with Gamma correction, for example, you should know that on a computer monitor, a small change in brightness at a low brightness level is not equal to the same change at a high level. Gamma correction compensates for this inequality.</li> <li>▶ If a dialog box opened, click OK to close it, or click Cancel to cancel the effect.</li> <li>▶ If you want to save the modified image, pull down the File menu and choose Save As to save the image under the filename you want it to have.</li> </ul>

Figures 34-10 through 34-15 show the result of applying six different Paint Shop Pro image effects to the Flying Fortress image in the *Aircraft* folder of the *Multilit* CD. These are just a few of the special effects you will be able to create when you pull down the Effects menu and let your imagination be your guide.



Figure 34-10 Edge enhanced.



Figure 34-11 Rippled.

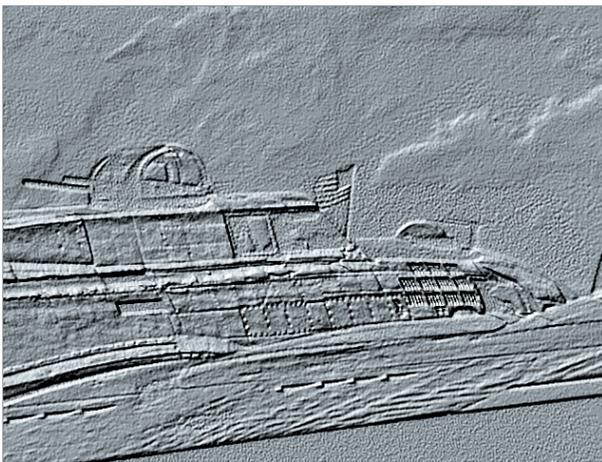


Figure 34-12 Sculptured.



Figure 34-13 Hot waxed.



Figure 34-14 Mirrored.



Figure 34-15 Framed in round wood.

## e x e r c i s e s

1. If you have access to the World Wide Web, get on the Web and browse to a screen with an image you would like to capture. Otherwise, run the *NeccKeynote* presentation in the *Necc* folder on the *Multilit* CD, and go to a slide that shows an image you like. Get Paint Shop Pro running (Windows) or Graphic Converter (Macintosh). Following the steps in Table 34-1, try the different capture methods you learned in this chapter for grabbing rectangular areas of the screen, windows, or the full screen. Which method is most appropriate for capturing the images you decided to grab? Why does that method work better for you than the others?
2. The *photos* directory on the *Multilit* CD contains an image that is too dark. The name of the image is *toodark.bmp*. Use Paint Shop Pro (Windows) or Graphic Converter (Macintosh) to enhance the image. *Hint*: To achieve the best result, you must not only brighten this image but also increase its contrast. Brightness and contrast are two image parameters that interact with each other; with experience, you will learn how to make good contrast and brightness adjustments.