

# Adobe Photoshop

A Tutorial For Media Design/Graphics Students



This tutorial presents the basic methods of preparing images, using Adobe Photoshop, for print publication.

### **Tutorial topics:**

- Basic Terms
- The Desktop and Palettes
- Resolution
- Creating Action Palettes
- Saving file formats
- Color Correction and Enhancement
- Silhouettes

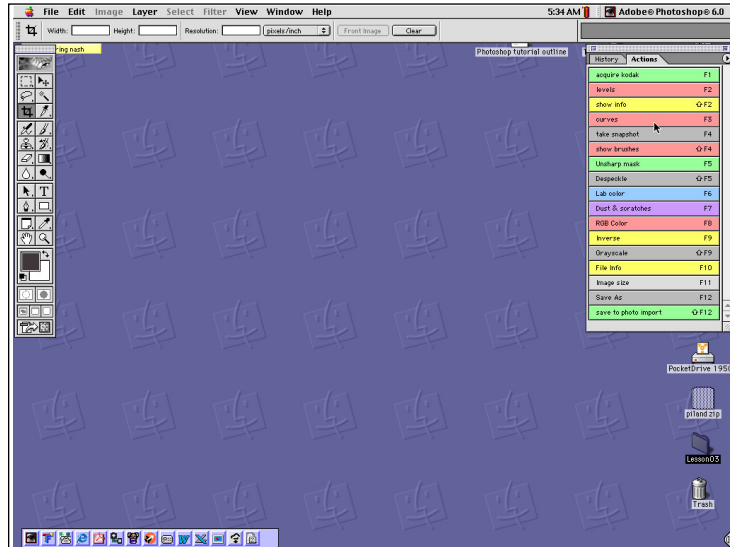
# Basic Terms

Common terms using Photoshop and a Macintosh.

- **Aliasing:** The stairstep effect at the edge of a line or area of color caused by displaying the line or area of color as pixels.
- **Anti-aliasing:** A technique to reduce the effect of aliasing by interpolating pixels of intermediate color along displayed edges.
- **Color Depth:** *Color depth* refers to the possible number of colors in an image. Common color depths are 1-bit, 8-bit, 16-bit, 24-bit, and 32-bit. A bit has two possible values: 0 and 1. These bits are used to define the color of each pixel in an image. By increasing the number of bits used to define the color, the range of colors available for each pixel is also increased. RGB files use 8-bit for each channel producing a 24-bit color image.
- **CMYK:** Cyan, magenta, yellow and black. The standard color model for printing applications. A four-color separation is always a CMYK.
- **EPS:** The Encapsulated PostScript file format is a metafile format; it can be used for vector images or bitmap images. When you place an EPS image into a document, you can scale it up or down without information loss. EPS files can be graphics or images of whole pages that include text, font, graphic, and page layout information.
- **Feathering:** In Photoshop, the blending of a selection with its surrounding area.
- **Histogram:** In Photoshop, a graphical representation of the occurrence of the luminosities or different color values in an image.
- **Image Resolution:** The number of pixels per inch (ppi) in a raster image.
- **JPEG:** Joint Photographic Experts Group. 1) The lossy compression scheme used to make the file sizes of continuous tone images smaller. 2) The JPEG File Interchange Format, a common raster image file format that uses the JPEG compression scheme.
- **Mask:** A device used to protect areas of an image from change. In Photoshop, this is accomplished through a selection.
- **Noise:** Random interference in any part of the digital imaging process (for example, dust, dirt on a scanner bed.)
- **Pixel:** A *pixel* is the fundamental unit of an image in Photoshop. It is a small square block of color. An image often consists of many pixels, arranged in columns and rows.
- **Quick Mask Mode:** In Photoshop, the mode in which selected pixels are displayed as an overlay color (typically red) and selections can be edited using the painting tools.
- **Raster or Bitmap graphics:** A *raster* is the grid into which the pixels are arranged. Consequently, images made up of pixels are often referred to as raster images. A *raster image* cannot be enlarged unlimitedly without the pixels becoming visible. Images enlarged too much often have jagged edges.
- **Resampling:** The process of changing the pixel dimensions of an image.
- **RGB:** A color model that uses the additive properties of red, green, and blue light to describe colors. Used exclusively by computer monitors and televisions.
- **Screen Frequency:** The number of halftone dots per unit area, usually measured in lpi, (lines per inch).
- **Standard Mode:** In Photoshop, the typical mode used for viewing and editing an image.
- **Three-quarter Tones:** The tones in an image tending toward the shadow areas typified by a 75% gray value.
- **TIFF:** Tagged Image File Format. A common raster image file format, used especially in printing and page layout applications.
- **Unsharp Mask (USM):** In Photoshop, a filter used to sharpen an image by increasing the contrast of detected edges.
- **Vector graphics:** A *vector* is a mathematically defined line or curve. While Photoshop utilizes vectors when you create a path, you can only edit raster images with Photoshop.

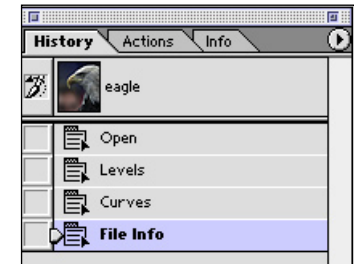
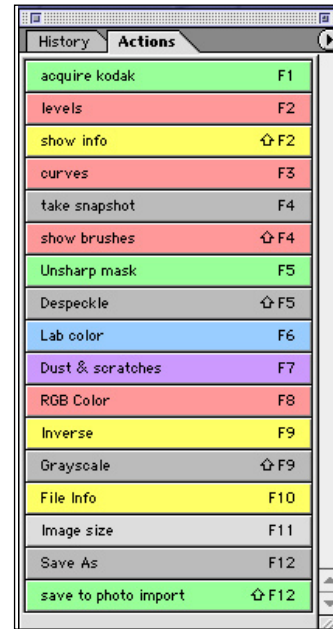
# The Desktop

The gray area of the monitor where you work on your images and access applications and folders, etc.

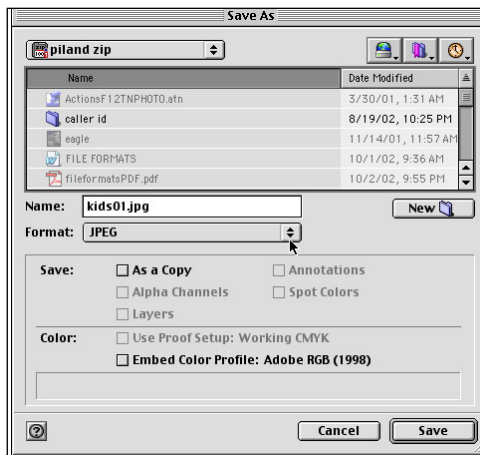


# Palettes

Photoshop palettes add functionality to nearly every tool in the toolbox. Some palettes are specific to a tool's use, while others monitor your work and help you stay organized.



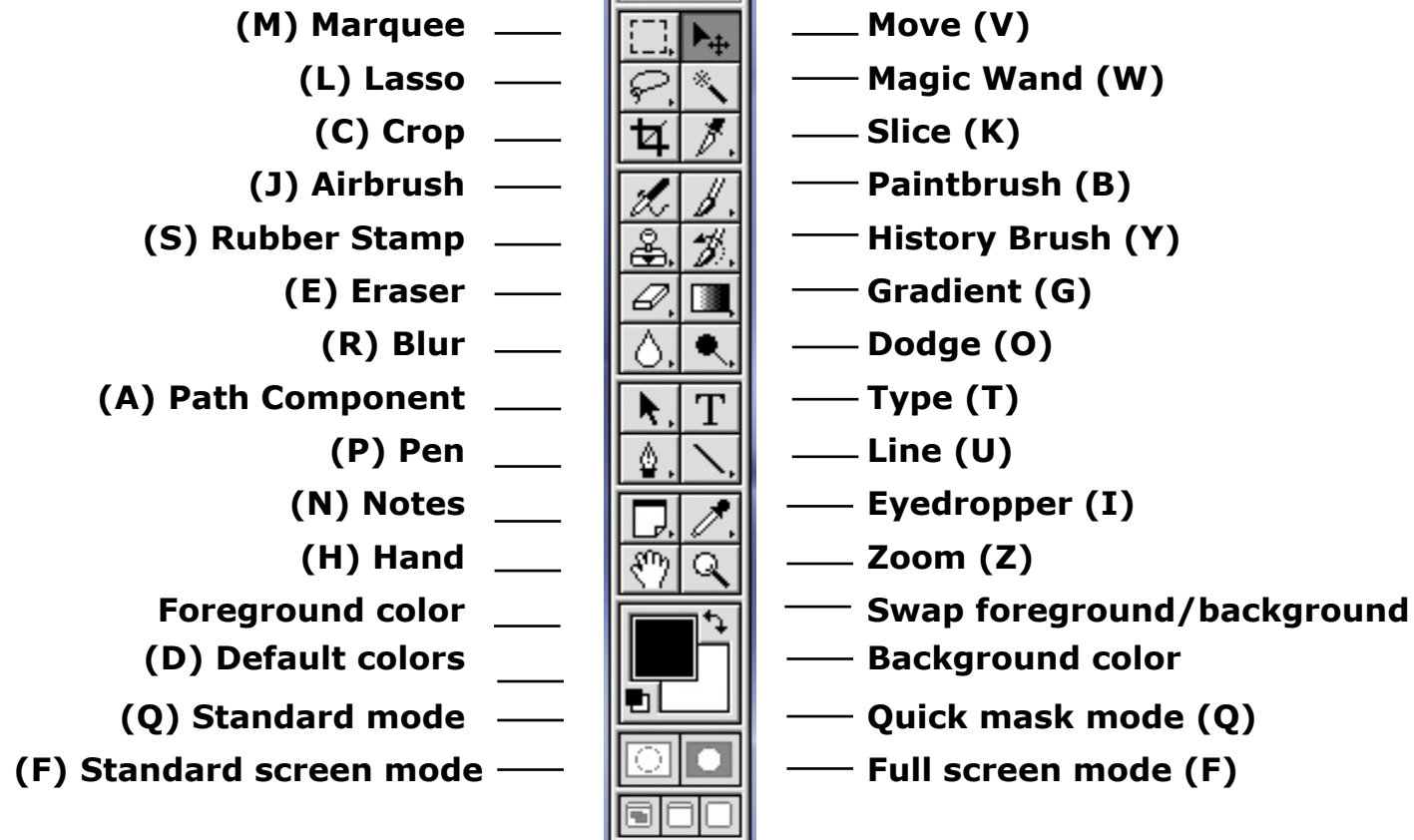
# The Dialog Box



The Dialog Box is a common Macintosh prompt which enables the user to make a choice before continuing on to the next step.

# The Toolbox

Photoshop's main palette



## Full screen mode with menu bar (F)

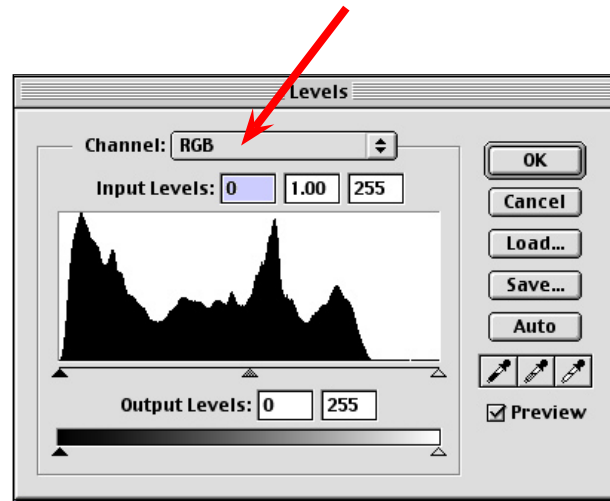
Other tools are hidden behind some of the tools in the toolbox. Hold down on the tool and others will appear.

Move the pointer onto the tool you want and let go. Here's a list of those tools.

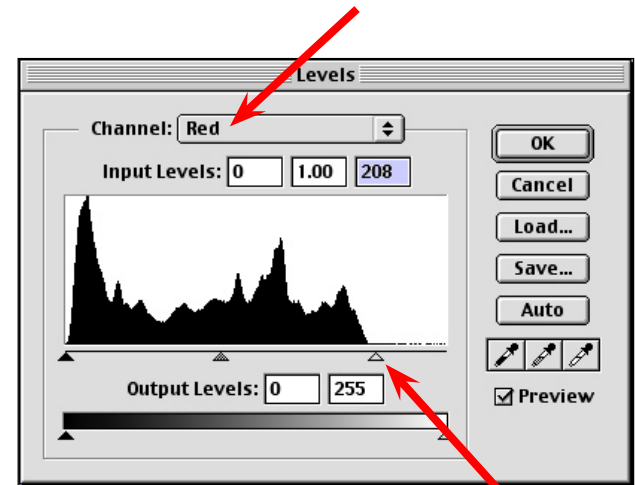
- Lasso/Polygon Lasso/Magnetic Lasso • Line/Pencil • Pen/Magnetic Pen/Others • Rubber Stamp/Pattern Stamp • Type/Others
- Blur/Sharpen/Smudge • Gradient/Others • Dodge/Burn/Sponge • Eyedropper/Color sampler

# Step by Step...

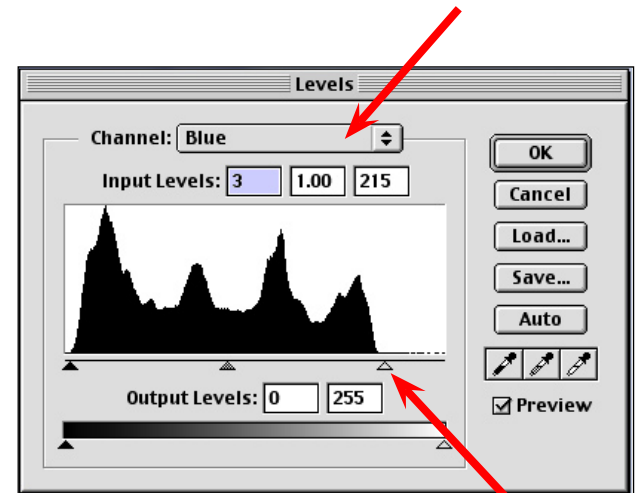
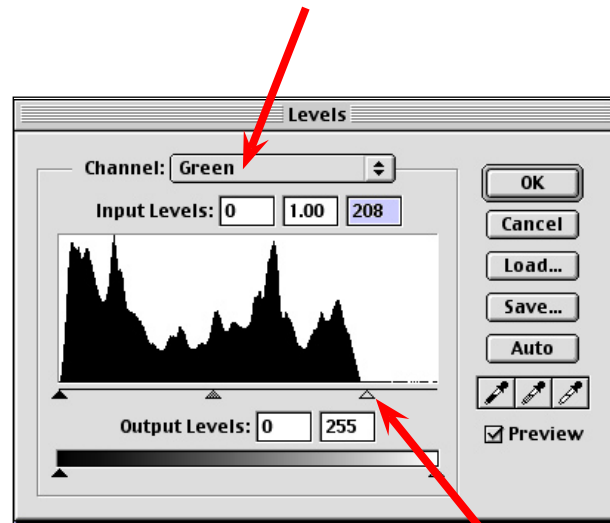
Whether you start with a scanned image or with a digital file the procedure should be the same from this point on. Once the image is on your desktop **go to Levels first**. Adjust the sliders each channel at a time. This gives you a more accurate color adjustment than an overall RGB change. See illustration at right or view the movie below:



Notice the gap in the highlight area on the right side of this histogram. Don't adjust here, go to each channel to make the adjustment.

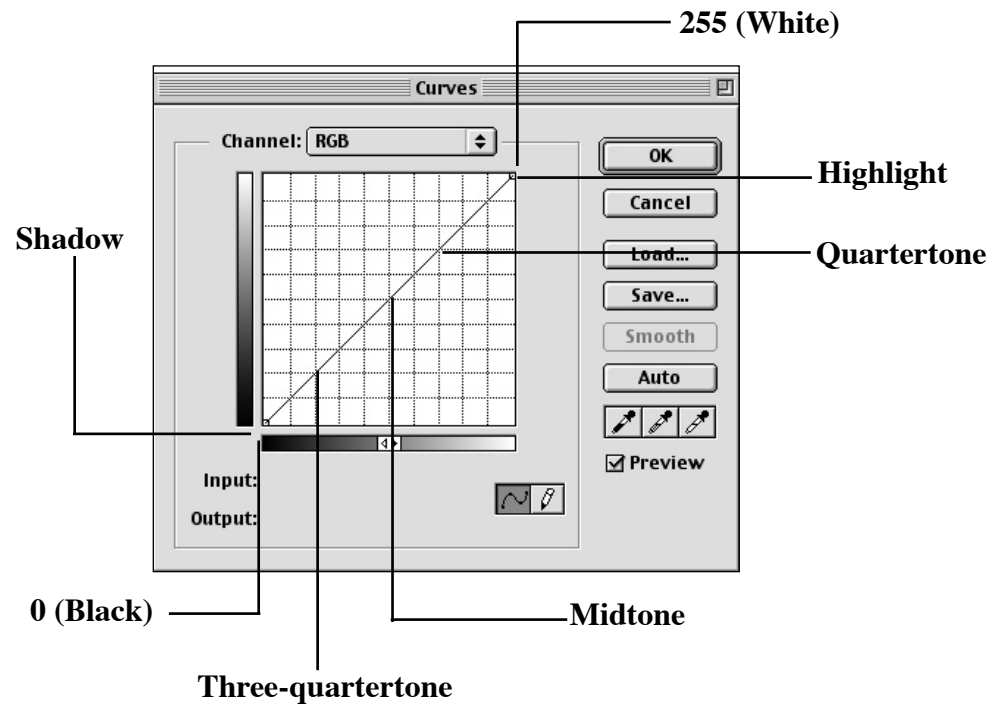
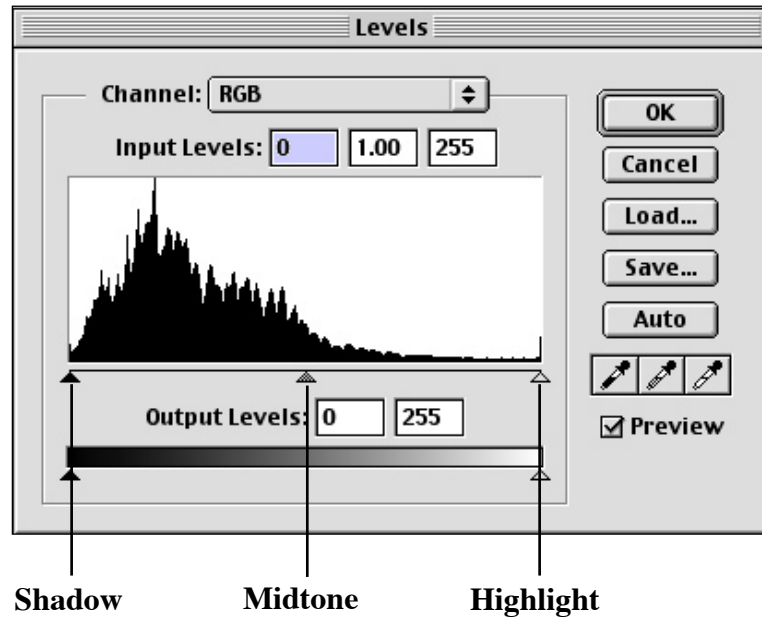


Move the sliders toward the middle just as the histogram starts showing information. Do this at both ends if needed. Do this in all three channels.



Even after you make these adjustments you may need to do other tweaking. Click OK and move on to Curves to do more fine changes.

These two color adjustment dialog boxes show you similar information. But Levels allows you to first see where the image information is in regards to the overall image. Curves allows you to make more precise changes using the grid



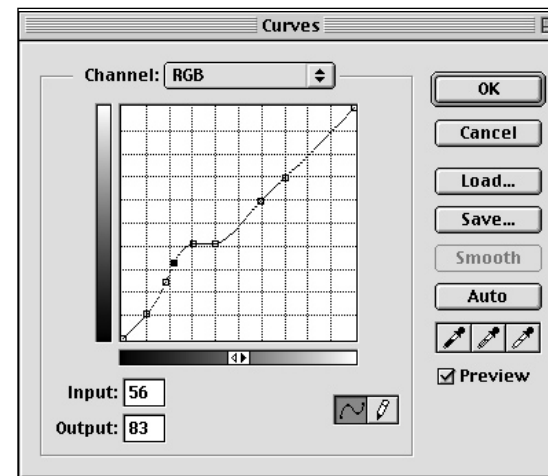
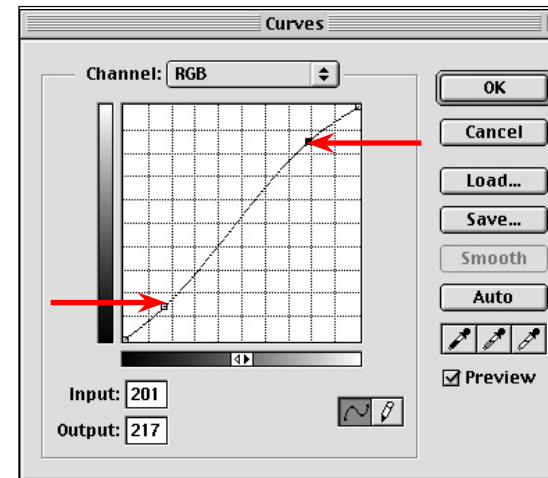
# Curves

Curves allows you greater flexibility in color correcting your image. You should always do brightness and contrast changes in curves. **NEVER use the Brightness and Contrast dialog box.**

Make your changes by pulling the curve in from the top and bottom as demonstrated at right.

The grid can be broken down into the zone system and adjustments can be made in a particular zone and not anywhere else in the image. It only takes a short time to get use to setting your levels first and then moving on to curves for more adjustments if needed.

In the example at right, you can see the tags on the lower, shadow end on the curve. By placing a tag on each intersecting grid, you can control the curve moving anywhere but the precise grid you want to adjust. In this case the three-quartertone is lightened without affecting the other tonal areas. You can do this in the highlight area as well. This can be useful to bring down bright areas that seem to sometimes compete with the subject in the photo.

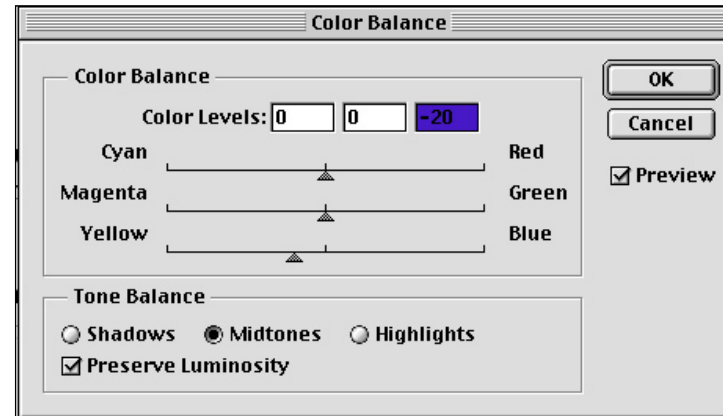


The photos at left show the before and after adjustment, going through the steps of levels first, then curves with final adjustments being done within the grid areas corrects the problems.



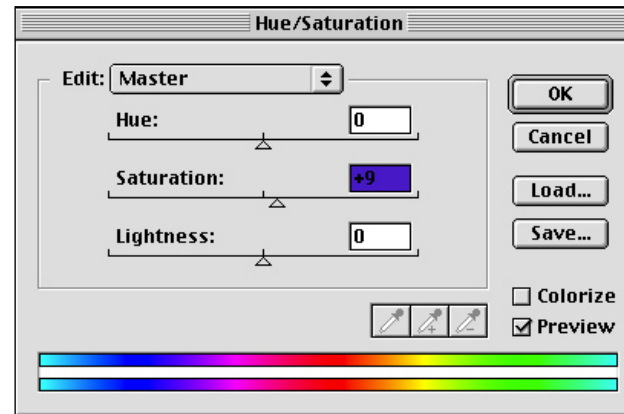
**Other ways** of color correcting when you can't quite get the image to look like you think it should. This is about 10% of your work. The earlier steps should correct 90% of the image.

If the image you are working on has a strong color cast even after doing the basic adjustments, you can try Color Balance. This allows you to move the sliders in the direction opposite of the color cast. If the image is overall blue, you would move the slider toward yellow. If the image is red you'd move toward cyan, and so on. The dialog box is set up to move RGB colors lined up with CMYK colors to achieve the desired effect. See example at right.



Another adjustment method is Hue/Saturation. It beneficial in many cases to use Hue/Saturation to tone down colors and bump up others. Files from the digital cameras are sometimes flat in nature or weak in color depending on the quality of light. The key is not to exaggerate the color but keep it looking natural, not like a over colorized postcard.

Go to the color you want to work with and mover the saturation sliders to add or subtract that color. With what we do you should not need to use the Hue or Lightness features.



**Tip:** Don't forget you can do selective adjustment to areas of your images. Use the lasso or the magic wand to select an area then do your adjustment to just that area. An example would be lightening a face, or darkening down a highlight, or doing an unsharp mask on the main subject area and not the background. Snapshot methods are described later in this presentation.

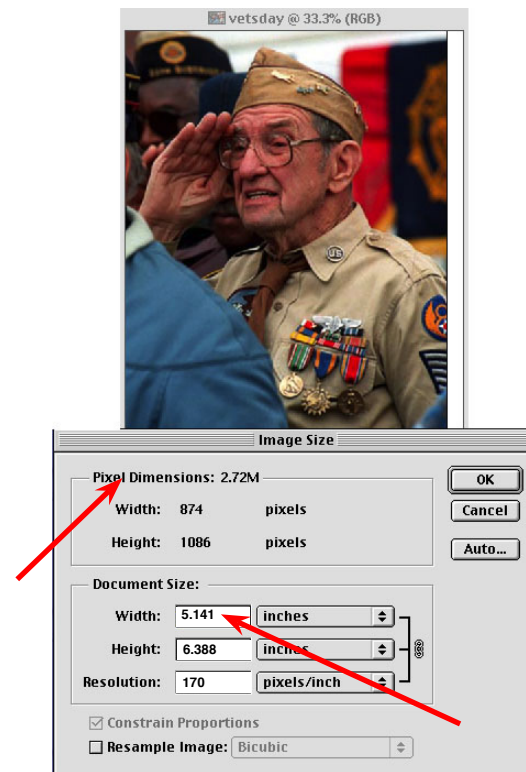
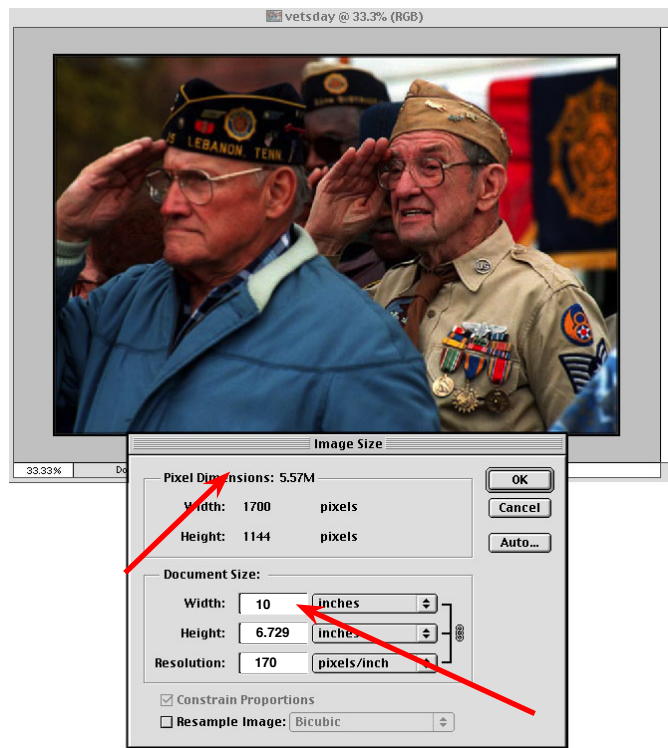


# File Size

Before you can determine your image size you need to know what potential size the photo may run. Below are standard column sizes for photos used in standard broadsheet newspapers.

- 1 column = 2"
- 3 column = 6.5"
- 5 column = 10.75"
- 2 column = 4.25"
- 4 column = 8.5"
- 6 column = 12.9"

Sizing your images to run the proper size is equally important as it is to scan a negative or print to give you adequate resolution. A full uncropped photo from a digital camera gives you a 5.57mg file. It is capable of running, as is, up to 10" x 6.729". That is almost a 5 column horizontal picture. So what happens when you get that killer shot (not this one) and its only half of the image area? You have to crop it and the file becomes 2.72mg. It measures 5.141" x 6.388" just under 3 columns. What happens why they want to run it 4 columns at 8.5" wide?

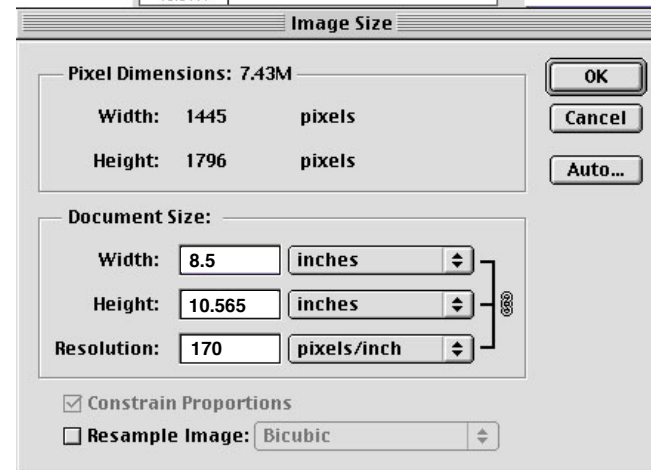


**What happens is you have to resample the photo.** The time to resample is right after you crop it and see its too small for what you hope it will run. Why is this important? It is a matter of quality of image. We have to resample at our workstation to insure it makes the grade.

**You don't need to do it unless you do a heavy crop and the file size doesn't provide an adequate image size to run a prescribed column width.**

Here's how you do it. Once you open up the Image Size dialog box, you click on the Resample box at the bottom. Then you change the width to the measurement needed to fit the largest column size the photo will run. As in this example, with the resample checked, the measurement is changed to 8.5" wide. This enables the photo to run 4 columns. The file sizes obviously changes also from 2.68mg to 4.61mg.

For some unknown reason, you are able to resample digital camera files almost twice their file size. Scanned files from negatives will not hold up to this much resampling and is completely discouraged.



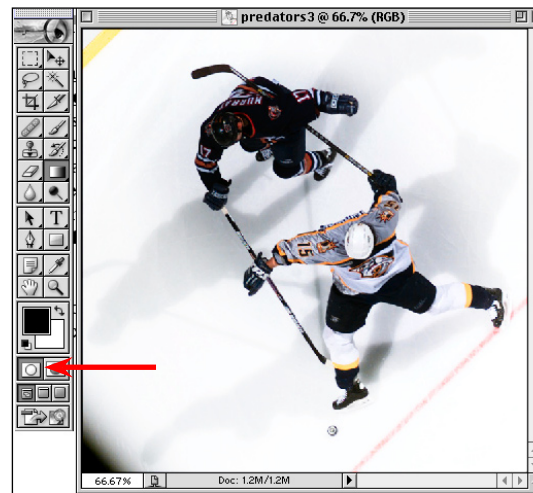

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**A word of advice:** Don't resample unless you can verify that it will work. Once the resampling is done, test it by outputting it to a color proofer in prepress. If you see the pixels showing up on the screen at 100% view, then more than likely it will also reproduce that way also.

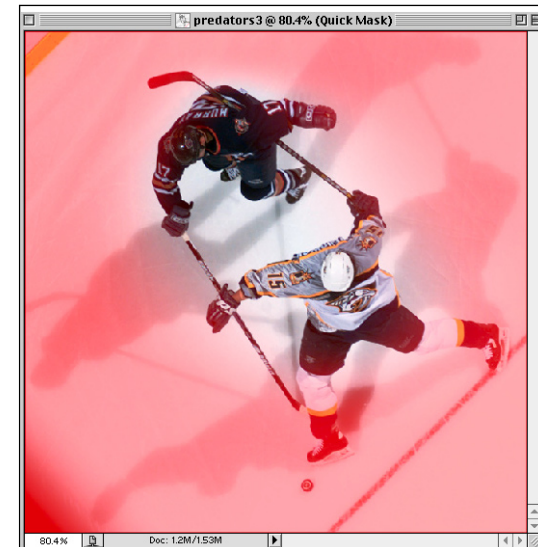
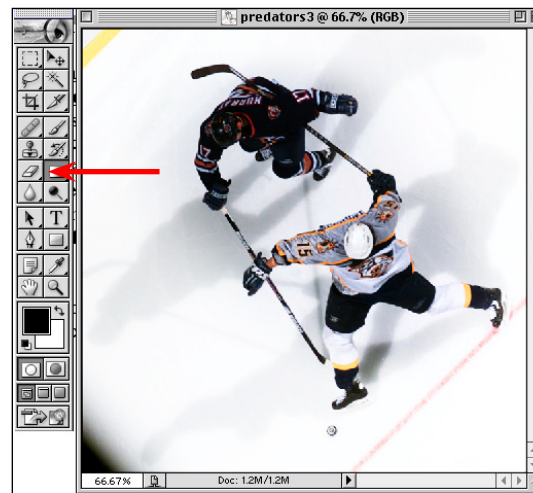
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**Using the Quick Mask and Gradient tool** to darken and sometimes lighten selected areas of the image. Usually you would darken the edges of some images to define the edge of the image and help bring out the subject.

In your toolbox click on Quick Mask.

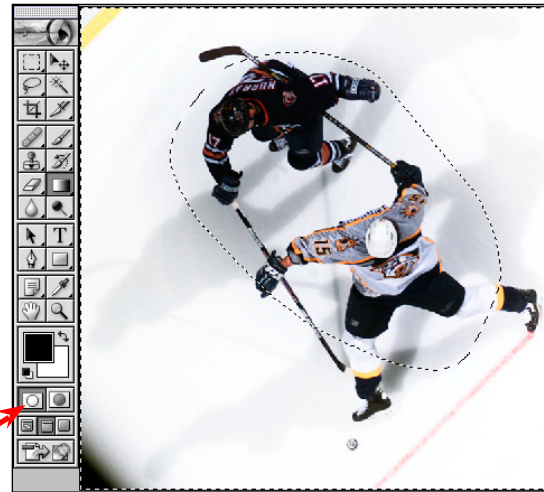


Click on the Gradient tool. If you get only one single gradients drawn versus multiples, then you need to set your gradient options to, foreground to transparency.

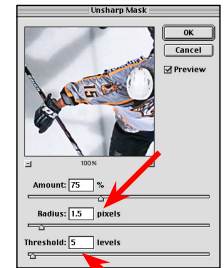
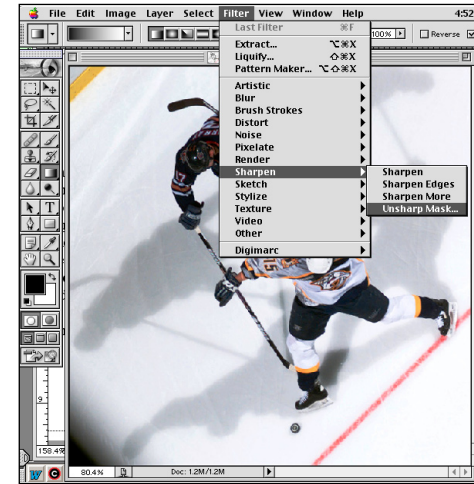
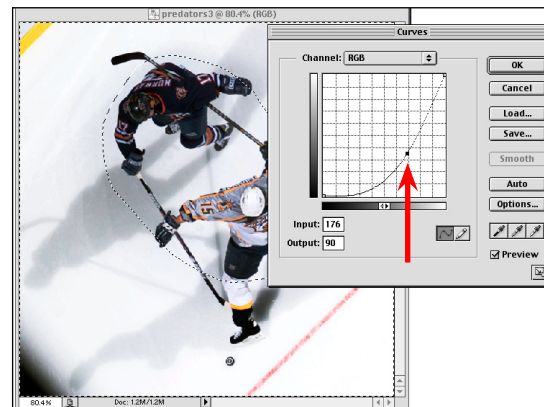


With your gradient tool draw a line from the outside toward the middle, masking the area you want to darken. Do this as many times as it takes to define the area you want to select. It is masking that area in order to turn it into a selection. The mask you draw will be red like the example above. (Continued on the next page.)

After masking the area go back and click on standard mode. This shows you the selected area. You can now darken, lighten, or adjust the color. Since the gradient options are set on foreground to transparency you need to realize that the dashes indicating your selection is the midpoint of the gradient you drew. This allows you to darken the outer most areas and gradually fade to transparency toward the middle.



Using curves allows you to darken the selected area which in this case helps give tonality to the ice surrounding the goalie. Once you've achieved the desired change, hit OK.



Never use sharpen, sharpen edges or sharpen more. To achieve a sharpened look to your image **always use unsharp mask**. The settings at the right are the base for changing the look of your photo. You can lessen or increase the amount but don't change the radius or threshold. The end results are sharper but not as harsh as earlier techniques.



# Neat Stuff to Know

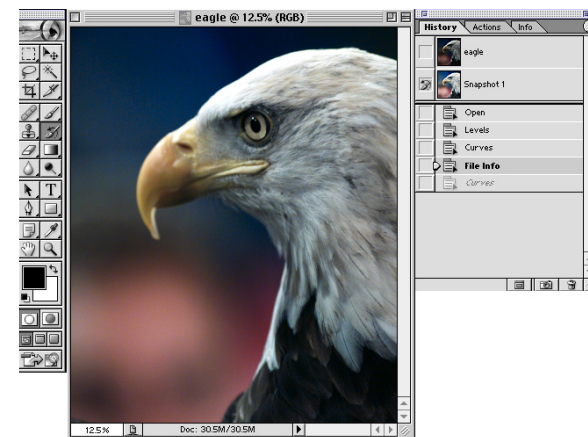
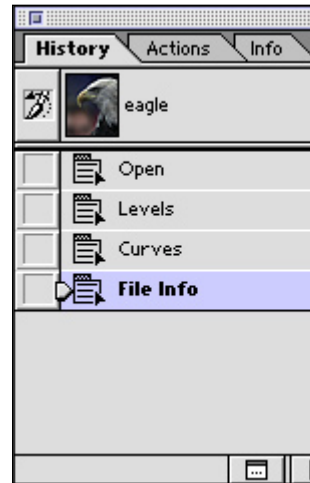
Here is a list of some of the new things in Photoshop 6.0 that is different but very exciting. The first three have an immediate use for the photographer.

- Multiple levels of undo and redo
- The History Palette and the History Brush
- Magnetic pen and Magnetic Lasso
- Complete color management controls
- Built in support for spot-color channels
- Editable text with character level formatting

Multiple levels of undo and redo are actually a part of the History palette and are shown below but need to be demonstrated to see how they work. The color management controls are being handle at the pre-press end and have mostly with the output of the image. We are working with them to see what our preferences need to be to achieve the best reproduction.

The other features mentioned above are not covered here.

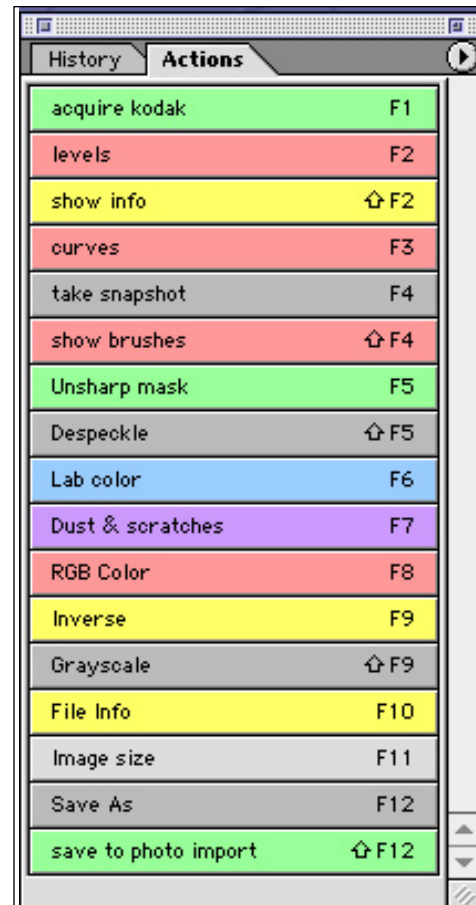
The History palette shows each of its states, as its called, in a linear method. You can go up and down the palette clicking on the different states to previous changes in the image. If you move up to a state and then make another change the states below will be discarded.



To do a snapshot you must make the change, click on the snapshot icon at the bottom of the palette, then click on the previous state, click the history brush at the left of the new snapshot and also the history brush in the toolbox. Then you can proceed to making the change on the image with the desired brush.

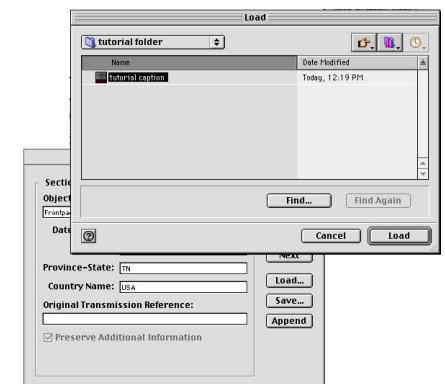
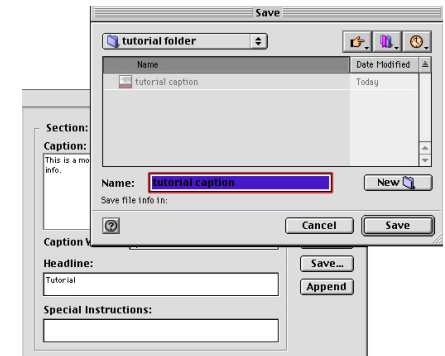
# Using Action Palettes

An Actions Palette can help give you an easy way to perform functions you use most often. They serve as hot keys to open up a certain dialog box or just save a file. To record the action, you record it, name it and create a button for that particular action. When you get ready to do a certain function just click on the button. The palette will hold as few or as many actions you may need. The palette at left is an example of a useful set of actions.



## Saving and Loading Caption Information

In order to keep information with each photo used a caption should be attached to the photo. This enables the photographer and any other person handling the photo to look at that information to insure the subject of the photo is properly identified. Here's a quick way to load your generic caption information instead of having to type it in each time. Go to File in the menu bar and pull down to File Info. Fill in the areas needed to accompany a particular photo. Click the save button at the lower right side of the box and save this to a folder. When captioning a new photo that same information can then be loaded into the caption field by clicking on the load button at the lower right. This will help you work more efficiently.

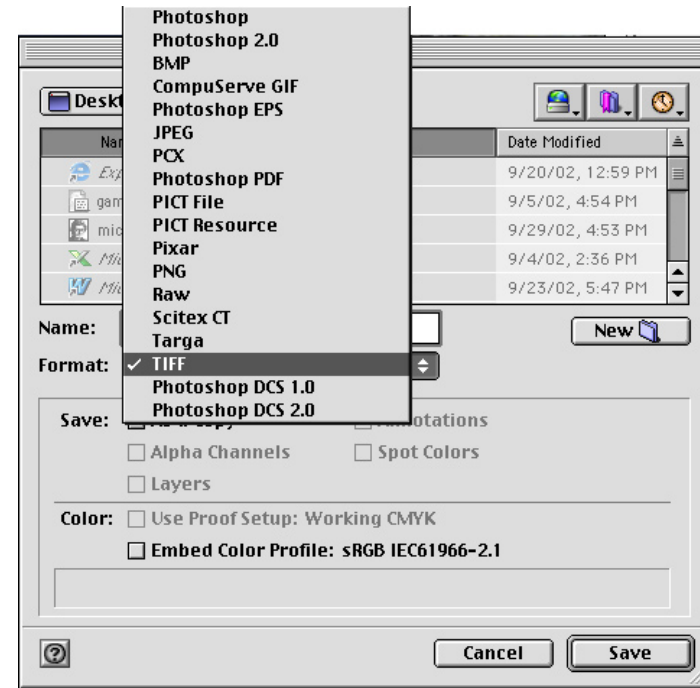


# File Formats


Once you have prepared your images for use, the specific file format should be used when it is saved. The two most common file formats for saving files is TIFF or JPEG. With the TIFF files you can save files without any loss of information. This is known as non-lossy. Saving as TIFF files is the best method maintaining the maximum quality files. TIFF is also the choice of file for inserting into page layout program such as QuarkXpress. The disadvan-

tage of saving this way is the size of the files.

In the case of JPEG, files are saved using compression and information is lost. This is known as lossy. Saving as JPEG is best for use on the web, as email attachments, or for storing images in a limited amount of space. You can control the amount of compression you apply to the image by selecting the level of quality vs. compression at the time you save the file.



## Producing Silhouettes in Photoshop

There are several different ways to make a silhouette of a photograph. If you have used Freehand or Illustrator and are comfortable with bezier curves and the pen tool, then you could use that method to create a path. 

Otherwise an efficient but professional method is using a combination

of lasso, Quick Mask and the paint brush. Here's how to do it.

Open your photo, click on the lasso tool and quickly outline as close to the subject as you can. Once you've completed your lasso loop, click the Quick Mask button. Your selected area becomes the mask. (Continued on next page.)





While in the Quick Mask mode, click on the paint brush and paint in closer to the skateboarder. If you paint over into the skateboarder then click on the eraser and touch up where you went out of bounds. (See photos at right.)

Once you have finished painting the edge of the subject, click back on the Standard Mode button next to Quick Mask button. The mask becomes a selection and appears to the outside of the skateboarder. While this area is selected hit delete. If you did a good job on the mask with the paint brush, the silhouette should look clean. Do a (shift, command I) to inverse the selection or go to Select in the menu bar and pull down to Inverse. The selection is now around only the skateboarder. Now go to the menu bar and pull down from Window and select Show Paths.

At the top right corner of the Paths palette click on the arrow and select Make Work Path. Save this for use in a page layout program. It can be placed into the copy to allow the text to flow around it like above.

