
Dodging and Burning

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Introduction

Dodging and burning is the process of lightening or darkening parts of an image. In a conventional darkroom this is done during the printing process by positioning opaque masks between the enlarger and the paper. This is something of a hit-or-miss proposition as you cannot see the actual results until the print is processed. Using Picture Window, there are a number of different ways to perform these local tonal adjustments in a highly controlled fashion.

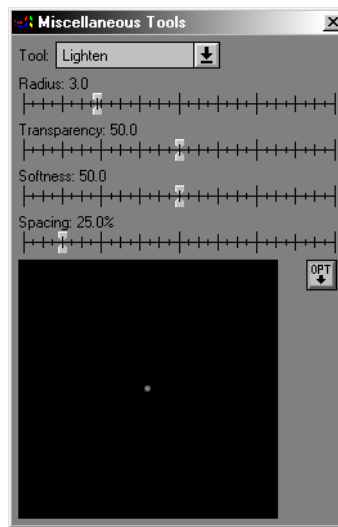
Freehand Dodging and Burning

The most straightforward method of dodging and burning is freehand with the Lighten or Darken tools. However, like dodging and burning in the darkroom, this method is sometimes tricky to control.

To access the Lighten and Darken tools, first click on the Miscellaneous Tools icon on the tool bar or use the Tools/Miscellaneous command from the main menu. This pops up the Miscellaneous Tools dialog box.

The next step is to select either the Lighten or Darken tool and set the Radius, Transparency, Softness, and Spacing as desired. The larger the radius, the larger the area

will be lightened or darkened as you apply the tool to an image. Try to use as large a radius as possible as this leads to smoother results, but a smaller radius may be necessary if you want to affect only a small area of the image. The higher the transparency, the more subtle the effect of the tool. For smoother results, try to use a relatively high transparency setting and build up the effects gradually. The greater the softness, the more gradual the blending around the edges of the region to which the tool is applied. Unless you want a hard transition around the area you are working on, use a high softness setting. Finally, the spacing setting controls how often the tool is applied as you apply it to the image; the default setting usually works pretty well.



Additional options can be accessed via the Opt button. The most important of these is the option to lighten or darken primarily the shadows, highlights, midtones or the entire tonal range. These options can be very helpful in letting you bring out shadow detail without losing highlight detail or vice versa, or when you want to lighten or darken the midtones without losing shadow or highlight details.

Using the Lighten and Darken tools effectively is a little like using a floor sander -- it takes some practice to get smooth results. Since the results of freehand tools are cumulative, if your strokes build up too much in any one area the image may get too light or too dark. While you can use the Undo command to erase a stroke, it often works best to keep the transparency high and slowly build up the effect you want using a number of overlapping strokes.

Dodging and Burning with One-To-One Cloning

This method retains the directness of working freehand while making it a little easier to control the results.

To lighten an image using One-to-One cloning, first create a lighter version of the image using a transformation that alters the brightness of the image such as Brightness, Brightness Curve or Levels and Color. Then activate the clone tool and select the One-to-One option by clicking on its Opt button. For more control, make sure you use high transparency and softness settings. Then, Shift-Click on the lighter version of the image and click and drag over the original image. As you apply the clone tool, parts of the lighter image are blended in with the original version. By creating a darker version of the original image, you can use the clone tool in the same way to darken the image.

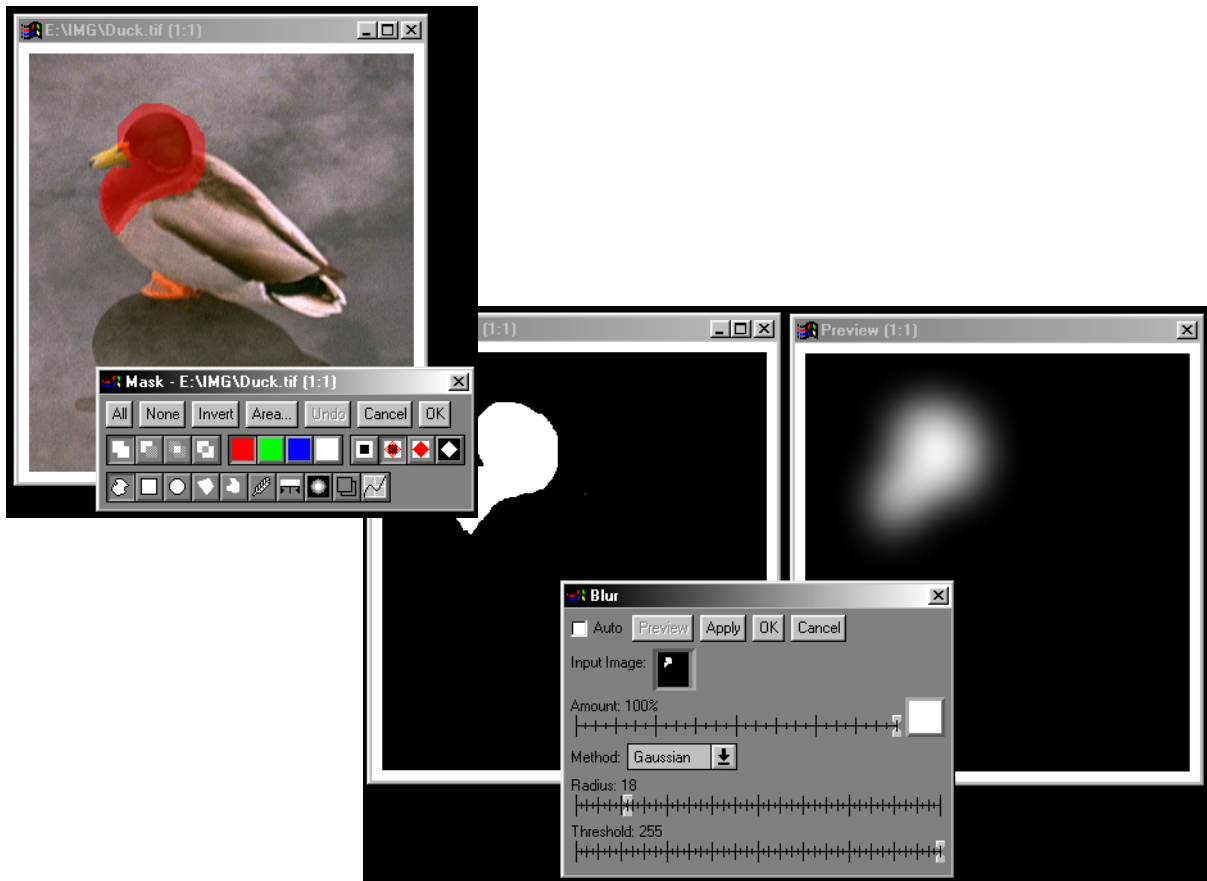
Dodging and Burning with Masks

This method offers the most control in lightening and darkening, but is less spontaneous than the freehand methods described above. Using transformations instead of freehand tools you can adjust the size and shape of the affected area by editing the mask image and the extent of the effect with Amount sliders. This lets you experiment with as many variations as you want before committing to a particular result. With the freehand methods, the effect is harder to alter once it has been applied.

The first step is to create a mask that isolates the areas you want to lighten or darken. This mask can be very precise if you want to lighten or darken a very specific area or it can be soft-edged to create a more gradual effect.

To create a very soft mask, start by roughly outlining the areas you want to affect using the freehand drawing tool in the Mask dialog box. Then use the mask Blur tool or the Blur transformation with a large radius to soften the edges. Since blurring erodes the edges by the blur radius, you will need to start by highlighting a little extra

around the edges of the area you want to change.

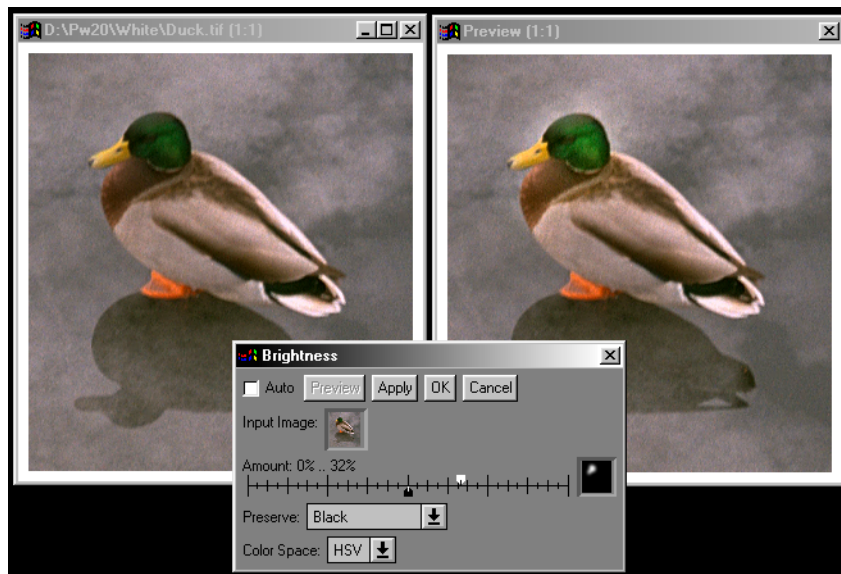


Once you have a mask, there are several ways you can use it to lighten and/or darken an image.

Brightness Transformation

The Brightness transformation is the one transformation that can be used to simultaneously lighten some parts of an image while darkening others.

- 1) Click on the image you want to modify and select the Transformation/Gray/Brightness command. This pops up the Brightness dialog box.
- 2) Click on the small white square to the right of the Amount slider. This pops up a menu of the image windows that contain masks you can use with the input image. Select the mask image you created above. If the mask window does not appear in the menu, check to make sure that it is open in a window, that it is a black and white image, and that it has the same exact size in pixels as the input image.
- 3) Once you select the mask, the Amount slider splits into two parts: a white slider and a black slider, both of which are initially set to 0%. Moving the white slider to the right will lighten the parts of the input image where the mask image is white; moving it to the left will darken the input image. Moving the black slider to the right will lighten the parts of the input image where the mask is black; moving it to the left will darken the input image. Parts of the image where the mask has an intermediate gray level will be proportionately lightened or darkened. If you move the white slider to the right, you should move the black slider to the left by an equal amount if you want to keep the overall brightness of the image the same.
- 4) Click on Preview to see the effects and either make further adjustments or click OK to finish up.



The Preserve setting lets you concentrate the effects on the shadow areas, highlights, midtones, or apply them uniformly to the entire tonal range.

For color images, you can also change the Color Space setting. When you use the HSV color space, lightening a color makes it brighter while preserving its saturation. Using the HSL color space, the more you lighten a color, the closer it gets to pure white.

Levels and Color or Brightness Curve

Using these transformations with a mask gives you the most precise control over how the image is either lightened or darkened, but they can only do one or the other. To lighten some areas and darken others, you will have to apply the transformation twice; once with a mask for lightening and once with a different mask for darkening.

- 1) Click on the image you want to modify and select the Transformation/Gray/Levels or Transformation/Gray/Brightness Curve command. This pops up the corresponding dialog box.
- 2) Click on the small white square to the right of the Amount slider. This pops up a menu of the image windows that contain masks you can use with the input image. Select the mask image you created above. If the mask window does not appear in the menu, check to make sure that it is open in a window, that it is a black and white image, and that it has the same exact size in pixels as the input image.
- 3) Once you select the mask, the Amount slider splits into two parts: a white slider and a black slider. Initially, the white slider is set to 100% and the black slider to 0%. This will cause the full effect of whatever lightening or darkening you specify with the other transformation settings to be applied to the parts of the input image where the mask image is white, and leaves the parts of the input image where the mask image is black unchanged. If, when you created the mask, you accidentally highlighted areas you want to keep the same instead of highlighting the areas you want to change, simply reverse the positions of the black and white sliders.
- 4) Click on Preview to see the effects and either make further adjustments or click OK to finish up.

For color images, you can also change the Color Space setting. When you use the HSV color space, lightening a color makes it brighter while preserving its saturation. Using the HSL color space, the more you lighten a color, the closer it gets to pure white.

Filter

The Filter transformation can be used to lighten or darken an image as it can be used to simulate sandwiching the image with a filter image (using the mask image as the filter image), thus darkening the areas when the filter image is dark. This is a little placing a variable neutral density filter over the image. The extent of the darkening can be adjusted using the Amount slider. Any loss of overall image brightness can be removed by adjusting the Exposure Compensation slider.

To lighten instead of darkening, select the Subtractive Method; this will lighten the areas where the filter image is light.

Using More than 8 Bits

One of the differences between dodging and burning in the darkroom and in the computer has to do with the nature of photographic media. The fact that the density range film can capture is much wider than the range paper can reproduce makes it possible to bring out otherwise invisible information in a negative by underexposing or overexposing it. A digital image, on the other hand, contains only as much information as was captured in the original scan. Lightening shadow areas only works up to a point; too much lightening starts amplifying scanner noise in the image and creates unnatural-looking artifacts.

One way to minimize this problem is to use a scanner which has a high DMAX (DMAX is the maximum density the scanner can record), captures 10 or more bits per color, and whose driver can transmit this extended information to your computer. The Pro version of Picture Window lets you work with the full dynamic range captured by the scanner up to 16 bits per color. The extra bits translate to a finer graduation of gray levels, and this additional information gives you much more latitude to adjust the brightness of the image without having it break up.

If your scanner captures more than 8 bits per color but its driver cannot transfer the extra bits to your computer, all is not lost. You can scan the image twice with two

different brightness settings. Then you can pull information from the brighter one to enhance shadow detail in the darker one or vice versa. Another trick for getting more information from your scanner is to make multiple scans and average them as this reduces noise in the shadow areas.