



# 3

## EXPOSURE CORRECTION

Who hasn't gone to the photo store to pick up photos, and with bated breath opened the envelope only to be disappointed by pictures that are too light, too dark, or messed up because the flash didn't go off? All these problems can be traced back to incorrect exposure. Although modern cameras have sophisticated light meters and exposure controls, strong back light or well-intentioned but incorrect camera settings can fool these modern wonders into making the wrong exposure.

Additionally, the ravages of time, displaying the photo in strong sunlight, improper storage conditions, poor chemical processing, and the transient nature of most color photographic substrates can wreak havoc on your fondest memories. When pictures fade, they don't contain any rich blacks or pure whites, and often odd color shifts are introduced.

Of course, making the appropriate exposure and protecting your photos by storing them correctly is always better than trying to apply a Photoshop fix; however, sometimes you have to rescue the pictures that fall by the wayside.

In this chapter, you'll work with grayscale and color images to

- Build up density in underexposed images
- Accentuate information in overexposed images
- Add fill-flash to open up backlit portraits
- Selectively paint light back into the picture



The worst aspect of an extreme exposure *faux pas* is that the original image information is missing. No amount of Photoshop finesse can rescue information that wasn't there to begin with. Exposure-challenged images might not be transformed from a croaking frog to a royal prince, but hopefully the techniques in this chapter will salvage your memories well enough to frame and share them with family and friends.



### Note

When you have the choice between scanning a print or the original film, working with the original film will most often yield better results. Even extremely over- or underexposed film contains more information than a print made from a poor film exposure does. If possible, try to find the original film or ask your client if they have it for you to scan.

## WORKING WITH UNDEREXPOSED IMAGES

Images that are underexposed are usually dark or dull without a true rich-black or clean-white. Shadows that don't have any useful information and white areas that look medium gray are also tell-tale signs that the camera meter was fooled into calculating the wrong exposure. Images that have faded over time can also be symptomatic of underexposure, and these same techniques can be used to rescue them.

### Using the Screen Blending Mode

There is nothing worse than trying to rescue drastically underexposed images. **Figure 3.1** shows the original, in which the manual light meter of the camera was fooled by the light center column causing the entire image to be under-exposed by about three f-stops. I used the Screen Blending Mode on a Curves Adjustment Layer to open the image up to get the results seen in **figure 3.2**.



figure 3.1



figure 3.2

 [ch3\\_underexpose.jpg](#)

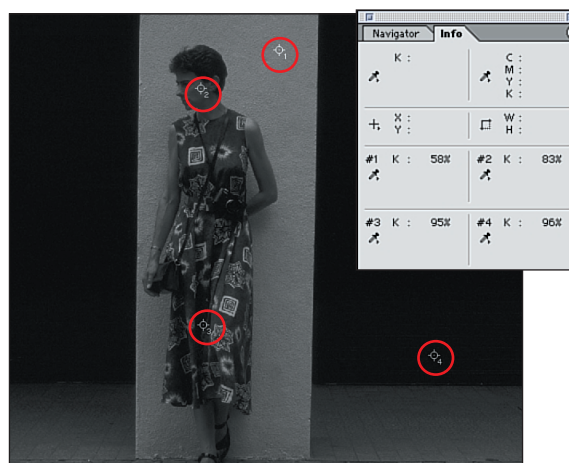


figure 3.3

Color Samplers enable you to measure and track tonal changes. I have added four samplers to track the highlights and shadows of this image.

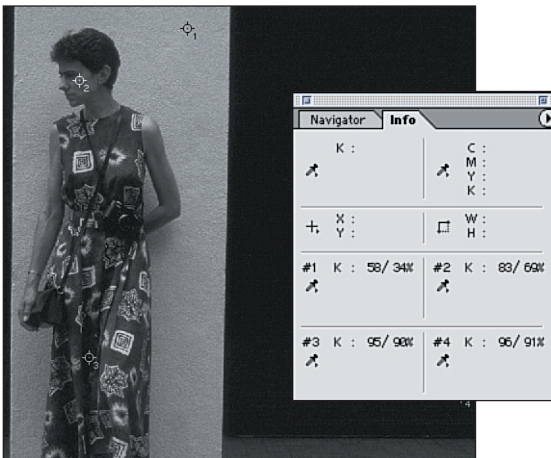
1. Add Color Samplers to track important tonal information as shown in figure 3.3. In this example, I added four to the various points of the image to track the wall, skin tones, shadow in the dress, and the background.
2. Add a Curves Adjustment Layer and change the Blending Mode to Screen.

### Tip

Hold down (Option) [Alt] and click the New Fill or New Adjustment Layer icon to select the Adjustment Layers blend mode.

Notice that, even though the Curve itself has not been changed (yet), the Info palette shows that the Screen Blending Mode is lightening the image (see **figure 3.4**).

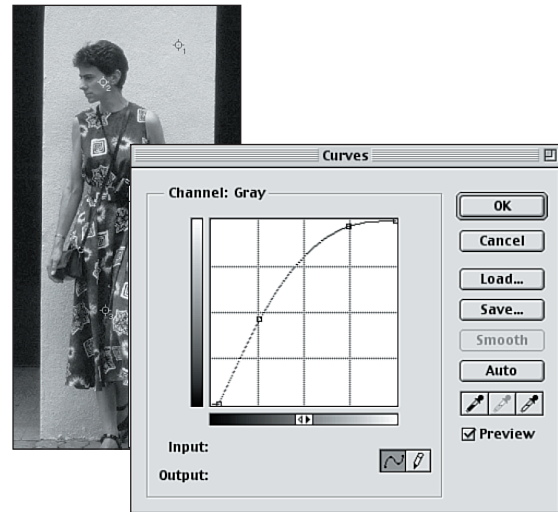
- Sampler 1: The wall went from 58% to 34%.
- Sampler 2: The cheek went from 83% to 69%.
- Sampler 3: The dress went from 95% to 90%.
- Sampler 4: The background shadow went from 96% to 91%.



**figure 3.4**

Watching the Info palette is crucial in understanding how the Blending Modes affect the image data. The first number (on the left) is the original value of the sampler, and the second number (on the right) shows the value after editing.

3. (Cmd + click)[Ctrl + click] the tonal area you want to work with to add a handle to the Curve. Start with the most important tones—in this case, the wall and the skin tones—and adjust the Curve to bring those tones into the desired range, as seen in **figure 3.5**.



**figure 3.5**

By working with Curves to lighten the midtones, I darkened the deepest shadows to black by moving the black point (the point in the lower left) in Curves to the right to suppress the noise that the underexposure caused.

### Caution

Adding excessive contrast with Blending Modes or tonal changes results in image posterization (as illustrated in **figure 3.6**) that might cause banding when printing. To avoid posterization, be careful how much pushing and pulling (lightening and darkening) of tonal values you do.



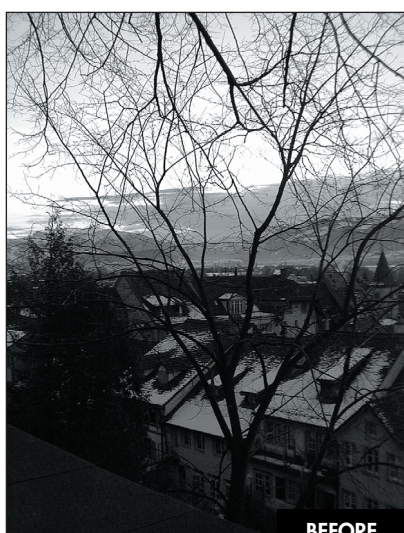
**figure 3.6**

Image posterization can result in banding when printing.



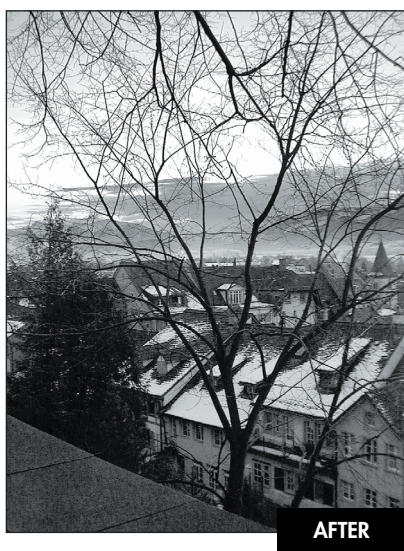
## Transitioning a Tonal Correction

Sometimes one side of an image is much lighter or darker than the other side. You can use the Gradient tool on an Adjustment Layer to protect the good part of the image while the Adjustment Layer corrects the bad part of the image. In this example, the camera meter was fooled by the light morning sky, underexposing the lower half of the picture, as shown in **figure 3.7**. As you can see in **figure 3.8**, the final image is tonally balanced and memories of that early morning walk have been saved.



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**figure 3.7**

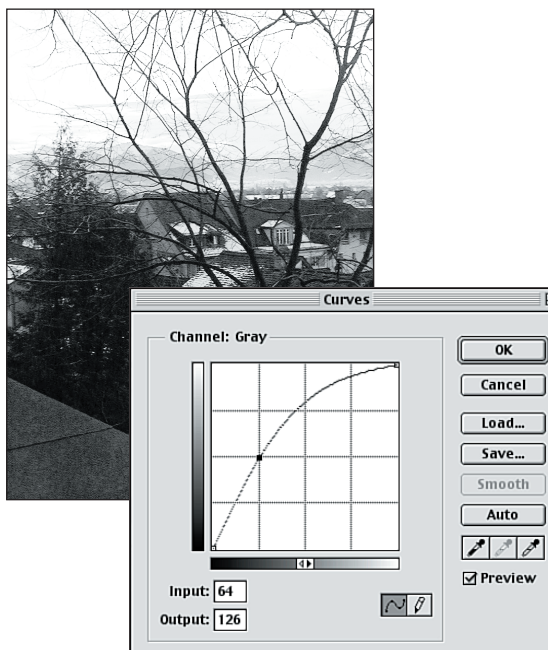


**figure 3.8**

I used a Curves Adjustment Layer with the Blending Mode set to Screen to lighten the bottom of the image; however, that blew out the sky. To isolate the Curves Adjustment Layer to the bottom portion of the image, I took advantage of an Adjustment Layer layer mask. Where I wanted the adjustment to affect the image, I made sure the mask was white; where I wanted to hide the adjustment, I made sure the mask was black. Because I wanted an even transition from black to white, I used the Gradient tool to create this transition. When using masks, I think of the Gradient tool as a big paintbrush that allows you to draw over the entire surface from black to white with a smooth, gray transition.

### **ch3\_sky.jpg**

1. Add a Curves Adjustment Layer. If the image is too dark (as in this case), select Screen as the Blending Mode. If the image was too light, select Multiply to help darken down image areas.
2. Make your tonal adjustments and focus on the areas that need fixing (see **figure 3.9**). In this case, don't worry about the sky getting too light.

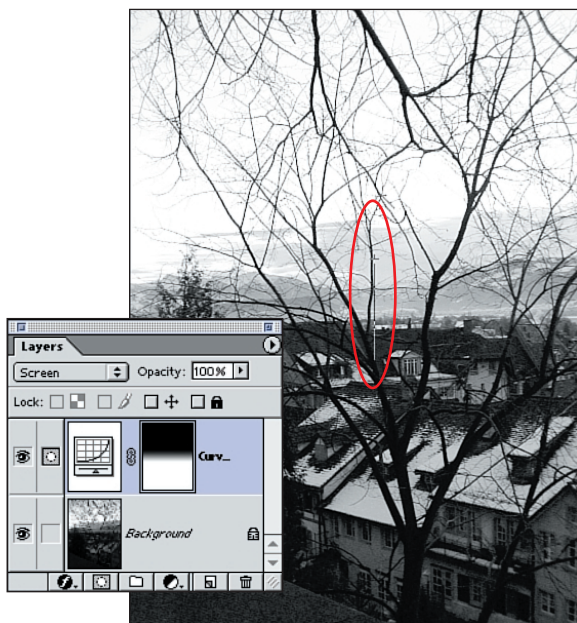


**figure 3.9**

Using Curves and the Screen Blending Mode will open up or lighten the underexposed areas quickly.



3. Choose the Linear Gradient tool and select the black to white opaque gradient.
4. Activate the Curves Adjustment Layer layer mask. Start the blend where you want the tonal protection to start (just above the horizon) and draw down to where the image adjustment is to your liking (see [figure 3.10](#)). If you don't draw the blend perfectly the first time, use the Gradient tool to drag gradients until you get the transition you want. Wherever the blend is black, the tonal correction will be hidden, and wherever you leave white, the tonal correction will be revealed.



**figure 3.10**

*Drawing the blend on the Adjustment Layer layer mask controls where the effect is taking place.*

## Painting with Adjustment Layers

Of course, not all image imperfections fall on a straight line as the previous example did. When I need to enhance irregular areas I prefer to use Photoshop's Brush tools and a Wacom pressure-sensitive tablet to hide and show image adjustments by painting in their masks. In the picture of the beauty queen (see [figure 3.11](#)), the main subject is too dark. By lightening her face, the viewer's eye is drawn to her, as seen in [figure 3.12](#).



**figure 3.11**



**figure 3.12**

1. Add a Curves Adjustment Layer set to Screen to lighten the image. **Figure 3.13** shows that the entire image is affected by the Adjustment Layer, which makes the image look better but also takes away tonal focus from the primary figure.



**figure 3.13**

Lighten the entire file.

2. I find it easier to hide the entire tonal correction by inverting the Adjustment Layer layer mask (Cmd + I)[Ctrl + I] or filling it with 100% black. Then you will selectively paint in the correction.
3. Select the Airbrush, set white as the foreground color, and decrease the opacity to 10%–20%. Begin painting on the Adjustment Layer's mask. Decreasing the opacity allows a gradual build up of white paint in the mask, slowly revealing the adjustment in the image, as **figure 3.14** illustrates.



**figure 3.14**

Painting in the Curves Adjustment Layer layer mask carefully lightens only the areas that require it.

This technique gives you the ability to decide where and to what extent the tonal changes take place. The soft-edged airbrush will yield a soft-edged tonal transition that is difficult to detect.

## **SALVAGING OVEREXPOSED IMAGES**

Slide positive originals or digital camera files are images that are most likely to be overexposed. Slide films, such as Kodak Ektachrome and AgfaChrome, and consumer digital cameras do not have the exposure latitude that color negative film has, which makes them more sensitive to overexposure. As with underexposure, a severely overexposed image might not give you much (if any) image information to work with. If the overexposed areas are clear, blownout to white, or if the Info palette reads 255, 255, 255, there is no amount of Photoshop magic that can recreate image information that wasn't captured to begin with. In the following exercises, we will work with very light and faded images to learn techniques to bring out subtle information to create images that are saturated and rich.



## Correcting Overexposed Images from Digital Cameras

In the following example, the original image was captured with a consumer-level digital camera, and it is overexposed (see [figure 3.15](#)). After adding density to the file, the image is richer and more saturated (see [figure 3.16](#)).



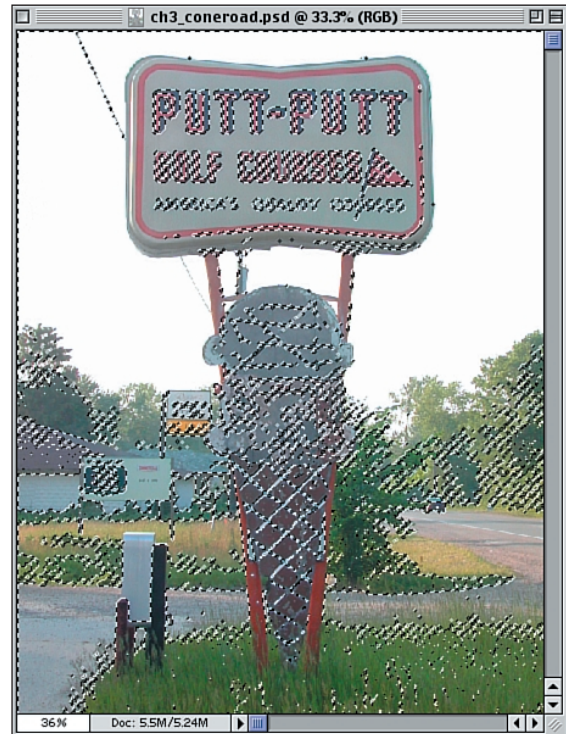
*figure 3.15*



*figure 3.16*

### ch3\_coneroad.jpg

1. Start by loading the image's luminosity by pressing (Cmd + Option + ~)[Ctrl + Alt + ~] to create the active selection (see [figure 3.17](#)). Loading the luminosity uses the overall image brightness to make the selection.



*figure 3.17*

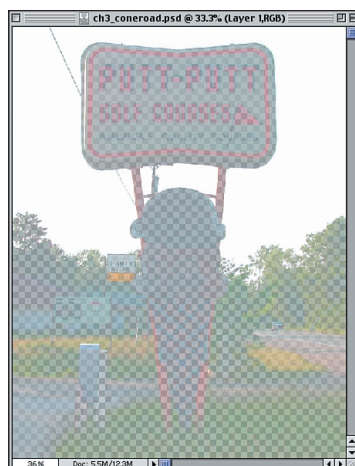
*Load the image's luminosity.*

2. Select Layer > New > Layer Via Copy or press (Cmd + J)[Ctrl + J] to create a new layer based on the selection.
3. By turning off the Background layer, you can see the subtle nature of the added layer (see [figure 3.18](#)).

### Note

You can also load image luminosity by (Command) [Control] clicking on the composite channel icon (RGB, CMYK, LAB, or Grayscale) in the Channels palette.

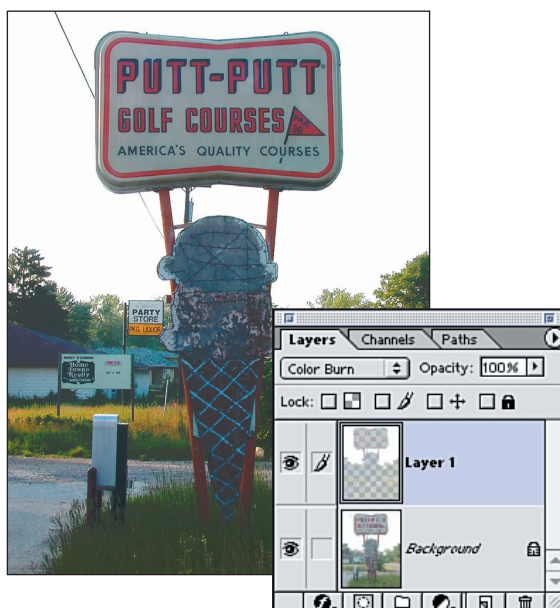




**figure 3.18**

Just for curiosity's sake, view the resulting layer.

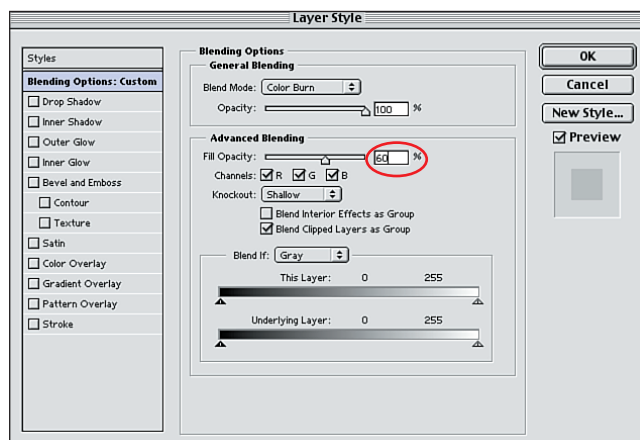
4. Make the Background layer visible again. Make the new layer active, and change the Blending Mode to Color Burn. The image will most likely look muddy, as seen in **figure 3.19**.



**figure 3.19**

Duplicating the layer and changing the Blending Mode to Color Burn.

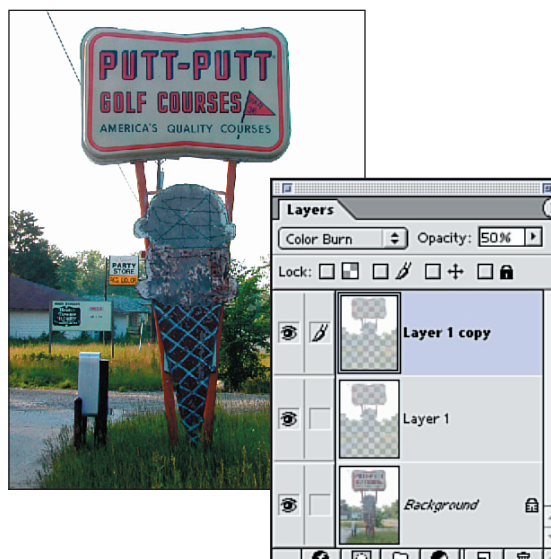
5. Double-click the Color Burn layer and change the Advanced Blending Fill Opacity to 60%, as seen in **figure 3.20**.



**figure 3.20**

The Layer Style dialog box controls how layers interact with one another.

6. To strengthen the effect, duplicate the Color Burn layer and lower the duplicated layer's opacity to create the desired effect, as seen in **figure 3.21**.



**figure 3.21**

Duplicating the layer and adjusting opacity fine-tunes the correction.

## Correcting Slight Overexposure and Reducing Specular Highlights

In this example, the studio still life of the citrus fruit is slightly overexposed and flat, as seen in the original file in [figure 3.22](#). By correcting the shadow point and toning down the specular highlights on the fruit, the final image as seen in [figure 3.23](#) could (almost) pass for a correctly exposed image. I say *almost* because it is always better to work with the correct exposure rather than trying to fix a mistake.



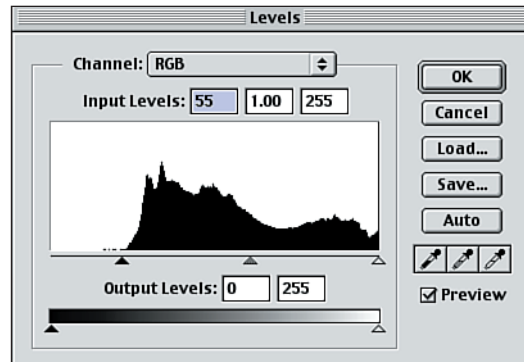
[figure 3.22](#)



[figure 3.23](#)

**ch3\_lemons.jpg**

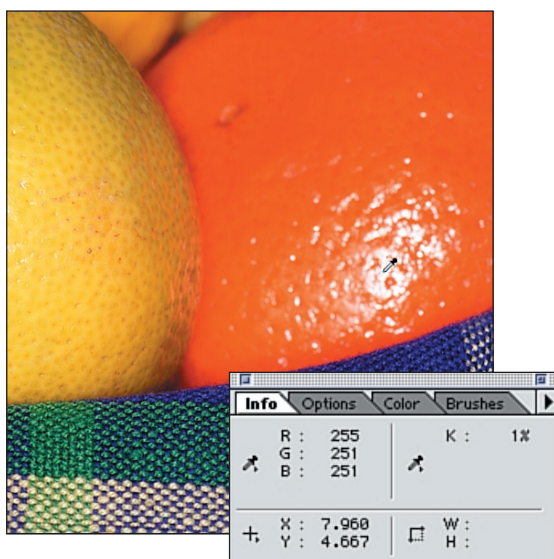
1. The lack of information on the left side of the Levels histogram is symptomatic of an overexposed image (see [figure 3.24](#)). Move the shadow slider to the right to where the darkest information starts. In this case, ignore the few pixels that occur before the majority of the histogram.



[figure 3.24](#)

*Moving the shadow slider to where the tonal information begins deepens the shadow and makes the image look richer.*

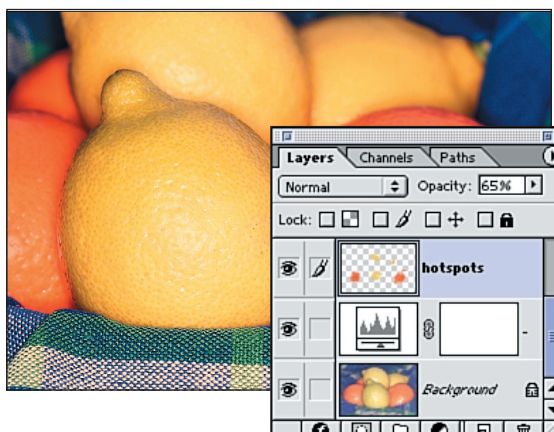
2. One of the problems with overexposed images is that the highlights have a tendency to blowout to pure white. After measuring the highlights on the fruit and getting an RGB reading of 255, 251, 251 (see [figure 3.25](#)), you can see that the highlights need to be toned down individually.



**figure 3.25**

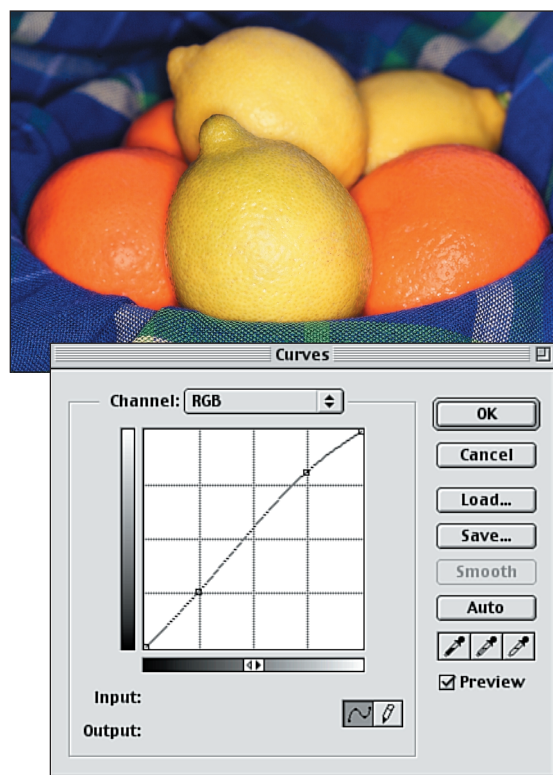
Measure highlights with the Eyedropper.

3. Add a new layer and name it hotspots. Use a soft-edged brush and the Clone Stamp tool to clone over the highlights. I lowered the opacity of the hotspot layer to bring back a hint of the highlights, as shown in **figure 3.26**. (For more detail on these spotting and Clone Stamp techniques, see Chapters 5, “Dust and Mold Removal,” and 6, “Damage Control and Repair.”)
4. Finally, fine-tune the image contrast with a subtle S-Curve. **Figure 3.27** shows the Curves adjustment and the final image.



**figure 3.26**

After cloning over the hotspots, experiment with the opacity of the layer to bring back some of the visual interest by letting the highlights shimmer through.



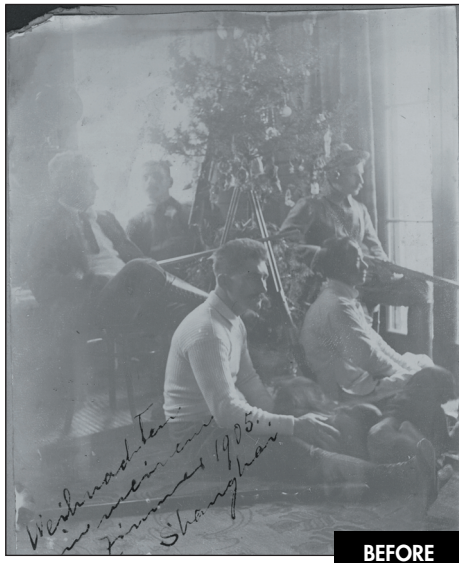
**figure 3.27**

The gentle S-Curve boosts the contrast just a bit and allows the color of the fruit to shine through beautifully.

## Balancing Exposure and Fading

The original image in **figure 3.28** is faded and flat, whereas the corrected rendition in **figure 3.29** balances the exposure between the center figures and the windows. In this example, the light coming through the windows over-powered the center of the image. To balance the exposure, we'll use a combination of an Overlay Adjustment Layer and the Gradient tool.





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figure 3.28



figure 3.29

ch3\_xmas.jpg

1. Add a Curves Adjustment Layer with the Blending Mode set to Overlay to enhance the contrast.
2. The Curves Overlay Adjustment Layer helped the center of the image, but to add even more density, duplicate the Curves Adjustment Layer. This improves the center of the image but makes the window light too bright.

3. Select the Gradient tool and choose the black to transparent gradient. Drag the gradient from each upper corner toward the center of the image, as seen in the Layers palette in figure 3.30. The secret here is to set the Gradient tool to work from foreground (black) to transparent—this allows you to combine gradient blends with one another.

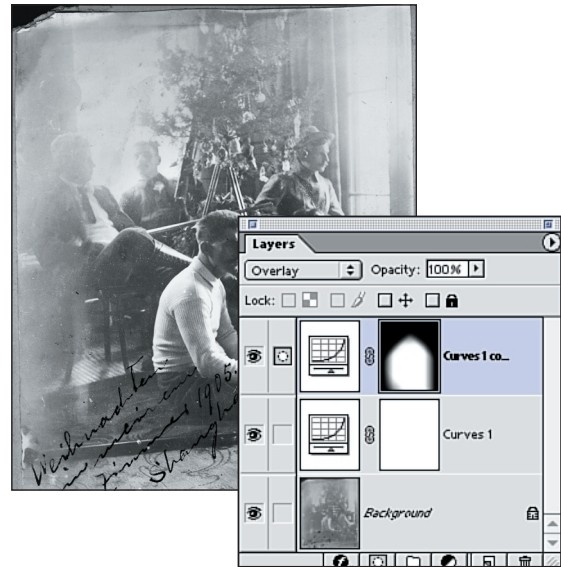


figure 3.30

Protect the corners of the image with two gradients.

## ADDING FILL-FLASH

Have you ever noticed how photographs taken in the middle of the day have really dark shadows, or when portraits are taken in front of a window that the people seem silhouetted? In these situations, the exposure problems are caused by the extreme difference between the strong light and the deep shadows, which can fool even the best camera exposure meter. When you're taking pictures, you can avoid these problems by taking your pictures in the morning or late afternoon when the sun is lower and softer or by adding light with a flash or a white fill-card. Of course, knowing those photographic tidbits after the fact doesn't help you one bit, but knowing how to add a bit of light with Photoshop is a great technique to rescue those portraits from darkness.

When working outdoors on sunny days or in high-contrast lighting situations, it is recommended to use flash or fill-flash to reduce lighting ratios and fill in the shadows. In **figure 3.31**, that obviously didn't happen, and now we need to use Photoshop to open up the dark areas without changing the lighting ratio too much to achieve the effect in **figure 3.32**.



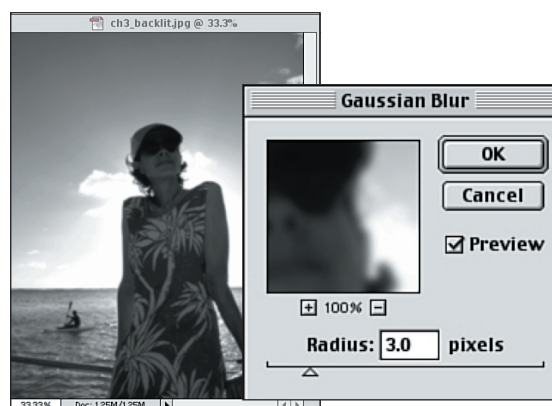
**figure 3.31**



**figure 3.32**

### **ch3\_backlit.jpg**

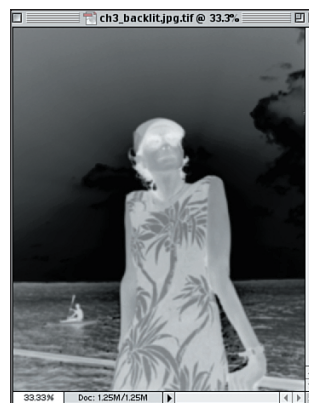
1. Duplicate the original image by choosing Image > Duplicate.
2. Select Image > Mode > Grayscale to convert the duplicate file to grayscale.
3. Select Filter > Blur > Gaussian Blur and use a 3–6-pixel Radius setting to soften the details (see **figure 3.33**). Use a lower Gaussian Blur setting for small files under 5MB and higher settings for larger files.



**figure 3.33**

Apply a Gaussian Blur with a 3–6 radius setting.

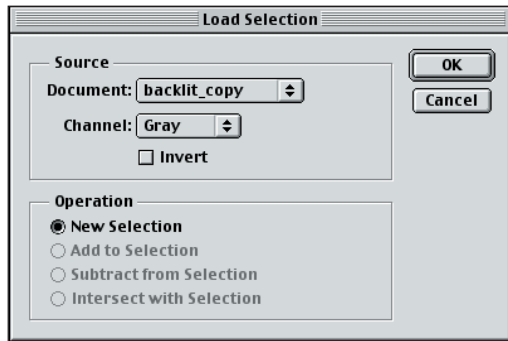
4. Invert the tonal values with Image > Adjust > Invert or (Cmd + I)[Ctrl + I] to create a negative image, as seen in **figure 3.34**. This negative image will be used to mask the digital fill-flash.



**figure 3.34**

Invert the black-and-white file to create a mask that will be light where you need more effect to take place.

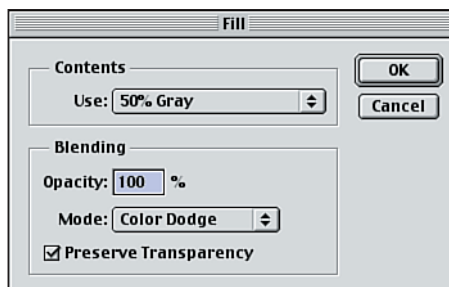
- Return to the original color image and choose **Select > Load Selection**. Check that your black-and-white mask image is selected in the Document pull-down menu, as seen in [figure 3.35](#).



**figure 3.35**

*Load the selection from the inverted document.*

- Select **Layer > New > Layer Via Copy** (Cmd + J) [Ctrl + J] to create a new layer based on the active selection.
- Use the Fill dialog box to fill the new layer. For content, select 50% Gray. Change the Blending Mode to Color Dodge and check Preserve Transparency to tell Photoshop to ignore all clear areas of the new layer (see [figure 3.36](#)).



**figure 3.36**

*Fill the active selection with 50% Gray set to Color Dodge with Preserve Transparency checked.*

- Notice how much lighter the image is now. If need be, erase any affected areas in the sky that don't need to be lighter, as shown in [figure 3.37](#).



**figure 3.37**

*You can erase image areas that were affected with the digital fill-flash.*

- If need be, duplicate the layer to increase the effect of the fill-flash and experiment with the layer's opacity to fine-tune the effect to your liking.

## **PAINTING WITH LIGHT**

Good photographers are very sensitive to the light, and I don't mean they get sunburned quickly. Rather, they understand how the sun rakes over a landscape in the early morning or evening and brings out hidden textures and colors or how they can work with light to create a flattering portrait. Photoshop isn't omnipotent (yet), but with a bit of selective lightening and darkening you can make a dull, lifeless photograph pop off the page. If you've ever worked in a traditional darkroom, these techniques will seem similar to dodging and burning techniques used to emphasize the atmosphere of the photograph.

The original image (see [figure 3.38](#)) doesn't have any drastic exposure problems, but it lacks the dramatic mood that the solo tree and stormy sky should convey. By using Photoshop to accentuate the darks and lights, the viewer's attention is focused on the tree, as seen in [figure 3.39](#).





figure 3.38



figure 3.39

### ch3\_lonetree.jpg

1. Load the image luminosity by (Command + Option) [Control + Alt] and ~ tilde and clicking on the RGB icon in the Channels palette.
2. Select Layer> New>Layer via Copy (Command + J) [Control + J] to create a new layer based on the selection.
3. Change the new layer's Blend Mode to Overlay.
4. Duplicate this layer once or twice to strengthen one saturation as seen in **figure 3.40**.



### Note

You can also load image luminosity by (Command) [Control] clicking on the composite channel icon (RGB, CMYK, LAB, or Grayscale) in the Channels palette.

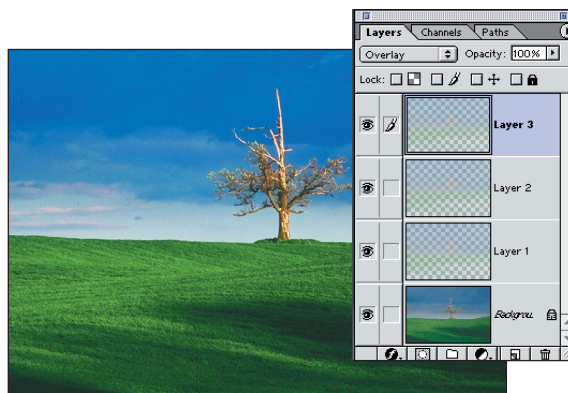


figure 3.40

Apply the Overlay Blending Mode to the new layers.

5. Add a new layer, fill it with a 50% gray, and change its Blend Mode to Overlay.
6. To paint in the lighter rays of light, use a large, soft-edged, white Airbrush at 2%-3% opacity and paint on the gray Overlay as shown in **figure 3.41**.

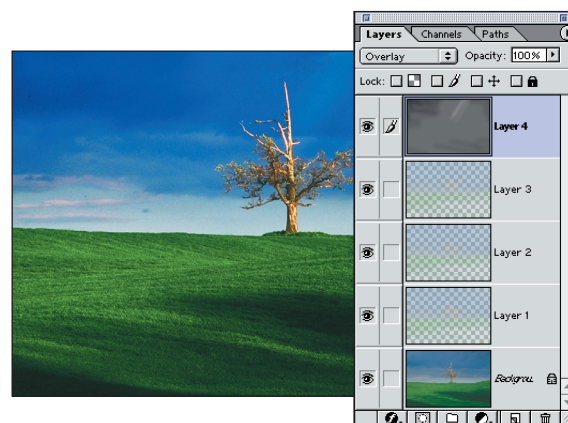


figure 3.41

Use a white Airbrush at 2%-3% Opacity to create a new light.

## CLOSING THOUGHTS

All in all, it is always better to start with a well-exposed picture; however, for those times when the light meter is fooled, the batteries run out, or the ravages of time wreak havoc on a beloved photo, turn to these Photoshop techniques to do the image justice.