

Photoshop

Dodge/Burn Tools



Last month we kicked off our tour of Photoshop's retouching tools with the Rubber Stamp tool. Today we'll examine the elusively named Dodge and Burn tools.

A Photographer's Toolbox

When Adobe created the tools that would brighten and darken images, you might wonder why they didn't just call them the Brighten and Darken tools. Instead, they were christened the Dodge and Burn tools. Does this make sense? Yes/No? Well, yes, if you have spent time in a photographic darkroom, which is exactly where Adobe found names and icons for these two little tools. If you look at what a photographer does when creating a print, then this all makes sense. To make a photographic print, you load a negative into an enlarger and project the image onto some light-sensitive paper. The amount of time you expose the paper to the light determines how bright the end result will be.

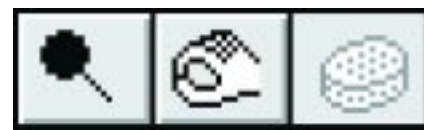
But, sometimes you want to brighten or darken isolated areas instead of the whole image. To do that you could overlap your hands and create a small hole between them, and then you could put your hands between the enlarger and the photographic paper to block the light from the majority of the image

and concentrate it on a small area. That's known as *burning* the light into an area, and that's why the tool that darkens your image is known as the Burn tool and looks like a hand with an opening in the middle.

If you still don't see why burning darkens your image, think about this. In a Photographic darkroom you normally use a negative to print from, right? So, with a negative, isn't everything reversed from what it looked like when you took the photo? Black areas are clear and white areas are black. And since the dark areas are clear, that means they will allow a lot of light to hit the print. So, a lot of light creates a dark area. Thus *burning* more light into an area will darken that area.

To do the opposite, you'd grab a small piece of black stuff (paper, cardboard, plastic, etc.), tape that onto a thin wire, and hold it between the enlarger and the print. That's why the dodge tool looks the way it does. That would *dodge* the light away from that area and reduce the amount that would usually hit an area, which would brighten the image.

And that, folks, is why Photoshop's brighten and darken tools are called Dodge and Burn and why their icons look the way they do. So, now that you're "in the know," let's use those puppies!



Left: Dodge tool. Center: Burn tool.

Get Your Brushes Back

Last month I mentioned that Photoshop's default brushes are less than ideal when using the Rubber Stamp tool. That advice doesn't apply today. The defaults are usually OK when using the Dodge and Burn tools, so reset your brushes to the defaults by choosing Reset Brushes from the side menu of the Brushes palette.



Be sure to reset your brushes if you're still using the ones we created in last month's article.

Expose Yourself

You have to be careful when using these tools because, unlike the Rubber Stamp tool, the Dodge and Burn tools don't have Opacity control. Instead they have something called Exposure. What's different about Opacity and Exposure is that with Opacity, you

can paint back and forth as many times as you'd like, and you don't have to worry because it doesn't work like a can of spray paint where you'd get more paint with each stroke. Instead, you get the same amount of change no matter how many times you paint back and forth (the amount of change is limited by the percentage at which you set the opacity slider). To apply more than one coat of paint, you'd have to release the mouse button between coats. But, with Exposure, it's more like spray paint—the more times you paint back and forth across the same area, the more you change that area.



Top: Tools that use an opacity setting don't continue to change the image as paint strokes overlap. **Bottom:** Tools that use an exposure setting change the image more where paint strokes overlap.

If the Dodge and Burn tools ever start making extremely dramatic changes to your image, even though you are using a low exposure setting, then you might want to double-click on the brush that you are using and check out the Spacing setting. If it's set much lower than the default setting of 25%, then that's the culprit. To see what I mean, just switch to a hard-edged brush and try the Dodge tool on an image using different Spacing settings. It's like using a can of spray paint and pressing the nozzle multiple times, each time spraying your "squirts of paint" closer and closer together until it just looks like a continuous spray of paint. The closer each application is, the more overlap you get, the more paint you apply. Well, it's the

same with the Dodge and Burn tools, and the Spacing setting determines how close your applications are.

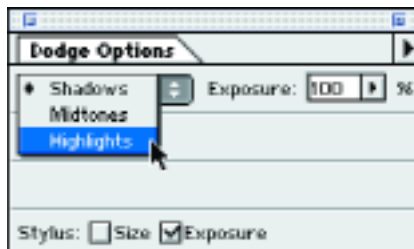


Spacing settings from top to bottom:
1%, 10%, 25%, 50%

Once you've got your brushes set up correctly, here's a shortcut that will make it faster to switch between brushes. Try pressing the bracket keys ([and]). The left bracket key should move you one brush to the left of the one that was active, and the right one should do the opposite. And while we're talking about keyboard shortcuts, you can type the letter "O" to switch to the Dodge and Burn tools and shift-O to toggle between all the tools that appear in that area of the tool palette—Dodge, Burn and Sponge.

Control Your Concentration

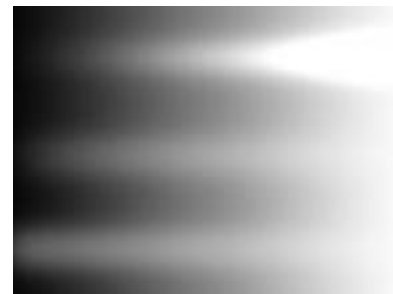
I use these tools all the time on grayscale images. Dodging is great when attempting to brighten up shadowy eye sockets, and Burn is good for ridding your image of those bright spots that show up on skin. Just make sure to have the blending mode set correctly; otherwise you're looking for trouble.



Be sure to set the blending mode before using the Dodge and Burn tools.

Highlights will concentrate on the brightest areas of your image,

Midtones will concentrate on the middle grays, and Shadows will mainly change the darkest areas. But beware, these settings don't prevent it from creeping into the other areas and making some changes; it will just happen to a lesser extent.



Top: Highlights. Middle: Midtones. Bottom: Shadows.

If you have the Options palette open and the Dodge or Burn tool is active, you can type shift+ (plus) to cycle through the different blending modes. You can even press the tab key to hide all your palettes and shift+ will still work! But then it's awfully hard to tell which setting you're using. In that case you could type shift-opt/alt-Z for Highlight, shift-opt/alt-V for Midtones and shift-opt/alt-W for Shadows.

If all that's too hard to remember, then just press the right mouse button in Windows, or ctrl-click on the Mac. That will give you a special menu that will also let you change the blending mode. That way you could work without the palettes (press tab to hide them) and still be able to change the blending mode without having to remember a bunch of keyboard commands.



From left to right: Original, burned using highlights, burned using midtones, burned using shadows.

So, if you're trying to get rid of a shiny spot on someone's nose, make sure it's set to Highlights, but still be careful that you don't overspray into areas you don't want to change, even if those areas would be considered midtones. And, if you're attempting to brighten up someone's dark eye sockets, set it to either Midtones or Shadows because Highlight won't do much good.

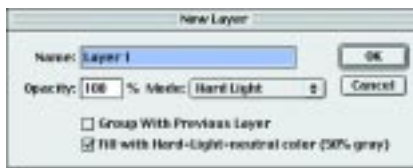
You'll also need to change the Exposure setting quite often (Window>Show Options). It determines how much of a change you'll make to your image. I change this setting so often that I usually rely on keyboard shortcuts. Just press the number keys on your keyboard. Pressing 1 will give you a 10% exposure setting, typing 23 will get you 23% and pressing 0 will get you to 100%, etc. Or, if you are going to be retouching a lot of images, then you'll definitely want to replace your mouse with a graphics tablet. A small one will cost somewhere around \$99, and a larger one will set you back just over \$300 (the Wacom brand is a sign of quality). Once you have one of those installed, you'll be able to turn on the Size and Pressure checkboxes at the bottom of the Dodge and Burn Options palette. When the Pressure checkbox is turned on, Photoshop will pay attention to how hard you're pressing on the tablet. Light pressure will give you low exposure settings and heavy pressure will give you more. But it will never go above the setting you have specified in the Options palette. Graphics tablets are almost essential when performing retouching; otherwise it's hard to blend your changes into the rest of the image.

I often use the Dodge tool set to Midtones to brighten teeth. Why Midtones when teeth are pretty bright? Well, I don't want to blow out all the detail in the teeth and make them pure white, instead I

just want to get rid of the darker areas of the teeth. So, the next time you get a shot of an obvious smoker, grab that Dodge tool and use the Midtones setting. But, be careful not to turn their gums into marshmallows!

Tricks For Using Layers

If you read last month's column, you learned that you can use the Rubber Stamp tool on its own layer. Unfortunately, you can't do that with the Dodge and Burn tools because they need to be able to see what they are working on (they don't just clone things like the Rubber Stamp tool). *But*, you might be able to cheat a bit. Try this: Choose Layer>New>Layer, and set the blending mode pop-up menu to Hard Light. Then turn on the Fill with Hard Light neutral color checkbox (it only shows up after you choose Hard Light from the menu).



Use Hard Light mode when creating the new layer and turn on the bottom checkbox.

Now be sure your tools are set to the Midtones setting and retouch away! This isn't really the same as using the tools directly on the image. In fact, it completely disables the Highlights, Midtones and Shadows settings (although you still have to leave the tools set to Midtones to get it to work). Instead, it will change all the shades of gray in your image an equal amount. But there's something to be said about working on a separate layer because you can bring areas back months later. Just paint with 50% gray and you'll undo all your dodging and burning.

How's that? Well, in Hard Light mode, any areas that are 50% gray

don't change the underlying image. Areas that are brighter than 50% gray will brighten the underlying image, and areas that are darker than 50% gray will darken the underlying image. If you really want to see where you've changed the image, opt/alt-click on the eyeball for that layer, and Photoshop will hide all the other layers. Then to get back to normal, opt/alt-click the eyeball again to make all the layers visible again.

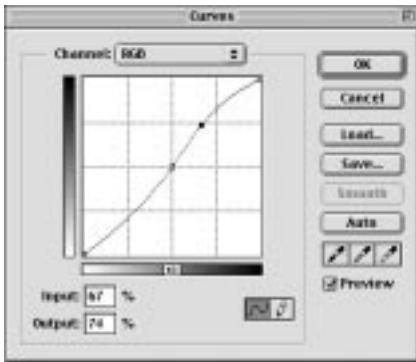


Hide all the other layers so you can see exactly where you've changed the image.

If Hard Light is too much for you, then try changing the blending mode to Soft Light or Overlay. They will do the same thing as Hard Light, but to a lesser extent. Or, heck, just lower the opacity of the layer! If that doesn't work, then you might want to try using the Curves dialog box. This isn't something that beginners should be getting into, but it can be a great technique for those of you who are at least partially comfortable with the Curves dialog box. So, for you comfortable ones, here's how to adjust the result with Curves.

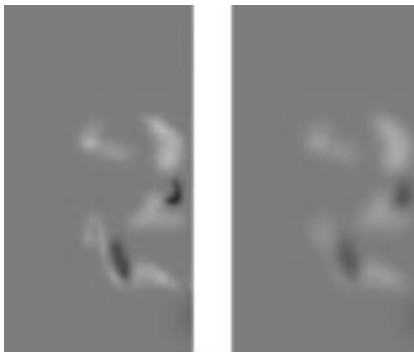
When you know you've overdone an area and don't feel like starting over, then choose Image>Adjust>Curves and lock in the 50% gray areas by clicking in the center of the curve. Now you can click and drag across the area you think is overdone and then cmd/ctrl-click on that area to add a point on the curve. Then use the up and

down arrow keys to brighten or darken those areas.



When using Curves, be sure to lock in the 50% gray point, or the entire image will change.

You can even use the Blur tool or one of the blur filters to soften the transition between the areas you changed and the untouched parts of the image. Go ahead and try it! It won't blur your picture because that's on an underlying layer—you're just blurring the Dodge and Burn stuff. It might be easier if you view only that layer and not the underlying image by opt/alt-clicking on its eyeball icon.



Left: original image. Right: Gaussian Blur filter applied.

Color Is A Different Story

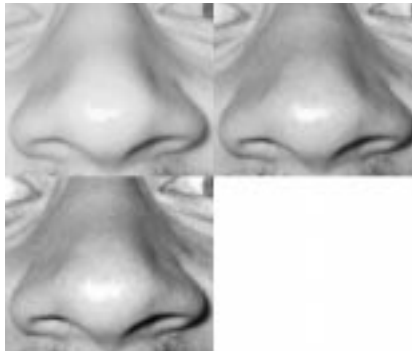
The Dodge and Burn tools might seem like something you would use on a daily basis, but really, they're not. Why? Well, they work great on grayscale images, but open a color one and it's a completely different story. Try to tone down a reflection on skin using the Burn tool set to Highlights. You'd think it should work, but instead you just

get a gray blob in the middle of someone's nose!



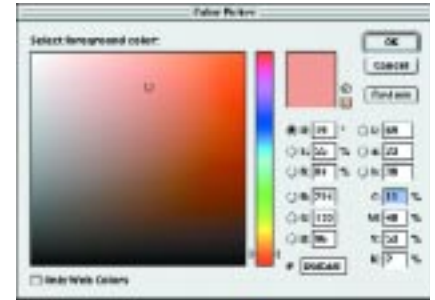
Left: original image. Right: Burn tool set to Highlights.

Let's look at how Photoshop thinks about color images, then we can figure out how to get around the problem. First off, color images are made out of at least three parts: RGB images are made out of Red, Green and Blue light, whereas CMYK images are made from Cyan, Magenta, Yellow and Black ink. Photoshop stores this information as three or four grayscale images and calls them Channels. Go ahead and open any image and then pop open the Channels palette and take a look (Window>Show Channels).



Clockwise from upper left: Red, Green, Blue channels.

show up in the color picker dialog box. You'll notice that no matter what color you pick (as long as it's close to a flesh tone color), Photoshop does not end up using equal amounts of RGB or CMYK, right? Now, click and drag along the left-most side of the color picker area and see what happens to the RGB numbers. Equal amounts of red, green and blue make gray.



Skin tones contain an unequal amount of red, green and blue light.

Now back to our problem. When you use the Burn tool set to Highlights on a color image, a reflection on skin will be very bright in *all* the channels of your image, which means that Photoshop will darken them *all* an equal amount—which creates gray! So, you can outsmart



Result of burning all the channels at once



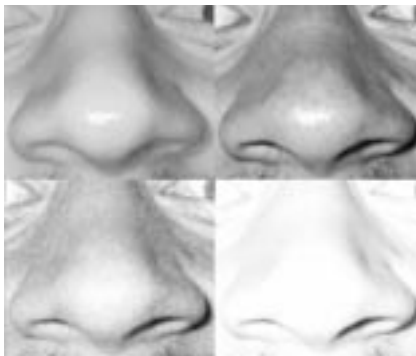
Result of burning the individual channels

If you're using the Burn tool set to Highlights, then Photoshop looks at each one of those channels, and if the area you are painting across is a bright area (highlight), then it will darken it. Let's find out why that's not always a good idea.

Click on your foreground color and choose a color that might be acceptable for a skin tone. Then look at the RGB or CMYK numbers that

the Burn tool by clicking on the individual channels and retouching them one at a time. Some of them will need to be darkened more than others, so use different exposure settings on each channel. That way the end result won't look gray.

You don't always have to retouch every channel in your image. It all depends on what color the area you are attempting to fix and your image mode.



Clockwise from upper left: Cyan, Magenta, Yellow, Black channels. With this image, only the cyan and magenta channels need to be retouched.

Or, if you don't like the idea of playing around with the channels, you could try this: Select an area of the skin that does not contain a reflection and then choose Layer>New>Layer Via Copy. Then use the Move tool to position that over your reflection. It should look pretty much out of place. But then try this—change the Blending mode of that layer (upper left of the Layers palette) to Color. The area should no longer look out of place, but you'll still have the reflection. Now click on the layer below, the one with the whole face in it, and use the Burn tool to darken



Left: area above shiny spot copied and placed over shiny area. Middle: Blending mode of copy layer set to Color. Right: Burn tool is used to darken underlying image without turning it gray.

the area. It shouldn't turn gray anymore! That's because Photoshop is using the color information from the layer above and applying it to the brightness information on the layer below!

Well, that might work fine for darkening those hot spot skin reflections, but what if I want to lighten the area around someone's eyes? You could adjust the individual channels, but I'll give you some other ideas that might be more enjoyable.

Let's say you have a really dark image where someone's face looks fine, but you can't see much detail in their clothes. Create a new layer above the image, set its Blending mode (top left of the Layers palette) to Color Dodge and then make a gradient that goes from black to white. The area that was filled with black shouldn't change the image at all, but any areas that are brighter than black should both brighten the image below and intensify its colors!



Top: original image. Bottom: layer with gradient set to Color Dodge (black on left, white on right).

Now let's see how this can be useful. Throw away that layer and start with a fresh one set to Color Dodge mode. Now grab the Paintbrush tool, set your foreground color to white and lower the opacity of that tool to somewhere around 20%. Go ahead and paint on the layer that is set to Color Dodge mode and see what happens—it should brighten your image. I use this all the time to spice up dull looking images.

You can add highlights to monotone looking hair, brighten up those shadowy eye sockets, make the colors "pop" in clothes, etc.



This is a perfect image to use the Color Dodge Blending mode on.



The entire face area was brightened by painting with white at a low opacity in Color Dodge mode.

Check Your Work

Once you're done fixing up your image, you'll want to make sure everything will look good when it's printed. It's awfully hard to see how your retouching blends into the rest of the image when you're viewing your image in color and are zoomed out to see the whole image. So, zoom in on your image to 100% view by double-clicking on the Zoom tool in the tool palette and then click through all the channels in your image to make sure things blend in. If you can see transitions between the areas you changed and the rest of the image, then there's a good chance you'll also see those transitions when you print your image, so get back to retouching until all those transitions are gone.

In the next installment of Instant Expert, we'll explore Photoshop's Blur and Sharpen tools. ◀

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