INTRODUCTION TO GRAPHICS

Healing Brush I

Information Sheet No. PS800

The edit tools in Adobe® Photoshop® are well suited to a wide variety of retouching scenarios. But they can't create detail where none exists. To fix dust and scratches or cover up blemishes and wrinkles, you need tools that can paint imagery on top of imagery. Tools like the healing brush and patch tool:

· The healing brush paints one section of an image onto another. As the tool clones the source detail, it mixes it with the color and lighting that surrounds the brushstroke, thereby mending the offending detail seamlessly.

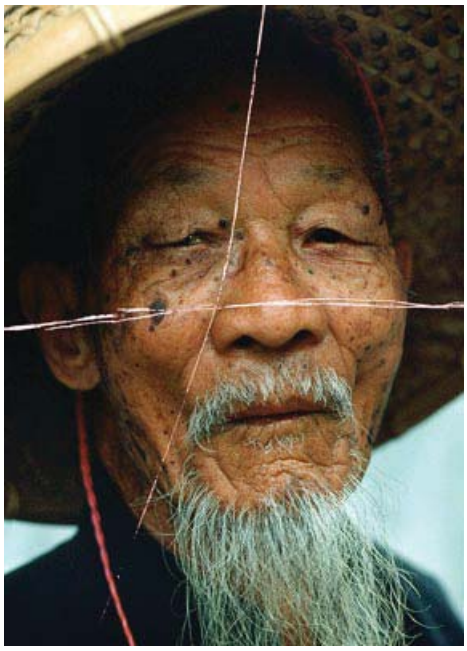
· The patch tool clones like the healing brush. But instead of painting with the tool, you select areas as you would with the lasso.

The following exercise shows you how to use these powerful tools to fix a variety of photographic woes, ranging from rips and tears to blemishes and age spots.

1. Open a broken image.

The photo I used appears so tragically scratched because I scratched it. I printed the image (available in perfect condition from PhotoSpin's Ed Simpson International People collection) to a continuous-tone Olympus P-400 image printer. Then I folded the output once vertically and again horizontally, scored the crease with a pair of scissors, pressed it flat, and scanned it into Photoshop.

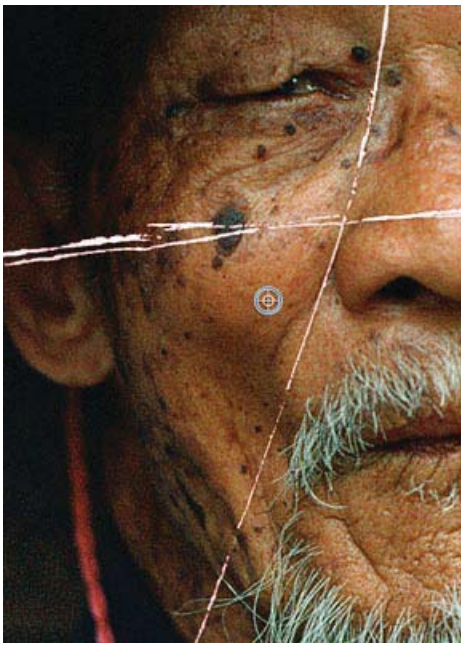
2. Click the healing brush in the toolbox.



True to its mission, the healing brush looks like a band-aid. In the options bar, make sure Source is set to Sampled and the Aligned check box is off. Sampled tells Photoshop to clone pixels from a spot inside an image (as you'll specify in the next step); turning Aligned off lets you clone several times in a row from one pristine spot.

3. Set the source point for the healing.

The healing brush uses a source point to clone from one portion of an image to another. To set the source point, press the Alt key (Option on the Mac) and click on an unblemished area of your image. The source point I used is indicated by the crosshairs below.



4. Start the healing.

Increase the brush diameter a couple of notches (say, to 30 pixels) and drag over a flaw in your image. I chose the giant mole up and to the left of my source point. As you drag, Photoshop shows you what the patch looks like if you were merely to clone the source detail, as illustrated by the first image below. But the moment you release the mouse button, Photoshop blends the source detail and destination perimeter to create a seamless mend, as witnessed by second image.

5. Heal a scratch.

To heal the scratch across my image, I first pressed [to reduce the brush diameter to 20 pixels. I then did the following:

· Dragged over the top-right fragment of the left-hand scratch, indicated by the yellow brushstroke in the image below. (Note that the brushstroke colors in this figure are for illustration purposes only; your brushstrokes will appear normal.)

· Pressed [again to reduce the brush diameter to 10 pixels and drag along the bottom fragment, as indicated in cyan in the figure.

· In a separate brushstroke, I dragged along the remaining portion of the left-hand scratch, indicated in purple.

· Finally, I dragged around the area indicated in green. The resulting image is shown below.

Tip: If you look at the options bar, you'll see that I'm using a hard brush, which is as it should be. A hard brush prevents the healing tool from incorporating distant and unrelated details into its mended pixels. In this case, the hard brush permits me to skirt between scratch lines without incorporating the white from one line into the healing for another. But even the best of automated

results fall short of perfect. For my part, I can clearly see rows of inconsistent pixels running through the old man's cheek and

ear (see the spotlighted example below). Fortunately, you can re-heal an area by painting over it once, twice, or as many times as you like.

6. Move the source and paint short strokes.

Using the healing brush effectively is all about selecting a good source point. Thankfully, when one source fails, you can switch to another one. Sources generally work best when set in an area that closely resembles the destination (the area that you want to heal).

· To heal inside the ear, for example, I Alt-clicked (Mac users, Option-click) inside the top portion of the ear and then dragged over the scarred section.

· To heal in the face, I set the source point in the lower area of the cheek where the flesh is relatively smooth.

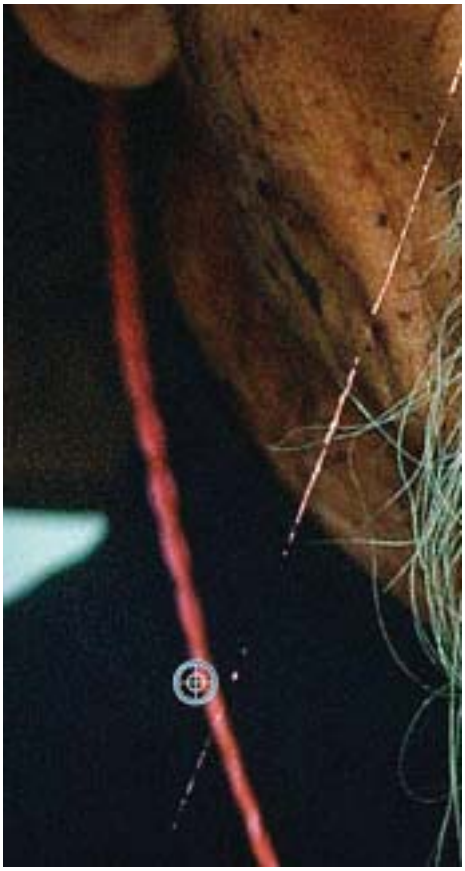
· To heal the black background, I Alt-clicked somewhere in the black background.

Keep your brushstrokes short. When using larger brushes, individual clicks can be very effective.

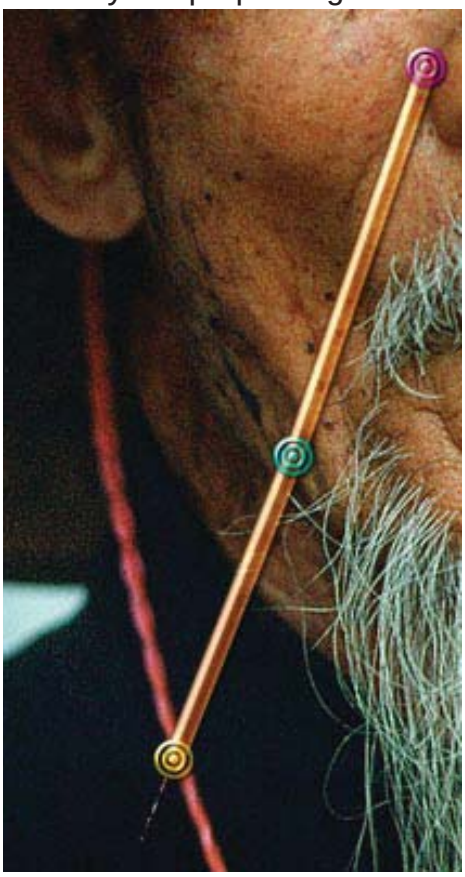
7. Set a new source.

Now to fix the nearly vertical scratch in the bottom half of the image. I pressed Alt (or Option) and clicked just to the left of the scratch along the red hat strap.

I then set the brush diameter to 20 pixels and clicked at the point where the scratch intersects the red strap, indicated by the yellow target in the image below. I then pressed the Shift key and clicked midway up the scratch, at the point indicated by the cyan target in the figure. Photoshop connects the two points with a straight line of healing, which I've colorized in orange below. I



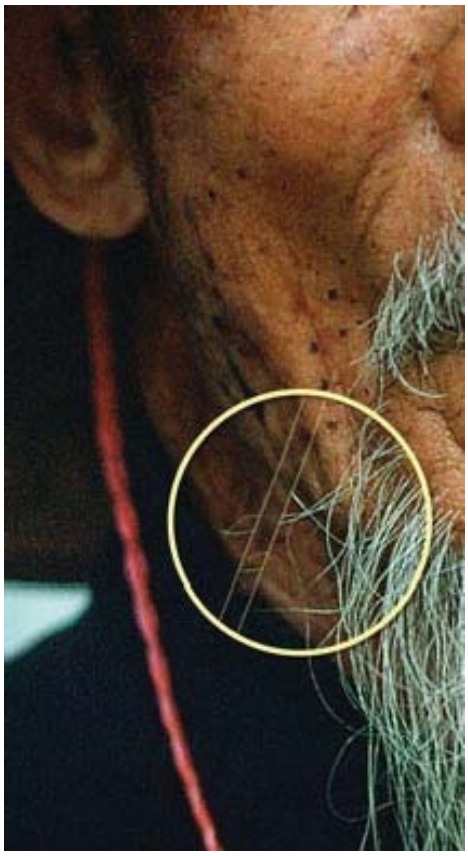
finished off the scratch by Shift-clicking just left of the nose, indicated by the purple target.



That still leaves an inch or so of scratch at the bottom of the image. Once again, I clicked where the strap intersects the scratch (yellow target) to reset the relationship between the source and destination points. I then pressed Shift and clicked down and to the left to heal away the scratch.

8. Fix scars and repeated details.

If you look hard enough, you can make out repeated details



around the nose and mouth in my image. But the bigger problems occur near the collar and among the whiskers, as shown below.

To fix these, I need to source very similar areas—meaning collar-to-neck transitions and whiskers at similar angles—and paint them in using very small brushes, as small as 6 or 7 pixels in diameter. To build up the two horizontal whiskers, I sourced what little remained intact of one, clicked to double its width, sourced that, clicked again, and so on. It takes a little patience, but in the end, you can build something out of nothing.

Tip: When using the healing brush, the options bar offers a handful of Mode options, but it lacks an Opacity setting. Fortunately, you can vary the opacity of a brushstroke after the fact. Immediately after painting a line with the healing brush, choose Edit > Fade Healing Brush. Then adjust the Opacity value to your liking and click OK.

9. Select the patch tool in the toolbox.

We now turn our attention from the healing brush to its companion, the patch tool. Click and hold the healing brush to bring up a flyout menu of additional options. Then choose the patch tool. In the options bar, make sure Patch is set to Source and Transparent is turned off.

10. Drag around the portion of the image you want to heal.

Initially, the patch tool works exactly like the lasso. To select an area inside the image, just drag around it. Be sure to select slightly outside the area you want to heal. You need a bit of margin for the tool to operate properly.

Need a polygonal patch tool? No problem. Press and hold the Alt key (Option on the Mac) and click to set points in a straight-sided selection outline. I used this technique to select the scratch line at the top of the image, as shown below. Notice that I kept my outline loose, selecting a few pixels of margin around the scratch.

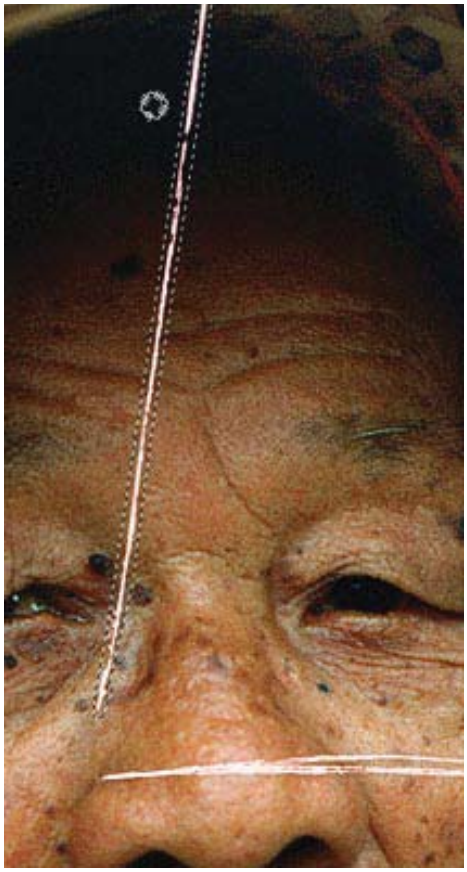
11. Choose View > Snap To > Document Bounds.

When turned on (as by default), Snap To > Document Bounds forces selection outlines and other objects to snap into alignment with the boundaries of the image. Normally, that's fine. But because you're already working close to the boundaries and you want to move the selection without constraint, it's best to turn it off.

12. Drag the selection to source another portion of the image.

Next, I dragged the selection outline just slightly to the right and down, to a portion of the image that was not scratched. In the image below, I dragged about 30 pixels to the right and 10 pixels down. Photoshop shows you a live preview of the cloning operation on the fly. Release the mouse button to apply the healing effect.

One of the downsides of using the patch tool is that the selection outlines cover up the mended edges and thus interfere with your ability to judge the quality of your edit. Fortunately, you can hide the selection outline by choosing View > Extras.



13. Select the magic wand in the toolbox.

The patch tool functions like a selection tool, but that's just a convenience function. Its healing powers translate to any kind of selection. To heal the final scratch, press W to select the magic wand.

14. Turn Contiguous off.

In the options bar, make sure the Tolerance value is set to 32 and Anti-aliased is turned on, as by default. To select an entire scratch all at once, turn off the Contiguous check box.

15. Click along a remaining scratch.

You can click just about anywhere. But you might as well make it easy on yourself and click at the thickest point in the scratch. I clicked on the tip of the man's nose. Photoshop selects the entire scratch along with lots of light pixels throughout the image.

16. Deselect everything except the scratch.

Click the rectangular marquee tool in the toolbox to select it. Then press the Shift and Alt keys and drag around the scratch.

Pressing Shift and Alt finds the intersection of one selection outline and another. In this case, it finds the intersection of the marquee and the wand selections, thus deselecting everything outside the marquee.

17. Choose the Expand command.

Choose Select > Modify > Expand to bring up the Expand dialog box, then enter 3 and click OK. This expands the selection to include just enough margin to make the healing function work properly.

18. Select the patch tool.

Now that the selection is ready to go, press the J key to return to the patch tool.

19. Drag to source another portion of the image.

Drag the selection outline to an area free of scratches. I dragged my outline about 40 pixels down and 5 pixels to the left, as shown below. Make sure the edge of the area previewed

inside the selection matches the edge outside the selection. Then release the mouse button to complete the operation.

20. Clean up with the healing brush.

The patch tool did a pretty good job of healing both the top and right-hand scratches in my image. But there are a few rough edges. To clean them up, press J a couple of times to switch back to the healing brush. Then press Ctrl+D (.-D on the Mac) to deselect the image. Alt-click (or Option-click) to set a source and get to work.

If you're looking for additional practice, the healing brush is an excellent tool for cleaning up blemishes. I went ahead and painted over most of the moles and age spots in my image. But I left the wrinkles. Wrinkles add character, and this particular gentleman wears them well.