Movie 6

Content-aware spotting and filling

Spot healing in Content-Aware mode

When working with the spot healing brush in the default Proximity Match mode you have to be careful not to work too close alongside sharply contrasting areas in case this cause the edges to bleed. The spot healing brush now features a new Content-Aware mode which intelligently works out how best to fill the areas you retouch when you use the spot healing brush.

Let's now look at what the spot healing brush is capable of when used in this mode. In the Figure 2 example there were a lot of electric cables and wires in the original photograph that spoiled the view. By using the spot healing brush in Content-Aware mode I was able to carefully remove all of these to produce the finished photo shown below it. Although the end result was quite effective I should point out that you do still have to apply a certain amount of skill in your brush work and choice of settings in order to use this tool effectively. To start with I found that the Normal blend mode worked best for retouching the cables that overlapped the sky, since this blend mode uses diffuse edges to blend seamlessly with the surroundings. I also mostly used long, continuous brush strokes to remove these from the photograph and achieve a smooth blended result with the rest of the sky. When retouching the rocks I applied much shorter brush strokes using the Replace blend mode to gradually removed the cables bit by bit (see the blend modes shown in Figure 1). I find that you need to be quite patient and note carefully the result of each brush stroke before applying the next. You'll discover that dragging the brush from different directions can also influence the outcome of the heal blend retouching and you may sometimes need to carry out an undo and reapply the brush stroke differently and keep doing this until you get the best result. I also find that you can disguise the retouching better by adding extra, thin light strokes 90° to the angle of the first, main brush stroke and this too can help disguise your retouching work with the spot healing brush used in this mode.
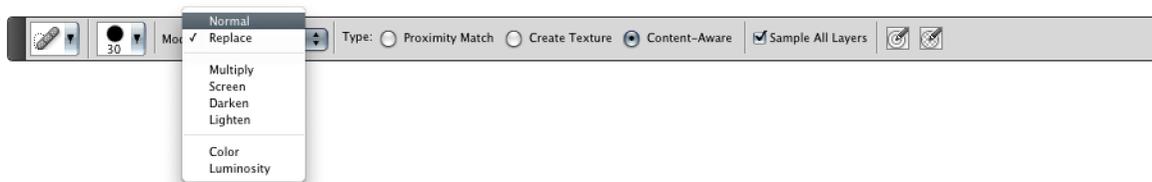
Figure 1 The spot healing brush Options bar with the Content-Aware mode selected. You can see here the various modes available for the spot healing brush.

Cache limit

The content-aware healing does make use of the image cache levels set in the Photoshop performance preferences to help speed up the healing computations. If you have the Cache limit set to 4 or fewer levels, this can compromise the performance of the spot healing brush in Content-Aware mode when carrying out big heals. It is therefore recommended that you raise the cache limit to 6 or higher.

Figure 2 This shows a before version (top) and after version (bottom), where I had used the spot healing brush in Content-Aware mode to retouch this photo.

Content-aware filling

Content-aware blending is also available as an Edit ⇨ Fill menu option. This means that you can create a selection and use the Edit ⇨ Fill command to let Photoshop work out how best to fill in the gaps in the selection. As you can see in the example shown here, the result was not bad considering Photoshop was using the surrounding image data to replace about a third of the original image. Content-aware filling can usually do a good job of working out which are the best pixels to sample and constructing a fairly convincing fill, but it is inevitable though that further retouching work may sometimes still be required. It is also recommend that you expand the selection slightly before applying a content-aware fill. You can do this by using the Refine Edge command or go to the Select menu and choose Modify ⇨ Expand.

New Delete options

If you make a selection on a Background layer, or a flattened image, and hit 'Delete', you'll see a Fill dialog box pop up. This allows you to choose how you wish to fill the selected areas and will have 'Content-Aware Fill' selected by default. In the past, hitting 'Delete' with a Background layer selected would fill the selected region using the current background color. If you want to bypass this behavior, you can use ⌘ Delete ctrl Delete to fill using the background color.

1 Here is a photograph I took of a Punch and Judy booth on a beach. The first step was to use the quick selection tool to define the outline of the Punch and Judy booth (this didn't need to be too precise). I then clicked on the Refine Edge… button in the Options bar and expanded the selection edge using the settings shown here.
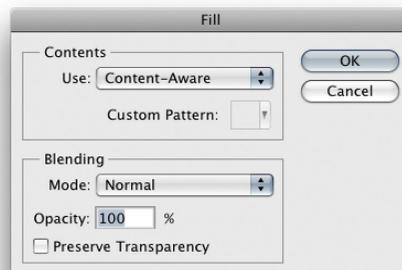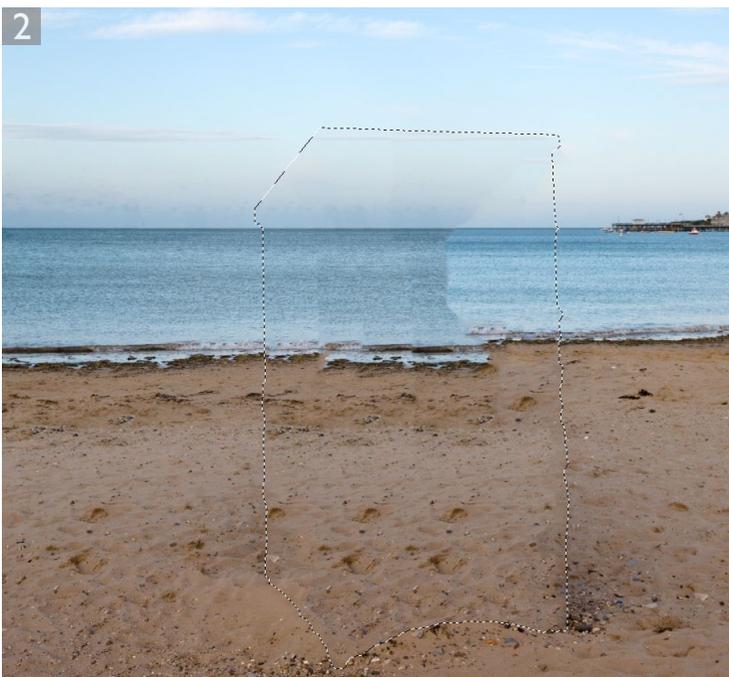
2 The next step was to go to the Edit menu and choose 'Fill…' (or, you may find easier to use the *Shift* *F5* shortcut). This opened the Fill dialog shown here where I selected 'Content-Aware' from the pop-up menu in the Contents section. It may take a minute or two for the processing to complete and as you can see, the initial result was not bad, even if it had failed to make a perfect fill in one single step.
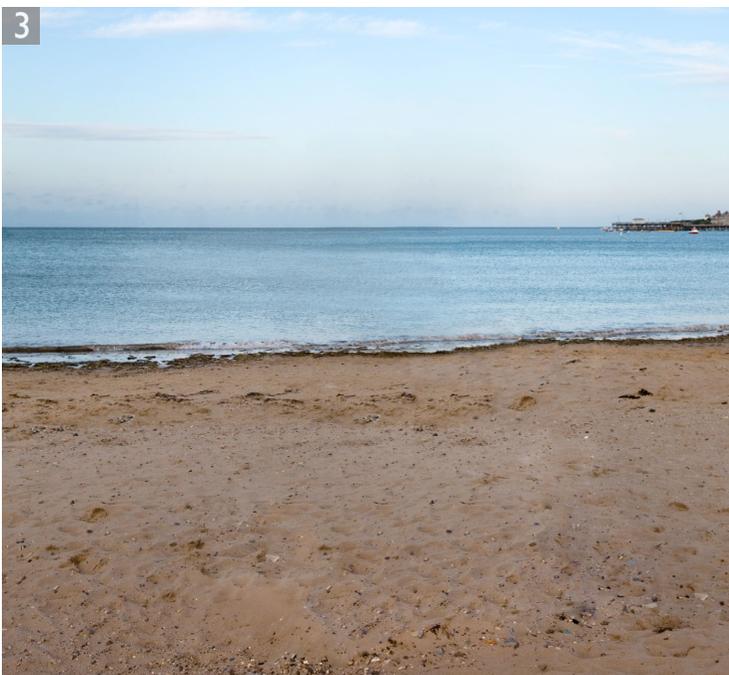
3 As with the patch tool example, you are always going to need to carry out further retouching work in order to produce a convincing looking retouch. In this instance I needed to carry out some additional retouching using a combination of the standard healing brush and clone stamp tools. The main point to make here is that this type of image manipulation, in which a huge chunk of the picture was removed, was only possible thanks to the power of the new content-aware filling algorithm.

Content-aware fill and Puppet Warp
I imagine some people will want to use the new Puppet Warp feature (described in the Movie 4 PDF) to select an object and manipulate it directly. I therefore think the content-aware fill feature may prove very useful as a preparation step where you would select an object and copy it to a new layer and then use the same selection to apply a content-aware fill to the original background layer.

Adobe™ Photoshop™ CS5 for Photographers

This PDF on keyboard shortcuts is supplied on the DVD that comes with Martin Evening's book: Adobe Photoshop CS5 for Photographers. This latest update in the Adobe Photoshop for Photographers series contains 768 pages in full color, plus a DVD containing video tutorials. The book layout has been further improved to make navigation easier and contains updated advice on everything you need to know about using Photoshop, from digital capture to print output, as well as all that is new in Adobe Photoshop CS5.

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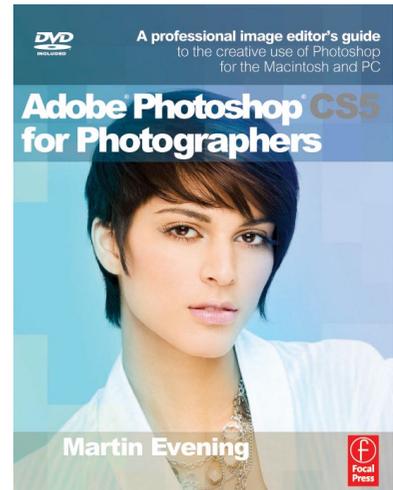
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