Movie 5 (Chapter 7 extract)

Masking Hair

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Once you get the hang of using the pen tool and combining its use with vector masks, you will soon discover that this is an effective way of isolating a subject such as in the previous composite where the object you wish to cut out contains smooth, geometric contours.

When you are presented with a subject that contains a complex outline, such as the model's hair in the next photograph, the main question is: how do you go about separating the hair from the background? More to the point, how can you do this convincingly without it looking like an obvious retouch job? The trick here is to make use of the existing color channel contents and to copy the information which is already there in the image and modify it to produce a new mask channel. So instead of attempting to trace every single strand of hair with the pen or paintbrush tool, you can save yourself a lot of time by recycling the information already contained in the color channels and use this to define the finely detailed edges. You will find that the pen tool can then be used to finish off tracing the curves of the model's body.

Keeping the edges soft

Retouched photographs will not look right if they feature 'pixel-sharp' edges. Softer masks usually make for a more natural-looking finish. A mask derived from a path conversion will be too crisp, even if it is anti-aliased. So, either feather your selections and if you have a layer mask, try applying a little Gaussian blur. You might find it helpful to use the blur tool to locally soften mask edges. Or you could apply a global gaussian blur filtration to the mask.

Whenever I shoot a subject where I intend later to make a cutout, I always ensure that I am shooting against a plain colored background. I find white backgrounds usually provide the best channel contrast and allow me to composite easily using the following technique.

1 The following steps describe how I would go about photographing a model with a view to adding a new backdrop later. I normally plan my shoots to always photograph against a white background as this is the best way to mask the fine hair detail, although the photograph here happens to have some light shading in the background.

2 I began looking at the individual color channels and duplicated the one that contained the most contrast, in this case the green channel. I duplicated the channel by dragging it to the New channel button in the Channels palette.
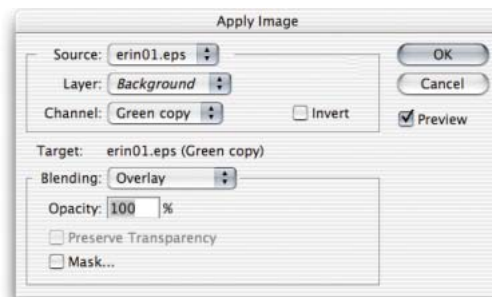
3 The next few steps all took place on the Green copy channel (if you copy this technique, make sure that the Green copy channel is selected). I wanted to increase the contrast in the alpha channel and make the hair darker. I went to the Image menu and chose Apply Image... As you can see in the above dialog, the Target channel was the Green copy channel, the Source channel was also Green copy and the blending mode had been set to Overlay. So I was using the Apply Image to apply an Overlay blend mode on the alpha channel with itself. With Apply Image you can choose all sorts of channel blending combinations. Most of the time I use Apply Image in the Multiply Blending mode and will experiment blending one color channel with another. The objective at this stage is to increase the contrast in the hair making use of the pixel information already present in the photograph.

4 At this point I am only interested in making a mask for the hair. Step 3 made quite a difference to the appearance of the channel and I now wanted to edit to increase the contrast more. I can do this using the paintbrush tool set to Overlay mode and switch between using black and white as the foreground color. And I prefer to paint using a pressure sensitive Wacom pen and tablet, with the pen pressure sensitivity for the Opacity switched on in the Brushes palette Other Dynamics options. When using the Overlay blend mode, as you paint with black, paint is only applied to dark pixels. As you paint with white, paint is only applied to the lighter pixels. Overlay is therefore a useful paint mode because you can paint quite freely using a large pixel brush to gradually build up the density around the dark hair strands without risk of painting over the light areas. I continued painting, taking care not to build up too much density on the outer hair strands.

5 Now let's look at masking the rest of the model. As was pointed out in Figure 7.9, the model's clothing is almost the same color as the backdrop. Therefore, the best way to isolate the rest of her body is to draw a pen path.
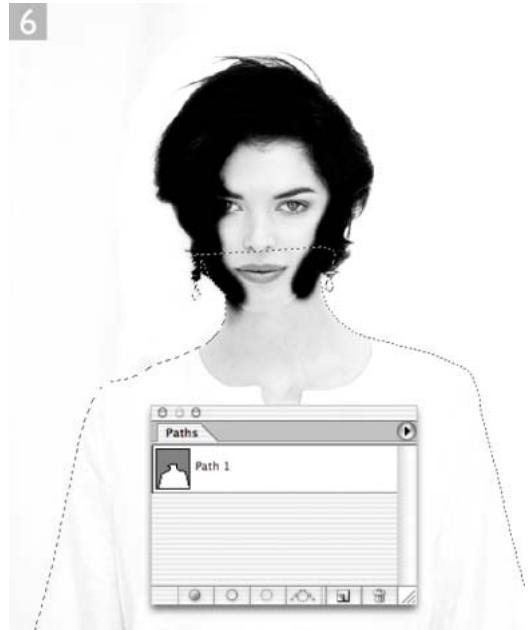
6 I used the pen tool to draw a path that followed the top half of the model, following the outline of her jaws and the finer outline detail of her earrings. I then converted the pen path to a selection by dragging Path 1 down to the Make Selection button in the Paths palette. I filled the selection with black and used the paintbrush tool in Normal mode to paint over the rest of her face.


7 With the mask complete, it was time to add a new backdrop. I opened up a photograph of a textured wall in Photoshop, selected the move tool and dragged the backdrop image across to the model image window. This added the backdrop as a new layer. I went to the layers palette and changed the blending mode to Multiply. The Multiply blend mode effectively 'projects' the new layer on top of the background layer. I kept the Layer 1 active and chose Edit ⇨ Free Transform and dragged the handles to scale the backdrop layer.
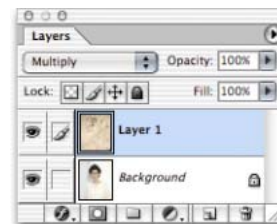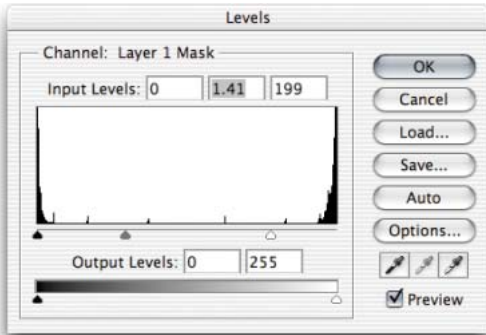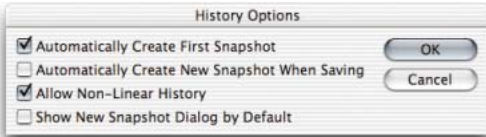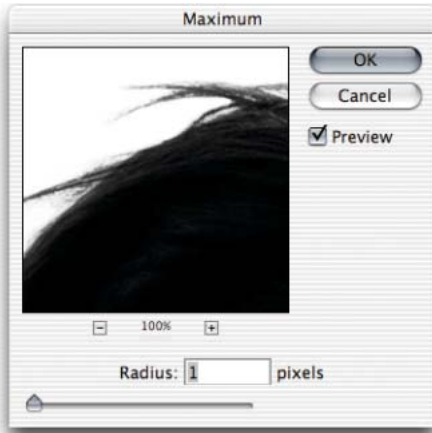
8 | ⌘ *ctrl* clicked the Green Copy channel to load it as a selection and then clicked on the Add Layer Mask button in the Layers palette to convert the selection to a layer mask.

The layer mask worked reasonably well, but benefited from some fine-tuning. I first went to the History palette and made sure that Allow Non-Linear History was selected. The layer mask was selected and I applied: Filter ⇨ Other ⇨ Maximum, followed by Filter ⇨ Blur ⇨ Gaussian Blur, followed by a Levels adjustment using the settings shown on this page. The Maximum+Blur+Levels adjustment shrunk the mask around the hair.
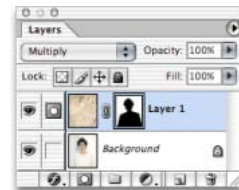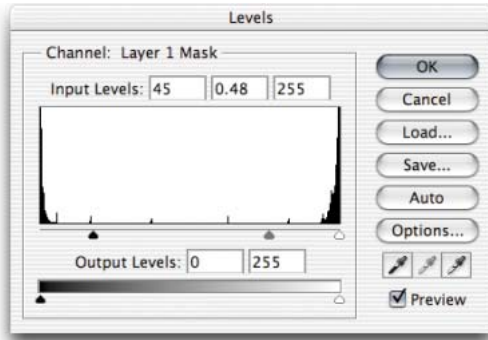
9 The reason for setting the History palette to allow nonlinear history may now become clear. In the last step, I modified the mask using a Levels adjustment to improve the hair masking. But doing so made the edges around the shoulder and neck too crisp.

I went to the History palette and clicked on the Gaussian Blur history state (note that the Levels history state does not go dim). I then applied an alternative levels adjustment, one that modified the layer mask so that the edges around the body were kept soft. I went to the History palette and clicked on the icon to the left of the previous levels adjustment. This set the history source to use the previous levels history state. I then selected the history brush from the tools palette and painted around the edges of the hair to restore the optimized hair mask state.

And that completes the steps required to add a new backdrop to a studio-shot photograph. This is a complex technique, so I have included this as a tutorial movie on the CD. You will also find the two images used are also available on the CD for you to experiment with.

Client: Schwarzkopf Ltd. Model: Erin Connelly.