NOTES ON TOPICS MENTIONED AT BPS DIGITAL IMAGING MEETING 11 MARCH 2013

Although I do not have actual notes with respect to the topics I covered at the meeting, these are some of the main points we covered.

LAYER MASKS

a) a layer mask determines which parts of the layer will be taken into account and at what intensity. The layer mask is a greyscale area such that where the mask is black, it is as if the corresponding pixels in the layer were not there; where the mask is white, the pixels are fully active and at shades of gray the pixels are partially active depending upon the grayness

b) you create a layer mask by clicking on the layer mask tool at the bottom of the layers palette.
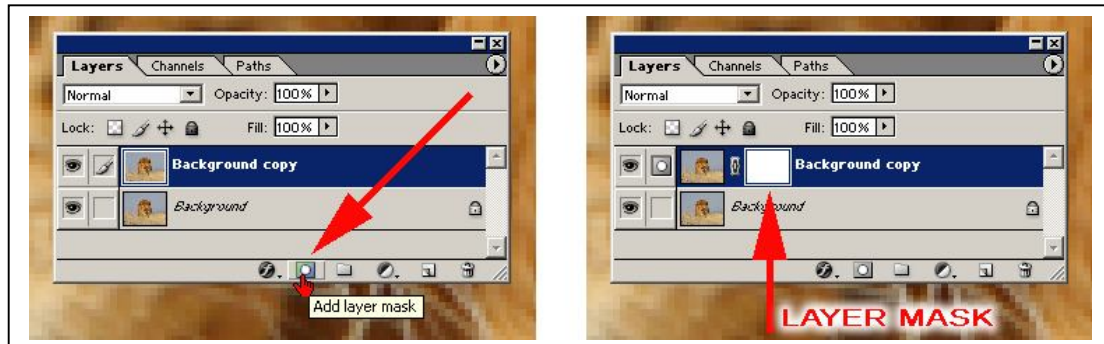
c) If you hold down ALT while clicking the layer mask tool, the mask starts off being black - i.e. hiding everything

d) if the there is a selection active, when you click on the layer mask tool, the layer mask will be filled with the selection shape. Again holding down ALT while clicking the layer mask will fill the mask with the inverse of the selection.

e) to paint on the layer mask, click on the layer mask in the relevant layer and paint with a brush in black, white or any shade of gray at any opacity.

f) to see the actual mask, hold down the ALT key while you click on the layer mask in the relevant layer. To return to the full picture, click on the layer icon instead of the mask icon in the relevant layer.

g) to see the layer mask superimposed over the image, hold down SHIFT and ALT while you click on the layer mask in the relevant layer. To return to the full picture, click on the layer icon instead of the mask icon in the relevant layer.

h) to change the colour and opacity of the superimposed layer mask, double click on the layer mask. You can then select a colour and opacity

i) to temporarily disable the layer mask, hold down SHIFT while you click on the layer mask in the relevant layer.

j) if you want to do a 'self-selection' in which the image is used as the mask (to control brightening dependent upon the brightness/darkness of the image) then 1) select the relevant layer which has the image, 2) duplicate the layer, 3) select all, 4) copy, 5) create a layer mask for this layer, 6) holding down ALT, click on the layer mask in this relevant layer, 7) paste. (You can invert the mask at this point by CTRL+I).. Now set the blend mode to screen (to lighten) or multiply (to darken). If the effect is too strong, reduce the opacity of the layer. If parts are being affected that you do not want affected, ALT+click on the layer mask, paint in black with a soft brush OR you can apply a LEVELS adjustment to alter the mask values - experiment - you cannot destroy your image ! (unless you save a version you do not like!)

USES OF LAYER MASK

a) hiding halos after sharpening

b) selecting areas for brightening (blend mode SCREEN) or darkening (blend mode MULTIPLY)

c) controlling which areas are sharpened

d) controlling which areas will be used after noise reduction

BLEND MODES

The blend modes for the layers provide a method for darkening and brightening areas of the picture. Although brightening can be achieved using the LEVELS tool, the mathematics of the LEVELS process results in a desaturation of the image, whereas the SCREEN blend mode both brightens the image and produces a slight colour saturation.

(To see this effect, open an image (and flatten it if it has any layers) duplicate the layer, set the blend to SCREEN and the opacity to 34%; duplicate this layer, set the blend mode to normal, the opacity to 100% and apply LEVELS with a setting of 1.30. (NOTE these values will move an area 128,128,128 to 150,150,150). Now look at the image and turn on and off the top layer. You will see that both techniques will have lightened the image but the LEVELS approach will also have desaturated the image.)

To brighten an area of the image, select all, copy (or copy merge) and paste. Set the blend mode to SCREEN and adjust the opacity to produce the desired effect in the area of the image you wanted lightened. Now add a layer mask with ALT (to produce a black layer mask) and using a white soft brush of appropriate size, paint on the layer mask to activate the lightening in just those areas you want lightened.

If you want a different area lightened to a different amount, repeat the whole process with a different opacity and paint the mask to reveal the other area.

If you want to darken an area, do exactly the same but set the blend mode to MULTIPLY.

The advantage of this technique is that you have total control over where the effect is done and to what intensity. You can also make very fine adjustments (such as making sure a brightening effect does not affect the background) The layer mask gives you complete control.

SHARPENING AND HALOS

One of the greatest problems with using any edge enhancing sharpening technique (such as Unsharp Mask or Nik Sharpening) is the production of a tell tale halo. This is particularly noticeable along the edge of a dark roof against a pale blue sky. An image with sharpening halos deserves zero marks in any competition irrespective of the content - The halo can be controlled easily.

a) select all, copy (or copy merged if you have many active layers) and paste. You now have a new layer with the full picture.
b) apply your unsharp mask (or other plug in filter sharpening) but do not worry about halos - select the level of sharpening for the areas you actually want sharpened.
c) set the blend mode to DARKEN
d) duplicate this layer and set the blend mode to LIGHTEN
e) create a standard layer mask for this layer (i.e. one which is completely white)
f) select a small (3 or 4 pixel) soft brush and set the paint colour to black
g) zoom in to around 200% or 300%

h) holding down the space bar, click in the image and move it around until you can see the halos
i) click on the layer mask
j) start painting in the mask with the brush along the halo line - it will disappear - continue all along the halo and in every part of the image where the halo should not be visible

NOTE sometimes it is not the halo that is the problem but instead there is too much dark. Simple - add a layer mask on the DARKEN layer and paint out the offending darkening parts.

Using layer masks to control where the sharpening occurs, it is possible to introduce variable sharpening. For example, you will never want to sharpen the sky so the layer mask for both the LIGHTEN and DARKEN layers should hide the sky - (Sharpening in the sky will accentuate the subtle gradations and can introduce visible artefacts).
With layer masks, you can also have different intensities of sharpening in different parts of the image.

CLONING

There was much discussion about the use of the 'clone' tool for adjusting pixels in the image. Because most authors use the clone tool in NORMAL mode with a standard shaped round brush at 100%, they see the 'clone' tool as a *copying* tool. And yes when used at 100% in NORMAL mode it is a copying tool and will replace the target pixels with a copy of the source pixels.

However, move away from 100% and choose a different blend mode and the 'clone' tool no longer 'copies and replicates' the pixels.

Set the blend mode to lighten and it will act as a multi-palette sourced brightening tool. As such it is more controllable than the dodge tool and undertakes a smoother effect across the whole range of pixel luminosity.

This can be used for removing dust by setting a smallish brush, opacity around 70%, blend mode LIGHTEN. Near a dust spot ALT+click then click over the dust spot 'a bit'. Then ALT+click in a slightly different spot near the same dust mark and repeat. This will blend the dust spot out without causing the tell tale 'replication' and 'repeated pattern' problem. Removing a large dust spot may require re-aligning the clone source perhaps 5 or 10 times.

To darken a spot, use the same technique but set the blend mode to DARKEN. This was used to remove a small cloud from behind a tree. We set the clone mode to darken, the opacity to 100% and ALT+Clicked in the blue sky near the tree. The cloning then removed the cloud but did not affect the tree. The reason for this was that under the brush, the cloud was lighter than the sky and so DARKEN caused a reduction in the luminosity of the pixels but the tree parts were already darker than the sky and so they were not affected. BUT beware that the source stays in the blue. You will need to re-align the source frequently when doing such an operation.

Swapping between LIGHTEN and DARKEN with frequent changes of *source* is a very efective way of removing unwanted elements from an image without the problem of repeated patterns.