

INTRODUCTION TO PHOTOSHOP LAYERS & MASKS

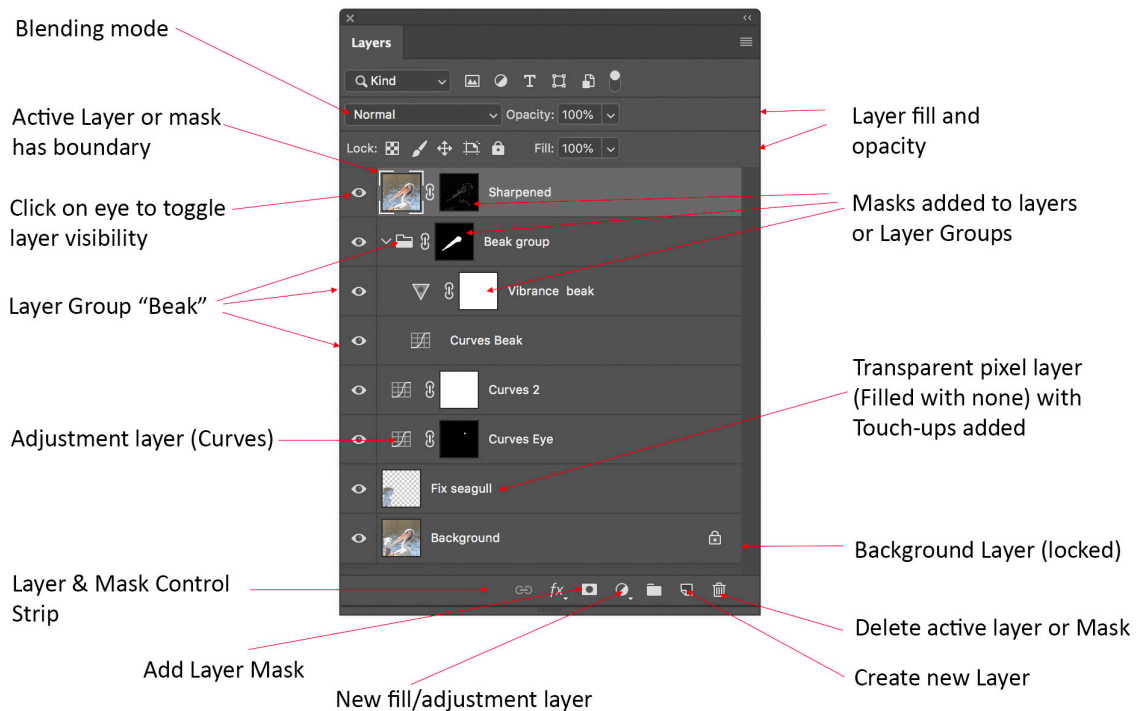
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Knowing the basis of how to use layers and masks is essential to all aspects of Photoshop work. These can be seen and controlled in the Layers Panel, one of the left-hand group of panels in the Photoshop window.

Photoshop changes pixel values, and Layers is one tool used for delaying the calculations, so that the image is not permanently changed until you want to. You can make a large number of adjustments, go back and re-adjust, before committing the changes. Flattening the layers applies the calculations permanently. You can step back in history or undo until you close the image, but then it is permanently changed.

Photoshop has upgraded Layers and Masks significantly as it developed, the result is a powerful but complicated set of tools. These notes look only at the basics, so as to get you started. Have Photoshop open as you read these notes.

THE LAYER PANEL – IMPORTANT CONTROLS ARE LABELLED



Hover your mouse over the Layer and Mask ikons to see what each does.

Click on a layer or mask to make it active, which is shown by the mask or layer having a dotted boundary.

A multi-layer image can be considered as a stack of pieces of paper, with the background layer at the bottom. Transparent layers are like clear plastic sheets that you can add opaque pixels. Imagine you are looking down on the layer stack from the top: this is the view you see on the screen. The image layers cover those below, except where transparent.

LAYER TYPES

Fill layers contain images, graphics or text, and are of two types. Image Layers and Shape Layers. The adjustment layer is a third type of layer.

IMAGE LAYERS

An *Image layer* can contain graphic elements such as paint strokes or photographs as an array of pixels, with tone and colour values applied to each pixel. From a distance, it looks a continuous image, but zoom in to more than 100% and you will see individual pixels. The more pixels, the smoother the image is at high magnification.

When you open a photograph for the first time, it will import as a single image layer, called the Background layer.

When you crop, or resample an image layer, Photoshop has to recalculate a new pixel grid. This is destructive and irreversible.

VECTOR LAYERS

A *Vector layer* contains solid colours and/or objects with outlines that are defined by lines known as vectors. There are no individual pixels. Vector layers are of two types – *Shape* Layers and *Text* layers. Shape layers are created when you use one of the shape tools, (eg rectangle, circle), or draw a pen path. When you use the text tool, you create a Text Layer. Objects in a shape or text layer can be changed and are scalable to any size without loss of quality. So, you can change the font of text easily, because you are changing the lines defining edge of each letter.

Photoshop will convert shape and text layers to pixel layers at some future stage in development. When this happens, the objects can no longer be revised non-destructively.

ADJUSTMENT LAYERS

Adjustment layers apply modifications, (Levels, curves, vibrance etc.), to the image layers below.

Come with a white mask.

Normally make changes to *all* image layers below (not above). Change this effect by linking adjustment to only the first image layer below by Option/Alt clicking on the line between the layers. Let go when you see the bent arrow.

With an Adjustment Layer, you can always change the adjustment later. Adjustments made using the MENU: Image > Adjustments are permanent and cannot be changed later, except that going back in History can undo them.

LAYER GROUPS

Adjustment layers and image layers can be put in a group for convenience. A mask added to the group applies to all layers in the group. Shift-click on the layers to be grouped and then click on the Create New Group button.

ADDING LAYERS

The following methods can all be used to add a new layer, which is added immediately above the active layer:

With one layer selected, use the Keystroke Control/Command + J. This will duplicate the active layer.

MENU: Layer > New and select an option.

Click the “Add a New Layer” Ikon on the Layer and masks controls bar to give an empty layer.

Drag the active Layer ikon onto the “Add a New Layer” Ikon to duplicate it.

Click on the “Create new fill or adjustment Layer” Ikon on the Layers Panel.

Click on one of the Ikons in the Adjustments Panel to create an adjustment layer.

If you have an active selection on a layer, and create a new layer, the selection is copied as pixels in the new layer and the remainder is transparent.

WORKING WITH LAYERS

Click on the layer’s ikon to make it active.

Click on the Eye Ikon to make the layer visible or invisible.

You can move a layer up and down the stack by clicking and dragging its ikon in the Layers panel.

Delete an active layer by using the Delete key, or dragging it to the bin in the Layers panel controls.

Remember hitting the Delete key deletes the active layer or mask. It does not undo a brush stroke or similar. To undo, you must Undo, erase or step back in history.

A layer can be modified by using dodging and burning, erasing or brushing on a colour. However, these changes are destructive. Step backwards in History to reverse.

To make a layer that merges all the layers below, first click on the topmost layer. Then COMMAND/CONTROL + OPTION + SHIFT + E. Name the new layer Stamped or Merged Layer. If you type COMMAND/CONTROL + SHIFT + E, all the visible layers (eyes turned on) are merged into one layer.

LAYER OPACITY AND FILL

There are two controls that in most cases do exactly the same thing, Opacity and Fill. By default, both are at 100%. If you reduce the percentage, then the layer contents become partially transparent.

The fill control works differently with layers that have a Layer style added (fx-button in the Layers control strip). It applies the opacity to the layer contents, but not the Layer Style. Layer styles are more for graphic artists than photographers. You can for example apply a Drop-shadow effect to text.

BLENDING MODES

By default, the layer is in the Normal mode. In this mode, it masks completely the layers below at 100%.

The mode can be changed for interesting effects. In the latest Photoshop CC there are previews of these effects.

The blend modes are in groups.

Below the Normal mode is a group of 5 that darken the image – MULTIPLY is the most useful according to Fletcher and Rains. It is equivalent to having two colour slides mounted together.

Next there are a group of 5 that lighten the image – SCREEN is the most useful. This is equivalent to making a print from 2 negatives that are sandwiched together.

Next there is a group of 7 with overlay effects – OVERLAY is the most useful. This mode superimposes the top image with the base, multiplying or screening depending on the base colour, whilst preserving the highlights and shadows of the base colour.

Many photographers apply a curves layer with the blending mode set to Luminosity. It will lighten or darken selectively without distorting colours. Similarly applying a Vibrance, or Hue and Saturation layer with Hue, Saturation or Colour blending mode could be advantageous.

Whichever mode the layer is in, reduce the opacity to modify its effect.

LAYER AND VECTOR MASKS

A fill layer is opaque, so it does not allow the underlying layers to be seen. A mask is a monochrome image attached to a layer. If on an image layer, it is used to hide the contents of a layer wholly or partially. Where the mask is *White*, it *Reveals* the contents of the layer it is attached to. Where the mask is *Black*, it *Hides* what is on the layer, making the layer transparent and allowing the layers below to be seen. It can be grey, partially hiding the layer, and still allowing the layers below to be seen.

A mask attached to an adjustment layer will apply the adjustment to the image layers below where it is white. Where it is black, the adjustment is not applied.

The important thing about a mask is that you are not deleting anything. You can modify the mask at any later stage of development. So, a mask is a much subtler way of working with your images, than using the eraser, dodging or burning.

CREATING A LAYER MASK

Click on Add Layer Mask ikon, adds a mask to the active layer. If nothing is selected, the new mask is white (opaque).

If you have a selection (marching ants), the new mask is modified by the selection. Make a selection in one layer or even a different image, then with another layer active, click on the Add Mask ikon.

If you add an adjustment layer, it will come with a white layer mask.

MASK TYPES

If you add a mask to an image layer, the mask will be a pixel-based layer mask. If you click again, a Vector mask will be added. This mask can contain vector objects: shapes, lines or text. When you add a mask to a shape or text layer, the mask added is a vector mask. Clicking the Add mask button again will add a layer mask.

MASK VISIBILITY

If you Option / Alt Click on the Mask's ikon, you make the mask visible in the workspace, instead of the image. Repeating Option / Alt Click toggles the effect.

A mask can be disabled to see what effect it makes to the image. Shift Click on the mask's ikon to toggle disablement on and off. When a mask is disabled it will have a red cross on its ikon.

MODIFYING A MASK.

A White mask is opaque, and a black one is transparent, Grey partially conceals the pixel layer below.

With a white mask active, paint on it with a black brush to hide the attached layer. If you prefer, invert the mask to make it black and hide the layer completely, and then paint with a white brush to reveal it only where you want to. Make sure the mask is active, not the layer, or you will mess up the layer and have to undo the brush strokes.

Select a brush with the Brush tool, or type B. To set the colour of the brush, use the Foreground and background colours buttons underneath the Tool bar on the left-hand side of the screen. Click the "Default Foreground and Background Colours" button, or type D to set the foreground and background to black and white. Use the "Switch foreground and background colours" button or type X to set the brush to black or white and toggle between them. You can't paint a mask with anything other than black, grey or white.

The [- bracket reduces brush size, and the] -bracket increases it. A soft circular brush is generally used for painting on masks.

Set the brush opacity and flow to control how the tone is applied using the Brush options bar at the top of the screen. Alternatively type 1 for 10% opacity, 2 for 20% opacity, and so on. Typing zero sets the opacity to 100%.

Double click on the mask's ikon to show its properties pane to give additional controls.

Invert a white mask to make it black to make the active layer transparent, revealing the layer below, using the Invert button or (Control-I). Paint on the mask with white where you want to show the active layer.

SUMMARY

This is a brief overview to get you started. Martin Evening devotes 94 pages of his book to a chapter on Layers, Selections and Masking. Most of us will produce images with only a few layers, but professionals can add up to 8000 layers to an image. There are tools for colour coding, grouping, linking and filtering lists of layers so as to make layer management easier. My later notes will show how you can use layers to remove or modify defects in an image, and to control colours and tones.

I will produce separate notes on introduction to compositing – combining images using layers and masks later. I will also cover how you can make masks from a channel, which typically is used for dropping in a sky.

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