Andrew Moreton's Photoshop 7 Notes

Part 2

- selections, masks, paths, filters and fills

Contents

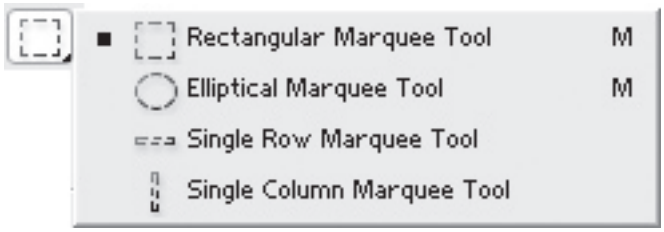
Selections

To edit specific parts of an image you'll find yourself needing to make selections. Photoshop offers quite a few ways of doing this including; the selection tools, various masks, vector paths, and the colour range command.

Whatever way you get there every method ends up with the same thing – a dotted border – Adobe's "marching ants" – that show which pixels in an image are selected and which ones aren't. The pixels inside the border will be effected by any editing decision, the ones outside the border won't be.

Creating standard selections

The Marquee tools



Use to make rectangular and elliptical selections.

Hold down the **SHIFT** key while dragging to constrain the selection to either a square or circle.

Hold down the **ALT** key while dragging to create a selection from it's centre.

Keyboard Equivalent – **M** (**SHIFT M** to toggle between rectangle and ellipse).

The Lasso tools

Use the Lasso tools to create irregular shaped selections.

Keyboard Equivalent – **L** (**SHIFT L** to toggle between Lasso, Polygon and Magnetic Lasso tool).

The Lasso tool

Click and drag with the Lasso to create freehand selections. Releasing the mouse button closes the selection. Hold down the **ALT** key to prevent the selection from closing while constraining the selection border to a straight line.

The Polygonal Lasso tool

Use the Polygonal Lasso tool to create straight edged selections. Click to anchor a selection edge. Click again elsewhere to create a line between the two clicks. Continue clicking to define edges of selection. Double click to close selection.

Hold down the **ALT** key to be able to draw freehand lines.

The Magnetic Lasso tool

The Magnetic Lasso tool can help you make selections by detecting edges of contrast in an image and snapping the selection border to those edges.

Be warned this only works well in very highly defined, contrasty images!

To use it, click with the mouse to begin. Move the mouse slowly around the edge of the area that you're trying to select (you don't need to hold the mouse button down).

While you do this Photoshop will drop anchor points around the selection's border. If you don't like it's choice of anchor points use the delete key to remove them.

Set your own anchor points by clicking.

Double click to finish the selection.

You can also adjust these parameters from the Options bar:

Width is how accurate you need to be with your drawing. High values allow for less accurate tracing of borders. Frequency is how often Photoshop will add an anchor point and Edge Contrast determines it's sensitivity to image contrast.

The Magic Wand tool 

Use the magic wand tool to make selections based on brightness values.

Click in an image with the magic wand tool and Photoshop creates a selection based on the brightness value of the clicked-on pixel. The tolerance value in the Options bar controls how close to that brightness value other pixels have to be in order to get included in the selection.

0 would select only pixels of exactly the same brightness as the clicked-on pixel.

255 would select all the pixels in the image. (Not so useful).

In order to select all pixels of similar brightness values throughout a whole image deselect the contiguous checkbox on the Option bar.

Altering Selections

Deselecting

You can get rid of a selection by clicking away from it with a selection tool or by going to **SELECT>DESELECT**

Keyboard equivalent – **CTRL D**

Reselecting

Should you need to load your last selection again go to **SELECT>RESELECT**

Keyboard equivalent – **CTRL SHIFT D**

Inverting a selection

To reverse what's selected and unselected in your image use **SELECT>INVERSE**

Keyboard equivalent – **CTRL SHIFT I**

Combining selections 

When you've a selection tool active the Options bar always displays the above four buttons.

Once you've made an initial selection these buttons determine whether you want to make a new selection

 add to the selection (keyboard equivalent – **SHIFT**)

 subtract from the selection (keyboard equivalent – **ALT**)

 to find the area where the existing selection and new selection intersect (keyboard equivalent – **ALT SHIFT**)

Moving and transforming selections

You can move selection outlines by clicking and dragging within their borders **with a selection tool selected.**

If you need to scale, skew, rotate or otherwise distort the selection outline use **SELECT>TRANSFORM SELECTION.**

Stroking selections

Use **EDIT>STROKE**... to add a line of pixels around the edges of your selection border.

Feathering

Use **SELECT>FEATHER**... to soften and blur the pixels at the edges of a selection. Feathering can be applied to a selection after it's been made or can be set beforehand in the Options bar.

The feathering effect won't become apparent until the selection is moved, copied to another document or edited in some way.

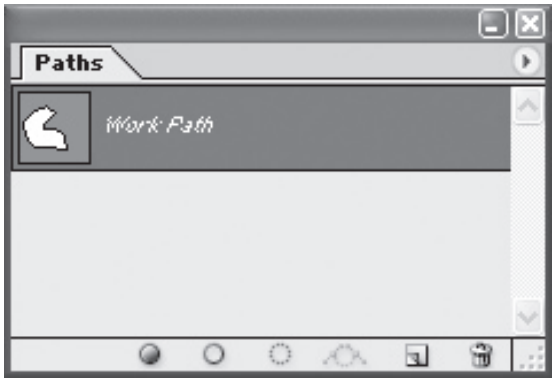
Paths

To make the most accurate, smooth edged selections you have to create paths. A path is a vector outline that can be used to define a selection.

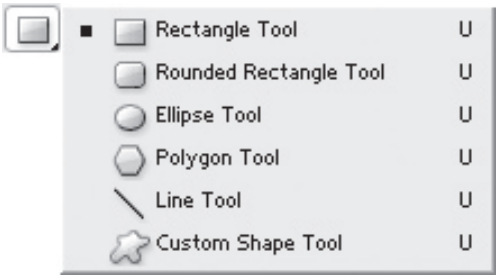
Paths can be created from already existing selections, or by using the Pen, Type or Shape tools.

The Paths palette

Paths being used in a document are managed in the paths palette (**WINDOW>PATHS**). A path is made active by clicking on its name in the paths palette.



New paths can be created and deleted using the Create New Path ()
and Delete Current Path ()buttons.



Creating basic paths with shape tools

The simplest (yet most limited) way of creating paths is to use the shape tools. And if you want to make rectangles, round-edged rectangles, ellipsis and equal sided polygons they'll be all you'll need.

Make sure you've used the set the Options bar to Paths 

Then drag a shape over your image. This will create a **work path.**

A work path is a temporary path created while you're making a vector based selection. Once you've created a path you'll find it's also been added to the Paths palette.

Move the path around with the path selection tool 

Keyboard Equivalents – **U** (**SHIFT U** to cycle through shape tools)

Changing paths into selections

To change a path into a selection, make sure it's active in the paths palette then either:

- **PATHS PALETTE MENU>MAKE SELECTION**...
- Use Load Path as Selection button ( ) on the Paths palette
- **CTRL-CLICK** the path's name in the paths palette
- **RIGHT-CLICK** and choose Make Selection from the contextual menu
- **CTRL-ENTER** on keyboard

Saving, and naming paths

Work paths are temporary. If you want to hold on to your paths then you'll want to name and save them.

Save and name paths by activating them and then either use **PATHS PALETTE MENU>SAVE PATH**... or double click on the path's name in the palette.

Transforming and combing paths and path components

Different shapes can be added together to form more complex paths. When more than one shape is being dealt with by a single path, the separate shapes are called **path components.**

Once you've made an initial path these buttons determine whether you want to:

 add a new shape to the path (keyboard equivalent – **SHIFT**)

 subtract from the path (keyboard equivalent – **ALT**)

 to find the area where the path and new shape intersect

(keyboard equivalent – **ALT SHIFT**)

 to exclude areas where the new shape overlaps existing path components.

If you need to scale, skew, rotate or otherwise distort a path use **EDIT>FREE TRANSFORM PATH.**

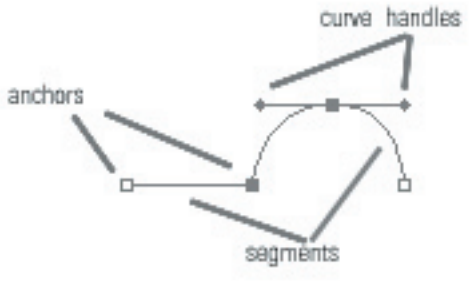
Stroking paths

Use **PATHS PALETTE MENU>STROKE PATH**... to add a border of pixels along a selected path. Choose from any of the paint tools to determine how this stroke is applied.

Using the pen and related tools to create and edit paths

Paths are made up of anchor points, segments and curve handles (or direction points as Adobe would have it).

Anchor points can have curve handles attached to them that influence the direction and intensity of a segment's curve. Anchor points can have two handles that effect both the incoming and outgoing curves.



Anchor points come in two varieties

- smooth, which means the incoming and outgoing curve handles seesaw as you manipulate them
- corner, which allow you to manipulate curve handles independently.

The Pen tools

The pen tool creates, adds and deletes anchor points.

Keyboard Equivalent – **P** (**SHIFT P** to cycle through other pen tools)

Creating paths 

Clicking with the Pen tool places an anchor points.

Clicking and dragging with the Pen tool places an anchor point and pulls out smooth curve handles (seesaw).

Adding the **ALT** key changes the smooth point to a corner point (no seesaw).

Clicking on the starting anchor point closes a path.

Resuming an unclosed path 

Click and drag on a path's endpoint to resume an unclosed path - this will pull out a curve handle - click again to add the next anchor point.

Adding and deleting anchor points 

Delete anchor points by taking the Pen tool over an existing anchor point – it'll change to the Delete Anchor Point tool. Click to delete the anchor point.

Add anchor points by taking the pen tool over a path segment. – it'll change to the Add Anchor Point tool. Click to add new anchor points.

The Direct Selection tool 

The Direct Selection tool allows you to select and move anchor points, curve segments and curve handles. **SHIFT-CLICK** on multiple anchor points to group select and move them.

Selected anchor points can be nudged with the keyboard arrow keys.

ALT-CLICKING within a path component selects all it's anchor points (same as the path selection tool).

Keyboard Equivalent – **A** (**SHIFT A** to toggle between Direct Selection tool and Path Selection tool).

ALT-DRAG a path to duplicate it.

The Path Selection tool 

Path components can be moved using the Path Selection tool. They can be moved together by **SHIFT-CLICKING** with the Path Selection tool.

Multiple path components (**SHIFT-CLICK** to select them) can be combined into a single path using the Combine button on the Options bar.

Multiple paths components can be aligned and distributed to using the various buttons on the Options bar.

The Convert Point tool 

Use the convert point tool to change an anchor point into one of these three types:

- corner anchor point with no handles
- corner anchor point with independent handles
- smooth anchor point

CLICK on an anchor point **with** handles to remove the handles.

DRAG out from an anchor point **without** handles to add smooth curve handles.

CLICK-DRAG on curve handles to convert a smooth anchor point into a corner anchor point (seesawing to non-seesawing).

Pen Tool Cut-out Keyboard Commands

If you're using the Pen tool it only really comes into it's own when you move between it and it's related tools with keyboard commands – so when you're creating a selection:

- Use the Pen tool to create a path,
  - **CLICK**, **HOLD** and **DRAG** to pull out **smooth curve** handles
  - delete anchor points by **CLICKING** on them
  - add anchor points by clicking on active path
- Move anchor points with the Direct Selection tool
  - (**CTRL**)
- Alter curve handles with the Convert Point tool
  - (**ALT**)
- Change path to selection with **CTRL ENTER**

Defining Clipping Paths

Sometimes a desktop publishing or layout application needs to be told which parts of an image it shouldn't display. You can do this by saving a path as a clipping path – the outside portions of which will be ignored by the DTP or layout programme.

To save a clipping path, first create your path and then name it. Once the path is named go to **PATHS PALETTE MENU>CLIPPING PATH**... and tell it to use the path you just named.

Masks

While paths provide the most accurate method of creating selections for cut-outs and other purposes, there are times when – in order to create special effects or to select hard to define areas – a mask is what you need.

A mask is an eight-bit greyscale of masks for making selections – Quick Masks and Alpha Channels.

Depending on your preferences, black in a mask will represent areas which won't be effected by any editing – white will represent areas that will be totally effected – and intermediate shades of grey represent intermediate levels of effect. (This is Photoshop's default behaviour – invert it by double clicking on either the Quick Mask button or an Alpha Channel's name in the channels palette (see below))

You can use any of Photoshop's paint tools and filters in a mask.

Quick Masks 

A Quick Mask is a way of making temporary selection masks. Use the Edit In Quick Mask Mode button from the bottom right of the tool bar to switch to Quick Mask mode.

Check whether your mask is using black to select or mask areas by double clicking the Quick Mask button. Choose an appropriate overlay colour and opacity to view your mask.

Create your Quick Mask using paint, filters, gradient or editing tools.

Change the mask into a selection by clicking back to normal with the Edit in Standard Mode button.

Switch in and out of Quick Mask mode with **Q**.

If you have a selection border active and switch to Quick Mask mode Photoshop will automatically fill that area on the mask (or it's inverse depending on how you've set your preferences).

Save a Quick Mask by dragging it from the channels palette to the Create New Channel button at the bottom of the Channels palette.

Alpha Channels

An Alpha Channel is a selection mask that you can save for future use.

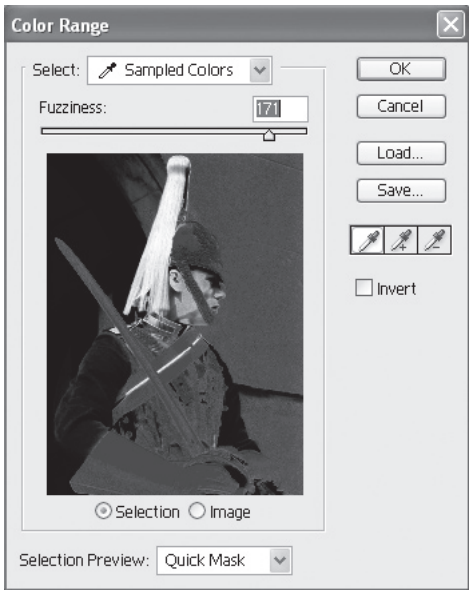
Create new Alpha Channels by

- Using **CHANNELS PALETTE MENU>NEW CHANNEL**...
- Using the New Channel button ()on the channels palette
- Make a selection with a selection tool and go to **SELECT>SAVE SELECTION**...

Load an Alpha Channel (create a selection) by

- Using **SELECT>LOAD SELECTION**...
- **CRTL-CLICK** on the channel you want to load in the channels palette.
- Add and subtract channels from each other using
  CTRL-SHIFT-CLICK to add
  CTRL-ALT-CLICK to subtract

Color Range



The Color Range command is able to create a mask-based selection based on colour. Find the command under **SELECT>COLOR RANGE**.

Use the left-most eyedropper tool to select colours you want to select

Choose the Selection radio button to see a preview of the selection mask.

Use the other two droppers to add and remove colours from the selection

Use the fuzziness slider to extend or contract the range of colours included in your selection.

Note that the Color Range command bases it's selection on any selection you may already have active.

In order to make selections of large ranges of colour make sure you have no selections active before using the command. To select subtler ranges of colour, make a first, general selection with the color range command, then use the command again to refine the initial selection further.

On exiting the color range dialogue box Photoshop goes straight into standard editing mode - though this isn't particularly representative of the selection it'll have created. To get a better idea of the areas in your image that are selected view the selection as a Quick Mask. (**Q** on the keyboard).

Extract

Use the Extract command to separate foreground elements and delete the rest of an image. **FILTER>EXTRACT**... is where you'll find it and it can be handy (depending on the contrast in your image) in cutting out complicated translucent edges such as fur and hair.

Once you've bought up the Extract dialogue box use the Highlight tool  to trace around the edges of the area that you're trying to select. This works just like an ordinary brush – you can set the brush size using the Brush Size slider or by using **[** and **]** on the keyboard.

Check Smart Highlighting when you're tracing a very obvious edge – Photoshop will constrain the width of your highlight to the minimum necessary.

Use the Eraser tool  to rub out the highlight.

Once you've traced the edges of the foreground element use the Fill tool  to fill in the area that you're tying to extract.

If you're confident that your extraction is going to be right first time (very unlikely) click OK. This will return you to your document and Photoshop will delete the excluded area of the selection. If you're not so confident try the Preview button.

The Preview button will allow you to see how successful your extraction has been. It defaults to showing your extraction against a checkerboard background, however the Display pop-up at the bottom right of the dialogue box allows you to view your extraction against a variety of other backgrounds.

Having previewed the extraction use the Cleanup tool  to tidy up edges. On it's own the Cleanup tool removes pixels from the selection. Hold down **ALT** to restore pixels that have been deleted from the background.

Use the Edge Touchup tool  to sharpen the edges of the extraction.

If you're trying to extract a foreground element that's tonally similar to it's background, draw all the way around it with the Highlight tool, fill the area and then check the Force Foreground checkbox.

Keyboard equivalent – **CTRL-ALT X**

Fills

Paint Bucket 

Use the Paint Bucket to fill an area selected on brightness values (same as the Magic Wand) with the foreground color or a pattern.

Click in an image with the Paint Bucket tool and Photoshop creates a selection based on the brightness value of the clicked-on pixel. Then it fills it up with either the Foreground colour or the pattern of your choice. Tell it which with the Options bar.

The tolerance value in the Options bar controls how close to that brightness value other pixels have to be in order to get filled.

0 would fill only pixels of exactly the same brightness as the clicked-on pixel.

255 would fill all the pixels in the image.

In order to fill all pixels of similar brightness values throughout a whole image deselect the contiguous checkbox on the option bar.

Keyboard equivalent – **G** (**SHIFT G** to cycle between it and the Gradient tool)

Fill Command

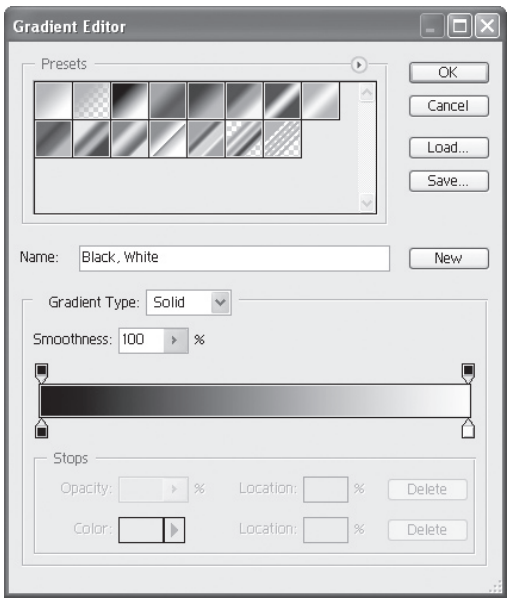
Use **EDIT>FILL**... to fill a selected area with white, 50% grey, a pattern, the current history state, or black. You also have options regarding opacity and blend modes used.

Keyboard equivalent – **SHIFT-BACKSPACE**

Also: use **ALT-BACKSPACE** to fill with the foreground colour, **BACKSPACE** to fill with the background colour.

Gradients 

Create allsorts of gradients with the Gradient tool.



Smooth Gradients

Choose a preset gradient from the pop-up on the Options bar. (Look under the pop-up's sub-menu and you'll find that you can load more preset gradient collections.)

To make up your own gradients, click on the gradient on the Options bar. This brings up the Gradient Editor.

Add colour stops to a gradient by clicking in empty space beneath the gradient preview. Remove colour stops by dragging them off.

Move the small diamonds between colour stops to position the mid-point between the two colours.

Use the stops above the gradient preview to alter the opacity of the gradient.

Save gradients in the Gradient Editor with the New button.

Use the Options bar to set opacity and blend modes.

Choose different types of gradient:

 linear gradient

 radial gradient

 angle gradient

 reflected gradient

 diamond gradient

Noise gradients

All the above is true of noise gradients except that a noise gradient is made of very rapid transitions from one colour to another without any intermediate smoothing.

Create a noise gradient by opening the Gradient Editor and changing the Gradient Type pop-up menu from Solid to Noise.

Patterns

Patterns are fills made from tiling smaller images together. Photoshop has a range of preset patterns, you can create them yourself or you can use the Pattern Maker command.

Defining patterns

To create a pattern select a rectangular non-feathered area of an image. Go to **EDIT>DEFINE PATTERN**... and give it a name.

Creating Patterns with Pattern Maker

Use **FILTER>PATTERN MAKER**... to create and preview patterns. Open Pattern Maker and select the area of your image that you want to use as a tile. Click the Generate button to make Photoshop create a preview of your pattern.

If you don't like the tile Photoshop's made click Generate Again. This will create a slightly different pattern based on the same sample of pixels.

Photoshop lets you compare the patterns you've created with the Tile History area of the Pattern Maker. When you find the pattern you want either click the little disk icon on the Tile History to save the pattern as a preset or click OK to fill the active layer or selection with the pattern.

Applying Patterns

Patterns can be applied using the Pattern Stamp Tool, the Fill command (**EDIT> FILL...)**, the Bucket tool, Layer Styles, Heal and Patch tools.

Filters

The Filter menu contains commands that apply various different effects to images. Some of these effects can enhance – others can be downright destructive.

Applying Filters

Although not all filter dialogue boxes offer the same degree of functionality most look something like this:

The Preview checkbox will make Photoshop update the image window with a preview of the effects of the filter.

The (small) Preview box, shows a thumbnail of the filtered image which can be zoomed in and out of using the Zoom buttons. Clicking in the image window will usually update the Preview box with area just clicked on.

Reapplying Filters

The filter you last used is added to the top of the Filter menu. If you choose it Photoshop will apply the filter using the same settings as you last used. If you need to alter those settings hold down ALT as you choose the item.

Keyboard equivalent – **CRTL – F** (**CTRL-ALT-F** to alter settings).

Sharpening

Unsharp Mask

Despite it's name the Unsharp Mask filter is far and away Photoshop's best sharpening tool. The filter looks for and increases contrast between neighbouring pixels - this gives the illusion of sharpening by creating halos around the contrasty edges in an image. Find it under **FILTER>SHARPEN>UNSHARP MASK**...

Try to view images at 100% (Actual Pixels) or 50% while sharpening to best judge the results.

The Radius slider controls the width of the edge halo.

Use the Threshold to control how much Photoshop sharpens noise – move the slider to choose how great the difference between pixel brightness needs to be before sharpening will apply.

Amount – surprise! – controls the amount of sharpening applied.

Unsharp Mask should be applied after conversion to CMYK, and resizing but before final Levels or Curves adjustments.

Blurring

Gaussian Blur

Better than Blur, better than Blur More, use Gaussian Blur to reduce contrast between pixels.

Find it under **FILTER>BLUR>GAUSSIAN BLUR**...