

# Digital Darkroom ©Alton Camera Club February 2010

## **RAW or JPG or both?**

Use RAW when:

- Difficult exposure such as a very bright or dark scene.
- Accurate colours are expected.
- You need best tone gradation.
- Other software features aid processing (sharpness, lens correction, noise reduction)
- There is plenty of space available on memory card.

Use JPG:

- When shooting large numbers of shots.
- You need to produce results quickly.
- If shooting on Continuous mode with high frame rates.
- If limited computer or memory card storage space is a problem.

RAW images are 3 times larger and often need special software to view and process. Using RAW+JPG gives you the best of both worlds. JPGs can be obtained from RAW but not the other way around.

On the camera always have the largest image settings available. All effects should be turned off as you can make better adjustments on your computer afterwards.

## **Pick Your Best Images**

Demonstrate your superb photography skills by only showing a varied selection of only your finest pictures. Ignore those uninteresting, unflattering or technically poor shots.

## **Where are the Pictures Going?**

Decide whether they are going to be printed, put on the web, in a slideshow or presentation. What is the final size of the image? How good does the original image need to be? Are you printing at home or sending to a commercial lab? Does your collection of images need to be compressed for an email attachment.

If the image is for publication ensure that no editing occurs that can misrepresent or alter the interpretation of the photograph. It can be unacceptable to remove, replace or introduce any artefacts into an image. However, dust removal, exposure or colour correction and cropping rarely present problems.

## **Available Tools**

The market leading professional tool is Adobe Photoshop, however, the full version could be too expensive depending on your needs so various other cheaper but perfectly adequate products are available. The following are good alternatives: Adobe Photoshop Elements, Corel PaintShop Pro Photo, Serif Photo Plus, Ulead PhotoImpact. Free alternatives are also worth considering such as Google Picasa, Paint.Net or GIMP. Software from your camera manufacturer may be available like Canon's DPP (free with DSLRs) or Nikon Capture NX2.

## **The Histogram**

This representation allows you to see the amounts of the coloured and toned parts of the image. Exposure and colour defects can be interpreted here. Ideally there should be no parts of the image that have drifted off either end of the scale. You could check on the camera when taking the picture. Each image is different so there is no correct looking graph. Overexposed and underexposed images have lost vital data which cannot be recovered.

## **8-bit or 16-bit?**

16-bit image files hold a larger tonal range but use more space in your computer. For most purposes 8-bit is adequate and affordable software usually use 8-bit files. JPG files are 8-bit.

## ***Colour Space?***

The colour space determines how the colours in your image are represented as numbers in the image file. For most purposes the sRGB colour space is adequate. Ensure that your camera, editing software and printer are consistent in using the same space.

# **Suggested Imaging Workflow**

## ***Decide to use JPG or RAW file***

For JPGs just open the file and adjustments will be made later on in the workflow.

When opening a RAW file, use 16-bit processing for best quality, set the White Balance appropriately, adjust the Exposure/Recovery and other settings to ensure that the histogram shows little evidence of clipping at either end of the scale. You should consider applying noise reduction and a small amount of sharpening here. There might be little difference to the JPG.

## ***Colour Balance and Tonal Range***

Do the colours look right? Is the image overall too dark or too bright? Does it look similar to the image you envisaged when you took the photograph.

Depending on the tools available at your disposal, improvements can be made. The most flexible tools are Curves or Levels. These enable you to alter the spread of the tonal range.

Brightness and Contrast tools are best avoided because they do not offer fine enough control and it is easy to make parts of the image irrecoverably bright or dark.

The image is in three parts called channels: Red, Green and Blue, which can all be altered together or independently of each other.

If you are in a hurry or can't figure out where an image is incorrect Auto Levels, Auto Contrast and Auto-colour balance are acceptable ways of correction but they are rarely perfect.

## ***Noise Reduction***

If you have used a high ISO setting, maybe ISO 400 or higher depending how good your camera's sensor is, then some noise reduction could be needed. Various tools are usually available in the software but commercial tools such as Noise Ninja can give superior results. Where fine-control is available use it to ensure that the effect is not overdone. Always make sure that sufficient image detail is retained.

## ***Levelling and Cropping***

Use the rotate option to level the image. Water and walls are usually good indicators of a horizontal or vertical surface. If you don't get it right first time, undo and try again. Don't keep making small changes as each adjustment is reducing the quality of the image. Only one change is needed here.

Crop the image to remove the unwanted edges of the image. Ensure spacing between the subject and the edge is even. Make sure that the tops of heads and buildings remain intact with a little gap. Consideration should be given to compositional rules such as symmetry and the Rule of Thirds. Also, bear in mind the proportions of the final image. Photoshop will allow you to Crop and Rotate together.

## ***Retouching***

Remove dust and hairs using the Clone or Healing Brush tool. Also, consider removing unnecessary distractions in the image such as twigs, text, litter, people, etc. Other alterations that can be achieved at this part of the sequence are recolouring items, 'Dodging' and 'Burning' to selectively lighten and darken specific areas. Some retouching may need to be done prior to cropping because items can be used from the portions to be thrown away. Fix Red Eye at this point using automated tools.

## **Filters**

In general filters are gimmicky effects that are best avoided unless there is a serious artistic effect that is to be achieved. They can also be used to reduce the impact of an image where text or other items need to be more prominent. Be selective and sensitive to their use as any effect can be easily overdone.

## **Text**

When adding text ensure that it does not overpower the image and is added where there is little or no conflicting detail. Contrasting colours work well. Apply a layer style to add a more professional looking 3D effect.

## **Image Size**

Depending on the use for your image you will usually need to alter the size. Ensure that you preserve the proportions of the image but be prepared to do further cropping to make the image fit the intended media. If you need to fit dimensions exactly use Image Size first to so that one of the dimensions is correct and the other is exact or too large; then use Canvas Size to trim the excess portion of the image to match the intended size.

Resizing affects the image quality so should only be done once only. If the image size needs to be changed only slightly it may be better to just trim with Canvas Size.

Suggested image sizes: 7"x5" print – 2100x1500 pixels, club PDI competition image: maximum 1400x1050px, A4 image: 3507x2480px, iPod Touch: 480x320px.

The DPI setting is only used to work out a default print size and can be safely ignored.

Borders should be added after resizing so ensure that you include their dimensions in your calculations.

## **Saving**

For superior work, or keeping a copy of work in progress, save a copy of the edited image at the highest size and quality. Use the native file format of the editing software or a more widely used format such as TIFF.

If the image is finished and no more work is required an 8-bit, JPG image is usable for most purposes. Only use compression if essential for emailing and still use a high quality setting.

## **Sharpening**

This will make the edges within the image more distinct. Unfortunately, you can't take a soft image and make it sharper. There is no best method but some is always better than none providing that detail is enhanced but not the noise in the image. The amount of sharpening to use depends on how the image will be viewed; an image on screen will require less sharpening than when printed so an image prepared for printing will look overdone on screen.

The Unsharp Mask tool is the best tool to learn from but you may prefer a different one. Use a Goldilocks setting: not too much, not too little but just right.

## **Printing**

At home use a printer from a respected manufacturer or send your images to a reliable commercial outlet.

Use paper and ink from the same brand as your printer. This will give you more consistent results and be cheaper in the long run.

The image should be detailed enough for the size you are printing at; 240ppi (pixels per inch) is a reasonable minimum quality but aim for higher detail. Ensure that some, but not too much, sharpening is applied.

Ink and paper is expensive so use small test prints to check tone and colour before committing your masterpiece to full size. Expect that image changes will be needed. Be proud to display the result so print at a respectable size.