

## **Optimize your Digital Exposure Technique:**

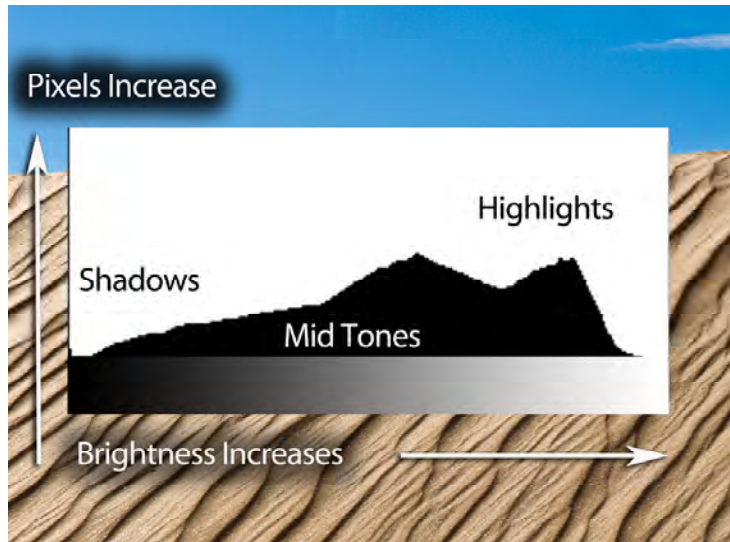
The file format you use can make an impact on the amount of information captured. There are significant advantages to shooting in RAW mode compared to JPEG. A JPEG image can only contain a maximum of 256 levels per 8-bit RGB channel, but a Digital SLR with RAW capacity is able to capture up to 4000 levels at 12-bits per RGB channel.

It would be wrong to say that it is not possible to achieve good results with JPEG, but critical attention to exposure is more important. When capturing in JPEG mode, the camera settings used to process the image, such as the white balance, are permanently "baked in" at the time of capture. Camera tone correction and sharpening are also applied to enhance images shot in JPEG mode. This cannot be reversed by reprocessing the image with Lightroom and /or Photoshop because of the limited depth of data (8 bit).

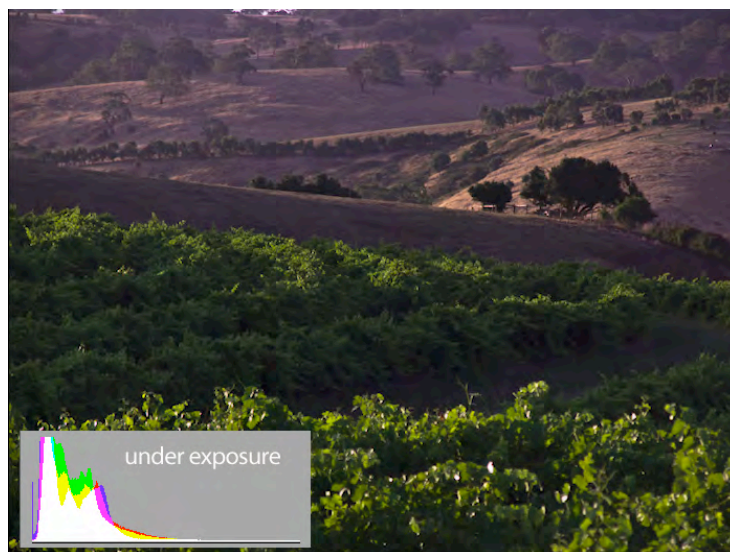
The important difference is that when capturing in RAW you can decide later how to best process the data.

When underexposing the digital image data is lost. This is because the sensor on a digital SLR uses half of its 4000 levels to record information in the brightest range, half again in the next stop down, and so on. If you underexpose by one stop, you will immediately halve the number of values that can potentially be captured, in effect losing a significant amount of information.

Exposing for the digital image is certainly different from exposing for the traditional photographic process. Relying on the exposure meter in camera is certainly important, but looking at the histogram display on the back of the camera will help to fine tune your exposure and take advantage of digital's larger exposure latitude. Understanding histograms as an exposure tool is one of the most important features to learn on any digital SLR camera. It will help you interpret the range of tones included in the exposure.



A histogram is a graphic representation of the light levels in your picture. It will illustrate how many of each of the tones you have recorded. In a histogram, the scene's tones are distributed from left to right, creating peaks and valleys within the range of tones. These high peaks represent a high quantity of the values within the scene. The darkest values are to the extreme left and the lightest values are to the extreme right. When modifying the histogram's appearance we should employ techniques of exposure compensation to favor increasing the exposure to place more information on the right side. Repeat after me "Right is Bright". By favoring the exposure to the right of the histogram display we can take full advantage of the tonal scale during capture. By moving the tones captured to the right allows you to obtain smoother and more acceptable tone gradation.



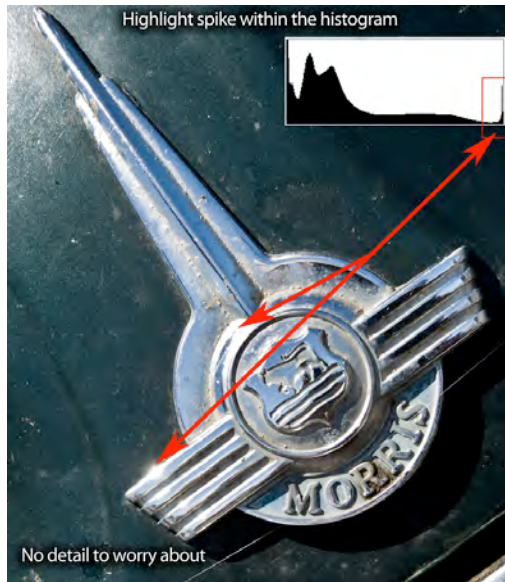
Note the histogram above is to the left of center. In this scene the potential for recording all the midtone and highlight value is lost.



In this example, favoring the exposure to include more information to the right of center gives this image better distribution of the data, capturing all of the potential values from shadow to highlight.



When you favor your exposure too much to the right, be warned: The histogram should not pile up and move beyond the right edge, this will lead to an over exposure situation with blown out highlights.



Areas that do not contain detail like the chrome specular highlight will blow out. In most cases like this there is not any detail of value to be concerned with.

Digital SLR cameras have a "flashing highlight" or "blinking" indicator. This should be enabled to alert you to the possibility of over exposing highlight information. When enabled, the indicator will warn you about which areas of the image are overexposed. Evaluate this and adjust the exposure down to prevent the condition if need be.

In some cases when using the technique of favoring your exposures to the right, the image may appear too light on the camera display or in your raw conversion application. This is not a problem as long as you haven't "blown out" any important highlight information

Another thing to be aware of is that the histogram on the back of all digital cameras is formed from an internally generated 8-bit Jpeg, even if you are shooting in RAW. Consequently, the histogram on the back of the camera is different than the one your final processed RAW image will have. What this means is, you may have a more room than you think on the highlight side of the histogram than your camera is indicating.

Experiment with the exposures in the Raw processor in Lightroom or Photoshop to observe how much of this data is recoverable. With a little bit of experimentation you will be able to better evaluate and adjust exposure in the highlights and when to ignore the warnings.

Getting a perfect exposure takes some experimentation at first but, with a bit of practice you should be on the way to improving your pictures with less time spent adjusting them in Lightroom or Photoshop.

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