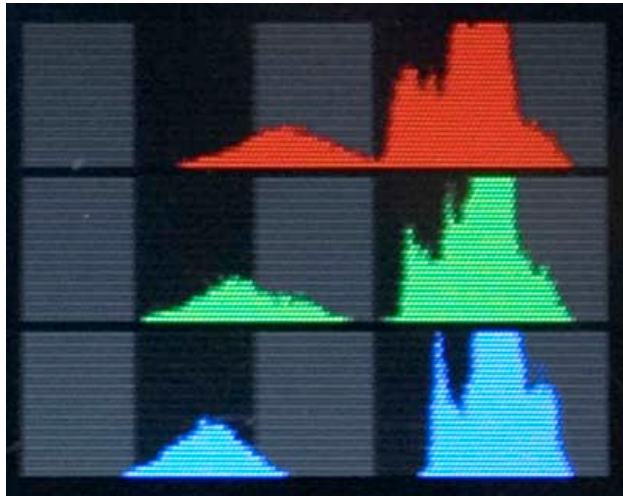


*Some examples of common histograms*

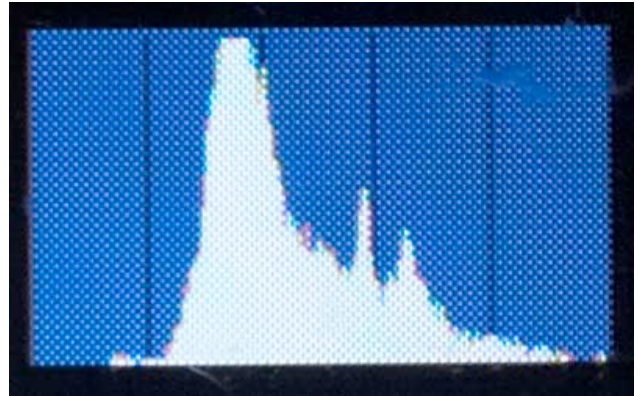


by

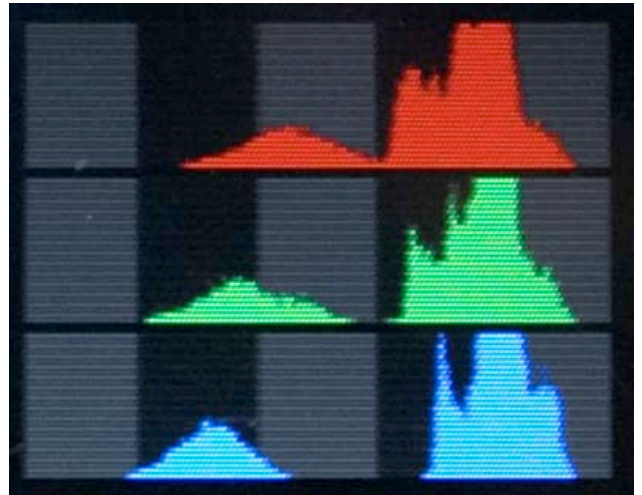
Alain Briot

*Some examples of common histograms*

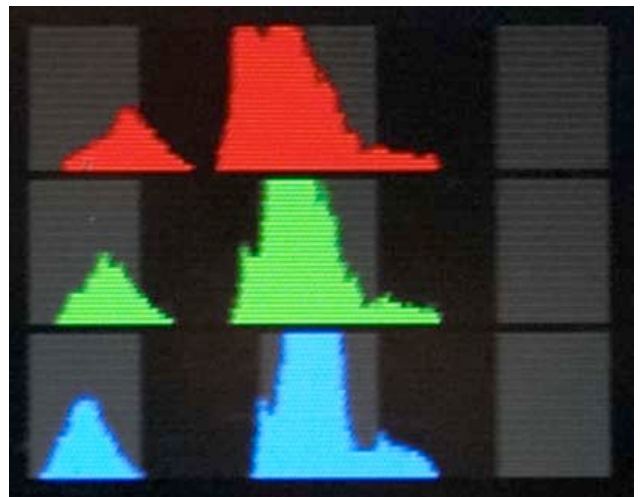
A single-channel histogram from the Canon 300D. A single channel histogram is an average of the three-color channels (Red, green and blue). While the histogram show no clipping in the highlights (right side) there could be clipping in one of the three channels. The only way to know for sure is to have a three channel histogram, a much more reliable way to tell if your image is clipped or not.



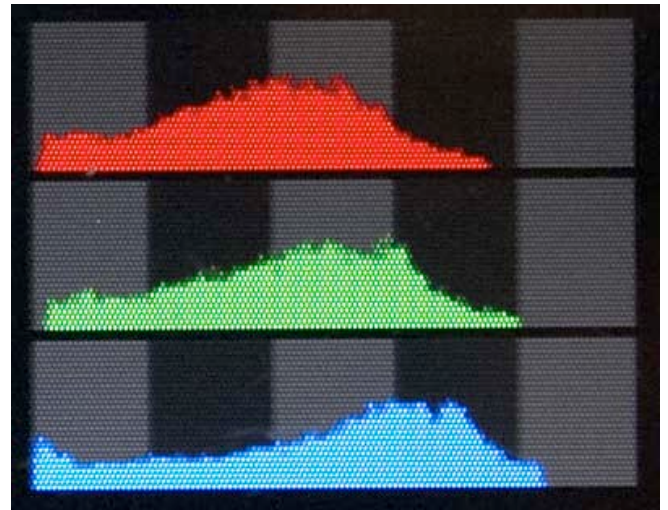
A tri-channel histogram from the Canon 1DsMk2. This histogram shows a properly exposed photograph, with details both in the shadows and highlights. Furthermore, this photograph was exposed to the right, as demonstrated by the shadows having been moved away from the left side. The tri color histogram clearly shows that not all three channels have received the same amount of exposure. The blue channel extends way further to the left than the red channel for example. If we had a single channel histogram to evaluate this image, we would basically be looking at the equivalent of the green channel because it is in between the red and green channel in exposure and therefore very close to being the average of all three channels. In that case, and if we placed the green channel all the way to the left, we would be clipping the shadows in the blue channel.



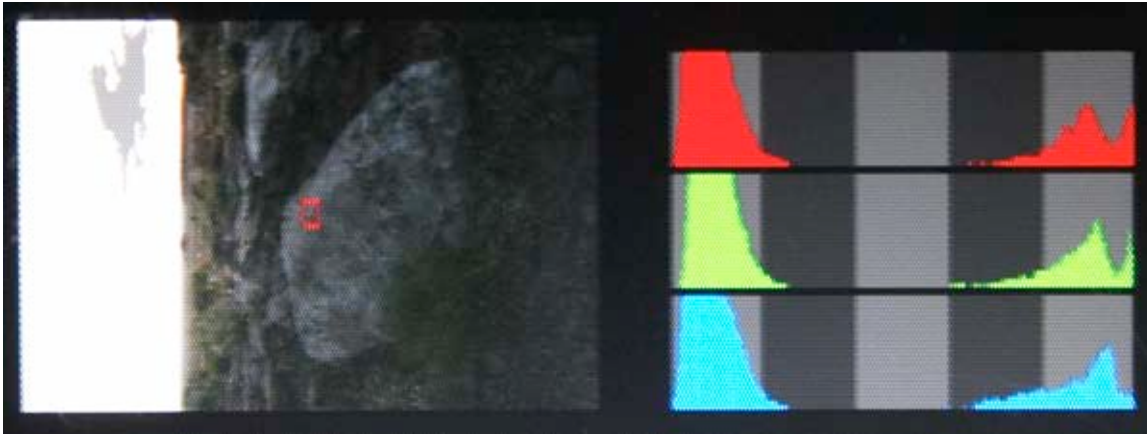
This histogram, while capturing shadows in both shadows and highlights, was not exposed to the right, thereby lowering the quality of the data in the shadows. There is no doubt here that shadows in this photograph will have a lot of noise in them. Since there is room to the right, it would be better to “expose to the right” in order to capture more data.



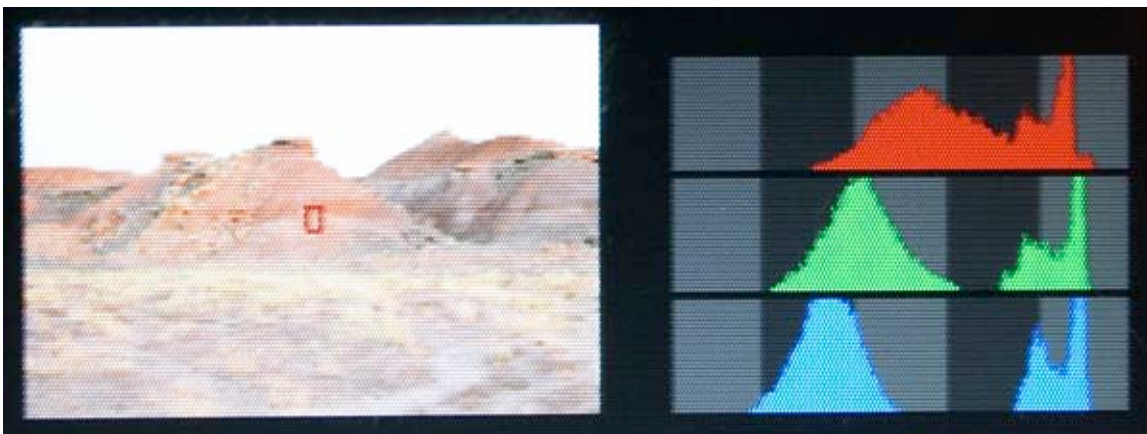
This histogram shows definite clipping of the shadows. This photograph will not have any details in the shadows. Here too, since space is available on the right side of the histogram, exposing to the right would have given us details in the shadows.



This photograph shows an even more dramatic shadow-clipping situation. However, because this is a star trail photograph, we expect shadows to be completely black. After all, it is night! Therefore, in this instance this is not a problem. In fact, because the exposure is done on bulb mode and for a very long period of time, there is virtually no way to expose to the right.



Here is the histogram that was clipped both in the shadows and highlights. This is a sunset scene looking straight west towards the sun, an extremely high contrast situation. In this situation, the only way to get details in both highlight and shadows is to take two photographs, one exposed for the shadows (overexposed) and one exposed for the highlights (underexposed) and then merge them into a single image in Photoshop.



Here is the histogram of a perfectly exposed photograph. The shadows have been adequately moved to the right by overexposing slightly, yet the highlights are not clipped, in fact there is additional space available between the highlights and the right side of the histogram. The photograph is brighter than it should be, and looks overexposed and desaturated, but this is not a problem, as it will be easily fixed during RAW conversion and/or in Photoshop. To see a photograph with proper brightness and saturation in the field, all we need to do is take a “visualization” capture by underexposing by 1 or 2 stops. Just make sure you do not use this visualization capture during Raw conversion! It may look better on the LCD screen, but the image quality will definitely be lower.