The New Exposure Management Technique

with Automatic ISO and Exposure Compensation

Cowboy Portrait surveying actions during a rodeo in golden hour lighting (Manual/Auto ISO, F8.0, 1/120 sec, exposure +.3)

In photography, a proper exposure is one of the critical functions, second only to good composition for a good picture. The exposure of an image impacts the focus and feeling to the viewer. A bright or dark, clear or fuzzy, warm or cool, picture displays how I feel about what I see. I hope that the viewers will also sense the similar feeling. From a negative perspective, poor exposures can degrade the User's perception. Overexposed highlights kill good compositions. Underexposed shadows kill good compositions. The good exposure of "just right light" is what we seek.

This discussion on Exposure Management is based on years of experience in action photography with a digital camera. In the genre of action photography, the exposure decisions must often be made in seconds. This is done in two

basic steps: 1) Set up the camera for your goals and 2) Use the exposure compensation to optimize the exposure.

There is the photographic “sunny 16 rule” (On a bright sunny day, the exposure for ASA 100 is F16, 1/125) and many other assorted exposure tricks that lead to a good exposure. Some people (older ones) even resort to using a technology called a light meter. Can you believe that one photographer used the brightness of the moon to estimate his exposure (Moonrise over Hernandez—Adams). All of these approaches will help, but all lack the fast optimization needed for capturing fast moving photography.

This approach works in most digital applications, but is most useful in dynamic lighting situations. Do you think this approach will help you? Here are three thoughts about my approach:

- I’ve successfully used the auto-iso feature on my Nikon D700 for many years, which makes acceptable images up to ISO 4000. Most of today’s modern DSLR or mirrorless camera are easily capable of making good pictures at ISO 16,000 or greater. However, I rarely photograph in very dark or night scenes that require these extreme capabilities—other’s do.
- Mostly, my digital cameras are used for action images on the go and typically, hand-hold photography. These situations change very quickly in subjects and lighting, which means that I may only have a few seconds to make the image. So, my adjustments have to be very fast.
- Another approach towards faster shooting is to simplify my vision—I see scenes either as a portrait (managing depth of field) or subject motion (freezing or blurring action). Other photographers have many other goals. There is a process for learning to configure a camera for these situations, and they are well documented. However, simply reading about them won’t provide all the skills for using them—you have to test and experiment.

Background

Most of our modern digital cameras have had an “auto-iso” capability for many years. Few of us have fully embraced the “auto-iso” capability because “we’re old school.” Mostly, we were raised with film where each roll had its own ASA, which is a term (comparable to ISO) used for denoting its sensitivity. When added to the other two other key camera controls of shutter speed and aperture, we have a term often referred to as the exposure triangle.

So, what is this “old school” perspective? Film typically comes in a roll or pack of sheets. Once put into the camera, we were usually became restricted to that sensitivity—Please note that it is possibly to make adjustments. However, that requires a significant amount of complexity in the film development. Most people stick to one speed/sensitivity!

Welcome to the modern world! Each image can be shot with it’s own sensitivity which doesn’t create development issues! We all knew that, but a frequent question is: What is the best ISO? A frequent photographer answer: the one that provides the best picture—haha. This is true but very confusing and not often very helpful. For the past few years, I’ve been a full time Rodeo Photographer. In this environment, the lighting drastically changes over the course of a day, the subject material and shade/bright conditions. Yet, I was determined to maintain that my old school techniques would be sufficient. They were not! There wasn’t enough time to reset the exposure parameters.

Too often, I would miss an important picture due to an exposure failure. In the environment of fixed-ISO, I could only change the aperture or shutter speed. A common approach would be to put the aperture on a specific setting (e.g. F8) and then hope that there was enough shutter speed. If the subject quickly became black/dark, the shutter speed would compensate and increase. At best, I’d have an overexposed image. However, if the image was white, the shutter would slow and I’d potentially end with a blurry subject—very bad. The impacts of shutter priority are also bad. The black subject would decrease the aperture and I might not have enough depth of field. A white subject would increase the aperture and give too much depth of field.

Compensation Process

Step 1—Determine your Camera’s Native ISO

To use the auto ISO approach, the first step is to make sure that you’re not over exposing the image. I call this “setting the low point.” While composing the scene, make sure that the camera selects an ISO higher than the camera’s native minimum setting. For example, I have a vintage Nikon D4 camera, which uses ISO 100 for its native minimum. In normal shooting, the camera won’t go lower below this value of 100. The goal is to ensure that the ISO indicates to at least 125. I also have Nikon D750 camera, which has a native setting of ISO 200 and I use a working ISO of 250 or higher. To increase the ISO, simply increase either the shutter speed and aperture.

Step 2 — Determine your shoot Condition Goal

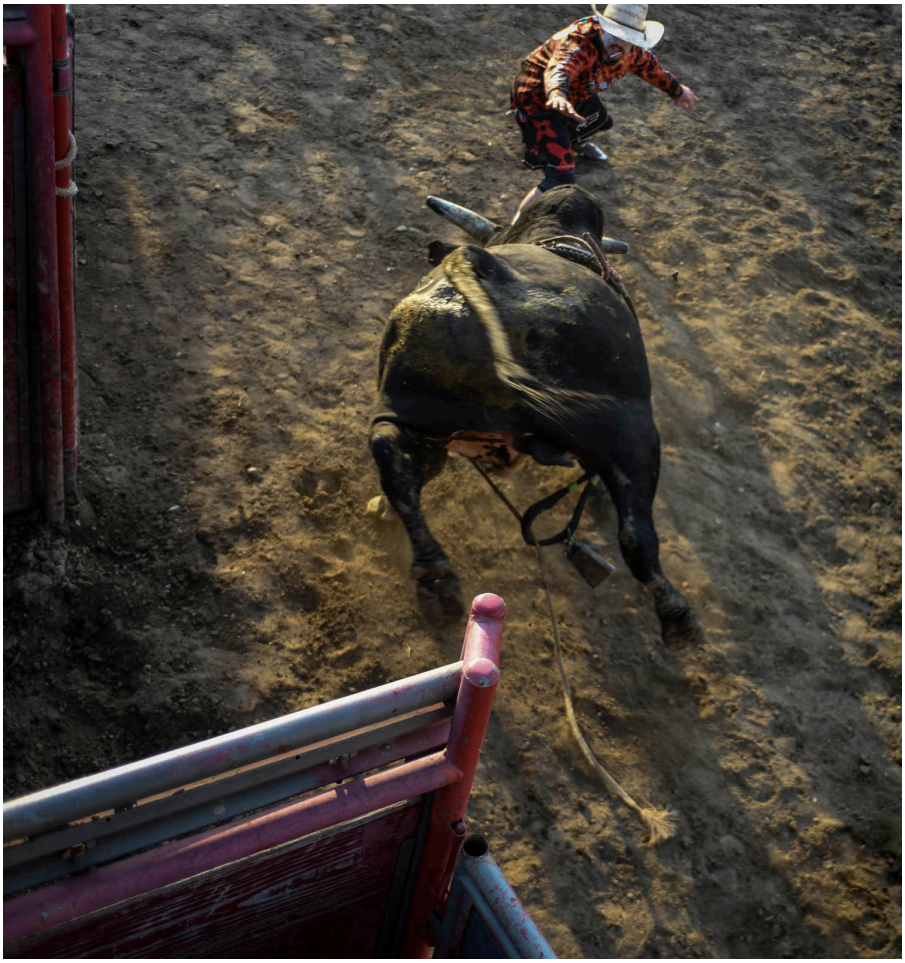
Please set your camera on the manual (M) setting. Manual allows adjustment control for both the aperture and shutter speed, which will vary the ISO. My perspective is to use the settings for to match your goals. One of my teachers have said that there are six different correct exposure settings for most scenes, and it is the photographer's job to identify the best one. These actual manual settings determination will be saved for a later discussion.

Step 3 — Compensation

Now, that the desired setup has been completed to get an appropriate exposure, we can talk about compensation and the ability quickly optimize the exposure. The optimization goal is now to ensure that we get the correct exposure for the scene. Unfortunately, the camera's light meter algorithm always wants to average a scene. If it it black/dark, the camera will provide an exposure solution that is lighter. The converse is true, because the algorithm will darken white/bright scenes. Photographers must recognize this flaw and "compensate."

- If the scene is dark, spin the compensation to the (-) negative direction
- If the scene is balanced, put the compensation at the (0) position
- If the scene is bright, spin the compensation at the (+) positive direction

Examples



Black Bull in deep shadow (Manual/Auto ISO, F3.2, 1/800 sec, exposure -.6)

Stopping the Cowgirl Action on a charging horse (Manual/ Auto ISO, ISO 16,000, F5.0, 1/1250 sec, exposure +0)

Mom & Daughter in a High-Key backlight situation (Manual/Auto ISO, ISO 560, F5.6, 1/125 sec, exposure +.6)