THE WHY, WHEN, AND HOW OF EXPOSURE COMPENSATION

Quick Guide
Written by Robin Nichols

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Photo by Robin Nichols

This photograph of a band playing at a country festival features what you might call 'tricky lighting.' There's a fair bit of daylight coming into the stage at the front but behind the guitarists you have harsh spotlights plus a bunch of other lighting, all of which are going to produce unpredictable photo results. The best exposures were made with the Exposure Compensation feature set to plus 1/3 of an f-stop in Aperture Priority mode. It's not a lot, but just enough to negate the darkening effect that the four bright spotlights would make on this frame. If you use Exposure Compensation in situations like this it produces cleaner-looking results and you spend a lot less time in front of a computer editing the images back to perfection.

Exposure compensation is a feature that most of us might have heard of but few actually know how to use.

Personally, I consider Exposure Compensation to be one of the most significant photographic techniques you can learn because it can so easily make or break any shot.

Simply put, Exposure Compensation is used in **Program**, **Shutter,** and **Aperture** priority modes to lighten, or darken, an exposure, thus overriding what the camera's light meter 'thinks' is the correct exposure value.

Photo by Robin Nichols

Every camera has an Exposure Compensation function which is usually located on the outside of the camera body for fast access. Some smaller cameras incorporate the function inside the 'less-easy-to-access' camera menu. The default position, denoted by a zero in the middle of the scale, offers no influence over what the camera thinks is the correct exposure, but add a plus or a minus value to the Exposure Compensation and what the camera meter thinks is the correct exposure is overridden to make the results brighter or darker respectively.

Before I carry on, I think it's important to explain something of how light metering works.

In many ways metering, the process of measuring the amount of light entering the camera, and the translation this information goes through to produce what photographers call a 'good exposure,' is a fairly simple electrical process that's backed by some serious technology in the camera software.

What You'll Learn in this Guide

- What exposure compensation is
- When we need to use it
- An understanding of what **metering patterns** are
- An understanding of how the **Histogram** works
- How to read the Histogram and subsequently make changes to the exposure

Years ago, in the days of film, I was sitting on a train somewhere in the middle of Thailand listening to a conversation between a couple of Europeans discussing the merits of their cameras.

One asked the other how many pictures they'd get on a roll of film, because "mine never lets me get more than about 32 or 33 pictures…" (per roll of 36-exposure film). This sounded hilarious to me, as if the camera was somehow limiting the number of pictures maliciously.

The other person admitted that the number of pictures they ended up with was a bit of a mystery as well but added, "…for some reason mine also seems to make up its own mind about how bright my photos come out…".

Again, this was funny, sounding as if someone in the camera factory had purposely programmed the camera to fail, or at least to act without any input from the poor owner.

Recalling that conversation, I totally get the frustration they were experiencing, and I'm sure many other amateur photographers experience the same. After all, why, if we own the latest camera technology, do we still suffer poor exposure results?

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Photo by Robin Nichols

In this comparison, the left-hand frame was shot with a zero Exposure Compensation value – not a bad result – but I wanted more 'atmosphere' from those laser-like beams of sunlight penetrating a dark alley in Marrakesh's souk. Right: I reshot at minus 2/3 stop and darkened it a bit more in Photoshop to emphasize the atmosphere generated by the smoke and sunlight piercing the gloom of the market.

HOW CAMERAS METER LIGHT

Cameras make their exposure decisions by assessing light being reflected off a subject. And there lies one of photography's (and my two Europeans') great problems.

Because metering is mostly read from reflected light, its strength is dependent almost entirely on the nature of that surface's color and texture.

For example, you'll get a wildly different exposure result by pointing the camera at a matte black wall compared with a shiny white-painted surface. The varying reflectivity creates a completely different metering analysis, and therefore a different exposure result.

I always joke that being a navy photographer should be the easiest job in the world, because shooting in an 18% mid-grey environment (the color of a warship) must produce perfect exposures every time as it is halfway between black and white.

It's not just measuring the amount of light that makes a good exposure; it's also where in the frame the camera takes its measurements from – and that's exactly where the serious technology developments mentioned earlier come in.

All cameras have several different metering modes, which essentially means 'metering patterns.' These patterns dictate how much exposure emphasis is placed on the top, bottom, and sides of the frame.

In general, you'll see more emphasis placed on the center of the frame because that's where the subject is usually placed. The rest of the frame is allocated slightly lower proportions of light metering depending on the pattern chosen and the purpose behind each setting.
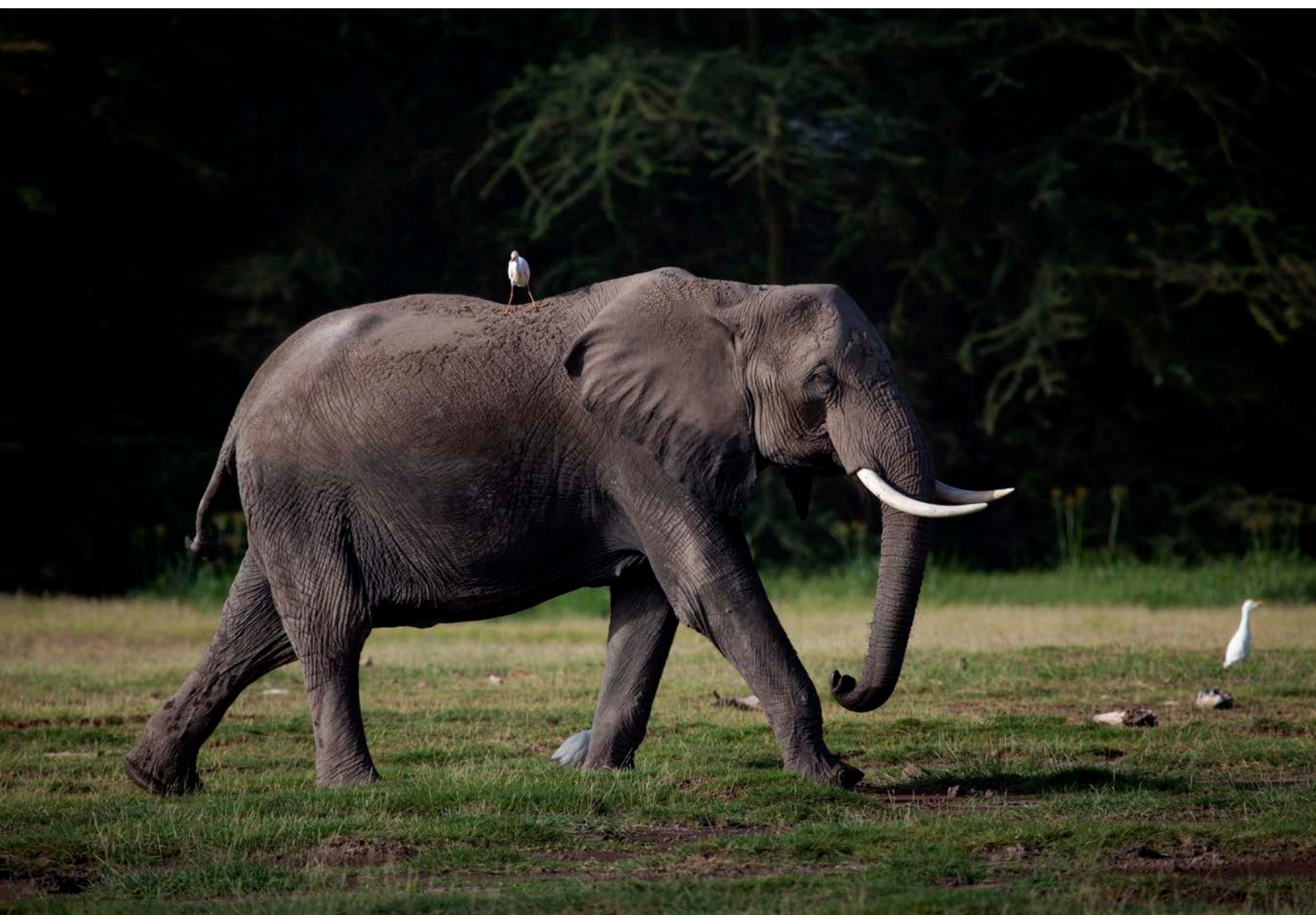
Photo by Robin Nichols

Even elephants need exposure compensation. Because the scene is mostly darker than a mid-grey tone, the camera naturally overexposes, producing a light grey elephant. While this is easy enough to fix using software, the white cattle egrets are also overexposed to the point that the tones get clipped, which means no amount of Photoshop work can recover the lost highlights. By underexposing the scene, the darker tones might go a bit too dark, but the highlight details are preserved – and remember, you can always brighten the dark tones with your software.

Nikon's proprietary metering pattern is called **Matrix Metering** and Canon's is called **Evaluative Metering.** In fact, all camera companies have their own specialist metering patterns. All do a great job of assessing the amount of light getting into the camera and making exposure decisions based on the balance of light read from the edges, top, bottom, and center of the frame.

Check your camera manual and you'll see other metering modes (patterns) that are available: average, average center-weighted, spot metering, partial metering, and multi-zone metering. Different cameras have slightly different metering modes (patterns).

METERING MODES (PATTERNS) IN BRIEF

Matrix/evaluative metering

- Best all-rounder for most shooting situations.

Average center-weighted metering

- Emphasizes 60-80% of the viewfinder and then averages out the rest of the metering area.
- Good for very uneven-brightness subjects.

Average metering

- Makes an even metering decision from the entire frame. Both average and average Center-weighted are good for ignoring very bright lights that are typically seen in urban night photography and interior shooting situations.

Spot metering

- Only reads about 5% of the (middle of the) scene for pinpoint accuracy.
- Can produce errors if you meter the wrong place in the frame.

What has all of this technology got to do with exposure compensation?

Well, despite all of the fabulous technology packed into the latest cameras, challenging light conditions still force cameras to make exposure mistakes.

Shooting into the sun will produce underexposure because the setting is very bright, while shooting at night inevitably produces overexposure because the setting is very dark.

Shooting a wedding party, where all of the men wear black, can cause issues with overexposure (because the camera meter reacts to the mass of black within the frame). Conversely, a backlit bride wearing all white can also send your meter off the scale the other way.

Some of you might recall a special camera setting **called 'Beach' or 'Snow Mode.'** I even remember seeing this symbol on my dad's old German rangefinder camera (no, not a Leica, unfortunately), and you'll find it on most good digital cameras too.

The light at these locations is very bright – virtually white – which challenges even the best camera light meters. So, applying this mode effectively dials in some **Exposure Compensation** – although it is either on, or off; rarely do you find a camera that permits you to change the amount of compensation in these particular camera shooting modes. It's either 'on' or 'off.' But it works!

Photo by Robin Nichols

Here's one of my favorite shots from a trip to Havana: a Cuban hanging out at the entrance to a bar in Havana. It was very dark – the interior of the building was dim. You might think of adding light to brighten up the man's face and help create a brighter white shirt, but as you can see from the series of frames, going lighter only makes the darker tones appear wishy-washy. Because the scene is so predominantly dark, the camera will automatically try to overexpose the frame from 'normal' (at left), to +1/3, and +2/3 of an f-stop. All three can be edited back to perfection (darker) because the highlights have not been clipped (last frame is the +1/3 example, with the shadows darkened a bit and the highlights lightened slightly).

If you take a snap and see that the LCD readout looks really dark, clearly something in the exposure has gone off the rails and needs to be compensated. Setting the Exposure Compensation to a 'plus amount' adds more light to the next exposure, effectively making it lighter. How much extra light you should add, in terms of f-stops, depends on a few factors. But of course, once dialed in, most cameras will automatically display a brighter-looking LCD image indicating that more light has been added to the exposure, and your camera is producing a better looking result.

To create this compensation, cameras change the shutter speed, aperture, or both depending on the shooting mode that you're using. A slower shutter speed lets in more light ('+' exposure compensation) and produces a lighter resulting image, while a faster shutter speed lets in less light ('-' exposure compensation) and makes the resulting image darker.

When the aperture is increased in size (a smaller number such as f/2), more light is let in resulting in a lighter image. When the aperture is decreased in size (a larger number such as f/22), less light is let in resulting in a darker image.

Photo by Robin Nichols

This was my favorite shot from this sequence. It was shot with an Exposure Compensation setting of -2/3 of a stop. The resulting image was converted to black and white (in software) and darkened slightly for added mood.

You can apply this lightening/darkening compensation in steps of one third of an f/stop, though in practice, this is such a small amount as to be almost invisible. Note that you can usually change these increments from thirds to half stops in the camera menu, which is more practical.

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WHEN DO YOU USE EXPOSURE COMPENSATION?

If you have to squint into the light because the scene is bright, or strain to see anything because the scene is dark, that's when you'll most likely need **Exposure Compensation!**

The simple answer to this obvious question is whenever you think it needs it; if the LCD screen image preview looks too dark, or too light, add or subtract light with Exposure Compensation.

It works with all of the metering patterns, but it only works in your camera's **Program**, **Shutter,** and **Aperture** priority modes.

It does not work in **Manual** mode. In Manual mode, you have to change both the shutter and the aperture to get the right exposure balance yourself. There's no camera automated process to be tricked – you just have to keep adjusting one or both of those settings until it looks perfect.

Program Mode automatically reads the light and sets both the shutter speed and the aperture to give a good balanced exposure.

The other two, **Shutter Priority** and **Aperture Priority** modes, are semi-automatic modes, where the photographer chooses a shutter speed or f-stop, respectively, and the camera does the other half, balancing an aperture or shutter speed to match.

All three automatic modes can easily produce over- or underexposure, simply by shooting in tricky lighting.

One of the best ways to check if your exposures are looking good, especially if you are shooting in bright light and it's difficult to see the image on the LCD screen clearly, is to use the **Histogram**.

Photo by Robin Nichols

In this illustration, I made six exposures with a fixed aperture of f/9, but I dialed in Exposure Compensation values of -3, -2, -1, normal, and +1 and +2 stops. Look at the position of the Histogram in each exposure. As the shutter speed slows, the Histogram moves from the left to the right (underexposure to overexposure). In this example the normal or the +1 f-stop examples are the best of the bunch because there's no apparent over- or underexposure present in the file.

UNDERSTANDING THE HISTOGRAM

The Histogram is another one of those features that I know many photographers have seen on their LCD screens but most might not know what it represents.

Take a photograph and then press the **Info** (information) or **Disp** (Display) buttons on the back of the camera body (this should cycle through several different screens with each press of the button). These screens show different modes of information, from just the image on its own to basic shooting information to more shooting information with the Histogram (that weird-looking graph thingy).

The Histogram graph shows us the proportions of tones in the image – either before it's captured or after, depending on the camera model. If the graph shape looks like a perfect triangular mountain – not touching either the left- or right-hand sides and with the highest part in the center – it means most of the tones
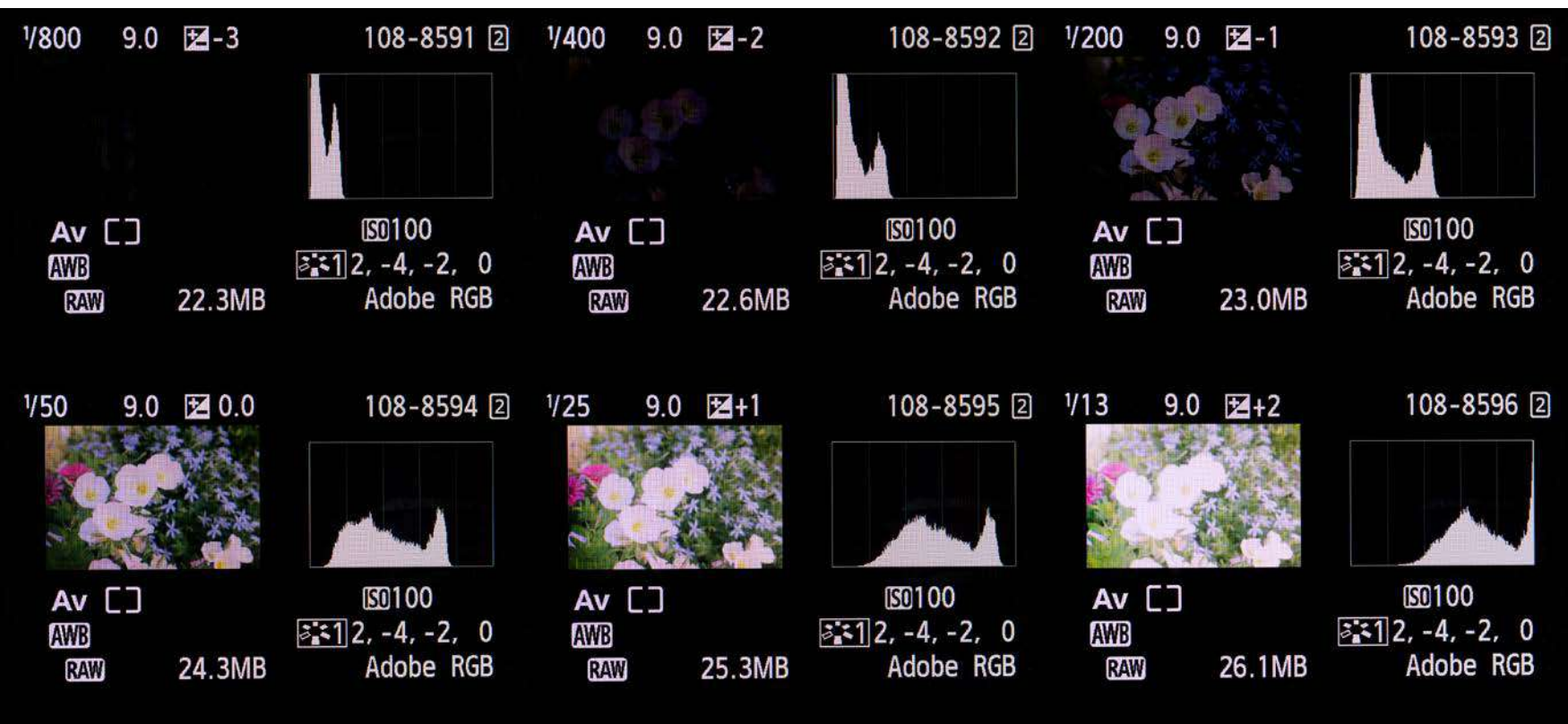
are in the mid-grey zone and that there's no over- or underexposure present in the file.

Change the **Exposure Compensation** feature from 'normal,' or 'zero,' to 'plus **two f-stops'** and you'll see that in the next Histogram readout that mountain range has shifted significantly to the right-hand side.

In fact, if it now touches the right-hand edge of the graph display, it indicates overexposure. If you dial in **minus two f-stops**, the mountain range shifts in the opposite direction, toward the left-hand axis, and ultimately underexposure.

This is a perfect way to tell if your exposure is on target or not.

In fact, you don't even need to see the photo playback, just the Histogram. By exposing to get the mountain range somewhere in the middle of that graph base line, without it touching either the left- or right-hand sides, you have produced a near perfect exposure.

Sure, you could further tweak the left/right position of the graph by dialing in another third, or half a stop, of compensation, but providing it's not touching either side you can easily edit it to perfection in Photoshop, Lightroom, or any other good photo software.

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Hey there!

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ABOUT THE AUTHOR

Robin Nichols is a UK-born photographer. He has spent the past 30 years in Sydney, Australia, where he began work as a cameraman, then as a freelance photographer.

He worked as a freelance writer and then as a magazine editor for several photography publications for more than eight years. He also ran his own publishing business, producing two specialist magazines - *Better Photoshop Techniques* and *Better Digital Camera* magazine.

Aside from conducting photo tours and workshops, Robin teaches photography, video, and post-processing classes through the Centre for Continuing Education at Sydney University.

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