CHUDLEIGH CAMERA CLUB

Basic Skills 6 Focus Sheet

Other ways of controlling exposure

Exposure is fundamental to photography, and most of the previous Focus Sheets have at least touched on the subject; No.2 in particular discussed the basic 'exposure triangle' of shutter speed, aperture and ISO in which various combinations can all result in the same overall exposure. In this edition, we'll take a look at other ways of controlling exposure, such as metering modes, exposure/flash compensation and exposure lock.

1. Metering Modes

Most DSLRs will have button, dial or menu to change the area of the frame over which the exposure meter takes its reading. Generally these are:

Matrix: the camera meters a wide area (more or less the whole fame) and sets the exposure according to the distribution of colour, composition and 3D distance (if the lens supports it). The whole frame area may be given equal weight, or the central part of the frame may be given a little more weight than the edges, depending on the camera design. Matrix mode is most useful for wide-area shots such as landscapes, where a balance of exposure over the whole frame is required.

Centre-weighted: As for matrix metering the camera meters the whole frame, but the central portion is weighed more highly. The size of the central area may be selectable or fixed, but is typically 10-20mm in diameter on a full frame (35mm-equivalent) sensor. Centre-weighted mode is the usual setting for portraits and similar, where the background is of less importance than the main subject.

Spot: As you might guess, the spot mode uses only a small area (typically 5mm – 1-2% of the whole frame). This circle is usually centred on the current focus point, so that the subject of interest is correctly exposed when the background might be especially dark (for instance the subject is brightly lit in an otherwise dark room) or light (in cases of back-lit subjects).

In this sequence (sorry about the awful subject!), the camera settings were unchanged apart from the metering mode. From L-R: matrix; matrix; centre-weighted; spot.

2. Exposure Compensation

When using other than full manual metering (i.e. A, S, P or scene modes), the camera will in general select the correct auto-exposure for most subjects. But as the metering system is trying to balance an average brightness, it is really aiming for (in black and while equivalent) a mid-grey tone overall. Subjects not conforming to this ideal tone will fool the meter. For instance, taking a shot

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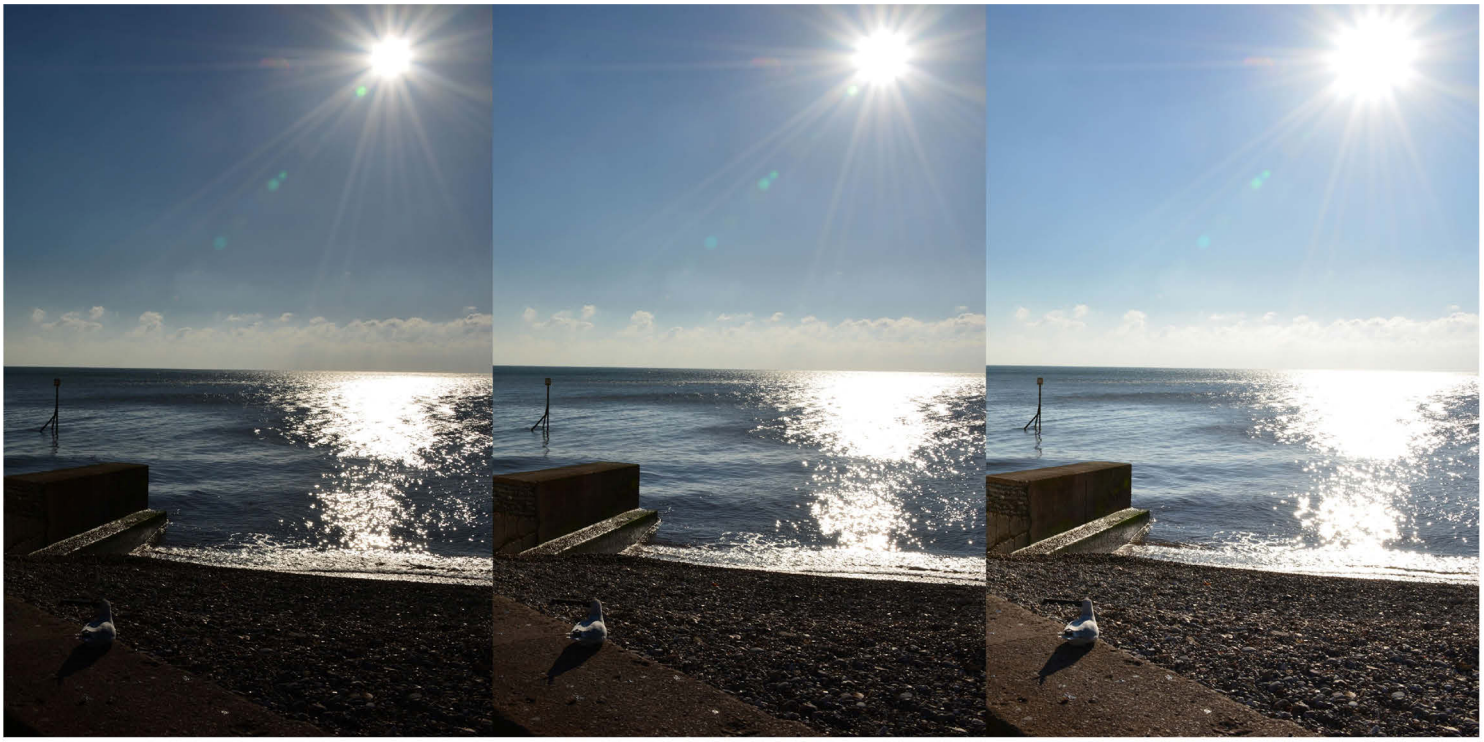
of a white wedding dress or a snowy landscape will result in a dull, rather grey dress or snow. Conversely, a naturally dark subject (the groom in a black suit) will come out dark grey rather than black.

While this can be compensated for in post-processing, the camera's auto-exposure can be manually adjusted using the exposure compensation button (or menu). Most DSLRs will allow you to lighten (positive compensation) or darken (negative compensation) the exposure relative to the camera's auto-setting. Exposure compensation (EC) can typically be set up to ±5 EV (or 'stops') in ½ or ☒EV steps. EC is most effective when used with spot or centre-weighed metering modes.

In some cases, the subject may contain a large range of tones from very dark to very light – a high contrast or large 'dynamic range' scene – and the camera may struggle to give a single correctly-exposed shot. In these cases, taking a more than one picture using different EC values may help to select a compromise setting.



In the above sequence, the camera has been set up to take three identical shots in 'bracket' mode, which automatically applies negative and positive EC offsets – in this case ±1.7EV – from the central 'normal' (0EV) exposure. It is a matter of taste and what part of the frame is judged to be 'correct' in context; perhaps the sun and sea-sparkle of the first, or the beach in the last. Finally, it's possible to merge all three (or more) shots into a single HDR (high dynamic range) image in post-processing, though this is a more advanced topic to be covered in a future Focus Sheet.

3. Flash Compensation

Flash compensation is rather like normal EC except that it alters the output power of a flash gun (built-in or external) over a typical range of -3EV to +1EV in ½ or ☒EV steps. This is used to change the brightness of a subject relative to the background,

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for instance to increase a fill-flash effect or to decrease highlights or reflections. Flash compensation can be combined with normal EC in which case the values are additive overall. All but the simplest external flash units also allow compensation, or relative power output, to be set on their own controls, which again is added to any value set on the camera.

4. Exposure Lock

On most cameras, when the shutter-release button is half-pressed, the focus is frozen, allowing the shot to be re-composed without altering focus (unless in 'continuous' mode), but the exposure will still alter as the scene changes.

DSLRs will also usually have a dedicated AE-L/AF-L button (as above) which can be set up in the menu to act on exposure alone (AE-L), focus only (AF-L) or both (default). In AE-L mode, when this button is pressed (depending on the camera, a singe press may hold the setting, or you may have to keep pressing it), the initial exposure will be maintained, allowing re-composition and possible refocussing by releasing the shutter button and taking the shot when ready again.

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