“Know your Camera”

Some notes I made to support Elisa Nishimura’s “Know your camera” presentation on 14th Sept. (Mark Taylor)

Disclaimer: These notes are for NIKON cameras (but 90% of it is relevant to all other makes…I’m just not sure which 90% ☺)

1. Metering Modes

3 main modes. Matrix/Evaluative, Centre-Weighted, Spot.

Background.

To calculate light levels, cameras convert the scene in front of the lens to greyscale. It then averages all of the light and dark pixels. The result is compared to 18% grey, which is deemed by camera makers to be the optimal exposure (i.e. a well-exposed image will “blend” to an 18% grey image if converted to greyscale). The camera uses the exposure meter indicator to tell you how close you are to 18% grey (if you are using manual mode). If you are in one of the semi-automatic modes (A, S, P) or full automatic mode, it will automatically adjust to make sure the exposure achieves 18% grey.

In high-contrast situations, this averaging can be problematic. An average can be the worst of both worlds with neither the light nor the dark areas properly exposed.

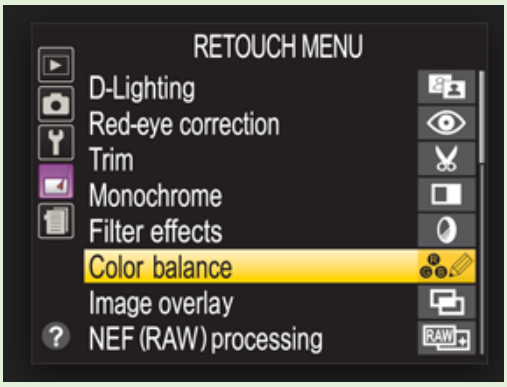
Metering modes allow you to choose how much of your scene is to be considered by the camera for metering purposes: the whole scene, (matrix), mainly the centre area (centre-weighted), or just the point in the middle of the frame (spot).

How? Depress the metering button, and rotate the command dial to cycle through the options.

Top tips.

- In fully automatic mode, you are restricted to matrix metering.
- On NIKON cameras (and probably other makers) the centre-weighted or spot-metering do not follow the focus point. They are always in the centre of the frame. If you want your subject to the left or right, meter and focus with them in the centre of the frame, then re-compose.

2. Cropping and simple edits in camera raw.



Background.

It is possible to edit images in-camera. All images edited in this way are new images (unless you expressly choose otherwise). All re-touched images are in JPG format (even if the original was a RAW file).

Why edit in-camera?

If you want to post something to Facebook or to a friend and you don't want to/need to use Photoshop to crop, straighten etc.

How?

Menu > Retouch Menu.

Choose from (1) D-Lighting, (2) Red-eye correction, (3) Trim - aspect, (4) Monochrome, (5) Filter Effects (colour intensifier, starburst, soft), (6) Colour Balance, (7) Image overlay, (8) RAW processing, (9) Resize, (10) Quick retouch, (11) Straighten, (12) Distortion control, (13) Fisheye, (14) Colour outline, (15) Colour Sketch, (16) Perspective Control, (17) Miniature effect, (18) Selective Colour (19) Edit movie.

Top tips.

- Use playback button to select image. Press "I (information)" button. Select "retouch". This is a shortcut to the main menu system.
- Red-eye correction will only work with images which were taken with a flash.
- All retouch options have their uses, but none that can't be done better in Photoshop/Lightroom. The advantage is that they are quick, and they can be uploaded to social media bypassing any Photoshop/Lightroom processing.
- The ones you are most likely to use will be D-Lighting which will dynamically adjust the light in the image (e.g. will increase the exposure of a foreground subject which is a bit dark because of back-lighting). Resize is equivalent to "crop". Trim will change the aspect 5:7, 10:8, Square etc. The straighten tool is good for horizons. Selective colour is good fun too. Edit movie is excellent if you want to keep just a small segment of a movie and recover the "waste space".

3. Shooting in JPG Vs Raw

Background.

There are several levels of detail (image quality) that can be captured in an image. The main two are RAW and JPG, but JPG also has some sub-levels (fine, normal & basic). You are really only interested in JPG (fine) and RAW.

What's the difference? JPG files are compressed (so some pixels are discarded to make the files smaller). As a rule of thumb, JPG (fine) files take up half as much space as the equivalent RAW files.

Your camera can be set up to save: just RAW files, just JPG files or both RAW and JPG. There are also options to save each type to different cards.

Why use JPG?

- They take up less space allowing you to take more images if your card is nearly full. They consume less storage space on your computer (reducing backup times).
- Your camera's maximum frame rate (burst) can be more easily maintained because the files are smaller.
- The pre-processed images are sharper and brighter on the back of the camera and on computer in comparison to their RAW equivalent.
- JPG's can be posted to social media/e-mails/websites etc. without conversion.
- Most print-shops only accept images in JPG format.

Why use RAW? The files are larger. They are uncompressed so there is no loss of pixels. You can recover far more information in post-processing than JPG allows. You can crop tighter without loss of detail.

How?

Menu> Photo Shooting Menu > Image quality > RAW (NEF) + Fine.

Top Tips.

- JPG files shot in monochrome cannot be processed later in colour. RAW files (even with in the Monochrome setting) still captures all the colour information.
- If space is not an issue, shoot in both RAW and JPG. This means that in Adobe Bridge you can review your JPGs rather than your RAWs, because the JPGs are initially brighter and sharper, and then use the RAW files to when you are actually post-processing.

4. **Shooting in Monochrome.**

Background.

It is possible to convert any image to monochrome using the Retouch menu (above). However, it is also possible to shoot in monochrome such that the images on your display will be monochrome. It is important to note that JPG files shot in monochrome do not save colour information. Files shot in RAW will.

Why shoot in monochrome? If your intention is to produce a monochrome image, then shoot in monochrome. It lets you pre-view without having to wait for post-processing, and adjust your shooting accordingly.

How?

Menu > Photo Shooting Menu > Set Picture Control > Monochrome.

5. **Pop-up flash.**

Background.

The pop-up flash is of very limited use. It produces a hard light, and is prone to causing red-eye. It can also cast a shadow over the bottom centre of an image because the lens casing interferes with the light from the flash. (The longer the lens the more this impacts). However, there are a few circumstances in which it is useful. If your subject is backlit, and you don't want to expose completely for the foreground (thereby causing the background to blow out), then use a fill flash. This will add light to the foreground but not to the background.

How?

Press the flash button to pop-up the flash.

Flash Exposure Compensation (FEC).

If you take a shot and find the foreground is either too bright or too dark, you can adjust the flash exposure.

Press and hold the flash button. Use the sub-command dial (front dial) to add or remove power to/from the flash. On NIKON the power range is -3 to +1 stop. This is much quicker than going into the flash settings to turn on manual flash and reducing the flash power.

Top tips.

- FEC only works when the flash settings are AUTO or TTL (Through the Lens). It won't work if the flash settings are set to Manual. The camera must also be in one the following modes (P,S,A,M or Scene).

6. **Video recording.**

How?

1. Turn on camera.
2. Press “Liveview (Lv) button”. And rotate Liveview outer dial from camera symbol to video symbol.
3. On the top of the camera use the button with the red dot to stop and start recording. The REC symbol will show on the LCD display. If the REC symbol is not there, you are not recording.

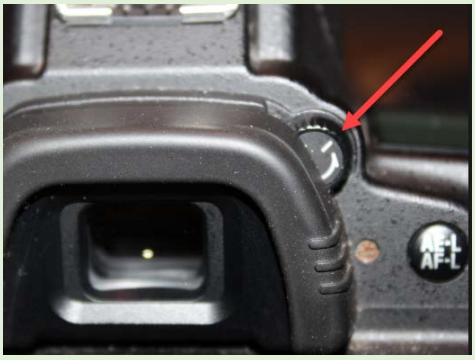
Clockwise from top left, the screen shows (1) the mode you are in (manual, auto, program etc.), (2) the focus mode (single or continuous), (3) picture control (SD- standard, NL-neutral, MC Monochrome etc.), (4) the white balance, (5) the frame rate and resolution, (6) the amount of recording time left on the card, (7) the recording mode (video), (8) the ISO, (9) the F stop, (10) the shutter speed, (11) metering mode, and (12) the sound levels and sensitivity (A – automatic).

The resulting file is a .MOV file which can be opened in Photoshop or many other video-processing tools. Don’t worry if playback on a movie player is poor. Rendering the video in one of these tools will make it better. You can also capture decent stills from a movie file (there is a quick way of doing this using the “i” button with a clip selected or using the “retouch” from the menu).

Top tips.

- Set up for automatic recording as far as possible. This means setting your mode dial to Auto. (Using Programme or Scene will also work but you are beginning to take personal control).
- Set white balance to auto (you can’t change these in Scene or Auto, only in P,A,S, or Manual).
- If you are using Programme or Scene then press and hold the AF button (below the lens-release button) and rotate the main command dial to select “F” for continuous focus rather than “S”. This means your lens will refocus continually as you move the camera.
- Use an external microphone, otherwise the sound of the motor “hunting” for focus will be very evident on your recording.
- Be aware that recording at 1080p (60 frames/sec) will consume almost 1Gb of disk space per minute of recording. A 32 Gb card will give about 40 mins recording time. Using the menu to select “HIGH QUALITY” rather than the default “NORMAL” will half the recording time.
- Use the “info” button for grids, horizon lines, histograms.

Adjusting the diopter.

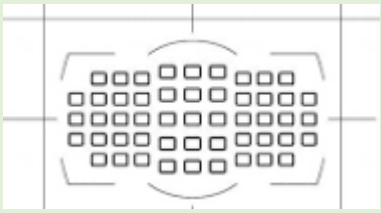


The diopter is a feature of the camera viewfinder, and is characterised by a small thumb-wheel to the side of the viewfinder itself. It allows you to customise the focus of the viewfinder to your particular eye. It is important to match the diopter to your eye.

Why?

If you don't, nothing through the viewfinder will be in sharp focus. The camera will still focus and the image may be sharp but you won't know than unless you look at the back of the camera, or see it in post-processing.

How?



Turn the diopter dial fully clockwise. Point the camera at a clean bright surface. Rotate the thumb-wheel anticlockwise until the AF brackets are in sharp focus. You will need to "rock the dial" to find the best focus.

(You may not see all of the squares shown, but you will see some form of grid).

Mark.