

DIGITAL SLR CAMERA SETTINGS



This is a discussion on camera settings for landscape photography. New photographers may find this a good place to start.

The last several pages cover other miscellaneous

Digital photography has made setting up the camera far more challenging; it's easy to feel overwhelmed.

In this section we'll, cover important settings to be aware of.

The settings discussed assume shooting landscape photography from a sturdy tripod.

The settings given are the ones I use.

That does not make them right or wrong, they are simply the ones I like for my workflow.

Other photographers may be very happy with different settings.

Modes

Many photography conversations will involve the word “mode”, where mode refers to something different depending upon the context of the discussion. This page is my effort to stop confusion before it starts... Hopefully.

There are 4 types of “modes” on the camera.

Shooting Mode: How the camera makes exposure decisions. Manual, Shutter Priority, Aperture Priority, Program...

Metering Mode: Used to decide where in the frame the camera samples light for metering purposes; to stimulate the light meter.

Focusing Mode: Sets how the camera focuses. e.g. Auto, manual, focus once and quit, focus constantly, focus and track...

Drive Mode: Determines what happens when the shutter release is depressed. e.g. One trip of the shutter or when held down constant tripping of the shutter; rapid fire.

If new to landscape photography, we recommend getting out the camera and making adjustments as we go along.

Diopeter Adjustment – If like me, your vision is not perfect, then check this out.

To correct for vision issues, DSLR's often have an adjustment wheel near the viewfinder that one can spin while looking through the viewfinder.

Adjusting the diopter for one's eye will make looking through the viewfinder much simpler and far easier to assess compositions.

Note: The viewfinders of most DSLRs only reveal 85% to 95% of what the sensor sees. The viewfinders of most pro level cameras reveal 100% of what the sensor sees.

Adjust the diopter for your eyes. Hint: look at the digital readouts in the eyepiece while turning the diopter.



Metering Modes

Metering is used to determine the proper combination of aperture and shutter speed to expose the sensor to the appropriate amount of light.

Cameras may sample light from various sections of the image.

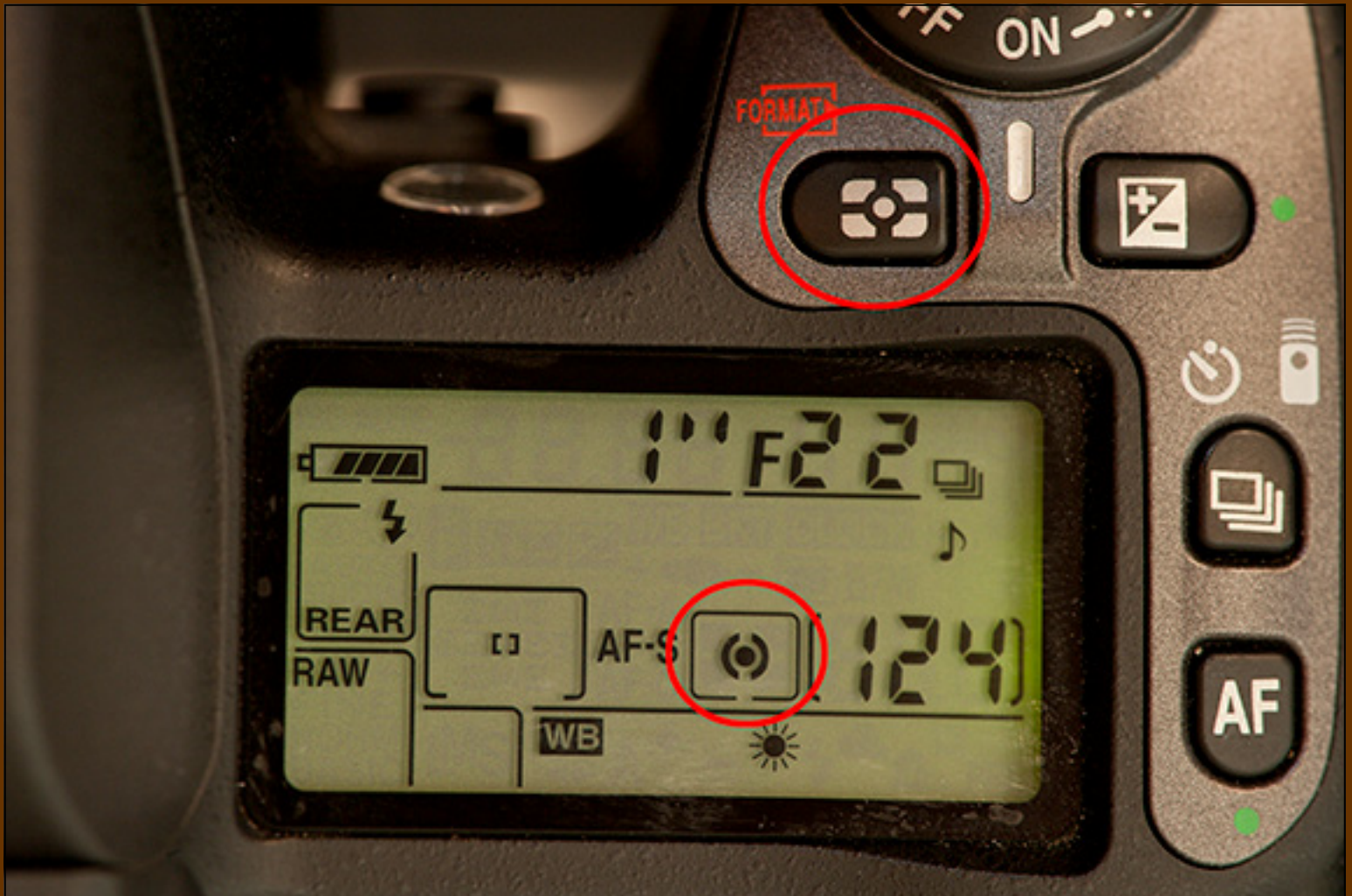
Typically, there are three options for where the camera samples light in the image (Canon has 4).

1st option) Spot metering - All of the metering is done utilizing the light in the very center of the composed scene (frame).



The symbol in the bottom red circle indicates that this Nikon camera is in the **spot metering mode**.

2nd option) Center weighted - Other portions of the frame are considered, though the majority (70 to 80%) of the light measured is around the center of the composed scene.

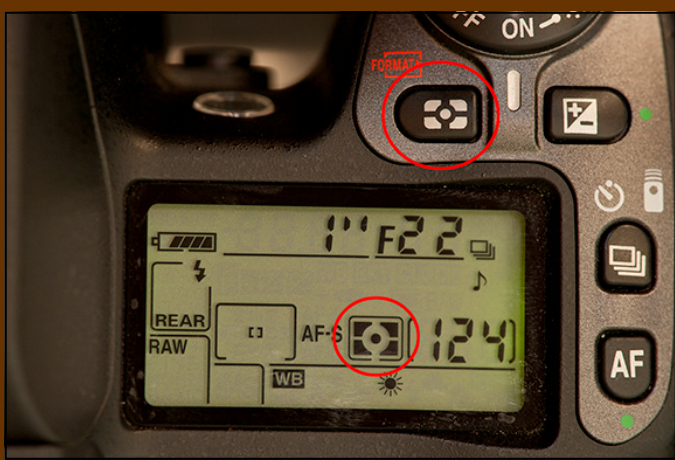


The symbol in the bottom red circle is Nikon's symbol for **center weighted metering**.

3rd option) Matrix metering (Nikon), Evaluative metering (Canon) - Light entering at numerous locations of the image is used in more or less equal consideration.

I typically select the matrix (Nikon) or evaluative (Canon) metering mode.

This is the default setting for most DSLRs.



The symbol in the bottom red circle is **Nikon's** symbol for matrix metering.

To change metering modes press the button in the top red circle and spin the back dial.

Conveniently, it is the same symbol as the one on the metering mode button (top red circle).



Look for this symbol Use Front Dial

Evaluative

The symbol in the bottom red box is **Canon's** symbol for evaluative metering (looks kind of like an eye).

Conveniently, it is the same symbol as the one on the metering mode button (top red box). Depress this button and rotate the front dial to change metering modes.

Image Quality (Raw, Jpg)

What is captured in the field is just the starting point to producing a fine photograph.

After recording information with the sensor, one must spend time in the darkroom (digitally post processing) in order to produce one's vision of an image.

Which kind of image capture (raw or jpg) provides the best information for post processing?

RAW

For landscape photography, shooting raw files is the very best way to capture an image.

Raw files have the most information; the best opportunity to produce a desirable finished image.

Raw files are actually data files in a format specific to the camera model, they always need further computer processing to create an image.

When a raw file is converted to an image file it may be saved as any type of image file including tiff files. These are advantageous because they may be edited and saved without losing any image information.

JPG files have been compressed by the camera software during processing, as a result some information has been discarded.

JPG files are image files that any computer can read.

They are processed by the camera so that no additional processing by the computer is required.

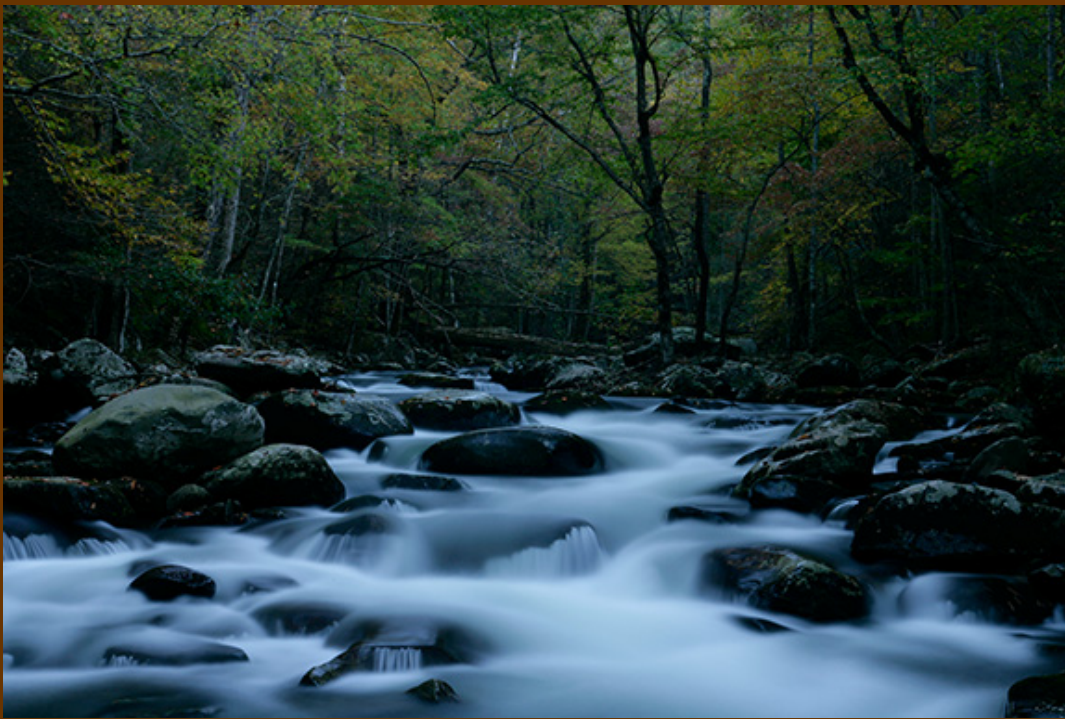
However, JPG files may be processed more if desired.

JPG files tend to be much smaller than raw or tiff files.

If one opens a jpg image and saves it again as a jpg image, then more information will be lost. Each cycle of opening and saving will continue to lose information.

If one converts a jpg image to a tiff upon saving, then no additional information will be lost.

If one keeps the image in the tiff file format, then future cycles of opening and resaving will not result in information loss.



Jpg capture



Processed
raw file

Raw files have more information, thus greater editing headroom.

Most beginners to digital cameras are scared of raw files, because they require post processing and that means another huge learning curve.

So, at first jpg images are taken, then both jpg and raw files are captured. Then, eventually, the jpg files are dropped and just raw files are captured.



Jpg capture



Raw capture
no corrections

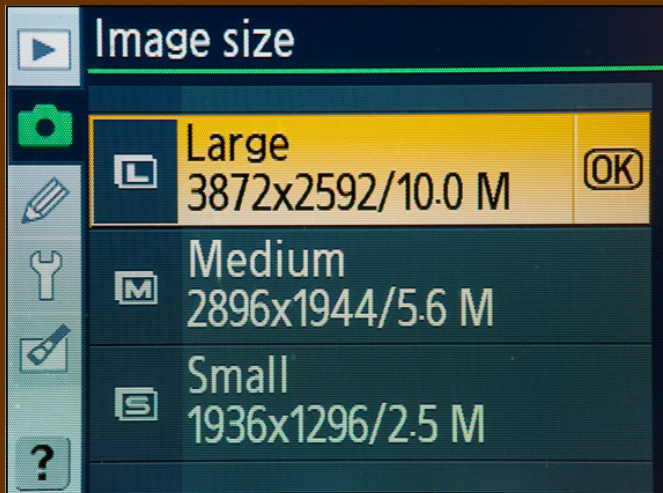


Raw capture
(corrected and adjusted).

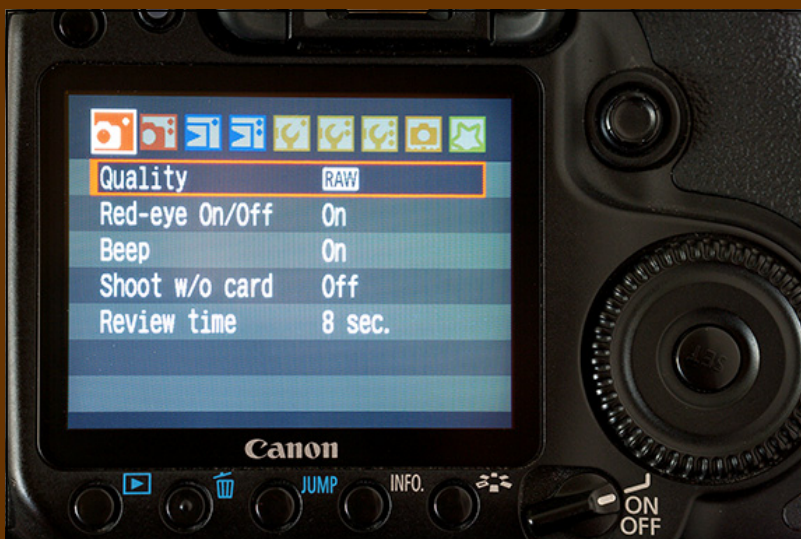
If capturing jpg images, then select the largest and finest option available.



Nikon D80 image quality adjustment.



Nikon D80 image size.



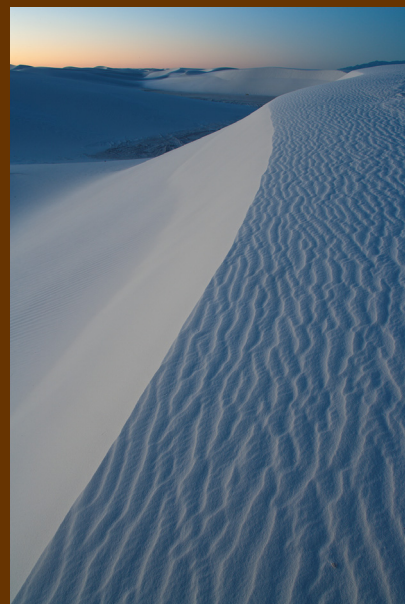
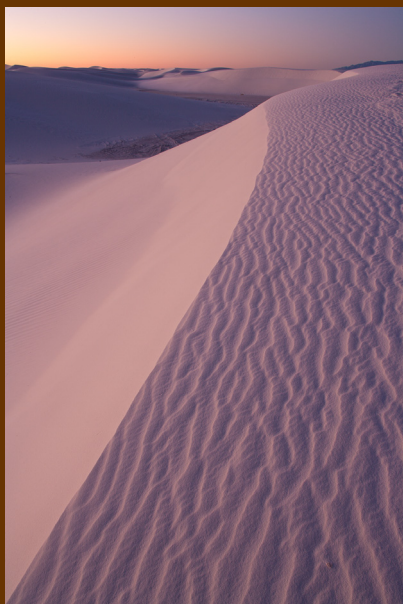
Canon 40D image quality adjustment set to raw.

Depress the set button in the middle of the back dial for more options including jpg.

White Balance Adjustment – In the past I'd photograph landscapes with daylight white balance. However, I frequently had to make large white balance adjustments in post processing. This was not an issue, adjusting the white balance of a raw file is a non-destructive edit. But, it was taking time to find an acceptable white balance setting. Who has more time?

Now, I usually leave the white balance set to auto. I find this typically provides a better starting point for fine tuning the white balance in post processing.

If capturing jpgs, then I advise getting the white balance correct in camera. It can be a destructive edit in post processing.



Color Space; Size of Crayon Box – In almost all cameras this setting is done in a menu selection. If one is capturing raw files, then this setting is meaningless. With raw files the color space is determined by a choice made when converting the raw file into an image.

If capturing jpgs then the color space should match the intended output.

If one intends to view the image only on a computer or other digital device then the sRGB color space is the choice.

Use the Adobe RGB 1998 color space if one intends to print. It is easy to convert (in Photoshop) to sRGB when preparing an image for computer or digital device viewing.

sRGB color space (small box of crayons) has a narrow range of colors to work with.

Adobe RGB 1998 color space (large box of crayons) has a wide range of colors to work with.

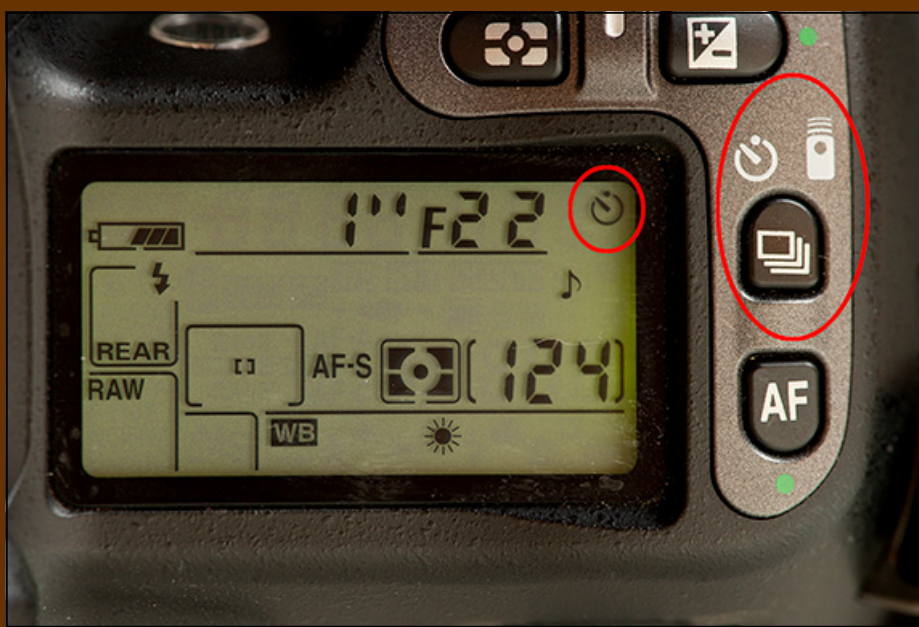
Self Timer

Using the self timer allows one to make an exposure while not touching the camera; very helpful in preventing blurry images due to camera shake caused by tripping the shutter.

If a cable release or cordless remote is not being employed, then I strongly recommend using the self timer.

I use the self timer for most of my landscape photography.

I attach a cable release only when timing is critical, e.g. photographing breaking waves at the beach.



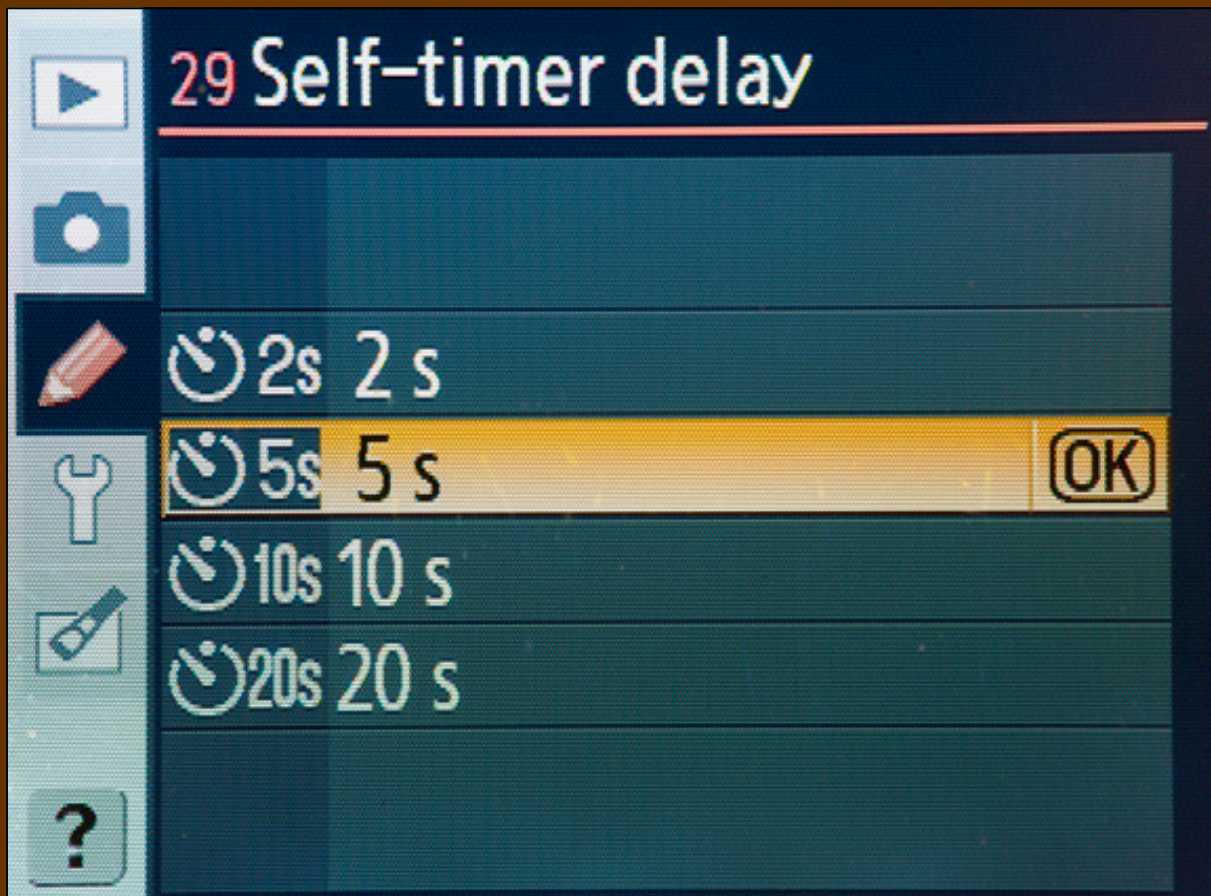
Nikon D80 self timer. Repeatedly pushing the button will cycle through certain functions including the self timer.



Canon 40D self timer. Hold the button in the upper red box down while rotating the back dial. Notice the changes in the lower red box when the back dial is rotated.

Often, somewhere in the menu, one can choose how long the self timer will count before tripping the shutter.

For most shooting situations I set this to 2 seconds.



Nikon D80 self timer delay amount.

Highlight Warning (the blinkies)

I like having this feature enabled.

If a portion of an image is so overexposed that no information is recorded, on one color channel (pure white) or more, then that portion of the image will blink.

With some cameras this warning needs to be turned on in the menu to have it available when replaying an image.



Nikon D80. Push and release the playback button to display the image, then push up or down on the multi selector to cycle through various information readouts including the highlight warning. When viewing this readout, areas of the image where the highlights are blown out, will blink on and off.



Enter the menu as indicated in the image above to enable highlight warnings on a Canon 40D. Once this is enabled, areas of the image where the highlights are blown out, will blink on and off during image review.

No memory card lock – Depending upon how this setting is toggled the camera may take photographs without a memory card inserted. Say what??? Yep, this is really silly.

Please **disable** the ability of the camera to take photographs without a memory card inserted.



Nikon D80; shutter release locked without a memory card installed in the camera.



Canon 40D; in the off position the camera will not shoot without a memory card.

Formatting the memory card

Upon inserting a new memory card or after downloading and backing up images from a memory card, I format the card in the camera.



Formatting a memory card with the Nikon D80.



Formatting the memory card with the Canon 40D.

Auto rotate – While shooting with the camera in the vertical format, I like images to replay in the vertical format; disable rotate.



To turn off auto rotate with a Canon 5D Mark III. Enter the menu as indicated above and select the symbol for “On for computer only” then press set to accept the change.



To turn off auto rotate with a Nikon D80. Enter the menu as indicated in the image to the left and press “OK” then select “OFF” and press “OK”.

Nikon - V.R.; Vibration Reduction

Canon - I.S.; Image Stabilization

Do not use when shooting on a tripod!

Additional camera settings not discussed here,
but very useful to know about.

For those participants who are interested in these settings we will happily cover them during the workshop.

*AEB — Auto Exposure Bracketing

* Number of Bracketed Shots (not all cameras)

*Bracketing Sequence (Canon)
Auto Bracketing Order (Nikon)

*Bracketing Auto Cancel

*My Menu Settings (Canon)

*Custom Shooting Mode (Canon)

*Mirror Lockup

* Live View Shooting

MISCELLANEOUS ITEMS

To eliminate blurriness due to handholding the camera, how fast does the shutter speed need to be?

We can calculate this, but first we need to know something about the camera.

What is the camera's lens multiplication factor?

Lens Multiplication Factor (LMF) A.K.A. the crop factor – As a result of sensor size, many DSLR cameras have a lens multiplication factor greater than one; LMFs range from about 1.3 to 2, but for most cameras it is about 1.5. More expensive, full frame cameras have a LMF of 1.

The easiest way to discover the LMF of a camera model is to ask “Lord Google”.

Handholding Rule of Thumb – I recommend always using a tripod to shoot landscape photographs.

On occasion, one may wish to handhold the camera when taking snap shots of the family, pets or whatever. For these snap shots to be free from blur as a result of handheld camera shake, then the shutter speed should be at least as fast as:

$$\frac{1}{(\text{focal length of the lens}) \times (\text{LMF})}$$

For Example: Let's say the desirable composition was found with a focal length of 100mm and the camera's LMF is 1.5. How fast must the shutter speed be to ensure camera shake, due to handholding, does not blur the image?

$$\frac{1}{100 \times 1.5} = \frac{1}{150}$$

The answer: The shutter speed must be 1/150 of a second or faster, to avoid blur due to handheld camera shake.

If image stabilization is utilized, then often the shutter speed can be slower by a stop or two, sometimes more.

Circular Polarizing Filter

In many lighting situations, using a polarizing filter will help increase the color saturation of an image.

It does so by removing the shine or glare from non-metallic reflective surfaces such as water, glass, smooth leaves, rocks, etc.



Once the shine or glare has been removed, the color of the object becomes more apparent and will record with richer tones.

After the filter is attached to the lens, it will continue to rotate.

To use a polarizer, attach it to the lens, look in the viewfinder, then rotate the filter to taste.

There will be no effect when shooting parallel to the sun's rays.



Note: Camera models are changing all the time and each camera has it's own way of achieving the settings discussed.

Before the start of the workshop, I recommend setting up the camera as described in this lesson. Some of the changes may be difficult to figure out. Always consider asking “Lord Google” for help.

In the end, if you are still having difficulty and these settings are available on the camera, we'll get them squared away at the start of the workshop.