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The following pages refer to a lot of jargon, so here is a brief description to that jargon.

Aperture: refers to the hole in the lens that allows light to hit the sensor, (the electronic plate that records the image). The size of the aperture, (hole), can be changed from very small to very large in increments.

These increments are known as f/stops, (referred to as stops of light); the thing to remember is the f/stop controls the depth of field, (also known as DOF) in the photograph, (that which is in focus).

The smaller the number, the larger the aperture, which produces a blurred background; the larger the number, the smaller the aperture, which produces a sharp background.

Whoever invented that needs a good slapping. But it is what it is.

Shutter: The shutter is just that - a shutter that sits in front of the aperture and opens and closes allowing light to fall on the sensor. The shutter, by default will always be closed, only opening when the user presses the shutter release button on the camera.

Again, the length of time for the shutter can be altered and is measured in seconds and fraction of seconds. the shutter will double and halve for every stop of light, both up and down.

So the sequence would be slower = 1 sec, 2 secs, 4 secs and so on; Faster would be 1 sec, 1/2 sec, 1/4th sec, 1/8th sec, 1/15th sec, 1/30th sec and so on all the way to 1/4000th sec.

The slower the shutter speed= more light - the faster the shutter speed, less light. Also remember faster shutter speeds are used to freeze movement.

ISO: refers to the sensor's sensitivity to light. Again, the numbers double and halve, starting at 100 to 200 to 400 and again refers to a stop of light.

100 is the least sensitive, 400 the most sensitive. The ISO on a digital camera can go up to 6400, but remember, the higher the number the more noise will be in the photographs.

So to summarize:

All the elements here are known as the exposure triangle, and all the elements are measured in stops of light. The aim of all this is to get a good exposure, (look for the exposure bar in the viewfinder).

If, for example, you need a faster shutter speed to freeze movement because the wind is moving the branches of a tree, then you will be dictating less light going to the sensor resulting in an under-exposed image.

Therefore either a wider aperture, allowing more light into the camera, or a higher ISO, changing the light sensitivity of the sensor needs to be dialed in to compensate for the change in the shutter speed.

There is a handy link at the end of this tutorial, so you can practice using the exposure triangle.

A Typical DSLR Camera

I've used a Nikon D5300 as an example, as this is the camera I use and am familiar with.

All the features this camera boasts, are commonly found on the majority of the DSLRs on the market and while the various buttons might be in a different location on your camera - they will be there.



Buttons and Features



Buttons and Features. (cont).

Flash release Button

Zoom Ring

Focusing Ring

Automatic/manual focus switch

Image Stabilisation switch

Function Button

Lens Lock Button

High Speed Burst Button

Cover



Menu Button

Viewfinder

Diopter Adjustment

Information Button

Exposure/Focus Lock

Command Wheel

Picture Button

Vari-angle Screen

Joystick Dial

Zoom in Button

Delete Button

Zoom out Button



The Mode Dial



Auto: Fully automatic. The camera will detect the scene, lighting etc. And set the camera's Aperture, shutter speed and ISO to take a well exposed image

Program: Semi-automatic. The camera automatically adjusts shutter speed and aperture for optimal exposure. You can, however, choose other aperture and shutter speed combinations that will produce the same exposure: this is called "flexible program".

Manual: You set the shutter speed, Aperture and ISO. This mode gives you complete control of the camera.

Aperture Priority: Semi-automatic: You set the Aperture and the camera sets the shutter speed and ISO to suit the conditions.

Shutter Priority: Semi-automatic. You set the shutter speed and the camera automatically sets the aperture and ISO to suit the conditions.

The Buttons and features.



Effects: Sub divides into: HDR, Low and High Key, Night, Silhouette and many others.

Macro: For Close up work.

Sport: For capturing fast moving objects.

Child: For capturing the subtle skin tones.

Landscape: for Depth of Field.

Portrait: Sets the camera up for soft tones.

Scenes: sub divides for various scenes which include night portrait and landscape, sunset, beach, candlelight, pet and blossom shots as well as a few others.

Understanding your Camera.

Now we have all these buttons and switches identified, how does it all relate to the camera?

If I had to put it into any sort of context I would say this is a combination of the mode that's been chosen and the Command Wheel.

Lets first have a look at the Aperture Priority, (AV for Canon). When in this mode, turning the command wheel will change change the exposure one stop for every click of the command wheel.

If in this mode the Aperture/Exposure Compensation button is pressed at the same time, the exposure compensation will change by 1/3rd of a stop for every click of the Command Wheel.

When in Shutter Priority, (TV for Canon), the Command Wheel will change the shutter speed, one stop at a time. for each click if the Command Wheel. Again, by pressing the Aperture/Exposure Compensation button at the same time when rotating the Command Wheel, the exposure compensation will alter, by 1/3rd of a stop for every click of the wheel.

In all modes, except for Auto, pressing the Fn button while rotating the Command Wheel will change the ISO, as will by pressing the Flash Button, when rotating the Command Wheel, give all the options available for flash, red eye reduction, slow and rear flash and flash synchronisation.

So how do we know where we are with this plethora of information? All the settings will be displayed on the camera screen.



Mode Metering Matrix Shutter Speed ISO Exposure Scale Aperture

As the settings are changed on the camera, the resulting exposure will be shown on the exposure scale giving an accurate idea of what to expect when the Shutter Button is pressed.

Shooting in Manual Mode

We've had a look at what happens in the camera when we shoot in semi-automatic mode, now let's look at what happens in Manual Mode.

Rotate the Command Wheel and the shutter speed will change; hold down the Aperture/Exposure Compensation Button and the Aperture will change.

Exposure compensation is not available in Manual Mode - Pressing the Information button, will make the lower half of the screen live. (Highlighted in Yellow)



Press the Info button and the highlighted area becomes live.

These settings are a short cut to the custom shooting menu and are quickly altered by using the Joy-stick Dial.

AF-L / AE- L Locks

There will be occasions when the lighting of a particular scene will result in an under exposed shot. If this is the case, then the AF-L/AE-L lock button will come into it's own.

AF-L/AE-L lock stands for Auto Focus/Auto Exposure Lock and the default behaviour of the AE-L/AF-L button is typically set to lock both camera exposure and focus.

This can be changed in the menu and the options will typically be:

- AE/AF lock
- AE lock only
- AE lock (Hold)
- AF lock only
- AF on

AE/AF lock will lock both camera exposure (shutter speed, aperture, ISO and white balance) and lens focus. The feature will only be active while you hold down the button. Once you release it, the lock will be released as well.

AE lock only – will only lock the camera exposure, so focus will be reacquired if you recompose the shot. Also only works while you hold down the AE-L/AF-L button.

AE lock (Reset on release) – exposure will be locked once you press the AE-L/AF-L button and will stay locked until you take a shot, even if you release it.

AE lock (Hold) – exposure will be locked when the button is pressed and will stay locked even if you take multiple shots. The lock will be automatically removed if the camera is inactive for a time period set in the “Auto meter-off delay” menu setting, or can be also removed by pressing the AE-L/AF-L button again.

AF lock only – only focus will be locked while the button is depressed. The lock is removed as soon as you release the button.

My personal preference is to have the AE lock (Hold) set.

To automatically focus an image, the Shutter Release button must be pressed half way down. By pressing the AE-L/AF_L while the Shutter Release button is held half way down will lock the camera's current settings, in my case, exposure and ISO in memory. Once the exposure is locked I can then recompose the image and take the shot with the pre-set exposure.

Metering Modes

Across the range of DSLR cameras there will be several metering modes, with several different names, such as Spot Metering, Partial Metering, Centre Weighted Average Metering, (not on all bodies), and Evaluative Metering, (for Canon).

It's the same for Nikon, but with different names.

Spot; Centre weighted; Average, (not on all bodies) and Matrix Metering.

I can't really speak for Canon, as I'm not that familiar with them but with Nikon the three basic metering modes can be sub-divided, depending on the focusing mode you choose.

Spot



Normally in the centre of the frame, and will meter at the focus point.

Centre Weighted

Will evaluate the light surrounding the focal point to about 8% of the frame.



Matrix



Will meter across the entire frame.

Focusing Modes

Nikon's three Auto-Focusing Area Modes:

Single Point AF:

Dynamic Area AF:

and Auto Area AF—are designed to handle any shooting situation.

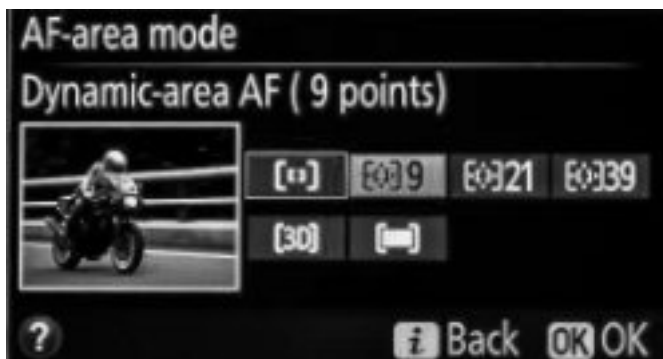
Single Point



With good light control and a static subject, Single Point AF ensures that the most important element in the composition, such as the eyes in a portrait, will be sharply focused.

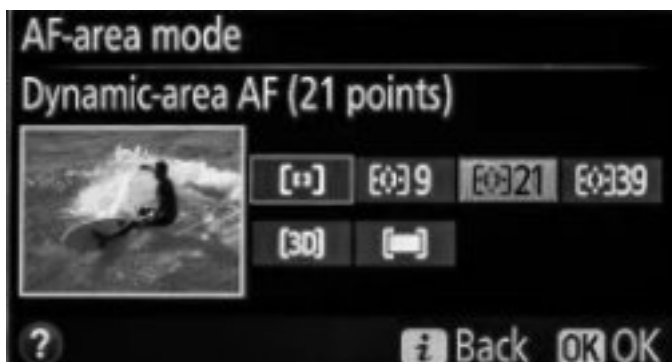
Dynamic Area

With Dynamic Area AF—and depending on which D-SLR you are using—you can select from several focusing options—9, 11, 21, 39 or all 51-points AF. Select a Single AF point and the areas surrounding it serve as backup—a significant advantage when shooting moving subjects.



Select the 9-point option when you want to focus on erratically moving subjects with greater accuracy.

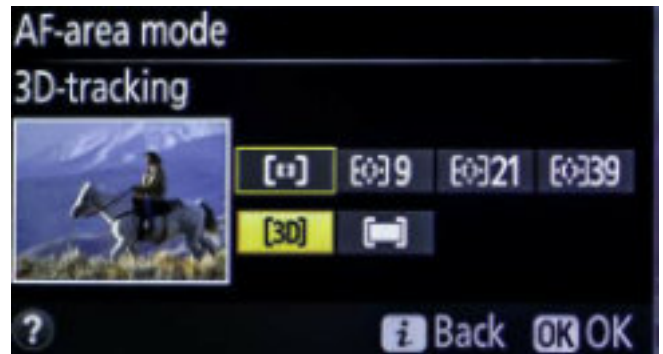
When dealing with insufficient contrast for fast focus detection, choosing 21 or 51 points makes detection easier.



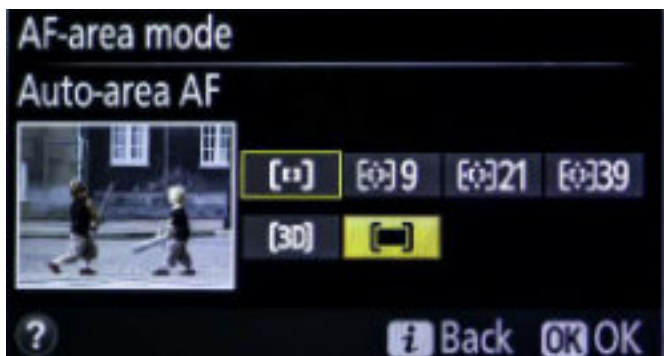
Focusing Modes. (Cont.).

3-D Tracking

The 51-point option also allows for 3D Focus Tracking, which uses colour information from the 1,005-pixel RGB sensor to automatically follow moving subjects across the AF points.



Auto Area



Auto Area AF uses colour information and special face recognition algorithms to automatically focus on an individual's face, which is extremely helpful when there's simply no time to select a focus point, or when using Live View in hand-held mode at high or low angles.

So from manual focusing to automatic focusing, with modern DSLRs, there shouldn't be, with practice, any situation where you can't achieve a well exposed, dynamic image.

To help you practice