

Some of below TAKEN FROM CAMERAS.ABOUT.COM

Focus is probably the most important thing to get right when taking a picture. An image that is exposed wrongly (within limits) can be largely corrected in PS but an image that is out of focus can't be recovered with exception of 'slightly soft' corrections with sharpening.

FOCUS MODES (Automatic)

Most [DSLR](#) cameras have three distinct [autofocus](#) (AF) modes that are designed to help photographers in different situations. These are useful tools that can be used to help gain the correct focus and it is important to understand the differences between them.

The various [camera manufacturers](#) use different names for each of these modes, yet they all serve the same purpose.

1. One Shot / Single Shot / AF-S

Single Shot is the autofocus mode that most DSLR photographers use with their cameras, and it is definitely the one to start with as you learn how to use your DSLR.

It is best to practice in this mode while shooting static photos, such as [landscapes](#) or still life.

In Single Shot mode, the camera needs to be re-focused every time you move the camera in relation to the subject, and -- as the name suggests -- it will only shoot a single shot at a time.

To use it, choose a focus point and press the [shutter](#) button halfway (unless using Back button focus) until you hear a beep (if you have the function activated) or notice the focus indicator light in the [viewfinder](#)/LCD has stopped flashing.

Press the shutter button completely to take the picture and repeat for the next shot.

NOTE – not applicable if using Back button focusing.

Note that most cameras will not let you take a photograph in Single Shot mode until the lens has completely focused (can often be a setting in your menu).

Digital cameras have a red autofocus assist beam that helps the camera find focus in low light conditions. In most DSLRs, this will only work in Single Shot mode. The same is often true for assist beams built into external speedlights.

2. AI Servo / Continuous / AF-C

The AI Servo ([Canon](#)) or AF-C ([Nikon](#)) mode is designed to use with moving subjects and is useful with wildlife and sports photography.

The shutter button is half-pressed to activate focusing (except for BBF), as usual, but there won't be any beeps from the camera or lights in the viewfinder.

In this Continuous mode, as long as the shutter is half-pressed, you can track your subject as it moves, and the camera will keep re-focusing on the subject.

Take some time to play with this mode because it can be tricky to get used to. The camera will sense the object you want to focus on, then try to predict its movement and focus on where it thinks the subject will go next.

When this mode was first released it did not work very well at all. It has greatly improved in recent years and many photographers have found it extremely helpful. Of course, the higher-end the camera model, the more fine-tuned and accurate Continuous mode will be.

It is often used with the FOCUS POINT option for 'tracking' (see below).

3. AI Focus / AF-A (Auto mode)

This mode combines both of the previous [autofocus](#) modes into one convenient feature.

In AI Focus ([Canon](#)) or AF-A ([Nikon](#)), the camera remains in Single Shot mode unless the subject moves, in which case it automatically switches to Continuous mode. The camera will emit a soft beep once the subject is focused. This can be particularly useful for photographing children, who are inclined to move around a lot!

There are other variants depending on your camera e.g. combined AF with MF facility to fine tune.

See later for Manual Focus

Also see Back Button Focus (BBF) notes from last week for an alternative to using the shutter button for focusing – I would recommend BBF if your camera supports reconfiguration of buttons.

FOCUS POINTS/FOCUS AREAS

Modern [DSLR](#) cameras come with a number of focus points, which can usually be seen through the viewfinder. These are known as AF (autofocus) points. DSLRs have a [number of these autofocus points](#), ranging from five to 51 (or more) AF points.

What Are Autofocus Points?

[Autofocus points](#) are what the camera uses to focus on a subject. You'll probably first notice them when you press the shutter halfway. [Many cameras](#) will emit a "beep," and some of the AF points will light up (often in a red or green color) in the viewfinder.

When your DSLR is left on automatic AF selection, you'll know where the camera is focusing by which AF points light up.

Using automatic AF selection can work fine, if you're using a big [depth of field](#) (e.g. F22) and aren't shooting anything that's moving. But, with certain types of subjects, the camera can become confused as to where it is meant to be focusing.

For example, if you're trying to shoot a butterfly on a leaf with a background filled with contrast, the camera could focus on the more distinct contrasts at the back. So, to be safe, it's sometimes better to use manual AF selection.

What Is Manual AF Selection?

Manual AF selection often means that you can just select a single AF point, which will give you a precise area on which to focus. However, some modern cameras, such as the [Canon EOS 7D](#), have extremely clever AF systems, which allow you to not only pick single points, but also to pick a group or section of the photo on which to focus. AF systems are becoming far more sophisticated, thus reducing the opportunities for the photographer to get his or her focus wrong.

Using a Large Number of AF Points

Having a lot of AF points is particularly useful if you like to take lots of [action](#) shots, or [if you photograph pets](#) and children ... both of which rarely sit still! With a higher number of AF points, you can cut down on the chances of the subject being away from a point of focus.

Your camera will have a number of presets to select points e.g. Flexible Spot - allowing you to move the focus point around), Wide – giving a wide range of AF points across the width of the sensor, Zone – giving you an option to pick a zone of the sensor and points within the zone, Centre – setting the focus point to the centre of sensor etc.

Lock-on AF Focus point is used to track a moving object, in combination with 'Continuous Focus mode'. This is used a lot for wildlife and Sport photography. You still need to follow the subject, but as long as you keep the subject within a certain area of your sensor, the focus point will follow the subject.

Common Pre-set focus Points/Areas –

1. Centre (often configurable in size)
2. Flexible Spot – configurable in size with ability to move it around the sensor to a position that suits your composition.
3. Zone – Focusing on a zone of the sensor, of your choice and at time of taking picture, focus points within that zone.
4. Variants of Zone e.g. Wide.
5. Lock-on (track) – configurable in size and follows the subject within certain bounds of your sensor – usually used in conjunction with Continuous focus mode.

MANUAL FOCUS

Manual gives you complete control over what and where you focus on using the focus ring on your lens.

The reason AF options were implemented on modern cameras is it is generally a much quicker means of focusing (freeing you to consider all other aspects of image composition at the time of taking the picture), but Manual focus can be very useful and sometimes the only reliable way to focus. There are many people who only use Manual focus, relying on having enough depth of field to quickly capture an image without worrying about exact focusing – not recommended unless you know exactly what you are doing.

If you're someone who's migrating from a point and shoot camera to a [DSLR](#) model, there are quite a few aspects of photography that you're going to have to learn about before you can begin having success with your advanced camera. One of the most confusing aspects can be figuring out when you should use manual focus, versus when it's better to use an auto focus mode.

To learn more about the debate of auto focus versus manual focus, read the tips below.

- Auto focus mode is one where the camera determines the sharpest focus, using sensors that are devoted to measuring the focus of the scene. In autofocus mode, the photographer doesn't have to do anything.
- Switch to Manual focus either using the camera menu system or Manual focus button. Some lenses have a MF/AF switch on the barrel that overrides any camera setting for manual focus.
- With manual focus, you're going to use the palm of your left hand to cup the lens. Then use your left fingers to slightly twist the focus ring on the DSLR lens until the image is in sharp focus. Holding the camera properly is a key aspect of making use of manual focus, otherwise you'll be awkwardly trying to support the camera while using

the manual focus ring, which may make it difficult to shoot the photo without a slight blur from camera shake.

- When using manual focus, you may have better luck determining whether the scene is in sharp focus by using the viewfinder, rather than using the [LCD screen](#). If you're shooting outdoors in bright sunlight, holding the [viewfinder](#) against your eye is going to allow you to avoid glare on the LCD screen, as the glare can make it especially tough to determine the sharpness of the focus.
- To see which focus mode you're currently in, press the Info button on your DSLR camera. The focus mode should be displayed, along with the other camera settings, on the LCD. However, the focus mode setting might be displayed using an icon or the initials "AF" or "MF," meaning you'll need to be certain you understand these icons and initials. You may need to look through the DSLR's user guide to find the answers.
- Sometimes, you can set the focus mode on the [interchangeable lens](#), by sliding a switch (often labelled A/M or AF/MF), moving between auto focus and manual focus (overriding the camera setting).
- Auto focus tends to have problems working properly when the subject and background are a similar color; when the subject is partly in bright sun and partly in shadows; when it is dark and when an object is between the subject and the camera. In those instances, switch to manual focus.
- **Focus to infinity.** When using manual focus, there may be times you want to focus to infinity, which essentially means the entire image is in focus. Nothing in the photo will be in extremely sharp focus, but everything in the photo will be in sharp enough focus to be visible. Make sure the aperture is set at a high f-stop number (F22 end), allowing for a large [depth of field](#) to be in focus. To focus to infinity, you just have to turn the focal ring on the lens all the way to the left (or right, depending on your lens model) to the infinity setting. You may find you have to turn it back slightly to get real infinity focusing due to the nature of the optics. Once the far image is in good focus, you can shoot the photo, and you should have focus to infinity in the photo.
- Many cameras now give options to 'zoom' the focus in the viewfinder/LCD to assist in focusing and offer 'peaking' colours to help indicate what is in focus – note this is just a guide and cannot replace a visual check on focusing.

DEPTH OF FIELD

This is the amount of the image that is in focus (front to back). This is dependent on various factors/settings.

When you focus you generally do it on the main subject. How much in front and behind the subject is also in focus is known as the 'depth of field' (Hyperfocus distance)

The key factor/setting that determines the depth of field is the Aperture – a wide aperture (f2) gives a shallow depth of field and a small aperture (F22) gives a wide depth of field. The amount also depends on the focal length of the lens being used and the distance from the subject. Telephoto lenses generally give shallow depth of field whilst wide angle give wider depth of field – relatively! The closer the subject the shallower the depth of field.

This is the subject of a different session (see [Managing light \(Basic camera controls\)](#) notes on the Club website under Useful tutorials.