

Photographic tips - Things every camera user should know

This is not set out to tell you how to use your camera but to give general principles that affect all cameras and to give those new to photography a guide to some of the terms used.

It is not intended as a replacement for either your Camera instruction book or any published photography book but hopefully as an aid to both.

This first section is for newcomers to photography.

Aperture

Simply, the aperture is the size of hole through which the light is admitted to the camera during the taking of a photograph. For any given shutter speed more light is admitted through a bigger aperture. The lower the F number, the bigger the aperture i.e. F8 is larger than F16. Altering the aperture affects the 'Depth of Field'.

Auto Focus

Most cameras have this feature. The camera's electronics looks for sharp edges and adjusts the focus to optimise the sharpness. This operates very quickly generally within the time it takes to press the shutter release button. You do have to be sure that the camera is seeing what you want it to see, where items are in close proximity it may focus on a closer or more distant object leaving the desired target out of focus. This can happen when say taking a picture of a plant where there are other plants in the foreground and background.

Backlighting

This occurs when your subject is brightly lit from behind as when they stand in front of a window in strong daylight. Unless the exposure is adjusted or a flash is used to provide fill-in lighting then your subject will appear as a dark silhouette against the bright window. Similarly taking pictures outside when the subject's back is toward the sun has the same result. The old guidance of taking the picture with the sun behind the photographer still is generally true unless you are looking for a particular effect.

Backup

For those storing their digital images on a computer it is crucial to have a back-up. This is to have copies of the images stored elsewhere on different media so if there is a problem with your computer you are not at risk of losing all of your photos. These can be put on an external hard drive, copied to CD/DVD etc.

Camera shake

Unfortunately as we get older we become more prone to camera shake but even young people can have the problem where, for instance, a picture is being taken from a moving or vibrating vehicle. The effects of camera shake are more pronounced at long range when using the telephoto features of your camera. The result is a blurred picture which is impossible to rectify. Some cameras have features which minimise the effect of camera shake. Where possible use a Tripod.

Camera types

The principal types of Digital cameras are given below and originally they were quite distinct. The descriptions may not align with what is available now or in the future as improvement are tending to blur their differences. If you are buying a camera or upgrading your own it is best to see what is currently on the market that matches your criteria.

Compact camera

Originally a quite simple camera with few features, as digital camera prices have dropped many of these cameras have become more involved and now have similar menus to the more expensive cameras.

Bridge camera

These 'bridge' the gap between Compact and DSLR cameras and they have advanced features. They have an electronic viewfinder (EVF) which is better than most compacts but not as good as the optical system of the DSLR. Their weight is about the same as a small DSLR but generally you cannot change the lens.

Digital Single lens Reflex (DSLR)

A replacement for the film based SLR, when you look through the viewfinder you are actually looking through the camera lens and see exactly what the camera sees. Their construction makes them heavier than either compact and bridge cameras and they also tend to be more expensive. However their big advantage is the ability to change lenses to ones of a different focal length and that makes them attractive to professional photographers.

Close up setting/Macro

Usually identified as a flower on the camera settings, this permits the taking of pictures at very short range so that for example a flower can be made to fill the viewing screen.

Depth of field

When you focus on a subject some items in front and behind the subject will also be in focus, this is the Depth of Field. This can be controlled by the aperture; a smaller aperture will give a greater depth of field while a larger aperture will reduce the depth of field. e.g. F16 gives a greater depth of field than F8

Exposure

A certain amount of light is necessary to provide a good picture. This quantity of light is provided via the lens aperture and shutter to the camera screen. The actual quantity is controlled by the aperture setting and the shutter speed which in turn is controlled by the camera's internal light meter. When the camera is set to AUTO this is controlled by the camera and will give an acceptable picture under most conditions. If the resulting picture is too dark it is said to be underexposed, if too light it is described as overexposed.

Flash

Usually internally fitted to most cameras and operates automatically, in the event of low light levels, when the camera is set to Auto. Flash has a limited range and will be of little use beyond 5 metres but is useful in taking indoor pictures or pictures outside in poor light. It can also effectively be used to freeze moving subjects since the flash duration is short.

F number

This is the measure of aperture size and is derived from the optics and physical construction of the camera which needn't concern you at this stage. Basically, the larger the F number, the smaller the aperture and the smaller the F number, the larger the aperture. i.e. F8 is larger than F16. Altering the F number affects the 'Depth of Field'

Focal length

Simply the Focal length is the optical length of the lens given in millimetres (mm). A short lens length permits wide angle shots and is called a wide angle lens. Long focal length permits pictures to be taken at a distance and is referred to as a telephoto lens. In between are lens focal lengths that are deemed to be approximating to the human eye and can be used for portraits. Digital cameras invariably have a zoom lens and the Zoom is operated by a switch usually marked W-T (WIDE-TELEPHOTO).

Frame

Frame is the common term for a single picture image.

Landscape

A picture shape that is wider than it is deep, typically used for pictures of landscapes or subjects that are wide in comparison to their height.

Landscape mode on cameras selects the best exposure parameters for landscape type pictures. This usually involves a smallest possible aperture to provide a good depth of field with a corresponding longer shutter speed.

Macro /close up

Usually identified as a flower on the camera settings, this permits the taking of pictures at very short range so that for example a flower can be made to fill the viewing screen.

Memory cards

These store the images in your camera and come in a variety of types which are not interchangeable. They are available in multi gigabyte capacity at reasonable prices. The 2 Gigabyte size is ample for most cameras, larger capacity cards are needed for digital movie cameras or cameras with a capability of taking high definition movies.

Parallax

A problem arising from a misalignment of the eye/viewfinder/lens most pronounced when the photographer wears spectacles and cannot get their eye right up to the viewfinder. Parallax is one of the common causes of pictures where the subjects head is missing. Not such a common problem now with the use of screens on the camera body to compose pictures. Often there are guide markings in the viewfinder to reduce the occurrence of this problem.

Portrait

A picture shape that is deeper than it is wide, typically used for single person portraits or narrow tall subjects.

The portrait mode on the camera sets the best exposure parameters for portrait type photos. The Aperture is often set large to give a minimum depth of field so the subject stands out from the background, the shutter speed is fast to compensate for the wide aperture setting and to minimise camera shake.

Red eye

Red eye results from the reflection of a flash in the eye, often occurring when flash pictures are taken indoors. Many cameras have red eye reduction which gives a small flash in advance of the flash while the picture is taken. This pre-flash causes the subjects retina to reduce in size. Red eye on existing photos can be removed with photo editing software.

Resolution

Resolution relates to the sharpness of the image and corresponds to the number of effective pixels there are covering the image. The more pixels included in the picture, the greater the potential resolution.

Self timer

The self timer permits the camera shutter release to be delayed so, for example, the photographer can include themselves in the picture.

Shutter speed

This is the speed or rather the duration that the shutter is open when you press the shutter release to take a picture. It is measured in fractions of a second.

Tripods Monopods Minipods

When camera shake is a problem or you are taking a picture with a long exposure a tripod is essential. Smaller versions sometimes known as monopods with one leg or Minipods, which are a

short tripod can be carried with you easily and stood on a raised surface to provide a stable support for your camera. If you use the self timer this further reduces risk of shake. In the absence of any of these items a convenient solid post or wall can be used to rest the camera.

Viewfinder

I don't think this needs describing as everyone that has used a film camera will be familiar with it. Their construction and mode of operation is often different on a digital camera but the effect is similar. Some cameras will not have viewfinders relying on the LCD (Liquid Crystal Diode) screen on the rear of the camera body for you to view the image. The LCD can be quite a drain on the camera battery and is not very useful in bright sunlight. However not everyone can get on with a viewfinder.

Zoom

Most cameras have a zoom feature operated by a switch or lever marked **W - T** where W moves the lens to the wide angle position (short focal length) and the T moves the lens to the Telephoto position (long focal length). Cameras have up to approximately 6 times zoom where 6 times refers to the difference between the shortest and the longest focal length available on the camera/lens i.e. A camera with a 20-120mm lens has a 6 times (6x) zoom since the maximum focal length is 6 times the minimum. ($6 \times 20 = 120$). This is about the maximum optical zoom and cameras claiming greater zoom facilities are invariably using digital manipulation to achieve that.

Some tips for taking pictures

Protect your camera from the worst excesses of the weather

To minimise shake some people find it useful to hold their breath while pressing the shutter release.

Avoid taking pictures straight into the sun or strong source of light

Try to get the sun coming over your shoulder to illuminate your subject

If you have time, avoid telegraph poles, signs etc spoiling your picture

Use the 'thirds rule' to position your subject and avoid horizons and similar features splitting your picture in half.

When you are taking pictures of landscapes, try to get something of interest in the foreground.

Use a tripod or another rest for your camera when taking long exposures e.g. at night or in poor light.

Photographic tips – For the more advanced user

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This second section is for photographers with more experience .

Aperture Priority

This is found on some cameras and permits semi manual control. The photographer sets up the aperture to give the required Depth of Field and the cameras light meter sets up the shutter speed to provide the correct exposure.

AE lock

Auto Exposure lock allows the light meter to take a reading from a particular part of your subject and hold that setting while composing the picture. Usually accessed by pointing the camera at the area of desired exposure and half pressing the shutter release, keeping the shutter half pressed compose the picture and when satisfied fully press the shutter to expose the picture, useful in backlighting and where there is a contrast in light levels between say, ground and sky.

Barrel Distortion.

A result of using wide angle lenses or a zoom set at the minimum focal length (towards the W on the zoom control lever/switch). The edges of the picture seem to curve away from you so it appears the picture is wrapped around a very large ball. Sometimes this is used as a feature in the extreme and you may have heard of fish-eye lenses which give excessive barrel distortion as a desired effect. Minor distortion of this type can be corrected using editing programs.

Burst

Similar to continuous shooting but often limited in number of frames by limitations of the camera.

CCD (Charge Coupled Device)

Stands for 'Charge Coupled Device' and is the light sensor in the Digital camera that records the image when you take a photo. The CCD consists of millions of light receptors one for each pixel of the image. The size of the CCD is measured in Megapixels and the higher the number of megapixels generally, the better the image quality.

Note - Although your camera may claim to have a certain number of pixels not all of these can be used for taking the picture. Some are blacked out for colour balance and some may fall outside the lens coverage. The term **Effective Pixels** is used to describe those actually employed in taking the photo.

Continuous shooting

In this mode pictures continue to be taken all the while the shutter release is pressed. Pictures are taken in quick succession and it is useful for fast moving subjects or to catch an event that is imminent but you are unsure of the exact timing. In this mode the camera will take some time to capture the pictures and will not be available to take further pictures during this time

Digital Zoom

This is not to be confused with Optical Zoom. Digital Zoom is employed in cameras where claims of more than about 6x zoom are made. The digital zoom is by enlarging the centre part of the image in the camera so that it looks bigger. In fact it only has the same number of pixels as that area did pre – zoom. The result is that it will have far less resolution and may pixelate under moderate enlargement of the image. If your camera has this feature and you want to make use of it then a tripod is desirable.

Of course, cameras with very high numbers of megapixels will minimise this pixellation as there will be more pixels in any given part of the photo.

Filters

Filters fit on the front of the lens and provide a variety of effects, coloured filters will remove or enhance certain colours within the picture. Photographers will often protect their camera lens from physical damage by the constant use of a UV (Ultra–violet) filter. A polarising filter will permit enhanced sky/cloud pictures and minimise reflections when taking pictures of water for example.

Filtering the flash

Particularly when using flash at close range the effect can be harsh lighting effects on the subject. A piece of tissue paper held over the flash will give a more subtle lighting effect. Holding a coloured translucent material over the flash can produce interesting results and letting some of the flash through uncoloured can relieve any extremes in colour rendering.

Flash

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Hot shoe

Most cameras have a built in flash but where a hot shoe is fitted you can also use an external flash gun by fitting it on to the hot shoe.

ISO

Replaces the ASA number which indicates the speed of the ‘film’ i.e. its sensitivity to light. On cameras where the ISO number can be changed increasing the ISO number permits pictures to be taken in lower light levels without overly affecting the aperture and shutter duration. Using a high ISO setting may cause a grainy effect on the picture, known as ‘noise’ on digital cameras. Using the lowest practical ISO setting will give the best results.

Manual

Setting on the camera that removes many of the auto features and allows the operator to take shots that would not work under Auto mode.

Panorama

A facility on some cameras for up to three pictures to be taken across a landscape and as long as there is some overlap in the subject the camera will produce a wide and shallow panoramic image.

Pixel/Megapixel

A pixel which is short for picture element is a very small coloured square , several million of them will make up your digital photograph. They form a fine mosaic which can be seen if you keep enlarging the image. A megapixel is one million pixels.

Single shooting

Single shooting is the normal mode of picture taking where one picture is taken for one press of the shutter release.

Shutter delay (lag)

Shutter delay is the slight delay between pressing the shutter release and the camera recording the image particularly noticeable with moving, especially fast moving subjects. If a problem and with older cameras a particular issue then either try to anticipate the event or use continuous or burst mode. People moving from film cameras to digital cameras for the first time may find the greatest difficulty.

Shutter priority

This is a semi manual mode that complements the Aperture Priority setting. The user can set the shutter speed will the cameras light metering device compensates by adjusting the aperture setting for a correct exposure. Often used where a fast shutter speed is required to capture fast moving events or alternatively to use a slow shutter speed to deliberately blur shots of moving objects.

Thumbnails (Thumbnail images)

Most cameras allow you to review images that you have taken and to replace the single recorded image on the screen with a number of reduced size images that are held on the memory card. These small images are sometimes called Thumbnails, presumably because of their size. You can also get Thumbnails on the computer screen which eases searching through the images.

USB

Stands for Universal Serial Bus, but you can't use your pass on this. This is a plug and socket arrangement that allows the transfer of data from camera to computer. Some cameras use a lead to download the images to a computer but with many cameras you now remove the memory card and put it in an appropriate slot on the computer, or in a slot on a commercial print machine at a supermarket or camera shop, which you might use if you don't have a computer.

White balance

A feature on some cameras that corrects the colour cast (distortion) caused by artificial light sources or colour tints in ambient lighting e.g. fluorescent light