

CHILTERN U3A PHOTOGRAPHY GROUP.

Digital Camera Settings

Most of us have had and still have, even after some years of experience, TROUBLE WITH UNDERSTANDING AND SETTING THE VARIABLE FEATURES WITH WHICH DIGITAL CAMERAS ARE EQUIPPED.

This TUTORIAL will visit many of the common features which need to be understood and set correctly if you are to gain consistently good results from your digital camera.

RESOLUTION and COMPRESSION.

These settings determine the quality of the image you capture.

RESOLUTION (sometimes referred to as **SIZE**) setting determines TWO aspects

- (i) what fundamental sharpness will be recorded relative to size of image.
- (ii) what size of image will be recorded to suit the purpose to which it will be put i.e. LOWER resolution for SMALL prints and HIGHER resolution for LARGER pictures.

COMPRESSION setting also determines TWO aspects.

- (i) higher quality of image with “Superfine” or “Fine” settings
- (ii) more image storage capacity on the camera memory card with “Normal” setting i.e. like choosing a 20 or 36 exposure film.

FILE FORMAT.

This is a FUNDAMENTAL setting which determines how your images will be recorded in the camera and what you will have to do to them once they are downloaded to your computer.

JPEG is the commonest and “normal” setting established by the camera manufacturer during its construction.

RAW is a specialist setting needing complex knowledge and software to convert from data to pictures. It is the format used by professionals and advanced amateurs.

ISO “SPEED” SETTING.

This facility is one of the great adjustable advanced features available on digital cameras which used to be determined by the actual FILM in conventional cameras.

FILM came in a predetermined “SPEED” i.e. ASA/ISO 200 or 300 – 400 etc, the whole 36 frames were set at this speed.

DIGITAL ISO setting can be varied from one shot to the next within a range from say 50 to 1400.

NOTE

1. The higher the number the “faster” the film and the more suitable for capturing fast moving action shots.

2. It's the same with **digital**, BUT the advantage of being able to change "film speed" between shots/subjects gives a flexibility such as high ISO setting for a FLASH shot in a large room thus ensuring everything is lit by the onboard/low power camera flash.

However, there is a downside.

As with "fast films" picture quality degrades and noise (grain) occurs.

2. AUTO setting of the ISO feature is available on some cameras, a good average manual setting is 100 to 200 it balances flexibility with quality.

WHITE BALANCE SETTING.

Another advantage of digital cameras is this variable setting facility which allows you to compensate the COLOUR BALANCE for whatever main illumination is lighting your subject.

This is probably most noticeable under artificial light, TUNGSTEN, FLUORESCENT, PHOTOFLOOD, FLASH all of which can be compensated for in WB setting. Also cloudy, sunshine, shade and 'normal' daylight.

Settings can be varied from shot to shot if necessary BUT if that is too much of a chore then **AWB (Automatic White Balance)** is a setting that will ensure you never record a badly colour caste image.

Serious DSLR cameras now have a KELVIN colour temperature adjustment feature, also a "bracketing" function and a "retained customising" setting which allows a previous custom setting to be retained and recalled simply by switching to 'custom' No 1 or 2

FLASH PHOTOGRAPHY.

You have two choices (with most cameras) either the 'built in' flash unit or a 'clip on' unit which attaches to the 'hot shoe' facility BUT has to be purchased separately.

ON BOARD flash has several drawbacks.

- It is of low power and therefore its range is limited to about 10 feet maximum.
- It consumes a lot of camera battery power if used for more than the occasional shot.
- RED EYE is a curse caused by the flash head being set too close to the lens.
- Harsh shadows behind subject.

CLIP ON flash has several advantages.

- The onboard battery is very powerful and is only used for the flash process.
- A range of power choices are available to choose from making flash illumination both brighter and up to a long way from the camera, possible.
- RED EYE should be non existent or severely reduced.
- Flash head ARTICULATION allows "BOUNCE" flash to be used as an illumination softening effect, either off the wall or off the ceiling.

FLASH SETTINGS these have to be set manually from the menu.

- **Red Eye Reduction** select this setting when taking people pictures if they are full face on and not more than 10 feet distant i.e. portraits.

- **Flash On or Forced Flash** setting will ALWAYS fire the flash no matter how far away the subject is e.g. sports stadiums with spectators using flash totally ineffectively, at up to 300 yards from the subject. It just wastes battery power and adds nothing to the picture.
- **Auto** the flash will fire WHEN/IF it is needed to enhance the subject.
- **Slow Synchro** suitable for night scenes where the foreground needs SOME illumination against a dark background.
- **Flash OFF** the flash is completely disabled and will NOT fire at all.

DIGITAL ZOOM.

There are TWO types of ZOOM feature in most digital cameras.

3. **DIGITAL** zoom, is just the same as you enlarging a picture on your computer screen i.e. the more you enlarge it, the more it degrades the image.
4. **OPTICAL** zoom, is effectively changing the actual lens enlargement and dependent upon the quality of the camera optics (glass lens) will reproduce a better quality image than DZ.

MACRO SETTING.

A more common description for “macro” would be CLOSE UP.

The “macro” setting on digital cameras is an amazing facility which allows extreme close ups to be taken of either flowers or insects with quite outstanding results all achieved with comparative ease by simply clicking the MACRO button which features on the back of most digital cameras.

To take a very acceptable picture simply go in close while viewing the LCD screen image and when it is suitably sized within the frame, HALF DEPRESS the shutter release button, wait for sharp focus to be achieved, then fully depress the release button, job done.

It is good practice to set ISO to not more than 100 and use some sort of steady (tripod) to prevent camera shake.

Manual APERTURE and SHUTTER Setting.

“Getting off Auto” is most budding photographer’s ambition with their digital camera. It is relatively easy so long as you understand WHY you want to escape auto and know WHAT you want to achieve that cannot be done in AUTO.

Special Effects is a catchall expression which goes some way to identifying an ambition to move beyond the simply GOOD IMAGE.

Differential Focussing would fall into this category and represents one of the most simple and desirable “effects” available to anyone prepared to set the APERTURE manually. Large aperture = short range focus (shallow depth of field), small aperture = long DEPTH OF FIELD (which is what we mean by “focussing range”)

By focussing on an insect with a large aperture setting the background will become blurred and thereby remove a distracting influence in the captured image.

Equally a small aperture setting will allow great depth of field as needed in most landscape images to ensure maximum sharpness throughout the whole scene from foreground to far distance.

Fast Shutter Speed is needed to “FREEZE” movement, setting it manually up to 1000th of a second, ensures a fast moving subject, greyhound, train, aircraft, racing car, will be in sharp focus while background will be blurred if the camera is “panned” with the subject.

FOCUSSING.

Most unsophisticated digital cameras will be equipped with AUTO FOCUS.

More advanced models will have a choice of auto or MANUAL.

When using AUTO remember that it TAKES THE CAMERA TIME TO

FOCUS, this causes a common problem known as “SHUTTER DRAG”

It is the delay which occurs when you decide to “CLICK” the ‘shutter’ and the action does not happen instantaneously.

This can be overcome by PART DEPRESSING the shutter release button while pointing the camera at the subject and when the screen shows a clear image THEN fully depress the release button.

This is very important when taking CLOSE UP or “MACRO” shots to allow the focussing to take effect.

LIGHT METERING.

This is another procedure which must take place BEFORE a satisfactory image can be recorded, and it also takes time.

This process can be done in several ways but commonly you can select between TWO methods.

1. EVALUATIVE metering where a “general” or overall average is measured and the aperture and shutter speed are set accordingly.
2. CENTRE WEIGHTED metering where a greater notice is taken of the CENTRE of the image than the surrounding area in order that the picture is more correct at the centre of INTEREST.

Serious amateurs and professionals still prefer to use a hand held light meter to measure different parts of the picture and then make their settings of ALL VARIABLES to ensure they capture the very best image. To utilise this method your digital camera must have MANUAL SETTINGS available for **aperture** and **shutter speed**.

VIEW IMAGES.

Immediately after you have taken a picture the camera will REVIEW the image on the LCD screen at the back of the camera. The time available for you to view the image is determined by a variable Menu Setting, typically between 2 and 5 seconds.

To view all images or any specific image recorded on your camera’s memory card switch the ON/OFF switch to the REPLAY setting, the symbol for which is an “arrow head” on its side usually pointing to the right.

The FOUR WAY toggle allows you to move between images, forward or back, and the time available to look at an image is NOT pre set as in the REVIEW mode immediately following taking a picture.

ADDITIONAL FEATURES.

Dependent upon the camera quality and level of sophistication numerous additional facilities can be available which add greater control over image recording.

Red Eye Reduction is available on all but the most basic cameras BUT it has to be preset before taking images of people with flash.

Compensation for Contrast, Saturation, Sharpness is available 'onboard' with some of the more sophisticated compact digital cameras. It is, of course, a feature of most Digital Manipulation Software packages to be applied to images "after the event". NOTE:- onboard settings often give a more 'intense' result to produce a more "punchy" image. This can be a disadvantage which once recorded cannot be easily overcome. It is a better option to make adjustments to images once downloaded to the computer.

LCD Brightness might be available and can be very useful in bright sunshine if the LCD screen is made unusable. Either an eye piece type viewfinder, a brightness control for the LCD screen or a collapsible retro fit LCD Shield can overcome this most annoying problem.

Beware, full brightness setting uses more camera battery power.

Date/Time setting can be made on the camera Menu to record on each image.

Erasing Images from the camera memory card can be done either singly or ALL images can be removed. If you wish to remove ALL images e.g. after downloading your images from camera to computer, then it is good practice to RE FORMAT the camera memory card. By so doing any residual data recorded at the time of image capture relative to a specific image, will be removed entirely.

TIPS FOR BETTER PHOTOGRAPHS.

Film is capable of producing BETTER images than digital.

A 35mm Frame has the equivalent of 25 mega pixels, even the best DSLR's only have 10 to 12 mp's maximum and 2 ¼ inch square format has around 150mp's. However lens technology has advanced in step with digital progress and only the top of the range film cameras will deliver maximum film quality.

Do NOT do away with any quality film cameras, they fetch very little second-hand at present BUT they are still VERY USABLE and in time, being of good quality, will become collectable.

Black and White or GREYSCALE is an available setting on many digital cameras, try it. It is also available on most digital software which allows you to switch between 'standard' colour and SEPIA, GREYSCALE, BLACK & WHITE Try it, if the subject is right you may be amazed at just how stunning the image becomes in monochrome (that's what B&W is called)

Carry a camera everywhere now that digital cameras are small, (or even telephone cameras, but they do not produce decent pics so beware) carry a small one in pocket or handbag, you never know when you will "witness" an event or be confronted with a stunning image which simply begs to be recorded. How many times has somebody said in your company "I wish I had a camera now" Digital images can be so easily e-mailed to the MEDIA and good financial rewards can await the EYE WITNESS on the spot.

Memory Cards, always have more than one even if the second is of relatively small memory capacity. 1 and 2 gigabyte cards are now readily available at affordable prices, they have become “essential” for people who shoot in RAW setting because RAW images take up to 10x more memory than JPEG images.

Batteries, it is sensible practice to carry a second FULLY CHARGED battery or “dry cell” equivalents to avoid ever running out of power. Think of the “unique witness” situation and you run out of power just when something happens.

BETTER PHOTOGRAPHS ?

Well better prepared anyway !!