# GUIDES TO 'PROPER' PHOTOGRPAHY

## What is 'ISO' and how is it best used?

https://www.youtube.com/watch?v=q8cj9Lj9w-g

**Introduction**

ISO is a somewhat misunderstood (and perhaps the more scary) of the three controls of exposure (Aperture, Shutter Speed and ISO).

**It is a measure of the sensitivity of the pixels in the sensor at the back of the camera.**

It is probably the less used and a key reason for this is that camera manufacturers have been slow to develop sensors with high sensitivity.

**How does it work?**

A change to the ISO value of your sensor changes the amount of light that the pixels in the sensor will absorb in the time the shutter is open. As the ISO is increased, an electrical charge 'excites' the pixels to become more sensitive (they literally 'vibrate'). At high ISO settings this 'vibration' can lead to some noise (or grain) in your image.

**When would I alter ISO?**

The normal ISO setting is either 'Auto' or 100. This is fine in many cases – this is a low setting and will result in sharp images in good light. However, as the light gets darker then you have the option of: Opening the shutter (which will change the Depth of Focus) or extending the shutter speed (which could lead to motion blur / camera shake) or increasing the ISO – which works fine up to say 10,000. The risk of grain varies depending upon your camera – so the best way to check this is to experiment by increasing ISO over a number of versions of the same shot and then check at what ISO level you feel the noise (or grain) is a problem. Make a note of this and try not to go above that level.

However, if you do need a higher ISO, resulting in grain, post processing software today can usually remove most of this noise – so all is not lost!

**Auto or Manual?**

The temptation is to use 'Auto' and the trouble with this is that you are then unaware of what ISO the camera is automatically selecting – and then you see your favourite shot spoilt by noise! If you are taking images in good light then Auto is fine. But as soon as you are taking fast exposures or light is failing – then you need to be in Manual control of ISO.

By taking manual control you can adjust it whilst being aware of the level at which noise occurs and trying to avoid this.

**The quality of Pixels**

You are probably aware that your camera produces images of a number of million pixels – maybe 20MP or higher. This is the number of pixels in your sensor – so the bigger the sensor, the bigger your image. Manufactures are now also looking at the size and quality of the pixels – for example Sony offer a camera (the A7) that is only 12MP BUT it can go to 410,000 ISO with little noise! – because the pixels are physically bigger. This camera really does see in the dark and is used by news photographers to record night activity.