

## INTRODUCTION TO SHUTTER SPEED - Presented at DIG meeting 5<sup>th</sup> July

Liana Bull

### How to choose the right shutter speed

Taking good photographs isn't just about buying the most expensive camera available. Whether you're a wedding photographer or an amateur looking to turn professional, it's important that you understand shutter speed and how it can affect the photos you take.

### What is Shutter Speed?

The easiest way to explain shutter speed is the length of time the camera shutter is open. Back in the days of "film" photography, this was the time that the film was exposed to the scene. In digital photography terms, the shutter speed is how long the camera's image sensor "sees" the scene.

Defined most basically – shutter speed is **'the amount of time that the shutter is open'**.

In film photography it was the length of time that the film was exposed to the scene you're photographing and similarly in digital photography shutter speed is the length of time that your image sensor 'sees' the scene you're attempting to capture.

Shutter speed is measured in seconds – or in most cases fractions of seconds. The bigger the denominator the faster the speed (ie 1/1000 is much faster than 1/30).

In most cases you'll probably be using shutter speeds of 1/60th of a second or faster. This is because anything slower than this is very difficult to use without getting camera shake. Camera shake is when your camera is moving while the shutter is open and results in blur in your photos.

If you're using a slow shutter speed (anything slower than 1/60) you will need to either use a tripod or some type of image stabilization (more and more cameras are coming with this built in).

Shutter speeds available to you on your camera will usually double (approximately) with each setting. As a result you'll usually have the options for the following shutter speeds – 1/500, 1/250, 1/125, 1/60, 1/30, 1/15, 1/8 etc. This 'doubling' is handy to keep in mind as aperture settings also double the amount of light that is let in – as a result increasing shutter speed by one stop and decreasing aperture by one stop should give you similar exposure levels (but we'll talk more about this in a future post).

Some cameras also give you the option for very slow shutter speeds that are not fractions of seconds but are measured in seconds (for example 1 second, 10 seconds, 30 seconds etc). These are used in very low light situations, when you're going after special effects and/or when you're trying to capture a lot of movement in a shot. Some cameras also give you the option to shoot in 'B' (or 'Bulb') mode. Bulb mode lets you keep the shutter open for as long as you hold it down.

When considering what shutter speed to use in an image you should always ask yourself whether anything in your scene is moving and how you'd like to capture that movement. If there is movement in your scene you have the choice of either freezing the movement (so it looks still) or letting the moving object intentionally blur (giving it a sense of movement).

To freeze movement in an image you'll want to choose a faster shutter speed and to let the movement blur you'll want to choose a slower shutter speed. The actual speeds you should choose will vary depending upon the speed of the subject in your shot and how much you want it to be blurred.

**Focal Length and Shutter Speed** – another thing to consider when choosing shutter speed is the focal length of the lens you're using. Longer focal lengths will accentuate the amount of camera shake you have and so you'll need to choose a faster shutter speed (unless you have image stabilization in your lens or camera).

The 'rule' of thumb to use with focal length in non image stabilized situations) is to choose a shutter speed with a denominator that is larger than the focal length of the lens. For example if you have a lens that is 50mm 1/60th is probably ok but if you have a 200mm lens you'll probably want to shoot at around 1/250.

### **Shutter Speed – Bringing it Together**

Remember that thinking about Shutter Speed in isolation from the other two elements of the Exposure Triangle (aperture and ISO) is not really a good idea. As you change shutter speed you'll need to change one or both of the other elements to compensate for it.

For example if you speed up your shutter speed one stop (for example from 1/125th to 1/250th) you're effectively letting half as much light into your camera. To compensate for this you'll probably need to increase your aperture one stop (for example from f16 to f11). The other alternative would be to choose a faster ISO rating (you might want to move from ISO 100 to ISO 400 for example).

### **Different Shutter Speeds**

There are various shutter speeds for various purposes. Measured in seconds (fractions of seconds), speeds are denoted in numbers such as 1/1000 or 1/50. Obviously, the larger the denominator, the greater the speed. The average camera speed is usually 1/60. Speeds slower than this are hard to manage as they almost always lead to blurry photographs.

The most common shutter speed settings available on cameras are usually 1/500, 1/250, 1/125, 1/60, 1/30, 1/15, 1/8 etc. Some cameras also allow you the option of measuring shutter speed in full seconds (not fractions) such as 1 second, 2 seconds, 10 seconds etc. This is particularly useful in low light photography or when you are trying to capture movement.

Of course, many photographers use shutter speeds lower than 1/60 and this does not mean all their photographs turn out blurry. For best results, slow shutter speeds should be used when your camera is on a tripod so your camera is stable and there is no shake whilst capturing the shot.

### **Picking the Ideal Shutter Speed**

Now that you know the technical details, how do you go about picking the right shutter speed so you get perfect photos? Needless to say, the demands of wedding photography will be vastly different to photographing a school sports carnival.

The most important consideration when picking the right shutter speed is movement. How much movement do you expect to capture?

Would you like to “freeze” this movement in order to get a clean, clear photo? In this case, you need to use a fast shutter speed. This will let you capture the moment before it escapes you. Or maybe you would like to let the movement appear blurry (intentionally) in the photos to better project the movement? A slower shutter speed should be used in this case.

The actual numbers for the speeds will depend on how “frozen” or “blurry” you want your images to turn out and a little trial and error in the right situation will help you figure this out.

### **Considering Focal Length**

The focal length of your lens will contribute to camera shake and unless you have in-camera image stabilisation, you should consider your shutter speed depending on the focal length as well. For longer focal lengths, you will probably need faster shutter speeds. Without image stabilisation, you are best to use a shutter speed denominator that is larger than the length. So, for 200mm lens, your ideal speed would be 1/250 for a good quality photograph.

Following these tips will help you choose the right shutter speed and will take you a long way towards taking better photos.

I hope you’ve found this introduction to shutter speed useful. I would highly recommend you also put a little time aside today to learn about the other two important elements of the Exposure Triangle – [Aperture](#) and [ISO](#).

**Darren Rowse** ex digital-photography-school.com

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