FLASH,

don't be afraid to use it

Presented by Keryn Gannon

Using a camera flash can broaden the scope and enhance the appearance of your photographic subject. However, flash can also be one of the most confusing and misused of all photographic tools.

Unlike ambient light photography, you cannot see how flash will affect the scene prior to taking the photograph. Experience using a flash will give you an idea of how it will affect your image.

I will try to explain some of the technical terminology so we can focus on the real essence of flash photography: how to control your light and thereby achieve the desired exposure.

Firstly you need to understand how your camera's metering system works.

Your camera calculates its "correct" exposure using light reflected off the subject. This is a best guess calculation, as subjects reflect light differently.

Camera's are set up to expose for mid grey, this is why white is often underexposed and black is overexposed, both of these reasons can mean the camera gets the exposure wrong.

This image is taken using the camera's "correct" exposure

Exposure compensation of 1 1/3 stops over was used to achieve correct exposure

This is why our camera's have the options of exposure compensation and different metering options ie spot metering, centre-weighted average etc.

When using a flash, your subject is being lit by two light sources:

- **your flash, over which you have some control, and**
- **the ambient light, which is likely out of your control.**

This may seem simple and obvious, but its consequences are probably not.

A flash photograph actually consists of two separate exposures: one for ambient light and the other for flash.

Therefore the shutter speed, ISO and aperture chosen will still affect the image.

The flash pulse is very brief compared to the exposure time, this means that the amount of flash captured by your camera is independent of the shutter speed.

USING THE BUILT-IN CAMERA FLASH

The built in flash on all camera's is generally harsh, but there are times when you must use it, and when used correctly can actually 'make a shot'.

These flashes are harsh as they are a small light source, they have limited power and as they are pointed directly at the subject, they tend to flatten it.

There are a couple of things we can do to help here.

1. GET IN CLOSE

One of the main limitation of built in flash units is their power. These units are small and share their power with the camera's power, so their power is limited. Therefore, you really need to be within 2-4 meters. If you are not able to get this close, then your flash is probably not worth using, and you are best to bump up your ISO.

2. TRY SLOW SYNC FLASH

Slow Sync Flash is a function which tells the camera to shoot with a longer shutter speed, but to also fire the flash. Your subject will be relatively sharp, and there will be some ambient light. In compact camera's this is often called "night mode" or "party mode". Because of the longr shutter speed needed, you may need a tripod.

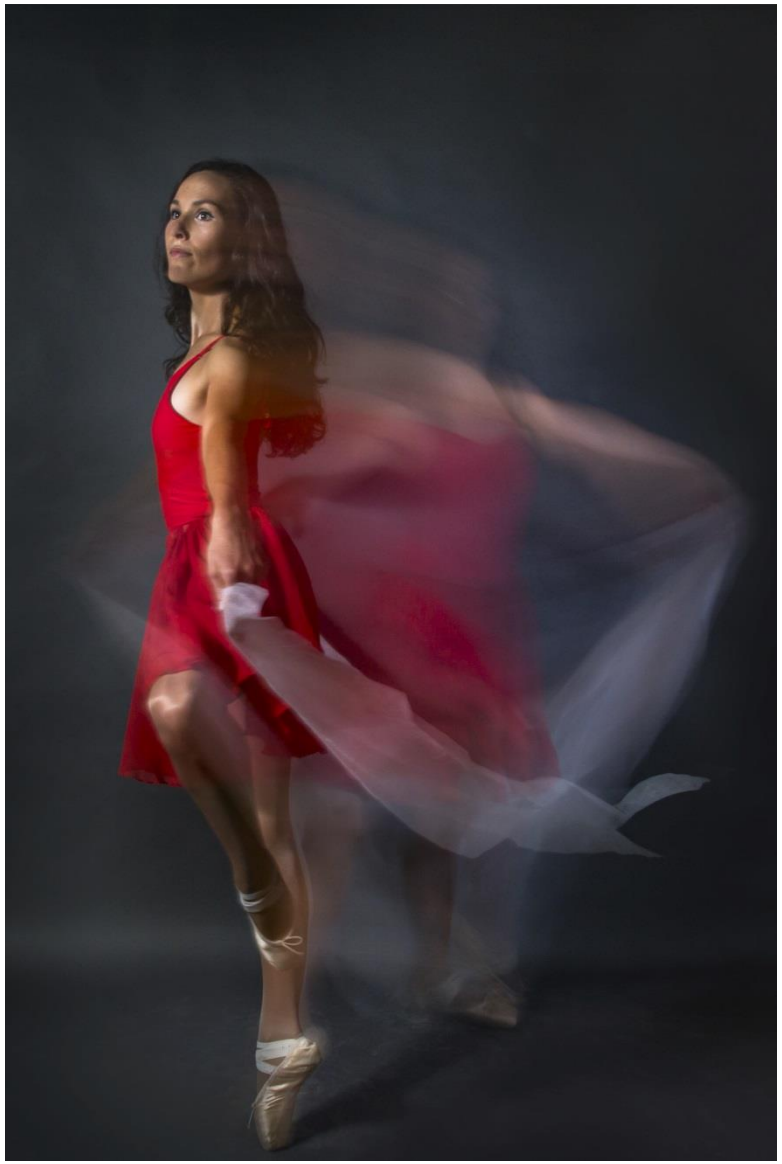
In DSLR Camera's this is called 1st or 2nd or rear curtain sync.

1st AND 2ND OR REAR CURTAIN SYNC

You will generally have two options in slow speed sync.

1st curtain sync, where the flash with fire at the beginning of your exposure, and

2nd or rear curtain sync, where the flash will fire at the end of the exposure. Rear curtain sync allows for a trail before freezing the subject at the end of the exposure.



In the image opposite 2nd or rear curtain sync was used.

ISO 400 F11 1.0 sec

RED-EYE IN FLASH

A problem with camera flash is unnatural red pupils in the subject.

As the ambient light is most likely low (hence why you are using a flash), the pupils are fully dilated, so the eyes are red.

This is much more prominent when the flash is localised and directional, as with a built-in flash.

Some cameras and flashes had a red-eye reduction mode, which sends a series of smaller flashes before the exposure so that the subject's pupils are contracted during the flash. This does not eliminate red-eye entirely (the pupils will still reflect some light), but reduces its prominence.

It possible move the subject to a position where there is a little more ambient light, as their pupils will contract naturally.

Red-eye can be removed in post production, but this does not always look perfect.

USING A STROBE OR OFF CAMERA FLASH

When using a strobe flash, you have many more options.

You can vary the direction and intensity and harshness of the light hitting your subject.

The options here are almost unlimited.

In the first image, the photographer did not use a camera flash, so the image is quite dark and grainy.

In the 2nd image, a flash was used. It was bounced off the (very high) ceiling. There is some shadowing on the wall, but it is bright and clean.

When using the pop-up flash, your image is lit from a small light source, and it will generally be of a high contrast.

With an off-camera flash, you are able to adjust its direction. It can be twisted to bounce of a wall or a ceiling to spread and soften the light. This means that both the contrast and the shadows will be far softer.

If using triggers, it is possible to remove the flash from the camera, for yet more options.

The image of Jennifer Aniston has been taken using an on camera flash pointed directly at her, not very flattering. You can tell this by the catch lights in her eyes, they are small and round.

This image has been taken with a flash that has been bounced of a wall. The catch lights in her eyes are to the left, the light is softer and more flattering.

A common misconception is that a flash is only used for situations where it is dark. Not true. Fill flash is most useful under bright ambient lighting, such as when the subject is back-lit, or the lighting has too much contrast. It will dramatically improve the appearance of people being photographed in otherwise harsh outdoor lighting.

In this situation, you will need to force the flash to fire, because there is plenty of light it will not fire automatically.

The flowers would have been very dark if a flash had not been used. Using fill flash enabled me to darken the background.

The camera would have exposed for the background and the little boy would be dark if fill flash was not used here.

(Floating school, Tonle Sap lake, Cambodia.

Most DSLR camera's will have a button to force the flash to fire. In compact cameras this may be in the menu or a button on the back. It will generally have a image of a flash.

Canon has a button on the front of the camera near the lens connection.

Of course, for a strobe flash, you just turn it on.

FLASH WHITE BALANCE

Flash units emit light which has a color temperature of about 5000K (kelvin) which is comparable to daylight.

As the ambient light will most likely differ from 5,000K, the areas where the flash does not light will most likely be a different color.

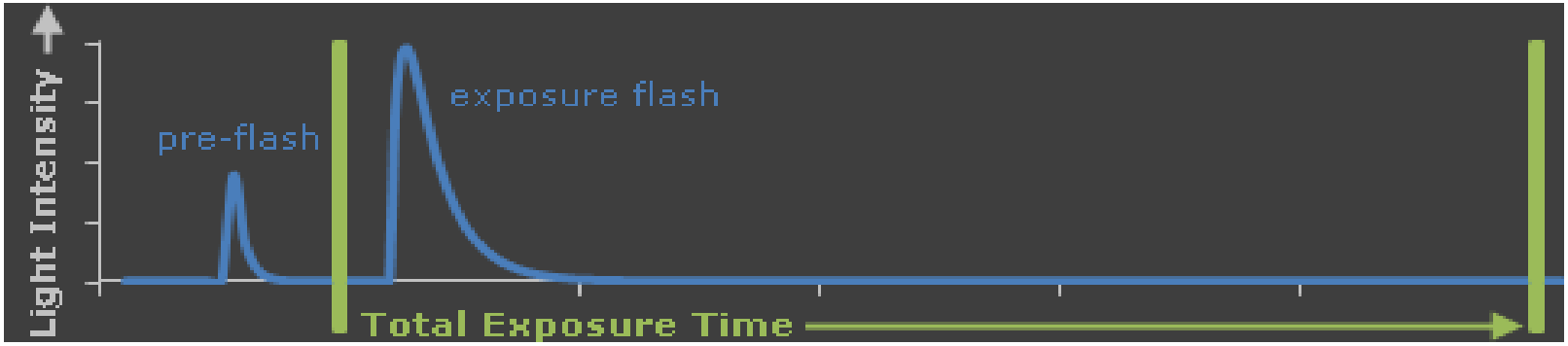
Most cameras will set the white balance to match the flash, so when used with artificial lighting, there will often be a color difference. Colored filters can be used to overcome this problem.

HOW FLASH WORKS

The most common way to use your flash is to set it to TTL or ETTL (through the lens).

Digital flash metering works by bouncing one or more tiny pre-flash pulses off the subject immediately before the exposure begins, this estimates the flash intensity needed.

NOTE: Some people are susceptible to this pre-flash, this is why they seem to have their eyes closed in images where flash is used.



Just after the exposure begins, the flash unit fires. Your camera then measures how much this flash has reflected back in real-time, and stops the flash once the necessary amount of light has been emitted.

But it can easily go wrong. Both the ambient light metering and flash metering need to be correct.

AMBIENT LIGHT METERING

This is the first to occur, it determines the combination of aperture, ISO and shutter speed. This is very important as it controls the overall exposure, and it what the subsequent flash metering will be based on.

As mentioned earlier, in-camera metering can be wrong as it can only measure reflected and not incident light.

FLASH METERING

Flash metering is based on the results from both the pre-flash and from the ambient light metering. If your TTL flash metering system emits an incorrect amount of flash, not only will your overall exposure be off, but the ratio as well.

Even with correct flash exposure, if your subject/s cover a large distance range, subjects closer to the camera will be much brighter than those in the distance.

FLASH EXPOSURE COMPENSATION

Fortunately the flash systems both in-camera and strobe allow for you to have some control.

You can increase or decrease the power of the flash both in the menu of the camera, or on the flash unit itself.

One of the most common reasons to increase the power would be if you are bouncing the flash, the flash will meter for the ceiling/floor, but not the increased distance to the subject.

The previous information is based on using auto and semi-auto modes on your camera.

You can use the camera in manual, thereby controlling the ambient light and still use the flash in TTL, it still calculates the flash power by using the pre-flash light pulse (my favourite).

You can use the flash in full manual, (practice needed). Probably more suited to studio situations, or where you have time to set-up the shot.

OTHER FLASH FUNCTIONS

ETTL as already discussed.

Manual: Where you determine the power used.

Multi/Stroboscopic: Here you choose the power the flash uses and the number of times the flash fires. It makes for some really cool effects. Note that each time the flash fires, it's power decreases.

Multi flash is mainly used in a studio as it works best with little ambient light

USING YOUR FLASH OFF CAMERA

It is usually more flattering to a portrait to use your flash off the camera.

You can do this by purchasing a set of triggers. These can be manual triggers, which are inexpensive, or fully automatic triggers which are much more expensive but offer many more functions.

MODIFIERS

There are any number of modifiers you can add to your flash to soften or direct its light.

A Snoot, which is like a funnel will direct the light to a small point.

A softbox, which still directs the light, but also softens it.

An umbrella, depending on the type, there are shoot through (white) or reflected umbrellas. These also diffuse, direct and somewhat direct the light.

Using a flash unlocks so many creative options and allows you to have more control over how your image looks.

Practice is the best way to understand how it works, and in the digital age, there is nothing to stop you experimenting.

Question time?