Part 3

Equipment

The majority of lighting solutions in a photographic studio fall into two categories: Flash or Continuous. With the advent of LED lighting, continuous lighting has become cheaper and cooler as flash heads tend to run at high temperatures. Continuous LED lights output a fraction of the heat from conventional filament bulbs or florescent tubes, used in older versions.

Flash Heads or Strobes

These vary in style, but consist of a control panel, a charging unit (body) a modelling light, and the flash tube or strobe. Some may come with a reflector (as shown above) but not always. There are many “light modifiers” on the market which can shape, soften or reflect light in different ways, according to the desired outcome.

The amount of flash is variable and can be adjusted to suit conditions required from the control panel on the rear of the unit. Most are wireless, or will accept a “sync” cable attached to the output socket on a camera. (See on following pages.)

The advantage of these units is, being mains electric powered, they have a very fast recycle time (the speed at which the flash becomes ready**)** and have a high light output.

Smaller Flash Heads

Less versatile, but much cheaper flash heads are available. Lower in power, but still able to produce good results in a small studio, these lights are more compact than the larger flash heads or strobes. Consequently, they are far simpler to use, although less flexible.

These are usually configured in a primary/secondary role with one primary flash connected via a sync cable – either directly to the camera, or through a small trigger/receiver module.

They also have modelling lights, but are restricted in their main light output from the flash tube as Full, Half or Quarter Power outputs.

Modelling Light

Modelling lights are used as a representative light, mimicking but not as bright as the main flash. They are used to provide an indication of how the light will fall upon the subject when using light modifiers

Light Modifiers

As their name suggests, there are various addon devices for flash heads. These include:

- Reflectors
- Soft Boxes
- Barn Doors
- Shoot-through Umbrellas
- Reflective Umbrellas
- Snoots

Examples of Modifiers

Reflector

Soft Box

Shoot-through Umbrella

Reflective Umbrella

Snoot

Beauty Dish Reflector

Ring Light

Continuous Lighting

As its name suggests, this form of lighting stays on all the time. They are dimmable and some have the ability to alter the colour of the light from warm to cool colours.

They come is either round or square shapes – the square often having “barn doors” to direct light or stop light-spill onto a background or other surface.

Another type of continuous light is a ring-light. As its name suggests, this is a circular light. It can be used to light very small items with an event light (macro photography) or to produce a round highlight in a model’s eyes.

Stands

All of these lighting types use a three-legged stand (for stability) which is adjustable for height. They can also be augmented with a boom or extension arm, to raise the light above the subject, while incorporating any of the light modifiers previously mentioned.

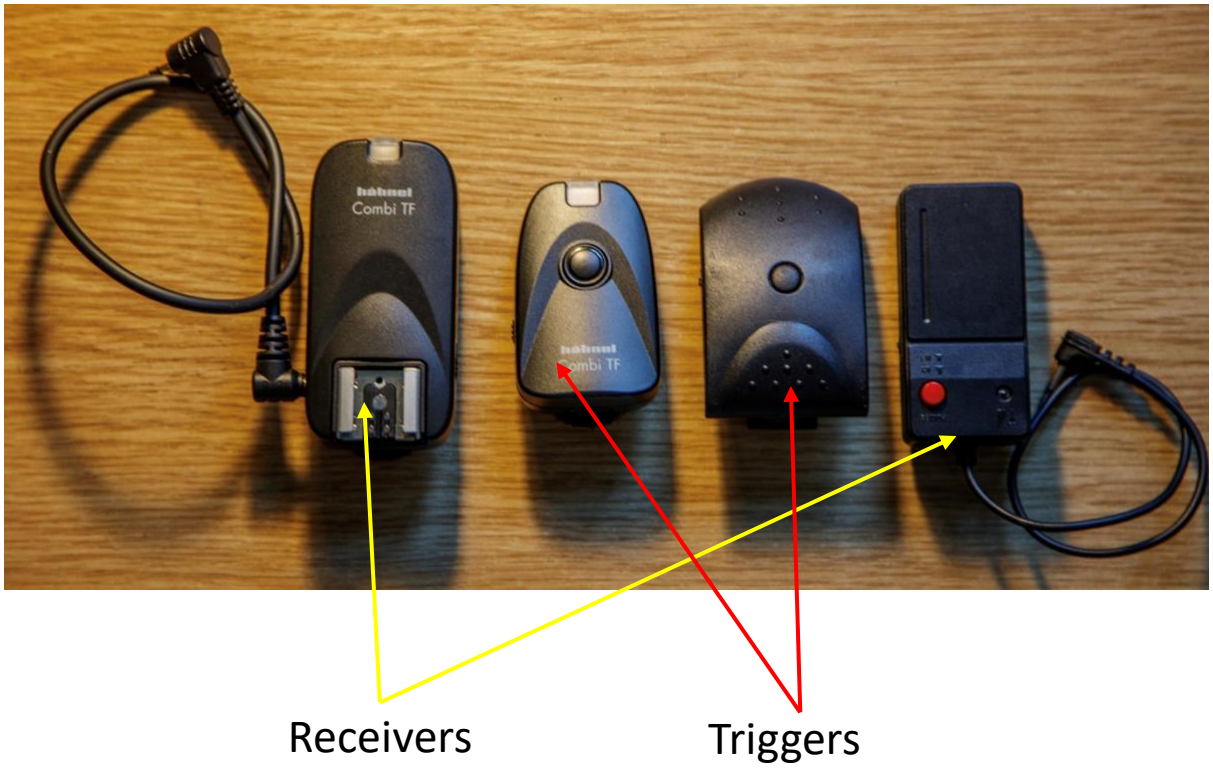
Triggers, Receivers and Sync Cables

Today, flash Heads are controlled by Triggers and Receivers. These work wirelessly to fire the flash head(s) when required. Each trigger can fire up to 256 flash heads!

Flash Triggers are mounted on the "hot shoe" of a camera. They work with the camera to remotely "fire" the flash as the shutter is released. This saves lots of trailing cables in a studio and allow the photography plenty of scope to move around to get the desired shot.

Again there are many types of trigger; the ones shown herecan fire different flash heads at different times, to suit a setup, to save having to reset the light units each time.

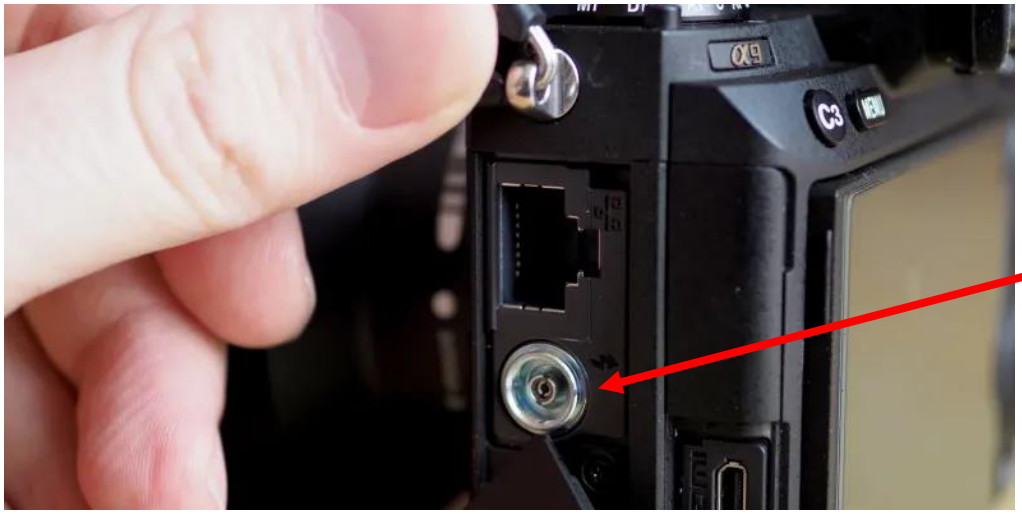
A cheaper versionis available, capable of firing one master flash head. These are not so versatile, but with other flash heads set as "secondary", mutiple flashes can still be fired from these simpler versions. These are non-camera specific, and can be used on any camera with a flash hot shoe.



Sync (Synchronising) Cables

As its name suggests, this cable is used to synchronise the shutter action with the flash head. This is a long cable which gives it an element of flexibility, but not as much as a wireless system.

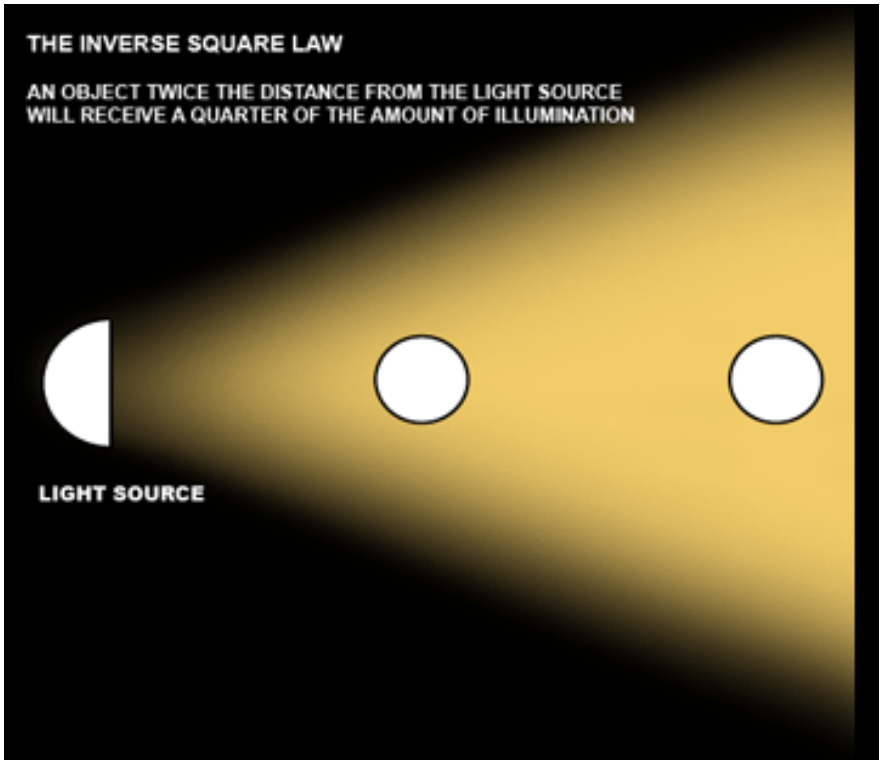
The cable is usually connected between the dedicated port on the side of a camera (Usually under a rubber cover) and a sync connector on a flash head.



Alternatively, the cable can be plugged into a portable flash gun or a hot shoe adapter for off-camera flash use.

Distance of Light from the Subject (Inverse Square Law)

Basically, all the inverse square law says is that an object that is twice the distance from a point source of light will receive a quarter of the illumination. So, what it means to us photographers is that if you move your subject from three meters away to six meters away, you will need four times the amount of light for the same exposure. This can most easily be achieved by opening the lens aperture two f-stops or using (or raising the power of) a flashgun to four times as powerful.



As you can see from the diagram the beam of light fans out quite quickly and the object furthest from the light receives only a small proportion of the light, most of the beam misses the target.

The more the beam is focused the higher proportion of the light will fall on the object. With a theatrical spotlight for instance which has a very narrow beam, much more light will fall on the object.

In the studio, lights are often much closer to the subject than a camera. There are two reasons for this, one is to get more light on the subject: the nearer the light is to the subject the more light reaches it, and the other is that the nearer the light is to the subject the less of a 'point source' it will be, and so the softer the shadows will be on the subject.

This is assuming the light has some kind of a reflector or umbrella attached to it to spread the light out a little; the nearer the light is to the subject, the bigger and more spread out it will appear to be, and therefore the softer the shadows will be. High contrast and sharply defined shadows are always the enemy of the photographer and should be minimized whenever possible.