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Setting up & using an Infra-red and PIR trigger

Remote triggers

The basic principle of a remote trigger is to get your subject to take its own photo day or night. There are a number of ways to do this, light beams, PIR sensors and pressure pads. I use an infra-red light beam and a PIR sensor (Passive Infra Red)

Infra-red light beam

With an infra-red light beam the camera is triggered when the beam between the emitter and receiver is broken. The emitter and receiver can normally be set up to 4mt apart. When the beam is broken a signal is sent by cable to your camera to fire the shutter. The light beam is just used to trigger your camera and it's your camera that fires any flashes you have set. The sensitivity can be adjusted for your subject, mammals, birds or insects. If you are photographing badgers and have the unit set to mammals, the camera is only triggered when something large breaks the beam and is not triggered by a passing moth. How you set the beam up depends on your subject. The simplest method would be to set the beam across a regular track. As the subject goes through the beam a photo is taken. The light beam can be used for a whole range of subjects in many different ways. Across tracks, by a regular perch, at a feeding station or at a nest site. Check to see if a licence is needed for your subject at or near the nest. Natural England or the RSPB would have information on this. I have a licence for barn owls and kingfishers and great care needs to be taken to prevent any disturbance.



Key points

- ~ Fast reaction time for birds in flight.
- ~ Can adjust sensitivity/width of the beam for better focusing.
- ~ Can accurately position emitter/receiver, across track, flight path



PIR Trigger

A PIR trigger works in a similar way to a light beam but you don't need to line up a second unit. The PIR (Passive Infra Red) unit is triggered by movement of heat in front of the sensor – similar to a burglar alarm. They are also used as triggers on trail cameras. I use a PIR trigger for mammals as the PIR trigger time is slower than the light beam, usually half to one second. This would be too slow for birds in flight shots but good for foxes, badgers and hedgehogs.

Key points

- ~ Quick and easy to set up.
- ~ Usually cheaper than a light beam.
- ~ Usually longer battery life – more time in the field.
- ~ Some PIR units have a light sensor for lightning photography.



Adding some camouflage makes it look more natural and more likely your subject will come to where you want.



My kit was set up ready to capture the tawny fly over the bluebells but I couldn't believe my luck when I checked the back of my camera to see I got a roe deer in the picture as well. The roe deer must have been close to the beam when the tawny flew over its shoulder to take both their photos.

Like all wildlife photography, there is time spent planning and setting up, but when you get a result and it all comes together, it's just that bit more rewarding.

Flash photography

Check your camera and flash settings. I've used both Canon and Nikon kits. For my remote photography I set the camera and flashes to manual and pre focus on a set point. For both sets of kits, I do test shots to see what F stop I can use to get a good depth of field and the best lighting. I may use between 3 and 6 flashguns at a time. I have connected them by cable, used light sensitive slave cells and I'm now using wireless triggers. You can use less flashes, but would need to use a low F stop around F5.6 (larger aperture), something like F8 or F11 would be good but if you can use F16 you will have a greater depth of field and more chance of your subject being in focus. Using a wide angle lens will also give you a greater depth of field but will need to be set up closer so your subject is still a good size in the frame. At night the camera speed is not so critical, I use 1/250 sec., but it's the shorter burst of flash that freezes the action. For the tawny owl flying low over bluebells, I set the flashes to 1/16 power. As well as a fast recycle time, it was the short burst of flash that captured the owl in flight. For badgers which are not so fast I set the flashes to 1/2 power. This gives me a faster recycle time so I can take a second photo without needing to wait for the flashes fully recharge.

Focusing

A point to remember when focusing is that the depth of field is two thirds beyond the line of focus and one third in front so it may be best just to focus past your planned focal point to get full use of the depth of field. I've done some tests by sticking a number of cheap yellow (Pound shop) pencils in the ground through the line of focus to see what my depth of field would be for a range of apertures.

Setting up and Camouflage

For photographs with the light beam across a track, I have found that some camouflage around the camera and tripod and over the light beam unit helps to blend it in to the natural environment. Both the light beam units (sender and receiver) have a tripod thread on the base and a ground spike or tripod can be used to position them at the height and angle you want. I also use an Ultra pod II to strap a flash on a branch and more ground spikes to position the rest of the flashes.



For my tawny owl photos, I set up in two ways. One way is to have the owl fly towards the camera. The wild tawny owl I photograph has got used to coming in for food. I've set the camera up close to the ground and used a wide angle lens. I've tried different set ups for the flashes, but usually set up the flashes in a curve by the camera and may be one flash set behind the owl for some backlight (moonlight). Keep the flashes about a metre away from the camera to avoid red eye. Doing trials by swinging my camera bag through the beam, I have found there is about 20-30cm travel from the beam breaking to the shutter firing. This test gives me the position to set the focus point. For a side-on tawny owl photo where the owl flies across the camera, the focusing is easier. I also set the camera to 'continuous high' shooting and if I'm lucky, get 2 or 3 shots as the owl flies across the camera. Having the flashes set to 1/16 power gives a quick recycle time and freezes the action. I use some scrim around the flash guns, a C80 cover over the camera, C39 tripod mount cover and C38 tripod leg sleeves. Doing this makes it look more natural and more likely your subject will come to where you want. The C80 camera and lens cover also protects your camera from the evening dew and helps reduce battery drain in cold conditions. The kit can get quite damp at dusk and during the night even in good weather conditions.

Check your camera and flash settings. When I set up my Canon kit I found that the camera didn't fire when the tawny owl came through, but did when I set up. I realised that I had the 30 minute 'auto power off' set. It just took a couple of seconds to go into the menu and turn this off. I also found that I had to do the same for the flash guns to take them off stand by. I use rechargeable batteries for the flash guns because I found that I was getting through too many Duracells. By using rechargeables, they can be fully charged each time.

I keep my kit for infra red photography together in a green grip bag. I have draw cord bags for the various cables. I keep my flash guns in neoprene bags which gives them protection from knocks and scratches. The bags are large enough to keep the flash blocks or wireless transmitters attached.

There may be more ways to set up and use a light beam, but the methods I use, I have worked out over the years by trial and error, also talking to friends and sharing ideas builds your knowledge. I've never been one for keeping the way I take photos a secret. For me wildlife and wildlife photography is a passion - I love the outdoors. When waiting for a badger to come by in a winter woods, I can just lie there looking up at the stars through the leafless trees and listen to the sounds of the forest. When I'm photographing a kingfisher from a hide, it's a great feeling to know that they are just a few feet away, totally relaxed and unaware of my presence. This is my kind of photography - capturing their natural behaviour. Like all wildlife photography, there is time spent planning and setting up, but when you get a result and it all comes together, it's just that bit more rewarding.



Setting the flashes to 1/16 power freezes the owls flight in the photo

To avoid red eye use your flashes off camera.

It does take time & planning but when you get a result and it all comes together, it's just that bit more rewarding.



Set up with one of the flashes behind the tawny to give some backlight (moonlight) through the feathers

It's a good idea to plan your set up at home and do some trails before you set up in the field

Below are some links to our products that I use for my remote photography and links to Jama for the infra-red light beam and a link to a PIR trigger I use.

Kit I use and available from my company wildlifewatchingsupplies.co.uk

These are products I've added to our list or I've designed to help me with my wildlife photography

- ~ [Ground spikes](#) Code E2 for light beam and flashes
- ~ [Camera covers](#) C80 Camera & Lens covers
- ~ [Ultra pod](#) C22 Mini tripod/clamp
- ~ [Tripod mount cover](#) C39-A Tripod Mount Cover
- ~ [Tripod leg sleeves](#) C38-G Tripod Leg Sleeves
- ~ [Neoprene pockets](#) C28.2 Neoprene Bags for Flashes
- ~ [Cargo grip bags](#) C10 Cargo bags
- ~ [Leafcut scrim](#) A2 Leafcut Scrim



Light beam on Ground spike

Jama infra-red light beam – An ideal set up would be a light beam code BIR2, 10 mt 'Rallon' cable for positioning unit and camera adapter to suit your make of camera. The camera adapter connects your camera to the cable and to the light beam.

Available direct from Jama.fr. I've used this make of light beam with great success over the years.

Jama.fr also offer the PIR trigger.

The PIR trigger is available in the UK online.

I've added a link to the company but you can find it via Google. [Micnova PIR trigger](#)

Thank you for your interest - I have more photo tips and web links on my wildlifephotography.co.uk site

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