Pole-Cam On The Cheap

By Alexander Mustard

What do you get it you cross a broom with a bicycle? This short article is about my attempt to make a pole-cam for my stills rig on a very tight budget. I am going to tell you how it worked and some of the design lessons I learned along the way.

I have just returned home from DEMA and the Antibes festival and once again I came away full of admiration for the housing manufacturers, who are continuing to bring new products to the market to allow their photographers to produce new types of images. In the last issue of UWP, Tim Rock reported on Aquatica's waterproof remote release. While Seacam, in particular, deserve special praise for their pole-cam system, which not only has electronic shutter release, but also options for remote viewfinder and even VR glasses to see what your camera is seeing. The only downside is the price. And if you have to ask…

I am not a Seacam user and I don't have much money to throw around, so I decided to try and make my own pole-cam system. OK, so it lacks the sophistication and engineering excellence of the Austrian kit, but if you can take the teasing on the dive boat it is certainly capable of producing stunning images. The whole lot cost me less than 20 Euros and it is totally waterproof!

The broom/cycle cam only cost 20 Euros to make. It is important to have the shutter release mounted on the pole, because all pole-cams will require two hands to manoeuvre.

Reef shark split level. The buoyancy on the base of the housings makes it easy to shoot split levels and makes the pole-cam much less tiring to use. Here I shot on manual focus, locked 30cm from the camera, set underwater. And manual exposure, metered on the sunset. I relied on strobes for flash fill in the dark water. Nikon D2X + 10-17mm @ 10mm. Subal Housing. Subtronic strobes. F13 @ 1/50th. Pole-cam.

I am not much of an engineer, but I do have a talent for the lateral thinking required for a good bodge. So a quick trip to the local hardware shop and I had my essentials: a metal broom for the pole, a gardener's kneeling pad for floatation and a bicycle brake lever and cable to fire the shutter.

The bicycle brake cable is ideal for firing the shutter because the outer sheath of the cable can be secured to the pole and the camera, while the cable inside can move freely to pull the shutter lever back and take the shot, without jerking the housing. The brake lever is also advantageous for the system. Not only does the long pull of the lever provide an ideal mechanism for feeling

Reef shark dreams. Here I experimented with aperture priority (with –1.3 stops of under exposure) to burn in the water colour with a long exposure. Movement of the camera has created a ghostly, dream-like effect, which I rather like. Nikon D2X + 10-17mm @ 11.5mm. Subal Housing. Subtronic strobes. F13 @ 0.8 second. Pole-cam.

The shutter is fired using the brake cable. The sheath surrounding the cable is secured to the handle of the housing with cable-ties. The cable can then move freely and passes through a small hole I drilled in the shutter release to fire the camera. The firing mechanism is 100% reliable and waterproof.

I bolted buoyancy to the base of the camera, to make the system easier to handle. The buoyancy causes the camera to float close the correct height for a split-level photo. It is easy to push gentle down on the pole to shoot completely submerged images. The broom is bolted to a section of Ultralight arm, which then mounts to the standard strobe mouting balls. When I use strobes I must use three-way clamps. Note I used a fisheye dome for all the photos, the small dome it only used here for demonstration purposes.

the shutter focus and fire, but the lever itself is already designed for mounting onto a pole, bicycle handlebars, after all, are a similar diameter. This is a very important point because photographers often forget that they will need two hands to guide the pole and there won't have a spare hand for pressing a separate remote release.

The next job is attaching the pole to the camera. First, I gave my new broom a haircut and then drilled two holes through the base and bolted it to a long section of Ultralight arm. This meant I could then mount between the normal mounting balls on top of my housing. If I want to use strobes then I must use Ultralight three way clamps. I found this method much more advantageous than mounting the pole to a single ball on top of the housing because the two mounting points stop it rotating on the end of the pole making aiming a much less infuriating process. With a single mounting ball a housing will rotate easily because of the drag on it caused by panning it through water. The downside of my mounting method is that it is only suitable for horizontal framing.

The only permanent modification required for the system was to drill a 1mm hole through the plastic shutter lever on my housing. This allowed me to pass the brake cable through the lever and securing it on the other side, so that when the cable is pulled the shutter moves immediately. The spring in the brake lever returns the mechanism, ready for the next shot.

The other factor that is often overlooked in pole-camming is buoyancy. I quickly found it was much more preferable to have a buoyant system because during photographic sessions, the action is always interspersed with long periods of inactivity. During these periods it is much more pleasant to have a rig supporting itself on the surface. Furthermore, should you accidentally drop the pole the camera won't sink to the bottom of the ocean. I had actually intended to use a simple swimming

The brake lever mounts onto the broom handle and is easily pulled while using two hands to guide the pole. The long pull actually gives decent feel of the autofocus point and shutter firing.

float for buoyancy, but they are difficult to find and, in any case, the foam kneeling-pad for gardening costs less than a Euro and provides similar buoyancy. I just bolted it to the base of my housing, using the existing bolt holes. I have also found the buoyancy mat very useful for shooting split-levels, when I am in the water, making it much less tiring to hold the camera half out of the water.

The mat is so light it can come on any trip. Which is something than I cannot say about my broom. The downside of the broom is that its shape means it cannot travel easily. Although a replacement can often be found in some cleaner destinations! The final problem is salt accumulation between the brake cable and its sheath, which means that the cable must to be replaced after each trip. The cost is about two Euros.

The one area of my system I could not emulate the Seacam kit with was remote, electronic viewfinder. The Seacam one is so cool and I applaud them heartily for developing such a piece of kit for underwater photographers. Inevitably, my approach has adopted more of a spray and pray technique! But aiming is actually pretty easy and with a wide lens I get an acceptably high hit rate.

The photographic techniques of pole-camming do depend a great deal on what you are photographing. I have used both auto-focus and locked off manual focus, and both auto exposure and manual exposure, and strobes and available light only, for the various shots I have tried to create. In short it is a lot of fun and a great way to pass surface intervals, if you have marine life crowding the boat. It also provides a chance to photograph creatures or environments that are too shy, dangerous, inhospitable or smelly for in water photography. I have just started with my pole-cam and I hope to report back in a future issue on how I get on.

Alexander Mustard
www.amustard.com