

Constant light v strobes?

by Nigel Motyer

A few years ago I was watching a guy shooting pictures with his TG6 while using a torch for lighting, no strobe. I asked him afterwards how he managed his exposures and he came back with the obvious but simple reply of, he didn't, he just let the camera do it. That was a light bulb moment for me and as I'd recently set up a housing for Video, it didn't even have a way of triggering strobes, I thought I'd dedicate some time looking at constant lighting instead of strobes to light my images.

I get asked for still images from time to time but I was increasingly being asked for video footage and I liked the idea of a new challenge so I had toyed with the idea of seriously trying to shoot underwater video footage in a more focused way. At the same time I had been asked by a film production company for useable underwater video footage as they were producing a natural history series for an American channel and had a budget for underwater footage but the brief was pretty broad. They suggested I just carry a video camera on every dive and see what showed up!

So I went for it, but I was doing

this at very much the budget end of what was "broadcastable" and on advice from the production company, had sidelined my usual Nikon D850 and had set up a dedicated Video system with a Panasonic GH5, a Nauticam housing, an ex demo model that Alex T gave me at a good price, and a set of Keldan 15000 lumen video lights and a WWL-1 wet lens. It's a very capable video system but as I started down that road the difficulty of shooting useable footage that can be cut into watchable sequences came roaring into view. Video is hard, and it takes so much more time to get quality footage, and the editing, the computing power needed and the file storage.don't get me started!

If I'm honest, I just prefer to shoot stills. I like the challenge and the simplicity of trying to come back with five to ten images I like from a day's diving, so I was finding that increasingly as I was shooting video footage I'd feel that the scene would make a lovely still image and so I'd switch the camera over to stills capture and play around with the Keldan lights to get a still image I liked.

I had no way of triggering a



A diver over a sea fan in the Banda Sea. Getting good diver images when trying out new techniques requires a bit of understanding from the model. John is a wonderful photographer who instinctively knows how to model for shots. He knew I was trying to dial up the Keldan lights to add in the right amount of lighting on the fan and gave me the time to do it.

Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2xKeldan Video 8x CR195. 160th at F7.1, ISO 500

strobe on that GH5 housing so I could only light images with the Keldan lights but I was loving the freedom of being able to dial up or down the power on the lights and immediately see the potential image in the viewfinder before I pressed the shutter, it seemed just like the

simplicity of the TG6 and the torch. I could just dial in and see the light coverage I liked right in front of me. With the camera's screen I could see the real-time impact of changing any of the camera settings and I could dynamically move the lighting around to where it looked good. No more

surprises in image review, I can't tell you the number of times my strobe fell behind a kelp frond or I had the power setting on the strobe completely wrong for the image and I didn't know about it till afterwards. This was so easy to dial in the lighting and see the impact before pressing the shutter. It was a genuine game changer and I really started to enjoy this different type of image making.



The other big factor boosting my love of this system was the Nauticam WWL wet lens, this is such an adaptable optic and matched with an Olympus kit lens, it has a really useable zoom capability. I could shoot nearly anything I came across from Basking sharks to Shrimps. On paper, in terms of view, it was similar to the 16-35 lens on my D850 but in reality it far out performed that system. The Nikon lens needed a huge, heavy dome and an extension collar to get decent edge sharpness. The WWL was much sharper in the corners at wider F-stops but it was also much neater to use and allowed you focus right up to the front element. Depth of Field can be an issue unless using a smaller aperture but it really is a great optic.

Within a short period of time I found that my favourite camera to dive with was the GH5 rather than the D850. This surprised me because the image quality of the Nikon was way higher than the Panasonic. The image files were just better on the Nikon, they had a higher resolution, much better high ISO performance and far better dynamic



A Red Irish Lord in Browning Pass, Northern Vancouver Island. The ability of the WWL wet lens to focus so close to the dome gives great opportunities for these mid-sized fish but it can be tricky to get even lighting across the frame with the port so close to the subject. Being able to move the Keldans so I could see the lit image in the viewfinder before you press the shutter was a huge benefit.

Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2xKeldan Video 8x CR195. 100th at F8, ISO 500

range within the files but the fun factor of shooting the Panasonic was just so appealing and I had the option of shooting useable video if I happened to

come across anything special. The big hassle of course was travelling with both systems but with the usual tricks of stuffing ports, lenses, batteries



This Chimaera is a very reflective fish which comes up from deep water to lay eggs in the shallows of northern Vancouver Island. The water was dark and the viz wasn't great, so it was an easy shot to screw up. Being able to judge the lighting on the fish while bringing in some background water colour would have been tricky with strobe. With constant lighting and a moving subject, I needed to pay attention to the shutter speed to avoid movement blur.

Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2xKeldan Video 8x CR195. 100th at F4.5, ISO 500

and chargers into every pocket I had, I could just about manage that.

The simplicity of setting the camera's LCD screen to reflect the impact of the settings on the camera meant that I could very easily get the background water to be the

brightness I wanted and then it was just a question of adding in the light I wanted by dialling up the power of each Keldan light until the foreground interest was showing the colour I wanted. Most of the time I shot the system on manual settings but if I was



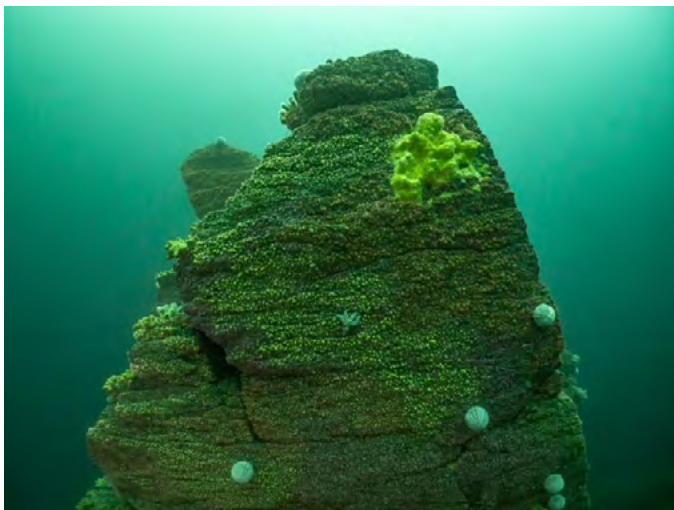
When rooting around under Kelp fronds it's easy for a strobe light to fall behind a Kelp frond, something you won't notice until after you review the image. When using constant lighting you can see any shadows real-time and correct before you take the picture. Here beading anemones are growing on a Kelp stalk. I needed a very slow shutter to bring back the green in the water.

Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2xKeldan Video 8x CR195. 13th at F8, ISO 500

feeling particularly lazy I could just set the camera to meter for whatever light I put onto the subject for nailed on exposure every time. So it felt like an ideal solution right? Well while that's largely true, I did find out the gotchas with this solution.

The first thing that I noticed was that strobe brings one very clear advantage that constant lighting doesn't give you. That burst of high intensity lighting from a strobe not only adds light, it also freezes the action. The burst of light has a tiny duration so the light recorded on the sensor helps to freeze any motion

on the lit parts of the frame, even if a slower shutter speed is used. My home waters are in Ireland, so it's colder, greener and frequently darker water where I regularly use very slow shutter speeds to create background colour in the water. A strobe will freeze the action but I was soon to find out constant lighting will continue to light a moving subject evenly throughout the duration of the shutter being open so you can very easily end up with blurred still images if you drop the shutter much below an 80th of a second. I found that good camera technique became much more important when using constant lighting and I was always looking to use faster shutter speeds than I was used to using with strobes. You will get away with some movement if the



To show the process – Two images, the first, unlit showing how I judge the available light exposure to get the background water the colour I wanted. The second image is the same exposure but this time with the lighting turned up until the colour on the rocks is brought back into the frame. Valentia Island, Co Kerry Southwest Ireland Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2 x Keldan Video 8x CR195. 30thth at F3.5, ISO 640

movement is further away from the camera but, by and large, staying above 125th of a second was a good idea if there was any movement in the scene. I lost a lot of images from camera movement in the early days, particularly if I let the camera control the exposure.

The next issue was having the ability to critically review the still images I was taking. On my Nikon I use an enhanced 45 degree viewfinder, it makes the images much easier to compose but I could critically assess focus on an image review LCD screen on the back of the camera. I could also do this on the GH5 but I found in dark water, a quick preview on the LCD screen on the back of the camera allowed me judge exposure but, unless I punched in magnification, often didn't allow me see if there was a slight movement blur if I'd allowed the

shutter speed to drop too much. I quickly found that judging the images properly was an important step and really needed a bigger viewfinder.

I looked at options, I originally wanted to keep the system smaller and easier to travel with but in the end I opted for an external 5 inch HD monitor. Being able to shoot video while holding the camera away from your body was a game changer for improving the stability of the video footage. So despite my desire to keep the system smaller and more budget friendly, I ended up buying a Nauticam housing for a Small HD502 4K monitor, I got the obvious benefits for my video shooting but it also allowed me a proper screen to judge if there was any motion blur in the final images. So more chargers, housings, brackets and arms vacuum systems (with different batteries, honestly, why do



Macro shooting with this technique opens a much easier route to creating balanced lighting macro images. In this case a Sea Hare in Kilkeran Bay, Connemara, West of Ireland.

Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2 x Keldan Video 8x CR195. 160thth at F9, ISO 640

Nauticam do that ?). I now had two systems with multiple battery systems, none of which used the same chargers. When it all worked it was fantastic but I was used to a D850 whose battery lasted for weeks, the GH5 or the monitor needed attention after every dive, it's a high maintenance system. Perhaps it was the way I set it up, but if the monitor batteries died on a dive, the LCD on the camera was disabled and I could only use the eyepiece viewfinder. That was near impossible to use

effectively so I got used to changing the batteries on the monitor after every dive.

The other issue was that although the lights I was using were pretty powerful, in shallow water I needed lower ISO's and smaller apertures to control brighter daylight. In those conditions, even though I had thirty thousand lumens at my disposal, I was often wishing for more power on my lighting. This was a particular issue in shallow coral reef dives where the natural daylight was really strong or if I was filming divers who also themselves had very powerful lights. Of course the usual restrictions on shutter speed needing to stay within the flash synch speed no longer applied, so I could happily run the shutter speed up to whatever I needed to control the light, but as a stills shooter I had to remember that now, for the first time, shutter speed was now a setting that also controlled the intensity of my artificial lighting as well as the available light. That takes a while to get use to but it sometimes means you need to really crank up the power of the artificial lighting if you want to use a faster shutter speed. The exposure triangle that I had learned through years of still photography was now operating with slightly different rules.

The other issue that became a daily task was battery management. I found that if I kept my lights at half power or lower then I could happily get a days diving out of a charge but if I was shooting in brighter conditions or I wanted to use a smaller aperture for greater depth of field then I needed to up the power on the lighting, then the run times on the lights might not last two dives. Battery management became a constant nag in the back of my head, the camera, the monitor and the lights all chewed through power. Not a deal breaker, but you needed to think about it, particularly if you were



I was lucky that I had been shooting a close focus image of a sponge when I saw movement to my left as this small Angler fish swam towards me, so this was really a grab shot. The lighting was OK but at only an 80th of a second the shutter speed was much slower than I would have liked for a moving subject. I was able to take four frames three of which were blurred from the combined movement from me and the fish but panning with the fish gave me one sharp image. The benefit of constant lighting though means you don't have to wait for flashes to recycle so you can set the frame rate as high as you like. Aran Mor Island, County Donegal Ireland.

Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2 x Keldan Video 8x CR195. 80thth at F4.5, ISO 500



One of my first attempts to balance a constant light source light on a close focus wide-angle was this Elegant anemone in one of my local dives Dublin Bay. With the Zoom racked all the way out to its longest end the WWL focuses virtually on the dome. The lights were angled high up and pointed down onto the scene to light up the anemone. Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2 x Keldan Video 8x CR195. 25thth at F9, ISO 400

heading offshore for a day, dry boxes and spare batteries for each of them needed space on the boat and getting systems back on charge between dives became a more urgent task. I can certainly see why professional camera people use such powerful and expensive lights to give themselves the option of balancing their lighting

with longer shooting times.

So the constant lighting wasn't the game changer I had hoped. It certainly is a good solution for some images but I ultimately found that using strobes for still images was a better solution. Certainly a large part of the appeal of the GH5 system I had was the WWL optic. At one point

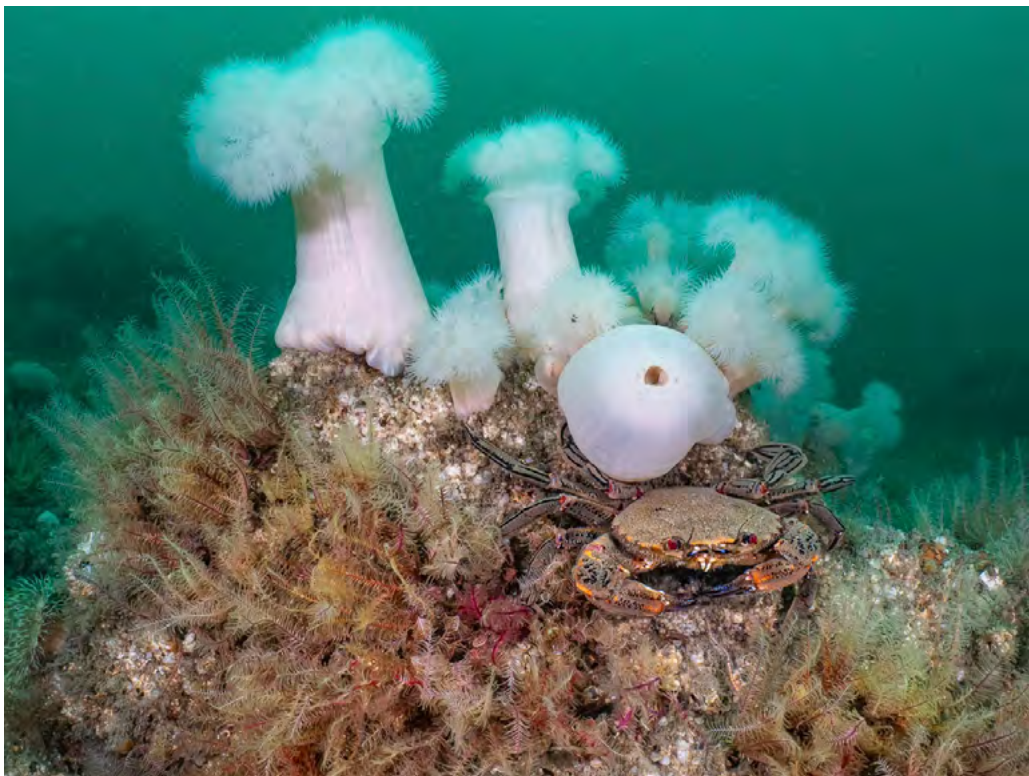


I'd tried to take this type of shot many times, showing the colour in the dark gullies under lush green kelp fronds above. Putting light in the back of the image is a great way to pull the viewer into the frame so I was trying to balance this colourful scene with the distant but low available light in the background. It's an environment subject to a lot of swell and movement so I'd always found it hard to get clean even lighting on the colour on the rocks as my strobes would frequently be blocked by swaying Kelp fronds. Getting constant light onto the scene gives you certainty on the lighting before you take the picture. The GH5 is a capable camera but high ISO is not its strength, so I was shooting this wide open to maximise the exposure and it's a great example of how well the WWL works even at F4.

Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2 x Keldan Video 8x CR195. 40thth at F4, ISO 640

I was loving the WWL optic so much that I looked at getting hot shoe flash trigger for the housing to allow me

add back in strobes onto that system. The ability to freeze motion at slow synch speeds was something I missed



A local dive for me, Dublin Bay, Ireland. This was an earlier experiment looking at what was possible. Here I was able to get a sharp well-lit image in pretty poor conditions, 4 meters viz making the background colour at 20 meters hard to achieve. A 15th of a second brought back the colour even at F10 which I wanted to keep it all sharp.

Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2 x Keldan Video 8x CR195. 15thth at F10, ISO 400

in a constant lighting solution. Its not that you can't do it with lights, it's just that its easier with strobes. However, by then the technology had moved on and, capable as it was, it made no sense to further invest in the GH5 solution. The newer sensors were just far more capable and even the GH5 Video capability was becoming more

dated. Finally, newer systems were coming on stream that would allow me combine superior video capability to the GH5 whilst maintaining the still image quality of the D850 in one mirrorless system that allowed me keep the WWL wet lens. I sold both the D850 and the GH5 and switched to a Nikon Z8 and the WWL-c, an upgraded

A cuttlefish at Playa Chica in Lanzarote in the Canary Islands, I wanted to use a smaller aperture here to keep the whole animal sharp, so even though I was shallow, I slowed the shutter speed to keep the blue in the water. It's interesting that although I used a relatively fast shutter speed at 125th, the movement in the sand under the



Cuttlefish's siphon wasn't frozen. It was a lesson to me how good flash is at freezing this type of movement likely making strobe lit images sharper overall.

Panasonic GH5, Olympus 14-42mm F3.5-5.6 II R, Nauticam housing, WWL-B wet lens, 2 x Keldan Video 8x CR195. 125thth at F16, ISO 400

WWL lens that was optimised for the Nikon Z range.

In retrospect the two years I ran those two systems was a great learning curve but I was really ready for the move to the Z8 when it came. The Z8 has great video, if I ever needed it, but in truth I know video isn't my thing. I still regularly dive with Z8 and the WWL-c with the Keldan lights, I love the simplicity of that system but I came to the conclusion that if stills are your passion, then while constant lighting has its place, for me it cannot replace good quality strobes for stills photography.

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