

NIGHT DIVING

From a photographic point of view, flying can be fun. Lots of different, or even unique, perspectives and subject matter. Same with the photography of mountain climbing or any other number of sports. But what they all have in common is that once the sun goes down, so do the number of photo opportunities.

Diving is different. While landscape photographers can, and have, used star or moon light to take photographs the result is not that different from daytime results, just with incredibly long exposure times and the addition of a very heavy tripod. Since the distance from camera to subject is already limited for underwater photography, due to the density of water (600x greater than air) and the inevitable suspended particles, most subjects can be photographed at night with much the same techniques and success as daytime efforts. However, the one advantage of night diving is that a whole new crew of underwater critters clock on for the dark shift. All new fodder for your camera.

As far as equipment goes, both dive and camera gear are the same for night time use. The addition to the gear list is usually limited to a torch and possibly a cylume stick or similar signal device slipped onto your tank valve. However there are a few things you can do to make the experience of taking photographs during a night dive more comfortable, convenient and safe.

If you have a housed SLR camera (either digital or film) the first thing you will notice is that you need an extra arm. Large housings are much more comfortable held with two hands, hence the

normal supply of two contoured handles. Along with the housing you will probably have a few brackets, strobe arms, locking arm joints and one or two strobes. The whole thing may be carried along in one hand, held against your chest or in the crook of your arm, but when you have to use it then two hands are mandatory, especially if there is any sort of current present. Of course that is all fine and dandy during the day but at night you are lumbered with that torch. And not just stuck in your BC pocket or dangling off one of the many clanking D rings. You have to use the torch almost all the time to see where you are going, keep an eye on your gauges, watch out for your dive buddy and, most important of all, find your nocturnal subject matter.

Short of eating cheese from Chernobyl, there is not much chance of you growing an extra arm out of your head, so the issue of operating your camera once you have found your subject while keeping it illuminated enough to get it all framed up and shot is a major problem. Lets have a look at a few solutions to night diving torch logistics for photographers. You can use one or more of the following methods to keep yourself sane and safe.

Have you heard of Oleg Vladimirovich Losev? No? If you have you probably need to get out more. Oleg invented the LED or Light Emitting Diode. While you may think that the LED was invented around the same time as iPods, Facebook and the last Windows operating system to work properly, LED's were invented in 1927 by a Russian who worked with radio diodes. They started to be used in the US in the early 60's. Think of the computers shown in early Star Trek or Lost in Space episodes with those little blinking lights. Today a hand held torch with a number of LEDs provide a compact, robust and reliable light source. If one LED dies there are usually a number of others in the cluster that can keep operating, sort of like a series of backup light globes that are already plugged in and working. The light output from an LED torch is quite bright, usually daylight balanced with a broad beam, perfect for a focus torch or as video lights.

A common form of LED torch is one with a harness to be worn on your head. This leaves the light pointing in the same direction as your face, which is handy, while freeing up your hands. Twin torch systems are often worn in this manner by cave divers. The advantage of this system is that your hands are freed, the torch(s) can be easily aimed at where you are looking and the whole system is quite lightweight. The disadvantages are that you are limited in size and power if you need to light a large area (such as wreck or cavern diving) and the annoying consequence of a bright light next to your face attracting every wiggling planktonic critter on the reef. Try that around coral spawning time or during the temperate spring mysid population explosion. Also, the head mounted lights can be blocked by your housing if using an SLR, plunging your subject into sudden darkness, and/or flaring off the housing back into your eyes. Even compact cameras can have similar problems, though not as much as the larger housings that require your face pressed up to their back.

You can work around the issues, possibly mounting the light higher up



A typical head mount unit with adjustable fit straps. A twin unit system would not normally use a head harness but be attached to a light weight cave diving helmet. But that does not mean that a twin unit can be adapted to work on a single harness.

on your head, but when using close-up systems the housing, even the small compact ones, will usually block your torch light. This is not to say that this system is not viable. It may work just fine for your dive technique and camera set-up or you may be able to work around or ignore the issues in favour of the advantages of a head mounted system. Similar pros and cons can be found with forearm or shoulder mounted systems.

A second method is to take advantage of built in torches or modelling lights found in some strobes. This applies only to external strobes such as the Nikon SB units or



This head mount harness unit has a separate battery pack, balancing the whole unit and allowing more batteries to be used. Note that there are multiple LED globes.

Ikelite D series. (Compact cameras may have a focus beam or pre-flash system but not a modelling light.) Some have "aiming lights" which may be OK to see where your strobe is pointing but are no substitute for a decent torch. Proper modelling lights can throw out a very decent broad, bright beam. I currently use a set of Ikelite strobes with very nice built in modelling lights. Providing a broad, soft but powerful beam they are always there for night dives or just to light up the dim ledge on a rocky reef during the day. The advantages of built in modelling lights are that they are always there, not forgotten back on board or quietly flooding away in your BC pocket after you dropped your tank on it. It is one less piece of gear

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This torch clamp has a quick release feature enabling the torch to be snapped out and hand held without needing tools.



The clamp on this torch holder is able to fit onto a strobe arm or other anchor points of varying diameters.

digital photography



This is an SLR housing bracket I designed to hold all sorts of things, including a night dive focus torch. It also protects the dials and strobe connections on top of the housing and serves as a sturdy handle for lifting and carrying. I would normally have the torch placed directly over the lens so that a simple tilt down or up will cover any camera to subject distance. Ken has moved his across a touch so that it does not bump him on the head every time he uses the viewfinder. Centralising the torch and pushing further forward in the clamp would solve that problem.

dive to spread the battery load.

The disadvantage of built in modelling lights in strobes is that if you aim the modelling light to hit your subject directly, the strobe will be angled too far into the path of the lens, causing serious back scatter, particularly for small subjects photographed from a short distance. Positioning the strobes correctly (usually parallel to the lens) means that the modelling lamps are directed out of the lens path so that the subject, when viewed through the camera's viewfinder, is not illuminated as brightly as it could. The camera's auto focus may not be as snappy and accurate as well, due to the low light levels from the indirect lighting.

In practice I have found that a good compromise is to use the built in modelling lights to conduct the dive and find critters, switching between strobes to balance out battery use. Then when I find a subject I have a separate torch mounted on the housing which can be angled onto the subject without causing back scatter. Using a high shutter speed, say between 1/125th and 1/200th or your

to find, service and remember to pack. They may be powered by separate batteries but generally use the same battery as your strobe. Obviously this means that if you are using them for the duration of a dive your battery will take a beating, but if you start your dive with a fully charged battery (which you should) then they should last for at least one dive. If you have dual strobes with modelling lights, use one then switch to the other strobe's modelling light half way through the

maximum strobe sync speed, will underexpose the torch light sufficiently to eliminate any back scatter or influence on the final exposure.

Compact cameras can usually be held with one hand allowing your other hand to hold and aim a focus torch. You can also use head mounted torches for general viewing and have a hand held torch to illuminate small subjects that may be skittish or hard to hit with a head mounted torch when the camera is in the way. Even better, you can mount a small torch on the accessory shoe of the camera housing. Small brackets can be purchased that can hold a torch, freeing up your other hand to hold on in currents, keep you off the reef or just generally steady yourself or the camera.

Some divers have their buddy operate a torch to illuminate photographic subjects. That's fine but it is not the ideal situation as that would mean a constant vigilance by the other diver to ensure that you don't miss out on any subjects. Fine for a dive or two but it soon wears pretty thin. It is better to be self sufficient in the torch department if only to ensure you don't miss a skittish subject.

There are a number of products on the market that enable you to mount a torch onto your strobe arm(s), onto a accessory shoe or similar holding point or even onto the strobe itself. The latter of course is OK for a spotting light but, as mentioned above, focus lights on or in a strobe are less than ideal as it promotes bad lighting practices. The best torch holding products are those that allow for a variety of mounting points with the ability to move the torch to exactly where you want it and then lock it in place.

No matter what your choice of focus torch and holder, you are best served with a second small torch with an easily operated on/off switch, either head mounted or slung off your wrist or clipped onto the front of your BC. While the LCD screen will show you your image results (automatically if you have your camera set to do so) generally all



Another option is to mount the torch on a flexible arm. If you are using dual strobes this may be an addition you do not want to make, placing the focus torch on the housing or strobe/arm instead to cut down on clutter. The advantage of this system is that the torch can be swung in for macro work or kept out to the side for wide angle use, as is the case with this cavern diver.



Here Jesse is using the built in modelling light found in most of the superb Ikelite range of strobes. Great for lighting up the general area but the addition of an on camera torch for close work will enable the strobe to be aimed further forward, as is the case here, to avoid back scatter.

the other camera controls are invisible in the dark. While the small "windows" at the top of a metal housing let you see the dials, knobs and button settings, at night these are usually not illuminated from within, leaving you "flying blind" if you want to change any of settings not shown in the viewfinder display. The same applies to compact cameras. Even though most compact camera housings are all "see through" perspex, a second light source is invaluable for checking or changing settings.

If you are going to mount a torch on your housing, the best spot to place the torch is directly over the central axis of the lens. That allows you to change the position of the torch beam on distant to super-close subjects with just one upward or downward panning movement. If your torch is mounted off centre, such as on a strobe arm off to one side, then you will need to fiddle a little more to move the beam in two planes to hit the subject; down and back for close subjects, up and out for distant subjects. If the accessory shoe is not directly over the lens then you may have to either put up with the extra fiddling or make up a simple bracket that mounts in the shoe, or on any other solid point, so that the torch can be accurately positioned above the lens.

> LINKS

<http://www.tasco.com.au/Products/tabid/59/CategoryID/439/List/0/Level/a/productid/1176/Default.aspx>
<http://www.seaoptics.com.au>
<http://www.pelican.com>
<http://www.ikelite.com>
<http://www.capebyronimports.com.au/ikeliteprod.htm>
<http://www.ulcs.com/strobes.html>

Keep in mind that if you are using a traditional viewfinder to compose your images, you will need to mount the torch far enough forward so that the back of it does not whack you in the head every time you put the housing up to your mask. Compact camera users would normally take advantage of the live feed coming through the LCD display so for them this is not an issue.

Finally, the clamp that holds your torch should be solid and lockable while allowing easy, smooth panning. Diving with a camera is hard enough, particularly at night, without having to fiddle about to unlock your torch to move it or have it randomly drifting off the subject because of an insecure mounting system (i.e. a couple of rubber bands generally do not work well enough). Ideally the torch should be able to be locked down firmly enough to avoid accidental movement but with enough play to allow accurate re-aiming.