

Talking Tec

By Damien Siviero

Early on in my closed-circuit rebreather (CCR) training my instructor once said “that camera is going to kill you”. He also forced me to conduct the vast majority my training either carrying or using a DSLR camera rig. His sobering words made me carefully consider how and where I would take a camera in the water from then on. Underwater photography presents a serious task load on any diver, so the concepts in this article apply also to standard diving as well as tec diving, loosely defined here as any diving conducted past accepted norms of depth and/or overhead environments.

Understanding Risk

From the start of our open water course we are told that scuba diving has risks; that is true but no where do they become more real than when tec diving with a camera. Understanding what additional risks a camera puts on us is critical in mitigating and/or accepting them.

We are confronted with various types of risks that effect different things. Different risks effect different aspects of our diving and photography, such as safety, equipment, mission objective and so

on. Each risk needs to be assessed and if practical mitigated as small issues can snowball into bigger ones. I say “if practical” as it is my opinion that certain risks are best left alone and accepted, because the overhead of eliminating it is too great – it is up to each of us to decide where that line is.

During the execution of a typical dive I consider the ascent and descent phases to be of particular risk to me. We dive in high current, rough seas and limited visibility more often than not. The result is ascents and descents that require particular attention and often two hands to hang on, manipulate equipment, etc... To manage this risk I clip off my camera, but in doing some argue that I am at risk of losing it due to a clip failure. Personally I accept the risk of equipment loss (ultimately a financial issue) to manage what I consider a real issue to my safety. Not holding a camera rig frees up both my hands and mind for other more critical tasks.

Lack of attention/awareness (often described as complacency) is another area of high risk whilst tec diving. Managing deco time, gas, PPO2, and so on are critical to executing a dive safely. Underwater photography does a great job at



*Bow and anchor of the SS Catterthun,
60m, Sydney
1/50s @ f/3.5; ISO1600
Canon 7D, Tokina 10-17mm, Aquatica,
2 * z240s*

*Scooter diver over the bow of MV
Fairwind, 90m, SW Rocks, Australia.
1/60s @ f/3.5; ISO1250
Canon 7D, Tokina 10-17mm, Aquatica,
2 * DS125s*



distracting us from these tasks. My approach to address this problem is to dedicate a block of time I use to shoot a given subject. I estimate the time required to shoot a subject (e.g. 3-5 minutes), assess the variables (gas, time, etc...) and if it is within parameters I will proceed. If not, I will either not shoot or revise my objective to fit within the allocated limited. Maintaining awareness of how long I am shooting for and what I am achieving helps give me reference to overall dive time. Safety divers are a great solution too, though unfortunately a rare commodity in non-commercial circles. On many dives my buddy/model becomes the safety diver by default, and if he/she says we're going or calls the dive that it and the camera is away.

Equipment Overload

The hallmark of a tec diver surely has to be the amount of equipment that is carried on a dive. Rebreathers, twin tanks, stage cylinders, reels, canister lights, computers, and so on are all carried to safely execute a typical dive. When we add a sizeable camera to this, it can quickly become overwhelming and dangerous.

One approach to addressing this scenario is by managing smaller issues one by one or even eliminating them before the dive begins. For



Sturdy clamps and 12+9" arms allow a DSLR rig to be tightly wrapped up. Stix arms provide lift, making the it near neutral. Front and rear neoprene covers are tied together with 3mm bungee along with a boltsnap for clipping off when not in use.

example, hook/suicide clips can make handling gear difficult, so switching them out for standard boltsnaps often makes handling easier and avoids the snowball effect.

The amount of equipment we carry adds greatly to the task load underwater, so if you do not need it leave it at home. The bare minimum of equipment can still be a lot and the best way to deal with it all is incrementally. If you can deal with a single small stage cylinder, don't add a reel and canister light until you can do that too. Your camera rig is the last piece of equipment you want to add, and even then perhaps start out with no strobes, then small arms and finally multi segment ones.



Shooting in high flow caves with models and off camera strobes can be difficult. Ginnie Springs, Florida.

1/100s @f/4.5; ISO800

*Canon 7D, Tokina 10-17mm, Aquatica, 2 * z240s, DS-125 off camera*

A clean, tidy and consistent equipment setup will make tec diving easier to execute. The same is true with your camera rig. Strobe sync chords (particularly thin optic fibre ones) should not have exposed loops or other loose ends that can snag and cause entanglement issues. Making your rig neutral (or near neutral) in the water will make it easy to handle and when appropriate clip off. Consider buoyancy arms that provide positive lift for this purpose. The smaller you rig gets, the easier it will be to manage.

Handling your rig

One of the biggest issues I faced when I began doing complex tec dives

with a large camera rig was what to do with it when executing tasks (e.g. gas switch, pickup a cylinder, run line, deploy a SMB). Having the ability to clip off your rig and free up both hands is at times critical.

Multiple ways to clip off a rig exist and your particular equipment configuration may dictate your best approach but for me it is often to clip the rig off to my right d-ring. To enable this, my housing has a single boltsnap (with large eye for finger insertion) attached to the base of the right grip. With the strobe and arms wrapped up tight, this makes my rig reasonably small and discretely tucks in behind my twins or rebreather. It does not clutter my front chest area or

dangle below me, which is a major issue in wreck/cave penetration. When clipped off, I always have the front and rear covers on to protect the port and viewfinder. Both are made from neoprene and are tied together with a piece of 3mm bungee with a boltsnap at one end. When using the camera, the covers are clipped off to the right hip d-ring and again float upwards from there and neatly out of the way.

My experience with most cave and wreck photography is that it can be either mission specific or opportunistic. With the former, we set objectives (e.g. shoot a given section of cave) and then plan depth/time/distances around that objective. Opportunistic dives are very different and I tend to fit photographic opportunities into a given dive plan; this often makes sense when I've not dived a wreck before and don't really know what I'm going to find.

Years ago I used a tether or camera strap with a quick release buckle and squiggly coil. I quickly found out that for deep wreck diving this was not a good idea as it would snag and catch on everything. Simple tasks like removing a stage cylinder or inflating a SMB became a burden; it was also the source of the "that camera will kill you" comment by my instructor. The logic behind a long tether is that when dropped, the camera will hang below you and out of the way. In practice I found it to be an irritating distraction hitting my legs (when vertical) and an obstacle between my buddy and I (should proximity be required).

Many divers talk about cave and wreck line as coming alive underwater. Unless managed properly, it snakes and weaves its way around as if it were possessed. DSLR rigs, with their controls/dials, strobe arms and clamps appear to be a natural



*Stern and propeller of SS Birchgrove Park, 50m, Sydney 1/100s @ f/3.5; ISO800
Canon 50D, Tokina 10-17mm, Aquatica, 2 * DS125s*

magnet to guidelines. Other than holding the camera in a position clear of the line (not always possible and also a high task load), a clean and tidy rig that is stowed clear is the best way I have found to deal with line entanglement. Taut line and awareness is the key to success, so pay attention to where the line is and how it may attach you camera. Also apply particular care when deploying a SMB at depth as an inflated SMB snagged on the camera attached to you is not fun.

Coming from a cave background, one area I do not compromise on is lighting. I always dive with a primary light as standard and never rely on my on-camera lighting for safety. More often than not my on-camera lighting is more than adequate and I don't bother using my primary, but if I decided to leave the camera on the surface or ditch it mid dive that leaves me in a less than ideal situation.



*Diver twisting through passages of Devil's System, Ginnie Spring, Florida. 1/80s @ f/10; ISO650
Canon 7D, Tokina 10-17mm, Aquatica, 2 * z240s*

Rebreathers and Photography

Closed Circuit Rebreathers (CCR) offer the tec diver a virtually unlimited gas supply and greatly extend time underwater. Contrary to popular myths, CCRs do not make you immune to nitrogen and they do not make you undetectable to marine life. For an overview of the types of rebreathers, visit my rebreather guide at <http://damiensiviero.com/rebreather-guide/>.

If you consider time and light as the biggest constraints in underwater photography; the former is addressed in a big way by CCRs. Reducing gas limits and optimal PPO2s enable you to spend more time in the no-decompression zone and/or far less time decompressing. Net result is you can spend more time shooting, but this comes at a cost of complexity and monitoring. The latter is critical for the photographer, as instead of the focus being on gas volumes it now shifts to PPO2 monitoring. For this reason I consider a Heads Up Display (HUD)



*Descending into the high flow of Devil's Eye as tanic water mixes with fresh, Ginnie Spring, Florida. 1/60s @ f/3.5; ISO1250 Canon 7D, Tokina 10-17mm, Aquatica, 2 * z240s*

that conveys PPO2 information to your mask very important for the photographer.

Being stealthy underwater also provides the photographer with an advantage, but it is in my opinion often overstated. Marine creatures are not stupid, they know you are there but seem to have much more tolerance for a diver when you are not spewing out noisy bubbles. Shooting sharks and schooling fish are particular scenarios where CCRs provide an advantage because they do not emit bubbles. Bubble-less diving is also an advantage when shooting macro, as it results in a calmness that tends to make creatures more amenable to being photographed.

Deep dives and nitrogen narcosis present a serious problem to underwater photographers. Typically, divers either do their best to cope with the narcosis or use trimix, a combination of oxygen, helium and nitrogen, to remove or reduce the

narcotic effect. Whilst very effective, helium is a relatively expensive gas, which results in people either deep diving on air or running it lean to save money. Due to the low levels of gas consumed, CCRs make diving even on liberal trimix quite affordable.

Although other forms exist, rebreathers are commonly either manual (aka KISS style) or electronically controlled. Both have their merits, though I have dived both types extensively and find the electronically controlled rebreather to be more suited to the type of diving I do. KISS style units require a busier hands on approach in addition to the same level of monitoring and for the photographer, I consider the electronic CCR with their alarms and automation to be a more appropriate solution.

Diving with models

Unfortunately in tec diving competent and willing models are hard to come by. Understandably, not many people want to spend what little time they have on a deep wreck or cave being told to shine their light here or move a bit over there. My advice is if you find a good model, treat them well! Consider their safety first as it can be just as task loading (if not more) being the model than the photographer.

In caves with flow it is often easier for a model to retrace their path giving you another opportunity to take the shot, than it is to have them hold a stationary position back-finning against the flow. The forward movement also pulls back their equipment and yields a more aesthetic body position.

Conclusion

Despite advances in equipment, training and

attitudes, tec diving is still a dangerous activity and sadly people do die. Applying our craft of underwater photography in caves, wrecks and at extreme depths only adds to the risk already present on those dives. Although you can find yourself a tec instructor and get certified with relative ease, developing the skills and confidence necessary to safely execute a photographic dive is not as easy. Finally, be prepared to put the camera away, or if it comes to you or the camera even ditch it, as in the end you can always repeat the dive and cameras are replaceable – you are not.

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DISCLAIMER: Tec diving is dangerous and should not be undertaken without proper training. The concepts and techniques discussed in this article should be considered editorial opinion and are not in any way an adequate substitution for training from a qualified professional.

