Fort Erie Underwater Recovery Unit Journal

September, 2013

Our second Journal installment has to do with the finer points of dry suit diving. Many divers have them, some would like one, others curse them, while still others (such as yours truly) opted to unload it for a much lesser maintenance wet suit.

The greatest benefit diving with a dry suit is that you're diving, well, dry. It's basically a dryer cold than the wet cold in a wet suit, but it's all cold nonetheless.

I've seen many a diver pay good money for a long awaited dive trip only to have their plans hit the wall when, while donning their suit, they blow a neck or wrist seal, suffer a zipper malfunction, or a catastrophic pee valve melt down, and are relegated to watch other divers enjoy their dives for the same great price.

Diving dry is of course, a personal preference. The biggest secret to dry suit diving is to treat the suit very delicately, and carefully check out and repair or replace potentially parts before setting out on that costly dive trip.

As with anything these days, you get what you pay for, so if you want to dive dry with any peace of mind, be prepared to shell out for it.

Fortunately, there have been in-roads to dry suit diving, most notably, seals that can be replaced in the field without having to send it away should a seal be compromised. Again, be prepared to bankroll such innovations.

Dry suit diving involves some specialized techniques and it will take several dives before one gets properly acclimatized to their dry suit. Emergency techniques such as pulling open one's neck seal should the vent button stick shut on ascent are all things that need to be considered before attempting to dive dry.

Dry Suits have greatly evolved since the 1940s, and you can spend as little or as much as you want depending on the creature comforts inherent within each model and type.

You can save a bundle on a dry suit if you decide to purchase second hand. However; the first question to ask outside of the price is; why are you selling it?

Make sure to thoroughly check the wrist and neck seals, pee valve if so equipped as well as the zipper. Also, check for excessive abrasions on the knee and elbow areas of the suit. Are the inflate/deflate buttons operating easily? All points to ponder to be sure.

Here then are several tips and techniques for prolonging, preserving, and getting the most of your dry suit when diving…

Top Dry Suit Techniques

Dealing with Inversions

The first thing most dry suit virgins worry about is floaty feet. Combined with dire warnings about inversion, the new feeling of floaty feet can soon turn to a paranoia that has fuelled a whole industry into strap-on ankle-weights.

Yet floaty feet are only a perception, rarely a reality. Many dry suit divers nowadays are just past the beginner stage in wet suit diving. Their buoyancy control will not be a subconscious habit. Chances are they will be used to swimming along slightly negative, 30% of their effort being used avoid sinking.

Such divers are not used to having their legs horizontal in the water. It feels unusual, hence uncomfortable. So they take the advice of someone who went though the same paranoia a year or two before and purchase ankle-weights.

Given a chance, floaty feet are actually one of the nice things about dry suits. It's great being able to float horizontal or slightly face-down, keeping fins away from stirring up silt. A bit of air round the toes helps to keep them warm, too.

When you think about it, a 1kg ankle-weight has little impact on buoyancy. When they fall off during dives, the owners seldom notice until they are back on the boat.

So why do ankle-weights feel good to wear? Dry suits can be cut slightly long in the legs to enable a diver to sit down, and the straps from ankle-weights prevent loose boots from popping off. But it's not the weight that does this, it's the strap.
With a neoprene suit, you can leave your legs uncluttered. With a dry suit, newer divers wear straps round their ankles to make sure the boots are secure.

Buoyancy - BC or Suit?

For the average diver, properly weighted at the start of a dive, adding a little air to the suit is all that should be needed to maintain neutral buoyancy. Add just enough to make up for compression of the air in the suit and compression of the suit itself.

Keeping all buoyancy control in the suit makes it easy to get a good horizontal attitude in the water. It's both simpler and safer to have only one source of buoyancy to remember when ascending. The BC is there only as a back-up and for use on the surface. This is where newer divers end up with an uncontrolled ascent and subsequent embolism. They forget to vent one of them.

There are exceptions, however. With a thick neoprene suit on a deep dive, compensating for compression of the neoprene in addition to the suit volume can result in the suit becoming uncomfortably full. Adding a little air to the BC makes it more comfortable. It's one of the reasons why divers doing a lot of deeper diving often prefer membrane or compressed neoprene suits.

With full technical kit, the buoyancy change during a dive as gas is used will be much greater than with a single cylinder. A diver weighted to be neutrally buoyant on the 3m stop at the end of a dive will be quite a bit negative at the start of the dive. So again, the BC can be used to compensate for the additional weight of gas carried at the start of a dive.

Sticky Zips

A lubricated zip will slide more easily, and so is less likely to become damaged in the process. Zips don't need to be lubricated for every dive. Doing it when preparing kit before a trip is quite often enough, and also prior to storing a suit for any period of time.

The most common lubricants are beeswax and proprietary zip-lube.

Beeswax comes in bars that can be rubbed along a zip. Zip-lube is painted on with the spreader brush on the cap. In both cases the slider needs to be pulled up and down a few times to finish the job. Either lubricant will work well, but don't use both on the same zip, as it seems to prevent them from working.

In a pinch, many lubricants can be used. The main thing is to avoid anything that could rot the zip or suit (like WD40). In the past I have loosened up a sticky zip with butter from a dismantled sandwich!

The only addition to this procedure is to wipe off any excess so as to not leave globs that could rap dirt or grit, and remembering to eat the rest of the sandwich.

Sticky Seals

The classic lubricant to get hands through wrist seals is French chalk, or a 'light, unperfumed talcum powder', the rationale being that perfume rots the rubber. This may have been an issue for latex seals 50 years ago, but in practice it doesn't matter. A light dusting of any old talc will do.

It isn't just talc that can be used with wrist seals. All sorts of liquid lubricants will work, though petroleum-based ones must be avoided to prevent seals from prematurely perishing. Liquid hand or dish soap works quite well.

Personal lubricant, better known as KY Gel, has a dedicated following. Consider the young lady who arrived on location without her KY, popped into the drug store to get a tube, then commented: 'Haven't you got anything larger? That won't last a day, let alone a week!'

Hmmm; the less said the better!

Getting Your Head In

Liquid lubricants aren't so practical with neck seals. A latex neck seal can benefit from a light dusting of talc, but don't bother with a neoprene neck seal. Because it reverses, the nylon lining will slide over skin and hair. Talc will just clog inside the nylon and make a mess.

For those with long hair, try using a leg from a pair of pantyhose. The hose goes over your head and the seal slides over the hose, then you can remove and pocket it, ready for taking the neck seal off later. Just remember to remove it before going into the dive shop!

Kinky Zips

The main source of zip damage is bending a zip too tightly. While some bending will naturally take place while wearing a suit, the main source of excessive bending is when a suit is packed away.

Dry suits are best packed in separate bags. The suit bags can then be loaded last, after the heavier bags have been stacked below.

Better protection is needed for air travel, where bags are crushed in whatever way pleases the baggage-handlers.

The best solution for air travel is careful packing in a hard-shell suitcase. However, such cases weigh a lot and can be awkward on a boat, so the next best solution is a section of drainpipe cut to the length of the zip and slotted to fit over it. The drainpipe both protects the zip and prevents it from being bent, and the rest of the suit can be rolled round it.

A less sophisticated variation is a length of wood and some tape. This is the opposite of general

packing, where most divers prefer to roll from the boots upward, wrapping the shoulders round the rest so that the zip doesn't bend too tightly.

Zipper Getting Caught in the Undersuit

This is another source of damaged and broken zips. First the undersuit gets caught in the zip, then, with the baffle in, it gets caught too.

There is a very simple solution to closing a dry suit zip without getting whatever is underneath snagged. Leave a finger or two inside while you're doing it. The trailing fingers push the under-suit or baffle clear of the zip as it closes.

Leaky wrists

The first source of leaks is usually through the wrist seals. Most wrists are too small for a stretchy seal to be fully effective, and tendons close to the surface make nice little channels for water to seep along.

For some divers, if latex seals leak, neoprene seals may be dryer, or vice-versa.

Most practical fixes are variations of the old Navy solution of tight elastic bands an inch or so wide, called 'greys' for their colour. These could be pulled on top of the seals to hold them tighter.

Making a set out of neoprene can work. My preference is neoprene wrist seals and a simple pair of Velcro straps that can be tightened over them as needed, even during a dive.

Another fix is to add a second set of seals behind the first set, which works well, but can be very hard work to get on and off. Dry gloves that lock to the cuff can also help.

Loose Valves

On a new suit, check that the valves are tight! It’s not unusual for a suit to arrive with valves that are only gently tightened rather than firm against the suit. It's also worth checking that the valves are tight every now and then. They *can* work loose, particularly on neoprene suits as the neoprene thins with age.

Hung Out to Dry

There are really two issues here, drying a suit fully at the end of a trip, and drying out the inside between dives.

Most suit materials are damaged by excessive exposure to sunlight, so hanging a suit out in the sun is not the best way to dry it unless you need fast results. It's not something to be paranoid about, and a bit of sun every now and then won't be a problem, but habitually leaving a suit to dry in strong sunlight will definitely shorten its life.

Between dives there is no useful purpose to drying the outside of a suit! Unless the inside needs drying, you can leave it rolled up. If it's damp, turn it inside out and let the sun and wind do their work.

Between trips, a suit needs to be bone dry before storing. Some divers like to wash and disinfect the inside of their suits to keep them smelling nice, which means that extra drying of the inside will be necessary.

The ideal way to hang a suit up for drying is by the boots. Scubapro distributes a clever hanger that does just that.

Another method is to fold the middle over a section of plastic pipe. The pipe is wide enough that air gets between the folded parts.

The difficult part to dry is always the inside of the boots, particularly heavy-duty boots that won't turn all the way inside out.

The standard trick is to stuff them with balls of newspaper, replacing the damp paper at regular intervals until it no longer comes out damp, then making sure that fresh air can circulate inside to get the last bit of moisture out.

A modern hi-tech and speedier alternative is the proprietary *Dampire Dryzone*, a pair of socks laced with a moisture-muncher that sucks the damp from the boots.

If the boots are still damp before the start of a dive, wearing plastic bags over the feet feels great, keeps the toes warmer, and helps the boots to slide on easily.

These are some of the ways you can prevent a dry suit dive from being unexpectedly aborted. The more you dive with your dry suit, the more you will get to know it, its stress points and alternate ways to prolong its lifespan.

Until next time, have fun, be safe, and…

THINK DEEP!!!