

Risk Management for

Solo Divers

Some people dive solo and actually have no idea they are doing so.

Text by Steve Lewis

Diving is risky business. Just how risky depends on a whole shopping list of factors and influences, but let's agree that there are more risks involved with diving than, say, sitting in your basement watching Olympic curling on TV.

Now if we were to apply similar logic and argument, we could go further and make the point that solo diving carries an additional level of risk over and above the "run of the mill" stuff associated with regular diving. There are a few subtle points that need to be clarified if we are to fully understand that last statement, but we'll get to it in a few paragraphs. Let's simply agree that solo diving carries a few risks that are unique to... well... diving solo.

Yet, it is done every day. Indeed, some people dive solo and actually have no idea they are doing so... but more about that later.

Notwithstanding that at least two scuba training agencies teach courses intended to train independent or solos divers, you can find a whole bunch of people within the diving community who do not believe the additional risks associated with solo diving can be managed at all. These folks will

give anyone admitting that they dive alone or who are even thinking about diving alone, the sage advice that they are crazy. "You are risking certain death, because solo diving is nuts," is the usual line.

These folks mean well. The circumstances that inform their opinion usually centers around being told—perhaps in an open-water training session—that diving alone is dangerous and not recom-

mended. And bless 'em, they cannot see further than that.

Shake up

In 1999 (or thereabouts), what was then a brand-new training agency—called Scuba Diving International (SDI)—took the old-school recreational diving market by the scruff of its neck and gave it a good shake. They did it by launching a unique specialty course called Solo Diver—a program that taught recreational

sport divers what tools and techniques would help them stay safe when diving on their own. And this was something no other agency had dared do before.

The logic behind the launch was that as risky as solo diving might be, divers were doing it anyway—many unaware they were effectively diving alone. The thinking behind the launch was that at least with a structured and sanctioned training program in place,



Solo diving was defined as self-sufficient diving

The first step is to define what it is you intend to teach and to whom. Solo diving was defined as self-sufficient diving. To define the program's target market, was not as straightforward. The circumstances where someone might find themselves diving solo had to be a little broader than simply diving without a buddy and being in the water with nobody else around.

Definitions

For instance, solo could also be defined as someone diving with a buddy who is way less experienced and upon whom they would rather not rely in the case

people could at least approach solo diving with the right mindset and correct equipment to do it with the proper controls in place.

When the folks at a training agency come up with a brand new idea like, "Hey, let's teach people to dive solo," taking that concept from a doodle on the back of a paper napkin to a full-blown program with instructor guides, student materials, and standards underwritten by a reputable insurance company, involves a

ing solo. By the same token, solo diving might also be someone who dives with other folks in the water, but who is doing "their own things," which is a diplomatic way to describe the buddy skills of most underwater photographers!

Insta-buddy experience

It may also describe a traveling diver who finds themselves on a dive boat coupled with an "insta-buddy" whose experience, abilities and dive habits are a total mystery. And solo diver fully describes every instructor who takes students into the water in a class setting. In an emergency, that instructor **MUST** be capable of "self-rescue," because it would be unfair and perhaps unrealistic to rely on a student to help.

Having defined what solo diving is, the next steps are to understand and define just how risky each of those situations is, and if those risks are manageable. In reviewing its solo diver program, SDI's training advisory panel looking really closely at the previously common blanket statement, "You are risking certain death, because solo diving is nuts," to see if it is indeed true or simply blinkered thinking.

In the world of diving, risk management always begins with a risk identification stage: what risks does the activity—in this case solo diving—carry with it and what is its potential outcome? The next stage is to assess each of the identified risks on a scale that stretches from Very Likely to Extremely Unlikely. And the third stage is to come up with a tactical plan that avoids or mitigates ALL the very likely and likely risks, as well as dealing comfortably with the risks that have only a small chance of happening.

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great number of steps that follow a pretty well-defined pathway. Anyone who's been involved in the task will tell you it's not an easy process.

of an emergency. After all, logic dictates that if you are diving with someone whose help can't be guaranteed if the Rottweilers hit the fan, you're effectively div-

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Solo Diving

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Perhaps the most commonly cited "additional" risk associated with solo diving is running out of something to breathe. To the classically trained old-school open-water dive instructor—and graduates from his courses—flipping your buddy the OOA sign and breathing from one of his regulators is the tried and true solution in this scenario. In reality this option is not always available.

Where's your buddy?

For example, what if your buddy isn't around? What if her gas supply is also down to seeds and stems? What if you really should do a safety stop and your buddy isn't in the mood to hang around at six metres for a few minutes before surfacing? Obviously, if you are diving without a buddy, there is nobody with whom to share gas, and all this becomes academic. Clearly, these situations present a challenge.

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To someone with a background in technical diving, the concept of running out of gas and relying on a buddy to get you back to the surface, is a bit of an anathema. Most technical divers regard running out of gas careless at best. Technical divers spend a lot of time and effort, and money, planning things so they do not run low on gas.

A far most constructive and robust solution is to NOT run out of air, and this can easily be accomplished by using a real gas management plan.

A properly trained solo diver knows their personal gas consumption rate. They know how many litres of cubic feet of gas they have at the start of their dive and they budget their time and depth, not just on the time that their PDC (personal dive computer)

will allow them before decompression, but more importantly the time and depth that their STARTING GAS VOLUME will allow them while keeping a sensible amount back for contingencies. There is nothing difficult or revolutionary about teaching proper gas management to sport divers; however, it is often neglected. For a solo diver it is a required and an important skill to master if one wishes to dive with any margin of safety.

Equipment failure

There is of course, another side to the running out of gas scenario: equipment failure. While the practice is common among sport divers, diving with a single regulator first stage and no redundant gas supply is extremely risky... buddy or no buddy. With only one "life-support system," a diver—any diver—is totally done for if in the case of total equipment failure or even a minor

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inconvenience such as a missing mouthpiece.

Once again the "normal" solution is to rely on your buddy to help. For someone committed to self-sufficiency and diving alone, the better solution is to carry a back-up. A properly equipped solo diver carries a small volume cylinder of gas fitted with a regulator and SPG. In the parlance of technical diving, this extra cylinder is often called a stage bottle, but in the language of solo divers, it becomes a buddy bottle. Effectively, it supplies enough gas to get the diver from their maximum depth back to the surface at the prescribed ascent rate including a safety stop, with a margin of contingency gas... just in case.

Another risk that is presented who pooh-pooh the idea of div-

ing without a buddy is getting lost or entangled. The thinking is that with a buddy in tow, they will offer assistance. They will help if you are confused about the location of the exit, lose your mask, or are attacked by a strand of kelp or discarded fishing line. Once again, this shifts an awful lot of responsibility for one's own well-being off your own shoulders and onto someone else's. There is another way.

Surface marker bouys

Solo divers are taught to carry and use a delayed surface marker buoy and a spool or reel so that it can be deployed from depth. This effectively becomes the diver's personal ascent line and alleviates one issue. Carrying and being able to deploy a back-up mask deals with another. Entanglement is a more sticky issue. Solo divers are taught to avoid areas where entanglement is a real threat, but just in case carry more than one cutting device (and train how to extricate themselves from an entanglement using one of those tools

and or common sense).

Avoid panic

In all three of these issues, one of the key guidelines is to avoid panic. "Stop, breathe, think, act" are the watchwords and as such perhaps more valid for a solo diver than for any other.

The ability to control panic when things go pear-shaped at depth is a function in part of experience. For example, the prerequisites for SDI's Solo Diver are for the diver to have logged at least 100 dives. I guess the agency believes that although logging that many dives offers no guarantees, it's a workable benchmark.

There is one other risk that's quoted as unique for those without a buddy to keep them in check. When diving alone, it is possible to drift beyond one's comfort zone and into the land of panic. A buddy, in the best-case scenario, provides a sober second opinion and will help prevent you from pushing beyond the limits of your training and experience.



Solo divers are also encouraged to share and discuss their dive plans with a friend or family member BEFORE putting the plan into action and going for a dive.



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growing number of instructors and divers believe that self-sufficiency begins with good training and part of that training is realistic and detailed risk analysis, self-assessment, and equipment choices.

Fact is that I believe in SDI's solo diver program, and those from other agencies teaching the same skills, have helped to produce a cadre of better divers, and ironically, a lot of really good potential dive buddies! ☐

Steve Lewis is a diver, instructor, dive industry consultant and author. He teaches and lectures at home and abroad. His main focus is to dive safety and to make each of us aware of the things that will make us better divers than we are now. His latest book, Staying Alive: Risk Management Techniques for Advanced Scuba Diving, is available through Amazon. For more information, visit www.techdivertraining.org or www.cccave.training. Steve will be one of more than 30 speakers at EuroTek 2014 being held in Birmingham, United Kingdom, September 20-21.

Once again, well-trained solo divers follow a personal dive plan that takes this "shortcoming" into account. They are taught to draw up a plan that outlines goals, waypoints, contingencies and LIMITS. Those limits include ones that take into account the limits of their equipment, their training and their experience. They are also trained to "self-assess" their personal stress levels before a dive and to call off any dive that seems too much for them on that particular day. One of the responsibilities accepted by a solo diver is to plan all their solo dives well within those limits.

Solo divers are also encouraged to share and discuss their dive plans with a friend or family member BEFORE putting the plan into action and going for a dive.

Accepting risk

Finally, there are some risks that simply have to be accepted. For example, having a medical emergency underwater while diving alone has a very small chance of happening, but the magnitude of the potential outcome is the most serious possible. A good risk management plan may have suggestions to mitigate the health—maintain a healthy lifestyle and work to stay fit for example—but that can never be totally avoided. If your personal state of health is at question, never dive alone.

When solo diving was brought to center stage and had the spotlight shone on it, many old-school instructors and divers were upset. They argued that solo diving is wrong and nothing would change their minds. However, I believe a



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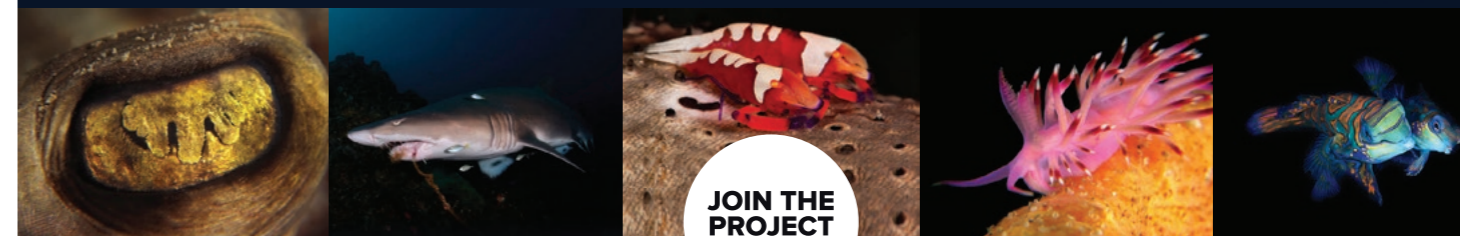
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