Technical Diving : Why?

Practice makes perfect; basic skills in technical diving can make it seem like one is learning to dive all over again, albeit better with more streamlined trim

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To develop your diving without becoming an instructor —

Technical diving gives you the opportunity to develop your diving without becoming an instructor. But the diving becomes more difficult, and the technology is not what you are used to. Do you have what it takes to move on? Is technical diving for you? After you read this article, you'll know a little more, and maybe you will be willing to take the next step in diving. Perhaps technical diving is something for you?

For many, technical diving feels like something very strange. Most divers have taken their certificates during a trip to a warm country, and often it stops there. But some go further and take their first stumbling steps into more advanced diving. They start diving in their home country. Maybe they decide to educate themselves further. A few of them decide to evolve even further in diving. They take the next step and perhaps even a course with rescue exercises, a course where they will learn more about the physics around the diving. A few press on and decide to become a "divemaster". They see it as an opportunity to work with diving abroad or as a way to get to learn a bit more. To become an instructor would then have been the traditional way, the only way to go on in one's diving career.

In recent years, a new path has opened up for those who do not want to become an instructor and yet want to develop with his or her diving; that path is technical diving.

Tougher requirements

If you selects this route, it opens up a window of opportunity to learn more advanced techniques, albeit a little harder and deeper than most can handle. So far, there are few who choose this path, yet a small but steady stream of divers have begun to become interested. More and more divers are learning to dive with mixed gases and decompression. Technical diving makes it possible to get to places that ordinary holiday divers do not even dream of.

"Personally, I think that most divers seem to get a new start when they begin a course in technical diving. It provides them with new skills to practice, and they will practice a lot on things that they previously only learned the basics of," said Stefan Hogeborn, a NAUI instructor in Sweden and my instructor in technical diving.

Today, there are a number of organizations that provide courses in technical diving. They all have one thing in common in that they teach a different approach to diving.

"Now, we leave the diving that fits all, and hence, the techniques taught at recreational courses. Now, rules apply all the time, and one must follow them; instead of one teammate, you now have two," said Hogeborn.

It's a good idea to get used to using twin tanks before you start a technical diving course

Come prepared

I was offer an opportunity to test out what technical diving could be for me, but I was extremely hesitant and refused at first, thinking that technical diving wasn't for me. But after some persuasion, I decided to take the chance to see what it was.

I had never used twin bottles and hadn't learned the techniques used for them. It was time to become a beginner again.

"I think that anyone who wants to try out technical diving should dive with twin bottles for a while before taking the next step. A short cut could be to enroll in an 'intro to tech' type course. It's an orientation course for technical diving," said Hogeborn. Most educational organizations have one.

Solid course

People starting with technical diving will probably have to learn to dive all over again. Everything is different, and yet, the same. Technical Diver, a NAUI course, includes 12 practice dives and a larger number of theory lessons. Technical Diver combines smaller classes into one larger course. It is a solid start to learning more about technical diving.

If the instructor awards you with your certification, which is not a given, the instructor believes that your skill set in diving makes it possible for you to start doing technical dives. It does not mean that you are a complete technical diver—a mistake young tough boys often make.

"After the course, you're still a beginner, but with more skills than before. It is after your education that the real training begins," said Hogeborn.

For me, the course gave me an opportunity for a new start in diving, new equipment, new gear and a different attitude to the "team"—your diving buddies. Suddenly, there are lots of new things to practice and new things to see, previously impossible to reach.

What is this?

The first few days, I just sucked in information. I kept my distance and studied my fellow students in the course; I was, after all, there to describe technical diving as a reporter as well. But slowly, I was sucked into actually learning, because it was so fun.

The team—my fellow students—consisted of Frida Drakling, Janne Henriksson and me. We were to become the team, or three group, of which a technical dive team consists.

It became quite clear to me that, even before the course, the other two students had been training on the principles and procedures that we were supposed to learn. In the beginning, it was to my disadvantage since I hadn't been practicing them at all; everything was totally knew for me. But as the days passed, I caught up more and more.

Some things were easy for me to understand, others—mostly practical stuff—took a little bit more time to understand. But we complemented one another well and learned from each other. It was something we would benefit from over the days to come.

The course was structured in modules, skills in the water were mixed with theoretical lessons. In order to have time for our normal lives, we concentrated on our lessons in the evenings and on weekends. It would take us a few weeks before we had had time to do all the exercises and learn the theory.

During deco stops at the end of a technical dive, divers switch to 100 percent oxygen

A lot of theory

The first lectures of the course were mostly theoretical. Hogeborn told and showed us how to configure our equipment and what kind of equipment we had to use to be able to do the dives we were about to learn to do. It became clear to me that we were now leaving common recreational diving and moving into diving with higher complexity. What one brings under water was now on a large degree about redundancy.

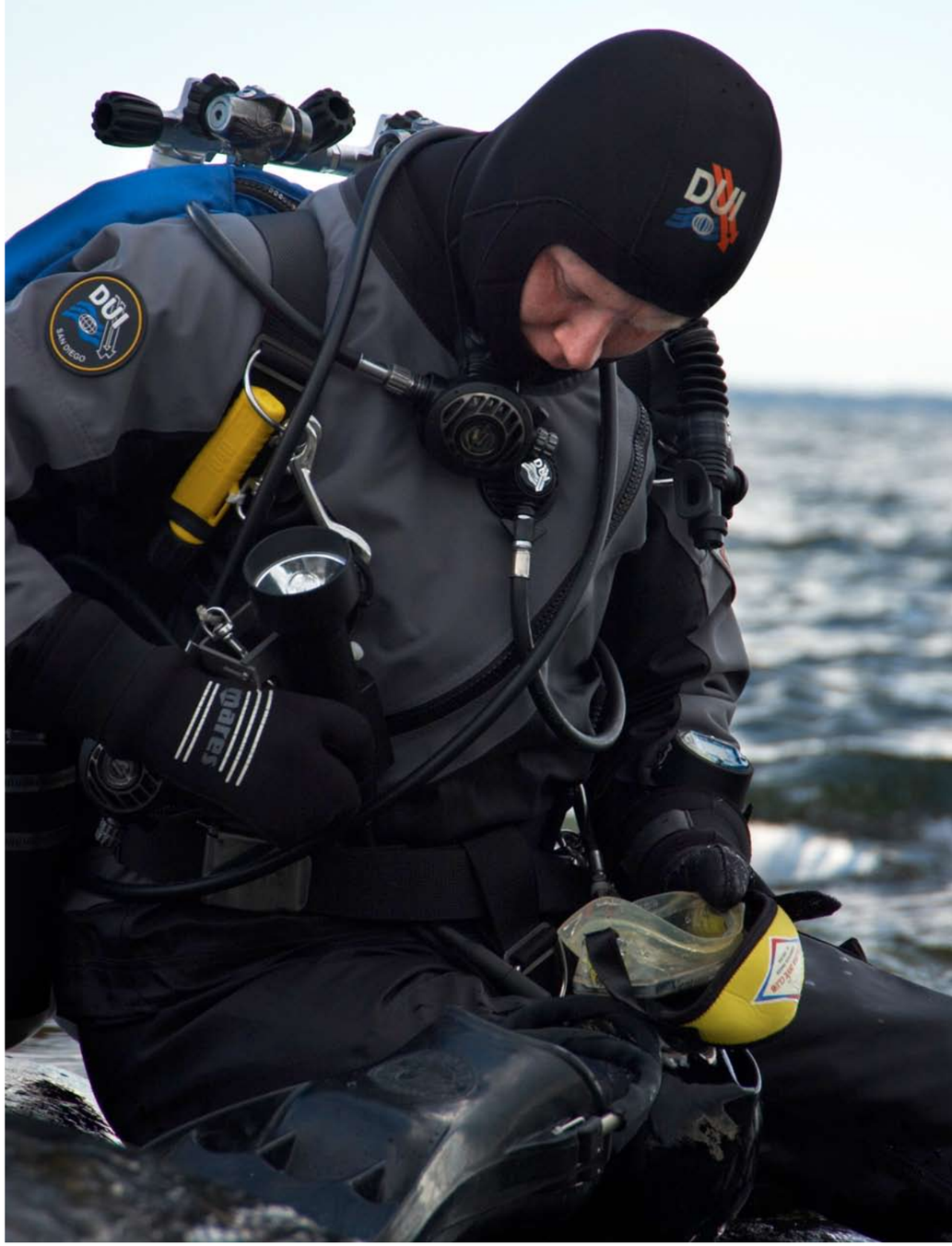
This was also fun—much more fun than I first thought. I had always believed that technical divers were a little too interested in technology, that they had a tendency to talk a lot and mostly tinker with their gear, and that they found little or no pleasure from diving for its own sake. But I have found out that this is not so.

Most of the technical divers I meet nowadays have a more pragmatic approach to their diving than I first thought. Things are used, or sit where they sit, because they have a purpose, and there is always a proper reason for everything these divers bring under the surface; if there's no reason for bringing it, they leave it behind.

Tinkering with your diving gear

The organization and care of a diver's equipment is the foundation for good trim and correct technique. Hogeborn shows us how to adjust and correct our backplates and webbing, bottles and steel twinning bands. Each step leads to the next, and after a while, you wonder why you didn't set up your diving gear

A diver on the team, or three group, which is used in technical diving, prepares for an exercise to practice new skills



A tip: buy a pair of dry gloves with five fingers before the course. These three-finger gloves can pose a problem in drills handling and tieing air tanks

like this from the beginning.

Despite our delight in learning new things, Hogeborn wants us to remember that there is nothing wrong with recreational diving equipment as long as the type of dives undertaken with that kind of gear are done within the recreational diving limits.

Fins and swimming

After reviewing the basic theory of technical diving, it's time for some training with our fins. First, we practiced on land. We found a place in a small park near the class room and practiced the various techniques. It felt kind of silly, and people looked when they walked past. It was actually a pretty good thing to do, because when you are back above water, you can ask questions, be corrected and rapidly be shown the right way to do it.

Later, when we tried it in the water, the techniques were there, not perfect but reasonably good. Reverse kicks were simply not easy, but I was beginning to get it right (several weeks later).

We went through the usual frog kicks, modified frog kicks, flutter kicks, reverse kicks and helicopter turns in both directions with one or two legs. It turned out to be a lesson that I think most divers, even those who don´t intend to become technical divers, could benefit from. For me, it felt like basic skills that I really wondered why I and other divers did not go through in basic training.

Time to get wet

The first day of diving. It felt good to soon be getting into the water, but before we did, we had to practice our S- and V-drills dry. S-drill stands for Safety drill, and V-drill stands for Valve drill. This is something we would do before every dive, during and after the course, from now on.

An S-drill simulates a situation where one diver runs out of gas and must receive gas from the other diver. The drill teaches us how to act in a situation like that. In a V-drill, you close and open all three valves on the cylinder package while sequentially switching the regulator so that you always have air.

It was much harder than one would think. I had obvious problems, and it took a while before I succeeded. I felt like I was put together in the wrong way to implement a "valve drill."

It's not only a problem in reaching the valves but also a balance problem. If you only concentrate on the Valve drill, you will slip and loose your trim, probably even float up and down in the beginning. It is a good exercise that makes you manage multiple operations simultaneously. I have gotten accustomed to always practicing these operations to get them to flow like running water. But I still have to work a bit to reach the valves.

Technical diving is about being able to solve most problems you can think of and then some. You must solve the problems without panicking or the need to surface. To surface is not the solution when diving technically.

To see yourself on film

The exercise was to swim along a line that the instructor had tied off on the bottom. We were now supposed to show the fin techniques we had practiced on land. This first dive also gave the instructor, and us, an opportunity to study how our trim was with, for us, new equipment.

This was the first time I swam with a decompression bottle under my arm.

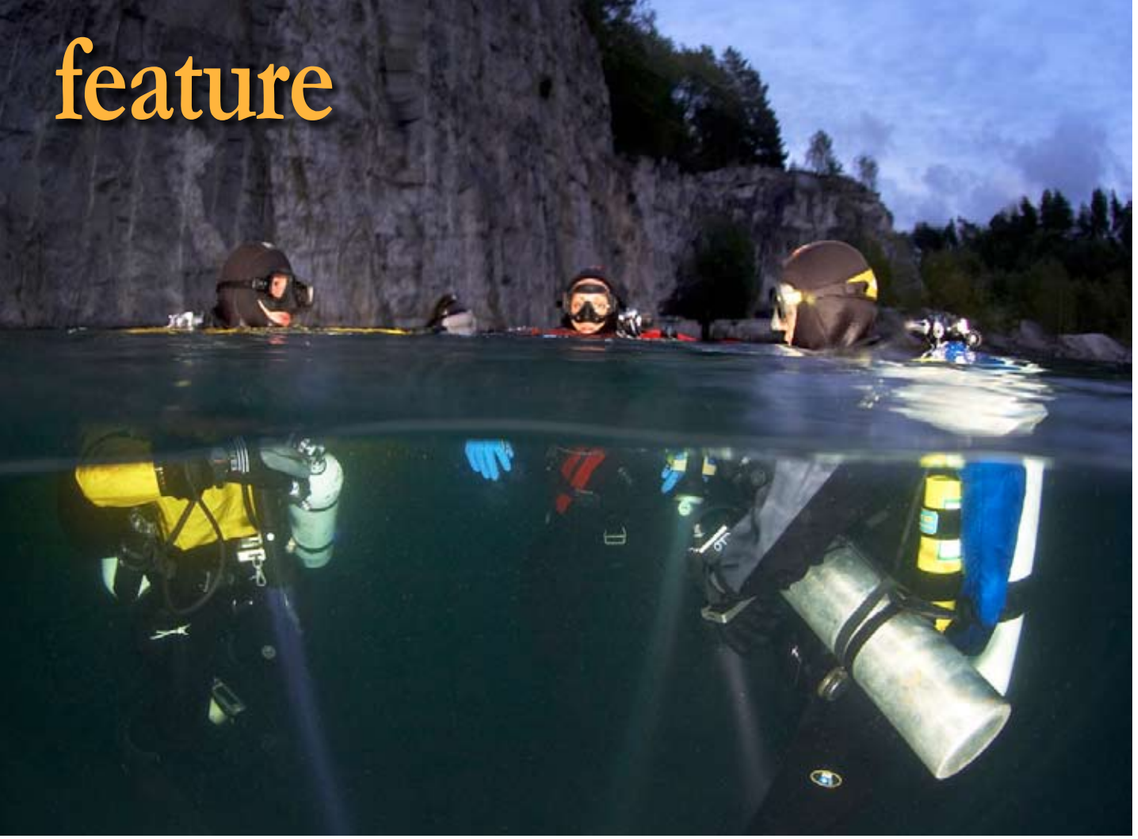
The instructor showed us how it was done, and then it was our turn. Every move we did was filmed, and when we got, back to the class room our techniques were analyzed.

The camera was merciless; all errors could be clearly seen, and while we viewed it, comments on our technique rained down on us, sometimes to big laughs. It was clearly visible when someone did something good, and it was equally clear when someone did something bad. Having a video camera in a training situation was a very good idea, as it turned out.

To have the right gloves

On the next practice dive, we brought our decompression bottles, but did not use them. We brought them to practice removing and attaching them to our harness. We practiced the procedure to leave the bottles at a tie off on the line. That sounds kind of easy, but each new operation is a new difficulty to sort out.

I, myself, just couldn't handle it and didn't, for the life of me, understand why. I tried and tried and just got more and more pissed off because it seemed much less difficult for my team mates, Frida and Janne. What was I doing wrong, and what were they doing right? It took a while before I realized that it had something to do with the gloves I had on. To do it properly required more fingers than I had available in my three-finger gloves.



Divers meet at the descent line to talk through their dive before commencing the technical dive

A tip: buy a pair of dry gloves with five fingers before the course. It's probably possible with three finger gloves, but oh so much simpler if you have five fingers to work with.

Task loading

This course was designed to teach you how to solve problems. New problems keep on coming up, and you must come up with the solutions. When you have solved the first problem, there is always another. Slowly the instructor's demands on you increase. It's called "task loading"—the problem load is ever increasing.

Technical diving is about being able to solve most problems you can think of and then some. You must solve the problems without panicking or the need to surface. To surface is not the solution when diving technically. You have left the type of diving where you can make a direct ascent to the surface. A technical diver must be able to solve the problems on the spot, in an orderly fashion and with the help of your team mates.

The team is a unit, helping is a given if something is wrong for any of the divers in the team. If you can solve the problem, do, if not, support for your team member when he or she tries to solve the problem.

Physics and gas laws

The subsequent days, we carefully learned about physics and gas laws and how to calculate END, MOD, SCR, best mix, oxygen exposure, and more. The abbreviations stand for a lot of things you should know if you want to dive technical dives. Instead of telling you how to calculate stuff like this in this article, you should take a course. With an instructor, you will learn all the calculations that you need to do to a technical dive safely.

Today, there is software that calculates all these values for you, but you should know how to do it without the programs, said Hogeborn.

Much of what we learned during this course, we recognized from exercises that we had done in previous courses such as the rescue course or equivalent.

What happens if things go wrong? What symptoms are there with different types of gas poisoning? It's good to learn again, and it gives you a fresh look at old skills.

Line handling

A good environment for scenario exercises is one that can be altered to your needs. We did them in an old sand take, the Husby pit. It was perfect because if you put a fin or a hand in the bottom you lose visibility in seconds. But before we got into the water, it was time for a dry exercise in line handling.

After yet another review of line signs and how to follow and interpret the line, we covered our eyes while Hogeborn, together with his assistant, drew a path in the forest. The team's task was to orient the line without seeing anything. It was fun, difficult and instructive.

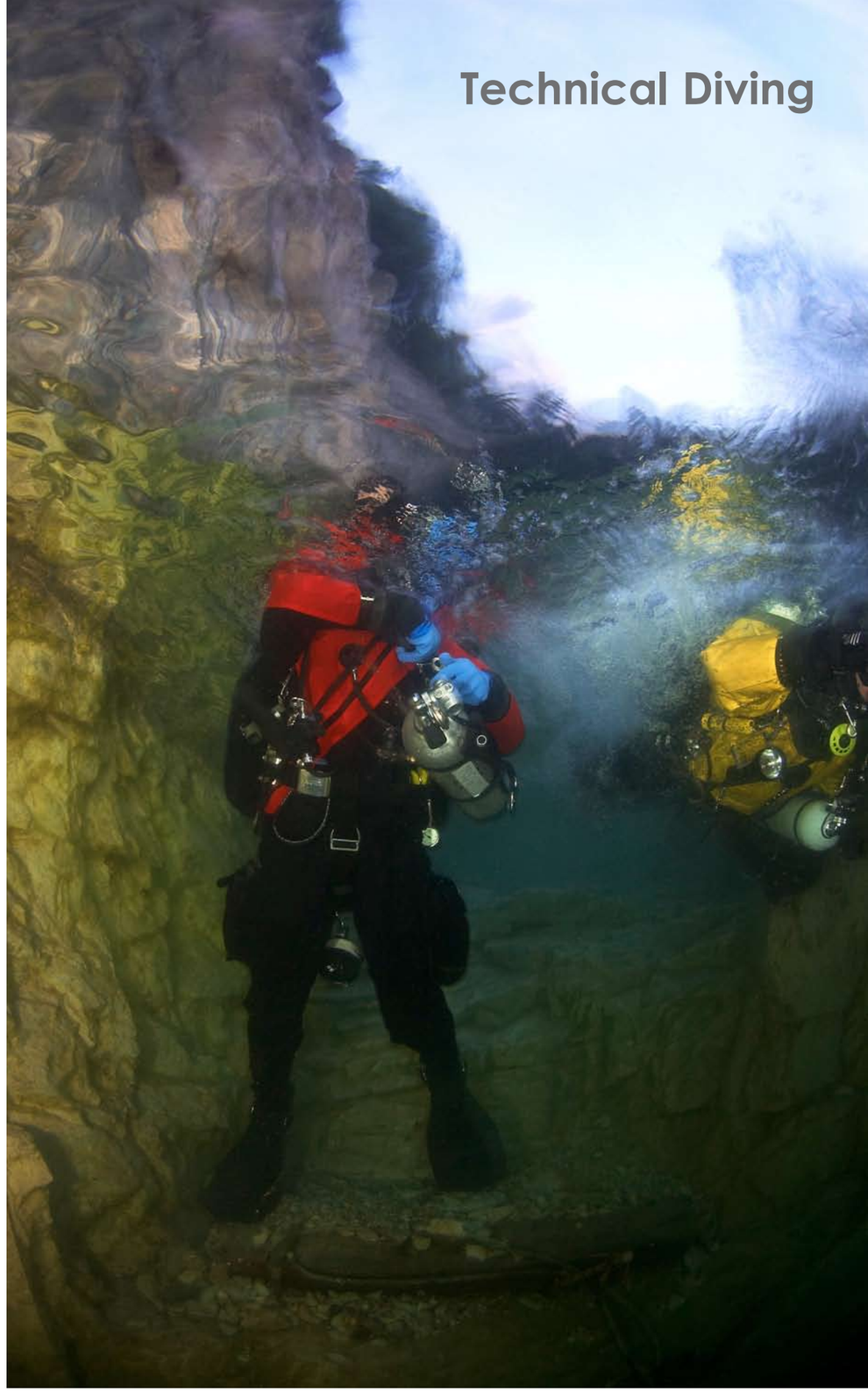
Zero visibility

The bottom of Husby pit was highly mobile and impaired visibility quickly—a perfect place for our scenario exercises. The exercise was to deploy line, unload decompression bottles, or keep them on, swim out over the bottom and tie off the line at proper places.

It all sounded pretty simple and straight forward. It's just that at this point our instructor turned out to be the devil. Suddenly, regulators were free flowing, lights stopped working, valves were turned off, the masks disappeared, and with silt outs, the visibility turned to zero; quickly, we had to start communicating through body contact.

Troubleshooting

The task loading exercise is constructed to teach the team how to handle any difficulties and problems. They should also learn to prioritize between what needs to be solved first and what can wait. The instructor's task is to keep the problems at



Divers practice new skills at Husby pit where visibility can quickly disappear due to silt

THIS PAGE: Divers form a small trident star around the ascent line as they begin their journey to the surface

a manageable but challenging level and bring the whole team to work together to solve the problems.

During the course, you learn that things will happen. Your readiness for unexpected events increases, and the ability to solve problems when they arise gets better and better. The stress threshold is shifted to increasingly difficult problems. Most can be solved if you take it easy.

Each diving day began and ended with theory and a briefing of the dives of the day. All exercises were filmed, and my shortcomings often became painfully clear.

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The launch of decompression

We developed as divers more and more over the following days. Our instructor decided it was time to start practicing ascents with decompression.

The difficulties in ascents with decompression are keeping the depth and time, performing the gas changes, and keeping an eye on your team mates. It is more difficult than you might think and requires a lot of exercise.

A fact of technical diving is that you learn a lot of stuff that you will keep training on for a long time—hence, all the technical divers located and paddling in Björkvik (a beginner's dive site in Sweden with a maximum depth of 15 meters) and other "easy" dive sites. They practice routines over and over again. In a crisis situation, the routines must work.

You practice over and over again so that there can be no doubt. In a real situation, it just has to work, said Hogeborn.

20 minutes at 45 meters depth

Our first steep dive was at a depth of 45 meters with a bottom time of 20 minutes. It started to get dark when we swam out into the lime quarry in Vagnhärad. Darkness settled and became dense. We did our V-trills and S-Drills—safety and valve exercises that you always do before a dive.

We swam over to the descent line, talked through our dive plan and began our dive, a journey into the darkness. Temperatures dropped as we descended. We landed on the bottom in an orderly fashion. Once down, we tied off our line, which we would follow in the dark and murky water to start the dive.

As the one responsible for checking our dive time, I watched the dive from a time perspective and tried to plan the dive so we would return to the ascent line in time for our ascent. Everything worked fine except that I got a bad cramp in one leg and had to call the attention of the other team members.

We solved the problem and continued the dive. After ten minutes, we swung around and returned to the ascent line. The lights shined like laser beams in the dense darkness — it was pretty cool.

Trident star

When we returned to the ascent line, we formed a small trident star around the ascent line and began our journey to the surface. The instructor was hovering outside our view, but he was there all the time. We were all a little worried about whether he would try to give us some new tasks to solve, but he didn't.

All of us had responsibilities; mine was to check the ascent rate and clock our stops. Our deep stops ended up being a little longer than I planned, but things were going well, and when we reached six meters, we switched over to our decompression gas, 100 percent oxygen, and made our remaining stops.

Star Light

When we broke the surface, stellar light shined from above. As we paddled towards the place where we would climb up, I looked up to the heavens and the stars and thought about life. It's fun and exciting and sometimes rewarding.

The next few days, we did some similar dives, tried different roles in the team and had the opportunity to test different gas mixes to see how helium affected us. My personal experience was that the difference between a gas mixture with high helium content and a mix with low or no helium content, is very large. Helium strengthens and improves your awareness substantially or rather, the absence of nitrogen does. Suddenly, the dive is totally clear to you and you remember more.

A new beginning

Those of you who have been diving for a while will find that technical diving gives you a chance to re-ignite your diving passion, and that it gives you new knowledge. All of a sudden, there is a possibility to dive where you previously didn't have the knowledge or technology to go. You will become a better diver. I can also promise that if you haven't previously suffered from the idea that you are never fully developed as a diver, you will suffer that prospect now. So go ahead and practice. ■