



Taking the technical step

There's now a well-mapped-out path to follow that can lead first to simple nitrox and then all the way down to teaching others to teach tech

Story and photography by **PADI Asia Pacific**

NEW DIVERS TODAY HAVE A VARIETY OF CHOICES TO make when it comes to getting into the “extreme” side of scuba diving as a sport. Technical diving is gaining momentum in Asia, taking experienced, qualified divers far deeper than in mainstream recreational diving.

Dive shops find that offering tech diving courses can create a closer bond with their more-experienced customers.

“While we still do PADI Discover Scuba diving and PADI open-water diver courses, the bulk of our customers are already qualified divers looking for something new, exciting and adventurous,” Kevin Black, the owner of the dive shop Kiwidiver, in Phuket, Thailand, says. With new training such as sidemount

and recreational-rebreather courses becoming available, “more and more divers are discovering that diving with more than one tank is not just for the macho, but available for everyone with many additional benefits.”

Divers often find that expanding their range of skills rekindles their passion for being underwater and reminds them why they started scuba diving in the first place. While many divers are initially intimidated by the prospect of diving on a rebreather or with multiple cylinders, they generally find, by taking it one step at a time, that technical diving isn't as daunting as they first expected.

Black, who is an instructor trainer teaching PADI's TecRec system of technical diving, says tech diving also provides

instructors with an opportunity to expand their own knowledge and skill set.

“With such a range of courses available, our instructors love the fact they are always doing something different,” Black says. “We also enjoy our own personal development, continuously learning new skills and taking time to refine them. If we are not teaching it, we are practicing it.”

One of the challenges is that technical courses require more equipment and logistics to conduct, and are more involved to teach. But they also offer rewards.

“We create a loyal following of repeat customers returning regularly to take on the next challenge,” Black says. “There is also something special about showing a diving professional a completely different dive at a location that they have been diving regularly for years because, by diving the site with technical equipment, we are able to access parts of the site that would otherwise be impossible to reach.”

GREAT REWARDS

It took Peter Mesley 20 years and thousands of hours under water before he experienced his favourite moment: when the shape of *HMHS Britannic* came into focus deep under the waters off the Greek island of Kea.

Mesley, who is a PADI TecRec instructor trainer based in New Zealand, recalls the start of the dive. As soon as he hit the water, there was instant relief – all the weight of his four stage cylinders, camera gear, lights and rebreather disappeared.

Descending through the waters, the *Britannic* suddenly emerged at about 60 metres.

“My heart was racing, and I could hear every breath through my rebreather,” he recalls. “All the butterflies in my stomach were replaced with a tingle of joy, as the dark object on the sea floor

started to take shape. The hull seemed to go on for ever.”

Mesley hung above the main superstructure for a brief moment and soaked it all in. Then he switched on his camera, turned on his lights and penetrated the wreck. He descended through the grand staircase of the ship, one of the sister vessels of the *Titanic*.

“Thoughts raced through my mind,” he remembers, noting that the room he entered had once been a spectacular sight. “For the next 60 minutes, I captured life-changing memories on my camera that I would cherish forever. This was the pinnacle of my diving.”

Mesley took in the wooden bannister rails and well-crafted fittings, all the remnants of the grand ship: a Marconi radio, pieces of a painted-glass skylight, massive telegraphs hanging precariously down towards the seabed.

He then had plenty of time to reflect on his experience as he completed seven and a half hours of decompression. “Man, that was a long dive,” he says. “But worth every minute of the deco.”

GETTING TECHNICAL

But what exactly is technical diving? It is generally defined as diving other than conventional, commercial or research diving that takes divers beyond recreational scuba diving limits.

Tim Irvin, an open-water instructor in Sydney who is studying via the PADI TecRec programme, says he was skeptical about technical and rebreather diving before he got started. But a good friend of his encouraged him to keep an open mind and complete a “try dive” with a

MORE TO EXPLORE

From deep wrecks to nitrox-induced extra bottom time at shallower depths of around 30 metres, there's a broad range of more advanced diving that starts simple and gets more technical.





THE SIMPLEST STEP

One of the simplest ways for divers to take their underwater adventures to the next level is to get certified for enriched-air or "nitrox" diving.

Nitrox has plenty of benefits. Regardless of what you love to do underwater, enriched-air nitrox gives you more dive time. One of the reasons that diving on nitrox is so popular is that it's useful for almost all your dives. By reducing the amount of nitrogen that enters your bloodstream, enriched air also reduces your decompression stress and can reduce your surface interval between dives.

There are a few activities that particularly benefit from enriched-air diving. Nitrox is especially useful for divers who want to follow a profile of diving below 18 metres, particularly for dives at around 25 to 30 metres. It's also very useful for digital photography and drysuit diving. Nitrox helps offset the short no-stop times you have on deeper dives so you get to see more. It also lets you take advantage of your digital camera's capabilities and highlights the benefits of the superior insulation you get from your drysuit.

Contrary to popular belief, nitrox doesn't let you conduct very deep dives. Oxygen becomes toxic at greater pressures. As a result, it's important to learn about oxygen-toxicity limitations.

PADI's Enriched Air Diver course explains the benefits and the restrictions of diving with nitrox. It is in fact the most popular of the 30 or so speciality courses that the dive-certification company offers.

closed-circuit rebreather.

"I couldn't stop smiling," Irvin recalls of the dive. "I was mesmerized by the way the unit was bubble-less, silent and able to maintain depth for a long period of time. Within moments I was surrounded by pelagic fish and gliding along with species that would normally be scared away by the noise of open circuit."

He enrolled in a rebreather course right away, and has since dived the wrecks of Truk Lagoon as well as many other dive sites across Asia. "Yes, the course is challenging and the theory in the required materials is extensive," he says. "But the rewards will leave you with experiences you will never forget."

The motives for taking technical training range from a desire to improve your capabilities to survive in more challenging environments, a quest for a challenge, or the lure of a specific dive site that is currently out of range such as a deep wreck or unique marine species on a deep reef.

What's common to all of these motivations is an understanding that discipline, focus and practice are vital if you are to expand the depth, time or geography of a dive. The mental and physical discipline helps manage risk. Experience allows tech divers to complete challenging dives safely.

COURSE PROGRESSION

PADI began offering courses for TecRec instructors and trainers in 2001. Closed-circuit rebreathers have now been added to the stable of training.

The following is the main progression of courses for tech divers under the PADI system.

Tec 40: This is the entry point for technical diving. The Tec 40 diver is qualified to make decompression dives with not more

EASY DOES IT

With more and more divers going beyond basic certification, the main dive-certification organizations have made a conscious decision to expand their offering into recreational tech.

« At the upper end of the scale, divers learn to plan and execute deco dives using trimix or heliox, allowing them to go as deep as 100 metres with up to four bailout cylinders. »

than 10 minutes of total decompression, not deeper than 40 metres, while using a single cylinder of decompression gas. The decompression cylinder can carry up to 50 percent oxygen as enriched air to make the decompression more conservative.

Tec 40 CCR: This is the entry point for technical closed-circuit rebreather diving. No technical diving experience is necessary, as the principles of technical diving are learned along with CCR diving techniques. Tec 40 CCR Divers are qualified to plan and make dives using air diluent to a maximum depth of 40 metres, with one decompression stop of up to 10 minutes.

Tec 45: This course qualifies divers to make single and repetitive dives to a maximum depth of 45 metres while using a single enriched-air decompression gas or oxygen, to accelerate the decompression time or maximise off-gassing.

Tec 50: This qualifies divers to use air, enriched air and oxygen for multiple-stop decompression dives as deep as 50 metres using standard open-circuit, multiple-cylinder tech diving equipment, while using two decompression gases (enriched air and/or oxygen) to accelerate the decompression or maximise off-gassing.

Tec 60 CCR: Divers learn the use of trimix beyond 40 metres to reduce inert-gas narcosis and make it easier to breathe. Divers learn to use two bailout cylinders and develop the high level of skill required to plan and make decompression dives to a maximum depth of 60 metres. Divers are then qualified to plan and make decompression dives using trimix with a minimum of 16 percent oxygen to a maximum depth of 60 metres.

Tec Trimix 65: Divers qualify to use air, enriched air, oxygen and trimix with 18 percent or more oxygen for multiple-stop decompression dives as deep as 65 metres using standard open-circuit, multiple-cylinder tech-diving equipment while using two decompression gases (enriched air and/or oxygen) to accelerate the decompression or make it more conservative.

Tec Trimix Diver: This teaches divers how to use air, enriched air, oxygen and trimix for multiple-stop decompression dives using two or more decompression gases (enriched air and/or oxygen) for decompression. The depth limit in training is 90 metres. No limits are placed on how deep the diver can go after training, providing they build their experience gradually.

Tec 100 CCR Diver: Tec 100 CCR Diver is the upper level course in the PADI Tec CCR course series. It builds on the knowledge, skills and experience divers gain during the Tec 60 CCR course. Divers qualify to plan and execute decompression dives using trimix or heliox to as deep as 100 metres using up to four bailout cylinders. **AD**



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