GETTING TECHNICAL IN TASSIE

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+ I FELT THE FAMILIAR TOUCH OF ADRENALINE AS THE BUTTERFLIES STRETCHED. I WAS ABOUT TO DIVE DEEPER FOR LONGER THAN EVER BEFORE. I WATCHED THE ECHO SOUNDER AS THE SUN ROSE OVER THE BOW; THE DEPTH INCREASED PAST 50 METRES AND THE BOAT STOPPED TO DRIFT. I PUT MY GEAR ON METHODICALLY, CLIPPING EQUIPMENT WHERE I COULD FIND IT BY FEEL. THIS WAS THE FINAL DIVE OF MY DECO COURSE AND I WANTED TO DO EVERYTHING RIGHT. I MENTALLY REHEARSED THE DIVE PLAN AGAIN – 55 METRES FOR 15 MINUTES. THE BUTTERFLIES FLUTTERED SOME MORE. AND THEN IT WAS TIME TO GO.

The water chill was a relief after the effort of gearing up. My buddy and I did our S-drill then descended. Down, down, down. As I dropped deeper I added air to my drysuit, needing more than usual because of the extra pressure. At 45 metres our lights started picking out bottom features. I came to a stop, hovering just above the bottom at 55 metres. I checked my depth gauges again, fingers and toes buzzing, the narcosis unlike anything I'd ever experienced. I checked my buddy and counted the other divers. One, two, three, four plus me. Yep, I really am here. Check, check, check. The bottom went by as we drifted along. A low reef appeared with sponges and seawhips. A school of butterfly perch shied away, strange, because they're usually comfortable around divers. Someone found a pipefish, or was it a flutemouth? I'd never seen either before and wondered if this depth was common for them. I checked my gauges yet again. Bottom time approached 13 minutes, time to start moving up.

I levelled off at 15 metres to send up my SMB. It filled easily and the reel sang as my line ran out. The first deco stop was at 12 metres for five minutes, followed by nine metres for six. I could see the boat circling above as I reeled up to the next stop. The filtered sunlight lit up the comb jellies sharing our hang time. For the six-metre stop, I changed to my deco mix, the oxygen rich gas tasting sweet. Nineteen minutes later we were free to surface, our decompression debt repaid. The dissolved gases in our bodies exhaled with every breath.

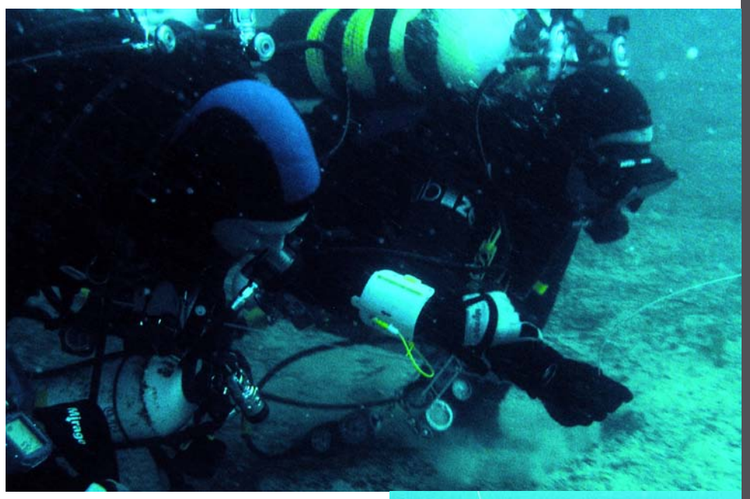
WEEKEND ONE We gathered at Bicheno Dive Centre for our entry into the world of technical diving – James, a fisheries management officer, Eric, an ex-South African landscape gardener and myself, a local, all keen to extend our diving experiences and dive deeper for longer. We sought out Jason Griffiths from the Scuba Centre at Wynyard to lead us through the SSI Decompression Diving course. Jason brought a graduate from one of his previous courses, Jason F. He became our fourth diver and rounded out the two buddy pairs.

Jason ran us through our first theory session, revising the homework we'd done in preparation. Around us, the accommodation at the dive centre looked like a gear freak's fantasy. There were twin sets and stage bottles stacked in the corner, regs and reels draped over chairs and tank bands and tools lying in wait.

DIVE 1 – SATURDAY MORNING, WAUBS BAY.
I'm sure we were the most over-equipped divers ever to dive The Bay, staggering under the weight of twin tanks, stage bottles and other goodies. Making our entries, we welcomed the sensation of weightlessness. A diver out of water is like a seal on a beach, but add water and the cumbersome becomes controlled. The dive served to familiarise us with the equipment and

each other. We reviewed basic skills. Jason quickly introduced a new skill that would become all too familiar – no-mask air sharing. Intended to simulate a low-gas emergency in poor visibility, one diver wears a blacked-out mask while the other goes maskless. The dive progressed well.

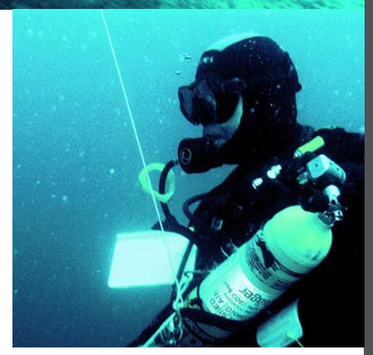
Back on shore we conducted Rapid Field Neurological examinations on each other. The Rapid Field Neuro is a tool that helps detect the early symptoms of decompression illness. The examiner asks



the diver simple questions to evaluate mental status. Particular head and shoulder movements test cranial nerves. Light touching confirms normal sensation and resistance to force assesses muscle tone. Confirmation of balance and coordination finishes the exam.
By conducting Rapid Field Neuros after every dive, we built up a picture of the normal responses for each diver in the group. Had we detected an abnormal response, we'd have started first aid procedures for suspected decompression illness and sought medical assistance.

DIVE 2 – SATURDAY AFTERNOON WAUBS BAY This needed slightly deeper water so we swam out past The Rock to the sand flats. The aim this time was to practise new skills that could be essential when we started exceeding no-decompression limits. We shared air from a long hose, followed a line without a mask and maintained a hover while passing off and retrieving stage tanks. Our final underwater skill for the day was deploying surface marker buoys (SMB) and simulating a deco stop. As I watched the bubbles from my reg rise past the mouth of my limp SMB, I decided there is a definite knack to getting the air into the buoy. Jason's after-dive coaching soon had me on the right track.

Gas management is an essential step in planning a deco dive. To ensure adequate supply, divers need to know how much gas they'll breathe during the dive. The basis for their calculations is the Surface Consumption Rate (SCR) – how many



litres of air a diver breathes per minute, when on the surface. All divers learn that a litre of free air on the surface compresses to half a litre at 10 metres and a third of a litre at 20 metres. So a diver breathing compressed air at 20 litres per minute on the surface will use the equivalent of 40 litres of free air per minute at 10 metres and a whopping 120 litres per minute at 50 metres. To help us work out our SCRs, we noted start and finish pressures while staying at a constant depth for 10

TECHNICAL DIVING GLOSSARY.
DCS – Decompression Sickness – Any injury to the body caused by dissolved gases forming bubbles that expand during ascent. Also known as "The Bends", because a common symptom is joint pain that may be partially relieved by keeping the joint bent.
Deco Mix – A gas blend breathed during decompression stops to speed up the removal of dissolved gases from the body. Typically the oxygen content is 50% or higher.
EAN or EANx – Enriched Air Nitrox. A blend of nitrogen and oxygen. For recreational diving, the percentage of oxygen is usually between 21% and 40%. For technical diving, the percentage of oxygen can be as high as 100%. Example: EAN80 = Nitrox containing 80% oxygen.
Manifold – An arrangement that joins the gas supply from two tanks. May have an isolating valve that blocks the flow of gas from one tank to the other.
Narced – Suffering the effects of nitrogen narcosis.
Nitrogen Narcosis – A deterioration of mental and physical aptitude caused by exposure to high partial pressures of nitrogen.
Partial Pressure – The pressure exerted by each gas in a gas mixture.
Rapid Field Neuro – Rapid Field Neurological Examination. An examination of a diver that helps detect the early symptoms of decompression illness.
S-drill – Safety drill. A pre-dive routine that checks a diver and his or her equipment. Buddy pairs do the first part before entering the water and the second part in the water before descent. It includes testing of regulators, checking the status of valves and looking for leaks from hoses or tanks.
SCR – Surface Consumption Rate – The volume of free air a diver breathes per minute when on the surface. Usually measured in litres per minute.
SMB – Surface Marker Buoy. A bag used to identify the location of a diver conducting decompression. Inflated by the diver, the bag rises to the surface on the line from a reel. The diver then holds onto the reel, or clips onto the line to help maintain the correct stop depth.
Stage Bottle/Tank – A gas cylinder containing deco mix. Usually carried by clipping an attached strap to D-rings on the diver's hips and chest.
Twin Set – Two tanks, the same size and material, rigidly fixed to each other with straps. May be completely independent of each other or joined with a manifold.

minutes. Back ashore, we crunched the numbers and proved what I'd known for some time – I'm an air pig!

DIVE 3 – SUNDAY MORNING. The swell kicked from the south overnight and was running around six metres offshore. Optimistically, we loaded the boat at the ramp and headed out. The dive plan required at least 30 metres of water, with deco stops at six and three metres. As we rounded the north end of Governor Island, we could see the surf breaking

through the marine reserve. The swell lifted us two to four metres on every wave and pushed the boat around. Holding a deco stop at three metres would be difficult and this was our first dive with compulsory stops. We called the dive, all geared up and no place to go. Luckily, at the north end of the Bicheno Gulch, the dive site Blue Waters is sheltered from the heavy southerly swell and was more than we could resist. Though normally a shore dive, we dived from the boat, practicing our skills - reeling out and back without masks, sharing air from the long hose and deploying surface marker buoys.
Back on shore, we washed down and packed up.

WEEKEND TWO Excitement still bubbling, we returned to Bicheno to complete our deco course. We planned a four-day weekend to fit in the four remaining dives. This gave us plenty of surface time to off-gas and a chance to revise for our end-of-course theory exam.

DIVE 3, MK 2 – FRIDAY AFTERNOON THE GOLDEN BOMBIES A signature Bicheno dive, The Golden Bombies are two large rocks rising from sand at 40 metres. Yellow zoanthids cover both with a distinctive golden hue that gives the site its name. Located in Governor Island Marine Reserve, this is a fantastic dive, with sponges, crayfish and seawhips.
But we were there for business. This was our first dive where deco stops were compulsory – direct ascent to the surface could result in the agonies of the bends, or worse. With EAN60 as our deco mix, the dive plan was 40 metres for 25 minutes before ascending to nine metres for a one-minute stop; then up to six metres for a 17-minute stop. To increase our safety margin we added a stop at three metres for 10 minutes.

Geared up, we checked our buddies and splashed in, completing our S-drills on the surface before heading for the bottom. We stopped our descent and hovered over the sand, the yellow rocks rising above us. Jason held a slate out to us, 'Write your mother's maiden name backwards.' Aha! A narcosis test. At 40 metres, we should be feeling the effects of narcosis. Sure enough, a relatively simple task proved challenging. After doiong it, I realised I'd made a mistake and scribbled a note on my slate. I might have been narced but at least I knew I was wrong!

DIVE 4 – SATURDAY MORNING
The first of our deep blue dives, we headed east. To find deeper than 40 metres at Bicheno takes a boat trip beyond Governor Island Marine Reserve and we were looking for a depth of 45 metres. After about 10 minutes at speed, we were nowhere, but we were there. Dropping to the bottom, the coarse sand brought a surprise – scallops. Those of us with licenses grabbed a few (we were outside the reserve) while the others were working through their required skills. I completed a removal and replacement of my stage bottle and the others looked at me strangely – my perfectly executed skill wasn't required on this dive. Narced again. Heading for our first deco stop, we shared air while ascending. The long hose on the donated regulator made this easier by allowing each diver enough space to control their own ascent.

DIVE 5 – SUNDAY MORNING A virtual carbon copy of the previous dive, we headed east again for another deep blue dive and 50 metres. This time we were ready for the scallops and took a catch bag but when we reached the bottom there were almost none in sight. Murphy beat us to them. Our first proper task this dive was another narcosis test. Maths this time. Add back-gas pressure to stage-tank pressure and divide by three. My maths is better than my spelling so I had no problems. Narcosis affects us all differently though. When the bag surfaced, there was a slate attached apologising for the lack of a catch. The bag-carrier hadn't seen his buddy dropping scallops into the bag!

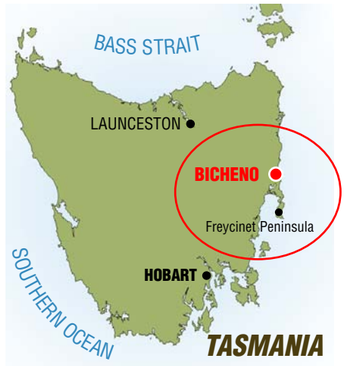
DIVE 6 – MONDAY MORNING THE FINAL DIVE This was it. The deepest dive any of us had ever done, a check out dive with no individual skills assessment – the dive as a whole was the test. From planning, through preparation

The course is an introduction to technical diving, with theory covering equipment, physics, physiology, dive planning and gas management. The practical side includes equipment configuration and land drills plus six dives. The dives get progressively more challenging and finish with a decompression dive to 55 metres. The course includes accelerated decompression on rich Nitrox mixes. Our deco mixes were EAN60 for dives to 40 metres and EAN80 for deeper.

to execution, it was time to apply everything we'd learned. We dived and I was narced. We ascended and decompressed, did a 10-minute safety stop at three metres, then surfaced. I checked myself for unexplained aches or pains. All clear. I relaxed on the boat ride home and contemplated the course, pleased with myself and on some inner level relieved.

PERSONAL CHALLENGES

Decompression diving carries a greater risk of personal injury than diving within no-decompression limits. So why would someone choose an activity that increases such risks? Underlying the actions of many ambitious divers is a desire to challenge oneself. Psychologists classify this as risk-taking behaviour and they're probably right. But this over-simplifies the situation as individual motivations are complex and varied. For instance, James loves the prolific fish life and the colourful invertebrates on Tasmania's deep reefs. He wants to make the most of favourable conditions to enjoy longer bottom times at sites that are hard to reach. Eric has a passion for diving, completing over 300 dives since his openwater course in 2002.



He also looks forward to longer bottom times and believes the skills learned on the deco course will make him a safer diver. I agree with both of them, but my motivations are more than just diving deeper for longer. I have a history of so-called extreme activities – offshore yacht racing, Ironman triathlon, rock climbing and white water rafting. Now I deco dive.

Before the course, if I'd been asked why I wanted to exceed no-decompression limits, I'd have trotted out the standard answers. After the course I gained unexpected insight into my own psyche – I did a decompression diving course to challenge myself mentally and physically in an environment of controlled risk. Sure, I'm curious about what is down there and I do think my diving skills improved, but overall, it was about the personal challenge. For me, just scraping through the course was never an option. The thing about personal challenges is that the level of satisfaction gained is proportional to the effort put in. Studying the theory and visualising the skills were as important to me as the actual diving. Coming to terms with the equipment and procedures required real effort, but the sense of achievement I gained from completing each skill made it all worthwhile.

Now, does anyone have the number for 'Narcoholics Anonymous'? The butterflies are getting restless.