



Decompression Procedures and Trimix Course
Underwater Explorers, Portland
June-July 2002
Devil Gas, "Dry"-suits and Donald Duck Impressions

[Trip Report Index](#)

Trip Report by Iain Smith

de Techie Instructor...

- Izzy Imset ([Underwater Explorers UK](#))

dem Techie Students...

- John Kendall
- David Martin
- Iain Smith

Saturday 01 June 02

Site: *Countess of Erne*

Boat: Tideflow

Depth: 12.5m

Time: 57min

As Izzy and David were unavailable to start the course on the Saturday, John and I took the opportunity to get a warm-up dive in with twinsets and stage cylinders. As we were only a single buddy pair, we had little influence on the site chosen by Breakwater, hence my 300th dive was conducted in even worse visibility than my 200th (which, due to an extraordinary piece of bad planning on my part, had taken place in my "favourite" brick pit.) Officially known as the Countess of Erne, our dive was on a wreck more commonly known as the Countess of Silt in Portland harbour. This wreck is a former coal hulk, sunk by enemy action during the Second World War. Visibility was typically dreadful, ranging from 2m at most outside to approximately the square root of sod all inside. However, this was an excellent "experience" dive for us both, it being the first time that we had had to follow a line out of a wreck "blind". We also took the opportunity to practise shutdowns, finding that, while the drills were just about achievable, we both had issues getting at our valves.

Meanwhile, David set off from Cambridge some hours after us, traveling a whole couple-of-hundred metres before being stopped by the police at Jesus Green roundabout as part of their anti-drink-driving campaign. Almost as soon as the words "Of course I've been drinking - I've just finished my finals..." said, they were regretted! However, two hours of rowing proved more than adequate to metabolise the alcohol from a glass of champagne, and he joined Iain and John in the small hours of Sunday morning without anything more serious than a metaphorically slapped wrist for cheek.

Sunday 02 June 02

Site: Landing Craft

Boat: Top Gun

Depth: 15.2m

Time: 68min

David joined us after an overnight drive from Cambridge and after some initial theory on equipment configuration we headed back out into Portland harbour for the first dive of our course. As if it wasn't stressful enough being under close scrutiny from someone I didn't know as a fellow club member for the first time since my Club Instructor Exam, I decided to test-dive a new low-volume mask.

The dive was on the Landing Craft, a site which, like the Countess, I had dived more than once in the past. The dive began with an introduction of a new concept - the 6m "bubble check". This gives the divers an opportunity to cast an eye over each other "in water" and to confirm that everything is as it should be. Of course, the most obvious sign of something being wrong is a stream of bubbles coming from somewhere that it shouldn't be coming from, hence the name, but as the course progressed, we became more adept at spotting problems which, though unlikely to be the initiating factor in an incident, might well exacerbate an existing situation at depth. An example of such an error might be a drysuit hose connected over the long hose, meaning that this would deploy only a small portion of its full length in an OOA situation. In technical diving, attention to detail is everything. This is a lesson which, though never explicitly spelled out to us, became more

and more obvious on every dive.

We had little time to enjoy this wreck [David: Iain, the viz was shocking...how on earth were we supposed to "enjoy" any dive on it?] as one drill after another was thrown at us. Izzy taught John and me some alternative techniques to aid our shutdowns which, he explained afterwards, were being restricted by the poor fit of our suits which, though originally made-to-measure, had not been made with our since-purchased Weezle Extreme undersuits in mind! These techniques enabled us to be certain of our ability to shut down our valves if required, albeit with less elegance than David, who appeared to have acquired the flexibility of an octopus from somewhere and had no problems whatsoever with his shutdowns!

The next skill taught was a "no mask" line-following exercise which, given the visibility, might seem rather reminiscent to our Sports Diver students of the classroom "climb over and under and round several benches while blindfolded" exercise. This is an excellent drill for water confidence, particularly in low visibility.

The final set of drills was shutdowns. One student was told to swim away from the group. Izzy would then shut off another student's air, leaving them to chase after the first student and secure the primary demand valve from them. This exercise helps to demonstrate the need for close buddy contact but also reinforces the knowledge that it is perfectly possible for a human to not breath for a reasonable time - certainly more than long enough to allow a properly functioning team to resolve an OOA situation.

When my turn came, I felt Izzy turn off my right post and decided to be a smartass. [Qui, moi?] As my primary cut out, I switched to my backup, expecting to be able to be able to breath and to turn round and give Izzy a cheeky grin. Unfortunately for me, Izzy had turned my left post off without me noticing...and for every second of the time that I spent playing with demand valves, John was getting further and further away...

By the time I reached him, I was certainly feeling that it would be very nice to breath in the very near future and did not feel in any way that I was "playing a part" as I followed Izzy's teaching of grabbing the first part of the diver that you reach and "climbing" up them. I think something of my urgency transmitted itself to John, who tried to be helpful by trying to hand off the primary regulator..just as I made a grab for it. Needless to say, I completely missed. Having disengaged my fingers from John's mouth, I found the reg in his hand and took a very welcome breath! Another lesson known from theory, now taught by practical experience: Humans share, by and large, similar anatomy. Our mouths are in the same place relative to the rest of us. Once you have a hold on someone, you can find their mouth reliably. Hence the best thing that a diver can do when being "climbed" is to freeze and allow the OOA diver to do exactly what they want...which is to take the primary reg. Once that has gone, the backup reg will be within inches of the donor's mouth and (ideally) can be secured hands-free.

David's initial reaction to having his air turned off was also to go for the backup, and finding this had also been turned-off, attempted to turn the right-post back on. However, Izzy was still hovering just out of sight, and got hit in the process.

We were next asked to demonstrate frog-kicking, a technique that Iain and John had used frequently. While possibly the most powerful finning style, it comes into its own in silty conditions where one wishes to avoid kicking the bottom up. It was new to David, so Izzy took the time to move his fins through the motions - whilst (unsuccessfully) attempting to remove them to persuade him of the advantages of Jetfins. Izzy was, however, able to successfully steal David's DSMB and reel, quickly teaching him that the backup DSMB should not be stowed attached to the main reel!

Our 6m stop was one of our less impressive demonstrations of skill level - indeed, in a group consisting of a BSAC Nitrox Instructor and two Advanced Nitrox Divers, was rather embarrassing and a clear demonstration of the fact that even those skills that you think you have by instinct will deteriorate if not used.

Another of the little details came to light after the dive. David had shunned the use of gloves prior to the dive, despite collective advice to the contrary. After the having taken his mask off, we thought he had a bleeding nose, however it rapidly became obvious that the blood dripping on the deck was from his fingers, lacerated on the rusting steel edges of the Landing Craft. While he insists that his hands were not cold and did not hurt (some would suggest that they were too cold for him to feel the pain!) it was not until the farce of attempting to wash the salt water of his equipment whilst instead coating it liberally with blood that he conceded that maybe gloves have their advantages...

Site: Frognor
Boat: Top Gun
Depth: 34.7m
Mix: 32% Nitrox
Bottom Time: 32min
Ascent Time: 20min
Total Time: 52min

While our performance in the morning had not by any means been perfect, we appeared to have shown enough promise and competence to progress to a 35m dive. We were joined by another pair of Izzy's students who were a few dives ahead of us. I would have said that it was nice being on a boat where everyone was performing at a higher standard, but I rather feel that my finstraps falling apart on both fins made me look rather like the obligatory clutz. Another detail missed (not having tie-wrapped the straps on my new Jetfins), another example of why not to miss the details!

The major purpose of this dive was for Izzy to assess our ability to work as a team. I think that, in this respect, we had a certain advantage as all three of us are a) instructors, hence are used to looking out for others underwater and b) have dived together frequently. The addition of 50W halogen torches makes keeping track of one another even easier.

The Frognor itself is fairly flattened, however, life on the wreck was as spectacular as I have seen in the UK, with shoals of huge pollack and

a beautiful yellow gobi with a black head.

This dive was our first exposure to executing run times with the rigid discipline required on technical dives. While we have all executed run-time dives in the past we found ourselves two minutes over time leaving the bottom, having failed to anticipate the time needed to deploy a DSMB. Our relaxed ascent rates clearly also needed to become a thing of the past, as we slipped further behind schedule on the ascent to the first deco stop and yet further during the 21m stop, as the other two members of the team also took longer than expected to shoot buoys.

Two dives into the course and we already each had much to work on. Which is, I guess, the purpose of doing the course, though at least for me it was a wake up call - I had not thought that small details could prove so important and that those details are not just those of equipment configuration, but in the required standard of execution of basic skills.

Monday 03 June 02

Site: *Bittern or Hazard*

Boat: Top Gun

Depth: 34.1m

Mix: 32% Nitrox

BottomTime: 32min

Ascent Time: 20min

Total Time: 52min

As Izzy had already arranged to finish his other students' course on the Monday, we were invited to go along and dive off the same boat, although for John and me, this dive would not count towards our course. David, however, was not expecting to be able to make one of our planned dates and was therefore going to dive with the others.

Unlike previous days, however, the weather had deteriorated, and the journey to the dive site was quite rough. David succumbed to the rolling of the boat, although not until after donning twinset and stage, requiring him to perform a spectacular jump up and rotate in full kit, in a (fairly successfully) attempt to be sick over the edge of the boat. His scores were 5.8 for technical ability, but only a 4.2 for artistic interpretation...

A wreck whose identity has not been confirmed with certainty, the *Bittern/Hazard* is similarly broken to the Frognor. We were again accompanied by shoals of huge pollack and on this wreck, found a small conger eel, a number of six-inch gobies and a huge lobster. Fortunately for it, I had left my catch-bag on the boat, although quite how I would have got it out of its hold, I am unsure.

Our ascent again started two minutes late, although our ascent to 21m went according to plan. On this dive, we were carrying deco cylinders to give ourselves practise in gas switching. An unexpected complication was that my reg had depressurised during the dive and worked slightly loose. Consequently, on turning on the reg, it burst into a cloud of bubbles which caused a moment's alarm. However, the situation was remedied and the deco went to plan and to time.

The day's gloom was apparent even on the final stages of the ascent. From 3m, we could see the weather's reminder to us that "it's better, down where it's wetter...under the Sea!". Coming up from this dark dive, we could see rain-splashes lashing the surface. Oh joy. Not.

An improvement on our previous dive, but work still needing to be done.

After a three week interval for various reasons, we managed to plan to get all four of us in the same place at the same time for one day. However, having been fighting a raging cold for a week, there were some questions as to whether we should all really have been diving. On the Saturday, we were warned that the weather forecast for the Sunday was dire and would we like to call it now. The eternal optimists, we decided to head south in the hope of getting another couple of dives in. Loaded up to the eyeballs with paracetamol, aspirin, pseudoephedrine, we drove through the night, arriving at Weymouth, arriving at roughly 0430, for an 0645 departure. This gave us time to have breakfast, assemble our kit and be ready to rock well before Izzy arrived. That, at least, was the plan...

Sunday 07 July 02

Having got the gas burner going to boil water for the Army-issue ration pack breakfasts I had brought with me we started to assemble the piles and piles of equipment that seem only to grow larger with every passing dive.

Unfortunately, our cunning plan to demonstrate our personal organisation started going wrong when we unpacked. John realised with a sinking heart that his suit had been stored in a typically SafePlace™. It had therefore successfully avoided being packed and was currently adorning some unknown patch of his bedroom floor in Cambridge.

After some careful diplomacy (along the lines of "How would you like to go back to bed and sleep for several more hours?") John was able to talk our support diver out of his suit so that he could use it. This meant that he would not be needing his canister light either and after a certain degree of persuasion (and remembering his experiences in the vicinity of the P555 - see previous report) David agreed to test dive a canister light for this dive.

However, this all meant that we were without the obligatory support diver. Suddenly I found myself cast in this role on my first ever trimix dive.

This dive was, unfortunately, to be anything but our finest hour as colds, fatigue and new-kit diver syndrome kicked in.

Site: Salsette
Boat: Top Gun
Depth: 44.5m
Bottom Time: 25min
Ascent Time: 42min

The dive got off to a bad start when David's new Argon bottle stopped working at 6m. (It was later found to be a faulty O-ring, which had let most of the contents escape.) 5.5 bar of suit squeeze was not an option, so at 20m, David disconnected both the drysuit and wing inflates to use backgas. The suit squeeze was relieved by inrushing water, which was then chilled by the helium-based backgas. By 40m the suit was again squeezed tight, but bearable... It took David and John 10 minutes to reach Iain and Izzy on the bottom.

Meanwhile my cold was causing carbon dioxide retention, resulting in a degree of narcosis that I have never experienced before in my life. All I can say is that I'm glad I was breathing a mix with a nominal narcotic depth of 26m. I don't suppose I need to spell out which particular basic rule about diving with colds I proved in the breach...

I realised that we were waiting an unusually long time at the bottom of the shotline, but did not quite realise that nine minutes had passed before David managed to connect his wing inflator to his drysuit and everyone was, at last, sorted out on the wreck.

The Salsette is a large, imposing wreck, though we did not see (nor remember) nearly as much as we would have liked. I do, however, recall a spectacular bow with a large anchor. Definitely a wreck to revisit when fit to dive.

The dive deteriorated further as we left the wreck (albeit on time). None of us "drove" the ascent according to the run-time and our stops became progressively more extended. Each one of us had buoyancy issues and we finished the dive feeling hugely sheepish. Due to problems at the mixing station, our tanks were not refilled for the afternoon's dive, so we left early for Cambridge, determined to arrange some dive time at Stoney in order to hammer our skills into shape in order to redeem ourselves on our next dive.

An afternoon at Stoney gave us the depth to reenact our pathetic ascent from the Salsette, thus time somewhat more impressively, with every stop being on time and every movement between stop being at a smooth, controlled rate. A further evening at Gildenburgh allowed valve practise with the techniques taught to us by Izzy. After these two days, we were feeling far more confident about our upcoming assessment dive (and, given our diaries in the summer) our one chance to get qualified in time for the Scapa Flow expedition.

Sunday 21 July 02

Another one day trip to Weymouth, another overnight trip, this time with three full sets of kit loaded into the back of David's car. Unfortunately, John abandoned his plans to join us, having become unwell.

I therefore had only David to laugh at me as, having assembled my kit, an all-too-familiar hissing sound emanated from my equipment...second stage failure. Consequently Izzy arrived to find me with a second stage in its component parts, spread over the lid of my lunchbox. This is, of course, a sight completely familiar to most members of CUUEG, but not, I think, something that my instructor had expected to find immediately before an attempt at a trimix course assessment dive...!

Fortunately I had managed to acquire an Apeks service kit and was able to replace the defective part. For all those who say that service kits should not be made available to divers, I would ask just what on earth one is supposed to do when a reg fails when the boat leaves before the local dive shop opens? Abandon a dive for which one has paid boat fees, £40 or more in gas and a similar amount in petrol, all for the want of a 5p piece of rubber? Or trust divers to have the common sense to be able to read the service manuals and follow a simple set of instructions. Service kits used to be freely available. At what point did we suddenly become so thick that we stopped being able to use them?

End of Rant.

After getting to play with a canister light on our previous dive, David had finally decided to rid himself of his old torch (a pistol grip UK D8R), to replace it with an E.E. Pro-14 canister light, bought from Mark (the safety diver who wasn't able to dive with us a fortnight before). However Mark hadn't arrived by the time JBC was scheduled to leave, so the old torch had to come instead...

Site: P-555
Boat: JBC
Depth: 42.7m
Bottom Time: 25min
Ascent Time: 36min

Just to ensure that we would not, for a moment, expect our dive to go without a hitch, David's UK D8R performed true to past form...and died on entry. However, at the 6m "bubble check" he indicated that he would use a backup light for the dive so, all else being well, we continued to the seabed. The P-555 was sunk as an ASDIC target and sits upright on a number of gantries along its length. Somehow, she seems simply to be resting on the bottom, as if operating on "quiet routine", waiting to surprise a target. Torpedo tubes are visible at the bow, where we did our "deep shutdown" assessments with no difficulties. We then headed aft along the starboard side of the hull. At the stern, both prop shafts are in evidence, though the props themselves have gone. Coming up over the rudder, we had to negotiate some monofilament netting

hanging near-invisibly in the water. Having avoided being permanently entangled, we continued forward, arriving at the conning tower, just in time to deploy, leaving the wreck on time, as per the plan. Our 36 minute ascent went exactly as planned. Finally, a dive which came together as we knew it could!

Having completed the theory test (including writing essays debating the "advice" given in the official course material, where a two word answer might have sufficed!) David and I qualified as TDI Intermediate Trimix Divers. John would return to Portland in early September for the last dive, this time with his new suit. And, yes, something broke. This time it was a stage-reg's HP o-ring (see also the Scapa Flow trip report). Not to mention the holes he succeeded in poking in his suit within 10 dives of getting it due to some injudiciously placed jubilee clips...

JK: The dive was on the M2, and we were joined by 2 more of Izzy's students who were doing an Advanced Nitrox course. All was going well, until Izzy and myself passed the two others at about 25m on the shot line (the dark zone starts about then) meaning to light up the area at the bottom of the shot with our Canister lamps. After about 10 minutes of waiting, Izzy and myself aborted the dive, came up the shot to 21m and I made my gas switch (I was on a 21/35 bottom mix) then as we got to our 15m stop, the Nitrox guys came the other way. It turns out that one of them had had ear problems on descent and had ascended, then as they sorted that out they re-descended. Having already switched from my bottom gas to Deco gas, I decided not to re-descend, and so Izzy and I continued our ascent. All was fine until at 6m, I switched to 100% O2, and Izzy's HP hose on his backgas blew. So we shutdown the offending regulator, and continued the ascent. It would have been nice to complete the course without complications, however it is nice to see how small equipment problems can be dealt with without them turning into major incidents.

As we finished, Izzy reminded us that, as with any other certification, this is not a license to dive to its limits, but to go and gain experience on the easier dives that it permits us to do and, on dives for which we were already qualified to do, to introduce better discipline, better planning and better decompression schedules in order to make those dives safer and more enjoyable and to keep our skills in shape for bigger dives.

While I started this course sure that there was little I would gain from it and that it would simply be an attendance course to get a ticket for trimix, my diving on the course and subsequently has unquestionably tightened up and the benefits of trimix have become very obvious. On dives which I would previously have done on air or nitrox, I can now enjoy a much reduced degree of narcosis, making them not only safer, but I get to remember far more about them!

Many thanks for Izzy for putting up with our initially disastrous antics at the beginning of the course and for seeing it through to the end with us.