IANTD SEA NEWSLETTER

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ISSUE 3, 2014

Welcome to our latest IANTD SE Asia newsletter.
Hope you find the articles educational and entertaining. If you have comments or views, please let us know. Your feedback is important to us.
This is a busy month for us at IANTD. We are exhibiting at the ADEX 2014 dive exhibition (Booth # D03 & D05), we have four notable IANTD divers among the list of presenters for the Technical Diving Conference and we are looking forward to a series of instructor training programmes to be conducted in Bali after the show ends.

Safe diving!
Priscilla

ADEX2014

the Book signing event

Friday, 11, 2014

Simon Pridmore will be signing copies of his bestselling book for divers "Scuba Confidential" and his new "Bali Diving & Snorkeling Guide" at the IANTD South East Asia booth # D05 & D03 at 12 noon and 6pm today. Both books are on sale at the booth at ADEX Show special prices!

Saturday, 12, 2014

Simon Pridmore will be signing copies of his bestselling book for divers "Scuba Confidential" and his new Bali Diving & Snorkeling Guide at the IANTD South East Asia booth # D05 & D03 at 3 and 6pm . Both books are on sale at the booth at ADEX Show special prices!

Sunday, 13, 2014

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INSIDE THIS ISSUE

Lamar's course in Bali

(OW DPV, Essentials & OW Sidemount course)

During the week following ADEX, from 14 to 21 April, IANTD Instructor Trainer Trainer Lamar Hires will be conducting IANTD Essentials, Sidemount and Diver Propulsion Vehicle instructor training at Villa Alba in north Bali, assisted by his son Jared Hires. Lamar is a cave diving and technical diving legend and we are fortunate to be have him here with us. After all, who better to learn how to teach sidemount diving from than the man who has been at the forefront of this trend and designed and manufactured the original sidemount diving equipment. We are excited at the prospect of the training courses and also look forward to sharing the experiences of someone who was there at the birth of the technical diving "revolution."

Here is a brief biography.

Lamar started diving in 1979 after moving to Jacksonville, FL. The springs of North Florida were the closest dive sites to Jacksonville that didn't require getting on a boat. After diving all of the springs countless times, he was naturally drawn to the caves. He earned his NAUI open water instructor rating in August 1984. And in November 1984, after cave diving for five years and logging over 1000 dives, he earned his cave instructor rating with the NSS-CDS.

He has gone on to explore and map many cave systems in North Florida and around the world with a small group of dive buddies. The motivation to explore and challenge himself led to the design of many new Dive Rite products and diving styles. Lamar was one of the first to use sidemount techniques to push caves beyond the range of back mounted cylinders. In 1985 he used this knowledge and experience to write the first sidemount specialty program for cave divers for the NSS-CDS.

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Over the years Lamar has tested and experimented with various cylinder configurations to evolve sidemount diving into the specialty that it has become. He says, "I would have never thought it would become the open water diving style it is today."
He has tested gear and explored caves and wrecks around the world, including caves/mines in Finland, Puerto Rico, Dominican Republic, Australia, Japan, Italy, Russia, and numerous sites in the USA. He was part of the team that connected Telford Springs and Luraville Springs, two cave systems in North Florida. This dive set a short-lived world record for sidemount traverse in 1989, with a distance of 7600 ft. He has been in the icebergs of Antarctica and under the ice in sub-freezing water temperatures. He also dives plenty of wrecks, having been on wrecks in the Dry Tortugas, Egypt, Israel, UAE, Norway, Antarctica, and the Great Lakes.

Lamar is passionate about cave rescue and recovery. He has traveled around the world for the International Cave Rescue/Recovery team, training divers for this specialty, including Australian and Italian teams.

Lamar is still a very active instructor. He has trained more than 650 people to cave dive since 1984, and continues to train rebreather, sidemount, cave, and other technical divers.

After joining Dive Rite in 1984, he developed the first back mounted wing specifically for diving heavy double cylinders that would later become known as the Classic Wing. An updated version of the Classic Wing continues to be a popular wing today. He brought the backplate that is widely used by technical divers into mass production in 1984. He also worked with SEIKO EPSON to develop the first user programmable nitrox computer, the "Bridge", in 1992. After being with the company from the start, in 1997 Lamar bought Dive Rite from his friend and co-founder Mark Leonard.

Lamar continues to actively dive in caves and wrecks around the world. This provides the inspiration for developing and improving the Dive Rite product line by testing it in any environment imaginable.

Affiliations & Awards:
IANTD Board of Advisors (current)
National Speleological Society, Chairman (1992-1994)
National Speleological Society, Training Chairman (1987-1992)
International Underwater Cave Rescue and Recovery (IUCRR) Training Coordinator (current)
National Speleological Society, Lifetime Fellow Award
Florida Springs Exploration Award, 2000
Contributing writer for Advanced Diver Magazine, Divers Magazine, Scuba Times and Sport Diver Magazine
Contributing author NSS-CDS Cave Diving Manual and IANTD Technical Divers Encyclopedia

How Did Richard Pyle Come Up With The Idea Of "Pyle Stop"?

In the mid to late 1980s, I used to do a lot of air diving in the 180-200 fsw (55-60msw) range; mostly in search of interesting fishes to collect. After some of these dives, I would feel perfectly fine, and after others, I would feel extremely fatigued. In some cases, I had to struggle to stay awake during the drive home. I started paying attention to every detail of the dive-depth, total in-water time, current, temperature, etc. -trying to find some explanation for why I would feel differently after different dives. I eventually realized that the only factor that correlated - and correlated almost perfectly- was whether I had collected any fish on the dive. On dives when I caught fish, I felt fine. If I didn't catch any fish, I was exhausted after the dive. Then it struck me: on dives when I caught fish, I would need to stop fairly deep -usually at about two-thirds of the maximum depth of the dive - and insert a hypodermic into the gas-filled swimbladders of the fishes (sort of like a fish buoyancy compensator), to release the excess gas during ascent. I couldn't understand why, by spending additional time deeper, I would feel better after the dive. Intuitively, more time at depth should cause more nitrogen • loading, and if anything make me feel worse after the dives. So I decided to stop for 2-3 minutes at about 120-130 feet (36-39m) after all of my deep dives, regardless of whether I collected any fishes. And, lo and behold, the fatigue disappeared. It only started to make sense to me years later, after I saw the late Dr. David Yount, developer of the VPM model of decompression (which takes the physical properties of tiny bubbles into account), give a presentation at the 1991 American Academy of Underwater Sciences (AAUS) meeting in Honolulu.

Then in 1996, the late Win Remley asked me to write an article about my method of deep stops for the magazine Deep Tech, which he co-published. At the time, I didn't really have a formal method for adding deep decompression stops to my dive profiles – I either let the fish dictate the depth and duration based on their swimbladder needs, or I just sort of winged it. So, during the 45-minute period in which I wrote that article, I just sort of "invented" a method that seemed like it fit more or less what I was doing. Years earlier, I started writing (but never published) an article

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Diving in Komodo and Why I Wished I Had Twin Tank With Me...

KOMODO…we were already abashed by the company we were having, excited about the trip from all the stories told by divers who have been there before. We arrived at Labuan Bajo by flight from Bali and were greeted earnestly by the hotel manager from Exotic Komodo Hotel after alighting from the comfortable transfer vehicles from the airport, just five minutes away.

At 1300hrs, we were all settled into our rooms, unpacking our gears away in preparation for the dives in a day's time. All the gears were lumped into mesh bags, which were later tagged with our names. Thanks to the good management and planning by the dive team that led the trip, preparation for the dives were settled just before dinner.

7am. Most of us, including me, were already up and about, some eating breakfast and some suiting up into pre-dive outfits. In half hour, reliable and comfy vehicles came to ferry all 30 of us to the Labuan Bajo Harbor where our dive boats await. We were all already assigned to the different boats, so boarding was a breeze, and our bags that had our nametags on them came along soon after.

And then the boats; speedboats to be exact, started moving. The overly excited ones started setting up their gears, while the rest just laid back and awaited for space to fix their dive outfit. It was about an hour's journey to the first dive site.

Check out dive: strong drift and drastic thermoclines. The sights were pretty but normal, comparing to what we can see in Maldives and Sabah waters. Nothing quite special, but we were all getting in tuned with the cold waters. After the dive, the experienced guides discussed on how we were all to be separated into groups for the next 7 dives, in consideration for our safety and also the conservation of the life underwater, since the area is a protected underwater wildlife heritage.

The second dive site, Batu Bolong (or Hollow Rock in English), holds no clear waters to see what's at the bottom from aboard the boat. "Oh, it is just going to be like the first dive", everyone thought. Dabush! I was in the cold waters again. I cleared my mask while on the surface and got somehow drifted nearer to some rocks nearby. Naturally, once the mask was donned, I looked down to start snorkeling to the descend point. That was a sight of a lifetime! I did not even start snorkeling, looked up and gave a loud wow to everyone nearby. They acknowledged and one of them gave an agreeing remark "I know, right?"

The thrill got harder to contain as we descended. Already at 25 meters come 10 minutes into our dive and we were wasting air, aghast by the wonders at the second site, simply because they were just breathtaking. I really wished I had a twin tank configuration on my back, along with a nitrox stage tank with me. I could have stayed longer underwater, and venture deeper! The pelagic life at the depth of 30m was a non-stop trail around this magical rock. Groupers, Giant Trevallies, silver tipped reef sharks, and more. With what I had at that moment, I had to look out for "decompression limits" all the way.

It irked me so much for not putting what I've learnt from the Nitrox Diver Course and Advanced Nitrox Diver Course via IANTD Singapore, to good use. The gas combination in the stage tank would definitely keep my head and mind going for more than the three days of dives that I experienced on this trip. It will definitely keep me from getting tired easily, from all the wowing and mouth-gaping sights.

To counter this tiredness, the good higher percentage of oxygen will set your near-to-narcosis moments further away. Less residual nitrogen in the body would mean less lethargic feelings after you're out of the water, as compared to when diving with a normal single air tank. But with this extra oxygen come the dangers and risks of

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gas poisoning, which were all covered when I took the Nitrox Diver Course and was certified as an Enriched Air Nitrox (EANx) Diver.

With the twin tank configuration, it also brings other added risks. But the wonders to see underwater with a longer dive time and the ability to go way deeper are worth the time, practice and training from the Advanced Nitrox Diver Course that I took. From finning techniques to identifying problems I might face while underwater with a twin tank to advocating drills that will come naturally once the course is over, the Advanced EANx Diver Course gives assertive knowledge and made me into a more determined and confident diver. How I just wish I had twin tanks and a Nitrox stage bottle with me in Komodo. Technical diving for the win! Dive Nitrox!

By Nur Trisna

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describing how to bring fishes up alive from depth. Because swim-bladder expansion is a function of pressure and Boyle's law, that method involved calculating increments of pressure- depths where the ambient pressure was one-half or two-thirds the pressure at the depth of capture for the fish. Because it was the fish swimbladder that got me started on the deep stops, I decided to base my method of deep decompression stops on that. Later, I decided that this method of calculation was unnecessarily complex. Decompression physiology is far from an exact science, so it seemed to me a rule-of thumb that was easy to calculate on-the-fly would be better. So I modified the method to insert additional decompression stops at one-half depth increments between the maximum depth, and the first decompression stop required by a decompression schedule calculated by traditional methods. If the gap between the first stop and the first "required" stop was greater than 30 feet (9m), I would insert another deep stop at the half-way point of the gap. I would repeat this until the gap is less than 30 feet (9m).

Tek Lite:Adventure with Less Deco

With the Advanced Nitrox Diver course, divers will learn how to safely expand their range of diving to 140 fsw (42 msw). Divers choosing the Advanced Recreational Trimix Diver course are able to safely venture to 150 fsw (45 msw) with an Equivalent Narcosis Depth (END) of no more than 80 fsw (24 msw).

The diver may choose which programs (Advanced Nitrox or Advanced Recreational Trimix) they wish to take depending on their goals, desire for diving adventures and/or needs. The Tek Lite manual provides skilled recreational divers with an excellent taste of tech, including equipment configurations and decompression dive planning

How do the two courses differs in their purpose?
Both courses allow for limited decompression up to 15 minutes and allow the use of EANx decompression mixtures between 41% to 50% oxygen. The primary difference lies in the bottom gasses For the Advanced Nitrox Diver course the bottom mix is EAN ranging from 21% to 40% oxygen. For the Advanced Recreational Trimix Diver Course the bottom mixture is calculated never to exceed and END of 80 fsw (24 msw) and consists of a Trimix blend ranging from minimum of 28% to a maximum of 40% oxygen, and a helium content that will allow the diver an END of 80 fsw (24 msw) or less. One could term the bottom mix used in the Advanced Recreational Trimix Course as "Oxygen Enriched Trimix" or better yet "Hyperoxic Trimix".

What type of divers need Tek Lite?

- This is primarily for divers who desire to develop more knowledge about safer diving skills.
- Divers who want to learn how to plan decompression dives and properly utilize a decompression stage
- Divers who wish to use larger capacity cylinders or even doubles.
- Divers who desire to expand their capability and dive to greater depths.
- Divers who wish to use the advantages of helium for limiting narcosis within the 150 fsw (45 msw) or shallower range.
- Divers who wish to conduct dives with safer limited compressions of 15 minutes or less.
- Divers who want to increase their diving efficiency and knowledge, and possibly use Tek Lite as a growing process towards the broader realm of technical diving.

The Insidious Threat of Hypoxic Blackout in Rebreather Diving

Why rebreather divers, even more so than open circuit divers, need to be in control and focussed when they ascend

Rebreathers allow divers to enter a realm of undreamed-of opportunity. However, while they provide a solution to many of the drawbacks of open circuit scuba diving, such as limited gas supply, noise and short no–decompression limits, rebreathers also expose divers to a number of new concerns, which is why proper training and lots of practice in emergency procedures are essential.

One of these concerns is a widely misunderstood phenomenon most frequently referred to as shallow water or hypoxic blackout, something that hitherto has typically been a problem encountered mainly by free divers.

A technique many free divers practice to extend their time underwater is hyperventilation. They breathe in and out aggressively to reduce their carbon dioxide levels as much as possible. This causes the breathing reflex and onset of anxiety to be delayed while they are underwater. Then they dive. As they swim their bodies metabolize the oxygen and convert it into carbon dioxide and the longer they are down the more oxygen is metabolized.

Human beings can function normally at oxygen partial pressures of between 0.16 and 0.5. At partial pressures greater than 0.5 we are at risk from oxygen toxicity: at partial pressures below 0.16 the oxygen level is insufficient for us to maintain consciousness.

At the surface, the oxygen partial pressure in the air the free diver breathes is 0.21. When he arrives at 10m (33ft), generally speaking, the percentage of oxygen in the air in his lungs is still 21% but as he is now at an ambient pressure of 2 atmospheres and as the pressure of the air in his lungs has now doubled, the partial pressure of the oxygen in his lungs is 0.42.

This partial pressure then starts to drop and continues to fall as the oxygen is metabolized. If the diver stays at depth until the partial pressure drops to 0.28, he is fine, but this equates to a partial pressure of only 0.14 at the surface. So, as he ascends and his oxygen partial pressure drops with the reduction in ambient pressure, somewhere at a point close to the surface it will fall below 0.16, the diver will black out abruptly and, if he is not positively buoyant, will sink back down to the depths.

Rebreather divers can encounter similar issues as they ascend. On most electronic CCRs, the oxygen level in the diver's breathing supply is maintained at a preset level. As the diver ascends, the ambient pressure drops as does the partial pressure of oxygen in the diver's breathing loop. When the rebreather's electronics detect that this is happening they direct a solenoid to allow a fresh injection of oxygen into the loop to maintain the partial pressure at the desired level.

If, the diver's ascent is too rapid, however, the electronics may not have time to pick up and compensate for the oxygen shortfall. Furthermore, if the oxygen cylinder is empty or if corrosion or other debris is blocking the injector then no oxygen can be added, no matter how controlled the ascent. If the diver does not monitor his oxygen partial pressure and act to manually sustain a breathable oxygen level by, for instance manually injecting fresh diluent gas into his breathing loop, he will black out before he reaches the surface. There are no warning signs or symptoms.

It may well be that this phenomenon lies behind a number of unexplained rebreather fatalities in recent years. With very few exceptions, we all begin our diving lives on open circuit scuba and acquire open circuit habits. It is common in standard no decompression sport diving for divers to relax their vigilance once they begin their ascent. The dive is over and their attention starts to wander. It is also natural for a diver who encounters a problem or feels uncomfortable to quickly seek sanctuary in the shallows. After all, this makes good sense in open circuit terms because the shallower you are, the less air you use and the more time you have to solve any problem.

Due to the dangers of hypoxic blackout rebreather divers have to be trained to resist such tendencies and it can require intensive practice for them to achieve the instinctive level of concentration and discipline required. The ability to conduct a controlled and considered ascent is a widely underestimated tool in any diver's skill set. For a rebreather diver it is an essential survival technique.

By Simon Pridmore

(Simon is the author of the best-selling Scuba Confidential – An Insider's Guide to Becoming a Better Diver and will be signing copies of his book at ADEX 2014)

How a simple "NO" can save life

We have all read articles and news about diving incidents or accidents, some close shave some a little more tragic. Most if not all are preventable if the victims or even people around them could exercise a little "NO" in their life. As easy as it sound, it is often the most painful one syllabus a diver or a potential diver could utter. I shall expose you here, which I hope can make it a lot natural for your lips to use "NO" than a regulator.

You cannot really swim and is what some would call a pool lizard because you are not comfortable without your entire body attached to the side of the pool or have your both your feet on the ground. But here you are in an Open Water diving lesson because your ego would not deny your peers, worse still your lover date.

You are the dive operator despite knowing full well a BCD cannot replace watermanship but said yes to the above applicant because his fee would cover half the rent this month. You swallowed your conscience with a mental note to pay more attention to this fellow among the half dozen students in this class. "What's the worst that could happen, he will fail, and will have to make one more class." you thought.

You are here finally, Raja Ampat, the Mecca of all dive site, 5 months in planning, thousands of dollars and a big bite of your savings. And of all time, you must come down with a cold, real bad one, those you ask how is it possible that all facial orifice can be pouring with fluid and yet choked at the same time. You have heard it been done before or even seen it, you pop that extra strength decongestant, and start suiting up.

The tales can go on and on. I have implied many things but the above accounts doesn't always have any consequences, many divers got away with it. However, you can imagine and recall how all these behaviours relate to most of the diving incidents. This article could have been written in 3rd party story about a certain Tom or Jerry but I use "You". Because you and me, WE, are all guilty of it, one way or another many times in our diving life. We simply could not say "NO" and walk away. We have many a times put ourselves in harms way over foolish pride, ego and worse of all money.

How many times have we blatantly outsource our safety to the "professionals". We let them decide if the current is strong enough, the tank is secured or not, the valve opened or not, the depth, the table. It is tip top service no doubt, but can we say no to some of these services?

We are terrestrial animals and diving is always optional. If we are not entirely confident and comfortable with anything we simply have to say "NO" and stay dry. Even in the middle of a dive, say "NO" and get dry!

There is no shame in staying dry and no pride dying for a dive.

By Kiwi Pang

Hit by down current

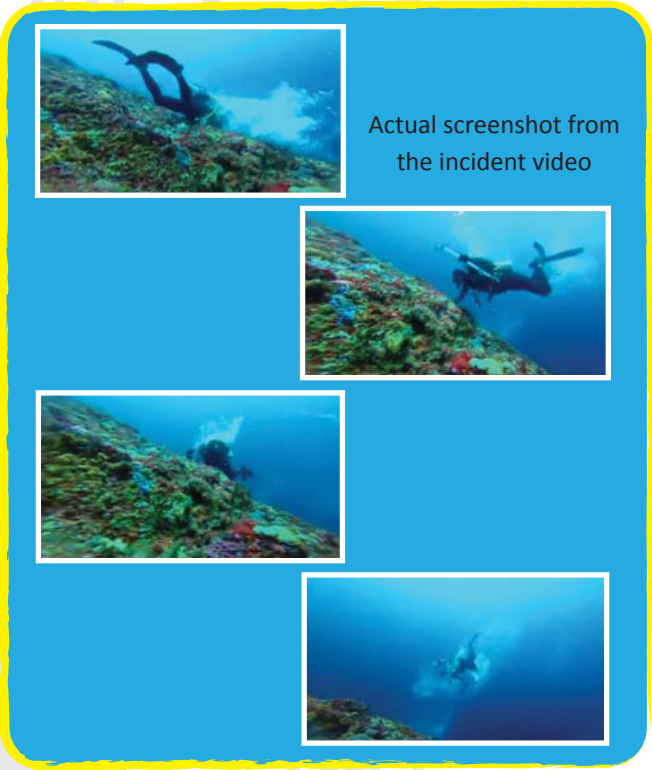
Location – Batu Bolong, Komodo, Indonesia
Date and time of incident – 23 Feb 2014 11.30am
By – Hashim Mansoor, IANTD Instructor

It was suppose to be a routine dive. The dive team in my boat consisted of divers with different skill levels, and I was the leader for the group. We had dived the same location just the day before, and everything was smooth then. The visibility was great, and the reef was vibrant on a dramatic rock formation, with a lazy current gently pushing the divers along. So the group agreed to dive it again, as they could not get enough of it.

The back roll into the water went about smoothly. As the dive leader, I took the sweeper position, keeping a distance from the reef face to be able to closely monitor the group as they glided gently along the reef. Then all of a sudden a massive down current hit me at about 20m depth without any prior warning. As I was some distance away from the reef face, I could not get anywhere near it to take a grip of any of the rocks there. The reef lies on a sharp slope and the down current pushed me quickly into the deep. At this time, my exhaled bubbles were drifting downwards, indicating the fast speed of the current. Quickly I reached for my inflator hose and inflated my BCD while paddling hard upwards. I checked my BCD once it reached maximum inflation so as not to waste any air which would be dumped out once the BCD has reached full inflation if the inflator is still activated. In this situation, air conservation is most crucial, as I do not know how long or how deep I would be carried by the current.

I quickly glanced at my dive computer. The depth was 40m, and still descending, albeit at a slower rate. Gradually the current eased out, and I stopped descending. My bubbles had stopped crowding around my face, and began rising when I exhaled. The last option of ditching my weights was not necessary.

Soon, I began to ascend as well. At this stage, I knew that I am out of the zone of influence of the down current, and very soon I will shoot out of the water with a fully inflated BCD, and run the risk of DCS due to quick ascend. I reached for my inflator hose again, and started to bleed off the air from the bladder, while maintaining gradual slow ascend towards the surface. I checked my dive computer, and was glad that I did not go into decompression mode. The air gauge showed I still have 100 or so bars, and hence plenty of air to reach the surface safely. Once I reached 5 m, i established neutral buoyancy, and began doing my safety stop. A stiff current was flowing at the surface, and I knew it was taking me away from the dive site. I deployed my Surface Marker Buoy and waited. Once the mandatory 3 minutes had passed, I ascended slowly to reach the surface, and true enough, I was several hundred metres away from the dive site. A passing dive boat from another group picked me up, and reconnected me with my own dive boat. I worried what happened to the rest in my group, but thankfully, only 3 others were hit by that current. Two managed to grab on the rocks and escaped, while one was similarly push down but not as deep. My final depth was 43m.



Lessons Learnt

Never assume a dive site behaviour will be consistent all the time. What was calm and quiet on one day, may not be so the next. Always be prepared for the worst, and react accordingly. Stay calm and think. While we cannot practice being hit by a down current, our experience from having done many dives helps us to stay calm even in the most arduous circumstances.

Know where your equipment is located on you, so that you can reach for it instinctively. Imagine being hit by a down current, and you cannot locate your inflator hose. That would have been disastrous. And always carry a Surface Marker Buoy for ALL dives. You will never know when you are going to be separated from your group or your boat, or if a speedboat is passing by in your direction.

Catch 4 of our IANTD Speakers on ADEX

ADEX2014

Tekdive Seminar

Lamar Hires
Saturday, 12, 2014 : 1430-1530hrs
History of Sidemount Diving
A look at where sidemount diving came from and where it is going. How has this discipline of diving evolved from cave diving to other realms of technical and recreational diving. What are the benefits?

Alex Santos
Saturday, 12, 2014 : 1530-1630hrs
Benefits of Oxygen in-Water Recompression for Early Treatment and Prevention of DCS

Simon Pridmore
Saturday, 12, 2014 : 1630-1730hrs
Below 60: A Paradigm for Deep Divers
A thought-provoking analysis of the equipment, procedures, manpower and mindset you need to run diving operations beyond 60m.

Dave Ross
Sunday, 13, 2014 : 1300-1400hrs
Cave Exploration in Central Samar