



TECHNICAL COMMISSION Newsletter

CMAS

CONFÉDÉRATION MONDIALE
DES ACTIVITÉS SUBAQUATIQUES

WORLD UNDERWATER FEDERATION

Dear friends,

Introduction

Welcome to the Fifth Edition of the CMAS Newsletter. The feedback from previous issues was very positive and it was therefore decided to resume production of the Newsletter. I hope find this edition as informative and useful.

Recompression Chamber

One issue of concern that has been brought to my attention by operators of recompression chambers is that divers with suspected / borderline bends are not contacting the chamber soon enough and end up going to the chamber too late. This will result in the chamber now having to treat the scarring caused by the decompression illness which takes a lot longer, rather than going early and treating the bend. Best practise suggests that if a diver feels unwell after a dive and suspects that his/her condition is related to a barotrauma, it is best to contact the chamber immediately for advice and if necessary, treatment. This will save the diver and chamber staff a lot of time in the long-run.

Mixed Gas Diving

Much work has been put into completing the standards relating to the CMAS Normoxic and Advanced Trimix. These are now on the CMAS website under the Technical page.

It has been stated previously and it is worth repeating that the CMAS maximum allowable partial pressure of Oxygen for Nitrox and Trimix dives is 1.4pp. For the decompression gas 1.6pp oxygen is acceptable. The reason for lowering the limits is due to the extensive experimentation that was carried out by NOAA, which has proven that these limits are safer. All Federations

should have these limits in their standards and anything above these would be outside of CMAS teaching. Federations may wish to reduce these limits and they can do so if they feel it necessary. As with all standards, limits are set for safety reasons and with the best knowledge and teaching that is available to the organisation. It is imperative that Federations recognise these changes and keep their own standards up to date.

Divers with Disabilities

Considerable work has been undertaken in producing standards for Divers with Disabilities and their instructors. This was an area that is not covered in the CMAS system and we set about rectifying it. The standards should be ready for ratification by the T.C. during the next meeting.

And Finally

If you have any questions of a technical nature please feel free to contact any one of the T.C. members. I have listed them below and also their area of expertise.

Best regards

Kevin O'Shaughnessy

President of the Technical Commission

Delegation of Tasks to TC Members

Kevin O'Shaughnessy:

Strategic development

Promote TC development at MB/EB

Management of requested courses by Federations and CDC's

Beat Müller

Secretary tasks for CMAS TC

Leader of the Cave Diving working group

Editor and producer of the News letters

Pere Lagrange Baile and assisted by Joan Ramon Guinjoan

Manage CMAS TC Teaching material
Guardians of the Spanish translations

Leo Troiano

Standards and Training program
Review of the Federation standards

Bob Cole

Technical Diving director
Leader of working group on tables for Deep Stops

Jean Rondia

Children Diving
CDC working group co-ordinator
Safety and quality in diving
Guidelines for federations for accepting divers from other federations

Luigi Caravani

Leader of working group working on Disabled Divers

Polish (KDP PTTK) speciality courses for recreational divers and instructors

Polish inland and South Baltic Sea waters are relatively difficult for recreational diving. The visibility of fresh or sea water can change vertically, ranging from zero to several meters. Moreover, water temperature is low and at the bottom it ranges from 4 to 8°C all the year round (including summer). In winter the majority of dives have to be made under the ice using a special thermal protection. Because of natural water properties of Polish lakes, every fresh water dive below 15 - 20 meters requires using a diver's torch. Therefore, "night diving" training is included in the KDP/CMAS one star course program as its obligatory part. Wreck diving in the Baltic Sea is the main attraction of sea diving in Poland but surface and deep water (up to 40 meters) wind water currents can suddenly appear during the dive and also the sea surface can become rough very fast. Another real danger for every diver (particu-

larly at low visibility) are unmarked fisherman nets in lakes and the sea. All the above mentioned factors have resulted in introducing for many years some speciality courses for divers and instructors by the Underwater Activity Commission (KDP PTTK Poland). These courses are as follows:

- Dry suit diving
- Ice diving
- Baltic Sea wreck diving

All the courses have two training levels i.e. the first one for divers and the second (methodology course) for instructors. After training, course participants receive KDP PTTK speciality cards.

Brief information on the courses for divers is specified below:

Dry suit diving course

A participant of the course should receive theoretical knowledge and practical skills enabling safe dry suit diving in open water.

Candidates for training should be at min. 16 years of age and have the CMAS One Star - P1 certificate (or other equivalent qualifications) . The 2-day training consists of 6 hrs classroom lectures and six hrs practical lessons including two open water dives up to 20-meters.

Ice diving course

A participant of the course should receive theoretical knowledge and practical skills enabling safe diving under ice.

Candidates for training should be at min. 16 years of age and have the CMAS One Star - P1 certificate (or other equivalent qualifications) and at least 15 confirmed logged dives since the P1 (or equivalent) course graduation. The 2-day training consists of six hours classroom lectures and six hours practical lessons including two open water dives up to 20-meters at the total submersion time of 50-minutes.

Marine wreck diving course

A participant of the course should receive theoretical knowledge and practical skills enabling safe sightseeing of the Baltic Sea bed laying wrecks (excluding wreck penetration).

Candidates for training should be at min.16 years of age, have the CMAS One Star - P1 certificate (or other equivalent qualifications) and at least 15 confirmed logged dives since the P1 (or equivalent) course graduation. The 3-day training consists of 12 hours classroom lectures and 10 hours practical lessons including three sea dives.

Videofilm makers course

Recently, the Underwater Activity Commission has introduced a new course for divers who want to make films underwater. Candidates for training should have CMAS One Star - P1 certificate (or other equivalent qualifications), two-day training consists of eight hours classroom lectures and four hours practical lessons including two open water film making dives.

Wieslaw Wachowski

President of KDP PTTK Poland

Blue Water Wash-aways

This year, so far, there have been 27 reported incidents of divers being washed away during or after diving.

Foreword

It's just over a year now since Peter Little of Pisces Dive Club London (BSAC 645) went missing off the Brothers Islands in the Red Sea. Peter was a good friend of mine and an excellent diver with well over 30 years of diving under his belt. We travelled the world diving together and this is not what I expected. So this article is dedicated to Peter with the hope that it might help others avoid his fate.

Some Thoughts on Avoiding being Left on

a Blue Water Holiday Reef and Dealing with being Washed Away

Introduction

Warmer blue water holiday diving seems to be what an awful lot of people want to do. And nothing could be further from your mind than running into trouble in idyllic surroundings. Blue water diving looks and feels so easy and, in general, it is. It's not my intention to scare you, because there are many, many safe diving operations offering superb safe diving holidays, but, don't be lulled into a false sense of security; there are some potential dangers to consider.

In some parts of the world the tides/currents are unpredictable. This can make reef diving potentially dangerous! To this add communication problems, and the chance of being washed away or left behind becomes a reality.

Avoiding being left behind

On Club outings the people running the show know you as an individual and will be looking out for you. By the same token keep in mind that the Blue Water Dive Master does not know you from Adam. Furthermore, on holiday boats there may be single travellers, pairs of divers and groups of different nationalities. Dive Boats are often noisy and confusing places. In these warm dive locations many Dive Masters (DM) do not speak English as a first language, which can leave them uncertain when it comes to dealing with English people. So, for your own benefit, it's your job to reduce this communication barrier. Furthermore, some may not have good management/organisational skills, which can lead to mismanagement of diving parties who may be in and out of the water at different times. All this can lead to confusion when the DM counts heads for the return journey to the Resort. If no one complains of a missing buddy or a pair

of divers etc the DM may set off for the Resort without one or more people.

That's why you should take the time and trouble to make yourself known and to become a real person to the Dive Master, not just a name/number on the dive list. Use the schoolyard trick of taking an "Apple for the Teacher". Make your own mind on how you do it - but do it. Also check up on how the DM logs divers in and out of the water - If there is no formal fool proof system, you should consider giving that boat a miss!

This is not the result of a fertile imagination - being left behind or washed away by current or tide is a real possibility: Even Hollywood has made a film about it called "Open Water". That should tell you something!

Being Washed Away

Now you know how to avoid being left behind. How should you deal with the actual situation of being washed away or left behind? One answer - Be prepared. Take precautions before going on holiday.

Many currents in the tropics are thermally driven, which makes them less predictable. However, lunar effects can add to their strength. A sound knowledge of local conditions is essential: use the best people on hand. Take more interest in the dive preparations; listen very carefully to the dive briefing. Ask questions; know where the current/tide may take you and equip yourself well. Your best defence is to trust everyone (be nice) and then double check for yourself. Most Dive Masters (DMs) want you to have a good time without getting hurt or lost. However, not everyone has all the skills and knowledge to keep you safe. An even bigger problem is that they often are unaware that they don't have all the necessary skills or knowledge but think that they do. Over confidence may be born out inexperience and/or complacency due to Blue Water Syndrome - "What can happen in Paradise?" This may apply for all nationalities of DM.

Be at the DM's briefings, pay attention to the comments about fast unpredictable cur-

rents/tides. Know where these currents/tides may tip you up after the dive. Sorry to repeat myself, but ask questions - be sure you get an answer and don't be fobbed off. Don't be coy about dropping out of a dive if you feel too concerned about the outcome.

Ensure you always carry an array of signal devices and double check that your buoyancy aids don't leak. Don't let Blue warm water make you complacent!

Equip Yourself with the Basics for Dealing with being Left Behind or Washed Away

The ability to signal rescuers and others may help save your life. The sea is a very big place and all that shows of you is your head and shoulders. You need to enlarge your profile to help others see you.

Signalling devices:

- Delayed Surface Marker buoys, reels and lines. Don't forget that a DSMB can be used as a buoyancy aid. Take two.
- A folding flag.
- A whistle of the blowing kind, tied on so as not lose it - those driven by the second stage of your DV require a supply of air to make them work, which you may not have.
- Water marking dye.
- Flashing lights (Strobe) for night use.
- A powerful torch.

Consider other signalling devices:

- A small mirror for signalling in sunlight (or an old CD - they cheap and available).
- Reflection strips on your dive suits help at night.
- Dive-proof Personal Location Beacon (PLB) (Sometimes wrongly called EPIRB, which are used by small crafts). Some PLBs have inbuilt GPS receivers in addition to 121.5MHz homing transmitters.

For more information: Check-out the Marine and Coastguard Agency (MCA) web-

site - www.mcga.gov.uk.

A very sharp diving knife is essential; the operative word is "sharp" not big. You might also find a pair of diving (surgical) scissors very useful.

Personally, I hate taking a snorkel on a Scuba dive, but in blue warm water with current/tides it's not a bad idea. They can be useful for breathing when waves are breaking over your face.

In warm locations the wearing of gloves is often frowned on - they are worried about you touching and damaging coral. If that's the case put a pair in your emergency bag on your belt. They will be invaluable if you are forced to climb/swim over sharp rocks - even coral. No one will mind too much if it's to save your life.

Always take a piece of rope - ie a Jon-line. This will help people to stay together.

The effects of the sun are markedly dampened by the cooling effect of the water. Take a hat with you in your emergency diving bag; it's really important to keep the sun off your head when you're on the surface. Always wear a Tee-Shirt over your wet suit; it will help with sun protection when you remove your wet suit. It can also be used to keep the sun off the back of your neck whilst you are in the water.

Drinking water - Strap a couple of full one litre bottles of water to your BCD/dive cylinder.

Assume nothing: Always double check before the dive that your BCD and DSMB hold their pressure without deflating. Take extra time and trouble if you are hiring such equipment.

Further Advice for your Consideration

Keep in mind that wetsuits can be used to make shade if you make land. Furthermore, they can be used to catch water in, if it rains.

If you can, take a rolled up very large strong black bin-liner on the dive. They

can be hard to find, but worth it if you do. Use it to make floating thermal protection: if the need arises unroll the bag and get inside, pull it up to the surface so that your feet are down and your head is up and out of the water. Inflate one of your DSMBs and tie it to the top of the bag to keep it afloat. The trapped water in the bag will act as a partial insulator, slowing conduction of your body heat to the surrounding water. It may also help keep off unwanted fish attention and ward-off sharp coral. Keep your knife to hand because you may need to cut your way out.

It is very important for groups to try to stay together. It is well known that in a wreck/capsizing incident non-swimmers survive because they stay with the wreckage and don't strike-out alone for the shore. Many times strong swimmers perish because they try to swim for shore. Even with powerful fins you may not be able to reach that island in the distance. Distances and current are difficult to judge and are often underestimated by people - stay with the group, you are stronger as a unit.

Group DSMBs together with rope and use as a raft: take turns to rest on it. Ditch weights but not your weight-belt. The belts may become useful later.

In warm locations, dive operators use aluminium dive cylinders. These cylinders are usually buoyant when empty and may be used as part of a raft - if they are not buoyant dump them.

This is not an exhaustive list of recommendations, but it gives a start to your planning process.

Good luck, stay safe and above all else - Enjoy your diving.

Bob Cole

CMAS Technical Director

CMAS DeeP-Stop Decompression System

CMAS has developed a DeeP-Stop Decompression System based upon Prof A A Bühlmann's ZHL16B tables as the basis. This system is now available to all CMAS Federations to use if they so wish.

The title form of "DeeP-Stop" is used to differentiate the CMAS system from other systems.

The system is offered in its basic form with three decompression tables and one common repetitive dive table:

- Table No 1 - Altitude 0-700-metres; final Stop at 3-metres.
- Table No 2 - Altitude 0-700-metres; final Stop at 6-metres.
- Table No 3 - Altitude 701-2500-metres; final Stop at 2-metres.
- Table No 4 - The Repetitive Dive-Time Table, which is common for Tables Nos 1 to No 3.

It is for each Federation to decide if they want to use this system and they may also tailor the range of depth/bottom envelopes offered for use by their divers. The choice of final stop depth is for each Federation to make considering their local conditions. For example the Sub-Aqua Association in the United Kingdom of Great Britain has chosen to prepare two systems: one for air qualified divers up to and including CMAS four-Star Divers ie the Sport Table, and an Extended Range Table for use by their "Extended Range Nitrox Divers". In both cases the final stop depth selected is 6-metres to match British diving conditions.

Also included in the basic DeeP-Stop Decompression Pack offered to Federations by CMAS are three text sections:

- Introduction
- Definitions
- Worked examples

Federation may use these sections to develop their own support documentation and training programme. The scheme has been offered in this form to allow Federations to develop and print their own package regionally; thus allowing local control of costs.

However, It is recommended that the Federations who take-up this programme use the opportunity to revise their decompression training programme and training material to enhance their buoyancy training, ascent training and buoyancy equipment maintenance training programmes.

The reason for this recommendation is that there are an increasing number of divers, world-wide, presenting to hyperbaric chambers for Decompression Illness (DCI) treatment, where the prime cause is poor buoyancy/ascent control; either relating to skills or poorly maintained Buoyancy Control Devices (BCDs) and Dry Suits. As a matter of interest my own Federation; the Sub-Aqua Association (SAA) in the United Kingdom of Great Britain has upgrade its training programmes in this area.

As a matter of interest I have prepared a Deep-Stop Decompression Handbook and Sports Tables for the SAA and three PowerPoint Lectures. The Handbook and Sports Tables are available from the SAA's Head Office (only in English) at admin@saa.org.uk.

Federations wishing to find out more about the CMAS DeeP-Stop System and to obtain their copy of the basic system on offer should contact Kevin O'Shaughnessy The President of the CMAS Technical Commission.

Kind Regards and Safe Diving

Bob Cole

CMAS Technical Director