IDAN Chamber Attendant & Chamber Operator course

Several years ago DAN Europe started with the Recompression Chamber Assistance and Partnership Program (RCAPP) in the DAN Europe region. This is an initiative which has several goals, including building partnerships with recompression facilities, improving facility standards, providing guidance and technical assistance, and ultimately reducing all possible risks that might be present at these facilities. We want to make sure that DAN members get effective and safe treatments when they need to be attended to at one of these chambers after a diving accident.

A team of DAN experts therefore visit selected or volunteering hyperbaric facilities in remote diving locations to perform on-site risk assessments. After the visits, the facilities receive a detailed report with valuable information on how to render their operations safer, how to prioritize their issues, as well as guidance on both technical and operational matters. One of the things we've noticed during RCAPP trips, is that Hyperbaric Chambers in these remote locations are not used frequently. However their presence is extremely important in order to guarantee that divers have access to a chamber in an emergency situation.

For the benefit of divers, it is vitally important to make sure these chambers remain operational, while working in a safe way. While it is obviously good news that chambers are not used frequently – meaning that we are not seeing a lot of accidents! – it also means that it is hard for those who work at these facilities to keep their skills and competencies up to date. We have also observed that staff at remote chambers are often local Dive Instructors, who in case of need get called up to operate the chamber or act as chamber attendants. This makes a deal of sense, as this way the chamber can guarantee that there would always be an operator or attendant available. Many chambers do not have a 24/7 fixed, paid staff, as the cost would simply be too high. And even with a fixed staff, it is not uncommon to see a frequent change in staff members.

Irrespective of the numbers and availability of staff for operating and tending duties, every person working inside or outside the chamber must be trained and re-trained regularly. In most facilities, staff training is performed by the Doctor, who is usually there for a limited period of time. One of the unique problems in these situations, is that the training of the operators is not "uniform", as it depends on the Doctor who is there at that time. Often this Doctor has not had the time to study the chamber in detail, including the position of valves, piping, compressors, gas supplies and safety equipment. These items are usually different, or at least located in different places for each chamber.

Although it might appear odd, we even noticed that usually there are no specific user manuals, or that those present are not always used as a reference, as the chamber itself does not resemble the chamber described in the manuals! What is needed in this case is a manual that is made for the actual chamber, together with a training program that would make sure every staff member is trained and re-trained in the same way for the chamber that they are to be using. This did not exist…that is until DAN decided that in order to give extra support to chambers and in order to guarantee the safety of divers,made such a course.

The Chamber Attendant & Chamber Operator course (ChAtt & ChOps course)

The ChAtt (Chamber Attendant) course is a 3 day course during which participants are taught how to perform the functions of the inside tender in order to assist the injured diver in the best possible way

during treatment, as well as maintaining safety at all times. The attendant needs to make sure that there are no safety hazards in the chamber during treatment and needs to work closely together with the Chamber Operator or “driver of the chamber”. This primarily includes performing essential functions at the inside of the chamber during any likely emergencies (be these medical or technical situations).

The ChOps (Chamber Operator) course is a 5 day course and trains participants to operate or “drive” a hyperbaric chamber. Participants are taught sufficient theory so they understand how chambers work and how a hyperbaric facility should be set up technically. This is then followed with hands-on instruction and practical skills as to how to operate chambers in a safe way and how to react quickly, effectively and appropriately in emergencies. In order to be truly competent and to make sure safety drills become a standard way of working, the operator needs to be trained on the actual chamber that they will use. While the theory might always be the same, the practical part of the course depends very much on the actual chamber being used.

Some chambers have, for example, a deluge system (fire suppression system), while others are only fitted with a hand held extinguisher. It would thus not be possible to train a person how to use a deluge system if the chamber on which he is trained does not have such a system. And this is where “ChAtt & ChOps” is so special: the course is “tailored” to a specific chamber.

How does this works?
DAN has compiled a general Operations Manual that contains all the possible information that could be useful for every chamber. This manual is a working document for the course Instructor, who will need to customize this into a specific manual for the actual chamber with which he is going to teach the course. The Instructor therefore arrives at the course destination, or hyperbaric facility, a few days before the course and sets about taking specific and detailed pictures of the chamber. These are then integrated into the manual and the slide presentations that will be used during the course. This allows actual equipment to be illustrated rather than general examples. So, for example, when the manual refers to the “oxygen inlet valve”, both the manual and slides that participants will show the actual valve, together with its actual location, as it is on their own chamber.

The Instructor will also delete those parts of the text that cover equipment not fitted to the chamber. So for example where a deluge system is not available on that chamber, any references to deluge systems are removed, leaving only those parts referring to hand-held extinguishers. The final result is an electronic student manual which can be printed and given to each course participant. Participants would then have manual specific to their chamber. This would make the learning process not only easier, but also more efficient and less confusing. Once the Instructor has completed and printed the manual, a process taking about 2 days, the course can start.

How is the course organised?
The course is taught for the staff of a specific facility, organised around their actual chamber. It is divided into separate modules, making it possible to follow classroom instruction with hands-on training. Whatever the students learn during a theory session, they will need to practise this to make sure that they fully understand the implications. This is done immediately following each specific session. Once students have completed the practical part, they return to the classroom for the next module. If the module as covered piping and valves used, the practical session will include tracing the actual piping and identifying valves fitted in order to learn the facility inside out. If they then cover pressurising a chamber, they will then have to go and actually pressurise the chamber..

During the Attendant course students will learn such things as:

- Post Dive chamber Procedures and checks (inside of the chamber)
- The use of Built-in Breathing systems
- Fire drills
- Oxygen toxicity during treatment
- Chamber atmosphere contamination
- Over- pressurization and loss of pressure
- Medical emergencies
- Chamber hygiene
- Pre-dive orientation
- Tending an injured person
- Treatment gas and Air breaks
- Problems during the ascent.

During the Operator part students learn:

- Types of decompression Chambers
- Duties and responsibilities
- Main components and their functions: gas in, gas out, lightning, electrical supply, fire suppression, communications, environmental control, emergency procedures and safety devices
- Chamber Operating procedures (including per dive checks)
- Providing the chamber treatment (diving tables)
- Venting the chamber (reduction of temperature, Oxygen or CO2 levels in the chamber)
- Lock in and Lock out procedures
- Surfacing the chamber
- Post dive procedures
- Possible problems during treatment
- Emergency operating procedures
- Chamber fires and explosions
- Oxygen handling
- Hyperbaric Oxygen Therapy
- Coordination with the Diving Doctor

The course is structured in such a way that every participant first gets trained as a Chamber Attendant before they can progress on to the Chamber Operator course. This is done to make sure that participants understand that whatever the Operator does on the outside has an immediate effect on the Attendant and patient sitting on the inside. Although it is possible to train a person as an Attendant only, it is not possible (nor advisable) to train a person as an Operator only.

At the end of the course participants are certified as Operators and/or Attendants for their chamber. The manual and slides (electronic format) will stay with the chamber and the Safety Director can then use these to train new staff, re-train existing staff, or repeat safety drills on a regular basis. What DAN does by running these courses is not only creating a stronger relationship between DAN and the hyperbaric facilities, but also making sure that divers, our members, receive the most effective treatment should they need this at one of these facilities located all over the world. And all of this while assuring the well being of the divers and their safety during treatments.

First ChAtt & ChOps course organised in Cyprus

The first Chamber Attendant and Chamber Operator course in the DAN Europe region took place at the Oxygen Centre in Limassol, Cyprus from 1 to 8 June 2009. The group of participants comprised 3

experienced hyperbaric chamber operators, 2 DAN Europe and DAN Southern Africa staff members and 2 new (potential) chamber operators. The course Instructor, Bertus Brand from South Africa, made sure that everybody got enough hands-on training and that they felt fully confident by the end of the course. This particular course was not only done to certify the new operators, but also to ensure that we now have some European Instructors who are available to go and teach the course at other locations.

What did students think of the course?
The reactions of the students where extremely positive, which immediately showed the value and importance of the course.

Here are some reactions from the students:

"Attending a chamber operator's course with some of the most experienced people in this field could only make for a great course. The background knowledge and hands on approach were balanced in such a way that by the end of the course I felt very comfortable operating this particular chamber."
Chris Demetriou, Dive centre Manager and DAN Instructor Trainer

"The course was intense, but very enjoyable. Even experienced tenders and chamber operators like myself can still learn a lot of new things on these programs. I am convinced that these two courses will be of immense benefit to staff and volunteers of hyperbaric chambers all over the world. They, together with the DAN chamber risk assessment guide show that DAN truly cares about the safety of divers world wide."
Harry barthel, Hyperbaric Technician and DAN Instructor Trainer

"Suffice to say that the course was of immense benefit and one that will most surely benefit Dive Centres and Chamber worldwide. It really is a partnership with you guys and for that I thank you on behalf of all of the diving community but mostly from our side as we have done nothing but benefit since linking up with DAN!"
Clive Martin, Owner of Dive Inn dive centres and the Oxygen Centre

"I was quite a bit nervous as we started the program as Chamber Tenders and Operates, as I had no idea what is coming towards me during the next 7 days. The way the program is structured and the way it was presented has quickly taken any apprehension away from me, and I thoroughly started to enjoy the course. During the program I met a lot of very capable people and going through the lot step by step envisaging every aspect of a recompression chamber has given me the knowledge and the confidence in being a good chamber tender and operator. Fantastic course!! Thanks a lot."
Jurg Dahler, Director Fineglobe and DAN Instructor Trainer

"This new venture is an International DAN (IDAN) project. All IDAN offices worked together and will start offering these courses for free to their local RCAPP partners. This makes it a program with a global impact on dive safety. Because divers travel a lot and dive in "remote" locations (which include popular dive destinations like Egypt) and accidents can happen anywhere it is important to offer recompression chambers in any of these locations the same service and possibilities. Who will benefit from it at the end are the divers themselves, who in case of need might get treated in one of these chambers. DAN looks after the diver's safety in many ways. This is one of the way's divers might not expect to find DAN looking after them."
Guy Thomas, Director of Training and Operations, DAN Europe