ASTD

Association of Sport and Technical Divers

Standards and Training Guidelines

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1. ASTD

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2. General Regulations

Association of Sport and Technical Divers (ASTD) is a training organization operating in the field of training sport and technical divers and paramedics.

Diving training includes all aspects of sport recreational diving including Nitrox diving and wide range of specializations.

The second part of the training covers technical diving including diving with special Trimix and Heliox mixes, diving in enclosed areas and diving with closed and semi-closed circuits.

In the area of paramedics training ASTD educates about medical specialties focused on diving and training of medical personnel according to law.

The entire training program is based on the implementation of current knowledge in the training structure and is supported by longstanding experience in training divers.

3. Organization Structure

The supreme body is Training Directors committee.

The committee is responsible for establishing, maintaining and updating of Standards and Training Guidelines Manual in accordance with the most recent findings in the field of diving in the world.

The committee organizes regular training sessions for its associates – Instructor Trainers and Instructors who subsequently run training programs in accordance with the ASTD training system in compliance with their qualifications.

The committee licences each mentioned associate an active status for the period of one year.

4. Diving courses

ASTD courses are divided into 5 basic units. It is about:

- Sport Recreational Diving
- Technical Diving
- Technical Rebreather Diving
- Instructors/Professionals
- Medical Courses

Within the frame of these courses there are so-called specialization courses. These specialization courses can be added into a standard frame as courses created for the

specific conditions. The entry requirements of these specialization courses do not constitute a logical sequence as is the case with standard courses. Not all specialization courses are described in these training guidelines. However each specialization course must be approved by the Training Directors and listed on the ASTD website.

Sport Recreational Diving (SCUBA diving, Recreational Diving) covers all types of diving designed for recreational purposes. Sport recreational diving is carried out using air or nitrox mixes up to 50% of oxygen while divers are immersed in the recommended depth of not more than 40 meters in free - open water. Ice diving, cave diving and decompression dives can be also included in the sport diving after going through proper education and gained experience in special training.

Technical Diving (Extended Range Diving) includes all types of diving designed for recreational purposes exceeding the current limits of sport recreational diving. Technical diving is carried out using air or nitrox mixes up to 100% oxygen in case dives are done to the recommended depth of more than 40 meters in free-open water. Also in case of Overhead Environment diving. Wreck diving, diving in flooded caves and mines, decompression dives with long decompression times and diving with SCR/CCR rebreather - with semi-closed and closed circuits can be also included in technical diving after going through proper education and gained experience in special training. However diving with semi-closed and closed circuits creates his own group.

Technical Rebreather Diving comprises all kinds of diving with devices that are based on semi-closed or closed circuits. Specifically these are devices with a closed eCCR or mCCR circuit, devices with semi-closed passive or active SCR circuits and oxygen rebreathers. A course also includes the training of practical knowledge of the rebreather configuration, techniques used in diving with closed circuits and training with the additional equipment used - the open circuit backup system or the backup rebreather.

Instructor courses are designed for all experienced divers who can independently teach dive courses after they have successfully completed their training. Instructor courses are part of the ASTD Professional Program which means that instructors are supported not only by their own teaching instructors but by ASTD organization too. The instructor's program is divided into two basic units. The first is a sport recreation program that includes, above all, the basic instructor's stone - a qualification for Sport Diving Instructor. The second unit contains the technical program. The structure of the instructor's technical program is, more complex due to the variety of technical diving, but again is built on the basic stone - in this case Technical Diving Instructor qualification.

5. General Standards and Training Guidelines

These Standards are specifically designed for sports (recreational), technical and medical courses.

The link-up of each training step is shown in the graphical flowchart and also in the description of each training step.

The Standards also contain all general and specific requirements and aspects of particular courses. Their observance by instructors is considered as crucial part of training process. Any violations of Standards may trigger disciplinary proceedings and suspension of an active status of particular instructor.

I. Description

1. These Standards are applied to recreational and technical diving courses carried out within the training system ASTD - Association of Sports and Technical Divers. The training provider is an ASTD Instructor or an ASTD Instructor Trainer.
2. Courses of recreational and technical diving follow each other and can be combined. They include the basic development sequence and other specializations. All are designed according to the current state of knowledge and development of technology, with respect to maximum safety of all divers.

II. Prerequisities

1. For each course, the student must fill in a form about his/her state of health. If there are contraindications to (or suspected) diving, he is obliged to go through a medical checkup from a practitioner (with diving knowledge) and written confirmation of his ability to dive.
2. Part of the entry requirements is to document the number of dives made and to present the current diving qualification. Exact requirements are specified for each course.
3. Before acquiring the appropriate qualification, the course participant must demonstrate the knowledge and skills required for particular course.

III. Training Materials

1. Each student must have a manual available - a textbook containing the necessary theory for the course, either in printed or electronic form. It is recommended to perform lectures with the support of ASTD presentations.

IV. Content of Courses

1. The theoretical part includes all the contents of the manual-textbook.
2. Before acquiring the qualification, the practical skills listed in the requirements of the course must be met.
3. For the purpose of teaching, the minimum dive time is 20 minutes at a minimum depth of 5 meters in open water conditions, under specific conditions, eg in caves, a lower depth can be accepted.
4. On a single day, it is possible to make a maximum of 3 dives, or less if the requirements of particular course are met.
5. During the whole training period it is necessary to ensure a safe exit from the water, during the training in enclosed spaces a safe return to the outlet to the free water by a guide line.
6. Final oral or written exam.

V. General Equipment Requirements

1. The equipment must always be adequate to the conditions in which the dive takes place. This mainly concerns the adequate thermal insulation of students and instructor. The diver must have sufficient amount of gas for the entire dive time according to the Gas Management rules.
2. The equipment must always contain an alternative source of breathing gas. For recreational sport courses there is a minimum backup second stage of the primary

regulator – SCUBA. For technical courses, there is at least a double tanks (twin) with an adequate supply of compressed gas with an ISO manifold or other adequate manifold, 2 breathing SCUBA regulators, configured as primary and secondary, it is required that the primary regulator be equipped with a hose attached to the second stage in a minimum length of 150 - 210 cm (5 - 7 feet). The secondary regulator must be equipped with a tank pressure gauge (eg a watertight manometer).

3. Buoyancy Compensator Device - as a part of the primary Life Support System is always mandatory. A suitable secondary buoyancy source (dry suit, dual wing) is recommended for participants of course Experienced Diver and higher.
4. The depth gauge and bottom timer in any form is required from the AOWD course higher. For technical courses it is recommended to display time in seconds.
5. A knife or other chopping/cutting tool to solve the situation where a diver is caught in a rope, line, wire etc. is always required.
6. Instrument for signaling on the surface (whistle, siren, flares, signaling buoy, etc.) is strongly recommended.
7. All equipment (tanks, SCUBA regulator, hoses, pressure gauges etc.) used for gases containing more than 40% of oxygen must be classified as oxygen-compatible (oxygen clean and compatible for use with up to 100% oxygen).
8. An adequate bail out in the form of an open circuit or a backup rebreather is required for courses with SCR/CCR rebreathers (semi-closed/closed circuits).
9. The specific requirements for individual courses are contained in the standards for each course.

VI. Program Limits

1. Specific requirements for total bottom time and minimum number of dives are specified individually for each ASTD course.
2. The maximum number of students per instructor during free water training is specified for each individual course.
3. During any sport recreational diving course dives may not be planned or conducted to depths greater than 40 meters.
4. After completing the course and obtaining the appropriate qualification, the maximum depth indicated at the given course is strongly recommended.
5. During a sport recreational course that entitles decompression dives, the decompression time shall not exceed 20 minutes.
6. During any technical dive, dives to depths greater than the MOD (Maximum Operating Depth) of the given breathing mixture may not be planned or conducted.

VII. Training Provider Responsibilities – Instructor, Instructor Trainer

1. Follow the Standards throughout the training with maximum safety for all participants.
2. Notify in advance the possible risks, dangers or difficulties that may occur during training.
3. Explain the problem in the required range and demonstrate each exercise.
4. Check in advance for each course participant - student. This means to check its equipment, awareness in all its aspects and in case that the shortcomings can be repaired, it is necessary to do so immediately. Otherwise the training provider is required to interrupt or terminate the training.
5. To inform course participants - students about first aid rules and calling for specialist medical assistance.
6. It is recommended that the training provider should always have a proper first aid oxygen delivery system with a sufficient supply of oxygen, a first-aid kit and a connection to crisis telephone numbers (such as the DAN crisis line).

VIII. Rights and Duties of Program Participant - Student

1. Follow the instructions of the training provider, follow its interpretation, and perform exercises as instructed.
2. Check your equipment - equipment, functionality and reliability. If a fault is detected, immediately notify the training provider. It is recommended that you always get acquainted with the equipment of your diving partner - Buddy.
3. In the event of any health condition change notify the training instructor immediately. The same applies to the psychic state of the participant to perform the required training.
4. In the event of a violation of Standards by the training instructor, the student is advised to inform the Training Directors ASTD of this fact.

6. Sport Recreational Courses

ASTD Intro Dive

IX. Description

1. The Program is designed to all those interested in trying diving with mask, fins and snorkel and diving with SCUBA.
2. The Program does not qualify anyone to independent diving. It serves as an introduction to diving with mask, fins and snorkel and with SCUBA under supervision of an Instructor.

X. Instructor's Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher.

XI. Prerequisites

1. Must be a minimum of 12 years of age with a parent or guardian authorization.
2. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
3. Participants must be able to swim using any swimming stroke and to remain afloat with a minimum of effort.

XII. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Basic ABC – a mask, a snorkel and fins as well as neoprene shoes and/or gloves as necessary.
3. A tank with compressed air, a SCUBA regulator with a secondary second stage and a pressure gauge and an adequate buoyancy control device. The recommended minimum length of the primary second stage hose is 90 cm.

XIII. Program Limits

1. There may be no more than 1 student per Instructor during a dive. This ratio may be increased by 1 students for each assisting Divemaster, up to a maximum of 2 students with 2 Divemasters per training dive.
2. The dive must be conducted as non-decompression with recommended ascend time less than 9m per minute.
3. Maximum depth of the dive is 10 meters. Recommended maximum depth is 5 meters. Maximum bottom time is 20 minutes.

XIV. Program Content

1. The theory is presented only by providing oral instructions about possible risks and the importance of adjusting to all safety regulations.

2. Practical part includes giving instructions about SCUBA gear, basic underwater communication signals and the effects of elevated pressure on human body. A demonstration of skills in confined water (or a pool) follows. Learning to equalize pressure in ears, basic equipment skills (use of diving mask, fins and snorkel) and SCUBA skills – breathing under water.
3. Upon completing the dive in confined water a discovery open water dive may follow.
4. Conclusion of the Program with a commemorative diploma without issuance of a certification.

XV. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Basic information about SCUBA equipment and physiology.

B. Practical Part

1. Learning to breathe using a regulator – out of water and then in shallow water.
2. Equipment donning, breathing from a regulator and supervised swimming in shallow water.
3. Learning to equalize ears.
4. Learning to exhale upon ascending.
5. Performing of the dive under supervision.

ASTD SD Supervised Diver

I. Description

1. The Program is designed to provide training to all those interested in diving with mask, fins and snorkel and in diving with SCUBA.
2. The Program complies with EN 14153-1.
3. The Program qualifies a diver to dive to a maximum depth of 10 msw only in the accompaniment of an ASTD Divemaster or higher qualification who is in the closest vicinity of the diver throughout the entire dive.
4. The program entitles young divers to perform non-decompression dives solely in an open water environment; that is without an obstacle preventing direct access to the water surface.
5. It is possible to continue education leading to the development of further skills necessary for higher qualifications if accompanied by an Instructor.

II. Instructor's Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher.

III. Prerequisites

1. Must be a minimum of 12 years of age with a parent or guardian authorization.
2. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
3. Participants must be able to swim the distance of 50 meters without mask, fins and snorkel, using any swimming stroke.
4. Participants must be able to remain afloat with a minimum of effort for 5 minutes.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Basic ABC – a mask, a snorkel and fins as well as neoprene shoes and/or gloves as necessary.
3. A tank with compressed air, a SCUBA regulator with a secondary second stage and a pressure gauge and an adequate buoyancy control device. The recommended minimum length of the primary second stage hose is 90 cm.

V. Program Limits

1. There may be no more than 2 students per Instructor during a dive.
2. One open water dive must be conducted to a depth between 6 msw and 10 msw. None of the subsequent dives may be to depths greater than 20 msw.
3. All dives must be conducted as non-decompression with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Supervised Diver. Recommended time for lectures is 4 sessions of 120 minutes each.
2. Practical part in confined water (or a pool) including waterskills with basic equipment and with SCUBA. Recommended time is 3 sessions of 120 minutes each, minimum is 2 sessions of 120 minutes each.
3. Upon completing the practical part in confined water and sufficient acquiring of necessary skills, dives and practice of all the skills in open water environment follows.
4. Minimum of 4 dives is required, each with minimum of 20 minutes bottom time.
5. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Basic knowledge about SCUBA equipment.
2. Basic Physics.
3. Basic Physiology.
4. Dive planning and decompression tables.
5. Predicaments and their solving.

B. Confined Waterskills Development – without a SCUBA

1. Swim a distance of 50 meters using any stroke without stopping and without mask, fins and snorkel. Demonstrate the ability to remain afloat with a minimum of effort for 5 minutes. The skills must be performed before the beginning of the practical part of the training in the water.
2. Mask clearing and its use under water.
3. Snorkel clearing and use.
4. Demonstrate at least one finning technique of a choice with fins.
5. Swim 100 meters on the surface with mask, snorkel and fins.
6. Demonstrate the ability to enter and exit the water.
7. Demonstrate proficiency in surface duck diving technique and safe surfacing.
8. Swim for a distance of at least 5 meters under water using mask, snorkel and fins without surfacing.
9. Mask and snorkel donning under water.

C. Confined Waterskills Development – with a SCUBA

1. Demonstrate equipment assembly and its check as well as checking buddy's equipment.
2. Demonstrate knowledge of diving signals and communication between diving buddies.
3. Demonstrate buddy equipment check before entering the water.
4. Demonstrate at least two water entries.
5. Demonstrate buddy check before submerging – S drills.
6. Perform breathing from the primary regulator under water, exchanging it for a secondary regulator and gas sharing with a buddy. Do the same without mask.
7. Demonstrate proficiency in submerging and surfacing.
8. Demonstrate proficient buoyancy control and trim position.
9. Perform alternate gas sharing drill without mask and mask clearing.
10. Do a lateral Emergency Swimming Ascent (ESA).
11. Swim 25 meters on the surface wearing full SCUBA equipment.

D. Open Water Dives (upon completion of all the waterskills in confined environment)

1. Revise and perform all the skills in VII. C.
2. On all dives, ascend at a rate of 9 meters per minute or slower. Perform safety decompression stop on a spot.

ASTD Junior Diver

I. Description

1. The Program is designed to provide training to all the young interested in diving with mask, fins and snorkel and in diving with SCUBA.
2. The Program qualifies a diver to dive to a maximum depth of 10 msw in the accompaniment of another diver with AOWD or higher qualification. The accompanying diver must be the diver's parent/legal guardian or an accredited person. Diving to a maximum depth of 20 msw with a divemaster or an Instructor is possible upon successful completion of the Program.
3. The program entitles young divers to perform non-decompression dives solely in an open water environment; that is without an obstacle preventing direct access to the water surface.
4. . It is possible to continue diver's education leading to the development of further skills necessary for higher qualifications upon reaching 15 years of age if lead by an Instructor.

II. Instructor's Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher.

III. Prerequisites

1. Must be a minimum of 12 years of age with a parent or guardian authorization.
2. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
3. Participants must be able to swim the distance of 100 meters without mask, fins and snorkel, using any swimming stroke.
4. Participants must be able to remain afloat with a minimum of effort for 5 minutes.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Basic ABC – a mask, a snorkel and fins as well as neoprene shoes and/or gloves as necessary.
3. A tank with compressed air, a SCUBA regulator with a secondary second stage and a pressure gauge and an adequate buoyancy control device. The recommended minimum length of the primary second stage hose is 90 cm.

V. Program Limits

1. There may be no more than 2 students per Instructor during a dive.
2. The first and the second open water dives must be conducted to a depth between 6 msw and 10 msw. None of the subsequent dives may be to depths greater than 20 msw.
3. All dives must be conducted as non-decompression with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Junior Diver (ASTD *). Recommended time for lectures is 5 sessions.
2. Practical part in confined water (or a pool) including waterskills with basic equipment and with SCUBA. Recommended time is 5 sessions, minimum is 3 sessions.
3. Upon completing the practical part in confined water and sufficient acquiring of necessary skills, dives and practice of all the skills in open water environment follows. 5 dives are recommended; minimum are 4, each with minimum of 20 minutes bottom time.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. SCUBA equipment.
2. Physics.
3. Physiology.
4. Dive planning and decompression tables.
5. Predicaments and their solving.

B. Confined Waterskills Development – without a SCUBA

1. Swim a distance of 100 meters using any stroke in less than 15 minutes without stopping and without mask, fins and snorkel. Demonstrate the ability to remain afloat with a minimum of effort for 10 minutes. The skills must be performed before the beginning of the practical part of the training in the water.
2. Mask clearing and its use under water.
3. Snorkel clearing and use.
4. Demonstrate at least one finning technique of a choice with fins.
5. Swim 200 meters on the surface with mask, snorkel and fins.
6. Demonstrate the ability to enter and exit the water.
7. Demonstrate proficiency in surface duck diving technique and safe surfacing.
8. Swim for a distance of at least 10 meters under water using mask, snorkel and fins without surfacing.
9. Mask and snorkel donning under water.

C. Confined Waterskills Development – with a SCUBA

1. Demonstrate equipment assembly and its check as well as checking buddy's equipment.
2. Demonstrate knowledge of diving signals and communication between diving buddies.
3. Demonstrate buddy equipment check before entering the water.
4. Demonstrate at least two water entries.
5. Demonstrate buddy check before submerging – S drills.
6. Perform breathing from the primary regulator under water, exchanging it for a secondary regulator and gas sharing with a buddy. Do the same without mask.
7. Demonstrate proficiency in submerging and surfacing.
8. Demonstrate proficient buoyancy control and trim position.
9. Perform alternate gas sharing drill without mask and mask clearing.
10. Disconnect the inflator hose.
11. Perform breathing from a free flowing regulator.
12. Do a lateral Emergency Swimming Ascent (ESA).
13. On the surface, remove and replace SCUBA gear.

14. Swim 50 meters on the surface wearing full SCUBA equipment.
15. Tow a diver for a distance of at least 25 meters on the surface.

D. Open Water Dives (upon completion of all the waterskills in confined environment)

1. Revise and perform all the skills in VII. C.
2. Perform basic navigation techniques.
3. On all dives, ascend at a rate of 9 meters per minute or slower. Perform safety decompression stop on a spot.

ASTD OWD Open Water Diver (ASTD *)

I. Description

1. The Program is designed to provide comprehensive training to those who wish to become SCUBA divers.
2. The Program complies with EN 14153-2.
3. The Program qualifies a diver to dive to a maximum depth of 20 msw in the accompaniment of another diver of the same or higher qualification. Diving to a maximum depth of 30 msw with a divemaster or an Instructor is possible upon successful completion of the Program.
4. The program entitles a diver to perform non-decompression dives solely in an open water environment; that is without an obstacle preventing direct access to the water surface.
5. It is possible to continue diver's education leading to the development of further skills necessary for higher qualifications if lead by an Instructor.

II. Instructor's Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher.

III. Prerequisites

1. Must be a minimum of 15 years of age with a parent or guardian authorization.
2. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
3. Participants must be able to swim the distance of 100 meters without mask, fins and snorkel, using any swimming stroke in less than 15 minutes.
4. Participants must be able to remain afloat with a minimum of effort for 10 minutes.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Basic ABC – a mask, a snorkel and fins as well as neoprene shoes and/or gloves as necessary.
3. A tank with compressed air, a SCUBA regulator with a secondary second stage and a pressure gauge and an adequate buoyancy control device. The recommended minimum length of the primary second stage hose is 90 cm.

V. Program Limits

1. There may be no more than 2 students per Instructor during a dive.
2. The first and the second open water dives must be conducted to a depth between 6 msw and 10 msw. None of the subsequent dives may be to depths greater than 20 msw.

3. All dives must be conducted as non-decompression with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Open Water Diver (ASTD *). Recommended time for lectures is 5 sessions of 120 minutes each.
2. Practical part in confined water (or a pool) including waterskills with basic equipment and with SCUBA. Recommended time is 5 sessions of 120 minutes each, minimum is 3 sessions of 120 minutes each.
3. Upon completing the practical part in confined water and sufficient acquiring of necessary skills, dives and practice of all the skills in open water environment follows. 5 dives are recommended; minimum are 4, each with minimum of 20 minutes bottom time.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. SCUBA equipment.
2. Physics.
3. Physiology.
4. Dive planning and decompression tables.
5. Predicaments and their solving.

B. Confined Waterskills Development – without SCUBA

1. Swim a distance of 100 meters using any stroke in less than 15 minutes without stopping and without mask, fins and snorkel. Demonstrate the ability to remain afloat with a minimum of effort for 10 minutes. The skills must be performed before the beginning of the practical part of the training in the water.
2. Mask clearing and its use under water.
3. Snorkel clearing and use.
4. Demonstrate at least one finning technique of a choice with fins.
5. Swim 300 meters on the surface with mask, snorkel and fins.
6. Demonstrate the ability to enter and exit the water.
7. Demonstrate proficiency in surface duck diving technique and safe surfacing.
8. Swim for a distance of at least 10 meters under water using mask, snorkel and fins without surfacing.
9. Mask and snorkel donning under water.

C. Confined Waterskills Development – with SCUBA

1. Demonstrate equipment assembly and its check as well as checking buddy's equipment.
2. Demonstrate knowledge of diving signals and communication between diving buddies.
3. Demonstrate buddy equipment check before entering the water.
4. Demonstrate at least two water entries.
5. Demonstrate buddy check before submerging – S drills.
6. Perform breathing from the primary regulator under water, exchanging it for a secondary regulator and gas sharing with a buddy. Do the same without mask.
7. Demonstrate proficiency in submerging and surfacing.

8. Demonstrate proficient buoyancy control and trim position.
9. Perform alternate gas sharing drill without mask and mask clearing.
10. Disconnect the inflator hose.
11. Perform breathing from a free flowing regulator.
12. Do a lateral Emergency Swimming Ascent (ESA).
13. On the surface, remove and replace SCUBA gear.
14. Swim 50 meters on the surface wearing full SCUBA equipment.
15. Tow a diver for a distance of at least 25 meters on the surface.

D. Open Water Dives (upon completion of all the waterskills in confined environment)

1. Revise and perform all the skills in VII. C.
2. Perform basic navigation techniques.
3. On all dives, ascend at a rate of 9 meters per minute or slower. Perform safety decompression stop on a spot.

ASTD AOWD Advanced Open Water Diver (ASTD **)

I. Description

1. This mid-level Continuing Education Program is designed to enable ASTD OWD to gain deeper knowledge and more supervised practical experience.
2. The Program qualifies a diver to dive to a maximum depth of 30 msw on air in an open water environment. Upon its completion, it is possible to gain more practical experience of dives up to a maximum depth of 40 msw under a supervision of an Instructor.
3. The program entitles a diver to perform non-decompression dives solely in an open water environment; that is without an obstacle preventing direct access to the water surface.

II. Instructor's Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher.

III. Prerequisites

1. Must be a qualified ASTD Open Water Diver (ASTD *) or any RSTC Entry Level Diver or CMAS One Star, etc. equivalent.
2. Must be a minimum of 15 years of age with a parent or guardian authorization.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have a minimum of 15 logged dives of which 10 to the depths between 10 to 20 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Basic ABC – a mask, a snorkel and fins as well as neoprene shoes and/or gloves as necessary.
3. A tank with compressed air, a SCUBA regulator with a secondary second stage and a pressure gauge and an adequate buoyancy control device. The primary second stage hose is recommended to have a minimum length of 150-210 cm.

V. Program Limits

1. There may be no more than 2 students per Instructor during a dive. This ratio may be increased by 2 students for each assisting Divemaster, up to a maximum of 6 students with 2 Divemasters per training dive.
2. None of the training dives may be to depths greater than 30 msw.
3. All dives must be conducted as non-decompression with recommended ascent time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Advanced Open Water Diver (ASTD **).
2. The Program must include a minimum of 120 minutes of bottom time completed within 4 dives. At least 2 dives must be to depths of 25-30 meters.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revision and knowledge deepening of physics, physiology, SCUBA equipment, etc.
2. Night diving.
3. Limited visibility diving.
4. Underwater navigation.
5. Diving deeper.
6. Diving in a current.
7. Diving using a drysuit.
8. Diving from a boat.

B. Open Water Dives

1. Show proficiency in correct performance of safety decompression stop.
2. Show proficiency in keeping a maximum ascend rate of 9 meters per minute.
3. Demonstrate the ability to tie the three basic knots – square knot, clove hitch, bowline knot.
4. Demonstrate equipment assembly and its check as well as checking buddy's equipment.
5. Demonstrate buddy check before submerging – S drills.
6. Demonstrate proficient buoyancy control and trim position.
7. Demonstrate the ability to manage an out-of-air situation and perform gas sharing drill without mask and consequent mask clearing at a depth between 20 and 30 meters.
8. Disconnect the inflator hose.
9. Perform breathing from a free flowing regulator.
10. Swim 300 meters on the surface wearing full SCUBA equipment.
11. Tow a diver for a distance of at least 100 meters on the surface.
12. Manage an out-of-air situation and perform gas sharing drill with a buddy. Perform controlled ascent including a safety decompression stop from a depth of 20 to 30 msw.
13. Conduct a Night Dive or a Low Visibility Dive (less than 2 meters).
14. Using a compass, conduct a Navigation Dive utilizing navigation techniques learned in the theoretical part or the Program.
15. Conduct or simulate a dive from a boat.
16. Demonstrate using of decompression buoy in open water environment.

ASTD ED Experienced Diver (ASTD ***)

I. Description

1. This high-level Continuing Education Program is designed to enable ASTD AOWD to gain deeper knowledge and more supervised practical experience.
2. The Program qualifies a diver to dive to a maximum depth of 40 msw on air in an open water environment which is a maximum depth for recreational sport divers.
3. The program entitles a diver to perform decompression dives solely in an open water environment; that is without an obstacle preventing direct access to the water surface.

II. Instructor's Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher.

III. Prerequisites

1. Must be a qualified ASTD Advanced Open Water Diver (ASTD **) or any RSTC Advanced Diver or CMAS P **, etc. equivalent.
2. Must be a minimum of 18 years of age.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have a minimum of 30 logged dives of which 15 to the depths between 20 to 30 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator's hose is required to have a minimum length of 150-210 cm.
3. Two separate tanks connected together with a manifold are recommended.
4. A use of a secondary buoyancy control device (dry suit, etc.) is recommended.
5. A decompression buoy and a spool.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students for each assisting Divemaster, up to a maximum of 8 students with 2 Divemasters per training dive.
2. None of the training dives may be to depths greater than 40 msw.
3. All dives must be conducted as non-decompression with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Experienced Diver (ASTD ***).
2. The Program must include a minimum of 120 minutes of bottom time completed within 4 dives. At least 2 dives must be to depths of 30-40 meters.
3. At least one dive must be planned and conducted as a decompression dive.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revision and deepening of knowledge acquired during previous Programs.
2. Limits for diving with compressed air and physiological aspects of deeper diving.
3. Cold water diving and protection against cold.
4. Psychological aspects of diving.
5. Planning of dives to the depth of 40 meters.
6. Decompression diving.
7. Technical aspects of diving to 40 meters.
8. Diving team.
9. Predicaments solving.

B. Open Water Dives

1. Revision of all the advanced open water diver waterskills.
2. Show proficiency in correct performance of decompression stops with maximum ascend rate of 9 meters per minute.
3. Demonstrate buddy check before submerging – S drills (out-of-air, Bubble check and Valve drill) and complete Valve drill (valves open and close and regulators exchange).
4. Demonstrate proficient buoyancy control and trim position.
5. Demonstrate the ability to manage an out-of-air situation and perform gas sharing drill without mask at a depth greater than 30 meters. Perform controlled ascent.
6. Demonstrate using of decompression buoy in open water environment and perform decompression stops with a buoy.
7. Plan a dive (calculate the consumption of a vertical decompression dive, eg. Rock Bottom) then dive the plan.
8. Calculate decompression with help of all available aids – air tables, PC, decompression dive computer and perform decompression according to the plan.
9. Demonstrate the ability to manage a situation of an acute loss of buoyancy and an uncontrolled buoyant ascent.
10. Perform breathing from a free flowing regulator.
11. Swim 300 meters on the surface wearing full SCUBA equipment.
12. Tow a diver for a distance of at least 100 meters on the surface.

ASTD SCUBA Diving Paramedic

I. Description

1. The Program is designed to provide comprehensive training to those who are interested in the health issues related to SCUBA diving.
2. The Program covers providing emergency first aid, CPR (cardio-pulmonary resuscitation), the basics of AED and providing of oxygen for the purpose of SCUBA related accidents.

II. Instructor's Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher.
2. The Instructor must have valid SCUBA Diving Paramedic certificate (not older than 3 years).

III. Prerequisites

1. Minimum age is not set.
2. The minimum recommended SCUBA qualification is ASTD OWD or equivalent (RSTC OWD, CMAS P*, etc.).
3. The course is also suitable for non-divers with an interest in medical issues related to SCUBA and in providing First Aid (e.g. water rescuers, orderlies, etc.).

IV. Equipment Requirements

1. Equipment which is commonly used and tested by professional life saving services (bag valve mask, resuscitation mask, examination gloves, oxygen regulator, etc.) or which is recommended by diving health organizations such as DAN (Divers Alert Network).
2. Use of resuscitation model is recommended for CPR training.
3. The AED problematics can be taught mainly in the theoretical level due to difficulties with availability of training AED systems. Their use is therefor just recommended but not required.

V. Program Limits

1. With regards to the constant development of the health issues, the validity of the qualification is limited to 3 years. Retraining is required after this period.

VI. Program Content

1. Lectures including all material in the approved textbook and slides SCUBA Diving Paramedic.
2. The theory presented is based on the newest findings in the given field as per recommendation of the European Resuscitation Council Guidelines for Resuscitation

2010 which is based on the recommendation of ILCOR 2005 (International Liaison Committee on Resuscitation) which is a result of the consensus of various organizations, namely American Heart Association, Australian Resuscitation Council, Heart and Stroke Foundation of Canada, European Resuscitation Council and others.

3. Other topics covered are in accordance with the DAN's (Divers Alert Network) recommendation and with the newest findings in the area of SCUBA related medical issues.
4. Demonstration of providing CPR (cardio-pulmonary resuscitation) and oxygen.
5. Completion of the Program with an oral or written exam.
6. Completion of the Program with a practical exam involving demonstration of providing CPR and oxygen.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Providing First Aid with focus on SCUBA related issues.
2. Hazardous Marine Life Injuries – providing First Aid for injuries caused by marine life.
3. CPR – cardio-pulmonary resuscitation.
4. AED (Automatic External Defibrillator). Providing First Aid with the use of AED.
5. Providing Oxygen. Problematics of providing oxygen for SCUBA related injuries.

B. Practical Part

1. Demonstration and practice of CPR.
2. Manipulation with oxygen tanks and equipment.
3. Demonstration and practice of oxygen providing to a diver.

ASTD Rescue Diver

I. Description

1. The Program is designed to provide comprehensive training to those who wish to learn saving of a drowning diver, a free diver, a SCUBA diver and organizing of a rescue operation including further providing for those injured.

II. Instructor's Qualification

2. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher.
3. The Instructor must have a valid SCUBA Diving Paramedic certificate (not older than 3 years).

III. Prerequisites

1. Must be a minimum age of 18 years.
2. Must be a qualified ASTD Advanced Open Water Diver (ASTD **) or any equivalent (RSTC AOWD, CMAS P**, etc.).
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have valid qualification SDP – Scuba Diving Paramedic (not older than 3 years) or equivalent, including providing of oxygen, CPR and First Aid. The SDP course may be conducted concurrently.
5. Must have a minimum of 30 logged dives.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. A tank with compressed air, a SCUBA regulator with a secondary second stage and a pressure gauge and an adequate buoyancy control device. The primary second stage hose is required to have a minimum length of 150-210 cm (5-7 ft.).
3. A use of all secondary life saving devices (towing rope, rescue ring or rescue buoy, etc.) is recommended.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students for each assisting Divemaster, up to a maximum of 8 students with 2 Divemasters per training dive.
2. It is not recommended to exceed depths greater than 10 msw during the practical part of the training.
3. All dives must be conducted as non-decompression with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Rescue Diver.
2. The practical part must include saving of a drowning person and consequent towing on the surface for a minimum of 10 meters, saving of a diver with ABC, and a minimum of 4 dives which include demonstration of skills needed to help tired diver both under water and on the water surface as well as panicked diver on the surface and in the depth and also saving of unconscious diver from the depth and transport of the diver on the surface.
3. Demonstration of providing CPR (cardio-pulmonary resuscitation) and oxygen.
4. Demonstration of organization of a rescue operation, securing of an injured person on the surface and composing an emergency plan.
5. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revision of providing First Aid, CPR and oxygen.
2. Organization of a rescue operation and securing of the rescued person.
3. Composing of an emergency plan.

B. Practical Part in open water environment (after completion of all skills in confined water)

1. Searching for a lost diver. Determining the location of the missing person (where and when the diver was last seen) and performing of a search in the area using different methods (circle, grid, etc.).
2. Self-recovery. Demonstrate water treading and ability to keep head above water with help of improvised means. Stress situation management (stop-breathe-think-act).
3. Saving a drowning person. Swimming to a drowning figurant, bringing him to the surface and towing for a minimum of 10 meters. Getting him to the shore and demonstrating CPR.
4. Saving a diver with ABC equipment (free diver). Assisting of an unconscious diver under water, transport to the surface while securing airways and providing further care.
5. Helping diving buddy. Helping tired diver under water and on the surface (towing and pushing). Helping disoriented diver. An out-of-air situation in the depth followed by a safe ascent. Panicking diver in the depth and on the surface. Unconscious diver in the depth, transport to the surface and effective transport to the shore. Stripping diver off the equipment and transport out of water.
6. Organization of a rescue operation. Finding lost diver. Getting the diver out of water and using of all saving devices. Activation of emergency rescue services as per emergency plan.
7. Securing diver on the surface after any kind of accident. First examination of the injured person and in case of primary life systems malfunction, beginning CPR. Execution of basic neurological examination as per DAN recommendation, stabilization of the injured person and providing basic health care including oxygen.

ASTD Divemaster (ASTD ****)

I. Description

1. The Program is designed to provide responsible training for all experienced divers who can, upon successful completion, lead a group of divers.
2. The Program is in compliance with regulation EN 14153-3.
3. The Program is the first professional program. For this reason, the emphasis is primarily put on the ability to lead or assist with teaching other divers. Thorough knowledge and mastering of all the skills learnt in all previous programs are the prerequisites for the Program.
4. ASTD Divemaster may assist in all ASTD Recreational and some Specialty programs but cannot conduct training exercises unless under the direction of a qualified ASTD Instructor.
5. ASTD Divemaster is qualified to accompany qualified OWD divers to a maximum depth of 30 msw.
6. ASTD Divemaster is qualified to plan, execute and lead a rescue operations related to diving.

II. Instructor's Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher.
2. The Instructor must have a valid SCUBA Diving Paramedic certificate (not older than 3 years).

III. Prerequisites

1. A successful completion of the entry test of both theoretical and practical skills which confirms the necessary skills and knowledge a professional must possess is required.
2. Must be a qualified ASTD Experienced Diver (ASTD ***) or any equivalent (RSTC or CMAS P**, etc.).
3. Must be a qualified ASTD Rescue Diver or any RSTC equivalent.
4. Must have valid qualification SDP – Scuba Diving Paramedic (not older than 3 years) or equivalent, including providing of oxygen, CPR and First Aid. The SDP course may be conducted concurrently.
5. Must be a minimum age of 18 years.
6. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
7. Must have a minimum of 80 logged dives.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator's hose is required to have a minimum length of 150-210 cm (5-7 ft.).
3. Two separate tanks connected together with a manifold are recommended.
4. A use of a secondary buoyancy control device (dry suit, etc.) is recommended.

5. A decompression buoy and a spool.

V. Program Limits

1. None of the training dives may be to depths greater than 40 msw.
2. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
3. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Divemaster (ASTD ****).
2. The practical part of the Program must include a minimum of 240 minutes of assisting time. A half of the time involves assisting with lectures and demonstration of the skills on the surface and the second half assisting during the practical part in confined and open water environment in a minimum of 4 open water dives. The emphasis is put on the methodically correct mastering and demonstration of the skills to the students and the supervision of their execution during assisting.
3. At least one dive must be planned and executed as a decompression dive.
4. Setting up a plan of an entire diving operation with regards to specific conditions in which the dive shall be conducted, including a dive plan, a backup plan, an on-the-surface assistance, an emergency plan and dealing with an emergency.
5. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revision and deepening of knowledge gained during all previous Recreational Programs, especially Rescue Diver and Experienced Diver.
2. The problems of planning a diving operation including a dive plan, a backup plan, an on-the-surface assistance, an emergency plan and dealing with an emergency.
3. Conducting pre-dive and post-dive briefings.
4. Pedagogical minimum of conducting lessons.

B. Practical Part in open water environment (after completion of all skills in confined water)

1. Revision of skills acquired during Experienced Diver and Rescue Diver Programs.
2. Technique of searching and saving of a diver from depth no greater than 10 msw, bringing a diver to the surface.
3. Practice of underwater navigation using navigation points as well as underwater compass or other navigation devices.
4. Demonstration of the ability to methodically correctly demonstrate skills taught in Recreational Programs and assist with their teaching.
5. Setting up a plan of the operation including all specifics of the given area and local conditions – currents, underwater visibility, underwater dangers, etc. with regards to the diving group's abilities.
6. Setting up a dive plan with regards to physiological limits, gas management and decompression.
7. Setting up a backup and an emergency plan.
8. Conducting pre-dive briefing.

9. Pre-dive preparation and check, buddy-check in teams.
10. Pre-dive surveillance of all the divers' reactions with emphasis on stress symptomatology.
11. Organizing a group water entry.
12. Leading a diving group according to a dive plan and divers supervision – the emphasis is put on early recognition of stress reactivity.
13. Conducting pre-dive briefing including logging of the dive.

C. Qualification Renewal

1. Assist a minimum of one ASTD Program annually.
2. Log a minimum of 15 dives annually.
3. Must have valid qualification SDP – Scuba Diving Paramedic (not older than 3 years) or equivalent, including providing of oxygen, CPR and First Aid.
4. Maintain active ASTD membership.

7. Specialization courses

General Information

I. Description

1. The description relates to General Standards for all specialties. Specialization courses are further standardized in agreement with the ASTD provider in the region and ASTD HQ.
2. For example courses are:
   Night Diver, Full Face Mask Diver, Hard Helmet Diver, Under Water Photographer /Videographer, Contaminated Water Diver, Public Safety Diver and other forensic sciences specialties and more.
   Standards courses Ice Diver, Wreck Diver, Cavern Diver, Dry Suit Diver, Nitrox Diver, Advanced Nitrox Diver, DPV diver (Diver with underwater scooter), DPV Technical diver, Side Mount diver, Nitrox Blender (Specialist for mixing Nitrox) and Trimix Blender (Specialist for mixing Trimix) are explicitly set out in these standards separately for each program.

II. Instructor´s Qualification

1. The Programs may be led only by an instructor with the ASTD Sport Diving Instructor qualification or higher with proven experience in given specialization.

III. Prerequisities

1. The minimum recommended SCUBA qualification is ASTD OWD or equivalent (RSTC OWD, CMAS P*, etc.).
2. Must be a minimum of 15 years of age with a parent or guardian authorization.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
4. Must have a minimum of 10 logged dives.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator’s hose is required to have a minimum length of 150-210 cm.
3. Specification of additional equipment according to the course.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive.
2. None of the training dives may be to depths greater than 40 msw.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Theoretical and practical part of the Program is fully within the competence of the Instructor leading the course.

ASTD Dry Suit Diver

I. Description

1. The Program is designed to provide training of dry suit diving in free open water conditions and primarily serves to understand the widespread diving specifics with this equipment configuration.
2. The Program can be taught using either Nitrox or air based on previous diving skills.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher and ASTD Dry Suit Diver qualification or higher.

III. Prerequisities

1. The minimum recommended SCUBA qualification is ASTD OWD or equivalent (RSTC OWD, CMAS P*, etc.).
2. Must be a minimum of 15 years of age with a parent or guardian authorization.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have a minimum of 10 logged dives.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Dry suit with inflator, which serves as a backup buoyancy compensator device (BCD).
3. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator's hose is required to have a minimum length of 150-210 cm.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students for each assisting Divemaster, up to a maximum of 8 students with 2 Divemasters per training dive.
2. None of the training dives may be to depths greater than 40 msw.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Dry Suit Diver.
2. The practical part of the Program must include a minimum of 80 minutes of bottom time completed within 4 dives in open water dedicated to practicing the necessary techniques.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Diving in a dry suit.
2. Predicaments and their solving.

B. Open Water Dives

1. Demonstrate proficient buoyancy control and trim position.
2. Demonstrate the ability to manage out-of-air situation and perform gas sharing drill and perform controlled ascent.
3. Practice the correct open water diver waterskills and motion techniques including correct ascent rate.
4. Specific predicaments and their solving - sudden leakage of dry suit, gas transfer to legs, failure of filling and draining valve.
5. Demonstration of disconnection and connection of the inflator hose.

ASTD DPV Diver

I. Description

1. The Program is designed to train divers using the DPV (Diver Propulsion Vehicle – underwater open scooter) in open water and primarily serves to understand diving specifics with this gear configuration.
2. The Program can be taught using either Nitrox or air based on previous diving skills.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher and ASTD DPV Diver qualification or higher.

III. Prerequisities

1. The minimum recommended SCUBA qualification is ASTD OWD or equivalent (RSTC OWD, CMAS P*, etc.).
2. Must be a minimum of 15 years of age with a parent or guardian authorization.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have a minimum of 10 logged dives.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Diver Propulsion Vehicle.
3. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator's hose is required to have a minimum length of 150-210 cm (5-7 ft.).

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students for each assisting Divemaster, up to a maximum of 6 students with 2 Divemasters per training dive. None of the training dives may be to depths greater than 40 msw.
2. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
3. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides DPV Diver.
2. The practical part of the Program must include a minimum of 80 minutes of bottom time completed within 4 dives in open water dedicated to practicing the necessary techniques.

3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Diving with Diver Propulsion Vehicle.
2. Specific predicaments and their solving.

B. Open Water Dives

1. Demonstrate proficient buoyancy control and trim position.
2. Training of correct motion techniques with DPV including correct ascent rate.
3. Training of specific predicaments and their solving using DPV.

ASTD DPV Technical Diver

I. Description

1. The Program is designed to provide a training of diving using the DPV (Diver Propulsion Vehicle) in enclosed water areas and primarily serves to understand the diving specifics with this gear configuration.
2. The Program can be taught using any breathing gas based on previous diving skills.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher and ASTD DPV Technical Diver qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Technical Diver or have any other equivalent technical diving qualification.
2. Must be a minimum of 18 years of age.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have a minimum of 120 logged dives of which 30 to the depths between 30 to 40 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Diver Propulsion Vehicle.
3. Two separate tanks connected together with a manifold are required. Two SCUBA regulators configured as a primary and a secondary. Secondary regulator must be equipped with a tank pressure indicator (eg a watertight manometer). An adequate buoyancy control device – primary (wing) and spare (dry suit or dual wing while using wet suit). The secondary regulator´s hose is required to have a minimum lenght of 150 – 210 cm (5-7 ft.). Proficient configuration of the equipment is required – for example Hogarthian.

V. Program Limits

1. There may be no more than 2 students per Instructor during a dive.
2. None of the training dives may be to depths greater than 40 msw.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 2 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides DPV Technical Diver.
2. The practical part of the Program must include a minimum of 120 minutes of bottom time completed within 4 dives in open water dedicated to practicing the necessary techniques.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Diving with DPV.
2. Specific predicaments and their solving.
3. Specifics of planning of consumption in enclosed areas.
4. Specifics of diving with multiple DPVs.

B. Open Water Dives

1. Demonstrate proficient buoyancy control and trim position.
2. Training of correct motion techniques with DPV including correct ascent rate.
3. Training of specific predicaments and their solving using one or more DPVs.

ASTD Cavern Diver

I. Description

1. The Program is designed to teach diving in caverns i. e. overhead environment. The caverns are simple cave spaces where entry is visible from each place.
2. The Program can be taught using either Nitrox or air based on previous diving skills.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Cavern Diver qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Advanced Open Water Diver (ASTD **) or any equivalent (RSTC AOWD, CMAS P**, etc.).
2. Must be a minimum of 15 years of age with a parent or guardian authorization.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have a minimum of 30 logged dives of which 15 to the depths between 20 to 30 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator's hose is required to have a minimum length of 150-210 cm.
3. Two independent lights (minimum) – one primary and one safety.
4. Must have primary reel a safety reel/spool.

V. Program Limits

1. There may be no more than 3 students per Instructor during a dive.
2. None of the training dives may be to depths greater than 30 msw.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Cavern Diver.
2. The practical part of the Program must include a minimum of 60 minutes of bottom time completed within 2 dives in open water dedicated to practicing the necessary techniques.

3. The Program must also include a minimum of 120 minutes of bottom time completed within 4 dives in overhead environment - caverns.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Basics of karst typology.
2. General and specific dangers of diving in enclosed areas.
3. The equipment and its configuration including specific equipment - reel with line, personal reel, arrow etc.
4. Light communication, one hand communication and tactile communication in zero visibility.
5. Motion techniques in enclosed areas.
6. Consumption planning for diving in overhead environment - Rule of Thirds.
7. Psychological aspects and crisis management.

B. Dry Land Practice

1. Handling with reel/spool and fix line.
2. Practicing tactile signals in zero visibility.
3. Practicing specific light and one hand signals used in technical and cave diving.
4. Return to the fix line in zero visibility.

C. Open Water Dives

1. Revise of all exercises from the AOWD program.
2. Demonstration of underwater balance and buoyancy and trim control with BCD.
3. OOA (Out of Air) situation - air sharing with a dive partner and a controlled return along the fixed line.
4. Primary Reel handling practice - Primary Reel for safe connection of free water with permanent line.
5. Frog kick Training - frog kick as the basic fin kick used in cave and technical diving.

D. Overhead Environment Practice – Cavern

1. Revision of all previous exercises.
2. Establishing a secure connection of free water with a fixed line.
3. Fixed line tracking, team work.
4. Creating a dive plan and its implementation.

ASTD Ice Diver

I. Description

1. The Program is designed to provide responsible training to prepare divers for ice diving – diving in overhead environment in extreme climatic conditions.
2. The Program can be taught using either Nitrox or air based on previous diving skills.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher and ASTD Ice Diver qualification or higher.
2. The Program may be led only by an Instructor with the ASTD Technical Cave/Mine Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Advanced Open Water Diver (ASTD **) or any equivalent (RSTC AOWD, CMAS P**, etc.).
2. Must be a minimum of 15 years of age with a parent or guardian authorization.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have a minimum of 30 logged dives of which 15 to the depths between 20 to 30 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Good thermal insulation is a must, dry suit recommended.
3. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator's hose is required to have a minimum length of 150-210 cm (5-7 ft.).
4. Two independent lights (minimum) – one primary and one safety.
5. Must have primary reel a safety reel/spool.

V. Program Limits

1. There may be no more than 2 students per Instructor during a dive.
2. If the dive is not carried out by unwinding line from its own primary reel, a secure connection with the entry is required by a line unwound by the guide in surface. Then one of the divers has to be firmly connected, the others in the team are connected with this diver by a harness.
3. None of the training dives may be to depths greater than 30 msw.
4. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
5. No more than 3 dives may be conducted a day.
6. Diving under the ice is not strongly recommended:
    a) in one breath,

b) among icebergs,
c) in temperatures below -15 ° C,
d) without adequate, reliable and proven equipment,
e) without safe connection with entry,
f) without sufficient knowledge of diving under ice,
g) without adequate staffing both under and above water.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Ice Diver.
2. The practical part of the Program must include a minimum of 60 minutes of bottom time completed within 2 dives in open water dedicated to practicing the necessary techniques.
3. The Program must also include a minimum of 120 minutes of bottom time completed within 4 dives in overhead environment - caverns.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Specifics of low temperature diving including the principles of effective thermal protection.
2. Diving in enclosed areas focused on diving in specific conditions under ice.
3. Consumption planning for diving in overhead environment - Rule of Thirds.
4. The equipment and its configuration including specific equipment - reel with line, personal reel, arrow etc.
5. Light communication, one hand communication and tactile communication in zero visibility.
6. Motion techniques in enclosed areas.
7. Psychological aspects and crisis management.

B. Dry Land Practice

1. Handling with reel/spool and fix line.
2. Practicing tactile signals in zero visibility.
3. Practicing specific light and one hand signals used in technical and cave diving.
4. Return to the fix line in zero visibility.
5. Underwater navigation training using bearing points and a compass/buzle with a return course.

C. Open Water Dives

1. Revising of all exercises from the AOWD program.
2. Demonstration of underwater balance and buoyancy and trim control with BCD.
3. OOA (Out of Air) situation - air sharing with a dive partner and a controlled return along the fixed line.
4. Primary Reel handling practice - Primary Reel for safe connection of free water with permanent line.
5. Frog kick Training - frog kick as the basic fin kick used in cave and technical diving.
6. Underwater navigation training using bearing points and a compass/buzle with a return course.

D. Overhead Environment Practice – Under Ice

1. Revision of all previous exercises.
2. Creating a safe entry into the water - triangle or square, training safe entry and exit from water to ice.
3. Checking the safe ice thickness at the entry point.
4. Bail out hole for emergency exit, directional line on the surface.
5. When joining the diving team with the guide we take care of the secure attachment of the guiding line on the surface. Training of the signals between the guide and the divers is a must.
6. Fixed line tracking, team work.
7. Creating a dive plan and its implementation.

ASTD Nitrox Blender

I. Description

1. The Program is focused on oxygen handling and its safety and also on preparation and mixing of Nitrox mixtures in the range from 1% to 100% of oxygen.
2. The Program is also designed to provide training of technicians capable of servicing the equipment (cleaning the equipment) for oxygen cleanness and compatibility.
3. Tanks and breathing regulators, including all accessories (hoses, pressure gauges, etc.) used for gases containing more than 40% oxygen, must be classified as oxygen-compatible (oxygen clean and approved for using 100% of oxygen).

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Nitrox Blender qualification or higher.

III. Prerequisities

1. ASTD Nitrox Diver qualification recommended.
2. Must be a minimum of 18 years of age.

IV. Equipment Requirements

1. Oxygen analyzer.
2. Equipment in compliance with the mixing method used. Overflow hose and reliable precision pressure gauge for mixing according to partial pressure, adequate weighing device for mixing method according to molecular weight, approved blending system for continuous mixing method.
3. Calculation aid - mixing table, PC or other calculator.
4. Approved Oxygen Cleaning Technology - cleaners and oxygen compatible lubricants.

V. Program Limits

1. The maximum number of students per instructor for theoretical part is not limited. For practical part the maximum number of students is 10.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Nitrox Blender.
2. The Program must include a minimum of 120 minutes of practical exercise of mixing and analyzing Nitrox mixes, demonstrations of cleaning, oxygen service and visual inspection service.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Oxygen cleanness, compatibility and oxygen service.
2. Visual inspection program.
3. Safety in oxygen handling.
4. Mixing methods for Nitrox mixtures.
5. Calculation according to mixing table and calculation program.
6. Analysis of breathing mixes with correct description of diving tanks.

B. Practical Part

1. Demonstration of visual inspection program.
2. Mixing of any Nitrox mix according to one of the verified methods.
3. Perform breathing mix analysis.

ASTD Nitrox Diver

I. Description

1. This Program is designed for anyone interested in diving with modern Nitrox breathing mixtures (EANx) to the depth corresponding to their highest qualification, up to a maximum of 40 msw.
2. The Nitrox mix serves mostly for small depth dives. Its main advantage is the possibility of conservatism during dives and the extension of bottom time.
3. The Program concerns the use of Nitrox breathing mixtures ranging from 21% to up to 40% of oxygen.
4. The Program does not affect in any way the qualification regarding depths, dive time, decompression or diving in overhead environment etc. In this case previous qualification still remains.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher and ASTD Nitrox Diver qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Open Water Diver (ASTD *) or any equivalent (RSTC OWD, CMAS P*, etc.).
2. Must be a minimum of 15 years of age with a parent or guardian authorization.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. At this specialization program - equipment is required at least for the ASTD Open Water Diver level.
3. Oxygen analyzer, conducted by the student under the supervision of the instructor, to analyze the breathing mixture.

V. Program Limits

1. None of the training dives must not exceed the depth limits for which a diver is qualified and may not be to depths greater than 40 msw.
2. There may be no more than 2 students per Instructor during a dive. For theoretical part the number of students is not limited.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Nitrox Diver
2. It is recommended to perform 1-2 dives with an EANx mixture in the range of 24% to 40% oxygen. The Program can be accomplished only by lecturing theoretical knowledge. The requirement for realizing the dives is fully within the competence of the Instructor.
3. The course involves the use of Nitrox breathing mixtures ranging from 21% up to a maximum of 40% of oxygen, focusing on the use of NOAA I and II mixtures, i.e. EAN 32 and EAN 36.
4. Demonstration of work with oxygen analyzer.
5. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. History and reasons for using Nitrox.
2. Physics associated with the use of Nitrox.
3. Physiology associated with the use of Nitrox.
4. Dives planning, decompression tables and Nitrox computers.
5. Oxygen Handling.

B. Practical Part

1. Checking the correct description of the nitrox tank.
2. Analyzing the mixture in a tank using an oxygen analyzer.
3. The recommended dive plan is within the competence of the Instructor.

ASTD Advanced Nitrox Diver

I. Description

1. The Program Advanced Nitrox Diver is a program that allows you to gain further knowledge and further practical experience under the supervision.
2. This Program develops waterskills using a decompression tank mixture different from standard mixture used for bottom time.
3. The Program involves the use of Nitrox blends ranging from 21% to 40% oxygen up to a maximum PO_2 of 1.5 bar / ata = 150 kPa for Bottom gas. Furthermore, in the range of 21% up to a maximum of 50% oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for the decompression gas.
4. This Program qualifies divers to perform dives to maximum depth of 40 msw.
5. The Program entitles divers to perform decompression dives only in an environment without exit limitation - no overhead environment.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Technical Nitrox Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Experienced Diver (ASTD ***) or any equivalent (PADI Master Scuba Diver, CMAS P***, NAUI Advanced Diver 40m, IANTD Deep Diver etc.).
2. Must be a qualified ASTD Nitrox Diver or any equivalent (RSTC Nitrox Diver, CMAS Basic Nitrox Diver etc.).
3. Must be a minimum of 18 years of age.
4. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
5. Must have a minimum of 40 logged dives of which 10 to the depths between 30 to 40 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator’s hose is required to have a minimum length of 150-210 cm (5-7 ft.).
3. Decompression oxygen compatible tank with adequate equipment and description. Oxygen compatible regulator, equipped with a separate tank pressure gauge.
4. Recommended configuration is a kit with 2 connected and linked tanks.
5. Using a backup buoyancy control device BCD (dry suit etc.).
6. Oxygen analyzer.
7. Decompression buoy and spool.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students for each assisting Divemaster, up to a maximum of 8 students with 2 Divemasters per training dive.
2. None of the training dives may be to depths greater than 40 msw.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. All dives must be performed using Nitrox mixture up to 40% Oxygen. Nitrox mixtures with a higher oxygen content (up to 50% oxygen) can only be used for decompression or safety stops.
5. Appropriate safety and decompression stops must be carried out on each training dive using a decompression tank with a corresponding decompression Nitrox mixture.
6. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Technical Nitrox Diver.
2. The practical part of the Program must include a minimum of 120 minutes of bottom time completed within 4 open water dives. At least 2 dives must be at a depth of 30-40 msw.
3. Students learn to use Nitrox mixtures up to a maximum of 40% of oxygen with a maximum value and PO_2 of 1.5 bar / ata = 150 kPa. For decompression, Nitrox mixtures with a maximum of 50% oxygen and PO_2 of 1.6 bar / atm = 160 kPa can be used.
4. At least two dives must be planned and performed as decompressive.
5. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revising and deepening of previous program knowledge.
2. Dive plan focusing on the correct selection of Nitrox mixtures for bottom time and decompression.
3. Planning consumption with 2 different gases.
4. Calculating of decompression according to all commonly used aids (air tables, Nitrox tables, decompression computer, PC or equivalent).
5. Create a backup Bail out plan, calculate CNS parameters and whole body oxygen toxicity.
6. Predicaments and their solving.

B. Open Water Dives

1. Revising all waterskills from the ASTD Experienced Diver and ASTD Nitrox Diver.
2. Demonstrate buddy check before submerging – S drills (out-of-air, Bubble check and Valve drill) and complete Valve drill (valves open and close and regulators exchange).
3. Demonstrate proficient buoyancy control and trim position using decompression tank.
4. Practical training for the correct performance of decompression stops, including keeping the ascent rate between stops of 3 m/min.
5. Demonstrate using of decompression buoy in open water environment and perform decompression stops with a buoy.

6. Demonstrate the ability to manage an out-of-air situation and perform gas sharing drill without mask at a depth greater than 30 meters. Perform controlled ascent.
7. Demonstrate work with the decompression tank. Replacing a decompression tank under water with a buddy.
8. Plan a dive (calculate the consumption of a vertical decompression dive, eg. Rock Bottom) then dive the plan.
9. Demonstrate the ability to manage a situation of an acute loss of buoyancy and an uncontrolled buoyant ascent.
10. Swim 300 meters on the surface wearing full SCUBA equipment.
11. Tow a diver for a distance of at least 100 meters on the surface.

ASTD Side Mount Diver

I. Description

1. The Program is designed for training with the Side Mount configuration - tanks on the sides of the diver in free open water conditions. It helps to understand the basic diving issues with this specific equipment configuration.
2. The Program can be taught using either Nitrox or air based on previous diving skills.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor or higher with valid ASTD Side Mount Diver qualification or higher.
2. The Program may be led only by an Instructor with the ASTD Side/No Mount Technical Cave/Mine Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Advanced Open Water Diver (ASTD **) or any equivalent (RSTC AOWD, CMAS P**, etc.).
2. Must be a minimum of 15 years of age with a parent or guardian authorization.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have a minimum of 20 logged dives

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Specific Side Mount configuration including 2 independent tanks with appropriate buoyancy parameters with single valve, 2 separate regulators (each with a separate tank pressure gauge) and length-adjusted hoses to second stage.
3. Carrier adapted for this configuration (eg standard backplate) or specific carrier with integrated BCD buoyancy control device.
4. Exceptionally a specific side mount single tank configuration can be accepted. One compressed-air tank, a regulator equipped with a backup second stage and a primary second stage equipped with a seven-inch (210 cm) hose and a pressure gauge in the tank (eg a watertight manometer). Furthermore, an adequate BCD buoyancy control device (dry suit, modified BCD wing).

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students for each assisting Divemaster (with Side Mount Diver qualification), up to a maximum of 8 students with 2 Divemasters (with Side Mount Diver qualification) per training dive.
2. If the dive is not carried out by unwinding line from its own primary reel, a secure connection with the entry is required by a line unwound by the guide in surface. Then

one of the divers has to be firmly connected, the others in the team are connected with this diver by a harness.
3. None of the training dives may be to depths greater than 40 msw.
4. No dive during the Program must be in the Overhead Environment.
5. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
6. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Side Mount Diver.
2. The practical part of the Program must include a minimum of 120 minutes of bottom time completed within 4 open water dives. At least 2 dives must be at a depth of 25-30 msw.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. History and reasons for side mount configuration.
2. Dive plan and consumption plan for an specific dive with separate tanks.
3. Diving issues with side mount configuration.
4. Predicaments with side mount configuration and its solving.

B. Open Water Dives

1. Revision of all the advanced open water diver waterskills.
2. Demonstrate proficient buoyancy control and trim position.
3. OOA (Out of Air) situation - air sharing with a dive partner and a controlled return along the fixed line.
4. Crisis management - single tank failure, failure to mount the handle (commonly used bunge rubber for the upper handle), fault of the BCD compensator, failure of the regulator with manual control of the valve.
5. Practicing good motion techniques including correct ascent rate.
6. Practice mounting and demounting of first and second tanks.
7. Practice swimming with one tank in front of you, then two tanks at least 15 meters.
8. Performation of the dive according to the dive plan with the aspect of specific consumption planning.

ASTD Trimix Blender

I. Description

1. The Program includes the matters and safety of oxygen handling and then preparation and blending of Trimix and Heliox mixtures in the range of 1% to 100% of oxygen.
2. The Program is also intended for the training of technicians able to service the equipment (cleaning the equipment) by reason of oxygen cleanness and compatibility.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Trimix Blender or higher.

III. Prerequisities

1. ASTD Nitrox Blender qualification recommended.
2. ASTD Technical Diver qualification recommended.
3. Must be a minimum of 18 years of age.

IV. Equipment Requirements

1. Oxygen analyzer.
2. Helium analyzer recommended.
3. Equipment according to the blending method used. Overflow hose and reliable pressure gauge for blending method according partial pressure, adequate weighing device for blending method according molecular weight, approved blending system for continuous blending method.
4. Calculation aid - mixing table, PC or other calculator.
5. Approved technology for oxygen service - cleaners and oxygen compatible lubricants.

V. Program Limits

1. There may be no more than 10 students per Instructor during a dive. For theoretical part the number of students is not limited.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Trimix Blender.
2. The practical part of the Program must include a minimum of 120 minutes blending and analyzing of Trimix mixtures, demonstration of cleaning, oxygen service and visual inspection service.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Oxygen cleanness, compatibility and oxygen service.
2. Visual Inspection Program.
3. Safety in handling oxygen.
4. Blending methods of Trimix mixtures.
5. Calculation according to mixing table and calculation program.
6. Analysis of breathing mixes with correct description of diving tanks.

B. Practical Part

1. Demonstration of visual inspection program.
2. Demonstration of blending any trimix mixture according to one of the verified methods.
3. Perform breathing mix analysis.

ASTD Wreck Diver

I. Description

1. The Program is designed to teach scuba diving without penetration into wrecks. The lectures serves to understand the basics of wreck diving.
2. The Program can be taught using either Nitrox or air based on previous diving skills.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor qualification or higher and with valid ASTD Wreck Diver qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Advanced Open Water Diver (ASTD **) or any equivalent (RSTC AOWD, CMAS P**, etc.).
2. Must be a minimum of 15 years of age with a parent or guardian authorization.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor's approval must be provided.
4. Must have a minimum of 30 logged dives of which 15 to the depths between 20 to 30 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator's hose is required to have a minimum length of 150-210 cm.
3. Primary reel with guiding line for connection with fixed line.
4. Dekompression buoy and spool, especially for signaling on the surface.

V. Program Limits

1. There may be no more than 3 students per Instructor during a dive.
2. No dive during the Program must be in the Overhead Environment.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Wreck Diver.
2. Completion of the Program with an oral or written exam. At least 2 dives must be at a depth of 25-30 msw.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Dive plan and consumption planning of an appropriate dive type - for example Rock Bottom.
2. Descending in open free water along the descent line.
3. General and specific dangers of wreck diving - sea currents, nets, wires, fishing lines, sharp surfaces.
4. Basics of orientation during wreck diving.
5. Psychological aspects and crisis management.

B. Open Water Dives

1. Revising of all exercises from the AOWD program.
2. Demonstration of underwater balance and buoyancy and trim control with BCD.
3. OOA (Out of Air) situation - air sharing with a dive partner and a controlled return along the fixed line.
4. Show proficiency in correct performance of decompression stops with maximum ascent rate of 3 meters per minute.
5. Demonstrate using of decompression buoy in open water environment and perform decompression stops with a buoy.
6. Primary Reel handling practice - Primary Reel for safe connection of free water with permanent line.
7. Creating a dive plan and its realization.

8. Technical courses

ASTD Technical Nitrox Diver

I. Description

1. The Technical Diver Program is the first course focused on technical diving. This Program contains basic information and skills related to technical diving and is a pillar for further technical courses. The Program further extends knowledge of the use of Nitrox mixtures for bottom time, provides all knowledge of the use of all Nitrox mixtures and oxygen for decompression.
2. This Program develops waterskills using a decompression tank mixture different from standard mixture used for bottom time. It also includes the training of knowledge and skills of twin configuration and techniques used in technical diving.
3. The Program includes the use of Nitrox mixtures ranging from 21% up to a maximum of 100% oxygen up to a maximum value of 1.4 bar / ata = 140 kPa for Bottom gas partial pressure (PO_2). Furthermore, from 21% up to a maximum of 100% of oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for decompression air mixture (Deco gas).
4. This Program qualifies divers to perform dives to a maximum depth of 40 meters using air or various Nitrox mixtures.
5. The Program entitles divers to perform decompression dives only in an environment without exit limitation - no overhead environment.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Technical Diving Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Experienced Diver (ASTD ***) or any equivalent (PADI Master Scuba Diver, CMAS P***, NAUI Advanced Diver 40m, IANTD Deep Diver etc.).
2. Must be a qualified ASTD Nitrox Diver or any equivalent (RSTC Nitrox Diver, CMAS Basic Nitrox Diver etc.).
3. Must be a minimum of 18 years of age.
4. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
5. Must have a minimum of 100 logged dives of which 30 to the depths between 30 to 40 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Two separate tanks connected together with a ISO manifold are required. Two SCUBA regulators configured as a primary and a secondary. Secondary regulator must be equipped with a tank pressure indicator (eg a watertight manometer). An adequate buoyancy control device – primary (wing) and spare (dry suit or dual wing while using wet suit). The secondary regulator´s hose is required to have a minimum lenght of 150 – 210 cm (5-7 ft.). Proficient configuration of the equipment is required – for example Hogarthian.
4. Decompression oxygen compatible tank with adequate equipment and description. Oxygen compatible regulator, equipped with a separate tank pressure gauge.
5. Oxygen analyzer.
6. Decompression buoy and spool.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive.
2. None of the training dives may be to depths greater than 40 msw.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. The partial pressure of oxygen during the dive must not exceed 1.5 bar / ata = 150 kPa. For decompression the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
5. Appropriate safety and decompression stops must be carried out on each training dive using a decompression tank with a corresponding decompression Nitrox mixture or oxygen.
6. No more than 2 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Technical Nitrox Diver.
2. The practical part of the Program must include a minimum of 200 minutes of bottom time completed within 4 - 6 open water dives. At least 2 dives must be at a depth of 30-40 msw.
3. In case crossover is applied (experience recognition), the minimum bottom time is 100 minutes in free open water within at least of 2-3 dives.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revising and deepening of knowledge from previous courses.
2. Dive plan with an emphasis on the correct selection of Nitrox mixtures for bottom and decompression time.
3. Consumption planning with different gases.
4. Use of oxygen for decompression.
5. Calculating of decompression according to all commonly used aids (air tables, nitrox tables, decompression computer, PC or equivalent).

6. Creating a backup Bail out plan, calculating CNS parameters and whole body oxygen toxicity.
7. Diving in cold water and protection against cold.
8. Technical issues of diving to a depth of 40 meters with more tanks.
9. Predicaments and its solving.

B. Open Water Dives

1. Revising all waterskills from the ASTD Experienced Diver and ASTD Nitrox Diver.
2. Analysis of breathing mixes with correct description of diving tanks.
3. Manage the correct configuration - a set of two tanks with jumper and one decompression tank.
4. Demonstrate buddy check before submerging – S drills (out-of-air, Bubble check and Valve drill) and complete Valve drill (valves open and close and regulators exchange).
5. Demonstrate proficient buoyancy control and trim position using decompression tank.
6. Practical training for the correct performance of decompression stops, including keeping the ascent rate between stops of 3 m/min.
7. Demonstrate using of decompression buoy and perform decompression stops with a buoy.
8. Demonstrate the ability to manage an out-of-air situation and perform gas sharing drill without mask at a depth greater than 30 meters. Perform controlled ascent.
9. Demonstrate work with the decompression tank. Replacing a decompression tank under water with a buddy without loss of buoyancy.
10. Plan a dive (calculate the consumption of a vertical decompression dive, eg. Rock Bottom) then dive the plan.
11. Demonstrate the ability to manage a situation of an acute loss of buoyancy and situation with acute overplus of buoyancy.
12. Swim 300 meters on the surface wearing full SCUBA equipment.
13. Tow a diver for a distance of at least 100 meters on the surface.
14. Demonstration of Frog kick and Back kick as the basic kicks of fins used in technical diving.

ASTD Normoxic Trimix Diver

I. Description

1. The Normoxic Trimix Diver Program is the first technical diving course using the Trimix mixture, which is used for breathing at great depths. This Program contains basic information and skills related to technical diving to a depth up to 66 meters using all suitable Nitrox mixtures and oxygen for decompression.
2. This Program includes the training of knowledge and skills of configuring a two tanks device filled with standardized blends of normoxic Trimix and techniques used in technical diving.
3. Training of practical knowledge of equipment configuration and techniques used in technical diving follows the Technical Nitrox Diver Program.
4. The Program involves the use of normoxic Trimix mixtures ranging from 16% to 21% oxygen up to a maximum oxygen partial pressure (PO_2) of 1.4 bar / ata = 140 kPa for Bottom gas. Furthermore, from 21% up to a maximum of 100% of oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for decompression air mixture (Deco gas).
5. The Program entitles divers to perform decompression dives only in an environment without exit limitation - no overhead environment.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Normoxic Trimix Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Technical Nitrox Diver or any equivalent.
2. Must be a minimum of 18 years of age.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
4. Must have a minimum of 100 logged dives of which 30 to the depths between 30 to 40 msw.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Two separate tanks connected together with a ISO manifold are required. Two SCUBA regulators configured as a primary and a secondary. Secondary regulator must be equipped with a tank pressure indicator (eg a watertight manometer). An adequate buoyancy control device – primary (wing) and spare (dry suit or dual wing while using wet suit). The secondary regulator´s hose is required to have a minimum lenght of 150 – 210 cm (5-7 ft.). Proficient configuration of the equipment is required – for example Hogarthian.
4. Decompression oxygen compatible tank with adequate equipment and description. Oxygen compatible regulator, equipped with a separate tank pressure gauge.

5. Depth gauge and bottom timer in any form including the display of time in seconds. A backup measuring device is also suitable.
6. Oxygen analyzer.
7. Helium analyzer recommended.
8. Decompression buoy and spool.
9. In case decompression accident - a rescue oxygen kit and a resuscitation set must be available.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive.
2. None of the training dives may be to depths greater than 66 msw.
3. It is recommended to use one decompression tank, using two decompression tanks after handling all techniques with one tank.
4. The partial pressure of oxygen during the dive must not exceed 1.4 bar / atm = 140 kPa. For decompression, this limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
5. The breathing mixture must contain at least 16% oxygen.
6. Equivalent narcotic depth (END) must not exceed 30 meters.
7. No more than 2 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides Normoxic Trimix Diver.
2. The Program includes at least 2 training dives in open free water using 1 decompression tank at depths between 5 and 40 meters. In these dives - air or Nitrox and one kind of gas for decompression can be used.
3. The Program includes at least 2 dives with NTx free water mixes up to a maximum depth of 66 meters with a total dive length of at least 120 minutes. The divers must have 1 decompression tank with other breathing mixture (Nitrox, oxygen).
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revising and deepening of knowledge from previous courses.
2. Dive plan with an emphasis on the correct selection of NTx mixtures for bottom and decompression time.
3. Consumption planning with different gases.
4. Use of oxygen for decompression.
5. Calculating of decompression according to all commonly used aids (air tables, nitrox tables, decompression computer, PC or equivalent).
6. Creating a backup Bail out plan, calculating CNS parameters and whole body oxygen toxicity.
7. Technical issues of diving to a depth of 66 msw with more tanks.
8. Psychological aspects and crisis situation.

B. Open Water Dives

1. Revising all waterskills from ASTD Nitrox Diver.
2. Analysis of breathing mixes with correct description of diving tanks.

3. Manage the correct configuration - a set of two tanks with jumper and one decompression tank.
4. Demonstrate buddy check before submerging – S drills (out-of-air, Bubble check and Valve drill) and complete Valve drill (valves open and close and regulators exchange).
5. Demonstrate proficient buoyancy control and trim position using decompression tank.
6. Practical training for the correct performance of decompression stops, including keeping the ascent rate between stops of 3 m/min.
7. Demonstrate using of decompression buoy and perform decompression stops with a buoy.
8. Demonstrate the ability to manage an out-of-air situation and perform gas sharing drill without mask at a depth greater than 30 meters. Perform controlled ascent.
9. Demonstrate work with the decompression tank. Replacing a decompression tank under water with a buddy without loss of buoyancy.
10. Plan a dive (calculate the consumption of a vertical decompression dive, eg. Rock Bottom) then dive the plan.
11. Demonstrate the ability to manage a situation of an acute loss of buoyancy and situation with acute overplus of buoyancy.
12. Swim 300 meters on the surface wearing full SCUBA equipment.
13. Tow a diver for a distance of at least 100 meters on the surface.
14. Demonstration of Frog kick and Back kick as the basic kicks of fins used in technical diving.

ASTD Trimix Diver

I. Description

1. The Trimix Diver Program is dedicated to technical diving using the Trimix mixture which is used for breathing in great depths. This course contains basic information and skills related to technical diving to a depth up to 110 meters using all suitable Nitrox mixtures and oxygen for decompression.
2. Training of practical knowledge of equipment configuration and techniques used in technical diving follows the Normoxic Trimix Diver Program.
3. The Program involves the use of Trimix mixtures ranging from 10% to 21% oxygen up to a maximum PO_2 of 1.2 bar / ata = 120 kPa for Bottom gas. Furthermore, in the range of 21% up to a maximum of 100% oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for the Decompression gas.
4. The Program entitles divers to perform decompression dives only in an environment without exit limitation - no overhead environment.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Trimix Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Experienced Diver or any equivalent qualification.
2. Must be a minimum of 18 years of age.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
4. Must have a minimum of 200 logged dives of which 30 to the depths between 40 to 66 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Two separate tanks connected together with a ISO manifold are required. Two SCUBA regulators configured as a primary and a secondary. Secondary regulator must be equipped with a tank pressure indicator (eg a watertight manometer). An adequate buoyancy control device – primary (wing) and spare (dry suit or dual wing while using wet suit). The secondary regulator´s hose is required to have a minimum lenght of 150 – 210 cm (5-7 ft.). Proficient configuration of the equipment is required – for example Hogarthian.
4. Three decompression oxygen compatible tanks with adequate equipment and description. Oxygen compatible regulator, equipped with a separate tank pressure gauge.
5. Depth gauge and bottom timer in any form including the display of time in seconds. A backup measuring device is also suitable.
6. Oxygen analyzer.

7. Helium analyzer recommended.
8. Decompression buoy and spool.
9. In case decompression accident - a rescue oxygen kit and a resuscitation set must be available.

V. Program Limits

1. There may be no more than 2 students per Instructor during a dive.
2. None of the training dives may be to depths greater than 100 msw.
3. It is recommended to use two decompression tanks for dives up to 75 msw and three decompression tanks for dives deeper than 75 msw.
4. The partial pressure of oxygen during the dive must not exceed 1.2 bar / ata = 120 kPa. For decompression the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
5. The breathing mixture must contain from 10% to 16% of oxygen.
6. Equivalent narcotic depth (END) must not exceed 30 meters.
7. No more than 2 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD Technical Nitrox Diver.
2. The Program includes at least 4 training dives in free water using 2 decompression tanks at depths between 5 and 40 meters. Within these dives - air or Nitrox and two types of gas can be used for decompression.
3. The Program includes at least 2 dives with Tx mixture in free water up to a maximum depth of 100 meters with a total length of at least 160 minutes. For a dive to a depth of 75 meters, at least 2 decompression tanks with 2 different breathing mixtures (Nitrox, oxygen) must be used. For a dive to a depth greater than 75 meters, at least 3 decompression tanks with 3 other breathing mixtures (Trimix, Nitrox, Oxygen) must be used.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revising and deepening of knowledge from previous courses.
2. Air use limits for diving and physiological aspects of deep dive.
3. Diving in cold water and protection against cold.
4. Psychological aspects of diving.
5. Planning a dive with air up to 40 meters.
6. The issue of decompression diving.
7. Technical issue of diving to a depth of 40 meters.
8. Diving team.
9. Predicaments and its solving.

B. Open Water Dives

1. Revising of all exercises from the AOWD program.
2. Practical training for the correct performance of decompression stops, including keeping the ascent rate between stops of 3 m/min.

3. Demonstrate buddy check before submerging – S drills (out-of-air, Bubble check and Valve drill) and complete Valve drill (valves open and close and regulators exchange).
4. Demonstrate proficient buoyancy control and trim position.
5. Demonstrate the ability to manage an out-of-air situation and perform gas sharing drill without mask at a depth greater than 30 meters. Perform controlled ascent.
6. Demonstrate using of decompression buoy and perform decompression stops with a buoy.
7. Plan a dive (calculate the consumption of a vertical decompression dive, eg. Rock Bottom) then dive the plan.
5. Calculating of decompression according to all available devices - air tables, PC, decompression computer and decompression according to plan.
6. Demonstrate the ability to manage a situation of an acute loss of buoyancy and situation with acute overplus of buoyancy.
7. Ability to breathe from leaking regulator.
8. Swim 300 meters on the surface wearing full SCUBA equipment.
9. Tow a diver for a distance of at least 100 meters on the surface.

ASTD Technical Cave/Mine Diver

I. Description

1. The Program is designed for training divers in caves and flooded mines - depth up to 40 meters using air or various Nitrox mixtures. Deeper diving is possible only for qualified divers using mixtures with narcotic potential less than air (Trimix, Heliox) with END up to 40m.
2. The Program further extends knowledge of diving in enclosed areas. It may follow the Cavern Diver Program or be separate.
3. The Program involves the use of Trimix mixtures ranging from 21% to 100% oxygen up to a maximum PO_2 of 1.4 bar / ata = 140 kPa for Bottom gas. Furthermore, in the range of 21% up to a maximum of 100% oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for the Decompression gas.
4. Training of practical knowledge of equipment configuration and techniques used in technical diving follows the ASTD Technical Diver Program.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Technical Cave/Mine Instructor or higher.

III. Prerequisities

1. Must be a qualified ASTD Technical Diver or any equivalent qualification.
2. Experience acknowledged as sufficient by the Instructor to complete this Program.
3. Must be a minimum of 18 years of age.
4. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
5. Must have a minimum of 100 logged dives of which 30 to the depths between 30 to 40 msw.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Two separate tanks connected together with a ISO manifold are required. Two SCUBA regulators configured as a primary and a secondary. Secondary regulator must be equipped with a tank pressure indicator (eg a watertight manometer). An adequate buoyancy control device – primary (wing) and spare (dry suit or dual wing while using wet suit). The secondary regulator´s hose is required to have a minimum lenght of 150 – 210 cm (5-7 ft.). Proficient configuration of the equipment is required – for example Hogarthian.
4. Decompression/stage oxygen compatible tanks with adequate equipment and description. Oxygen compatible regulator, equipped with a separate tank pressure gauge.
5. Depth gauge and bottom timer in any form including the display of time in seconds. A backup measuring device is also suitable.

6. Three independent lights (minimum) – one primary and two safety.
7. Primary reel and two safety reels/spools.
8. A backup chopping/cutting tool to solve the situation where a diver is caught in a rope, line, wire etc.
9. Oxygen analyzer.

V. Program Limits

1. There may be no more than 6 students per Instructor during a dive. This ratio may be increased by 2 students in the presence of ASTD Technical Instructor with ASTD Technical Cave/Mine Diver qualification. Instructor must be present all the time.
2. None of the training dives may be to depths greater than 40 msw while using air or Nitrox.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. The partial pressure of oxygen during the dive must not exceed 1.5 bar / ata = 150 kPa. For decompression the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
5. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD Technical Cave/Mine Diver.
2. The Program must include a minimum of 150 minutes of training in confined water. Furthermore training in free water and 400 minutes of diving in enclosed areas completed within at least 8 dives.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revising and deepening the knowledge of the Cavern Diver Program or go through the whole issue.
    a. Basics of karst typology.
    b. General and specific dangers of diving in enclosed areas.
    c. The equipment and its configuration including specific equipment - reel with line, personal reel, arrow etc.
    d. Light communication, one hand communication and tactile communication in zero visibility.
    e. Motion techniques in enclosed areas.
    f. Consumption planning for diving in overhead environment - Rule of Thirds.
    g. Psychological aspects and crisis management.
6. Gas management - dive planning with deco/stage tank.
7. Analysis of breathing mixes with correct description of diving tanks.
8. Manage the correct configuration - a set of two tanks with jumper and one decompression tank.

B. Practical part in confined water (pool) with regulator

1. Demonstrate buddy check before submerging – S drills (out-of-air, Bubble check and Valve drill) and complete Valve drill (valves open and close and regulators exchange)

2. Demonstrate proficient buoyancy control and trim position.
3. Gas sharing - air sharing and swimming - changing both sides and practice consecutive swimming.
4. Gas sharing without mask - practice self-service logistics and facial contact to make sure that there is only one team member without mask or both.
5. Air leakage training - Instructor uses the air gun - air nozzle and practice excercise in water - right side, left side, manifold.
6. Basic motion techniques in cave diving - body position + frog kick, power frog kick and helicopter as basics, shuffle, modified flutter, hel and toe (just an ankle kick) may be added.
7. Guiding line technique - practicing manipulation with reel and spool, binding, team work, turning.
8. Practice of tactile signals in zero visibility, tactile identification using arrows.
9. Training of specific signals used in technical and cave diving with lights and one hand.
10. Return to the fix line in zero visibility - diver without mask or opaque face-glass.

C. Open Water Dives

1. Revising exercises from confined water.
2. Practice handling with of reel and guiding line.

D. Practical part in overhead environment - cave

1. Revising exercises from confined water.
2. Fixed line tracking. Training is focused on constantly viewing the situation around and where the buddy and line is. Light communication and signals. Correct body position, trim and good motion technique is must.
3. Exercise of main light failure and switch to backup or safety. Next, return without lights as a zero visibility simulation, return without mask. Practice using a backup mask.
4. Find a lost line in zero visibility (without light).
5. Work with reel and line, arrows and personal markers.
6. Solution of gas leakage from the valve or jumper and subsequent OOA with return to line.
7. Practice the use of decompression and stage/progress tank. Adequate gripping on a fixed line and practice of handling during operation.
8. Planning a dive and consumption planning for an adequate dive type in an overhead environment - Rule of Thirds and Rule of Fourths and other modifications for multistage planning.

ASTD Technical Wreck Diver

I. Description

1. The Program is designed for training divers to dive in wrecks with possible penetration into the wreck - depth up to 40 meters using air or various Nitrox mixtures. Deeper diving is possible only for qualified divers using mixtures with narcotic potential less than air (Trimix, Heliox) with END up to 40m.
2. The Program further extends knowledge of diving in enclosed areas. It may follow the Wreck DIver Program or be separate.
3. The Program involves the use of Nitrox mixtures ranging from 21% to 100% oxygen up to a maximum PO_2 of 1.4 bar / ata = 140 kPa for Bottom gas. Furthermore, in the range of 21% up to a maximum of 100% oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for the Decompression gas.
4. Training of practical knowledge of equipment configuration and techniques used in technical diving follows the ASTD Technical Diver Program.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Technical Wreck Instructor or higher.

III. Prerequisities

1. Must be a qualified ASTD Technical Diver or any equivalent technical diving qualification.
2. Experience acknowledged as sufficient by the Instructor to complete this Program.
3. Must be a minimum of 18 years of age.
4. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
5. Must have a minimum of 100 logged dives of which 30 to the depths between 30 to 40 meters.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Two separate tanks connected together with a ISO manifold are required. Two SCUBA regulators configured as a primary and a secondary. Secondary regulator must be equipped with a tank pressure indicator (eg a watertight manometer). An adequate buoyancy control device – primary (wing) and spare (dry suit or dual wing while using wet suit). The secondary regulator´s hose is required to have a minimum lenght of 150 – 210 cm (5-7 ft.). Proficient configuration of the equipment is required – for example Hogarthian.
4. Decompression/stage oxygen compatible tank with adequate equipment and description. Oxygen compatible regulator, equipped with a separate tank pressure gauge.

5. Depth gauge and bottom timer in any form including the display of time in seconds. A backup measuring device is also suitable.
6. Three independent lights (minimum) – one primary and two safety.
7. Primary reel) and one safety reel/spool.
8. Decompression buoy and spool.
9. Specific equipment according to the current requirements - compass for navigation, harness.
10. A signaling device on the surface is always recommended (whistle, siren, flares, signaling buoy, etc.).
11. A backup chopping/cutting tool to solve the situation where a diver is caught in a rope, line, wire etc.
12. Oxygen analyzer.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students (6 students max) in the presence of ASTD Technical Instructor with ASTD Technical Wreck Diver qualification. Instructor must be present all the time.
2. None of the training dives may be to depths greater than 40 msw while using air or Nitrox. Deeper diving is possible only for qualified divers using mixtures with narcotic potential less than air (Trimix, Heliox) with END up to 40m.
3. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
4. The partial pressure of oxygen during the dive must not exceed 1.5 bar / ata = 150 kPa. For decompression the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
5. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD Technical Wreck Diver.
2. The practical part of the Program must include a minimum of 240 minutes of bottom time completed within 6 dives in wrecks and enclosed areas.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revising and deepening the knowledge of the Wreck Diver Program.
2. Plan a dive and consumption planning adequate for wreck dive - Rock Bottom.
3. Descending in open free water along the descent line.
4. General and specific dangers of wreck diving - sea currents, nets, wires, fishing lines, sharp surfaces.
5. Basics of orientation during wreck diving.
6. Psychological aspects and crisis management.
7. Analysis of breathing mixes with correct description of diving tanks.
8. Manage the correct configuration - a set of two tanks with jumper and one decompression tank.

B. Practical part in confined water (pool) with regulator

1. Demonstrate buddy check before submerging – S drills (out-of-air, Bubble check and Valve drill) and complete Valve drill (valves open and close and regulators exchange).
2. Demonstrate proficient buoyancy control and trim position.
3. Gas sharing - air sharing and swimming - changing both sides and practice consecutive swimming.
4. Gas sharing without mask - practice self-service logistics and facial contact to make sure that there is only one team member without mask or both.
5. Air leakage training - Instructor uses the air gun - air nozzle and practice excercise in water - right side, left side, manifold.
6. Basic motion techniques in wreck diving - body position + frog kick, power frog kick and helicopter as basics, shuffle, modified flutter, hel and toe (just an ankle kick) may be added.
7. Guiding line technique - practicing manipulation with reel and spool, binding, team work, turning.
8. Practicing of crisis situation - tangling into nets, ropes, fishing lines.
9. Training of specific signals used in technical and wreck diving with lights and one hand.
10. Return to the fix line in zero visibility - diver without mask or opaque face-glass.

C. Open Water Dives

1. Revising exercises from confined water.
2. Decompression in free water on decompression buoy during drift, decompression in free water on descending line using a decompression tank.

D. Practical part in overhead environment – wreck

1. Revising exercises from confined water.
2. Fixed line tracking. Training is focused on constantly viewing the situation around and where the buddy and line is. Light communication and signals. Correct body position, trim and good motion technique is must.
3. Exercise of main light failure and switch to backup or safety. Next, return without lights as a zero visibility simulation, return without mask. Practice using a backup mask.
4. Find a lost line in zero visibility (without light).
5. Work with reel and line. Binding on a descending line.
6. Solution of gas leakage from the valve or jumper and subsequent OOA with return to line.
7. Practicing the use of a decompression tank. Perform decompression in free water using decompression buoy and reel/spool. Perform decompression on the descending line or drift trap.
8. Crisis situation training - lost diver in free water, use of Emergency buoy or backup signaling devices (light, acoustic, radar beacon, etc.).
9. Dive Plan and consumption clanning of an appropriate type of vertical dive and dive in overhead environment - Rock Bottom and Rule of Thirds.
10. Calculating decompression according to all commonly used aids (air tables, Nitrox tables, decompression computer, PC or equivalent) and creation of a backup Bail out plan. Calculation of CNS parameters and whole body oxygen toxicity.

ASTD Side/No Mount Technical Cave/Mine Diver

I. Description

1. The Program is designed for training divers to dive with Side Mount (tanks at the sides) or No Mount (tanks pushed in front) configuration in caves, flooded mines and wrecks - depth up to 40 meters using air or various Nitrox mixtures. Deeper diving is possible only for qualified divers using mixtures with narcotic potential less than air (Trimix, Heliox) with END up to 40m.
2. The Program further extends knowledge of diving in enclosed areas. It may follow the Cavern Diver Program or be separate.
3. The Program involves the use of Nitrox mixtures ranging from 21% to 100% oxygen up to a maximum PO_2 of 1.4 bar / ata = 140 kPa for Bottom gas. Furthermore, in the range of 21% up to a maximum of 100% oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for the Decompression gas.
4. Training of practical knowledge of equipment configuration and techniques used in technical diving follows the ASTD Technical Diver Program.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Side/No Mount Technical Cave/Mine Instructor or higher.

III. Prerequisities

1. Must be a qualified ASTD Technical Diver or any equivalent qualification in technical diving.
2. Must be qualified ASTD Side Mount Diver or equivalent. Without this qualification, it is necessary to go through the whole ASTD Side Mount Program in open water at the beginning of the this Program.
3. Experience acknowledged as sufficient by the Instructor to complete this Program.
4. Must be a minimum of 18 years of age.
5. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
6. Must have a minimum of 100 logged dives of which 30 to the depths between 30 to 40 msw.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Specific Side Mount configuration including 2 independent tanks with appropriate buoyancy parameters with single valve, 2 separate regulators (each with a separate tank pressure gauge) and length-adjusted hoses to second stage.
4. Carrier adapted for this configuration (eg standard backplate) or specific carrier with integrated BCD buoyancy control device.

5. Depth gauge and bottom timer in any form including the display of time in seconds. A backup measuring device is also suitable.
6. Three independent lights (minimum) – one primary and two safety.
7. Primary reel and two safety reels/spools.
8. A backup chopping/cutting tool to solve the situation where a diver is caught in a rope, line, wire etc.
9. Oxygen analyzer.

V. Program Limits

1. There may be no more than 6 students per Instructor during a dive. This ratio may be increased by 2 students in the presence of ASTD Technical Instructor with ASTD Technical Cave/Mine Diver qualification. Instructor must be present all the time.
2. All dives must be conducted with recommended ascend time less than 9m per minute. Appropriate safety decompression stops must be performed.
3. The partial pressure of oxygen during the dive must not exceed 1.5 bar / ata = 150 kPa. For decompression the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
4. No more than 3 dives may be conducted a day.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD Technical Cave/Mine Diver and Technical Side/No Mount Diver.
2. The Program must include a minimum of 150 minutes of training in confined water. Furthermore training in free water and 400 minutes of diving in enclosed areas completed within at least 8 dives.
3. In absence of the Side Mount Diver Program - the practical part of this Program must be accomplished - ie. 120 minutes of bottom time completed within 4 dives in open water. At least 2 dives must be at a depth of 25-30 msw.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revising and deepening the knowledge of the Cavern Diver Program or go through the whole issue.
    a. Basics of karst typology.
    b. General and specific dangers of diving in enclosed areas.
    c. The equipment and its configuration including specific equipment - reel with line, personal reel, arrow etc.
    d. Light communication, one hand communication and tactile communication in zero visibility.
    e. Motion techniques in enclosed areas.
    f. Consumption planning for diving in overhead environment - Rule of Thirds.
    g. Psychological aspects and crisis management.
2. Analysis of breathing mixes with correct description of diving tanks.
3. About Side/No Mount configuration.
    a. History and reasons for Side Mount configuration.
    b. Dive plan and consumption plan for an specific dive with separate tanks.

c. Diving issues with Side Mount configuration.
d. Predicaments with Side Mount configuration and its solving.

B. Practical part in confined water (pool) with regulator

1. Demonstrate buddy check before submerging – S drills (out-of-air, Bubble check and Valve drill) and complete Valve drill (valves open and close and regulators exchange).
2. Demonstrate proficient buoyancy control and trim position.
3. Gas sharing - air sharing and swimming - changing both sides and practice consecutive swimming.
4. Gas sharing without mask - practice self-service logistics and facial contact to make sure that there is only one team member without mask or both.
5. Air leakage training - Instructor uses the air gun - air nozzle and practice excercise in water - right side, left side, manifold.
6. Basic motion techniques in cave diving - body position + frog kick, power frog kick and helicopter as basics, shuffle, modified flutter, hel and toe (just an ankle kick) may be added.
7. Guiding line technique - practicing manipulation with reel and spool, binding, team work, turning.
8. Practice of tactile signals in zero visibility, tactile identification using arrows.
9. Training of specific signals used in technical and cave diving with lights and one hand.
10. Return to the fix line in zero visibility - diver without mask or opaque face-glass.
11. Crisis management - single tank failure, failure to mount the handle (commonly used bunge rubber for the upper handle), fault of the BCD compensator, failure of the regulator with manual control of the valve.
12. Practice mounting and demounting of first and second tanks.
13. Practice swimming with one tank in front of you, then two tanks at least 25 meters.

C. Open Water Dives

1. Revising exercises from confined water.
2. Practice handling with of reel and guiding line.

D. Practical part in overhead environment – cave

1. Revising exercises from confined water.
2. Fixed line tracking. Training is focused on constantly viewing the situation around and where the buddy and line is. Light communication and signals. Correct body position, trim and good motion technique is must.
3. Exercise of main light failure and switch to backup or safety. Next, return without lights as a zero visibility simulation, return without mask. Practice using a backup mask.
4. Find a lost line in zero visibility (without light).
5. Work with reel and line, arrows and personal markers.
6. Solution of gas leakage from the valve or jumper and subsequent OOA with return to line.
7. Practice the use of decompression and stage/progress tank. Adequate gripping on a fixed line and practice of handling during operation.

8. Planning a dive and consumption planning for an adequate dive type in an overhead environment - Rule of Thirds and Rule of Fourths and other modifications for multistage planning.

9. Technical courses with rebreathers

ASTD Rebreather Technical Diver

(Oxygen Rebreather Technical Diver)
(SCR Rebreather Technical Diver)
(CCR Rebreather Technical Diver)

I. Description

1. The Program is designed to train divers to dive with approved devices with a closed and semi-closed circuit to depths according to device specifications and breathing mixture.
2. The Program includes the use of nitrox mixtures ranging from 21% up to a maximum of 100% oxygen partial pressure (PO_2) up to a maximum value of 1.4 bar / ata = 140 kPa for Bottom gas. Furthermore, in the range of 21% up to a maximum of 100% oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for Deco gas and for MOD 6 meters of oxygen rebreather.
3. Part of the Program is training practical knowledge of rebreather configuration (closed circuit device), techniques used in diving with closed circuits and training with additional equipment - backup system with open-circuit or backup rebreather.
4. Specific requirements and recommendations of the Program result from the type of device and the specific conditions of the manufacturer.
5. Diving with rebreathers with Trimix, Heliox is discussed in a follow-up Program - applicant must be qualified Normoxic/Trimix Diver with open circuit and Rebreather Technical Diver.
6. The Program entitles divers to perform dives only with the device which was part of the course.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Rebreather Technical Diving Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Technical Nitrox Diver or any equivalent qualification.
2. Must be a minimum of 18 years of age.
3. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
4. Must have a minimum of 100 logged dives of which 30 to the depths between 30 to 40 msw.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.

3. Approved type of rebreather - devices with closed eCCR or mCCR circuit, devices with semi-closed passive or active SCR circuit or oxygen rebreather. Additionally, an adequate BCD compensator is required for the primary (wing) and backup (dry suit or dual wing if a wet suit is used).
4. Bail out backup system is solved with at least 1 tanks with a minimum volume of 7 liters with adequate set-out and a regulator equipped with a separate tank pressure gauge (eg a watertight manometer).
5. Specific equipment according to current requirements.
6. A signaling device on the surface is always recommended (whistle, siren, flares, signaling buoy, etc.).
7. Oxygen analyzer.
8. Decompression buoy and spool.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students (6 students max) in the presence of ASTD Technical Instructor with ASTD Rebreather Technical Diver qualification. Instructor must be present all the time.
2. The depth of the dive must not exceed the MOD of specific breathing mixture.
3. The partial pressure of oxygen during the dive must not exceed 1.5 bar / ata = 150 kPa. For decompression and oxygen rebreather the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
4. For good training, it is necessary to perform the appropriate decompression procedure for each training dive.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD Rebreather Technical Diver.
2. The practical part of the Program must include a minimum of 300 minutes of bottom time completed within 6 dives. For oxygen rebreather it is a minimum of 200 minutes of diving in open water into maximum depth of 6 meters within 4 dives.
3. At least 2 dives must be at a depth of 30-40 msw when using air or EAN (does not refer to an oxygen rebreather).
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Philosophy of diving with rebreathers.
2. Principle of aparatus with closed and semi-closed circuit, types of oxygen supplies to the circuit.
3. Physiological and pathophysiological aspects of respiration with rebreather.
4. Absorption of CO_2 as a separate problem.
5. Monitoring pO_2 as the main dive parameter.
6. Calculating of decompression according to all applicable aids - decompression computer as part of rebreather or external with own pO_2 sensor or everything used in open-circuit diving (air tables, Nitrox tables, decompression computer, PC or equivalent).
7. Calculating of CNS parameters and whole body oxygen toxicity.
8. Creating backup Bail out plan.

9. Analysis of breathing mixes with correct description of diving tanks.
10. Mastering the correct configuration of the rebreather and backup system.
11. Psychological aspects and crisis management.

B. Open Water Dives

1. Pre-dive preparation including overpressure and underpressure tight testing of breathing circuit. Practicing all S drills (specific for CCR rebreathers) and complete Valve Drill (opening and closing of all valves).
2. Tuning the specific equipment configuration during first dive. It is recommended that the first dive be carried out in a confined water area (eg swimming pool). Exercise changeover to OC (Open Circuit) and practicing the use of a backup tank with OC (mounting and demounting, giving a backup regulator in an OOA situation).
3. Throughout the dive, be aware of pO_2 in the respiratory circuit according to the basic rule - "Do I know what I'm breathing?".
4. Specific crisis situations and its solving - low and high pO_2, hypercapnia, water in the breathing circuit, failure of the device for any reason. Changeover to OC in an OOA situation and solution of air/Nitrox sharing with a diving partner from a backup, Bail out tanks and a controlled ascent.
5. Demonstrate proficient buoyancy control and trim position.
6. Practical training for the good performing of decompression stops, including keeping correct ascent rate of 3 meters/min.
7. Demonstrate the use of decompression buoy in open water and decompression training on buoy.
8. Demonstration of Frog kick and Back kick - the basic kicks of fins used in technical diving.

ASTD SCR Normoxic Trimix Diver

I. Description

1. The Program is designed for training divers with approved SCR devices with semi-closed circuits to the depths in accordance with instrument specification and with breathing mixture - normoxic Trimix.
2. The Program involves the use of normoxic Trimix mixtures ranging from 16% to 21% oxygen up to a maximum oxygen partial pressure (PO_2) of 1.4 bar / ata = 140 kPa for Bottom gas. Furthermore, from 21% up to a maximum of 100% of oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for decompression air mixture (Deco gas).
3. Follow-up training of the practical knowledge of the SCR rebreather (semi-closed circuit device) configuration, diving techniques used in dives with semi-closed circuits and training with the additional equipment used - backup open-circuit system or backup rebreather.
4. Specific requirements and recommendations of the Program result from the type of device and the specific conditions of the manufacturer.
5. The Program entitles divers to perform dives only with the device which was part of the course.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD SCR Normoxic Trimix Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Normoxic Trimix Diver or any equivalent technical diving qualification.
2. Must be a qualified ASTD Rebreather Technical Diver or any equivalent technical diving qualification.
3. Must be a minimum of 18 years of age.
4. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
5. Must have a minimum of 150 logged dives. - of which 20 dives to depths below 40 msw with normoxic Trimix for OC and at least 20 dives (25 hours of diving with SCR).
6. Experience acknowledged as sufficient by the Instructor to complete this Program.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Approved type of SCR rebreather - device with semi-closed passive or active SCR circuit. Additionally, an adequate BCD compensator is required for the primary (wing) and backup (dry suit or dual wing if a wet suit is used).
4. Bail out backup system is solved with at least 2 tanks with a minimum volume of 7 liters with adequate set-out and a regulator equipped with a separate tank pressure

gauge (eg a watertight manometer) for two diferent gases - normoxic Trimix for bottom time and decompression gas for decompression.
5. Specific equipment according to current requirements.
6. The depth gauge and bottom timer in any form including the display of time in seconds. A backup measuring device is also suitable.
7. Instrument for signaling on the surface is always recommended (whistle, siren, flares, signaling buoy, etc.).
8. A backup chopping/cutting tool to solve the situation where a diver is caught in a rope, line, wire etc.
9. Oxygen analyzer.
10. Helium analyzer recommended.
11. Decompression buoy and spool.
12. Rescue oxygen kit and a resuscitation set for a possible decompression accident must be available.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students (6 students max) in the presence of ASTD Normoxic Trimix Instructor with ASTD SCR Normoxic Trimix Diver qualification. Instructor must be present all the time.
2. The depth of the dive must not exceed the MOD of specific breathing mixture - up to 66 meters.
3. The partial pressure of oxygen during the dive must not exceed 1.5 bar / ata = 150 kPa. For decompression and oxygen rebreather the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
4. For good training, it is necessary to perform the appropriate decompression procedure for each training dive.
5. The mixture of normoxic Trimix must contain at least 16% oxygen.
6. Equivalent narcotic depth (END) must not exceed 30 meters.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD SCR Normoxic Trimix Diver.
2. The practical part of the Program must include a minimum of 180 minutes of bottom time completed within 3 dives.
3. At least 2 dives must be at a depth of 40-66 msw when using normoxic Trimix.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Extending knowledge of diving with Tx/Heliox mixtures using semi-closed circuit.
2. Calculating of decompression according to all applicable aids - decompression computer as part of rebreather or external with own pO_2 sensor or all that is used in open-circuit diving (air tables, nitrox tables, decompression computer, PC or equivalent).
3. Calculating of CNS parameters and whole body oxygen toxicity.
4. Creating backup Bail out plan..
5. Analysis of breathing mixes with correct description of diving tanks.
6. Mastering the correct configuration of the rebreather and backup system.

7. Psychological aspects and crisis management.

B. Open Water Dives

1. Pre-dive preparation including overpressure and underpressure tight testing of breathing circuit. Practicing all S drills (specific for CCR rebreathers) and complete Valve Drill (opening and closing of all valves).
2. Exercise changeover to OC (Open Circuit) and practicing the use of a backup bottle with OC (mounting and demounting, giving a backup regulator in an OOA situation).
3. Throughout the dive, be aware of pO_2 in the respiratory circuit according to the basic rule - "Do I know what I'm breathing?".
4. Specific crisis situations and its solving - low and high pO_2, hypercapnia, water in the breathing circuit, failure of the device for any reason. Changeover to OC in an OOA situation and solution of air/Nitrox sharing with a diving partner from a backup, Bail out tanks and a controlled ascent.
5. Demonstrate proficient buoyancy control and trim position.
6. Practical training for the good performing of decompression stops, including keeping correct ascent rate of 3 meters/min.
7. Demonstrate the use of decompression buoy in open water and decompression training on buoy.
8. Demonstrate planning a dive. Then dive this plan.

ASTD SCR Trimix Diver

I. Description

1. The Program is designed for training divers with approved SCR devices with semi-closed circuit to the depths in accordance with instrument specification and with breathing mixture - Trimix (MOD is 120 meters).
2. The Program involves the use of Trimix mixtures ranging from 10% to 16% oxygen up to a maximum oxygen partial pressure (PO_2) of 1.2 bar / ata = 120 kPa for Bottom gas. Furthermore, from 21% up to a maximum of 100% of oxygen up to a maximum value of PO_2 of 1.6 bar/ata = 160 kPa for decompression mixture (Deco gas).
3. Follow-up training of the practical knowledge of the SCR rebreather (semi-closed circuit device) configuration, diving techniques used in dives with semi-closed circuits and training with the additional equipment used - backup open-circuit system or backup rebreather.
4. Specific requirements and recommendations of the Program result from the type of device and the specific conditions of the manufacturer.
5. The Program entitles divers to perform dives only with the device which was part of the course.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD SCR Trimix Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Trimix Diver or any equivalent technical diving qualification.
2. Must be a qualified ASTD SCR Normoxic Trimix Diver or any equivalent technical diving qualification.
3. Must be a minimum of 18 years of age.
4. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
5. Must have a minimum of 150 logged dives. - of which 10 dives to depths below 60 msw with Trimix for OC and at least 40 dives (50 hours of diving with SCR) of which at least 10 dives with normoxic Trimix.
6. Experience acknowledged as sufficient by the Instructor to complete this Program.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Approved type of SCR rebreather - device with semi-closed passive or active SCR circuit. Additionally, an adequate BCD compensator is required for the primary (wing) and backup (dry suit or dual wing if a wet suit is used).
4. Bail out backup system is solved with at least 3 tanks with a minimum volume of 7 liters with adequate set-out and a regulator equipped with a separate tank pressure

gauge (eg a watertight manometer) for three different gases - Trimix for bottom time and two decompression gases - Nitrox and oxygen for decompression.
5. Specific equipment according to current requirements.
6. The depth gauge and bottom timer in any form including the display of time in seconds. A backup measuring device is also suitable.
7. Instrument for signaling on the surface is always recommended (whistle, siren, flares, signaling buoy, etc.).
8. Backup chopping/cutting tool to solve the situation where a diver is caught in a rope, line, wire etc.
9. Oxygen analyzer.
10. Helium analyzer recommended.
11. Decompression buoy and spool.
12. Rescue oxygen kit and a resuscitation set for a possible decompression accident must be available.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students (6 students max) in the presence of ASTD Trimix Instructor with ASTD SCR Trimix Diver qualification. Instructor must be present all the time.
2. The depth of the dive must not exceed the MOD of specific breathing mixture - up to 120 meters.
3. The partial pressure of oxygen during the dive must not exceed 1.2 bar/ata = 120 kPa. For decompression and oxygen rebreather the limit is 1.6 bar/ata = 160 kPa. This value is calculated for the deepest part of the decompression.
4. For good training, it is necessary to perform the appropriate decompression procedure for each training dive.
5. The mixture of Trimix must contain at least 10% oxygen.
6. Equivalent narcotic depth (END) must not exceed 30 meters.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD SCR Trimix Diver.
2. The practical part of the Program must include a minimum of 210 minutes of bottom time completed within 3 dives.
3. At least 2 dives must be at a depth of 66-120 msw when using Trimix.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Extending knowledge of diving with Tx/Heliox mixtures using semi-closed circuit.
2. Calculating of decompression according to all applicable aids - decompression computer as part of rebreather or external with own pO_2 sensor or all that is used in open-circuit diving (air tables, nitrox tables, decompression computer, PC or equivalent).
3. Creating backup Bail out plan.
4. Analysis of breathing mixes with correct description of diving tanks.
5. Mastering the correct configuration of the rebreather and backup system.
6. Psychological aspects and crisis management.

B. Open Water Dives

1. Pre-dive preparation including overpressure and underpressure tight testing of breathing circuit. Practicing all S drills (specific for CCR rebreathers) and complete Valve Drill (opening and closing of all valves).
2. Exercise changeover to OC (Open Circuit) and practicing the use of a backup bottle with OC (mounting and demounting, giving a backup regulator in an OOA situation).
3. Throughout the dive, be aware of pO_2 in the respiratory circuit according to the basic rule - "Do I know what I'm breathing?".
4. Specific crisis situations and its solving - low and high pO_2, hypercapnia, water in the breathing circuit, failure of the device for any reason. Changeover to OC in an OOA situation and solution of air/Nitrox sharing with a diving partner from a backup, Bail out tanks and a controlled ascent.
5. Demonstrate proficient buoyancy control and trim position.
6. Practical training for the good performing of decompression stops, including keeping correct ascent rate of 3 meters/min.
7. Demonstrate the use of decompression buoy in open water and decompression training on buoy.
8. Demonstrate planning a dive. Then dive this plan.

ASTD CCR Normoxic Trimix Diver

I. Description

1. The Program is designed for training divers with approved CCR devices with closed circuit to the depths in accordance with instrument specification and with breathing mixture - normoxic Trimix (MOD 66 meters). These are CCR rebreathers - electronically controlled eCCR or manually controlled mCCR.
2. The Program involves the use of normoxic Trimix mixtures ranging from 16% to 21% oxygen up to a maximum oxygen partial pressure (PO_2) of 1.4 bar / ata = 140 kPa for Bottom gas. Furthermore, from 21% up to a maximum of 100% of oxygen up to a maximum value of PO_2 of 1.6 bar / ata = 160 kPa for decompression air mixture (Deco gas).
3. Follow-up training of the practical knowledge of the CCR rebreather (closed circuit device) configuration, diving techniques used in dives with closed circuits and training with the additional equipment used - backup open-circuit system or backup rebreather.
4. Specific requirements and recommendations of the Program result from the type of device and the specific conditions of the manufacturer.
5. The Program entitles divers to perform dives only with the device which was part of the course.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD CCR Normoxic Trimix Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Normoxic Trimix Diver or any equivalent technical diving qualification.
2. Must be a qualified ASTD Rebreather Technical Diver or any equivalent technical diving qualification.
3. Must be a minimum of 18 years of age.
4. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
5. Must have a minimum of 150 logged dives. - of which 20 dives to depths below 40 msw with normoxic Trimix for OC and at least 20 dives (25 hours of diving with CCR).
6. Experience acknowledged as sufficient by the Instructor to complete this Program.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Approved type of CCR rebreather - device with semi-closed passive or active CCR circuit. Additionally, an adequate BCD compensator is required for the primary (wing) and backup (dry suit or dual wing if a wet suit is used).

4. Bail out backup system is solved with at least 2 tanks with a minimum volume of 7 liters with adequate set-out and a regulator equipped with a separate tank pressure gauge (eg a watertight manometer) for two different gases - normoxic Trimix for bottom time and decompression gas for decompression.
5. Specific equipment according to current requirements.
6. The depth gauge and bottom timer in any form including the display of time in seconds. A backup measuring device is also suitable.
7. Instrument for signaling on the surface is always recommended (whistle, siren, flares, signaling buoy, etc).
8. A backup chopping/cutting tool to solve the situation where a diver is caught in a rope, line, wire etc.
9. Oxygen analyzer.
10. Helium analyzer recommended.
11. Decompression buoy and spool.
12. Rescue oxygen kit and a resuscitation set for a possible decompression accident must be available.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students (6 students max) in the presence of ASTD Normoxic Trimix Instructor with ASTD CCR Normoxic Trimix Diver qualification. Instructor must be present all the time.
2. The depth of the dive must not exceed the MOD of specific breathing mixture - up to 66 meters.
3. The partial pressure of oxygen during the dive must not exceed 1.4 bar / ata = 140 kPa. For decompression and oxygen rebreather the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
4. For good training, it is necessary to perform the appropriate decompression procedure for each training dive.
5. The mixture of normoxic Trimix must contain at least 16% oxygen.
6. Equivalent narcotic depth (END) must not exceed 30 meters.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD CCR Normoxic Trimix Diver.
2. The practical part of the Program must include a minimum of 180 minutes of bottom time completed within 3 dives.
3. At least 2 dives must be at a depth of 40-66 msw when using normoxic Trimix.
4. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Extending knowledge of diving with Tx/Heliox mixtures using closed circuit.
2. Calculating of decompression according to all applicable aids - decompression computer as part of rebreather or external with own pO_2 sensor or all that is used in open-circuit diving (air tables, nitrox tables, decompression computer, PC or equivalent).
3. Calculating of CNS parameters and whole body oxygen toxicity.
4. Creating backup Bail out plan.

5. Analysis of breathing mixes with correct description of diving tanks.
6. Mastering the correct configuration of the rebreather and backup system.
7. Psychological aspects and crisis management.

B. Open Water Dives

1. Pre-dive preparation including overpressure and underpressure tight testing of breathing circuit. Practicing all S drills (specific for CCR rebreathers) and complete Valve Drill (opening and closing of all valves).
2. Exercise changeover to OC (Open Circuit) and practicing the use of a backup bottle with OC (mounting and demounting, giving a backup regulator in an OOA situation).
3. Throughout the dive, be aware of pO_2 in the respiratory circuit according to the basic rule - "Do I know what I'm breathing?".
4. Specific crisis situations and its solving - low and high pO_2, hypercapnia, water in the breathing circuit, failure of the device for any reason. Changeover to OC in an OOA situation and solution of air/Nitrox sharing with a diving partner from a backup, Bail out tanks and a controlled ascent.
5. Demonstrate proficient buoyancy control and trim position.
6. Practical training for the good performing of decompression stops, including keeping correct ascent rate of 3 meters/min.
7. Demonstrate the use of decompression buoy in open water and decompression training on buoy.
8. Demonstrate planning a dive. Then dive this plan.

ASTD CCR Trimix Diver

I. Description

1. The Program is designed for training divers with approved CCR devices with closed circuit to the depths in accordance with instrument specification and with breathing mixture - Trimix (MOD is 120 meters). These are CCR rebreathers - electronically controlled eCCR or manually controlled mCCR.
2. The Program involves the use of Trimix mixtures ranging from 10% to 16% oxygen up to a maximum oxygen partial pressure (PO_2) of 1.2 bar / ata = 120 kPa for Bottom gas. Furthermore, from 21% up to a maximum of 100% of oxygen up to a maximum value of PO_2 of 1.6 bar/ata = 160 kPa for decompression mixture (Deco gas).
3. Follow-up training of the practical knowledge of the CCR rebreather (closed circuit device) configuration, diving techniques used in dives with closed circuit and training with the additional equipment used - backup open-circuit system or backup rebreather.
4. Specific requirements and recommendations of the Program result from the type of device and the specific conditions of the manufacturer.
5. The Program entitles divers to perform dives only with the device which was part of the course.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD CCR Trimix Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Trimix Diver or any equivalent technical diving qualification.
2. Must be a qualified ASTD CCR Normoxic Trimix Diver or any equivalent technical diving qualification.
3. Must be a minimum of 18 years of age.
4. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
5. Must have a minimum of 150 logged dives - of which 10 dives to depths below 66 msw with Trimix for OC (50 hours of diving with CCR) of which at least 10 dives with normoxic Trimix. Experience acknowledged as sufficient by the Instructor to complete this Program.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.
3. Approved type of CCR rebreather - device with closed circuit electronically controlled eCCR or manually controlled mCCR. Additionally, an adequate BCD compensator is required for the primary (wing) and backup (dry suit or dual wing if a wet suit is used).
4. Bail out backup system is solved with at least 3 tanks with a minimum volume of 7 liters with adequate set-out and a regulator equipped with a separate tank pressure

gauge (eg a watertight manometer) for three different gases - Trimix for bottom time and two decompression gases - Nitrox and oxygen for decompression.
5. Specific equipment according to current requirements.
6. The depth gauge and bottom timer in any form including the display of time in seconds. A backup measuring device is also suitable.
7. Instrument for signaling on the surface is always recommended (whistle, siren, flares, signaling buoy, etc.).
8. Backup chopping/cutting tool to solve the situation where a diver is caught in a rope, line, wire etc.
9. Oxygen analyzer.
10. Helium analyzer recommended.
11. Decompression buoy and spool.
12. Rescue oxygen kit and a resuscitation set for a possible decompression accident must be available.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students (6 students max) in the presence of ASTD Trimix Instructor with ASTD CCR Trimix Diver qualification. Instructor must be present all the time.
2. The depth of the dive must not exceed the MOD of specific breathing mixture - up to 120 meters.
3. The partial pressure of oxygen during the dive must not exceed 1.2 bar / ata = 120 kPa. For decompression and oxygen rebreather the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
4. For good training, it is necessary to perform the appropriate decompression procedure for each training dive.
5. The mixture of Trimix must contain at least 10% oxygen.
6. Equivalent narcotic depth (END) must not exceed 30 meters.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD CCR Trimix Diver.
7. The practical part of the Program must include a minimum of 210 minutes of bottom time completed within 3 dives.
8. At least 2 dives must be at a depth of 66-120 msw when using Trimix.
9. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Extending knowledge of diving with Tx/Heliox mixtures using closed circuit.
2. Calculating of decompression according to all applicable aids - decompression computer as part of rebreather or external with own pO_2 sensor or all that is used in open-circuit diving (air tables, nitrox tables, decompression computer, PC or equivalent).
3. Creating backup Bail out plan.
4. Analysis of breathing mixes with correct description of diving tanks.
5. Mastering the correct configuration of the rebreather and backup system.
6. Psychological aspects and crisis management.

B. Open Water Dives

1. Pre-dive preparation including overpressure and underpressure tight testing of breathing circuit. Practicing all S drills (specific for CCR rebreathers) and complete Valve Drill (opening and closing of all valves).
2. Exercise changeover to OC (Open Circuit) and practicing the use of a backup bottle with OC (mounting and demountung, giving a backup regulator in an OOA situation).
3. Throughout the dive, be aware of pO_2 in the respiratory circuit according to the basic rule - "Do I know what I'm breathing?".
4. Specific crisis situations and its solving - low and high pO_2, hypercapnia, water in the breathing circuit, failure of the device for any reason. Changeover to OC in an OOA situation and solution of air/Nitrox sharing with a diving partner from a backup, Bail out tanks and a controlled ascent.
5. Demonstrate proficient buoyancy control and trim position.
6. Practical training for the good performing of decompression stops, including keeping correct ascent rate of 3 meters/min.
7. Demonstrate the use of decompression buoy in open water and decompression training on buoy.
8. Demonstrate planning a dive. Then dive this plan.

ASTD Rebreather Technical Cave/Mine/Wreck Diver

(SCR Rebreather Technical Cave/Mine/Wreck Diver)
(CCR Rebreather Technical Cave/Mine/Wreck Diver)

I. Description

1. The Program is designed for training divers to dive with approved rebreathers with semi-closed/closed circuit to the depths in accordance with instrument specification and with appropriate breathing mixture in caves, flooded mines and wrecks with possible penetration.
2. The Program involves the use of breathing mixtures ranging from 10% to 100% oxygen up to a maximum oxygen partial pressure (PO_2) of 1.4 bar / ata = 140 kPa for Bottom gas. Furthermore, from 21% up to a maximum of 100% of oxygen up to a maximum value of PO_2 of 1.6 bar/ata = 160 kPa for decompression mixture (Deco gas).
3. Part of the course is training practical knowledge of the rebreather configuration (closed circuit device), techniques used in diving with closed circuit and training with the additional equipment used - the open-circuit backup system or backup rebreather in specific overhead and wreck conditions.
4. Specific requirements and recommendations of the Program result from the type of device and the specific conditions of the manufacturer.
5. Appropriate qualification with open circuit is required - Technical Cave/Mine/Wreck Diver.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Rebreather Technical Cave/Mine/Wreck Instructor qualification or higher.

III. Prerequisities

1. Must be a qualified ASTD Technical Cave/Mine/Wreck Diver or any equivalent technical diving qualification.
2. Must be a qualified ASTD Rebreather Technical Diver or any equivalent technical diving qualification.
3. Must be a minimum of 18 years of age.
4. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
5. Must have a minimum of 150 logged dives - of which 20 dives to depths below 30 msw (25 hours of diving with SCR/CCR). Experience acknowledged as sufficient by the Instructor to complete this Program.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.

3. Approved type of rebreather - device with closed eCCR or mCCR circuit. Additionally, an adequate BCD compensator is required for the primary (wing) and backup (dry suit or dual wing if a wet suit is used).
4. Bail out backup system is solved with at least 1 tank with a minimum volume of 7 liters with adequate set-out and a regulator equipped with a separate tank pressure gauge (eg a watertight manometer).
5. Specific equipment according to current requirements - diving in caves or wreck - UW light, reel, etc.
6. Instrument for signaling on the surface is always recommended (whistle, siren, flares, signaling buoy, etc).
7. Oxygen analyzer.
8. Decompression buoy and spool.

V. Program Limits

1. There may be no more than 4 students per Instructor during a dive. This ratio may be increased by 2 students (6 students max) in the presence of ASTD Rebreather Technical Diving Instructor with ASTD CCR Trimix Diver qualification. Instructor must be present all the time.
2. The depth of the dive must not exceed the MOD of specific breathing mixture.
3. The partial pressure of oxygen during the dive must not exceed 1.5 bar / ata = 150 kPa. For decompression and oxygen rebreather the limit is 1.6 bar / ata = 160 kPa. This value is calculated for the deepest part of the decompression.
4. For good training, it is necessary to perform the appropriate decompression procedure for each training dive.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD Rebreather Technical Cave/Mine/Wreck Diver.
2. The Program includes the full matter from Technical Cave/Wreck Diver Program with Open Circuit plus specific information about SCR/CCR rebreather diving - Gas Management/Consumption Planning etc in an overhead and wreck conditions.
3. Completion of the Program with an oral or written exam.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Cave and wreck diving matter.
2. Diving with SCR/CCR rebreathers - specifics of diving in overhead and wreck conditions.

B. Open Water Dives

1. The practical part is almost the same as Technical Cave/Mine/Wreck Diver Program (with OC) and it is only modified for the type of SCR/CCR device.
2. The practical part also includes the practice of the type of SCR/CCR rebreather resulting from the content of the ASTD Rebreather Technical Diver Program.

10. Instructor Courses

ASTD Sport Diving Instructor

I. Description

1. The Program is intended for all experienced divers who (after successfully completion) can independently teach at courses of recreational diving.
2. The Program complies with EN 14413-1 and EN 14413-2.
3. The ASTD Sport Diving Instructors can teach ASTD Intro Dive, Supervised Diver, Junior Diver, Open Water Diver, Advanced Open Water Diver and Experienced Diver Programs without further training.
4. The ASTD Sport Diving Instructors with valid SCUBA Diving Paramedic qualification (updated every 3 years) may teach at ASTD SCUBA Diving Paramedic, Rescue Diver and Divemaster Programs.
5. The ASTD Sport Diving Instructors may also teach specialized courses - after meeting the requirements for the qualification of an Instructor defined in a particular specialization.
6. The ASTD Sport Diving Instructors are able to accompany Supervised Diver to a maximum depth of 10 meters, Junior Diver at a maximum depth of 20 meters and the Open Water Diver to a maximum depth of 30 meters.
7. The ASTD Sport Diving Instructors are qualified to plan, implement and manage rescue action during diving activities.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Sport Diving Instructor Trainer or higher.

III. Prerequisities

1. Successful completion of the entrance test, including theory and practice, confirming the necessary knowledge and skills that a professional member has to possess.
2. The prerequisite is mastering of all the exercises that are in the requirements of Open Water Diver Program and Divemaster Program. This instructor Program aims to educate how to teach, not practice the theory and practice of previous Programs.
3. Must be qualified ASTD Divemaster (ASTD ****) – or equivalent qualification according RSTC or CMAS P *** etc.
4. Valid medical certification SDP Scuba Diving Paramedic (not older than three years) or equivalent Program teaching oxygen supply, CPR and first aid.
5. Must be a minimum of 18 years of age.
6. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
7. Must have a minimum of 120 logged dives.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. A dual valve tank with compressed air, two SCUBA regulators configured as a primary and a secondary and an adequate buoyancy control device. The primary regulator's hose is required to have a minimum length of 150-210 cm.
3. Recommended configuration for open water is a kit with two connected and linked tanks.
4. Use of backup buoyancy source (dry suit, etc.) is recommended.
5. Signaling buoy and line are required depending on the type of site.
6. Theoretical lectures require complete training materials for ASTD Programs that the Instructor will be able to teach. It is recommended to use electronic devices(computer, tablet, smartphone, etc.).

V. Program Limits

1. None of the training dives may be to depths greater than 40 msw.
2. All dives must be conducted with recommended ascent time less than 9m per minute. Appropriate safety decompression stops must be performed.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD Sport Diving Instructor.
2. The practical part of the course must include at least 240 minutes of assisted time. First half - teaching the theory and demonstration of skills on dry land and second half - practical lessons in confined water and open water during minimally 2 dives in open water. During the assistance, mastering and presentation of the exercises to the students and the supervision of their implementation - is emphasized.
3. Educational minimum for all parts of the Program.
4. Introduction the ASTD administration.
5. Use of ASTD support materials.
6. Creating detailed dive plan for the entire action, given the specificity of the conditions in which the dive will take place, including the dive plan, backup plan, surface resource, crisis plan and crisis management.
7. Oral or written exam of theory.
8. Exam from the pedagogical minimum of conducting the theoretical lecture.
9. Passing physical tests in confined water.
10. Exam from the pedagogical minimum of conducting a practical lecture in confined water.
11. Exam from the pedagogical minimum of conducting a practical lecture in open water.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revising knowledge of Scuba Diving Paramedic, Rescue Diver and Divemaster.
2. Basics of pedagogy, way how to conduct lectures.
3. Issues of the dive plan, including the dive plan, backup plan, surface security, crisis plan, and crisis management.
4. Leading briefing before dive and debriefing after dive in confined water.
5. Leading briefing before dive and debriefing after diving in open water.

6. Specifying the use of recommended equipment for each program from the instructor's point of view.
7. Training guidelines and standards.
8. Introduction to whole ASTD sport program.
9. Introduction to the ASTD textbooks and their use.
10. Introduction to the Certification Process.
11. Introduction to the ASTD professional background.
12. Introduction to the evaluation process and feedback of Instructor.

B. Practical part in confined water (pool) without regulator

1. Swim 100 meters without using ABC in 3 minutes using any stroke.
2. Swim without using ABC at least 25 meters under water without emerging.
3. Putting ABC on at a minimum of 2 meters depth including mask clearing.
4. Swim 100 meters with ABC equipment within 2 minutes using any stroke, followed by immerging and swimming 10 meters under water.

C. Practical part in confined water (pool) with regulator

1. Show the ability to leading briefing before the start of a dive in confined water.
2. Demonstrate saving of a drowning person and consequent towing on the surface and perform first aid.
3. Demonstration of ability to demonstrate the exercises in sport courses and to assist in teaching them. The choice of exercises depends on the Instructor Trainer. Exercises are selected from the training guidelines of the Programs that the Instructor will teach.
4. Pre-diving preparation and checking, buddy check in diving teams.
5. Monitoring the reactions of all divers before the dive - emphasise on stress symptomatology.
6. Organization of entry into the water of the whole group.
7. Show the ability to leading debriefing after the end of a dive.

D. Open Water Dives

1. Show the ability to leading briefing before the start of a dive in open water.
2. Creating an action plan, including all the specifics of the area and local conditions - currents, underwater visibility, underwater hazards, etc., taking into account the ability of divers in the group. Marking and securing the dive site.
3. Creating a dive plan with regard to physiological limits, consumption planning and decompression.
4. Creating a backup plan, create a crisis plan.
5. Pre-diving preparation and checking, buddy check in diving teams.
6. Organization of entry into the water of the whole group.
7. Diving group management according to the dive plan, monitoring of all divers - emphasise on the early detection of stress reactivity.
8. Show the ability to leading debriefing after the end of a dive.

E. Conditions for maintaining the active status of qualification

1. Leadership and completion of at least 1 ASTD course per year, or an Instructor's seminar.
2. Must have at least 15 dives per year.
3. Valid medical certification SDP Scuba Diving Paramedic (not older than three years) or equivalent Program teaching oxygen supply, CPR and first aid.
4. Active membership.

ASTD Technical Diving Instructor

I. Description

1. The Program is intended for all experienced divers who (after successfully completion) can independently teach at basic courses of technical diving and recreational diving courses.
2. The ASTD Technical Diving Instructors can teach ASTD Intro Dive, Supervised Diver, Junior Diver, Open Water Diver, Advanced Open Water Diver, Experienced Diver a Technical Nitrox Diver Programs without further training.
3. The ASTD Technical Diving Instructors with valid SCUBA Diving Paramedic qualification (updated every 3 years) may teach ASTD SCUBA Diving Paramedic, Rescue Diver and Divemaster Programs.
4. The ASTD Technical Diving Instructors may also teach specialized courses - after meeting the requirements for the qualification of an Instructor defined in a particular specialization.
5. The ASTD Technical Diving Instructors are able to accompany Supervised Diver to a maximum depth of 10 meters, Junior Diver at a maximum depth of 20 meters and the Open Water Diver to a maximum depth of 30 meters.
6. The ASTD Sport Diving Instructors are qualified to plan, implement and manage rescue action during diving activities.

II. Instructor´s Qualification

1. The Program may be led only by an Instructor with the ASTD Technical Diving Instructor Trainer or higher.

III. Prerequisities

1. Successful completion of the entrance test, including theory and practice, confirming the necessary knowledge and skills that a professional member has to possess.
2. The prerequisite is mastering of all the exercises that are in the requirements of Open Water Diver Program to Divemaster Program including Technical Nitrox Diver Program. This Instructor Program aims to educate how to teach, not practice the theory and practice of previous Programs.
3. Must be qualified Sport Diving Instructor – or equivalent qualification according RSTC or CMAS I** etc.
4. Valid medical certification SDP Scuba Diving Paramedic (not older than three years) or equivalent Program teaching oxygen supply, CPR and first aid.
5. Must be a minimum of 21 years of age.
6. Satisfactory health conditions must be met. A medical release must be completed or doctor’s approval must be provided.
7. Must have a minimum of 200 logged dives.

IV. Equipment Requirements

1. Equipment must be adequate to the conditions of training.
2. Due to the difficulty of dives in cold water a suit with adequate thermal insulation (eg dry suit) is recommended.

3. Two separate tanks connected together with a manifold are required. Two SCUBA regulators configured as a primary and a secondary. Secondary regulator must be equipped with a tank pressure indicator (eg a watertight manometer). An adequate buoyancy control device – primary (wing) and spare (dry suit or dual wing while using wet suit). The secondary regulator´s hose is required to have a minimum lenght of 150 – 210 cm (5-7 ft.). Proficient configuration of the equipment is required – for example Hogarthian.
4. Decompression/stage oxygen compatible tank with adequate equipment and description. Oxygen compatible regulator, equipped with a separate tank pressure gauge.
5. Oxygen analyzer.
6. Decompression buoy and spool.
7. Theoretical lectures require complete training materials for ASTD Programs that the Instructor will be able to teach. It is recommended to use electronic devices(computer, tablet, smartphone, etc.).

V. Program Limits

1. None of the training dives may be to depths greater than 40 msw.
2. All dives must be conducted with recommended ascent time less than 9m per minute. Appropriate safety decompression stops must be performed.
3. The partial pressure of oxygen during the dive must not exceed 1.5 bar/ata = 150 kPa. For decompression the limit is 1.6 bar/ata = 160 kPa. This value is calculated for the deepest part of the decompression.
4. Appropriate safety and decompression stops must be carried out on each training dive using a decompression tank with a corresponding decompression Nitrox mixture or oxygen.

VI. Program Content

1. Lectures including all material in the approved textbook and slides ASTD Technical Diving Instructor.
2. The practical part of the course must include at least 240 minutes of assisted time. First half - teaching the theory and demonstration of skills on dry land and second half - practical lessons in confined water and open water during minimally 3 dives in open water. During the assistance, mastering and presentation of the exercises to the students and the supervision of their implementation - is emphasized.
3. Revising of educational minimum for all parts of the Program.
4. Using of ASTD support training materials.
5. Creating detailed dive plan for the entire action, given the specificity of the conditions in which the dive will take place, including the dive plan, backup plan, surface resource, crisis plan and crisis management.
6. Oral or written exam of theory.
7. Exam from the pedagogical minimum of conducting the theoretical lecture.
8. Passing physical tests in confined water.
9. Exam from the pedagogical minimum of conducting a practical lecture in open water.

VII. Theoretical Part and Waterskills Development

A. Theoretical Part

1. Revising knowledge from Scuba Diving Paramedic, Sport Diving Instructor Programs.
2. Revising way how to conduct lectures.

3. Issues of the dive plan, including the dive plan, backup plan, surface security, crisis plan, and crisis management.
4. Leading briefing before dive and debriefing after dive in open water.
5. Specifying the use of recommended equipment for each program from the instructor's point of view.
6. Training guidelines and standards.
7. Revising acquired knowledge from all ASTD Sport Programs and their deepening in the Technical Nitrox Diver Program.
8. Introduction to the ASTD Technical Diver training materials and their use.
9. Revising the knowledge about evaluation process and feedback of Instructor.

B. Practical part in confined water (pool)

1. Swim 100 meters without using ABC in 3 minutes using any stroke.
2. Swim without using ABC at least 25 meters under water without emerging.
3. Putting ABC on at a minimum of 2 meters depth including mask clearing.
4. Swim 100 meters with ABC equipment within 2 minutes using any stroke, followed by immerging and swimming 10 meters under water.

C. Open Water Dives

1. Show the ability to leading briefing before the start of a dive in open water.
2. Demonstrate saving of a drowning person and consequent towing on the surface and perform first aid.
3. Creating an action plan, including all the specifics of the area and local conditions - currents, underwater visibility, underwater hazards, etc., taking into account the ability of divers in the group. Marking and securing the dive site.
4. Creating a dive plan with regard to physiological limits, consumption planning and decompression.
5. Creating a backup plan, create a crisis plan.
6. Pre-diving preparation and checking, buddy check in diving teams.
7. Organization of entry into the water of the whole group.
8. Demonstration of ability to demonstrate the exercises in sport courses including Technical Nitrox Diver Program and to assist in teaching them. The choice of exercises depends on the Instructor Trainer. Exercises are selected from the training guidelines of the Programs that the Instructor will teach.
9. Diving group management according to the dive plan, monitoring of all divers - emphasise on the early detection of stress reactivity.
10. Show the ability to leading debriefing after the end of a dive

D. Conditions for maintaining the active status of qualification

1. Leadership and completion of at least 1 ASTD course per year, or an Instructor's seminar.
2. Must have at least 15 dives per year.
3. Valid medical certification SDP Scuba Diving Paramedic (not older than three years) or equivalent Program teaching oxygen supply, CPR and first aid.
4. Active membership.