



E Open water Advanced Trimix training dives

1. The participant must be at least 18 years of age.
2. Prior to commencing practical training, at the instructor's request, the participant must provide proof of a current diving medical not older than two years for participants under 40 years of age and for participants over 40 years of age not older than one year.

Plus for **OPTION A** (6 dive course)

3. Certification as IART CCR Level II Extended Range (**air**) Diver or equivalent (IANTD, TDI or BSAC etc.)
4. A minimum of 50 hours dive time with the Inspiration / Evolution CCR following completion of Level II training
5. No less than 20 dives at depths beyond 35m
6. Valid First Aid and CPR training.

Or for **OPTION B** (4 dive course)

3. Certification as IART CCR Level II Extended Range (**normoxic Trimix**) Diver or equivalent
 4. A minimum of 50 hours dive time with the Inspiration / Evolution CCR following completion of Level II training
 5. Not less than 20 dives deeper than 35m, 5 of which must be normoxic Trimix dives
 6. Valid First Aid and CPR training.
- or certification as IART OC Trimix Diver (or equivalent) plus minimum of 100 hours CCR dive time and 40 dives deeper than 40m

If student is crossing over from another organization the IART rescue module must be completed prior to commencement of the training dives. This includes the following exercises:

A controlled buoyant lift of an "unconscious diver". Ensure positive buoyancy of the casualty at the surface. (*Min. depth 15m and max. depth 20m*):

Perform simulated in-water expired air resuscitation (EAR). One breath every five seconds. (Instructor should allow student to try various EAR and towing techniques)

Course duration

For **option A** the course duration is approx. 7 days. The open water training consists of 6 dives over 6 days

For **option B** the course duration is approx. 5 days. The open water training consists of 4 dives over 4 days

The maximum instructor/student ratio is 1:2.

This course encourages the diver to assess accurately his/her own abilities and to consequently dive according to plan.



A confined water training session must precede commencement of the course training dives (each exercise should be repeated numerously)

- ▶ During finning, exchange mask to back-up. Clear mask. Return to original mask and stow back-up correctly.
- ▶ OC bail-out (to both inboard and stage supply)
- ▶ Removal and replacement of stages underwater (static and swimming)
- ▶ Feeding off-board stages into loop
- ▶ Manual diluent control

Prior to the OW training your instructor may require you to complete a “warm-up” dive in order to assess your current abilities. This is in the interest of your own safety and should be seen as part of the course

OPTION A - 6 open water dives OPTION B - 4 open water dives Min. & max.depths

Option A	dive 1 Normoxic Trimix	40 & 50 metres
	dive 2 Normoxic Trimix	40 & 60 metres
Option A+B	dive 3 Advanced Trimix	50 & 65 metres
	dive 4 Advanced Trimix	60 & 70 metres
	dive 5 Advanced Trimix	60 & 80 metres
	dive 6 Advanced Trimix	50 & 65 metres

Topics:

- ▶ Gas analysis
- ▶ Stress management
- ▶ Assembly, disassembly and maintenance
- ▶ Emergency exercises
- ▶ Dive planning under supervision and preparation of decompression tables
- ▶ Handling of self-prepared equipment configuration
- ▶ Gas switching

Preparation prior to every dive:

- ▶ Check equipment configuration
- ▶ Pre-dive check on the rebreather
- ▶ Dive planning with a PC using decompression software from APD, V-Planner, GAP or similar
- ▶ Student calculates his own runtime-tables (Instructor must control the calculations)

Dive 1 (Min. 40m – Max. 50m / max. 10min deco-penalty)

Gas: In-board gas: 100% oxygen and normoxic Trimix 21/35
 Stage cylinders: Normoxic Trimix 21/35 and 50% Nitrox

Exercises in the following order:

- 1.1 From the surface descend with inboard normoxic Trimix connected to loop
- 1.2 Stop descent at maximum planned depth
- 1.3 At target depth unclip stage cylinders and pass to the instructor. Maintain buoyancy control, then remount stages
- 1.4 Uncertain gas mix in loop – diluent flush with closed O₂ cylinder. Handset displays correct reading for ambient pressure? Re-open O₂ cylinder.
- 1.5 Start ascent according to plan. Maximum ascent rate of 10 metres/min
- 1.6 Between 40 - 20m deploy an SMB within 60 seconds
- 1.7 Perform setpoint switch and deco stops according to run time table or deco-computer on deco-buoy



Dive 2 – (Min. 40m – Max. 60m / max. 15 min deco-penalty)

Gas: In-board gas: 100% oxygen and normoxic Trimix 21/35 (20/35 if 60m planned)
Stage cylinders: Normoxic Trimix 21/35 (or 20/35) and 50% Nitrox

Exercises in the following order:

- 2.1 From the surface descend with inboard normoxic Trimix connected to loop
- 2.2 Stop descent at maximum planned depth
- 2.3 At target depth, adjust setpoint to 1.4 pO₂ and observe whether all cells respond uniformly and attain the maximum level
- 2.4 Return setpoint to the default (1.3 bar) level
- 2.5 With eyes closed, locate Trimix stage regulator and bail-out. After 2 breaths return to loop.
- 2.6 Start ascent according to plan. Maximum ascent rate of 10 metres/min
- 2.7 In 40m switch to OC Trimix stage bail-out and continue normal ascent
- 2.8 At 20 metres switch to Nitrox stage bail-out
- 2.9 Deploy an SMB within 60 seconds
- 2.10 Perform OC deco stops according to run time table or deco-computer on deco-buoy

Dive 3 - (Min. 50m - max. 65m / bottom-time max. 15min)

Recommended gas: In-board gas: 100% oxygen and TRIMIX 15/55
Stage cylinders: TRIMIX 15/55 and 50% Nitrox

Exercises in following order:

- 3.1 Descent with in-board gas diluent connected to counterlung feed.
- 3.2 Raise pO₂ value to 1.35 bar and carefully observe that handsets show all sensors moving in alignment and capable of attaining the chosen pO₂ level
- 3.3 Simulation: Solenoid stuck open. Leave loop. Close O₂ valve and flush down to default setting (1.3 bar). Reopen O₂ valve and return to loop.
- 3.4 Simulation: Solenoid stuck closed (manually hold pO₂ at 1.35 bar for 2 minutes)
- 3.5 Start ascent according to plan. Maximum ascent rate of 10 metres/min
- 3.6 Simulation: Loss of in-board diluent. Feed TRIMIX stage supply into loop. Briefly depress manual diluent inflator.
- 3.7 At 20m feed NITROX stage supply into loop. Briefly depress manual diluent inflator.
- 3.8 At 15m deploy deco-buoy within 60 secs.
- 3.9 Perform setpoint switch and deco stops according to run time table or deco-computer on deco-buoy

**Dive 4 - (Min. 60m - max. 70m / Bottom-time max. 15min)**

Recommended gas: In-board gas: 100% oxygen and TRIMIX 14/55
Stage cylinders: TRIMIX 14/55 and 50% Nitrox

Exercises in following order:

- 4.1 Descent with inboard-gas connected to loop
- 4.2 Manual control throughout dive. Controller set to low 0.7 setpoint. Maintain 1.2 pO₂ manually
- 4.3 During initial ascent switch to OC bail-out –**Trimix!** (Take 3 breaths and return to loop)
- 4.4 Ascent with visual reference or deploy deco-buoy or return to ascent line
- 4.5 Perform setpoint switch and deco stops according to run time table or deco-computer on deco-buoy

Dive 5 - (Min. 60m - Max. 80m / Bottom-time max. 10min)

Recommended gas: In-board gas: 100% oxygen and TRIMIX 12/55
Stage cylinders: TRIMIX 12/55 and 50% Nitrox

Exercises in following order:

- 5.1 Free descent with a minimum rate of 15 metres/min
- 5.2 Arrival at planned target depth
- 5.3 Simulation HIGH OXYGEN. Shut down oxygen supply, flush with diluent. Note quantity of gas required
- 5.4 Start ascent according to plan. Maximum ascent rate of 10 metres/min
- 5.5 Deploy buoy at 30 to 20 metres. Attach and deploy a second "emergency signal" buoy along first buoy. (**optional exercise – see note*)
- 5.6 Perform setpoint switch and deco stops according to run time table or deco-computer on deco-buoy

*(*Same colour as the first - use instructors buoy. Do not use actual colour that has been allocated for real emergencies with surface cover! Local conditions must be assessed to establish whether this exercise can be performed)*

Dive 6 – (Min. 50m - max. 65m / bottom-time max. 15min)

Recommended gas: In-board gas: 100% oxygen and TRIMIX 15/55
Stage cylinders: TRIMIX 18/35 and 32% Nitrox

Exercises in following order:

- 6.1 Descent with in-board TRIMIX connected to loop from the surface
- 6.2 Remove and replace Trimix stage.
- 6.3 Simulation: buoyancy inflator valve stuck open! Unclip and reclip all drysuit and wing inflators
- 6.4 Start ascent according to plan. Maximum ascent rate of 10 metres/min
- 6.5 Simulation: Flooded loop – At 40m bail-out to OC TRIMIX - switch to low setpoint and continue ascent.
- 6.6 At 30m: Switch to OC Nitrox 32 stage supply
- 6.7 Deploy deco-buoy within 60 secs.
- 6.8 Perform deco stops according to run time table or deco-computer

IMPORTANT- reflect all gas switches in the decompression calculations!

The training dives are only satisfactorily completed when ALL exercises have been correctly performed.