

# OPERATION WALLACEA - DIVE POLICY, STANDARDS AND PROCEDURES

*(Updated February 2010)*

## **Introduction**

Diving at all Operation Wallacea sites takes place in remote environments with limited access to decompression facilities and emergency medical services. It is critical in minimizing risk that safety is the primary factor in dive planning during any courses, science dives and recreational dives. The minimum standard governing this policy is the PADI standards and general procedures for all sites. For training and in water activities taking place in Cuba BSAC regulations must also be adhered to. Some standards and procedures are more stringent to take account of the remoteness of the dive sites from EMS and hyperbaric facilities.

## **Definition of a Dive**

An open water dive is defined as below 5m/15ft for any length of time. Confined water training is defined as not submerging below 5 m/15ft. A deep dive is defined as being below 18m/60ft for any length of time.

Free diving is a specialized form of diving and is not undertaken on Operation Wallacea sites.

## **Operation Wallacea Dive Standards**

The following standards are applicable to all diving undertaken with Operation Wallacea.

**Maximum Bottom Time:** The maximum surface-to-surface dive time for all open water dives is 50 minutes. Surface to surface time allows 3-minute ascent to the safety stop and 5 minutes for the safety stop. Therefore the maximum dive time of 50 minutes would equate to 42 minutes bottom time. No dive maximum time is to come within 3 pressure groups of the NDL on the RDP table or 5 minutes on the NDL on a computer. The only exception to this is when diving within the definitions of confined dive, when the bottom time is unlimited.

**Maximum Depth.** The maximum depth for all open water dives is 18m/60ft the only exception to this is for the Advanced Open water deep dive when the maximum depth is increased to 30mtrs/100ft. The maximum depth for confined dive is 5 meters; below this depth the dive must be classed as an open water dive.

An additional profile can be used during PADI Openwater training only. This profile has an extended Surface to surface time to 60 minutes. Surface to surface time allows 3-minute ascent to the safety stop and 5 minutes for the safety stop. Therefore the maximum dive time of 60 minutes would equate to 52 minutes bottom time. This allows additional bottom time to complete skills during Openwater training and cannot be used for any other dives. The Maximum depth for this dive is 10m/33ft. This dive must be approved by the dive operations manager as it can only be used at times where it wont have a detrimental effect on other scheduled dives.

**Air Requirements:** All divers entering the water for open water dives must have a minimum of 180 bar or 2700psi . Divers must begin their ascent with a minimum of 70bar or 1050 psi. All divers for both confined and open water dives must be on the surface with no less than 50 bar.

**Safety Stops:** A safety stop at 5 meters for 5 minutes must be performed prior to surfacing from all open water dives. Exceptions to this include missing diver procedures and emergency recalls as stated in the emergency procedures

**Surface Interval.** The minimum surface interval required between open water dives is 3 hours. This allows all divers to re-enter the water at Pressure Group A according to the PADI RDP.

**Repetitive diving:** The maximum number of open water dives is 4per day. The maximum number of consecutive diving days is 6. After this a compulsory 24-hour off gas period must be undertaken.

**Flying after diving:** Operation Wallacea's flying after diving regulations are to be in line with current PADI recommendation which currently state the following:

- *Single Dives* - A minimum pre-flight surface interval of 12 hours is suggested.
- *Repetitive Dives and/or Multiday Dives* - A minimum pre-flight surface interval of 18 hours is suggested.

**Over-Profiling; If** during any point in the dive either one or both of the buddy pair over profiles by more than 1meter or 1 minutes, the buddy pair must abort the dive by ascending at a safe rate of no more than 18meters per minute up to 5 Meters and perform a 5 Minute safety stop before ascending to the surface. No dive is to come within 3 pressure groups of the NDL on the RDP table or 5 minutes on the NDL on a computer.

If a diver over profile by 1 meter or less or 1 minute then they will be given a verbal warning by the dive operations manager. Over profiling to more than 1 meter or longer than 1 minute may require them to miss the next planned dive. Discipline for over profiles is at Dive Operations Manager discretion, however Continued over profiling may result in the diver being made to re-do areas of their dive training such as peak performance buoyancy to ensure that their dive skills are up to standard.

### **Supervision**

At least one member of dive staff must be present on all boats where students or staff are taking part in in- water activities.

**PADI and BSAC Training Courses.** All PADI training courses are to be in-water supervised by an instructor. In cases of 4 or more students the Instructor must be assisted by a divemaster, 3 students or less no divemaster is required. The maximum ratio is 8 students to each instructor + Divemaster. The maximum ratio for student: instructor without in water assistance from a divemaster is 3:1

**All non-training Dives and Snorkels.** All dives, snorkels and in water activities are to be led and supervised by a dive professional. The maximum ratio for in water supervision is 6 Volunteers: 1 dive professional. Dependant on conditions dive professionals may choose out of water supervision

as the most effective form of supervision for snorkelers, for example shore cover. This must first be approved by the Dive Operations Manager.

All certified divers and Snorkellers must in be buddy pairs at all times during in water activities, all buddy pairs must stay in close contact at all times.

Dive Professionals may dive in 3's in accordance with PADI regulations. At no point are divers allowed to dive solo.

Divemaster trainees do not included as students/ divers in the ratio however they must not be used as PADI professionals in the ratios.

### **OPERATION WALLACEA DIVE PROCEDURES**

All diving with Operation Wallacea is to be done within the Operation Wallacea dive standards stated above and must be inline with PADI standards and procedures.

#### **General Dive and Boat Procedures**

It is the responsibility of the Boat Leaders must complete a roster slate before departure. The date, departure time, destination and names of all the divers and snorkelers on the boat, together with their starting air pressure should be recorded on the slate, this slate must be handed into the person on radio duty so that a hard copy can be kept on land and the slate to be kept on the boat.

Once on the boat the dive leader must ensure the required Safety equipment is on board and all divers have required safety equipment, the dive leader must perform an initial radio check before leaving site.

On arrival at the dive site, the Boat Leader should make a visual assessment of the site to be dived. The Boat leader will then brief the divers on the key features of the dive site, any potential hazards, the duration and profile of the dive (max depth; max dive time; Safety Stop; minimum return tank pressure; recall signal and other underwater signals.)

Prior to any divers entering the water a second radio check is completed confirming radio contact with base.

If the dive site chosen is unsuitable for diving that day (eg strong currents, high winds), the Dive Leader will abort the dive at that site and proceed to an alternative site after informing the base via radio contact of the change in plan.

The dive leader will then assign buddy pairs, ensure that each buddy pair has completed their check, and ensure that the details of the air pressure of each diver prior to entry is noted on the slate boat roster.

During the period when the divers are underwater, the boat driver must remain alert and watching the surface for divers.

Divers are to ascend slowly and safely from each diver. The ascent rate for all divers is per the PADI standard rate of a maximum 18mtrs per minute. The ascent to the surface should only begin after completion of the required 5 minute safety stop at 5 meters. If a diver fails to return to the vicinity of the boat by the time of the ascent an SMB is to be deployed during the safety stop to allow the boat to locate the divers prior to surfacing.

The boat driver will help the divers aboard the boat upon surfacing.

Once all divers are on board the dive leader must note the remaining air pressure, Maximum depth and maximum dive time for each diver and record the information on the roster slate. On return to base the roster is handed into the radio room for the information to be written up onto a paper copy.

### **Emergency Procedures**

All staff are to be briefed on emergency procedures. Copies of the Operation Wallacea risk assessments, emergency action plans and evacuation procedures are to be available to staff throughout the season.

**Missing diver procedures:** *(please refer to emergency recall plans – missing diver or snorkeler)* If a diver loses sight of their buddy they must search for no longer than one minute in the immediate area before ascending to the surface at a safe rate (18mtrs per min) if the dive has remained within Opwall standards they may omit the safety stop and return directly to the surface, to reunite with their buddy. If the diver has dived outside of the profile they must complete necessary safety stops according to RDP regulations. If the diver is still unable to locate their buddy they must signal immediately to the boat who will recall all divers/ snorkelers from the water (using recall methods stated below) and begin following the missing diver procedures as stated in recall plan – missing diver or snorkeler.

**Injured diver procedures:** Injured divers are to be brought to the surface at the safe rate of 18mtrs per minute. If they have dived within Operation Wallacea standards then the safety stop may be omitted, if however either victim or rescuer have dived outside of the profile they must complete necessary safety stops according to RDP regulations. On reaching the surface the rescuing diver is to alert the dive boat by using visual or audible safety signal.

**Boat Recall procedures:** If at any point during the dive the boat needs to recall all divers and snorkelers the recall system will be; 3 revs of the engine followed by 30 second gap and a further 3 revs indicates all divers should ascend at 18m/60ft per minute to 5m/15ft inflate their safety sausage and undertake a 3 min safety stop before ascending. Continual revs of the engine for 30 seconds or more or constant metal on metal banging indicates all divers are to ascend at 18m/60ft per minute inflate their safety sausage at 5m. If the dive has remained within Opwall standards they must omit the safety stop and return directly to the surface. If the diver has dived outside of the profile they must complete necessary safety stops according to RDP regulations.

## **Dive Equipment Requirements**

**PADI Dive Training:** All students taking part in PADI dive training must have all equipment, required materials as stated in the PADI standards. All PADI professionals teaching / assisting with PADI training must also have the required materials and equipment as stated in the course standards.

**BSAC Dive Training:** All Students taking part in BSAC dive training must have all equipment and required materials as stated in the BSAC Standards. All BSAC professionals teaching / assisting with BSAC training must also have the required materials and equipment as stated in course standards.

**Certified divers / Science staff:** all certified divers are responsible for diving within Operation Wallacea standards therefore must have the following monitoring devices;

1. Depth Gauge
2. Submersible pressure gauge (SPG)
3. Timing device

(Both computer and compass are recommended)

All divers and snorkellers must wear appropriate protection from the temperature and environment; this is often dependant on site however long wetsuits are generally suitable.

All divers must carry one audible (whistle) and one visual (Surface Marker Buoy) safety-signaling device.

All Snorkellers must have one SMB per buddy pair. Both members of the buddy pair must stay within 3 meters of each other and 3 meters of the SMB.

## **Required Safety equipment**

*Each dive boat must have the following equipment on board. It is the responsibility of the diveleader to check all equipment is on board prior to each dive. It is also the responsibility of the dive operations manager to regularly check all equipment is in good working order.*

1. Oxygen kit suitable for both breathing and non-breathing patient with sufficient oxygen supply to return to site.
2. 1<sup>st</sup> aid kit including hot water thermos and vinegar to deal with marine organism injuries.
3. A floatation device / life ring
4. A radio for contact to base and other dive boats
5. A fully completed dive roster detailing all volunteers, students and staff on the boat

## **Definitions of roles and responsibilities**

### **Dive Operations Manager:**

- It is the responsibility of the dive operations manager to ensure that all dives and in water activities are scheduled and planned ensuring there are sufficient staffs to meet Operation Wallacea and PADI/ BSAC requirements.
- Ensure that student record files are accurately completed and kept for all student divers.
- Ensure that all PADI or BSAC forms for both student divers; certified divers and PADI or BSAC professionals are correctly completed before any in water activities.
- The dive operations manager must ensure that all PADI or BSAC training courses meet PADI/BSAC requirements.
- Ensure that all non – training dives, snorkels and in water activities meet Operation Wallacea’s standards
- A hard copy of all dive rosters must be reviewed and a record kept
- All dive professionals, students, volunteers and visitors must be fully briefed on Operation Wallacea dive standards and procedures prior to any in water activities.
- Ensure that all divers, including professionals undertake a check dive prior to any other dive activity. The exception to this being PADI openwater or BSAC Ocean Diver students.
- Overseeing the care and maintenance of all dive equipment including boats, compressors, dive equipment and safety equipment.
- All other duties and responsibilities as stated in individual contracts

### **Dive Instructors**

- It is the dive instructor’s duty to carry out dive training as required of them by the dive operations manager.
- It is the Dive instructor’s responsibility to ensure all training is done within PADI or BSAC and Operation Wallacea standards.
- Ensure that student record files are accurately completed and kept for all student divers.

- Ensure that all PADI or BSAC forms for are correctly completed before any in water activities and that all students meet the requirements for their course.
- Any other duties and responsibilities as stated in individual contracts

### **Divemaster and Dive Leaders**

*Diveleaders are defined as a PADI divemaster or above, or in the case of Cuba, BSAC diveleader or above, who have been assigned to lead and supervise in water activities, their roles are as follows*

- Ensure that all diving is done within Operation Wallacea Dive standards and PADI Standards and procedures.
- Have knowledge of Operation Wallacea Emergency action plans.
- Plan the dives/ snorkels as directed by the dive operation manager, including assigning buddy pairs.
- Brief all divers and snorkelers prior to any in-water activities.
- Ensure that buddy checks are carried out and each diver carries required safety equipment
- Ensure that all dive procedures are met including completed of dive roster forms, radio checks etc.
- When supervising boat dives and snorkels ensure that all necessary medical and safety equipment is on board.
- It is the Divemasters responsibility to carry out all duties, which are required of them by the dive operations manager and their individual contracts.

### **Certified divers and science staff**

- It is the responsibility of all certified divers to ensure that they follow all Operation Wallacea dive standards and procedures and that all dives are performed with PADI (or in the case of Cuba –BSAC) standards.
- Certified divers must listen carefully to dive briefings and follow instructions of the dive leader.
- Certified divers must be fully aware of all emergency procedures and recall systems.
- All divers must carry out buddy checks prior to each dive.
- It is the responsibility of all divers to ensure that their equipment is in safe working order and that they have all the required safety equipment.

## **Insurance**

All Dive Professionals are to have professional liability insurance as required by PADI (or in the case of Cuba, BSAC) and stated in Operation Wallacea diver contract. For all students, volunteers and science staff the activity of diving is covered by the Operation Wallacea insurance policy if done within Operation Wallacea dive standards.

## **Night dive specific standards and procedures**

Night dives are to be undertaken only by advanced divers or above. The exception to this is when a night dive is completed as part of the Advanced open watercourse.

**Profile:** the maximum depth for a night dive is 14meters. The maximum dive time remains 50 minutes including the 5-minute safety stop at 5 meters. All divers must enter the water at pressure group A or be completely off gassed.

**Supervision:** the supervision levels remain the same as stated in the general standards and procedures.

**Equipment:** Each diver must have at least one main touch, between the buddy pair there must also be a back up touch. A glo tube or cyalume stick should be attached to the tank valve of each

**Dive Boat:** The dive boat must remain moored in a stationary position, the mooring line/ shot line is to be marked with a strobe at the surface to indicate the boats location, a glo tube should be placed at 5 meters to indicate position for Safety stop, a third tube is also placed at 10mtrs. Throughout the dive boat crew should remain on the surface and alert for surfacing divers. Each boat should carry equipment as stated in the general standards but also carry a dive touch and a touch suitable for a surface search.