

THE CODE OF SAFE DIVING PRACTICE

This Code of Safe Diving Practice is produced in accordance with Section 19 of the provisions of the Marine Board (Diving) Regulations 1996 and should be read conjointly with them.

General Background

The Marine Board (Diving) Regulations 1996 were produced to upgrade and standardize the operation of resort diving in Bermuda. The regulations provide for a Code of Safe Diving Practice covering operations offering instruction tours and diving. This Code of Safe Diving Practice is issued by the Minister in accordance with Section 19 of the regulations.

Diving Operation

Diving Instructor/Guide Ratios: The maximum Instructor/Diver ratio for novice divers in one dive group is as follows:

- a) Scuba
 - i. 1 Instructor to 6 or less novice divers
 - ii. 1 Instructor and 1 Guide for 8 novice divers

It is recommended that two persons (an Instructor and Guide) be present whenever novice divers are in the water.

- b) Helmet

The recommended ratio is one instructor for seven helmet novice divers.

Maintenance of Diving Equipment

All equipment for hire or reward shall be maintained by the Diving Operation and every service of each piece of equipment shall be logged in the Diving Operation's Equipment Log Book.

Tank Testing

All tanks used for containing air for breathing underwater shall be hydro tested every 5 years and stamped on the neck and visually inspected every year and a certificate issued. It is the responsibility of the Diving Operator to ensure all tanks are tested and an annual sticker affixed to the tank when inspected or a notation entered in the equipment log book.

Stickers may be obtained commercially but are to be of type approved by the Minister prior to purchase.

Cascade tanks shall be hydro tested every 10 years.

Air Quality

The quality of all air supplied for diving shall meet the following minimum standards:

Oxygen	: 21% - plus or minus 0.5%
Carbon Monoxide	: Less than 10 parts per million
Carbon Dioxide	: Less than 1000 parts per million
Oil.....	: Less than 5 mg per cubic meter
Water	: As dry as possible and not to give rise to condensation at temperatures above 50F
Odor and Taste	: Freedom from both

Enriched Air (EANx):

Minimum Equipment Requirements:

A minimum of required equipment shall consist of a blending/mixing panel containing gauges to measure O₂ in, O₂ compatible air in, and tank pressure out. These shall all be equipped with non-return check and slow fill valves. Also required is an additional hydrocarbon filter, dedicated EANx tanks, clearly labeled and with a current O₂ prepared content stickers, EANx tables on the boat, and at minimum, one oxygen analyzer. Any equipment exposed to more than 40% O₂ must be clean and prepared for O₂ use by a service technician.

Oxygen Compatible Standards:

PpO ₂	1.6 ATA
Water	39 PPM
Oil Mist	less than 0.1 mg/meter cubed
Gaseous Hydrocarbons	15 PPM
Carbon Monoxide	2PPM

O₂pp should not exceed 1.6TA at any depth

Mixing/Blending requirements:

All mixers/blenders are required to be certified by an internationally recognized mixing/blending agency such as IANTD or TDI. In addition, they are also required to be Enriched Air divers with internationally recognized agency.

Record Keeping:

All blenders/mixers are required to maintain an accurate log of all EANx fills. This at minimum, must include, the mixer/blender name, tank serial number, fill pressure, MOD at ATA, the signature of user, the user's analysis of the mix, and the user's certification information. In the case of EANx training the instructor is to sign for the tanks. All fills are required to be analyzed by both the mixer/blender and the user using two separate Oxygen analysers.

Facility Inspection

During the annual inspection the following areas shall be inspected:

- 1) Diving Operations Equipment Log Book
- 2) Maintenance Manuals
- 3) Quality of air supplied
- 4) Practical diving operations
- 5) Display of Licences
- 6) Random checks on equipment and operational practices
- 7) Annual certification validation

Boat Manning at Dive Site

During all diving operations the boat shall be manned by a person capable of operating the boat and certified to perform C.P.R., E.A.R., and trained in oxygen resuscitation procedures.

C.P.R. First Aid Qualifications

All instructors, Guides and Boat Operators shall be qualified in CPR, EAR and First Aid by an Internationally recognized organization, and be trained in oxygen resuscitation. These qualifications shall be current and recertified in accordance with the requirements of the certifying agency.

Standard Resort Diving Procedure Excluding Helmet Diving

All novice divers will undergo training which shall encompass pool or shallow sheltered water training prior to open water diving involving at a minimum:

- 1) Regulator clearing and pick-up
- 2) Pressure gauge pick-up and safety level for surfacing
- 3) Mask clearing and proper fit/position
- 4) Nose/Eustation tube clearing
- 5) Hand signs
 - a) Above water
 - i. Distress
 - ii. OK
 - b) Below water
 - i. Distress
 - ii. OK
 - iii. And other signals considered appropriate by the Instructor
- 6) Dangers of breath holding
- 7) Emergency inflation of buoyancy compensator on the surface

Diving operations which exist at the date of commencement of the Regulations and Code of Practice and which do not have access to a pool or shallow water area, may continue with the current method of training, subject to the approval of the inspecting officer.

SAMPLE

THE MARINE BOARD ACT 1962

The Marine Board (Diving) Regulations 1996
BR-----/1996

Under the provisions of Section 4 of the Marine Board (Diving) Regulations 1996, and the associated Code of Safe Diving Practice,

(Name)

Is licenced as a (Diving Instructor)
(Diving Guide)
(Helmet Diving Instructor)

For the purposes of the said Regulations.

This licenced remains valid for ___ year(s) from date of issue.

Issued at Hamilton, Bermuda
this ___ day of _____, 20__

Director of Marine & Ports Services

Special Conditions for Scuba Diving

Depth limits of 40 meters (130ft) is recommended and a maximum depth limit of 50 meters (165ft) must not be exceeded.

Hang tank(s) with regulators or emergency air supply must be in the water during all scuba dives exceeding 80 feet.

- (2) **Night Diving:** Every qualified diver shall have an illuminated safety light attached to their equipment so that it is readily visible in all directions and divers not having dived at night before shall be accompanied by an experienced Diving Instructor.

Vessels involved in night diving activities **must** have adequate boat marker lights above water and an in-water working strobe or signaling light.

Minimum Equipment for Scuba Operations

The minimum equipment of novice divers shall be:

- a) Mask and fins
- b) Buoyancy compensator with low pressure inflator
- c) Regulator
- d) Pressure or contents gauge

The minimum equipment for Instructors and Guides shall be:

- a) Mask and fins
- b) Buoyancy compensator with low pressure inflator
- c) Regulator with an octopus rig or alternate air source
- d) Timing device
- e) Pressure gauge
- f) Depth gauge

Special Conditions for Helmet Diving

All helmet divers shall be under the observation of a Helmet Diving Instructor and will be controlled by holding onto an instructor control bar.

All helmet divers shall be limited to a maximum depth of 18 feet. All helmet diving systems shall provide a back-up air source to allow the helmet divers to return to the boat within (2) two minutes. The maximum length of air hose shall be limited to 100 feet from the side of the vessel.

Licencing of Diving Instructors or Guides

All Instructors shall hold a Bermuda licence which shall be valid for a period of 1 year commencing on the date of issue of the licence: thereafter may be extended for a further period of 4 years; and on expiry of the period of extension, if any, be renewed for a period of 5 years. The licence may be issued on the basis of equivalency provided a candidate holds a valid certificate issued by an internationally recognized licencing or certification body which the Department accepts as equivalent for the purpose of the issue of a Bermuda licence.

The international bodies which are currently are BSAC, PADI, SSI, CMAS, RSTC or NAUI. However, other bodies may be accepted at the discretion of the Minister.

Before a Bermuda licence is issued, the candidate will be required to present the licence or certification and supporting documentation issued by the accepted international body and may, in addition, be required to answer oral questions set by the Diving Inspector, sufficient to show his general competence of the prescribed standard set by the international certifying body.

If the Diving Inspector is not satisfied with the standards of answer to the oral questions, he may require a more searching exam, including written questions and practical demonstration of diving proficiency.

A Diving Instructor, Diving Guide or Helmet Diving Instructor shall possess CPR, Oxygen training and First Aid qualification issued by an approved body. Such qualification shall be maintained valid in accordance with the requirements of the accepted certifying authority.

A Bermuda Licence shall be issued for Diving Instructor, Diving Guide or Helmet Diving Instructor as the case may be.

Grandfathering of Licences

Holders of existing licences issued under the provisions of the Marine Board (Aqua Lung) Diving Regulations 1963 and in force on the date of coming into operation of the Marine Board (Diving) Regulations 1996, shall, on that date, be deemed to have been issued under these regulations and unless cancelled or suspended under these regulations shall remain in force for a period of 5 years and thereafter may from time to time on payment of the prescribed fee, be renewed for a further period of 5 years, providing the licensee remains active in the industry. In the case of Helmet Diving Instructors, the Scuba certification requirement shall be waived.

Scuba Diving Instructors

An Instructor shall possess an approved International equivalent Diving Instructors certification.

Scuba Diving Guides

A Diving Guide shall possess an approved International equivalent Dive Master or equivalent Scuba certification, demonstrated logged dives under a variety of different diving conditions diving regularly over a period of at least a year.

Helmet Diving Instructors

A Helmet Diving Instructor shall possess an approved International equivalent Dive Master Scuba certification and supply a letter of certification that the applicant has worked as an assistant to a qualified Helmet Diving Instructor for a period of at least a year, and is completely familiar with the Helmet Diving system and equipment.

Regulations

All customers shall be informed by the Diving Operation prior to Scuba or Helmet diving, that the taking of any type of marine life, dead or alive is strictly prohibited by Bermuda law.

Safe Diving Practices

All Instructors, Guides and Boat Pilot's shall individually follow all safe diving, snorkeling, training and boating principles, recognizing that influence by example is the cornerstone to the development and promotion of safe practices.

Display of Dive Flags

The Red/White dive flag(s) **must** be flown when in-water activities are in progress from a boat. At all other times the flag must be rolled or taken down.

Refresher Course/Dives

Refresher courses and/or refresher dives should be recommended if customer experience and/or performance indicate a need.

Certified Divers

All certified divers shall abide by the current open water diver training standards and have a buoyancy compensator with low pressure inflator. Also at a minimum a timing device per buddy team on all dives and a depth gauge on sloping sites or dives deeper than 80 feet.

Dive Sites

Dive sites with or without permanent moorings should be governed by the following rules of etiquette:

- a) All boats shall use moorings whenever possible.
- b) If a mooring is occupied, the second boat should attempt to establish contact from at least 200 yards away to determine the safest way to approach the site. Extreme caution is required when approaching a dive site with divers in the water. Radio is to be the preferred method of contact.
- c) To protect the coral reef, dive boats should anchor in sand holes if no mooring is available. The use of grapnel anchors is discouraged.
- d) When a group is entering the water and there are other groups in the water on that same site, both the briefing and the Instructor's directions in the water should emphasize staying with his group and avoid getting mixed up with the other groups. Coloured equipment for the Instructor and his/her group is recommended to assist in this operation.

Diving Boat

Equipment required for all vessels engaged in handling divers shall be in accordance with the Bermuda Island Boat Regulations 1965, but equipment must include the following:

- (1) VHF 2 way radio
- (1) Compass, mounted and lighted for night operation
running lights, mast, stern, side lights and anchor
Cabin or overhead light for night operation
- (1) Lifejacket for each person on board (divers personal safety vest or buoyancy compensator not acceptable flotation devices)
- (1) Red/White dive flag (0.6m x 0.5m)

- (1) Horn, electric or mechanical
- (1) Spot light/flash light
- (1) Boat hook
- (1) Set of tools appropriate to the boat or engine
- (1) Full 780 litre bottle (size E minimum) of oxygen with an adjustable constant flow regulator complete with contents gauge and pocket masks capable of delivering 100% O₂. Masks should have connections to hook-up to the system and be capable of administering E.A.R. plus supply 100% O₂ through a non-rebreather type mask for patients breathing spontaneously
- (1) Oxygen constant flow system
- (1) Weighted hang line/bar system near to the boarding ladder
- (1) First Aid Kit (see required list of supplies)
- (1) Clipboard
- (1) Set of dive tables excluding helmet divers
- (1) Float line (current line) or hose

The intent is not to duplicate but all of the above shall be carried on dive boats.

First Aid Kit for all Boats should contain:

- Copy of The DAN Emergency Handbook (waterproof)
- Fluids – 2 litres of water or balanced electrolyte drink if venturing more than half an hours travel from the base operation.
- Vinegar – large bottle (over 300ml) for treatment of nematocyst stings
- Basic first aid kit to contain at least: gauze, swabs, scissors and sharp knife
- Q-Tip swabs, crepe bandages, adhesive plaster, band-aids
- Eye wash (remove foreign body from eyes)
- Three elastic bandages 4” x 60” long – (pressure bandages)
- Pressure Pads (to control severe bleeding)
- Space Blanket
- Cold packs (can use 2 zip lock bags of ice if available)
- Adhesive tape (1” wide)
- Cleaning agent (Hydrogen Peroxide or Listerine)
- Tongue depressor
- Pencil, pen, victim’s checklist and log forms
- Backboard or alternative
- Spare pocket mask for CPR capable of attaching to the oxygen system on the boat