Ocean Stewards
Consensual Diving Standards for Offshore Aquaculture (1.0)

Compiled November, 2010

References: Keahole Point Fish Dive Manual
AAUS Diving Standards
OSHA Commercial Diving Standards
Ocean Farms Diving Safe Practices
University of Hawaii Diving Safety Manual
NOAA Diving Program
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Forward

Commercial diving standards and regulations have been designed with true commercial diving operations in mind, operations that often take place at great depths, in dangerous environments, and using heavy specialized equipment. As divers in aquaculture rarely if ever breath advanced mixed gases, conduct underwater welding, or use explosives, many of these regulations in no way pertain to our industry.

As a result, OSHA regulations do not actually consider most diving operations in aquaculture to be commercial diving as defined and governed by CFR 1910 Subpart T. Instead, OSHA recognizes these operations as agricultural activities. Animal production, as an agricultural activity, is regulated under CFR 1928. As offshore aquaculture is a relatively nascent industry, this section of Federal Code has not needed to provide specific guidelines for safe diving practices in aquaculture.

Obviously, diving has the potential to be a hazardous activity, and a standardized set of safe diving practices for the aquaculture industry benefits companies and employees by reducing the risk of dive-related injury and limiting exposure to liability. Furthermore, the OSHA regulations state that the development of federal standards should be based on:

“standards with which industries are generally familiar, and on whose adoption interested and affected persons have already had an opportunity to express their views. Such standards are either (1) national consensus standards on whose adoption affected persons have reached substantial agreement, or (2) Federal standards already established by Federal statutes or regulations.” ---29 CFR 1910.1(a)

That being the case, the development of a pre-established set of consensual diving standards for the aquaculture industry is in the interest of all parties. OSHA may in the future see fit to establish more explicit rules for diving in aquaculture. Employing a set of consensual set of standards that all industry members are comfortable adhering to will not only help ensure diver safety, but also that any future regulation only serves to further protect aquaculture companies and their employees.

If we aim to grow our industry (to which diving is often essential) in a responsible manner acceptable to government and society at large, we must start by supporting worker and environmental safety ourselves.
Chapter 1: General Policies

Purpose
The purpose of these Consensual Standards for Diving in Offshore Aquaculture (hereafter “Standards”) is to ensure that all diving operations in aquaculture are conducted in a safe and responsible manner, with the lowest possible risk of accidental dive-related injury or illness, environmental damage, and material loss. They will guide diving operations to be conducted in a manner allowing the highest levels of employee safety and well-being.

These Standards are to provide a minimum framework of safe practices which can be used as the basis for development of Dive Safety Manuals by Ocean Stewards member organizations according to their unique circumstances and requirements. Extensions or addendums to these standards may be adopted by member organizations according to local procedure. Nothing in these standards shall be construed to take the place of any rule, regulation, or law of any governmental agency.

The Standards are compiled from several pre-existing resources including the Dive Manuals of several offshore aquaculture operations, NOAA, The University of Hawaii, the AAUS scientific diving standards, and OSHA Commercial Diving regulations. The Standards, and any amendments, additions, or revisions thereto must be approved by the Ocean Stewards Diving Safety Committee.

Administration

Responsibilities of the Diving Safety Committee
This guiding document will be approved, amended and revised by the Ocean Stewards Diving Safety Committee (OSDSC), which will consist of the diving supervisors or executives from interested member organizations. The Standards are not a stand-alone document and therefore each member organization will have to extend and supplement the minimum standards to suit their unique operational requirements. All liability and responsibility for dive safety falls with the individual member organizations conducting the diving.

The Diving Safety Committee will also act as a bank of knowledge and expertise for member organizations. As issues in the developing trade of aquaculture diving present themselves, the
Committee or individual members thereof may elect to conduct research or liaise with outside organizations (such as DAN, NOAA, or Universities) to find the best answers for the industry.

**Diving for Aquaculture Defined**

OSHA considers any activities directly contributing to animal or crop production as agricultural in nature. This includes the vast majority of diving conducted by aquaculture companies, and thereby excludes them from regulation under CFR 1910 Subpart T. OSHA’s policy is:

“Operations that are clearly part of the controlled growing and harvesting of fish, shellfish, and plants in fresh, brackish, and marine waters are covered by the OSHA standards for agriculture, 29 CFR 1928. Any operations that are not uniquely agricultural and not part of the controlled growing and harvesting of fish, shellfish, and plants—e.g., the processing of harvested fish—would be covered by OSHA’s general industry standards. Thus, diving operations directly related to activities involving the controlled growing and harvesting of fish, shellfish, and plants are considered agricultural operations.”

— Standards Interpretation Letter, September 1982

These Standards are therefore intended to cover only diving operations consistent with the above definition.

**Responsibilities of Individual Member Organizations**

**Operational Control and Safety Manuals**

The diving control structure for individual operations is at the sole discretion of the operator, but it is strongly recommended that each Ocean Stewards Member Organization conducting dive operations develop a Dive Safety Manual that defines the safe practices to be followed for the work being done. This manual should at minimum include:

1. The minimal operational standards outlined herein, and specialized local approaches to;
2. Procedures for emergency management, evacuation, and medical treatment
3. Criteria for diver qualification and training
4. Standards written or adopted by reference for
   a. Each mode of diving to be utilized
   b. Responsibilities of Dive Team Members
   c. Equipment Use and Maintenance procedures
   d. Emergency management

As most aquaculture operations have heretofore been following to all reasonable extent the OSHA Commercial Diving Standards, the development and maintenance of such a manual should present little hardship to Member Organizations.

**Recordkeeping**

Sound recordkeeping should be considered essential to providing the utmost protection to divers and their employers. A personal file should be kept for each diver. The file should include evidence of certification level, log sheets, results of current physical examination, reports of disciplinary actions by the member organization, and other pertinent information deemed necessary.

Availability of Records:
a) Medical records shall be available to the attending physician of a diver or former diver when released in writing by the diver.
b) Records and documents required by this standard shall be retained by the member organization for the following period:
   1. Physician’s written reports of medical examinations for dive team members - 5 years.
   2. Diving safety manual - current document only.
   3. Records of dive (logs) - 1 year, except 5 years where there has been an incident of pressure-related injury.
   4. Any pressure-related injury assessment - 5 years.
   5. Equipment inspection and testing records - current entry or tag, or until equipment is withdrawn from service.

Chapter 2: Personnel Requirements

Training
Ocean Stewards Member Organizations conduct diving operations with varying levels of complexity, so training requirements may differ slightly between members. At a minimum, it should be each organization’s policy to certify that every person who would participate as a member of a dive team is able to provide documented proof of adequate diver training from a nationally recognized training agency (PADI, NAUI, Commercial Dive School, NOAA, Military or equivalent) prior to any participation as a member of the dive team. In addition:
   1. Each dive team member should have the experience or training necessary to perform assigned tasks in a safe and healthful manner.
   2. Each dive team member should have experience or be provided training in the following:
      a. The use of tools, equipment and systems relevant to assigned tasks;
      b. Techniques of the assigned diving mode
      c. Diving operations and emergency procedures.
   3. All dive team members should be trained in rescue, CPR, diving first aid, and emergency management techniques to the standards of the American Red Cross, Divers Alert Network or equivalent.

Medical Standards
All divers should pass a Diving Medical Examination prior to receiving authorization to dive, and the expiration date of the examination should appear on the diver’s status documentation. The exam must be conducted by a licensed physician of the diver’s choice, preferably with experience in diving/undersea medicine, and the results must pronounce the subject fit to dive. The diver should be free of any chronic or disabling disease which may restrict or limit exposure to hyperbaric conditions; these conditions should be presented along with the results of the diver’s physical exam and should be considered prior to employment/authorization to dive.

After any major illness or injury, or any condition requiring hospitalization for more than 24 hours, authorized divers should submit to a medical interview or examination appropriate to the nature and
extent of the injury or illness, as determined by the examining physician, before receiving clearance to resume diving activities.

**Information Provided Examining Physician**
The Member Organization should provide a copy of the medical evaluation requirements of this standard to the examining physician.

**Content of Medical Evaluations**
Medical examinations conducted initially and at the intervals specified below should consist of the following:

a) Diver agreement for release of medical information to the Member Organization  
b) Medical history  
c) Diving physical examination (Required tests listed below)

**Conditions Which May Disqualify Candidates from Diving (from AAUS, Adapted from Bove, 1998)**

- Abnormalities of the tympanic membrane, such as perforation, presence of a monomeric membrane, or inability to auto inflate the middle ears.  
- Vertigo including Meniere’s Disease.  
- Stapedectomy or middle ear reconstructive surgery.  
- Recent ocular surgery.  
- Psychiatric disorders including claustrophobia, suicidal ideation, psychosis, anxiety states, untreated depression.  
- Substance abuse, including alcohol.  
- Episodic loss of consciousness.  
- History of seizure.  
- History of stroke or a fixed neurological deficit.  
- Recurring neurologic disorders, including transient ischemic attacks.  
- History of intracranial aneurysm, other vascular malformation or intracranial hemorrhage.  
- History of neurological decompression illness with residual deficit.  
- Head injury with sequelae.  
- Hematologic disorders including coagulopathies.  
- Evidence of coronary artery disease or high risk for coronary artery disease.  
- Atrial septal defects.  
- Significant valvular heart disease - isolated mitral valve prolapse is not disqualifying.  
- Significant cardiac rhythm or conduction abnormalities.  
- Implanted cardiac pacemakers and cardiac defibrillators (ICD).  
- Inadequate exercise tolerance.  
- Severe hypertension.  
- History of spontaneous or traumatic pneumothorax.  
- Asthma.  
- Chronic pulmonary disease, including radiographic evidence of pulmonary blebs, bullae or cysts.  
- Diabetes mellitus.  
- Pregnancy.
Laboratory Requirements for Diving Medical Evaluation and Intervals.

1. Initial examination under age 40:
   a. Medical History
   b. Complete Physical Exam, emphasis on neurological and otological components
   c. Chest X-ray
   d. Spirometry
   e. Hematocrit or Hemoglobin
   f. Urinalysis
   g. Any further tests deemed necessary by the physician.

2. Periodic re-examination under age 40 (every 5 years):
   a. Medical History
   b. Complete Physical Exam, emphasis on neurological and otological components
   c. Hematocrit or Hemoglobin
   d. Urinalysis
   e. Any further tests deemed necessary by the physician

Chapter 3: Equipment

General
SCUBA gear is life-support equipment, and all possible measures should be taken to ensure that gear used by aquaculture divers is maintained in good condition and is suited to the work at hand. If possible, equipment used by divers should be standardized to facilitate coordination of the dive team and flexibility at sea. Equipment that is subjected to extreme usage under adverse conditions should require more frequent testing and maintenance. All equipment should be regularly examined by the person(s) using it.

Regulators
a) Only those makes and models specifically approved by the Member Organization and its diving supervisor should be used.
b) Scuba regulators should be inspected and tested prior to first use and every 12 months thereafter.
c) Regulators should consist of a primary second stage and an alternate air source (such as an octopus second stage or redundant air supply).

Scuba Cylinders
a) Scuba cylinders shall be designed, constructed, and maintained in accordance with the applicable provisions of the Unfired Pressure Vessel Safety Orders.
b) Scuba cylinders must be hydrostatically tested in accordance with DOT standards.
c) Scuba cylinders must have an internal and external inspection at intervals not to exceed 12 months
d) Scuba cylinder valves shall be functionally tested at intervals not to exceed 12 months.
e) Be stored in a ventilated area and protected from excessive heat;
f) Be secured from falling
g) Have shut-off valves protected by a cap, except when in use or manifolded, or when used for SCUBA diving.

**Backpacks**

Backpacks without integrated flotation devices and weight systems should have a quick release device designed to permit jettisoning with a single motion from either hand.

**Breathing gas supply hoses:**

Breathing gas supply hoses shall:

a) Have a working pressure at least equal to the working pressure of the total breathing gas system;

b) Have a rated bursting pressure at least equal to 4 times the working pressure;

c) Be tested at least annually to 1.5 times their working pressure; and

d) Have their open ends taped, capped or plugged when not in use.

Breathing gas supply hose connectors shall:

a) Be made of corrosion-resistant materials;

b) Have a working pressure at least equal to the working pressure of the hose to which they are attached; and

c) Be resistant to accidental disengagement.

**Gauges and timekeeping devices**

All divers must have an underwater timing device, an approved depth indicator, and a submersible pressure gauge.

a) Each depth gauge shall be deadweight tested or calibrated against a master reference gauge every 6 months, and when there is a discrepancy greater than two percent (2 percent) of full scale between any two equivalent gauges.

b) A cylinder pressure gauge capable of being monitored by the diver during the dive shall be worn by each SCUBA diver.

c) A timekeeping device shall be available at each dive location.

**Oxygen safety**

a) Equipment used with oxygen or mixtures containing over forty percent (40%) by volume oxygen should be designed for oxygen service.

b) Components (except umbilicals) exposed to oxygen or mixtures containing over forty percent (40%) by volume oxygen should be cleaned of flammable materials before use.

c) Oxygen systems over 125 psig and compressed air systems over 500 psig should have slow-opening shut-off valves.

**Weights and harnesses**

Except when heavy gear is worn, divers should be equipped with a weight belt or assembly capable of quick release.
Buoyancy and Flotation Devices

a) Each diver shall have the capability of achieving and maintaining positive buoyancy.
b) Personal flotation systems, buoyancy compensators, dry suits, or other variable volume buoyancy compensation devices shall be equipped with an exhaust valve.
c) These devices shall be functionally inspected and tested at intervals not to exceed 12 months.
d) Buoyancy compensators should have an inflation source separate from the breathing gas supply.
e) An inflatable flotation device capable of maintaining the diver at the surface in a face-up position, having a manually activated inflation source independent of the breathing supply, an oral inflation device, and an exhaust valve should be used for SCUBA diving.

Determination of Decompression Status: Dive Tables, Dive Computers

a) A set of diving tables, approved by the Member Organization (NAUI, US Navy, NOAA, but not PADI), must be available at the dive location.
b) Dive computers may be utilized in place of diving tables, providing the diver is properly trained in their use, and must be approved by the organizational member.

Auxiliary Equipment

Hand held underwater power tools, electrical tools and equipment used underwater should be specifically approved for this purpose. Electrical tools and equipment supplied with power from the surface should be de-energized before being placed into or retrieved from the water. Hand held power tools should not be supplied with power from the dive location until requested by the diver.

Support Equipment

First aid supplies

A first aid kit, trauma kit and emergency oxygen should be available at every dive location. The first aid equipment supplied by Member Organizations to their dive teams should be sufficient to reasonably cope with every possible contingency posed by the local conditions.

Diver’s Flag

A diver’s flag shall be displayed prominently whenever diving is conducted under circumstances where required by law or where water traffic is probable. This flag, a red “diver down” flag or international “Blue Alpha” code flag, should be illuminated during night diving operations.

Compressor Systems – Member Organization Discretion

The following should be considered in design and location of compressor systems:

a) Low-pressure compressors used to supply air to the diver if equipped with a volume tank should have a check valve on the inlet side, a relief valve, and a drain valve.
b) Compressed air systems over 500 psig should have slow-opening shut-off valves.
c) All air compressor intakes should be located away from areas containing exhaust or other contaminants.

Equipment Maintenance

Record Keeping

Each equipment modification, repair, test, calibration, or maintenance service should be logged,
including the date and nature of work performed, serial number of the item, and the name of the person performing the work for the following equipment:

a) Regulators
b) Submersible pressure gauges
c) Depth gauges
d) Scuba cylinders
e) Cylinder valves
f) Diving helmets
g) Submersible breathing masks
h) Compressors
i) Gas control panels
j) Air storage cylinders
k) Air filtration systems
l) Analytical instruments
m) Buoyancy control devices
n) Dry suits

Compressor Operation and Air Test Records

a) Gas analyses and air tests shall be performed on each organizational member-controlled breathing air compressor at regular intervals of no more than 100 hours of operation or 6 months, whichever occurs first. The results of these tests should be entered in a formal log and be maintained.

b) A log should be maintained showing operation, repair, overhaul, filter maintenance, and temperature adjustment for each compressor.

c) Outside parties supplying breathing gas to Member Organizations should be responsible for these requirements

Air Quality Standards

Breathing air for scuba shall meet the specifications as set forth by the Compressed Gas Association (CGA Pamphlet G-7.1).
Chapter 4: General Diving Procedures

General
No person should engage in diving operations without current authorization to dive from the Member Organization, pursuant to the requirements of these standards and the Member Organization’s Dive Safety Manual. A copy of the Dive Safety Manual should be made available to staff at all diving locations. No person should dive except in the direct committed presence of a buddy diver, qualified attendant, or stand-by diver, trained in and capable of performing basic emergency response procedures for a diving emergency, capable of using the provided equipment, and capable of entering the water, if needed. All divers must be fit to dive before entering the water; a diver may eliminate himself from diving operations for the day if he is unfit, or may be eliminated by a supervisor who considers him unfit. Successive inability to dive may require further medical intervention or action on the part of the Member Organization.

Emergency Aid, Evacuation and Contact Information:
A Dive Accident Management Plan (as part of the Dive Safety Manual) must be present on any vessel involved in diving operations. This Dive Accident Management Plan shall be reviewed with and available to the vessel master, person-in-charge, and members of the dive team before dive operations commence. This packet shall contain the following information:

a) Operation-specific emergency procedures: Site location and vessel specific information.
b) Emergency response and evacuation contacts for diving accidents: Chamber locations and phone numbers, site-specific emergency response network contacts for diving and non-diving accidents, evacuation transport options, Coast Guard rescue and assistance, and other applicable emergency contacts.

c) Dive and non-dive related hospitals and clinics.

d) Physicians available for consultation (24 hours).

e) Dive Team emergency contacts.

First Aid Supplies:
First aid supplies that should required for all diving operations are trauma kits, complete first aid kits, and an emergency oxygen supply. It should be the responsibility of the lead diver on each vessel or dive location to ensure these critical pieces of safety equipment are accounted for. It should be the responsibility of the management and or dive supervisor to make sure the kits are fully stocked and ready for use.

Pre-dive Procedures

Dive Planning
Dives should be planned around the competency of the least experienced diver. Before conducting any diving operations under the auspices of the Member Organization, the lead diver for a proposed operation must formulate a dive plan that should include the following:

1. Divers qualifications, and the type of certificate or certification held by each diver.
2. Emergency plan with the following information:
   a) Name, telephone number, and relationship of person to be contacted for each diver in the event of an emergency.
   b) Nearest operational decompression chamber.
   c) Nearest accessible hospital.
4. Approximate number of proposed dives.
5. Location(s) of proposed dives.
6. Estimated depth(s) and bottom time(s) anticipated.
7. Decompression status and repetitive dive plans, if required.
8. Proposed work, equipment, and boats to be employed.
9. Any hazardous conditions anticipated.

The Dive Plan is to be completed once for personnel conducting repetitive diving jobs that pose the same hazards. Copies of dive plans for routine operational dives such as mort removal and feed observations should be kept in the paperwork folder aboard each dive vessel as well as filed in the offices of the Organizational Member.

Dive Briefing
Dive team members should be briefed on the tasks to be undertaken, safety procedures for the diving mode, any unusual hazards or environmental conditions likely to affect safety, and any modifications to standard operating procedures. During the briefing, the designated Person-in-Charge should inquire of each dive team member the current state of physical fitness and indicate the procedure for reporting physical problems resulting from the dive.
Pre-dive Safety Checks

a) Diver’s Responsibility:
   1. Divers shall conduct a functional check of their diving equipment in the presence of the diving buddy or tender.
   2. It is the diver’s responsibility and duty to refuse to dive if, in their judgment, conditions are unfavorable, or if they would be violating the precepts of their training, of this standard, or the organizational member’s diving safety manual.
   3. No dive team member shall be required to be exposed to hyperbaric conditions against their will, except when necessary to prevent or treat a pressure-related injury.
   4. No dive team member shall be permitted to dive for the duration of any known condition, which is likely to adversely affect the safety and health of the diver or other dive members.

b) Equipment Evaluations
   1. Divers should ensure that their equipment is in proper working order and that the equipment is suitable for the type of diving operation.
   2. Each diver should have the capability of achieving and maintaining positive buoyancy.

c) Site Evaluation
   1. Environmental conditions at the site should be evaluated prior to entry. If conditions are deemed to be unsafe, the diving operation should be postponed.

Procedures During Dive

Water Entry and Exit:
A means capable of supporting the diver shall be provided for entering and exiting the water. The devices shall extend below the water surface. A device or plan will also be in place for removing an injured diver from the water.

Communications and Dive Monitoring
Good communications are essential for safety and proper completion of work assigned. It is up to each Member Organization to develop a system that ensures clear communication between divers underwater and with the surface. This may include hand signals, writing slates, marker floats, or other visual signals; or underwater radio communications equipment. The diving attendant and/or stand-by diver should remain with the dive boat and the diver at all times during a dive, keeping full attention on the diver and being alert to possible diver problems. No “side jobs” should be assigned to the attendant or stand-by diver while serving in that capacity.

Diving in and around Net Pens
Before entering the water a diver anticipating entry into any net pen should alert the Dive Attendant that he will be entering during the dive. If a dive team makes a decision to enter the net pen during a dive, they should alert the attendant with a marker buoy or other contact.

A diver entering a net pen alone should carry a spare air cylinder into the pen, and attach it to the interior of the entry door before proceeding to work. While working inside the pen, the diver should have a portable, ‘5-minute’ spare air cylinder attached to his person at all times. Whenever possible the
net pen should be partially surfaced while divers are working inside. When diving during conditions of reduced visibility (defined as visibility insufficient to see the outside silhouette of the net pen from the center of the net pen), the diver should utilize a tether or ‘rope highway’ to maintain orientation to the exit hatch. When two or more divers are inside a net pen at the same time, any diver leaving or entering the net pen must positively notify the other diver(s) of entrance and exit.

**Procedures When Sharks are Present**

Divers at marine farm sites should always be aware that sharks could appear. If a shark is sighted, the list below are procedures to be followed:

a) Divers are to notify each other by hand sign (hand held fin-like on top of head) and divers are to aggregate together and face the shark.
b) Divers should try to keep their backs to the cage, buoy, boat or other obstacle.
c) Divers are not to make any sudden movements, swim away hurriedly, splash, take photographs or flash lights at the shark
d) Divers should surface to discuss if the dive should continue as soon as it is safe to do so
e) No dive is to continue if any diver feels uncomfortable or would prefer to abort
f) No employee should ever be compelled to enter the water when sharks are around the cages; any dive undertaken when sharks have been sighted should be at the diver’s sole and absolute discretion
g) All sharks sighted are to be noted in the dive log. Record number of sharks, identifying features (species, length, distinguishing marks), behavior towards divers, and period of residence around the cages.
h) Management must be notified of these encounters.

There may be occasions when the offshore crew may have to use extra precautions with sharks. These occasions include, but are not limited to:

a) Shark at site is aggressive towards divers and other objects
b) Shark has become residential/territorial at the site. At this point, this is defined by viewing the same shark at the site for 2 or more days in succession.

All procedures mentioned above still apply. In addition, extra precautions are listed below:

a) Divers/Snorkelers should add an additional diver to the team size
b) Divers/Snorkelers should remain within view on surface or underwater
c) One of the dive team should carry a shark “poker” if the divers remain in close proximity (<20 ft)
d) If divers are not in close proximity, every diver should have a “poker”

The diver supervisor on site is responsible for all dive operations so he/she can suspend any dive operations if they believe it is necessary. If any shark starts to exhibit behavior that is considered a danger to divers, then the dive supervisor should suspend all in-water work, secure the site and notify the management of the Member Organization. Prior to any further action, management should consult with the relevant local authorities to determine the next course of action.

**Termination of Dive**

a) It is the responsibility of the diver to terminate the dive, without fear of penalty, whenever they feel it is unsafe to continue the dive, unless it compromises the safety of another diver already in the water.
b) The dive shall be terminated while there is still sufficient cylinder pressure to permit the
Post-dive Procedures

Post-Dive Safety Checks
a) After the completion of a dive, each diver shall report any physical problems, symptoms of decompression sickness, or equipment malfunctions.
b) When diving outside the no-decompression limits, the divers should remain awake for at least 1 hour after diving, and in the company of a dive team member who is prepared to transport them to a decompression chamber if necessary.

Dive Logs
Each diver should log every dive made under the auspices of the Member Organization program, and is encouraged to log all other dives. Standard forms will be provided by each Member Organization. Log sheets should be submitted to the dive supervisor, to be placed in the diver’s permanent file. Details of the submission procedures are left to the discretion of Member Organizations. Dive logs shall be in a form specified by the organization and shall include at least the following:
   a. Name of diver, buddy, and Lead Diver.
   b. Date, time, and location.
   c. Diving modes used.
   d. General nature of diving activities.
   e. Approximate surface and underwater conditions.
   f. Maximum depths, bottom time, and surface interval time.
   g. Diving tables or computers used.
   h. Detailed report of any near or actual incidents.

The “recording of the dive” should be retained for 1 year, or 5 years where there has been decompression sickness

Flying after Diving
• Following a Single No-Decompression Dive: Divers should have a minimum preflight surface interval of 12 hours.
• Following Multiple Dives per Day or Multiple Days of Diving: Divers should have a minimum preflight surface interval of 18 hours.
• Following Dives Requiring Decompression Stops: Divers should have a minimum preflight surface interval of 24 hours.

Emergency Procedures
Any diver may deviate from the requirements of this standard to the extent necessary to prevent or minimize a situation that is likely to cause death, serious physical harm, or major environmental damage. A written report of such actions should be submitted to the Member Organization. Each Member Organization will develop emergency procedures which include procedures for emergency care, recompression and evacuation for each dive location

Required Incident Reporting
All diving incidents requiring recompression treatment, or resulting in moderate or serious
injury, or death shall be immediately reported by staff to the Member Organization management. The Member Organization shall notify the Officer-in-Charge, United States Coast Guard, Marine Inspection, as soon as possible after a diving casualty occurs if the casualty involves any of the following:
- Loss of life;
- Diving-related injury to any person, causing incapacitation for more than 72 hours;
- diving-related injury to any person requiring hospitalization for more than 24 hours.

In the case of a death on any farm operation (diver-related or not), or the in-patient hospitalization of three or more persons due to one single incident at a farm operation (diver-related or not), the Member Organization must notify OSHA within eight (8) hours of occurrence.

The Member Organization's regular procedures for incident reporting, including those required by law, should be followed. The report should specify the circumstances of the incident and the extent of any injuries or illnesses.

Additional information must meet the following reporting requirements:
- a) Member Organizations should record and report occupational injuries and illnesses in accordance with requirements of the appropriate Labor Code section.
- b) If pressure-related injuries are suspected, or if symptoms are evident, the following additional information shall be recorded and retained by the Member Organization, with the record of the dive, for a period of 5 years:
  - Written descriptive report to include:
    - Name, address, phone numbers of the principal parties involved.
    - Summary of experience of divers involved.
    - Location, description of dive site, and description of conditions that led up to incident.
    - Description of symptoms, including depth and time of onset.
    - Description and results of treatment.
    - Disposition of case.
    - Recommendations to avoid repetition of incident.

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Also to the American Academy of Underwater Sciences and the University of Hawaii Diving Safety Program for making so much information available online. These are outstanding resources, and though geared towards scientific diving, should be required reading for all diving supervisors.

More information on Dive Safety and safe working practices can be found online at:

www.aaus.org

www.osha.gov

www.hawaii.edu/ehso/diving

www.ndc.noaa.gov