SCIENTIFIC DIVING PROCEDURES MANUAL

Standards and Rules for the University of Guam Marine Laboratory Scientific Diving Program

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Version VI – 2025

Forward

The mission of the Diving Control Board (DCB) at the University of Guam Marine Laboratory (UOGML) is to ensure that all scientific diving is conducted in a manner that will foster safe, effective diving and minimize accidental injuries and/or illnesses. This manual was prepared to conform to the safety standards of the American Academy of Underwater Sciences (AAUS) and it is based upon the AAUS Standards for Scientific Diving (available at www.aaus.org). Diving techniques or diving equipment not listed in this manual are prohibited at the UOGML except with the expressed approval of the DCB and only after the necessary safety guidelines are adopted by the DCB and incorporated into the UOGML diving standards manual.

Amendments to this *Manual* may be made at any regular meeting of the DCB by a simple majority vote of the members present and voting, provided that the amendments have been made available to the DCB members in writing at least one week before the meeting. Unless otherwise noted in the amendment, an amendment shall become effective after the Chair announces the vote. The change will be incorporated into this Manual no later than three business days after the vote, and shall be provided to the DCB members. This amended document will state in writing which version of manual is being superseded. Approval authority will be the Senior Vice President.

In addition, this manual will be reviewed by the DCB at least every 3 years. Additional reviews can be requested by any Marine Lab faculty or DCB member. The DCB will generate summary memos of all dive manual reviews for our records.

REVISION HISTORY

First Version: December 1995

Updated, V.2: November 2016

- Revised Sec. 2.2.2 Pre-dive safety checks, i.e., from minimum 300 lbs to 500 lbs of cylinder pressure
- Revised Sec. 2.6.B.2 from Ship Repair Facility Recompression Chamber to US Navy Dive Locker
- Revised Sec. 2.8.1 from standard forms to online dive log site
- Added Sec. 2.3.1 Alcohol and other drugs policy
- Added Sec. 4.3.3 Use of diver's drift sausage
- Added Sec. 2.6.0 Northern medical facility: Guam Regional Medical Facility

Updated, V. 3: June 2017

Revised Sec. 1.1.2.1 regarding the constituency of the DCB, from "a majority of scientific divers" to the current approved membership of the Board.

Updated, V. 4: Complete revision 2018. Photo credits: L. Raymundo, C. Caballes

Updated, V. 5: Major revision 2019 to align with AAUS requirements (e.g. dive training etc.)

Updated, V. 6: Adjusting for AAUS standards changes 2024, reformatting to match AAUS manual for ease of comparison and incorporation of future updates.

SECTION 1 GENERAL POLICY

1.1 Scientific Diving Standards

Purpose

The purpose of these Scientific Diving Standards is to ensure scientific diving is conducted in a manner that will maximize the protection of scientific divers from accidental injury and/or illness, and to set forth standards for training and certification that will allow a working reciprocity between Organizational Members (OMs or OM). Fulfillment of these purposes shall be consistent with the furtherance of research and safety, and facilitation of collaborative opportunities between AAUS OMs.

This *Manual* follows minimum standards set by the American Academy of Underwater Sciences (AAUS) for the establishment of recognized scientific diving programs, the organization for the conduct of these programs, and the basic regulations and procedures for safety in scientific diving operations. It also establishes a framework for reciprocity between UOGML and other AAUS OMs that adhere to these minimum standards.

Historical Perspective

The AAUS Scientific Diving Standards Manual, which serves as the foundation for the UOGML Scientific Diving Procedures Manual, was developed and written by AAUS by compiling the policies set forth in the diving manuals of several university, private, and governmental scientific diving programs. These programs share a common heritage with the scientific diving program at the Scripps Institution of Oceanography (SIO). Adherence to the SIO standards has proven both feasible and effective in protecting the health and safety of scientific divers since 1954.

In 1982, OSHA exempted scientific diving from commercial diving regulations (29CFR1910, Subpart T) under certain conditions that are outlined below. The final guidelines for the exemption became effective in 1985 (Federal Register, Vol. 50, No.6, p.1046). AAUS is recognized by OSHA as the scientific diving standard setting organization.

Scientific Diving Definition

Scientific diving is defined (29CFR1910.402) as:

"Diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks. Scientific diving does not include performing any tasks usually associated with commercial diving such as: Placing or removing heavy objects underwater; inspection of pipelines and similar objects; construction; demolition; cutting or welding; or the use of explosives."

Scientific Diving Exemption

The two elements that a diving program must contain as defined by OSHA in 29 CFR 1910 Subpart T 1910.401(a)(2)(iv) are:

1. Diving safety manual which includes at a minimum: Procedures covering all diving operations specific to the program; procedures for emergency care, including recompression and evacuation; and criteria for diver training and certification.
2. Diving control (safety) board, with the majority of its members being active divers, which must at a minimum have the authority to: Approve and monitor diving projects; review and revise the diving safety manual; assure compliance with the manual; certify the depths to which a diver has been trained; take disciplinary action for unsafe practices; and, assure adherence to the buddy system (a diver is accompanied by and is in continuous contact with another diver in the water) for SCUBA diving.

OSHA has granted an exemption for scientific diving from commercial diving regulations under the following guidelines (Appendix B to 29 CFR 1910 Subpart T):

1. The Diving Control Board consists of a majority of active scientific divers and has autonomous and absolute authority over the scientific diving program's operation.
2. The purpose of the project using scientific diving is the advancement of science; therefore, information and data resulting from the project are non-proprietary.
3. The tasks of a scientific diver are those of an observer and data gatherer. Construction and trouble-shooting tasks traditionally associated with commercial diving are not included within scientific diving.
4. Scientific divers, based on the nature of their activities, must use scientific expertise in studying the underwater environment and therefore, are scientists or scientists-in-training.

Liability

In adopting the policies set forth in this manual, the UOGML assumes no liability not otherwise imposed by law. Each diver is assumed under this policy to be voluntarily performing activities for which he/she assumes all risks, consequences, and potential liability.

Recommendations for Changes to the AAUS Manual

As part of each The UOGML annual report, recommendations for modifications of this *Manual* must be submitted to AAUS for consideration.

1.2 Operational Control

UOG Marine Laboratory Auspices and Responsibilities

The auspices of the UOGML include any scientific diving operation in which the UOGML is connected because of ownership of life support equipment used, locations selected, or relationship with the individual(s) concerned. This includes all cases involving the operations of authorized individuals of UOGML or auxiliary organizations, where such individuals are acting

within the scope of their authorization.

It is UOGML's responsibility to adhere to the AAUS Standards for Scientific Diving Certification and Operation of Scientific Diving Programs. The administration of the local diving program will reside with UOGML's Diving Control Board (DCB).

The regulations herein must be observed at all locations where scientific diving is conducted under the auspices of the UOGML. In the case of off-island diving (i.e., not in Guam, though work-related), please refer to Section 2.2 – Scientific Diving and Traveling.

UOG Marine Laboratory Scientific Diving Standards and Safety Manual

This scientific diving manual has been designed to enable UOGML to meet the requirements of local environments and conditions as well as to comply with the AAUS scientific diving standards. Approving authority within the University is the Senior Vice President for Academic and Student Affairs, via the Administrative Council.

Diving Control Board

The Diving Control Board (DCB) must consist of a majority of active scientific divers, and shall include the DSO, the Chair, the UOGML Director, a scientific diver faculty or staff representative, a scientific diver research associate or post doctoral researcher, the UOGML Lab Safety Manager, and a student representative. These members are considered voting members and are elected by a procedure outlined in the DCB By-Laws. The DCB is guided by By-Laws approved by the University of Guam's Board of Regents (Appendix 12).

A member of the DCB may be removed by a majority vote of the DCB. Removal of a member from the DCB shall be for just cause. Examples of just cause include, but are not limited to, a sanction imposed due to the commission of a major safety violation (Section 3.3), three unexplained absences from scheduled DCB meetings, and/or a major conflict of interest. No member of the DCB shall be removed without written notice of the charges for the removal, an investigation into the matter, and an opportunity to be heard in a public DCB hearing. Any member who removes his/her residence from Guam shall be deemed to have vacated his/her office, thereby creating a vacancy on the DCB.

The DCB has autonomous and absolute authority over the scientific diving program's operation.

The DCB:

1. Has autonomous and absolute authority over the scientific diving program's operation.
2. Shall act as the official representative of the University of Guam in matters concerning the scientific diving program.
3. Shall impose immediate restrictions on diving activities following a safety violation until a full investigation is complete.
4. Shall investigate and inquire into the nature and cause of all diving accidents or violations of the UOGML diving procedure manual and determine appropriate further action. The DCB shall notify the University Administration of all such accidents or violations, in the event that the University Administration determines that further University action is needed.

5. Shall be represented by the DSO or his/her representative in any University investigation into diving-related incidents. The University will follow its established and appropriate internal processes and procedures in determining whether further disciplinary or other action is needed.
6. Shall receive, consider, and resolve (if possible) diver-related problems and issues.
7. Shall recommend the issue, reissue, or revocation of scientific diver status for all divers within the UOGML's diving program.
8. Shall recommend changes in policy and amendments to AAUS and the UOGML's diving safety manual as the need arises.
9. Shall establish and/or approve training programs through which the applicants for certification can satisfy the requirements of this manual.
10. Shall suspend diving practices that are unsafe or unwise.
11. Shall approve and monitor diving projects.
12. Shall review and revise this diving procedures manual.
13. Shall ensure compliance with the manual.
14. Shall certify the depths to which a diver has been trained.
15. Shall ensure adherence to the buddy system for SCUBA diving and snorkeling.
16. Shall establish criteria for equipment selection and use.
17. Shall recommend new equipment or techniques.
18. Shall establish and/or approve facilities for the inspection and maintenance of diving and associated equipment.
19. Shall periodically review the DSO's performance and program.

The DCB may delegate operational oversight for portions of the program to the DSO; however, the DCB may not abdicate responsibility for the safe conduct of the diving program.

Diving Safety Officer

The Diving Safety Officer (DSO) serves as a voting member of the DCB, and should be designated one of the UOGML Representatives to AAUS. This person should have broad technical expertise and experience in research related diving.

Qualifications:

1. Must be an active SCUBA instructor from an internationally recognized certifying agency.
2. Must be appointed by the responsible administrative officer or designee, with the advice and counsel of the DCB.
3. Must qualify as a Full Voting Member of AAUS as defined by AAUS Bylaws.
    a. Holds a diving certification from a recognized national certifying agency or equivalent, and
    b. Has engaged in sustained or successive scientific diving activities during the past two years, or
    c. Has completed a course in scientific diving that meets the requirements as specified by the most current edition of the AAUS Standards for Scientific Diving.
4. Must attend an AAUS DSO Orientation within one year of accepting a position at an AAUS approved OM, unless they have served as a DSO for another current AAUS OM within the last year.

Duties and Responsibilities

1. Answers, through the DCB, to the Director of the UOGML or his/her designee, for the conduct of the scientific diving program.
2. The routine operational authority for this program rests with the DSO. This oversight includes, but is not limited to: training, diver authorizations, approval of dive plans, maintenance of diving records, and ensuring compliance with this Manual.
3. May permit some duties and responsibilities to be carried out by a qualified delegate, with the approval of the DCB. DSO may not delegate responsibility for the safe conduct of the local diving program.
4. Must be guided in the performance of the required duties by the advice of the DCB, but operational responsibility for the conduct of the scientific diving program will be retained by the DSO.
5. Must suspend diving operations determined to be unsafe or unwise.

Instructional Personnel Qualifications

All personnel involved in diving instruction under the auspices of the UOGML must be reviewed and authorized by the DCB and must be certified for the type of instruction they are providing. Certifications must be documented and on file.

Lead Diver

For each dive, one individual shall be designated as the Lead Diver who shall be at the dive location during the diving operation. The Lead Diver shall be responsible for:

1. Ensuring dives are conducted in accordance with Section 2.0.
2. Ensuring all dive team members possess current authorization and are qualified for the type of diving operation.
3. Coordination with other known activities in the vicinity that are likely to interfere with diving operations.
4. Ensuring safety and emergency equipment is in working order and at the dive site.
5. Briefing dive team members on

a. Dive objectives and dive plan
b. Unusual hazards or environmental conditions likely to affect the safety of the diving operation.
c. Modifications to diving or emergency procedures necessitated by the specific diving operation.

6. Suspending diving operations if in their opinion conditions are not safe.
7. Reporting to the DCB, through the DSO, any physical problems or adverse physiological effects including symptoms of pressure-related injuries.

Reciprocity and Visiting Scientific Divers

1. If the UOGML and another AAUS OM wish to jointly engage in diving activities, or in the use of diving resources, they must designate one of the participating DCBs to govern the joint dive project. However, responsibility for individual divers ultimately resides with the home OM.
2. A Scientific Diver from one OM must apply for permission to dive under the auspices of another OM by submitting to the DSO of the host OM a document containing all the

information listed in Appendix 10, signed by the DSO or designee of the home DCB.

3. A visiting Scientific Diver may be asked to demonstrate their knowledge and skills for the planned dive.
4. If a host OM denies a visiting Scientific Diver permission to dive, the host DCB must notify the visiting Scientific Diver and their DCB with an explanation of all reasons for the denial.
5. If a diver requesting to dive at the UOGML does not come from an AAUS member organization, they must provide the following to the DSO for approval, prior to diving with the UOGML:
    a) Current dive medical evaluation
    b) Dive certification
    c) Current First Aid, Oxygen Provider and CPR certifications
    d) Dive gear service records
    e) Dive logs
    f) If these documents are not supplied, or are not up to date, the individual will not be allowed to dive with the UOGML dive program.

Waiver of Requirements

The DCB may grant a waiver for specific requirements of training, examinations, depth certification, and minimum activity to maintain certification under certain conditions. These decisions will be made by the DCB on a case-by-case basis. Medical requirements cannot be waived.

1.3 Consequences of Violations of Regulations by Scientific Divers

Failure to comply with the regulations of this manual may be cause for the restriction or revocation of the diver's scientific diving authorization by action of the DCB.

1.4 Consequences of violations of Regulations by Organizational Members

Failure to comply with the regulations of the AAUS Scientific Diving Standards Manual may be cause for the restriction or revocation of the UOGML's recognition by AAUS.

1.5 Record Maintenance

The DSO maintains permanent records for each scientific diver at the UOGML. The file shall include evidence of certification level, log sheets, results of current physical examination, reports of disciplinary actions by the DCB, and other pertinent information. Medical records are available for the diver's physician when released by the diver in writing. Dive records involving any pressure related injury, pressure related injury assessments, and physician's evaluations are kept on file for five years. Dive records of UOGML scientific divers and qualified affiliates are kept on file as long as the scientific divers maintain their affiliation with the UOGML.

Availability of Records

1. Medical records must be available to an attending physician of a diver or former diver when released in writing by the diver.
2. Records and documents required by this Manual must be retained by the UOGML for

the following period:

a) Diving safety manual – Current document only.
b) Equipment inspection, testing, and maintenance records – Minimum current entry or tag.
c) Records of Dive – minimum of 1 year, except 5 years where there has been an incident of pressure-related injury.
d) Medical approval to dive – Minimum of 1 year past the expiration of the current document except 5 years where there has been an incident of pressure-related injury.
e) Diver training records – Minimum of 1 year beyond the life of the diver's program participation.
f) Diver authorization(s) – Minimum of 1 year beyond the life of the diver's program participation.
g) Pressure-related injury assessment - 5 years.
h) Reports of disciplinary actions by the DCB – Minimum of 1 year beyond the life of the diver's program participation.

SECTION 2 DIVING REGULATIONS

2.1 Introduction

No person shall engage in scientific diving operations under the auspices of the UOGML's scientific diving program unless they are authorized pursuant to the provisions of this manual.

2.2 Pre-Dive Procedures

Dive Plans

Before conducting any diving operations under the auspices of the UOGML, the lead diver for a proposed dive must fill out a dive plan and have it approved by the DSO. All dives will be planned around the competency of the least experienced diver. The dive plan (see Appendix 8) should include the following:

1. Diving Mode(s) and Gas(es)
2. Divers' authorizations
3. Approximate number of proposed dives
4. Location(s) of proposed dives
5. Estimated depth(s) and bottom time(s) anticipated
6. Decompression status and repetitive dive plans, if required
7. Proposed work, equipment, and boats to be employed
8. Any hazardous conditions anticipated
9. Emergency Action Plan (Appendix 5)
10. In water details of the dive plan should include:
    a) Diving Buddy assignments and tasks
    b) Goals and objectives
    c) Maximum depth(s) and bottom time
    d) Gas management plan
    e) Entry, exit, descent and ascent procedures
    f) Perceived environmental and operational hazards and mitigations
    g) Emergency and diver recall procedures

Scientific Diving and Traveling

When UOGML project-related diving will take place off Guam, a general summary dive plan should be submitted to the DSO prior to each trip (see appendix 8). Information should include as much detail as is possible to obtain prior to the trip (UOGML dive personnel, length of trip, approximate locations and estimated number of dives per day, type of boat or shore support, a general description of the work involved). Upon the dive personnel's return to Guam, dives made during the trip should be logged, following standard practice.

Diver Responsibility and Refusal to Dive

1. The decision to dive is that of the diver. The ultimate responsibility for safety rests with the individual diver. It is the diver's responsibility and duty to refuse to dive, without fear of penalty, if in his/her judgment, conditions are unsafe or unfavorable, if they are physically unfit to meet the challenges of the dive either due to illness or injury, or if

they would be violating the precepts of regulations in this *Manual*.
2. No dive team member will be required to be exposed to hyperbaric conditions against his/her will.
3. No dive team member may dive for the duration of any known condition, which is likely to adversely affect the safety and health of the diver or other dive team members.

Pre-Dive Safety Checks

1. Prior to commencing the dive, the team must assure that every team member is healthy, fit, and trained for the type of dive that is being attempted.
2. The lead diver should ensure that safety gear (first aid kit, Oxygen Kit, dive flag) accompanies all dives.
3. Scientific divers must conduct a functional check of their diving equipment in the presence of the dive buddy or tender. They must ensure the equipment is functioning properly and suitable for the type of diving operation being conducted.
4. Each diver must have the capability of achieving and maintaining positive buoyancy at the surface.
5. Environmental conditions at the site will be evaluated prior to entering the water.

Pre-Dive Briefings

Before conducting any diving operations under the auspices of the UOGML, the dive team members must be briefed on:

1. Dive Buddy assignments and tasks
2. Dive objectives.
3. Maximum depth(s) and bottom time
4. Turn around pressure and required surfacing pressure
5. Entry, exit, descent and ascent procedures
6. Perceived environmental and operational hazards and mitigations
7. Emergency and diver recall procedures

Policy on Alcohol and Drug Use

No consumption of alcohol or illegal drugs is permitted before or during scientific diving, under any circumstances. Doing so will be grounds for suspension or revocation of scientific diving certification. UOG policies prohibit the possession, sale or furnishing of alcohol on campus, with limited exception and as approved by the President. Further, UOG is a Tobacco-Free Campus, which prohibits the smoking of tobacco or tobacco-related products.

Intoxicants and diving

Diving shall not be undertaken while the diver is under the influence of any intoxicants or substances which can impair judgement. Diving cannot be undertaken within eight hours of consuming any intoxicants or if the diver is under the influence of any drugs that may impair his or her mental or physical capacities. AAUS considers substance abuse, including alcohol, to be grounds for disqualification of divers from diving (AAUS Standards. 2013). This rule is upheld by the UOGML DCB.

2.3 Diving Procedures

Solo Diving Prohibition

All diving activities must assure adherence to the buddy system. This buddy system is based upon mutual assistance, especially in the case of an emergency. Diving in a group of three may be approved by the DSO, after review of the dive plan.

Decompression Management

On any dive, both divers in the buddy pair must follow the most conservative dive profile

On any dive that exceeds 30 feet (9.14m), the diver shall perform a safety stop at 15ft for 3 minutes during the ascent phase of the dive.

Termination of the Dive

The diver shall terminate the dive while there is sufficient cylinder pressure to permit the diver to safely reach the surface, including any required safety stops. The diver shall exit the water with a minimum of 500 psi of cylinder pressure.

It is the responsibility of the diver to terminate any dive that they consider unsafe, without fear of reprisal, in a way that does not compromise the safety of another diver already in the water.

Emergencies and Deviations from Regulations

Any diver may deviate from the requirements of this *Manual* to the extent necessary to prevent or minimize a situation likely to cause death, serious physical harm, or major environmental damage. A written report must be submitted to the DCB explaining the circumstances and justifications.

2.4 Post-Dive Procedures

Post-Dive Safety Checks

After the completion of a dive, each diver must report any physical problems, symptoms of decompression sickness, or equipment malfunctions to the Lead Diver, DSO, and/or DCB.

If a dive violates no-decompression limits, the divers should remain awake for at least 1 hr after diving, and in the company of a dive team member who is prepared to transport him/her to a hyperbaric chamber if necessary. A written report must be submitted to the DCB explaining the circumstances.

2.5 Emergency Procedures

In all cases involving a known or suspected diving accident, the following procedures shall be followed:

Conscious person

1. If, after SCUBA diving, a person is suspected of any kind of injury, they will be taken to the nearest medical facility to be examined by a medical doctor.
2. If a person complains of symptoms of pressure-related injury such as dizziness, headache, numbness or tingling sensations, oxygen shall be administered. The diver will then be taken

to the Naval Station recompression chamber (Navy Dive Locker) for examination by the medical doctor on duty.

Unconscious person

1. If a person is found unconscious, or becomes so immediately after the dive, first aid/CPR shall be administered along with pure oxygen.
2. Arrangements should be made for emergency evacuation of the diver to the US Navy Dive Locker. If on land, contact 911 to request an ambulance for transportation. If on a boat, the emergency VHF radio channel 16 should be used to arrange for medical transportation. If no one can be reached on channel 16, then the Harbor Master (channels 12 and 13), or the local fishermen's channel (channel 68) can be used to reach assistance.

Medical facilities

1. For injuries not involving actual or suspected pressure-related injuries, the following medical facilities can be utilized:
    a) Northern Guam: Guam Regional Medical City
        - 671-645-5500, 133 Route 3, Dededo, GU 96923
    b) Central Guam: Guam Memorial Hospital
        - 671-647-2330, 850 Gov Carlos G Camacho Rd, Oka, 96913
2. For injuries involving actual or suspected pressure-related injuries, the diver(s) should be taken to:
    a) US Navy Dive Locker
        - 671-339-7143, located inside of Navy Base in Santa Rita, GU

2.6 Flying after Diving or Ascending to Altitude (Over 100 feet/304 meters)

1. Following a Single No-Decompression Dive: Divers should have a minimum preflight surface interval of 12 hours.
2. Following Multiple Dives per Day or Multiple Days of Diving: Divers should have a minimum preflight surface interval of 18 hours.
3. Following Dives Requiring Decompression Stops: Divers should have a minimum preflight surface interval of 24 hours.
4. Before Ascending to Altitude Above 1000 feet (304 meters): Divers should follow the appropriate guideline for preflight surface intervals.

2.7 Record Keeping Requirements

Personal Diving Log

Each authorized scientific diver must log every dive made under the auspices of the UOGML's program and is encouraged to log all other dives. An online dive logging site is available to all divers from the UOGML (see appendix 9). Logs must be submitted to the DSO on the last day of each month for inclusion in the diver's permanent file and include at least the following:

1. Name of diver and buddy
2. Date, time and location
3. Diving modes used

4. General nature of diving activities
5. Maximum depth and dive time
6. Diving tables or computers used
7. Detailed report of any near or actual incidents

Required Incident Reporting

All diving incidents requiring recompression treatment, or resulting in moderate or serious injury, or death must be reported to the UOGML's DCB and AAUS in a timely manner. UOGML must record and report occupational injuries and illnesses in accordance with requirements of the appropriate Labor Code section. UOGML must investigate and document any incident of pressure-related injury and prepare a report that is to be forwarded to AAUS during the annual reporting cycle. (See Section 3 for details).

SECTION 3 SAFETY VIOLATION REPORTING AND INVESTIGATION

3.1 Incident Reporting Procedure

Safety Violations vs. accidents, defined

Safety violations involve breaking regulations stipulated in this manual or provided in standard diving certification courses and scientific diver training. *Accidents* are events which are beyond the diver's control, and which can potentially, or do, result in physical or mental harm.

Incident Reporting Procedure

1. Consult Appendix 6 of this Manual, for incident response procedures.
2. Within 12 hours, the incident must be reported verbally to the DSO, including listing the personnel involved.
3. The DSO will promptly report the verbal description to the DCB.
4. The incident must then be described in writing, including as many details as are accurately remembered (time, location, environment, personnel involved, dive details, vehicles used, etc.). This will constitute the *incident report.* Any accompanying documentation of this incident should be included with the submission of the incident report.
5. The incident report must be submitted to the DSO within three (3) days of the incident.

3.2 DCB Action Procedure

1. Anyone involved in an incident will immediately be suspended from diving activities.
2. The DCB will convene as soon as possible to investigate the incident, based on the incident report and accompanying documentation. The DSO will document, in writing, all reports and discussions.
3. If, after this initial meeting, the DCB assesses that the incident requires reporting to the University and/or AAUS, this report will be submitted appropriately, with accompanying documentation and the DCB meeting report. Report format is presented in Appendix 6.
4. The DCB will invite all parties involved in the incident to discuss their involvement. This will be undertaken confidentially, and each participant will be met with separately.
5. The DCB will decide on further action via majority vote, depending on the documentation provided and the classification of the infraction.
6. The DSO will inform the involved personnel of the DCB decision, in writing. If any personnel are off-island at the time of this communication, they will be informed via email.
7. In the case where the DCB itself is charged with a complaint, the DCB will convene an *ad hoc* external review board to investigate the complaint. This board will be composed of an individual chosen by the DCB, one chosen by the complainant, and a third to be selected by the other two members. These individuals must be either scientific divers or certified dive instructors, must reside on Guam, and must not be UOGML faculty or staff. The *ad hoc* external review board will convene, review the evidence provided, and make a determination regarding any action to be taken. The DCB will develop appropriate timelines for this procedure within thirty (30) days of the University Administration's approval of this Scientific Dive Manual and be responsible for communicating these timelines with the appropriate personnel.

8. After the DCB submits its report, recommendations and/or findings to the Senior Vice President (SVP), and where the University Administration determines that further discipline or adverse action may be warranted, depending on the facts of the violation/complaint, the University will follow its established internal processes and procedures in addressing the matter. The DCB may assist in this process, as needed, and will be notified of the University Administration's determination.

3.3 Safety Violation Examples

The following lists are not meant to be exclusive, but merely descriptive. The DCB reserves the right to decide upon classification of infractions not listed here, and their severity, on a case-by-case basis. Further, the context of an incident will be considered in DCB deliberations.

Minor safety infractions

1. Drawing tank air down below 500 psi (35 bars)
2. Exceeding dive plan depth limit by 5 m for more than 5 mins (on air)
3. Failure to bring safety gear (DAN O_2 kit, dive flag or flotation device, etc.) during field work
4. Failure to keep gear (regulator and BCD) safety inspected annually
5. Failure to dive without an alternative air source (octopus regulator or air tube)
6. Failure to practice good buoyancy control
7. Ignoring required safety stops for 5 mins at 5 m following an 18 m or more dive
8. Failure to inform the DSO of a work-related dive plan
9. Failure to obtain prior approval from the DSO for nitrox dives

Major safety infractions

1. Diving under the influence of intoxicants or behavior-altering drugs
2. Continuing a dive after losing contact with a buddy
3. Violating the no-decompression dive policy
4. Behavior in association with a dive that puts another person at risk
5. Failure to maintain a safe ascent rate
6. Failure to report a safety violation or accident incident
7. Failure to get approval from the DSO for use of advanced equipment during a dive

3.4 Levels and Types of Action by DCB

The following are the types of actions that the DCB will use to respond to minor and major infractions. All actions will go into the diver's file for the length of time the diver is diving with the program.

Verbal warning – minor safety infractions will receive a verbal warning from the DSO. Three verbal warnings for the same offense will result in a written warning from the DSO.

Written warning – Two written warnings will result in suspension from diving. A written warning may also be given by the DCB for a minor infraction if the circumstances increased the severity of the risk or consequence of the infraction.

Suspension from diving – all major infractions will result in a suspension from diving, at least temporarily, until an investigation is completed. Continued suspension from diving may also be decided upon by the DCB, depending on the severity of the incident, as a result of the incident investigation.

Verbal and written warnings will remain active for 3 years, after which they will remain in the diver's file, but will be considered inactive, i.e. they will not be counted towards further disciplinary action.

3.5 Required Incident Reporting

AAUS reporting Procedure

In Addition to the information below, please refer to Appendix 6 for the form which is submitted to AAUS by the DSO. In addition, the incident will be included in the annual AAUS statistics report (Appendix 11).

All diving incidents requiring recompression treatment, or resulting in moderate or serious injury, or death must be reported to the UOGML's DCB and AAUS in a timely manner. The UOGML must record and report occupational injuries and illnesses in accordance with requirements of the appropriate Labor Code section. The UOGML must investigate and document any incident of pressure-related injury and prepare a report that is to be forwarded to AAUS during the annual reporting cycle.

If pressure-related injuries are suspected, or if symptoms are evident, the following additional information must be recorded and retained by the UOGML, with the record of the dive, for a period of 5 years.

Written descriptive report shall include:

1. Name, address, phone numbers of the principal parties involved.
2. Summary of experience of divers involved.
3. Location, description of dive site, and description of conditions that led up to the incident.
4. The circumstances of the incident and the extent of any injuries or illnesses.
5. Description of symptoms, including depth and time of onset.
6. Description and results of treatment.
7. Disposition of case.
8. Recommendations to avoid repetition of incident.

In addition to requirements specific to the UOGML, all diving incidents will be reported to the AAUS. This report must first be reviewed and released by the UOGML's DCB and at a minimum contain:

1. Complete AAUS Incident Report.
2. Summary of experience of divers involved.
3. Description of dive site, and description of conditions that led up to incident.
4. The circumstances of the incident and the extent of any injuries or illnesses.
5. Description of symptoms, including depth and time of onset.
6. Description and results of treatment.

7. Disposition of case.
8. Recommendations to avoid repetition of incident.

University of Guam reporting procedure

All major safety violations and accidents that require medical treatment, and for which Worker's Compensation is filed, will be reported by the DSO to the University Safety Officer and the Senior Vice President.

3.6 Workers' Compensation Procedure

Consult Appendix 7 for the Workers' Compensation procedure and forms.

3.7 Appealing a DCB Decision

After the DSO informs personnel involved with an incident of the DCB decision, the involved parties have one week to appeal a decision. During the time of deliberation of this appeal, they will remain suspended from diving activities. The appeal should be a written document, submitted to the Chair of the DCB. The Chair will then pass the appeal on to the UOG Senior Vice President, or her/his designee, who will act as the appellate body to deliberate on the written statement. The personnel requesting the appeal will subsequently be invited to an open discussion with the DCB and SVP/designee, to consider the appeal. The DCB will then meet and make a final decision, which will then be communicated in writing to the appealing personnel.

SECTION 4 DIVING EQUIPMENT

4.1 General Policy

All equipment must meet standards as determined by the DSO and the DCB. All equipment must be regularly examined by the person using it and serviced according to manufacturer recommendations. Equipment that is subjected to extreme usage under adverse conditions should require more frequent testing and maintenance.

4.2 Equipment

Regulators and Gauges

1. SCUBA regulators shall be inspected and approved by the DSO prior to their use in the UOGML diving program.
2. Regulators must be serviced and tested by qualified personnel every 12 months. A copy of the service record should be submitted to the DSO.
3. Regulators will consist of a first stage, primary second stage, alternate air source (such as an octopus or redundant air supply), submersible pressure gauge and inflator hose for Buoyancy Compensator Device.

Full Face Masks

1. A Full Face Mask may be used in place of the primary 2nd stage according to manufacturer's recommendations.
2. Breathing masks must have a readily and positively closing, non-return valve at the attachment point between the mask and hose, an exhaust valve, and a minimum ventilation rate capable of sustaining the diver at the depth to which he/she is diving.

Equipment for Determination of Decompression Status

1. Each member of the buddy team must have an underwater timing device and depth indicator, or dive computer
2. If dive tables are being used a set must be available at the dive location
3. If a dive computer is used to plan dives and indicate or determine decompression status, the diver must adhere to the following:
    a) Only makes and models of dive computers specifically approved by the DCB may be used.
    b) Complete an appropriate practical training session with DSO and pass a written examination.
    c) Each diver must have her/his own computer and must use the same computer on repetitive dives.
    d) Divers in buddy pairs must follow the most conservative dive computer.
    e) If the dive computer fails at any time during the dive, the dive must be terminated, and appropriate surfacing procedures should be initiated immediately. Diver should make a slow ascent with buddy, no faster than 30ft/min, and make a safety stop. If there is a possibility that the diver exceeded

their no decompression limit, they should make an extended safety stop for as long as there is available air supply.

f) A diver should not dive for 18 hours before using a new dive computer.
g) Once the dive computer is in use, it must not be switched off until it indicates complete off-gassing has occurred or 18 hours have elapsed, whichever comes first.
h) When using a dive computer, non-emergency ascents are to be at a rate specified for the make and model of dive computer being used.
i) Divers must follow all decompression stops indicated by dive computer, including deep stops, safety stops, and emergency decompression stops.

SCUBA Cylinders

1. SCUBA cylinders must be designed, constructed, and maintained in accordance with the applicable provisions of the Unfired Pressure Vessel Safety Orders.
2. SCUBA cylinders must be hydrostatically tested every 5 years, in accordance with Department of Transportation standards.
3. SCUBA cylinders must have an internal and external inspection at intervals not to exceed 12 months.
4. SCUBA cylinder valves must be functionally tested at intervals not to exceed 12 months.

Buoyancy Compensation Devices (BCD)

1. Each diver must have the capability of achieving and maintaining neutral buoyancy underwater and positive buoyancy at the surface.
2. BCDs, dry suits, or other variable volume buoyancy compensation devices must be equipped with an exhaust valve.
3. These devices must be functionally inspected and tested at intervals not to exceed 12 months.
4. BCDs, dry suits, or other variable volume buoyancy compensation devices must not be used as a lifting device in lieu of lift bags.

4.3 Auxiliary Equipment

Handheld Underwater Power Tools

1. Power tools and equipment used underwater must be specifically approved for this purpose.
2. Tools and equipment supplied with power from the surface must be de-energized before being placed into or retrieved from the water.
3. Handheld power tools must not be supplied with power from the dive location until requested by the diver.

4.4 Support Equipment

First Aid Supplies

A first aid kit and emergency oxygen appropriate for the diving being conducted must be available at the dive site.

Diver's Flag

A diver's flag shall be displayed prominently whenever diving is conducted. The flag should be flown when divers are in the water.

Surface Marker Buoy

A surface marker buoy is required for signaling surface support from the divers' location in the event of an emergency. It is required to be carried by divers at all times. The use of a reel to deploy the SMB from under water in the event of overhead traffic when surfacing or while performing a safety stop or emergency decompression stop is highly recommended.

Cutting Device

All divers should supply themselves with a cutting device, such as a knife, to disentangle themselves, or their equipment, should they become caught or entangled in marine life, abandoned fishing gear, or research paraphernalia.

4.5 Equipment Maintenance

Maintenance Schedule

Equipment maintenance shall be the responsibility of the individual diver, with oversight by the DSO. As previously stated in section 4.2, regulators, BCD's, gauges and cylinders should be inspected and subjected to routine maintenance once a year.

Record Keeping

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

1. Regulators
2. Gauges (SPG, Depth Gauges, Timers, and Dive Computers)
3. BCDs
4. SCUBA cylinders and valves
5. Full Face Masks
6. Compressors, air filtration systems, gas control panels, and storage banks
7. Rebreather systems
8. Additional equipment categories as determined by the DCB

Compressor Operations and Air Test Records

UOGML does not have a compressor. Air tanks are filled by Micronesian Diver's Association, and quarterly reports are collected to ensure compliance with air quality standards.

4.6 Air Quality Standards

Breathing Gas

Breathing gas must meet the following specifications as set forth by the Compressed Gas Association (CGA Pamphlet G-7.1; see table below).

CGA Grade E	
Component	**Maximum**
Oxygen	20 - 22%/v
Carbon Monoxide	10 PPM/v
Carbon Dioxide	1000 PPM/v
Condensed Hydrocarbons	5 mg/m3
Total Hydrocarbons as Methane	25 PPM/v
Water Vapor ppm	(2)
Objectionable Odors	None

For breathing air used in conjunction with self-contained breathing apparatus in extreme cold where moisture can condense and freeze, causing the breathing apparatus to malfunction, a dew point not to exceed -50°F (63 pm v/v) or 10 degrees lower than the coldest temperature expected in the area is required.

Remote Operations

For remote site operations using gas sources not controlled by the UOGML, every effort should be made to verify breathing gas meets the requirements of this standard. If CGA Grade E gas is not verifiable, the DCB must develop a protocol to mitigate risk to the diver.

SECTION 5 SCIENTIFIC DIVER CERTIFICATION AND AUTHORIZATIONS

5.1 Prerequisites

Administrative

The candidate must complete all administrative and legal documentation required by UOGML.

Entry Level Diver Certification

The candidate must, at minimum, show documented proof of an entry level diver certification or equivalent from an internationally recognized training agency. Entry level diver training is a prerequisite to scientific diver training and therefore no part of entry level training may be counted in any way toward scientific diver training.

1. "Minimum Course Content for Open Water Diver Certification"- World Recreational SCUBA Training Council (WRSTC), www.wrstc.com.
2. "Safety related minimum requirements for the training of recreational SCUBA divers – Part 2: Level 2 – Autonomous diver". ISO 24801-2:2014 - International Organization for Standardization (ISO) - www.iso.org.

Medical Examination

Applicants of the UOGML Scientific Diving Program must be certified by a licensed physician to be medically qualified for diving before they may enter the water under its auspices, as described in Section 6.00 and Appendix 3 of this Manual. AAUS medical standards may not be waived.

5.2 Training

The candidate must successfully complete prerequisites, theoretical aspects, practical training, and examinations for a minimum cumulative time of 100 hours and a minimum of 12 open water dives. Theoretical aspects must include principles and activities appropriate to the intended area of scientific study. Formats for meeting the 100-hour training requirement include UOGML developed formalized training course, or a combination of formalized and on the job training.

When a diver's resume provides clear evidence of significant scientific diving experience, the diver can be given credit for meeting portions of the 100-hour course requirements. The DCB will identify specific overlap between on-the-job training, previous scientific diving training/experience and course requirements, and then determine how potential deficiencies will be resolved. However, The UOGML cannot "test-out" divers, regardless of experience, when they have no previous experience in scientific diving.

Any candidate who does not convince the DCB, through the DSO, that they possess the necessary judgment, under diving conditions, for the safety of the diver and his/her buddy, may be denied UOGML scientific diving privileges.

Theoretical Training / Knowledge Development	
Required Topics:	**Suggested Topics:**
Diving Emergency Care Training • Cardiopulmonary Resuscitation (CPR) • AED • Standard or Basic First Aid • Recognition of DCS and AGE • Accident Management • Field Neurological Exam • Oxygen Administration	Specific Dive Modes (methods of gas delivery) • Open Circuit • Hookah • Surface Supplied diving • Rebreathers (closed and/or semi-closed)
Dive Rescue • To include procedures relevant to UOGML specific protocols. (See water skills below)	Specialized Breathing Gas • Nitrox • Mixed Gas
Scientific Method	Small Boat Operation
Data Gathering Techniques (Only items specific to area of study required) • Transects and Quadrats • Mapping • Coring • Photography • Tagging • Collecting • Animal Handling • Archaeology • Common Biota • Organism Identification • Behavior • Ecology • Site Selection, Location, and Re-location • Specialized Data Gathering Equipment	Specialized Environments and Conditions • Blue Water Diving • Altitude • Ice and Polar Diving (Cold Water Diving) • Zero Visibility Diving • Polluted Water Diving • Saturation Diving • Decompression Diving • Overhead Environments • Aquarium Diving • Night Diving • Kelp Diving • Strong Current Diving • Potential Entanglement/Entrapment • Live boating
Required Topics:	**Suggested Topics:**
Navigation	HazMat Training • Chemical Hygiene, Laboratory Safety (Use of Chemicals)
HazMat Training • HP Cylinders	
Decompression Management Tools • Dive Tables • Dive Computers • PC Based Software	Specialized Diving Equipment • Full face mask • Dry Suit • Communications • Dive Propulsion Vehicle (DPV) • SMBs/Lift Bags • Line Reels
AAUS Scientific Diving Regulations and History • Scientific Dive Planning • Coordination with other Agencies • Appropriate Governmental Regulations	
Hazards of breath-hold diving and ascents	
Dive Physics (Beyond entry level SCUBA)	Other Topics and Techniques as Determined by the DCB
Dive Physiology (Beyond entry level SCUBA)	
Dive Environments	
Decompression Theory and its Application	

Practical Training / Skill Development	
Confined Water	By the completion of training, the candidate must demonstrate the following in the presence of the DSO or designee. All tests are to be performed without swim aids. However, where exposure protection is needed, the candidate must be appropriately weighted to provide for neutral buoyancy. ● Swim underwater for a distance of 25 yards (23 meters) without surfacing. ● Swim 400 yards (366 meters) in less than 12 minutes. ● Tread water for 10 minutes, or 2 minutes without the use of hands. ● Transport a passive person of equal size a distance of 25 yards (23 meters) in the water.
	At the completion of training, the trainee must satisfy the DSO or DCB-approved designee of their ability to perform the following, as a minimum, in a pool or in sheltered water: ● Enter water fully equipped for diving ● Clear fully flooded face mask ● Demonstrate air sharing and ascent using an alternate air source, as both donor and recipient, with and without a face mask ● OPTIONAL - Demonstrate stationary buddy breathing as both donor and recipient~~,~~ ● Demonstrate understanding of underwater signs and signals ● Demonstrate ability to remove and replace equipment while submerged ● Demonstrate acceptable watermanship skills for anticipated scientific diving conditions
Open Water Skills	The trainee must satisfy the DSO, or DCB-approved designee, of their ability to perform at least the following in open water: ● Surface dive to a depth of 10 feet (3 meters) without SCUBA* ● Enter and exit water while wearing SCUBA gear* ^^ ● Kick on the surface 400 yards (366 meters) while wearing SCUBA gear, but not breathing from the SCUBA unit* ● Demonstrate proficiency in air sharing ascent as both donor and receiver* ● Demonstrate the ability to maneuver efficiently in the environment, at and below the surface* ^^ ● Complete a simulated emergency swimming ascent* ● Demonstrate clearing of mask and regulator while submerged* ● Underwater communications^^ ● Demonstrate ability to achieve and maintain neutral buoyancy while submerged* ● Demonstrate techniques of self-rescue and buddy rescue* ● Navigate underwater ^ ● Plan and execute a dive^ ● Demonstrate judgment adequate for safe scientific diving* ^^
	Rescue Skills: ● Rescue from depth and transport 25 yards (23 meters), as a diver, a passive simulated victim of an accident: surface diver, establish buoyancy, stabilize victim ● Demonstrate simulated in-water mouth-to-mouth resuscitation ● Removal of victim from water to shore or boat ● Stressed and panicked diver scenarios ● Recommendations For Rescue Of A Submerged Unresponsive Compressed-Gas Diver – Appendix 5
	Successfully complete a minimum of one checkout dive and at least eleven additional open water dives in a variety of dive sites, for a cumulative surface to surface time of 6 hours. Dives following the checkout dive(s) may be supervised by an active Scientific Diver holding

	the necessary depth authorization experienced in the type of diving planned, and with the knowledge and permission of the DSO
	The eleven dives (minimum) following the initial checkout dive may be conducted over a variety of depth ranges as specified by the UOGML DCB. Depth progression must proceed shallower to deeper after acceptable skills and judgment have been demonstrated, and are not to exceed 100 feet (30 m) during the initial 12 dive cycle
	* Checkout dive element ^^ Evaluated on all dives ^ Evaluated at some point during the training cycle

Examinations	
Equipment	The trainee will be subject to examination/review of: ● Personal diving equipment ● Task specific equipment ● Function and manipulation of decompression computer to be employed by the diver (if applicable)
Written Exams	The trainee must pass a written examination reviewed and approved by the UOGML DCB that demonstrates knowledge of at least the following: ● Function, care, use, and maintenance of diving equipment ● Advanced physics and physiology of diving ● Diving regulations ● Applicable diving environments ● Emergency procedures for UOGML-specific dive mode(s) and environments, including buoyant ascent and ascent by air sharing ● Currently accepted decompression theory and procedures ● Proper use of dive tables ● Hazards of breath-hold diving and ascents ● Planning and supervision of diving operations ● Navigation ● Diving hazards & mitigations ● Cause, symptoms, treatment, and prevention of the following: near drowning, air embolism, hypercapnia, squeezes, oxygen toxicity, nitrogen narcosis, exhaustion and panic, respiratory fatigue, motion sickness, decompression sickness, hypothermia, and hypoxia/anoxia ● Applicable theoretical training and knowledge development from the Required and Suggested Topics (above)

5.3 Diver Certification and Authorization

Only a person diving under the auspices of an UOGML that subscribes to the practices of the AAUS is eligible for a scientific diver certification.

Diver-In-Training (DIT) Authorization

This is an authorization to dive, usable only while it is current and for the purpose intended. This authorization signifies that a diver has completed and been certified as at least an entry level diver through an internationally recognized certifying agency and has the knowledge skills and experience necessary to commence and continue training as a scientific diver under supervision, as approved by the DCB. DIT status must only be used when the diver is on his/her way to becoming certified as a scientific diver. While it is recommended for DIT's to have hands-on scientific diver experience during their training, the DIT status is intended to be a

temporary authorization, not a substitute for Scientific Diver Certification.

Requirements for Diver-In-Training Authorization

- **Open-Water SCUBA certification**

Applicants must provide proof of current certification by a nationally or internationally recognized training agency. Basic open-water certification is the minimum accepted certification, advanced open-water certification is recommended.

- **Medical examination**

Applicants must be certified by a licensed physician to be medically qualified for diving before they may enter the water under its auspices.

- **Swimming Evaluation**

Applicants must demonstrate the following in the presence of the DSO. All tests are to be performed without swim aids.

1. Swim underwater for a distance of 25 yards (23 meters) without surfacing.
2. Swim 400 yards (366 meters) in less than 12 minutes.
3. Tread water for 10 minutes, or 2 minutes without the use of hands.
4. Transport a passive person of equal size a distance of 25 yards (23 meters) in the water.

- **Emergency care training**

Applicants must provide proof of current training in CPR, first aid, and emergency oxygen administration. Training is available at the UOGML, but must be completed before an applicant may dive with the program. The following are required:

1. Adult CPR
2. Emergency oxygen administration
3. First aid for diving accidents (Emergency First Response or its equivalent)

- **Written evaluation**

Applicants must pass a written examination on general open-water SCUBA skills and the contents of this manual.

- **Open water evaluation**

Applicants must satisfy the DSO or his/her appointee of her/his ability to:

1. Surface dive to a depth of 10 ft (3 meters) in open water without SCUBA.
2. Enter and exit water while wearing SCUBA gear
3. Kick on the surface 400 m while in full gear but not breathing from SCUBA.
4. Demonstrate proficiency in air sharing as both donor and receiver.
5. Demonstrate the ability to maneuver efficiently in the environment, at and below the surface.
6. Complete a simulated emergency swimming ascent.
7. Demonstrate clearing of mask and regulator while submerged.
8. Demonstrate ability to achieve and maintain neutral buoyancy while submerged.
9. Demonstrate techniques of self-rescue and buddy rescue.
10. Demonstrate judgment adequate for safe diving.

Scientific Diver Certification

Signifies a diver has completed all requirements in Section 5.2 and is certified by the AAUS UOGML to engage in scientific diving without supervision, as approved by the DCB through the DSO. Submission of documents and participation in aptitude examinations does not automatically result in certification. To be certified, the applicant must demonstrate to the DCB, through the DSO, that s/he is sufficiently skilled and proficient, and possess the necessary judgment for their safety and/or that of the dive team. Scientific Diver Certification is only active when required authorizations are in place and current.

Temporary Diver Authorization

Temporary Diver Authorization may be granted only to a diver who is not operating under the auspice of an AAUS OM. The individual in question must demonstrate proficiency in diving and can contribute measurably to a planned dive. A Temporary Diver Authorization constitutes a waiver of selected requirements of Section 5 and is valid only for a limited time, as approved by the DCB. A Temporary Diver Authorization must be restricted to the planned diving operation and must comply with all other policies, regulations, and standards of this Manual, including medical requirements. This authorization is not to be utilized as a repeated mechanism to circumvent existing standards set forth in this Manual.

5.4 Depth Authorizations

Depth Ratings and Progressions to Next Depth Level

Depth authorization indicates the maximum depth in which a diver can conduct science and may supervise other divers holding a lesser depth authorization. A scientific diver requires a valid depth authorization to be considered active.

A diver may be authorized to the next depth level after successfully completing the requirements for that level. A diver may exceed his/her depth authorization, by one level, when accompanied and supervised by a dive buddy holding a depth authorization greater or equal to the intended depth. Dives must be planned and executed with the permission of the DCB or designee.

In the event a diver within the UOGML does not hold an authorization at the desired next level, the DCB may authorize a required progression or procedure for a diver to attain a deeper authorization. If local conditions do not conform to traditional AAUS depth progressions, the DCB may devise a reasonable accommodation. However, the total number of dives to obtain a given depth authorization must follow the cumulative number of dives listed below.

- Authorization to 30 Foot Depth - Initial science diver depth authorization, approved upon the successful completion of training listed in Section 5. Cumulative minimum supervised divers: 12.
- Authorization to 60 Foot Depth - A diver holding a 30-foot authorization may be authorized to a depth of 60 feet after successfully completing and logging 12 supervised dives to depths between 31 and 60 feet under supervision of a diver authorized by the DCB, for a minimum total time of 4 hours. Cumulative minimum supervised dives: 24.

- Authorization to 100 Foot Depth - A diver holding a 60-foot authorization may be authorized to a depth of 100 feet after successfully completing and logging 6 supervised dives to depths between 61 and 100 feet under supervision of a dive buddy authorized by the DCB. The diver must also demonstrate proficiency in the use of the appropriate decompression profiling method. Cumulative minimum supervised dives: 30.
- Authorization to 130 Foot Depth - A diver holding a 100-foot authorization may be authorized to a depth of 130 feet after successfully completing and logging 6 supervised dives to depths between 100 and 130 feet under supervision of a dive buddy authorized by the DCB. The diver must also demonstrate proficiency in the use of the appropriate decompression profiling method. Cumulative minimum supervised dives: 36.

Diving is not permitted beyond 130 ft (40 m) depth.

5.5 Maintaining Active Status

Minimum Activity to Maintain Authorizations

During any 12-month period, each scientific diver must log a minimum of 12 scientific, scientific training, or proficiency dives. At least one dive must be logged near the maximum depth of the diver's authorization during each 6-month period. Failure to meet these requirements will result in revocation or restriction of authorization by the DSO under procedures established by the DCB.

Requalification of Depth Authorization

Once the initial requirements of Section 5 are met, divers whose depth authorization has lapsed due to lack of activity may be requalified after 2 dives to the previously certified depth under supervision.

Medical Examination

All scientific divers must pass a medical examination at the intervals specified in Section 6.2. A medically cleared diver experiencing any Conditions Which May Disqualify Candidates From Diving (Appendix 3.1) must receive clearance to return to diving from a physician before resuming diving activities. This medical examination requirement cannot be waived for any diver.

Emergency Care Training

The scientific diver must hold current training in the following, to be renewed every 2 years:

1. Adult CPR and AED
2. Emergency oxygen administration
3. First aid for diving accidents

Required diving emergency care training courses are offered on a regular basis by the DSO at the UOGML and are available for faculty, staff and students.

Rescue Skills Workshop

All active UOGML divers must participate in a Rescue Skills Workshop every 2 years, to be conducted by the DSO or qualified designee. The refresher will focus on in-water rescue skills, and ensure that divers have the skills necessary to rescue themselves and/or their dive buddy in the event of a dive emergency.

5.6 Revocation of Authorization

An individual's scientific diver certification can be restricted or revoked for cause by the DCB. Authorizations associated with an individual's scientific diver certification may be restricted or suspended for cause by the DSO. Restrictions or suspensions issued by the DSO may be rescinded by the DSO; these issues will be reported to and reviewed by the DCB, and the outcomes or actions resulting from this review will be documented in the diver's record. Violations of regulations set forth in this Manual or other governmental subdivisions not in conflict with this Manual, or demonstration of poor judgment, may be considered cause. The DCB or designee must inform the diver in writing of the reason(s) for revocation. The diver will be given the opportunity to present their case in writing to the DCB for reconsideration. Following revocation, the diver may be reauthorized after complying with conditions the DCB may impose. All such written statements and requests, as identified in this section, are formal documents, and therefore part of the diver's file.

If a diver's certification expires or is revoked, she/he may be recertified after complying with such conditions as the DSO or DCB may impose. The diver shall be given an opportunity to present her/his case to the DCB before conditions for recertification are stipulated.

SECTION 6 MEDICAL STANDARDS

6.1 Medical Requirements for UOGML Divers

1. Diving under the auspices of UOGML is permitted only with a current diving physical examination and a declaration by the examining physician of the diver's fitness to dive.
2. All medical evaluations required by this manual must be performed by, or under the direction of, a licensed physician of the applicant-diver's choice, preferably one trained in diving/undersea medicine.
3. The diver should be free of any chronic disabling disease and any conditions contained in the list of conditions for which restrictions from diving are generally recommended. (Appendix 3.1)
4. The UOGML must verify that divers have been declared by the examining medical authority to be fit to engage in diving activities.

6.2 Frequency of Medical Evaluations

Medical evaluation must be completed:		
Before Age 40	After age 40 Before Age 60	After Age 60
Before a diver may begin diving, unless an equivalent initial medical evaluation has been given within the preceding 5 years	Before a diver may begin diving, unless an equivalent initial medical evaluation has been given within the preceding 3 years	Before a diver may begin diving, unless an equivalent initial medical evaluation has been given within the preceding 2 years
At 5-year intervals	At 3-year intervals	At 2-year intervals
Clearance to return to diving must be obtained from a healthcare provider following a medically cleared diver experiencing any Conditions Which May Disqualify Candidates From Diving (Appendix 3.1), or following any major injury or illness, or any condition requiring chronic medication. If the condition is pressure related, the clearance to return to diving must come from a physician trained in diving medicine.		

6.3 Information Provided Examining Physician

The UOGML must provide a copy of the medical evaluation requirements of this *Manual* to the examining physician. (Appendix 3).

6.4 Content of Medical Evaluations

Medical examinations conducted initially and at the intervals specified in Section 6.2 must consist of the following:

1. Diving physical examination (Appendix 3.2). Modifications or omissions of required tests are not permitted.
2. Applicant agreement for release of medical information to the Diving Safety Officer and

the DCB (Appendix 3.3)
3. Medical history (Appendix 3.4)

6.5 Physician's Written Report

1. A Medical Evaluation of Fitness For SCUBA Diving Report signed by the examining or supervising physician stating the individual's fitness to dive, including any recommended restrictions or limitations will be submitted to the UOGML DSO for the diver's record after the examination is completed. The DSO must review the results and found satisfactory for entry into the dive program. Medical records will be kept confidential and in the divers' personal file.
2. The Medical Evaluation of Fitness For SCUBA Diving Report will be reviewed by the DSO and the diver's record and authorizations will be updated accordingly.
3. A copy of any physician's written reports will be made available to the individual.
4. It is the diver's responsibility to provide to the UOGML a written statement from the examining medical authority listing any restrictions, limitations, or clearances to dive resulting from medical examinations obtained by the individual outside of their normal diving medical examination cycle. These statements will be reviewed by the DSO and the diver's record and authorizations will be updated accordingly.

SECTION 7 NITROX DIVING

7.1 Requirements for Nitrox Authorization

The following guidelines address the use of nitrox by scientific divers under the auspices of the UOGML. While the UOGML does not provide Nitrox training, it may be required for certain types of research. Prior to authorization to use nitrox, the following minimum requirements must be met.

Prerequisites

Only a certified Scientific Diver or DIT diving under the auspices of an UOGML is eligible for authorization to use nitrox.

Applicant must hold a Nitrox certification from an internationally recognized diver training agency.

Application for authorization to use nitrox must be made to the DCB. Applicants must pass a practical and written evaluation. Submission of documents and participation in aptitude examinations does not automatically result in authorization to use nitrox. The applicant must convince the DCB through the DSO that they are sufficiently knowledgeable, skilled and proficient in the theory and use of nitrox for scientific diving.

Practical Evaluation

1. Oxygen analysis of nitrox mixtures.
2. Determination of MOD, oxygen partial pressure exposure, and oxygen toxicity time limits, for various nitrox mixtures at various depths.
3. Determination of nitrogen-based dive limits status by EAD method using air dive tables, and/or using nitrox dive tables, as approved by the DCB.
4. Nitrox dive computer use may be included, as approved by the DCB.
5. A minimum of two supervised open water dives using nitrox is required for authorization.

Written Evaluation

1. Function, care, use, and maintenance of equipment cleaned for nitrox use.
2. Physical and physiological considerations of nitrox diving (eg.: O_2 and CO_2 toxicity)
3. Diving regulations, procedures/operations, and dive planning as related to nitrox diving
4. Equipment marking and maintenance requirements
5. Dive table and/or dive computer usage
6. Calculation of: MOD, pO_2, and other aspects of Nitrox diving as required by the DCB

7.2 Nitrox Certification and Authorization

Nitrox Diver-In-Training

A Diver-In-Training, who has completed the training and authorization sections of these guidelines may be authorized by the DSO to use nitrox under the direct supervision of a Scientific Diver who also holds nitrox authorization. Dive depths should be restricted to those specified in the diver-in-training's authorization.

Nitrox Scientific Diver

A Scientific Diver who has completed the training and authorization sections of these guidelines may be authorized by the DSO to use nitrox. Depth authorization to use nitrox should be the same as those specified in the diver's authorization.

Nitrox Lead Diver

On any dive during which nitrox will be used by any team member, the Lead Diver should be authorized to use nitrox, and hold appropriate authorizations required for the dive, as specified in AAUS Standards. Lead Diver authorization for nitrox dives by the DSO and/or DCB should occur as part of the dive plan approval process.

In addition to general responsibilities, the Lead Diver should:

1. As part of the dive planning process, verify that all divers using nitrox on a dive are properly qualified and authorized;
2. As part of the pre-dive procedures, confirm with each diver the nitrox mixture the diver is using, and establish dive team maximum depth and time limits, according to the shortest time limit or shallowest depth limit among the team members.
3. The Lead Diver should also reduce the maximum allowable pO2 exposure limit for the dive team if on-site conditions so indicate.

7.3 Minimum Activity to Maintain Authorization

The diver should log at least one nitrox dive per year. Failure to meet the minimum activity level may be cause for restriction or revocation of nitrox authorization.

7.4 Operational Requirements

Oxygen Exposure Limits

1. All dives on Nitrox should be planned with a maximum partial pressure of 1.4 ATA (Atmospheres Absolute). Contingency partial pressure experienced at depth should not exceed 1.6 ATA under any circumstance.
2. The maximum allowable exposure limit should be reduced in cases where cold or strenuous dive conditions, or extended exposure times are expected.

Calculation of Decompression Status

1. Dive computers may be used to determine decompression status during nitrox dives. Manufacturers' guidelines and operation instructions should be followed.
2. Each diver must have their own computer and must use the same computer on repetitive dives.
3. Dive computers capable of pO_2 limit and fO_2 adjustment should be checked by the diver prior to the start each dive to ensure conformity with the mix being used.
4. If tables will be used to determine decompression status, a set of DCB approved nitrox dive tables should be available at the dive site.
5. Nitrox may not be used to increase the safety margin of air-based dive tables. When diving on Nitrox, decompression status must be calculated based on nitrox tables in order to accurately calculate MOD and oxygen exposure.

Gas Mixture Requirements

UOGML does not mix or provide Nitrox. Diver's using Nitrox must obtain tanks from a reputable dive shop that can provide documentation of the following via quarterly reports:

1. Oxygen used for mixing nitrox should meet the purity levels for "Medical Grade" (U.S.P.) or "Aviator Grade" standards.
2. In addition to the AAUS Air Purity Guidelines outlined in Section 4.6, any air that may come in contact with oxygen concentrations greater than 40% (i.e.. during mixing), must also have a hydrocarbon contaminant no greater than 0.1mg/m^3.

For remote site operations using compressors where this is not verifiable, the DCB must develop a protocol to mitigate risk to the diver.

Analysis Verification by Users

1. Prior to the dive, it is the responsibility of each diver to analyze the oxygen content of his/her SCUBA cylinder and acknowledge in writing the following information for each cylinder: fO_2, MOD, cylinder pressure, date of analysis, and user's name.
2. Individual dive log reporting forms should report fO_2 of nitrox used, if different than 21%.

7.5 Nitrox Diving Equipment

Required Equipment

All of the designated equipment and stated requirements regarding SCUBA equipment required in the *AAUS Manual* apply to nitrox operations. Additional minimal equipment necessary for nitrox diving operations includes:

1. Labeled SCUBA Cylinders in Accordance with Industry Standards
2. Oxygen Analyzers
3. Oxygen compatible equipment as applicable

Requirement for Oxygen Service

1. All equipment, which during the dive or cylinder filling process is exposed to concentrations greater than 40% oxygen, should be cleaned and maintained for oxygen service.
2. Any equipment used with oxygen or mixtures containing over 40% by volume oxygen must be designed and maintained for oxygen service. Oxygen systems over 125 psig must have slow-opening shut-off valves.

Compressor System

UOGML does not have a compressor to mix or provide Nitrox. Diver's using Nitrox must obtain tanks filled by a compressor from a reputable dive shop that can provide documentation of the following via quarterly reports:

1. Compressor/filtration system must produce oil-free air, or
2. An oil-lubricated compressor placed in service for a nitrox system should be checked for oil and hydrocarbon contamination at least quarterly.

SECTION 8 SNORKEL GUIDELINES

Snorkeling is subject to the same safety rules and guidelines as diving. It is the intent of the University of Guam Marine Laboratory (UOGML) to maximize Scientific Snorkeling safety. Therefore, no person shall engage in scientific snorkeling operations through UOGML unless they have been granted permission in accordance with this manual.

8.1 Requirements for Application

Non-diver applicants must complete the following forms:

1. UOGML Snorkeling medical form
2. Brief Snorkeling History
3. Current EFR and Oxygen Provider Certifications
4. UOGML Waiver of Liability

8.2 Swimming Evaluation

Applicants must demonstrate the following in the presence of the DSO. All tests are to be performed without swim aids.

1. Swim underwater for a distance of 25 yards (23 meters) without surfacing.
2. Swim 400 yards (366 meters) without stopping.
3. Tread water for 10 minutes, or 2 minutes without the use of hands.
4. Transport a passive person of equal size a distance of 25 yards (23 meters) in the water.

8.3 Requirements for Scientific Snorkeling

1. Face mask, snorkel and fins must be used
2. Exposure suit or other protective clothing must be worn
3. The snorkeler must be able to maintain positive buoyancy with minimal effort without a flotation device
4. A dive flag to be displayed at all times (provided by the UOGML), including shore entry snorkels
5. First aid and Oxygen kits (provided by the UOGML)

8.4 Scientific Snorkeling Protocol

1. A team consists of at least two snorkelers. Groups larger than three subdivide into buddy pairs.
2. Snorkelers must stay within 50 ft (18 m) of the dive flag.
3. Snorkelers must adhere to the buddy system. On the surface, snorkelers should remain within 15 ft of their buddy. When making surface dives and swimming underwater, snorkelers should adopt a “one up/one down” system (alternating dives).
4. Hyperventilation prior to breath-hold diving is not permitted.
5. Applicants requiring training in snorkeling/skin diving techniques and applicants with weak swimming abilities should make this known to the Diving Safety Officer. Additional practice, a swim competence test, or a flotation device may be recommended.

8.5 Activities Requiring Special Approval

It is the participant's responsibility to consult the DSO to assess the safety aspects of a snorkeling/free diving activity. The following activities require prior approval from the DSO:

1. Snorkeling that does not adhere to this policy guide
2. After-hour dives (early morning, night, weekend)
3. Hazardous environmental conditions (strong waves and/or currents, confined areas, caverns).
4. Snorkeling with known risk of entanglement
5. Snorkeling in areas of high boat traffic
6. Snorkeling following SCUBA dives
7. Breath-hold dives deeper than 15 ft
8. Spear fishing

APPENDIX 1 DEFINITION OF TERMS

Air sharing - Sharing of an air supply between divers.

ATA(s) - "Atmospheres Absolute", Total pressure exerted on an object, by a gas or mixture of gases, at a specific depth or elevation, including normal atmospheric pressure.

Alternate Gas Supply - Fully redundant system capable of providing a gas source to the diver should their primary gas supply fail.

Authorization-The DCB authorizes divers to dive using specialized modes of diving, and the depth they may dive to.

Bottom time - The total elapsed time measured in minutes from the time the diver leaves the surface in descent to the time that the diver begins a direct ascent to the surface.

Breath-hold Diving - A diving mode in which the diver uses no self-contained or surface-supplied air or oxygen supply.

Buddy Breathing - Sharing of a single air source between divers.

Buddy System -Two comparably equipped SCUBA divers in the water in constant communication.

Buoyant Ascent - An ascent made using some form of positive buoyancy.

Certified Diver - A diver who holds a recognized valid certification from an AAUS OM or internationally recognized certifying agency.

(Scientific Diver) Certification- A diver who holds a recognized valid certification from an AAUS OM

Controlled Ascent - Any one of several kinds of ascents including normal, swimming, and air sharing ascents where the diver(s) maintain control so a pause or stop can be made during the ascent.

Cylinder - A pressure vessel for the storage of gases.

Decompression Sickness - A condition with a variety of symptoms, which may result from gas, and bubbles in the tissues of divers after pressure reduction.

Dive - A descent into the water, an underwater diving activity utilizing compressed gas, an ascent, and return to the surface.

Dive Computer - A microprocessor based device which computes a diver's theoretical decompression status, in real time, by using pressure (depth) and time as input to a decompression model, or set of decompression tables, programmed into the device.

Dive Location - A surface or vessel from which a diving operation is conducted.

Dive Site - Physical location of a diver during a dive.

Dive Table - A profile or set of profiles of depth-time relationships for ascent rates and breathing mixtures to be followed after a specific depth-time exposure or exposures.

Diver – A person who stays underwater for long periods by having compressed gas supplied from the surface or by carrying a supply of compressed gas.

Diver-In-Training - An individual gaining experience and training in additional diving activities under the supervision of a dive team member experienced in those activities.

Diving Mode - A type of diving required specific equipment, procedures, and techniques, for example, snorkel, SCUBA, surface-supplied air, or mixed gas.

Diving Control Board (DCB) - Group of individuals who act as the official representative of the membership organization in matters concerning the scientific diving program (See Diving Control Board under Section 1.2).

Diving Safety Officer (DSO) - Individual responsible for the safe conduct of the scientific diving program of the membership organization (See Diving Safety Officer under Section 1.2).

DPIC – See Designated Person-In-Charge.

EAD - Equivalent Air Depth (see below).

Emergency Swimming Ascent - An ascent made under emergency conditions where the diver may exceed the normal ascent rate.

Enriched Air (EANx) - A name for a breathing mixture of air and oxygen when the percent of oxygen exceeds 21%. This term is considered synonymous with the term "nitrox" (Section 7).

Equivalent Air Depth (EAD) - Depth at which air will have the same nitrogen partial pressure as the nitrox mixture being used. This number, expressed in units of feet seawater or saltwater, will always be less than the actual depth for any enriched air mixture.

fO_2 - Fraction of oxygen in a gas mixture, expressed as either a decimal or percentage, by volume.

FSW - Feet of seawater.

Hyperbaric Chamber - See Recompression chamber.

Hyperbaric Conditions - Pressure conditions in excess of normal atmospheric pressure at the dive location.

Independent Reserve Breathing Gas - A diver-carried independent supply of air or mixed gas (as appropriate) sufficient under standard operating conditions to allow the diver to reach the surface, or another source of breathing gas, or to be reached by another diver.

Life Support Equipment – Underwater equipment necessary to sustain life.

Lead Diver - Certified scientific diver with experience and training to conduct the diving operation.

Organizational Member (OM) - An organization which is a current member of the AAUS, and which has a program, which adheres to the standards of the AAUS as, set forth in the *AAUS Manual*.

Mixed Gas - Breathing gas containing proportions of inert gas other than nitrogen greater than 1% by volume.

Mixed Gas Diving - A diving mode in which the diver is supplied in the water with a breathing gas other than air.

MOD - Maximum Operating Depth, usually determined as the depth at which the pO_2 for a given gas mixture reaches a predetermined maximum.

Nitrox - Any gas mixture comprised predominately of nitrogen and oxygen, most frequently containing

between 22% and 40% oxygen. Also be referred to as Enriched Air Nitrox, abbreviated EAN.

Normal Ascent - An ascent made with an adequate air supply at a rate of 30 feet per minute or less.

OTU - Oxygen Toxicity Unit

Oxygen Compatible - A gas delivery system that has components (O-rings, valve seats, diaphragms, etc.) that are compatible with oxygen at a stated pressure and temperature.

Oxygen Service - A gas delivery system that is both oxygen clean and oxygen compatible.

Oxygen Toxicity - Any adverse reaction of the central nervous system ("acute" or "CNS" oxygen toxicity) or lungs ("chronic", "whole-body", or "pulmonary" oxygen toxicity) brought on by exposure to an increased (above atmospheric levels) partial pressure of oxygen.

Pressure-Related Injury - An injury resulting from pressure disequilibrium within the body as the result of hyperbaric exposure. Examples include: decompression sickness, pneumothorax, mediastinal emphysema, air embolism, subcutaneous emphysema, or ruptured eardrum.

Pressure Vessel - See cylinder.

pO_2 - Inspired partial pressure of oxygen, usually expressed in units of atmospheres absolute.

Primary Reel - Initial guideline used by the dive team from open water to maximum penetration or a permanently installed guideline.

Psi - Unit of pressure, "pounds per square inch.

Psig - Unit of pressure, "pounds per square inch gauge.

Recompression Chamber - A pressure vessel for human occupancy. Also called a hyperbaric chamber or decompression chamber.

Safety Reel - Secondary reel used as a backup to the primary reel, usually containing 150 feet of guideline that is used in an emergency.

Safety Stop – A stop made between 15-20 feet (5-6 meters) for 3-5 minutes during the final ascent phase of a dive.

Scientific Diving - Scientific diving is defined (29CFR1910.402) as diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks.

SCUBA Diving - A diving mode independent of surface supply in which the diver uses open circuit self-contained underwater breathing apparatus.

Standby Diver - A diver at the dive location capable of rendering assistance to a diver in the water.

Swimming Ascent - An ascent, which can be done under normal or emergency conditions accomplished by simply swimming to the surface.

Turn Pressure – The gauge reading of a diver's open circuit SCUBA system designating the gas limit for terminating the dive and beginning the exit from the water.

APPENDIX 2 WAIVER OF LIABILITY

(To Be Completed By Applicant)

Agreement this _____ day of _____ between the University of Guam – Marine

Laboratory and _____(hereinafter "Person").
(PRINT NAME: FIRST, MIDDLE INITIAL, LAST)

In consideration of the University granting permission to the **Person** to use tools or equipment and/or participate in field trips and/or volunteer to assist in laboratory tests and/or experiments sponsored by the University, the **Person** hereby waives all claims for damage or loss to his/her person and/or property that may be caused by any act or failure to act by the University, its officers, agents or employees.

The **Person** understands and assumes the risk of any dangerous conditions that may be encountered in the course of a field trip, during laboratory work or working in the shop.

PERSON SIGNATURE **DATE**

APPENDIX 3 DIVE MEDICAL FORMS

3.1 DIVING MEDICAL EXAM OVERVIEW FOR THE EXAMINING PHYSICIAN

TO THE EXAMINING PHYSICIAN:

This person, _____, requires a medical examination to assess their fitness for certification as a Scientific Diver for the_____ (Organizational Member). Their answers on the Diving Medical History Form (attached) may indicate potential health or safety risks as noted. Your evaluation is requested on the attached SCUBA Diving Fitness Medical Evaluation Report. If you have questions about diving medicine, you may wish to consult one of the references on the attached list or contact one of the physicians with expertise in diving medicine whose names and phone numbers appear on an attached list, the Undersea Hyperbaric and Medical Society, or the Divers Alert Network. Please contact the undersigned Diving Safety Officer if you have any questions or concerns about diving medicine or the _____ (Organizational Member) standards. Thank you for your assistance.

_____ _____

Diving Safety Officer Date

_____ _____

Printed Name Phone Number

SCUBA and other modes of compressed-gas diving can be strenuous and hazardous. A special risk is present if the middle ear, sinuses, or lung segments do not readily equalize air pressure changes. The most common cause of distress is eustachian insufficiency. Recent deaths in the scientific diving community have been attributed to cardiovascular disease. Please consult the following list of conditions that usually restrict candidates from diving. (Adapted from Bove, 1998: bracketed numbers are pages in Bove)

CONDITIONS WHICH MAY DISQUALIFY CANDIDATES FROM DIVING

1. Abnormalities of the tympanic membrane, such as perforation, presence of a monomeric membrane, or inability to autoinflate the middle ears. [5 ,7, 8, 9]
2. Vertigo, including Meniere's Disease. [13]
3. Stapedectomy or middle ear reconstructive surgery. [11]
4. Recent ocular surgery. [15, 18, 19]
5. Psychiatric disorders including claustrophobia, suicidal ideation, psychosis, anxiety states, untreated depression. [20 - 23]
6. Substance abuse, including alcohol. [24 - 25]
7. Episodic loss of consciousness. [1, 26, 27]
8. History of seizure. [27, 28]
9. History of stroke or a fixed neurological deficit. [29, 30]
10. Recurring neurologic disorders, including transient ischemic attacks. [29, 30]
11. History of intracranial aneurysm, other vascular malformation or intracranial hemorrhage. [31]
12. History of neurological decompression illness with residual deficit. [29, 30]
13. Head injury with sequelae. [26, 27]

14. Hematologic disorders including coagulopathies. [41, 42]
15. Evidence of coronary artery disease or high risk for coronary artery disease. [33 - 35]
16. Atrial septal defects. [39]
17. Significant valvular heart disease - isolated mitral valve prolapse is not disqualifying. [38]
18. Significant cardiac rhythm or conduction abnormalities. [36 - 37]
19. Implanted cardiac pacemakers and cardiac defibrillators (ICD). [39, 40]
20. Inadequate exercise tolerance. [34]
21. Severe hypertension. [35]
22. History of spontaneous or traumatic pneumothorax. [45]
23. Asthma. [42 - 44]
24. Chronic pulmonary disease, including radiographic evidence of pulmonary blebs, bullae, or cysts. [45,46]
25. Diabetes mellitus. [46 - 47]
26. Pregnancy. [56]

SELECTED REFERENCES IN DIVING MEDICINE

Available from Best Publishing Company, P.O. Box 30100, Flagstaff, AZ 86003-0100, the Divers Alert Network (DAN) or the Undersea and Hyperbaric Medical Society (UHMS), Durham, NC

- Elliott, D.H. ed. 1996. *Are Asthmatics Fit to Dive?* Kensington, MD: Undersea and Hyperbaric Medical Society.
- Bove, A.A. 2011. The cardiovascular system and diving risk. *Undersea and Hyperbaric Medicine* 38(4): 261-269.
- Thompson, P.D. 2011. The cardiovascular risks of diving. *Undersea and Hyperbaric Medicine* 38(4): 271-277.
- Douglas, P.S. 2011. Cardiovascular screening in asymptomatic adults: Lessons for the diving world. *Undersea and Hyperbaric Medicine* 38(4): 279-287.
- Mitchell, S.J., and A.A. Bove. 2011. Medical screening of recreational divers for cardiovascular disease: Consensus discussion at the Divers Alert Network Fatality Workshop. *Undersea and Hyperbaric Medicine* 38(4): 289-296.
- Grundy, S.M., Pasternak, R., Greenland, P., Smith, S., and Fuster, V. 1999. Assessment of Cardiovascular Risk by Use of Multiple-Risk-Factor Assessment Equations. AHA/ACC Scientific Statement. *Journal of the American College of Cardiology,* 34: 1348-1359. http://content.onlinejacc.org/cgi/content/short/34/4/1348
- Bove, A.A. and Davis, J. 2003. DIVING MEDICINE, Fourth Edition. Philadelphia: W.B. Saunders Company.
- Edmonds, C., Lowry, C., Pennefather, J. and Walker, R. 2002. DIVING AND SUBAQUATIC MEDICINE, Fourth Edition. London: Hodder Arnold Publishers.
- Bove, A.A. ed. 1998. MEDICAL EXAMINATION OF SPORT SCUBA DIVERS, San Antonio, TX: Medical Seminars, Inc.
- NOAA DIVING MANUAL, NOAA. Superintendent of Documents. Washington, DC: U.S. Government Printing Office.

U.S. NAVY DIVING MANUAL. Superintendent of Documents, Washington, DC: U.S. Government Printing Office, Washington, D.C.

3.2 AAUS MEDICAL EVALUATION OF FITNESS FOR SCUBA DIVING REPORT

_____ _____

Name of Applicant (Print or Type) Date of Evaluation (Month/Day/Year)

To The Examining or Supervising Physician: Scientific divers require periodic SCUBA diving medical examinations to assess their fitness to engage in diving with self-contained underwater breathing apparatus (SCUBA). Their answers on the Diving Medical History Form may indicate potential health or safety risks as noted. SCUBA diving is an activity that puts unusual stress on the individual in several ways. Your evaluation is requested on this Medical Evaluation form. Your opinion on the applicant's medical fitness is requested. SCUBA diving requires heavy exertion. The diver must be free of cardiovascular and respiratory disease (see references, following page). An absolute requirement is the ability of the lungs, middle ears and sinuses to equalize pressure. Any condition that risks the loss of consciousness should disqualify the applicant. Please proceed in accordance with the AAUS Medical Standards (Sec. 5.00). If you have questions about diving medicine, please consult with the Undersea Hyperbaric Medical Society or Divers Alert Network. ***NOTE: Although portions of this exam may be conducted by other medical professionals (P.A. or N.P.), final signature for diving must come from a Medical Doctor (M.D.) or Osteopath (D.O.).***

TESTS: THE FOLLOWING TESTS ARE <u>REQUIRED</u>:

DURING ALL INITIAL AND PERIODIC RE-EXAMS (UNDER AGE 40):

- Medical history
- Complete physical exam, with emphasis on neurological and otological components
- Urinalysis
- Any further tests deemed necessary by the physician

ADDITIONAL TESTS DURING FIRST EXAM OVER AGE 40 AND PERIODIC RE-EXAMS (OVER AGE 40):

- Chest x-ray (Required only during first exam over age 40)
- Resting EKG
- Assessment of coronary artery disease using Multiple-Risk-Factor Assessment[1]
  (age, lipid profile, blood pressure, diabetic screening, smoking)
  Note: Exercise stress testing may be indicated based on Multiple-Risk-Factor Assessment[1]

PHYSICIAN'S STATEMENT:

I have evaluated the above mentioned individual according to the tests listed above. I have discussed with the patient any medical condition(s) that would not disqualify them from diving but which may seriously compromise subsequent health. The patient understands the nature of the hazards and the risks involved in diving with these conditions.

_____ 01 I find no medical conditions that may be disqualifying for participation in SCUBA diving.
Diver **<u>IS</u>** medically qualified to dive for: _____2 years (over age 60)
_____3 years (age 40-59)
_____5 years (under age 40)

_____ 02 Diver **<u>IS NOT</u>** medically qualified to dive:_____Permanently_____Temporarily.

_____MD or DO _____

Signature Date

_____

Name (Print or Type)

_____

Address

_____

Telephone Number E-Mail Address

My familiarity with applicant is: _____This exam only _____Regular physician for _____ years

My familiarity with diving medicine is:_____

3.3 APPLICANT'S RELEASE OF MEDICAL INFORMATION FORM

(To Be Completed By Applicant)

_____

Name of Applicant (Print or Type)

I authorize the release of this information and all medical information subsequently acquired in association with my diving to the _____ Diving Safety Officer and Diving Control Board or their designee at (place) _____ on (date) _____

Signature of Applicant _____ Date_____

REFERENCES

[1] Grundy, S.M., Pasternak, R., Greenland, P., Smith, S., and Fuster, V. 1999. Assessment of Cardiovascular Risk by Use of Multiple-Risk-Factor Assessment Equations. AHA/ACC Scientific Statement. *Journal of the American College of Cardiology,* 34: 1348-1359. http://content.onlinejacc.org/cgi/content/short/34/4/1348

3.4 DIVING MEDICAL HISTORY FORM

(To Be Completed By Applicant)

Name _____ DOB _____ Age _____ Wt._____ Ht. _____

Sponsor _____Date _____/_____/_____
(Dept./Project/Program/School, etc.) (Month / Day / Year)

TO THE APPLICANT:

SCUBA diving places considerable physical and mental demands on the diver. Certain medical and physical requirements must be met before beginning a diving or training program. Your accurate answers to the questions are more important, in many instances, in determining your fitness to dive than what the physician may see, hear or feel as part of the diving medical certification procedure.

This form must be kept confidential by the examining physician. If you believe any question amounts to invasion of your privacy, you may elect to omit an answer, provided that you must subsequently discuss that matter with your own physician who must then indicate, in writing, that you have done so and that no health hazard exists.

Should your answers indicate a condition, which might make diving hazardous, you will be asked to review the matter with your physician. In such instances, their written authorization will be required in order for further consideration to be given to your application. If your physician concludes that diving would involve undue risk for you, remember that they are concerned only with your well-being and safety.

	Yes	No	Please indicate whether or not the following apply to you	Comments
1			Convulsions, seizures, or epilepsy	
2			Fainting spells or dizziness	
3			Been addicted to drugs	
4			Diabetes	
5			Motion sickness or sea/air sickness	
6			Claustrophobia	
7			Mental disorder or nervous breakdown	
8			Are you pregnant?	
9			Do you suffer from menstrual problems?	
10			Anxiety spells or hyperventilation	
11			Frequent sour stomachs, nervous stomachs or vomiting spells	
12			Had a major operation	
13			Presently being treated by a physician	
14			Taking any medication regularly (even non-prescription)	
15			Been rejected or restricted from sports	
16			Headaches (frequent and severe)	
17			Wear dental plates	
18			Wear glasses or contact lenses	
19			Bleeding disorders	
20			Alcoholism	
21			Any problems related to diving	
22			Nervous tension or emotional problems	

	Yes	No	Please indicate whether or not the following apply to you	Comments
23			Take tranquilizers	
24			Perforated ear drums	
25			Hay fever	
26			Frequent sinus trouble, frequent drainage from the nose, post-nasal drip, or stuffy nose	
27			Frequent earaches	
28			Drainage from the ears	
29			Difficulty with your ears in airplanes or on mountains	
30			Ear surgery	
31			Ringing in your ears	
32			Frequent dizzy spells	
33			Hearing problems	
34			Trouble equalizing pressure in your ears	
35			Asthma	
36			Wheezing attacks	
37			Cough (chronic or recurrent)	
38			Frequently raise sputum	
39			Pleurisy	
40			Collapsed lung (pneumothorax)	
41			Lung cysts	
42			Pneumonia	
43			Tuberculosis	
44			Shortness of breath	
45			Lung problem or abnormality	
46			Spit blood	
47			Breathing difficulty after eating particular foods, after exposure to particular pollens or animals	
48			Are you subject to bronchitis	
49			Subcutaneous emphysema (air under the skin)	
50			Air embolism after diving	
51			Decompression sickness	
52			Rheumatic fever	
53			Scarlet fever	
54			Heart murmur	
55			Large heart	
56			High blood pressure	
57			Angina (heart pains or pressure in the chest)	
58			Heart attack	

	Yes	No	Please indicate whether or not the following apply to you	Comments
59			Low blood pressure	
60			Recurrent or persistent swelling of the legs	
61			Pounding, rapid heartbeat or palpitations	
62			Easily fatigued or short of breath	
63			Abnormal EKG	
64			Joint problems, dislocations or arthritis	
65			Back trouble or back injuries	
66			Ruptured or slipped disk	
67			Limiting physical handicaps	
68			Muscle cramps	
69			Varicose veins	
70			Amputations	
71			Head injury causing unconsciousness	
72			Paralysis	
73			Have you ever had an adverse reaction to medication?	
74			Do you smoke?	
75			Have you ever had any other medical problems not listed? If so, please list or describe below;	
76			Is there a family history of high cholesterol?	
77			Is there a family history of heart disease or stroke?	
78			Is there a family history of diabetes?	
79			Is there a family history of asthma?	
80			Date of last tetanus shot? Vaccination dates?	

Please explain any “yes” answers to the above questions.

_____

_____

_____

_____

_____

I certify that the above answers and information represent an accurate and complete description of my medical history.

Signature Date

3.5 RECOMMENDED PHYSICIANS WITH EXPERTISE IN DIVING MEDICINE

A List of Medical Doctors that have training and expertise in diving or undersea medicine can be found through the Undersea and Hyperbaric Medical Society or Divers Alert Network. See links below
https://www.uhms.org/resources/diving-medical-examiners-list.html
https://www.diversalertnetwork.org/medical/physicians.asp

1. Name: Ian Richardson
   Address: Express Care Agana Shopping Center, #207 above Payless Area, Hagåtña, 96910, Guam
   Telephone: +1 671-477-2873
2. Name: Frances Nicdao
   Address: 263 Vietnam Veterans Memorial Hwy, Mangilao, 96913, Guam
   Telephone: +1 671-648-9200
3. Name: _____
   Address:_____
   _____
   Telephone:_____
4. Name: _____
   Address:_____
   _____
   Telephone:_____
5. Name: _____
   Address:_____
   _____
   Telephone:_____
6. Name: _____
   Address:_____
   _____
   Telephone:_____

APPENDIX 4 SNORKEL MEDICAL & HISTORY FORMS

4.1a SNORKELING MEDICAL FORM

(To Be Completed By Applicant)

PARTICIPANT RECORD CONFIDENTIAL INFORMATION Please read carefully before signing.

This is a statement in which you are informed about potential risks related to snorkeling and the code of conduct to be accepted in the snorkeling program. Signing this statement is required to be considered as a participant in the snorkeling program offered by the Diving Safety Officer John Peralta and University of Guam Marine Laboratory, located in the city of Mangilao, Guam.
Read this statement prior to signing it. You must complete the medical questionnaire to enroll in the snorkeling program. If you are a minor, you must have this statement signed by a parent or guardian.
Snorkeling can be a demanding activity. When performed correctly, and when applying appropriate techniques, it is generally a safe activity. When established safety procedures are not followed, however, there are severe safety risks. To snorkel safely, you should be physically fit and not extremely overweight. Snorkeling can be strenuous under certain conditions. Your respiratory and circulatory systems must be in good health. All body air spaces must be normal and healthy. A person with coronary disease, current cold or congestion, epilepsy, a severe medical problem or under the influence of alcohol or drugs should not snorkel. If you have asthma, heart disease, other chronic medical conditions or you are taking medications on a regular basis, you should consult your doctor and the Dive Safety Officer before participating in this program, and on a regular basis thereafter upon completion.
You will also need to learn from the Dive Safety Officer the important safety rules regarding snorkeling. If you have any questions regarding this medical statement or the medical questionnaire, review them with the Dive Safety Officer before signing.

MEDICAL QUESTIONNAIRE To the Participant:

The purpose of this medical questionnaire is to find out if you should be examined by your doctor before participating in the snorkeling program of the University of Guam Marine Laboratory. A positive response to a question does not necessarily disqualify you from snorkeling. A positive response means that there is a preexisting condition that may affect your safety while snorkeling and you must seek the advice of your physician prior to engaging in snorkeling activities under the auspices of the University of Guam.

Please answer the following questions of your past or present medical history with a **YES** or **NO**. If you are not sure, answer **YES**. If any of these items apply to you, we must require that you consult with a physician prior to participating in snorkeling and fill out the Physician's Approval Form 4.1b (see next page for form).

_____ Are you presently taking prescription medications (with the exception of birth control or anti-malarials)?

HAVE YOU EVER HAD OR DO YOU CURRENTLY HAVE…
_____ Epilepsy, seizures, convulsions or take medications to prevent them?
_____ Blackouts or fainting (full/partial loss of consciousness)?
_____ Inability to perform moderate exercise (example: walk 1.6 km/one mile within 12 mins.)?
_____ Heart disease, heart attack, angina, heart surgery or blood vessel surgery?

The information I have provided about my medical history is accurate to the best of my knowledge. I agree to accept responsibility for omissions regarding my failure to disclose any existing or past health condition.

Signature:_____

Date:_____

4.1b SNORKELING MEDICAL FORM – PHYSICIAN'S APPROVAL

(Must be filled out by physician if there are any YES answers on the previous form 4.1a)

PARTICIPANT (Please Print) :

Name _____ Birth Date _____

Mailing Address_____

City _____State/Province _____ Country _____

Zip/Postal Code _____ Home Phone _____

Email _____ Business Phone _____

Name and address of your family or primary care physician:

Physician _____Clinic/Hospital _____

Address _____Phone _____

Date of last physical examination _____Name of examiner_____

Clinic/Hospital _____ Phone _____

Address _____

_____

PHYSICIAN:

This person will be traveling and snorkeling as part of their participation in educational and/or research programs sponsored by University of Guam Marine Lab. Your opinion of the applicant's medical fitness for travel and snorkeling is requested. Please review the attached medical history of the applicant.

PHYSICIAN'S IMPRESSION:

____ I find no medical conditions that I consider incompatible with snorkeling.

____ I am unable to recommend this individual for snorkeling.

Remarks _____

Physician's Signature _____ M.D. Date _____

Physician _____Clinic/Hospital _____

Address _____ Phone _____

4.2 SNORKELING HISTORY FORM

(To Be Completed By Applicant)

Participant's Name _____ Date _____

Describe Snorkeling History

_____

_____

_____

_____

_____

Date and Location of Last Snorkeling Activity

_____

_____

_____

_____

APPENDIX 5 DIVING EMERGENCY ACTION PLAN

Introduction

A diving accident victim could be any person who has been breathing air underwater regardless of depth. It is essential that emergency procedures are pre-planned and that medical treatment is initiated as soon as possible. It is the responsibility of each AAUS organizational member to develop procedures for diving emergencies including evacuation and medical treatment for each dive location.

General Procedures

Depending on and according to the nature of the diving accident:

1. Make appropriate contact with victim or rescue, as required.
2. Establish (A)irway, (B)reathing, (C)irculation, as required.
3. Stabilize the victim
3. Administer 100% oxygen, if appropriate (in cases of Decompression Illness, or Near Drowning).
4. Call local Emergency Medical System (EMS) for transport to nearest medical treatment facility. Explain the circumstances of the dive incident to the evacuation teams, medics and physicians.

Do not assume that they understand why 100% oxygen may be required for the diving accident victim or that recompression treatment may be necessary.

5. Call appropriate UOGML Dive Safety Officer, for contact with diving physician and decompression chamber, etc.
6. Notify DSO or designee according to the Emergency Action Plan of the organizational member.
7. Contact Worker's Compensation if medical attention is required and follow instructions for submission of appropriate forms.
8. Complete and submit Incident Report Form (www.aaus.org) to the DCB of the organization and the AAUS (Section 3.1 of this Manual: Incident Reporting Procedure).

List of Emergency Contact Numbers Appropriate For Dive Location

_____
_____
_____
_____
_____
_____
_____
_____
_____

Available Procedures

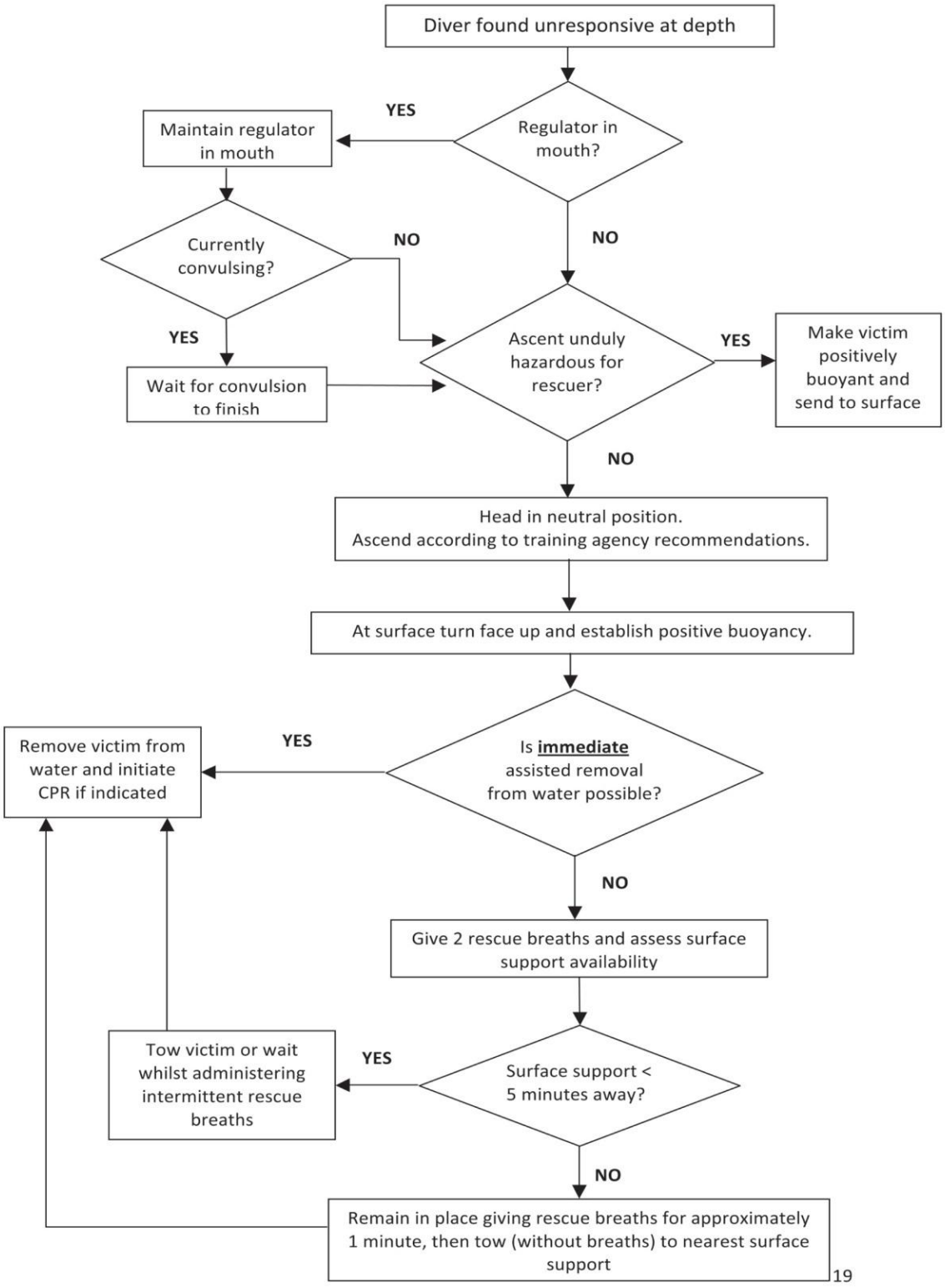
- Emergency care
- Recompression
- Evacuation

Emergency Plan Content

- Name, telephone number, and relationship of person to be contacted for each diver in the event of an emergency.
- Nearest operational decompression chamber.
- Nearest accessible hospital.
- Available means of transport.

RECOMMENDATIONS FOR RESCUE OF A SUBMERGED UNRESPONSIVE COMPRESSED-GAS DIVER

From: S.J. Mitchell et al., Undersea and Hyperbaric Medicine 2012, Vol. 39, No. 6, pages 1099-1108



19

APPENDIX 6 UOGML/AAUS DIVING INCIDENT REPORT FORM

Required Incident Reporting: All diving incidents requiring recompression treatment, or resulting in moderate or serious injury, or death shall be reported the AAUS Statistics Committee. The report will specify the circumstances of the incident and the extent of any injuries or illnesses. This form is confidential and for statistics purposes only. The Organizational Member's Diving Control Board must review and release this report before it is submitted to the AAUS Statistics Committee.

Check the appropriate space(s) & complete the form:

___Simple Illness ___Referred to Physician ___Serious injury

___Barotrauma ___Hyperbaric Treatment ___Near Drowning

___Hyperoxia ___Hypercapnea ___Fatality ___Other

•Workers' Compensation Claim Yes___ No___

Descriptive Report (use additional sheets if necessary) Date of Incident: _____/_____/_____
Month Day Year

Circumstances and the extent of the injuries or illnesses

Treatment provided and results

Recommendations to avoid repetition of incident:

Organizational Member Name:_____

Name & Title of Person Submitting Report:_____
(Please print)

Signature: _____ Date: ____/____/_____

Mailing Address: _____

Telephone:_____e-mail:_____

APPENDIX 7 WORKERS' COMPENSATION

Everyone employed by the University of Guam is covered by Worker's Compensation, in the event of a work-related injury or illness. You are also covered during work-related travel, provided you have filed an Administrative Leave form.

Instructions for filing for Workers' Compensation and relevant information:

1. The supervisor or group leader fills out Form 101a and b (Authorization to see a doctor), signs it, and provides the injured/ill person with these signed forms prior to a hospital or treatment center visit.
2. In the case of an emergency, the injured/ill person should go directly to a treatment facility and the supervisor will bring Form 101a and b to the place of treatment. The injured person or someone accompanying them is responsible for informing the supervisor of the illness or injury.
3. The injured person fills out Form 201 (Notice of Employee's Injury) and an incident report.
4. The injured person requests a copy of the Physician's Report as soon as it is available.
5. The supervisor fills out Form 202 (Employer's Report of Injury/Illness).
6. All forms, as well as the Physician's Report are submitted to the UOGML Lab Manager or Director (i.e., the person assigned to handling WC claims).

Payment: If the treatment facility accepts Workers' Compensation, then copies of form 101 a and b must be left with the facility. If the facility does not accept Workers' Compensation, then services will have to be paid for at the time of treatment, and reimbursement will be provided by the University at a later time.

The pages that follow are the WC forms mentioned above. They can be obtained from the UOGML Laboratory Safety Manager.

WORKER'S COMPENSATION COMMISSION

Department of Labor * Government of Guam * P.O. Box 9970 Tamuning, Guam 96931
Tel: (671) 300-4571/77 Fax: (671) 475-6811

WCC File#

INSTRUCTIONS: This side of the form should be completed in full. It authorizes a physician (duly qualified physicians include surgeons, osteopathic acupuncturists within the scope of their practice as defined by law) to examine and/or treat the employee for the injuries arising out of such accidental occupational injury, illness, or disease covered by the Guam Worker's Compensation Law. PLEASE TYPE OR PRINT LEGIBLY.

1. Name of Authorized Physician (circle one):	2. Name of Medical Facility (circle one):	
Physician on Duty at GMHA	Guam Memorial Hospital Authority	
3. Physician's Address:	**4. Medical Facility's Address:**	
Same as box 4	Guam Memorial Hospital Authority 850 Gov Carlos Camacho Road Tamuning, Guam 96911	
5. Name of Injured Employee , DoB, & SSN:	**6. Occupation:**	**7. Date of Injury:**

8. Description of Injury:

9. YOU ARE AUTHORIZED TO PROVIDE MEDICAL SERVICES TO THE EMPLOYEE AS FOLLOWS: (Please check one)

	A) If you believe the condition is related to the injury, furnish office and/or hospital treatment as necessary for the effects of the injury.
	B) If there is doubt as to whether the condition is related to the injury, you are authorized to examine the employee, using indicated non-surgical diagnostic studies, and should promptly advise those listed in Item 14 whether you believe the disability is due to the alleged injury. Pending further advice, you may provide such necessary conservative treatment.
	C) Other: EXAMINATION & TREATMENT of INJURY(IES) AS STATED IN BOX 8 – SINGLE VISIT ONLY. **** AUTHORIZATION INVALID IF ALTERED WITHOUT PRIOR APPROVAL BY WCC OFFICE **********

YOU ARE REQUESTED TO SUBMIT A WRITTEN REPORT OF FIRST TREATMENT WITHIN 20 DAYS TO THE COMMISSIONER AT THE ADDRESS INDICATED ITEM 13 BELOW. (See back of this form for instructions as to the medical report and the submission of your charges). Reports <u>are requisite</u> if services are to be paid.

22 GCA §9132 "Any person who willfully makes any false or misleading statement or representation for the purpose of obtaining any benefit or payment under this Title, or for the purpose of evading liability for any benefit or payment under this Title, shall be guilty of a misdemeanor."

10. Signature and Title of Authorizing Official:	**11. Name and Address of Employer:**
12. Date:	

13. Send your REPORT to:	**14. Name & address of Insurance Carrier to whom COPY of your report and BILL are to be sent:**
WORKER'S COMPENSATION COMMISSION **P.O. Box 9970** **Tamuning, Guam 96931**	**See Box 13**

FOR STATISTICAL PURPOSES ONLY:	
Employee's ethnicity (please choose one):	***Employee's citizenship (please choose one):***
Chamorro ***Yapese*** ***Japanese*** ***American*** ***Chuukese*** ***Marshall Islander*** ***Korean*** ***Kosraean*** ***Palauan*** ***Filipino*** ***Pacific Islander*** ***Pohnpeian*** ***Chinese*** ***Other (specify):*** _____	***U.S.*** ***Permanent Alien Resident*** ***Other (specify):***

FORM GWC-101a: AUTHORIZATION for MEDICAL EXAMINATION and/or TREATMENT (Revised 3/2014)

ATTENDING PHYSICIAN'S REPORT OF INJURY AND TREATMENT

INSTRUCTIONS TO PHYSICIAN: This initial report should be completed and mailed within 20 days, the original to the Commissioner (see item 13 for address), with a copy to the Company in item 14. Subsequent reports should be made regularly on Form GWC-204 or in narrative form while employee is in your care. Please read Item 9 on the front of this form. PLEASE TYPE OR PRINT LEGIBLY.

15. What history of injury or disease did Employee give to you?

16. Is there any history or evidence of PRE-EXISTING injury, disease, or physical impairment? [ ] NO [ ] YES (Describe):

17. What are your findings?	**18. What is your diagnosis?**

19. Do you believe the condition found was CAUSED or AGGRAVATED by the employment activity described? [ ] YES [ ] NO
(Please explain if there is doubt):

20. Did injury require hospitalization?[ ]YES[ ]NO **Hospital:** **Admission date:** **Discharge date:**	**21. Is additional hospitalization required? [ ] YES [ ] NO**

22. Surgery (If any, please describe):

Date performed:

23. Other types of treatments:	**24. What PERMANENT DEFECTS do you anticipate?**	
25. Date of first examination:	**26. Dates of treatments:**	**27. Date of discharge:**

28. Period of TEMPORARY DISABILITY **(Indicate if unknown):** **Partial Disability: From To** **Total Disability: From To**	**29. Date Employee is able to resume work:** **LIGHT WORK [ ]** **REGULAR WORK [ ]**

30. If Employee is able to resume work, date when advised:

31. If Employee is able to resume only light work, indicate extent of PHYSICAL LIMITATIONS and type of work he/she could reasonably perform with limitations:

32. General remarks and RECOMMENDATIONS for future care, if indicated:

33. Do you SPECIALIZE? [ ] NO [ ] YES (Please specify):

22 GCA §9132 "Any person who willfully makes any false or misleading statement or representation for the purpose of obtaining any benefit or payment under this Title, or for the purpose of evading liability for any benefit or payment under this Title, shall be guilty of a misdemeanor."

FORM GWC-101B REVISED (3/2014)

WORKER'S COMPENSATION COMMISSION

Department of Labor * Government of Guam
P. O. Box 9970 Tamuning, Guam 96931
Tel: (671) 300-4571/77 Fax: 671-475-6811

WCC File #:

INSTRUCTIONS: This form may be used by the Employee to file a NOTICE of an injury, illness or in the case of death, by Employee's representative. No benefits need be paid without this notice. Notice shall be given to the Commissioner and to the Employer by delivery or to the last known place of business. 22 GCA 9113. **PLEASE PRINT OR TYPE.**

**** THIS IS NOT A CLAIM ****

1. Name of injured Employee, DOB, & SSN:_____ - ____ - _____	2. Name of Employer & EIN:
3. Employee's address & telephone number:	4. Employer's address:
5. Date & time of alleged injury/illness:	6. Did employee stop work? If so, date stopped:
7. Employee's occupation:	8. Name of supervisor at time of injury:
9. Place where injury occurred:	
10. Is another person not of your employment the cause of the accident? [ ] YES [ ] NO	11. Will you file suit against the other person? [ ] YES [ ] NO
12. DESCRIBE IN FULL HOW THE ACCIDENT OCCURRED: Relate the events which resulted in the injury/illness. Tell what the Employee was doing at the time of the accident. Tell what happened and how it happened. Name any object or substance involved and tell how they were involved. Give full details on all factors which led or contributed to the accident. Use additional sheets if required and attach to this report.	
13. Effects of the injury (Indicate parts of body affected and how affected).	

22 GCA §9132 "Any person who willfully makes any false or misleading statement or representation for the purpose of obtaining any benefit or payment under this Title, or for the purpose of evading liability for any benefit or payment under this Title, shall be guilty of a misdemeanor."

14. Name & signature of person completing this notice:	15. Date of this notice:

FOR STATISTICAL PURPOSES ONLY

Please choose ONE ETHNICITY:			Please choose ONE CITIZENSHIP:
Yapese	Marshallese	American	United States
Chuukese	Palauan	African American	Permanent Resident Alien
Kosraean	Guamanian	Japanese	Other (specify):
Pohnpeian	Filipino	Korean	
Chinese	Other (specify):		

Form GWC-201: NOTICE of EMPLOYEE'S INJURY/ILLNESS or DEATH (Revised 3/2014)

WORKER'S COMPENSATION COMMISSION

Department of Labor * Government of Guam
P.O. Box 9970, Tamuning, Guam 96931
Tel: (671) 300-4571/77 Fax: (671) 475-6811

WCC File #:

INSTRUCTIONS: This form may be used by the Employer to report an injury or illness. 22 GCA 9131 requires the Employer to report to the Commissioner within ten (10) days from the date of or knowledge of any injury or illness. Failure or refusal to file this report may subject the Employer to a penalty of up to $500.00. **PLEASE PRINT OR TYPE.**

1. Name of injured Employee, DOB & SSN:	2. Name of Employer & EIN:
3. Employee's address & telephone no: ( )	4. Employer's address & Telephone no.: ( )
5. Date & time of alleged injury/illness:	6. Date of Employer's first knowledge of injury:
7. Date & hour Employee first lost time because of injury/illness:	8. Date & hour Employee returned to work:
9. Date & hour pay stopped:	10. Days usually worked per week (x days): S M T W TH F S Average hours per week:
11. Employee's occupation:	12. Employee's wages/earnings (overtime, etc):
13. Is another person not of your employment caused the accident? [ ] YES [ ] NO	a. Hourly: $ b. Weekly: $

14. DESCRIBE IN FULL HOW THE ACCIDENT OCCURRED: Relate the events which resulted in the injury/illness. Tell what the injured was doing at the time of the accident. Tell what happened and how it happened. Name any object or substance involved and tell how they were involved. Give full details on all factors which led or contributed to the accident. Use additional sheets if required and attach to this report.

15. NATURE OF INJURY/ILLNESS (Name part of body affected - fractured leg, bruised arm, lacerated finger, etc) Note any amputations.

16. Has medical attention been authorized? [ ] YES [ ] NO	17. Date authorized:	18. Has insurance carrier been notified? [ ] YES [ ] NO	19. Date notified:
20. Name of treating physician:		21. Name of insurance carrier: **Worker's Compensation Commission c/o Guam Dept of Labor**	
22. Name of treating facility:		23. Name & signature of person completing report:	

22 GCA §9132 "Any person who willfully makes any false or misleading statement or representation for the purpose of obtaining any benefit or payment under this Title, or for the purpose of evading liability for any benefit or payment under this Title, shall be guilty of a misdemeanor."

24. Title of person completing report:	25. Date of this report:

FOR STATISTICAL PURPOSES ONLY

Please choose ONE ETHNICITY:			Please choose ONE CITIZENSHIP:
Yapese	Marshallese	African American	United States
Chuukese	Palauan	Japanese	Permanent Resident Alien
Kosraean	Chamorro	Chinese	Other (specify):
Pohnepian	Filipino	American	
Korean	Other (specify):		

Form GWC-202: EMPLOYER'S REPORT of OCCUPATIONAL INJURY or ILLNESS (Page 1) (Rev 3/1/2014)

Form GWC-202: EMPLOYER'S REPORT of OCCUPATIONAL INJURY or ILLNESS (Page 2): Rev 3/1/2014

PLEASE CIRCLE THE APPROPRIATE ITEMS (for statistical purposes)

A. EVENT CODE

01 Fatality	02 No Time Loss	03 Time Loss

B. NATURE OF INJURY CODE

01 Amputation	08 Disease/Illness	15 Hearing Loss
02 Asphyxia	09 Dislocation	16 Hernia
03 Bruise/Contusion/Abrasion	10 Electric Shock	17 Poisoning (Systemic)
04 Burn (Chemical)	11 Exertion	18 Puncture
05 Burn (Heat)	12 Foreign Body in Eye/Conjunctivitis	19 Radiation Effects
06 Concussion	13 Fracture	20 Strain/Sprain
07 Cut/Laceration/Puncture	14 Freezing/Frostbite	21 Other (Specify)

C. BODY PART CODE LEFT | RIGHT

Abdomen	01		Thumb	14	15	Great Toe	34	35
Ankle(s):	02	03	Fingers Index-Small			Toes		
Back	04		(First-Fourth)	16 17 18 19	20 21 22 23	(First-Fourth)	36 37 38 39	40 41 42 43
Body	05							
System	06		Wrist	24	25	Ankle	44	45
Chest	07		Hand	26	27	Foot	46	47
Head	08		Elbow	28	29	Knee	48	49
Ear(s)	09	10	Arm	30	31	Leg	50	51
Eye(s)	11	12	Shoulder	32	33	Hip(s)	52	53
Face	13							

D. TYPE OF EVENT CODE

01 Absorption	05 Fall (Same level)	10 Rubbed/Abraded
02 Bite/Sting/Scratch	06 Fall (From elevation)	11 Shock
03 Cardio-Vascular/Respiratory System Failure	07 Ingestion	12 Struck Against
	08 Inhalation	13 Struck By
04 Caught In or Between	09 Repeated Motion/Pressure	14 Other (Specify)

E. SOURCE INJURY CODE

01 Aircraft	15 Electrical Apparatus/Wiring	29 Metal Products
02 Air Pressure	16 Explosives	30 Motor Vehicle (Highway)
03 Animal/Insect/Bird/Reptile/Fish	17 Fire/Smoke	31 Motor Vehicle (Industrial)
04 Boat	18 Food	32 Motorcycle
05 Bodily Motion	19 Furniture/Furnishings	33 Person
06 Boiler/Pressure Vessel	20 Gases	34 Petroleum Products
07 Boxes/Barrels, Etc.	21 Glass	35 Pump/Prime Motor
08 Buildings/Structures	22 Hand Tool (Manual)	36 Radiation
09 Chemical Liquid/Vapor	23 Hand Tool (Powered)	37 Vegetation
10 Cleaning Compound	24 Heat (Environmental/Mechanical)	38 Waste Products
11 Cold (Environment/Mechanical)	25 Hoisting Apparatus	29 Water
12 Dirt/Sand/Stone	26 Ladder	40 Weapons
13 Drugs/Alcohol	27 Machine	41 Working Surface
14 Dust/Particles/Chips	28 Materials Handling Equipment	42 Other (Specify)

F. CONTRIBUTING ENVIRONMENTAL FACTOR CODE

01 Catch Point/Pointer Action	10 Pinch Point Action
02 Chemical Action/Reaction Exposure	11 Radiation Condition
03 Flammable Liquid/Solid Exposure	12 Shear Point Action
04 Flying Object Motion	13 Sound Level
05 Gas/Vapor/Mist/Fume/Smoke/Dust Condition	14 Squeeze Point Action
06 Illumination	15 Temperature Above or Below Tolerance Level
07 Materials Handling Equipment/Method	16 Weather/Earthquake, Etc. Condition
08 Overhead Moving and/or Falling Object Action	17 Working Surface/Facility Layout Condition
09 Overpressure/Underpressure Condition	18 Other (Specify)

G. TASK ASSIGNMENT CODE

01 Employee Working at Regularly Assigned Task(s)	02 Employee Working at OTHER than Regularly Assigned Task(s)

APPENDIX 8 TRIP REQUEST PROCEDURES

8.1 BOAT/TRUCK RESERVATIONS

Trucks and boats must be reserved before submitting a trip request using the following protocol:

To reserve a boat or truck for fieldwork:

1. Check with Marine Techs that the truck or boat/captain are available for your desired day. If Marine Techs are not available in person, write them a note with your name, contact number and request on the white board outside their office in the boathouse and they will contact you once they are back in the office.
2. Once confirmed, write the following on the chalkboard inside the Marine Tech office:
    a. Your name
    b. What you are reserving: Boat or Truck (if boat, you don't need to write "truck" also, it comes with it)
    c. Where you are going
3. Submit a trip request to DSO for approval of trip details. **An approved trip request does NOT mean a confirmed Boat/Truck reservation.** You MUST use the chalkboard to ensure availability.
4. If you cancel your trip – remove your name so others can use

To Checkout a truck for Errands:

1. Check with Marine Techs (or admin if they are in field) that the truck is available.
2. Write the following on the chalkboard info so we know where you will be:
    a. Your name, the word "Truck", where you are going, time checking out.

*You must be on the approved driving list to checkout/drive the truck. Trucks must be back by 4:30pm, please notify a staff member if you are running late.

8.2 LOCAL TRIP REQUEST PROCEDURE

1. Trip requests must be submitted 24 hours in advance. If you need to make a last-minute request, please contact the DSO directly to see if a short notice approval is possible.
2. Access the trip request form on the UOGML website, under the diving tab. “Submit a Trip Request” button is located under the calendar, or use the link: https://uguam.formstack.com/forms/trip_request_form
3. Password is: 96923
4. Fill out all information and submit. Double check for accuracy or your trip request may be denied.
5. Trip requests must be approved by both the DSO and Director. Once approved, you will receive an email confirmation, and you may then proceed with your trip. If you do NOT receive a confirmation email before your trip, your trip is NOT authorized. In that case, please contact the DSO to find out why the trip was not approved.

8.3 APPLICATION FOR APPROVAL OF DIVE PLAN

(For visitors, workshops and off island trips)

University of Guam Marine Lab
Application for Approval of Dive Plan

Dive Details

Dive plan submitted by		Date submitted	
Principal investigator		Lead diver	
Proposed start date		Proposed end date	
Proposed # of dives		Proposed # of divers	
General dive location		Max depth	

Will this plan involve (check all that apply)

	Marine lab boats *		Specialty diving		Science divers in training
	Other boats or ships		Flying after diving		Nitrox
	Multiple days of diving		International travel		
	Decompression diving		Non-UOGML personnel		

* PI/Lead diver must meet with one of the captains prior to submitting this application.

General dive plan considerations

- In the interest of the dive team, it is expected that any diver who feels ill or has reasonable cause to believe they have been exposed to the Corona SARS-CoV-2 virus will exclude her/himself from diving operations until receiving medical clearance to dive.
- All divers must be familiar with the UOGML or AAUS Standards for Scientific Diving Manual.
- The Lead Diver is responsible for making and communicating decisions on in-water details of this dive plan including buddy assignments and tasks, goals and objectives, maximum depth(s) and bottom time, gas management, entry, exit, descent and ascent procedures, perceived environmental and operational hazards and mitigations, emergency and diver recall procedures.
- Any diver has the right to refuse to dive without fear of penalty if they feel the conditions are unsafe or unfavorable, OR the dive violates the precepts of their training OR the regulations of the UOGML/AAUS Standards for Scientific Diving Manual.
- It is the responsibility of each 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.
- All Dive plans MUST be based on the competency of the least experienced diver.
- Absolutely NO Solo Diving is allowed.
- An Emergency Management Plan MUST be completed for each expedition including the following: emergency contact information (including name, relationship, and telephone number) for each diver, nearest recompression chamber, nearest accessible hospital and anticipated means of transportation.

Dive Plan Roster and Emergency Contacts

	Diver Name	Depth Rating	Phone #	Emergency Contacts		
				Name	Relation	Phone #
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Purpose of dives

Operation Plan

Boat/vessel names		On site emergency comms (e.g., cell phone, VHF radio)	
Estimated depth		Estimated bottom time	
Dive tables used		Dive computer used	

Specific diving locations

Decompression schedules and repetitive dive plans (attach dive profile worksheet if necessary)

Diving work plans (attach detailed explanation if necessary)

Nitrox (include percentages)

Tools or specialized equipment (rebreathers, scooters, drills, hookah, etc.)

Hazardous conditions anticipated (e.g., cold water, low vis, extreme currents, extreme depths)

Safety equipment (check all that apply)

	First aid kit		Emergency Oxygen		Dive flag
Others					

International travel

Attach a copy of all itineraries including flight times, accommodations, and contact information

Contacts in country	
US consulate or embassy phone number	

Emergency management plan

A diving accident victim could be any person who has been breathing air underwater regardless of depth. It is essential that emergency procedures are pre-planned, and that medical treatment is initiated as soon as possible. The following procedures provide guidance for dealing with emergencies that arise in the course of compressed gas diving. They do not substitute for project supervisors and participants good judgement. Furthermore, they cannot account for all possible situations. Proper emergency actions rely upon sound training, sound judgement and rapid response.

It is the responsibility of the lead Diver for each project or dive to establish effective diving emergency procedures for the local diving operations, including evacuation and medical treatment. Divers must report all injuries to the Diving Safety Officer.

General procedures

1. Make appropriate contact with victim or rescue as required.
2. Establish (A)irway (B)reathing (C)irculation or (C)irculation (B)reathing (A)irway as appropriate.
3. Stabilize the victim.
4. Administer emergency oxygen, if appropriate (in cases of DCI or near drowning).
5. Call 911 or local Emergency Medical System (EMS) for transport to the nearest medical facility. Explain the circumstances of the dive incident to the evacuation team, medics, and physicians. Do not assume that they understand why 100% oxygen may be required for the diving accident victim or that recompression treatment may be necessary.
6. Contact Divers Alert Network Emergency Hotline (1-919-684-9111).
7. Notify the Diving Safety Officer. If the Diving Safety officer is not immediately available, contact Marine Lab administration.
8. If possible, complete the following actions: a) take notes of how the incident occurred and all response measures taken, including a timetable of actions; b) isolate the victim's equipment for inspection by the DSO and authorities; c) manage the accident scene for crowd control. Assign someone to keep bystanders from interfering; d) Make statements regarding the incident only to UOGML and EMS/Medical personnel. UOGML representatives shall be responsible for providing information to the media.
9. As soon as possible, the UOGML DSO prepares a diving incident report, including facts of the injury and treatment rendered, and statements from pertinent witnesses. A copy of this report shall be forwarded to the UOGML Diving Control Board, and to AAUS.

Emergency contact information

To be completed by lead diver

Nearest hospital	
Nearest recompression chamber	
Anticipated means of transport	

Emergency management contact information

UOGML Diving Safety Officer (DSO)
Ginger Carter
Office: 671-735-2183
Mobile: 671-727-3817
Email: carterg14457@triton.uog.edu

Divers Alert Network
Emergency Hotline: 919-684-9111
Medical Information: 919-684-2948

Dive plan approval

I certify that this dive plan has been completed in compliance with the University of Guam Marine Lab Diving Program's policies and procedures. I further certify that all information provided in this plan is true and correct to the best of my knowledge.

_____ _____
Signature of Lead Diver Date

_____ _____
Signature of Principal Investigator Date

Space below for UOGML Diving Control Board only

Dive plan approved by

Name & Title _____

_____ _____
Signature Date

Approved amendments

APPENDIX 9 DIVE LOGGING PROCEDURES

Each authorized scientific diver must log every dive made under the auspices of the UOGML's program.

Logs must be submitted to the DSO on the last day of each month for inclusion in the diver's permanent file.

Dives may be submitted using the AAUS/UOGML Dive Logging platform at uogml.diveaaus.com (preferred method) or other format as long as it includes the following:

1. Name of diver and buddy
2. Date, time and location
3. Diving modes used
4. General nature of diving activities
5. Maximum depth and dive time
6. Diving tables or computers used
7. Detailed report of any near or actual incidents

APPENDIX 10 AAUS DIVING RECIPROCITY / VERIFICATION OF TRAINING

AAUS REQUEST FOR DIVING RECIPROCITY FORM
VERIFICATION OF DIVER TRAINING AND EXPERIENCE

Diver: _____ Date: _____

This letter serves to verify that the above listed person has met the training and pre-requisites as indicated below, and has completed all requirements necessary to be certified as a *(Scientific Diver / Diver in Training)* as established by the *(Organizational Member)* Diving Safety Manual, and has demonstrated competency in the indicated areas. (Organizational Member*)* is an AAUS OM and meets or exceeds all AAUS training requirements.

The following is a brief summary of this diver's personnel file regarding dive status at

_____
(Date)

_____ Original diving authorization
_____ Written scientific diving examination
_____ Last diving medical examination Medical examination expiration date_____
_____ Most recent checkout dive
_____ SCUBA regulator/equipment service/test
_____ CPR training (Agency) _____ CPR Exp. _____
_____ Oxygen administration (Agency) _____ 02 Exp. _____
_____ First aid for diving _____ F.A. Exp. _____
_____ Date of last dive _____ Depth
Number of dives completed within previous 12 months?_____ Depth Authorization_____ feet
Total number of career dives? _____

Any restrictions or Waivers of Requirements? (Y/N)_____ if yes, explain:

Please indicate any pertinent authorizations or training:

Emergency Information:

Name: _____Relationship:_____

Telephone: _____(work) _____(home)

Address:_____

This is to verify that the above information is complete and correct

Diving Safety Officer:

_____ _____

(Signature) (Date)

_____

(Print)

APPENDIX 11 AAUS STATISTICS COLLECTION CRITERIA AND DEFINITIONS

COLLECTION CRITERIA:

The "Dive Time in Minutes", The Number of Dives Logged", and the "Number of Divers Logging Dives" will be collected for the following categories.

- Dive Classification
- Breathing Gas
- Diving Mode
- Decompression Planning and Calculation Method
- Depth Ranges
- Specialized Environments
- Incident Types

Dive Time in Minutes is defined as the surface-to-surface time including any safety or required decompression stops.

A Dive is defined as a descent underwater utilizing compressed gas and subsequent ascent/return to the surface with a minimum surface interval of 10 minutes.

Dives will not be differentiated as open water or confined water dives. But open water and confined water dives will be logged and submitted for AAUS statistics classified as either scientific or training/proficiency.

A "Diver Logging a Dive" is defined as a person who is diving under the auspices of your scientific diving organization. Dives logged by divers from another AAUS Organization will be reported with the diver's home organization. Only a diver who has actually logged a dive during the reporting period is counted under this category.

Incident(s) that occur during the collection cycle: Only incidents that occurred during, or resulting from, a dive where the diver is breathing a compressed gas will be submitted to AAUS.

DEFINITIONS:

Dive Classification:

- Scientific Dives: Dives that meet the scientific diving exemption as defined in 29 CFR 1910.402. Diving tasks traditionally associated with a specific scientific discipline are considered a scientific dive. Construction and trouble-shooting tasks traditionally associated with commercial diving are not considered a scientific dive.
- Training and Proficiency Dives: Dives performed as part of a scientific diver-training program, or dives performed in maintenance of a scientific diving certification/authorization.

Breathing Gas:

- Air: Dives where the bottom gas used for the dive is air.
- Nitrox: Dives where the bottom gas used for the dive is a combination of nitrogen and oxygen percentages different from those of air.
- Mixed Gas: Dives where the bottom gas used for the dive is a combination of oxygen, nitrogen, and helium (or other inert gas), or any other breathing gas combination not classified as air or nitrox.

Diving Mode:

- Open Circuit SCUBA: Dives where the breathing gas is inhaled from a self-contained underwater breathing apparatus and all of the exhaled gas leaves the breathing loop.

- Surface Supplied: Dives where the breathing gas is supplied from the surface by means of a pressurized umbilical hose. The umbilical generally consists of a gas supply hose, strength member, pneumofathometer hose, and communication line. The umbilical supplies a helmet or full-face mask. The diver may rely on the tender at the surface to monitor the divers' depth, time and diving profile.
- Hookah: While similar to Surface Supplied in that the breathing gas is supplied from the surface by means of a pressurized hose, the supply hose does not require a strength member, pneumofathometer hose, or communication line. Hookah equipment may be as simple as a long hose attached to a standard SCUBA cylinder supplying a standard SCUBA second stage. The diver is responsible for monitoring his/her own depth, time, and diving profile.
- Rebreathers: Dives where the breathing gas is repeatedly recycled in a breathing loop. The breathing loop may be fully closed or semi-closed. Note: A rebreather dive ending in an open circuit bailout is still logged as a rebreather dive.

Decompression Planning and Calculation Method:

- Dive Tables
- Dive Computer
- PC Based Decompression Software

Depth Ranges:

Depth ranges for sorting logged dives are: 0-30, 31-60, 61-100, 101-130, 131-150, 151-190, 191-250, 251-300, and 301->. Depths are in feet seawater (when measured in meters: 0-10, >10-30, >30-40, >40-45, >45-58, >58-76, >76-92, and >92->). A dive is logged to the maximum depth reached during the dive. Note: Only "The Number of Dives Logged" and "The Number of Divers Logging Dives" will be collected for this category.

Specialized Environments:

- Required Decompression: Any dive where the diver exceeds the no-decompression limit of the decompression planning method being employed.
- Overhead Environments: Any dive where the diver does not have direct access to the surface due to a physical obstruction.
- Blue Water Diving: Open Water diving where the bottom is generally greater than 200 feet deep and requires the use of multiple-tethers diving techniques.
- Ice and Polar Diving: Any dive conducted under ice or in polar conditions. Note: An Ice Dive would also be classified as an Overhead Environment dive.
- Saturation Diving: Excursion dives conducted as part of a saturation mission are to be logged by "classification", "mode", "gas", etc. The "surface" for these excursions is defined as leaving and surfacing within the Habitat. Time spent within the Habitat or chamber must not be logged by AAUS.
- Aquarium: An aquarium is a shallow, confined body of water, which is operated by or under the control of an institution and is used for the purposes of specimen exhibit, education, husbandry, or research (Not a swimming pool).

Incident Types:

- Hyperbaric: Decompression Sickness, AGE, or other barotrauma requiring recompression therapy.
- Barotrauma: Barotrauma requiring medical attention from a physician or medical facility, but not requiring recompression therapy.
- Injury: Any non-barotrauma injury occurring during a dive that requires medical attention from a physician or medical facility.
- Illness: Any illness requiring medical attention that can be attributed to diving.
- Near Drowning/ Hypoxia: An incident where a person asphyxiates to the minimum point of unconsciousness during a dive involving a compressed gas. But the person recovers.

- Hyperoxic/Oxygen Toxicity: An incident that can be attributed to the diver being exposed to too high a partial pressure of oxygen.
- Hypercapnea: An incident that can be attributed to the diver being exposed to an excess of carbon dioxide.
- Fatality: Any death accruing during a dive or resulting from the diving exposure.
- Other: An incident that does not fit one of the listed incident type

Incident Classification Rating Scale:

- Minor: Injuries that the UOGML considers being minor in nature. Examples of this classification of incident would include, but not be limited to:
    - Mask squeeze that produced discoloration of the eyes.
    - Lacerations requiring medical attention but not involving moderate or severe bleeding.
    - Other injuries that would not be expected to produce long term adverse effects on the diver's health or diving status.
- Moderate: Injuries that the UOGML considers being moderate in nature. Examples of this classification would include, but not be limited to:
    - DCS symptoms that resolved with the administration of oxygen, hyperbaric treatment given as a precaution.
    - DCS symptoms resolved with the first hyperbaric treatment.
    - Broken bones.
    - Torn ligaments or cartilage.
    - Concussion.
    - Ear barotrauma requiring surgical repair.
- Serious: Injuries that the UOGML considers being serious in nature. Examples of this classification would include, but not be limited to:
    - Arterial Gas Embolism.
    - DCS symptoms requiring multiple hyperbaric treatment.
    - Near drowning.
    - Oxygen Toxicity.
    - Hypercapnia.
    - Spinal injuries.
    - Heart attack.
    - Fatality.

APPENDIX 12 UOGML BYLAWS

Bylaws the University of Guam Marine Laboratory Diving Control Board

ARTICLE I – NAME

The name of this organization is the University of Guam (UOG) Marine Laboratory Diving Control Board. Administratively, the Board is within the purview of the Division of Academic and Student Affairs of the office of the Senior Vice President for Academic and Student Affairs of the University of Guam.

ARTICLE II – MISSION

The mission of the UOG Diving Control Board (hereafter referred to as the DCB) is to develop, maintain, and enforce a safety program that will train and guide all SCUBA diving and snorkeling research and other water activities associated with the UOG Marine Laboratory (hereafter referred to as UOGML). The mandates of the DCB are: *to support water research activities by maintaining and enforcing safety procedures; to train incoming personnel as certified Scientific Divers and then to maintain those certifications for the length of time the personnel are with the UOGML program; and to facilitate collaborations with other institutions which involve water research activities.* The program will cover activities of the faculty, staff, administrators, and students of the UOGML, as well as visiting research personnel who are diving under the auspices of the UOGML. The program follows that of the American Academy of Underwater Sciences (hereafter referred to as AAUS), but will include conditions that relate to the unique environment of the tropical western Pacific and UOGML as a host institution.

ARTICLE III – MEMBERSHIP

SECTION 1 CRITERIA FOR MEMBERSHIP

The DCB shall be composed of appointed, elected or hired faculty, diving staff, administrators, and students of the UOGML (hereafter referred to as the UOGML community). Specific positions are described below; all positions should be filled at all times in order for the DCB to function in its designated capacity. If a position is vacated for whatever reason, the responsible electing body (as identified in Section 2, below) can elect an interim member to complete the vacancy for the remainder of a given year (see Section 4, below).

SECTION 2 COMPOSITION OF THE DIVING CONTROL BOARD

The DCB shall be composed of the following members:

a. *Dive Safety Officer* (hereafter referred to as *DSO*), who will fill a University hired position as a voting member;
b. *Chair,* who is elected from and by the UOGML faculty, and who will sit on the DCB as a voting member;
c. *ML Director,* who will sit on the DCB as a voting member;
d. *One Marine Technician or staff* other than the DSO*,* who is elected by the faculty and who will sit on the DCB as a voting member;
e. *ML Laboratory Safety Manager,* who will sit on the DCB as a voting member;
f. *Student Representative,* elected from and by the graduate student population, and who will sit on the DCB as a voting member.

SECTION 3 CERTIFICATION OF MEMBERSHIP

The DSO and ML Laboratory Safety Manager shall be permanent members of the DCB, for as long as they remain in the position. The ML Director shall be a member for as long as his/her Directorship term extends. Other members (Chair, voting members) shall be elected for a three-year term, but can be re-elected for a

second consecutive term. Student representatives will serve for one year, but can also be re-elected for a second consecutive term. The recorder (see below) will be elected for a one-year term from among the DCB members, and can also be re-elected for a second term. All members should be certified UOGML scientific divers. The procedure to become a scientific diver is described in detail in the UOGML Scientific Diving Procedures Manual.

SECTION 4 ELECTION OF MEMBERS

Elections and/or verification of membership shall take place at the beginning of each academic year, as necessary, after which the composition of the DCB will be communicated to the Senior Vice President for Academic and Student Affairs. An elected member who cannot fulfill her/his duties and requests a leave of absence or termination from Board membership should notify the Chair in writing or at a regularly scheduled meeting. In the case where an elected member is not able to fulfill his/her full term of service, the respective electing body will elect an Acting member from the UOGML community to fill the role and the DCB Chair will coordinate this process and communicate the results to the DCB and ML community. The Acting member will serve on the DCB until either the elected member returns to their position or until a scheduled election can take place. To elect the student representative, students will hold an election to select this person from among the population of certified student scientific divers. The elected student must be in at least their second year of graduate school, be a certified scientific diver in good standing with the DCB, and be approved by the DCB.

SECTION 5 COMPENSATION

There will be no compensation for agreeing to election or appointment as a DCB member and fulfilling the duties of the elected or appointed position.

SECTION 6 REMOVAL OF MEMBERS

A member of the DCB can be removed from the Board with just cause by a quorum vote of the DCB membership. Prior to vote, the member must be given notice of this vote and provided an opportunity to be heard. Potential causes for removal from the DCB are discussed in the Scientific Diving Procedures Manual.

SECTION 7 CONFLICTS OF INTEREST

The DCB should be informed of any conflicts of interest of Board members on any issue being addressed. In such cases, the Board member with the conflict can participate in discussions but will recuse him- or herself from voting on the issue. To reach a quorum in such cases, the responsible electing body may elect a temporary member to replace the member who cannot vote. The temporary member will be provided with all documentation of the issue to be addressed and will be allowed an appropriate amount of time to apprise themselves of the issue prior to voting.

ARTICLE IV – DUTIES OF THE MEMBERS

The members of the DCB shall have the following duties:

SECTION 1 DUTIES OF MEMBERS

The DSO shall:

a. Maintain the UOGML Scientific Diving Procedures Manual in accordance with AAUS and UOG rules and make the manual available to all UOGML personnel.
b. Maintain updated records of all UOGML divers, which will include physical examination results, diving certification records, dates of Emergency First Responder (EFR), Cardiopulmonary Resuscitation (CPR), Oxygen Provider classes, insurance policies, and incident reports.
c. Remind UOGML divers of when their diving certification classes and physical examinations need to be renewed, in accordance with AAUS and DCB rules and schedules, as outlined in the Scientific Diving Procedures Manual;

d. Maintain a database for UOGML diving personnel gear service records, based on information provided by the diving personnel.
e. Serve as DCB Archivist, maintaining a centralized depository of program documents, including meeting minutes and other historical documents.
f. Coordinate with visiting researchers prior to, and during, their work at UOGML to ensure their safety and adherence to the UOGML diving rules.
g. Communicate with AAUS regarding changes and updates in their policies.
h. Provide updates on these items at regular DCB meetings.
i. Ensure all UOGML divers have the required safety gear on all trips and maintain said safety gear (Oxygen Provider kits, first aid kits, dive flags).
k. Provide written approval of all scheduled UOGML trips involving water activities, after reviewing submitted trip requests.
l. Meet as necessary with other college and university officials and organizations to represent the DCB and/or the Chair, in her/his absence from such meetings.
m. Have the final enforcement authority in safety-related issues that come before the DCB.

The Chair shall:

a. Serve as presiding officer at DCB meetings.
b. Prepare the agenda for DCB meetings and ensure that the agenda and minutes of the previous meeting are made available to board members three business days prior to the meeting.
c. Represent the DCB on any permanent or special university-wide or public body or event that may require its representation.
d. Meet as necessary with other college and university officials and organizations for the maintenance of the DCB program.
e. Serve as signature authority for the DCB program.
f. In recognition of the sensitive and/or confidential nature of issues that may come before the Board for deliberation and action, serve as the communicator of DCB decisions to the UOGML and UOG community, in coordination with the ML Director.
g. Maintain the *Bylaws.*
h. Perform other customary duties of the Chair of an organization, as specified in the Parliamentary Authority (see below, Article VI).

The recorder shall:

a. Be elected from among the remaining members of the Board, by the DCB members.
b. Record the minutes at each meeting and maintain a record of attendance.
c. Ensure that the minutes of the meetings are made available to the Chair and the DSO in a timely manner.
d. Serve as timekeeper for DCB meetings.

The ML Director shall:

a. Serve as Acting DCB Chair during temporary absences of the DCB Chair, to include serving as presiding officer at DCB meetings and other University meetings the Chair might be required to attend.
b. Should the office of DCB Chair become vacant, serve as acting DCB Chair until a new Chair is elected by the UOGML faculty, and results formally provided to the ML Director, who will inform the DCB members.

SECTION 2 RIGHTS AND RESPONSIBILITIES OF THE DCB

The DCB has the following rights and responsibilities:

a. To ensure representation of the DCB in UOGML faculty meetings and in University meetings which require DCB participation.
b. To formulate, update and communicate rules and regulations involving dive and snorkel safety to the UOGML community, as stated in the Scientific Diving Procedures Manual.
c. Update the Scientific Diving Procedures Manual, as needed, and approve changes to it with a majority vote, ensuring that the UOGML faculty are given the opportunity to provide input into substantive changes.
d. To enforce safety rules of the UOGML dive program.
e. To investigate violations of safety rules and regulations, following the procedures outlined in the Scientific Diving Procedures Manual.
f. To decide on appropriate actions to be taken as a consequence of safety violations and ensure that these actions are appropriately undertaken.
g. To communicate, via the DSO, with AAUS regarding updates to their regulations.
h. To facilitate, via the DSO, collaborations with visiting researchers and local agencies where diving and water work are involved.

ARTICLE V – MEETINGS AND LOCATION

SECTION 1 MEETING TIMES AND LOCATION

The DCB shall meet twice per semester, at a time to be decided upon by the Chair in consultation with the other DCB members. Special meetings to deal with urgent or critical issues shall be called by the Chair as needed. Meetings will take place at the UOGML Conference Room or the UOGML Lecture Hall. All members are expected to attend all meetings. If a member is unable to do, she/he may appoint a temporary representative to attend in her/his place. If a quorum vote is required, the elected member may vote electronically once she/he is apprised of the issue to be voted on.

SECTION 2 QUORUM

For all scheduled DCB meetings, both regular and special, the majority of currently certified voting members shall constitute a quorum.

SECTION 3 MEETING PROCEDURES

Meetings shall follow an agenda prepared and distributed in advance, in accordance with the Parliamentary Authority (Section VI, below). DCB decisions will be rendered on issues for which discussion and documentation has been completed, which have been submitted in advance to the Chair by the members of the DCB. Time limits for discussion shall be ten (10) minutes for each agenda item and two (2) minutes for each speaker, unless additional time is needed. When voting on any issue or agenda item, a quorum is necessary and the majority of the quorum decides the vote. The DCB can decide to approve electronic votes, when deemed necessary and expedient. In such cases, electronically voting members are considered "present", for quorum purposes.

Article VI – parliamentary authority

The rules contained in the current edition of *Robert's Rules of Order* shall govern the DCB meetings, standing committee meetings, and other committee meetings in all cases in which they are not inconsistent with these *Bylaws* and any special rules of order the DCB may adopt.

Article VII – Amendment of the *Bylaws*

Amendments to these Bylaws may be made at any regular meeting of the DCB by a vote of two-thirds of the members present and voting, provided that the amendments have been submitted in writing at the DCB's previous regular meeting. Unless otherwise noted in the amendment, an amendment shall become effective after the Chair announces the vote. The change will be incorporated into the by-laws no later than three business days after the vote and shall be provided to the DCB members. This amended document will state in writing which version of by-laws is being superseded. Approval authority will be the UOG President, through the Administrative Council and the Senior Vice President.