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Contributions (2000 words maximum) relevant to diving, diving education, and the aquatic environment are welcome. Digital copies may be submitted via e-mail or on CD/DVD disk. Hardcopy submissions should be typed, preferably double-spaced. Include name, address, and phone number of the author and a brief bio sketch giving topic expertise. Photographs should include captions and identify all recognizable persons. Jpeg or other digital format images are preferred, and should permit image resolution of at least 300 dpi when appropriately sized for publication. Hardcopy photographs should be at least 4” x 5” color or black-and-white glossy prints or 35 mm color slides.

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Homer Fletcher’s Lobster

In the course of our meal, Homer said he had something to show us, and out of his wallet he pulled a well-worn photograph—the one you see here. (I have it in color if you would like me to send it to you.) I was impressed: we were all impressed. You won’t see trophy lobsters like this anymore, certainly not in recreational diving depths. I propped Homer’s photo against a water glass and snapped a picture. If you look carefully, you’ll see another sizeable lobster at Homer’s feet and behind him a set of doubles (I think 45 c.f. cylinders) with a J-valve and a two-hose regulator. Homer was proud of his lobster, but also rather nonchalant: “We used to find them,” he said.

No, we don’t find them anymore. And there are many things we no longer find in our average diving. A few months ago I ran across a box of mediocre slides from my first trip to Grand Cayman in the early 1970s. Today, you have to hunt hard to find reefs that are as clean and healthy.

Homer’s picture was taken maybe 50 years ago, before technology had developed to the point we are now—easily able to strip the oceans bare, fill them with junk, and make a mess of their web of life; and before the sheer load, pressures, and care-less behaviors of a rapidly increasing population of humans made it almost certain that we would do so.

We want to dive in special natural places, so we flock to them, and an infrastructure is developed to support our increased presence, and we overtax those special places, and they suffer. We once believed that our waters and our air had an infinite capacity to absorb our discarded wastes without effect. We now know that isn’t so. Thankfully, and perhaps in time, we are beginning to accept responsibility for our only home and act to keep it livable—although some still fervently deny that anything is awry.

As divers and especially as diving leaders, we are privileged to visit a special part of our Earth. The oceans are the cradle of all life, and we have a special interest in preserving and maintaining our watery world. So join in: learn all you can about our seas and their problems; get involved become pro-active. Looking for an oceans-related career? Recreational diving leadership and instruction is one, and you are a pert of that. There are also many other paths to the sea, and there is something for everyone’s talents.

There is a lot even one person can do. We recently lost the voice of Dr. Eugenie Clark. She may have been just one individual, but she reached out and touched many and raised our appreciation of the ocean realm. I wonder how many entered a lifelong affair with the seas due to her influence.

Go to any Caribbean dive destination today, and you find a campaign to control the lionfish, our current poster child of invasive species. On the other hand, if you want to see an example of the archetype of an invasive species that has caused more planetary havoc than any, go look in the mirror. It is time to change that, and it is getting late. Involve yourself!

Maybe someday in our future Homer’s lobster can return. I hope so.

Safe diving, good teaching,

[Signature]
In early 2014, the NAUI Board of Directors determined the time had come for a complete review of our current bylaws. It had been many years since such a review had been conducted. NAUI is incorporated in the state of California, and during the intervening years, much of the California Nonprofit Mutual Benefit Law that governs our association had been modified. After review and consultation with a California attorney, it was confirmed that significant changes were legally necessary to update the NAUI Bylaws.

To begin this important work, Board member Dallas Edmiston was appointed committee chair, and a committee of members was convened that included Richard Alvarez, Tom Brooks, Nancy Cohagen, Mark C. Flahan, Floyd Holcum, Karen Kayser, Francis Linnehan, Chris Richardson, Lonnie Sharp, and Cecilia Shin. The dedication and sustained efforts of this group over the last year made this revision possible and the association is forever in their debt for their exemplary service.

The goal of the committee was to revise our current bylaws to bring them into compliance with all applicable state and federal regulations, while at the same time maintain a strong connection to NAUI’s past. The result is a revised set of bylaws that will be familiar to our members and, at the same time, bring the bylaws up-to-date where changes are needed.

We now enter an even more important phase in the amendment process—review and consideration by the membership. All active- and sustaining-status NAUI Instructors have the right and responsibility to vote for or against the proposal in its entirety. Their efforts, and those of the NSG staff, will ensure our membership experiences no interruption of day-to-day operations and support. Services will continue as usual at NAUI headquarters and its international service centers to meet the needs of all NAUI business partners and members. The NAUI and NSG Boards have undertaken the process for recruitment and selection of a new management team. We look forward with optimism to the new opportunities ahead.

Dallas Edmiston Appointed as Temporary Acting General Manager

With the recent retirement of Jim Bram and Jed Livingstone from NAUI Services Group (NSG) and from their responsibilities with NAUI Worldwide, the Board of Directors has addressed the leadership needs at NAUI headquarters by appointing Dallas Edmiston, NAUI 4099, as Trustee and Temporary Acting General Manager at NAUI/NSG Headquarters in Tampa, Florida. Dallas has been a NAUI member since 1974, is an active Course Director, and is currently a member of the NAUI Board of Directors. Additionally, Randy Shaw, NAUI Training Department Manager, and Kathy Brownlow, NAUI Operations Manager, are continuing in their respective duties at NAUI. Their efforts, and those of the NSG staff, will ensure our membership experiences no interruption of day-to-day operations and support. Services will continue as usual at NAUI headquarters and its international service centers to meet the needs of all NAUI business partners and members. The NAUI and NSG Boards have undertaken the process for recruitment and selection of a new management team. We look forward with optimism to the new opportunities ahead.

2015 Bylaws Revision - Your Vote Counts

In early 2014, the NAUI Board of Directors determined the time had come for a complete review of our current bylaws. It had been many years since such a review had been conducted. NAUI is incorporated in the state of California, and during the intervening years, much of the California Nonprofit Mutual Benefit Law that governs our association had been modified. After review and consultation with a California attorney, it was confirmed that significant changes were legally necessary to update the NAUI Bylaws.

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We now enter an even more important phase in the amendment process—review and consideration by the membership. All active- and sustaining-status NAUI Instructors have the right and responsibility to vote for or against the proposal in its entirety. The board and the committee have done their work. Now it is up to you, our members. Our association is based on democratic principles, which require your participation. The proposed revised bylaws are printed in this issue as is a summary of the changes. Please take the time to review the proposed revisions, read the new bylaws, and vote!

The 2015 NAUI Bylaws Revision election will be conducted online in conjunction with the annual Board of Directors election in the fall.

To participate online, you must have a valid email address on file with NAUI. If you do not have an email address on file and wish to participate in the online voting process, contact NAUI HQ to add a valid email address to your account so that voting credentials can be sent to you. If you wish to vote using a paper ballot, contact NAUI HQ and request one. You can do either by calling NAUI HQ at +1 813-628-6284, writing to Election Coordinator, NAUI Worldwide, 9030 Camden Field Parkway, Riverview, Florida 33578 USA, or emailing to election@naui.org.
**Summary of Changes to the NAUI Bylaws**

*(Members should read the entire draft document for complete descriptions of each Article.)*

<table>
<thead>
<tr>
<th>Article I, Territory</th>
<th>No change from current bylaws. Territory of the association shall be international and the territory of operation shall be determined by the Board of Directors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article II, Membership</td>
<td>Extends voting rights to all leadership level members–all instructor and leadership level members. Adds Emeritus status as a non-voting membership class.</td>
</tr>
<tr>
<td>Article III, Membership Rights</td>
<td>New section. Identifies voting rights of the membership and references California Nonprofit Mutual Benefit Law as authority on the rights of members.</td>
</tr>
<tr>
<td>Article IV, Membership Meetings and Voting</td>
<td>New section. Establishes the rights of members to conduct business with a quorum of at least 10% of the membership. Establishes procedures for notice and voting.</td>
</tr>
<tr>
<td>Article V, Board of Directors</td>
<td>Maintains nine elected directors. Establishes “International Advisors” to allow better global representation of members during board discussions.</td>
</tr>
<tr>
<td>Article VI, Meetings and Actions of the Board of Directors</td>
<td>No change from current bylaws. The board may meet in person, teleconference, or conduct of votes by electronic balloting.</td>
</tr>
<tr>
<td>Article VII, Officers</td>
<td>The position of NAUI President has been re-designated as “Executive Director” with responsibilities to both NAUI and NSG.</td>
</tr>
<tr>
<td>Article VIII, Committees</td>
<td>Allows the Board of Directors to establish both Board and Advisory Committees including an Executive Committee and an Executive Review Committee.</td>
</tr>
<tr>
<td>Article IX, Fiscal Affairs</td>
<td>No change from current bylaws. The fiscal affairs of the association are audited and reported on an annual basis. Members may review a summary of the annual report.</td>
</tr>
<tr>
<td>Article X, Amendments</td>
<td>Allows bylaw amendments to be put to a vote upon petition signed by 5% of the membership. Passage will require approval by 2/3 of those voting.</td>
</tr>
<tr>
<td>Article XI, Parliamentary Authority</td>
<td>No change from current bylaws. This article establishes Robert’s Rules of Order for conduct at meetings and addresses rules of construction in the bylaws.</td>
</tr>
<tr>
<td>Article XII, Distribution of Assets</td>
<td>Allows for the dissolution and disbursement of any remaining funds should the membership ever vote to dissolve the association.</td>
</tr>
<tr>
<td>Article XIII, Electronic Communications</td>
<td>New Section. Provides rules and procedures for the use of electronic communications with the membership in accordance with California code.</td>
</tr>
<tr>
<td>Article XIV, Corporate Seal</td>
<td>No change from current bylaws. Maintains the registered corporate seal of the association as approved by the Board of Directors.</td>
</tr>
</tbody>
</table>
PROPOSED BYLAWS
of the National Association of Underwater Instructors

ARTICLE I
TERRITORY

The National Association of Underwater Instructors (NAUI or "the Association") shall be international in nature and the territory of operation shall be determined by the NAUI Board of Directors (the "NAUI BOD"), to be increased or decreased in scope, as the NAUI BOD shall determine.

ARTICLE II
MEMBERSHIP

SECTION 1. CLASSIFICATION OF MEMBERS. Membership in NAUI is open to all qualified persons, as detailed below. Membership consists of two types, voting and non-voting. Members will be regarded as such, and be entitled to the full rights and privileges as accorded by these Bylaws and by the NAUI BOD so long as they maintain membership in good standing.

Membership categories are defined as: (i) voting members; (ii) non-voting members; and (iii) lifetime members.

SECTION 2. VOTING MEMBERS. All members under this section must be at least 18 years of age or older. They shall have the right and privilege to vote on any matters as called for in these Bylaws. Voting members may be designated in active or sustaining status, but such designation does not affect their right and privilege to vote.

A. Instructors. These are members who have attained the certification status of instructor by completing the requirements established by the NAUI BOD to enable them to issue various levels of diving certification as may be provided by the Association.

(i.) Active status instructors are instructor members who have attained the certification status of instructor, and meet the requirements to issue certifications as established by the NAUI BOD.

(ii.) Sustaining status instructors are instructor members who have attained the certification status of instructor, but do not currently meet the requirements to issue certifications as established by the NAUI BOD.

B. Leadership Members. These are members of the NAUI who have attained the certification status of skin diving instructor, divemaster, assistant instructor, or other leadership titles as approved by the NAUI BOD and may be granted such authority as may be determined by the NAUI BOD.

(i.) Active status leadership members are leadership members who have attained a leadership level certification and meet the requirements to perform their duties as established by the NAUI BOD.

(ii.) Sustaining status leadership members are leadership members who have attained a leadership level certification, but do not meet the requirements to perform their duties as established by the NAUI BOD.

SECTION 3. NON-VOTING MEMBERS. Non-voting members do not have the right to vote, nor hold office as a director of the Association.

A. Affiliate Members. Business entities that may be granted membership under such terms and conditions as may be established and approved by the NAUI BOD.

B. Honorary Members. The NAUI BOD may elect honorary members in the association by a vote of the NAUI BOD. Such members shall be exempt from the payment of any dues or assessments and shall be entitled to all the privileges that the Association may bestow upon them and no others.

C. Emeritus Members. Non-voting instructor and leadership members who have paid annual dues and who have retired from all diving instructional, assisting, and supervisory activities, but retain all other benefits and privileges of NAUI membership except the right to vote.

D. Other Members. Other levels of non-voting memberships with corresponding prerequisites, rights, benefits, and privileges may be established and approved by vote of the NAUI BOD.

SECTION 4. LIFETIME MEMBERS. These may be voting or non-voting members of the association who have met the financial requirements for Lifetime Membership as established by the NAUI BOD. These members will be exempt from any future NAUI membership dues requirements. Lifetime members shall not be exempt from other financial requirements or fees.
SECTION 5. CONFIRMATION OF ACTIVE INSTRUCTORS, SUSTAINING INSTRUCTORS, AND LEADERSHIP MEMBERSHIP. An applicant shall be deemed a member upon completion of (i) all prerequisites established by the NAUI BOD, (ii) payment of all obligations owed the Association, (iii) application to join the Association, (iv) review of all relevant materials by headquarters Training Department, and (v) issuance of a leadership member number.

SECTION 6. MEMBERSHIP DUES. All members, excluding those exempt by the NAUI BOD or by these Bylaws, will be subject to dues to be paid in such amount and at such times as established by the NAUI BOD.

SECTION 7. RESIGNATION, SUSPENSION OR TERMINATION OF MEMBERSHIP OF MEMBERS.

A. Resignation. A member may resign from the Association by providing written notice, which may be provided by electronic transmission, in compliance with Article XIII, Section 1 to the Association at its headquarters offices. Such resignation shall be effective when notification is received at the headquarters office or when received by an officer of the Association. A member who has resigned is no longer a member of the Association, no longer has any rights and privileges of membership, and shall continue to be obligated by any outstanding duties and obligations owed to the Association.

B. Suspension. A member whose membership is suspended, under paragraphs D and E of this Section, is not entitled to the rights and privileges of membership, but shall continue to be obligated by any outstanding duties and obligations of membership during the period of suspension.

C. Termination. A member whose membership is terminated, under paragraphs D and E of this Section, is no longer a member of the Association, and no longer has the rights and privileges of membership, but shall continue to be obligated by any outstanding duties and obligations to the Association.

D. Vote. A member’s membership in the Association may be terminated or suspended, under paragraph E of this Section, by a vote of the NAUI BOD, upon the finding of one or more of the following:

(i.) Failure of the member to pay dues, fees or assessments as set by the NAUI BOD or any outstanding accounts with the Association within 60 days after they become due and payable.

(ii.) Occurrence of any event that renders the member ineligible for membership, or failure to satisfy membership qualifications.

(iii.) The failure of the member to adhere to the NAUI Code of Ethics or the Standards of the Association, as defined in the NAUI Standards and Policies Manual or any document that might supersede that manual, or who engaged in conduct materially and seriously prejudicial to the purposes and interest of the Association. For purposes of this paragraph, such prejudicial conduct is deemed to include, but is not limited to, conduct hazardous to the health and safety of divers, whether such divers are students or experienced, or the general public.

E. Procedure for Termination or Suspension. If grounds appear to exist for termination or suspension of a member’s membership, the NAUI BOD or its designees shall conduct its procedures for review in accordance with the requirements for such review as set forth in the Membership Review Policy. The Association shall send the current Membership Review Policy including relevant termination or suspension procedures to all voting members at least annually.

SECTION 8. REINSTATEMENT OF MEMBERSHIP. A member who has defaulted on his or her responsibility for annual dues, or who has resigned in good standing, may apply to the Membership Committee for reinstatement as per procedures established by the NAUI BOD and subsequently set forth in the NAUI Standards and Policies Manual, or any document that might supersede that manual. Upon the completion of necessary requirements, the member seeking reinstatement may be so reinstated.

ARTICLE III

MEMBERSHIP RIGHTS

SECTION 1. VOTING RIGHTS. Subject to these Bylaws, voting members of NAUI shall have the right to vote, as set forth in these Bylaws, on:

A. The election of directors to the NAUI BOD;

B. Changing the number of directors if fixed in the Bylaws, changing the maximum or minimum number of directors if a range is stated in the Bylaws, or changing the Bylaws from a fixed number of directors to a range or vice versa;

C. The removal of directors from the NAUI BOD without cause;

D. Filling any vacancy caused by the removal of a director from the NAUI BOD;

E. Any amendment to these Bylaws and all amendments to the Articles of Incorporation of the Association, except for amendments permitted to be adopted by the NAUI BOD alone under Section 7812(b) of the California Nonprofit Mutual Benefit Corporation Law.

F. The disposition of all or substantially all of the assets of the Association;

G. Any merger of the Association;

H. Any voluntary dissolution of the Association;
ARTICLE IV
MEMBER MEETINGS AND VOTING

SECTION 1. MEMBER VOTING. Each voting member in good standing shall have one vote on each matter on which the voting members are entitled to vote.

SECTION 2. GENERAL MEMBERSHIP MEETING. A General Membership Meeting is to be held at least one time each calendar year at such time and place as determined by the NAUI BOD. The general membership meeting may be either (i) an informal meeting of the members or (ii) a formal meeting of the members. Either type of meeting is open to both voting and non-voting members.

A. Formal General Membership Meeting. A formal meeting must be called by either the NAUI BOD or members and noticed in accordance with Article IV, Section 4 below and meet the quorum requirements of Article IV, Section 5, below. Notice for a Formal General Membership Meeting must be given in accordance with Article IV, Section 4 C, below.

B. Informal General Membership Meeting. Voting members may submit agenda items to the Secretary or Chairman of the NAUI BOD up to fifteen days prior to the general membership meeting.

SECTION 3. RECORD DATE. For any notice, vote (at a meeting or by written ballot), or exercise of rights, the NAUI BOD shall set a record date, and only members of record on the date so fixed shall be entitled to notice, vote, or exercise of rights. For this purpose, a voting member holding an active or sustaining membership at the close of business on the record date shall be deemed a member of record.

A. For notice purposes, the record date shall be the business day preceding the date on which notice for that meeting is given.

B. For voting at meetings, the record date shall be the date of the meeting.

C. For voting by written ballot, the record date shall the day on which the first written ballot is mailed or solicited.

D. For entitlement to exercise any rights in respect to any other lawful action, the record date shall be the date on which the NAUI BOD adopts the resolution relating thereto or the sixtieth day before the date of such other action, whichever is later.

SECTION 4. FORMAL GENERAL MEMBERSHIP MEETINGS AND SPECIAL MEETINGS OF MEMBERS.

A. Who May Call. Formal General Membership Meetings and Special Meetings of the members may be called (i) by the NAUI BOD, the Chairman of the NAUI BOD, or the Executive Director, or (ii) on the written request of five percent of the voting membership. A written request may be collected by paper or electronic methods, must be dated and collected within a sixty-month period or less, and must be submitted to headquarters for verification of signatures. If more than one party calls a Formal Membership Meeting, the meeting may be conducted in two or more segments, as necessary, with the applicable business items reported by the parties.

B. Procedures for Calling Formal General Membership Meetings and Special Meetings Requested by Voting Members. If a Formal General Membership Meeting or Special Meeting is called by voting members, the requesting voting members shall deliver a written notice specifying the general nature of the business proposed to be transacted personally, by registered mail, facsimile transmission, or by electronic transmission such as email in compliance with Article XIII, Section 1 of these Bylaws to the Chairman of the NAUI BOD, Executive Director, or the Secretary of the NAUI BOD. For a General Membership Meeting, if the request is submitted at least [35-90] days before the General Membership Meeting, the meeting shall be noticed and conducted as a Formal General Membership Meeting. For Special Meetings, the requested meeting will be held at a time fixed by the NAUI BOD not less than thirty-five, nor more than ninety, days following the receipt of the request. If appropriate notice of such a meeting is not given within twenty days after delivery of the request, the requesting members may give the notice. Nothing contained in this subsection shall be construed as limiting, fixing, or affecting the time of any meeting of members called by the NAUI BOD, the Chairman of the NAUI BOD, or the Executive Director.

C. Time, Manner, and Contents of Notice of Formal General Membership Meetings and Special Meetings. The Secretary of the NAUI BOD shall give written notice of each Formal Membership Meeting or Special Meeting to each member who, as of the record date for notice of the meeting, would be entitled to vote at such meeting. The notice shall be delivered to the last address provided by the member to the Association for purposes of notice, either personally or by telephone, telegram, facsimile transmission, electronic transmission in compliance with Article XIII, Section 2 of these Bylaws, or first-class, registered mail or other mail. Notice of Formal General Membership Meetings or Special Meetings shall be given not less than twenty nor more than ninety days before the date of such meeting. The notice shall state the place, date, and time of the meeting and the general nature of the business to be transacted, and no other business may be transacted.

D. Acts of Members. Every decision or act made or done by a majority of voting members present and voting at a duly held meeting at which a quorum is present is the act of the members, unless the law, the Articles, or these Bylaws, require a greater number.
SECTION 5. MEMBER QUORUM. Ten percent (10%) of the voting membership shall constitute a quorum. A meeting at which a quorum is initially present may continue to transact business notwithstanding the withdrawal of enough members to leave less than a quorum, so long as any action taken thereafter is approved by at least a majority of the required quorum.

SECTION 6. PROXY VOTING PROHIBITED. Proxy voting shall not be permitted on any matter put to the vote of the members.

SECTION 7. ACTION BY WRITTEN BALLOT WITHOUT A MEETING.
A. Generally. Any action required or permitted to be taken by members at a meeting may be submitted for a vote by written ballot pursuant to this Section without a meeting.
B. Content of Written Ballots. Any written ballot distributed to the members to vote on a matter shall set forth the proposed action and provide an opportunity to specify approval or disapproval of the proposal.
C. Time for Return of Ballots. All written ballots shall provide a reasonable time within which to return them to the Association and each ballot shall state on its face or in an accompanying notice the date by which it must be returned in order to be counted.
D. Requirements for Valid Action. Approval by written ballot shall be valid only when the number of votes cast by ballot within the time period specified equals or exceeds the required quorum set forth in these Bylaws, and the number of approvals equals or exceeds the number of votes that would be required to approve the action if the vote were taken at a meeting of the members.
E. Solicitation Rules. Written ballots shall be solicited in a manner consistent with the requirements for notice of members' meetings.

ARTICLE V
BOARD OF DIRECTORS

SECTION 1. FUNCTION. The business and property of the Association shall be generally managed and its corporate powers shall be exercised by the NAUI BOD to the fullest extent allowed by law, subject to any restrictions imposed by law, the Articles of Incorporation, or these Bylaws.

SECTION 2. NUMBER OF DIRECTORS. The authorized number of directors shall be nine.

SECTION 3. INTERNATIONAL ADVISORS. Inasmuch as NAUI members rely on services provided by regional NAUI Services Group (NSG) Service Centers, each NSG Service Center shall be entitled to recommend for appointment, one NAUI member to attend and participate in all meetings of the NAUI BOD, except when the NAUI BOD enters executive session. Such individuals shall be known as International Advisors, but shall not have the authority to vote as a member of the NAUI BOD. International Advisors, if any, shall be appointed annually for a one-year term by the NAUI BOD and may be removed at any time, with or without cause, by the NAUI BOD. International Advisors shall have the right to receive notices of NAUI BOD meetings, and to participate in meetings as provided above.

SECTION 4. ELECTION AND NOMINATION OF NAUI DIRECTORS AND TERMS OF OFFICE.
A. Election. NAUI Directors shall be elected by the plurality of the voting members responding in a duly called election, conducted annually in accordance with NAUI Election Standard Operating Procedures or any document that supersedes this procedure.
B. Nominations. Qualified candidates shall be nominated in accordance with NAUI Election Standard Operating Procedures.
C. Terms of Office. Elected NAUI directors will serve a four-year term. No NAUI director shall serve more than two consecutive elected terms or no more than nine consecutive years if combined with an appointment in accordance with Section 7 of this Article.
D. Qualification. A nominee must have been an Active Instructor Member or Sustaining Instructor Member for at least three years immediately preceding the election date, be in good standing with the Association at the time of nomination and throughout the election and shall be current in their financial obligations to the Association and/or its subsidiaries at time of nomination and throughout the election. A nominee, by accepting his nomination, agrees to sign the Agreement by Nominees/Candidates for NAUI BOD Election and abide and adhere to the NAUI Code of Conduct for NAUI BOD members, Conflict of Interest Policy, and any other agreements that the NAUI BOD may designate. It is a mandatory obligation of a NAUI BOD nominee or member, once elected, to adhere to the Code of Conduct for NAUI BOD members.

SECTION 5. DUTIES AND POWERS OF THE NAUI BOARD OF DIRECTORS. Subject to the provisions of and limitations of the California Nonprofit Mutual Benefit Corporation Law and other applicable laws, and subject to the limitations in the Articles of Incorporation and these Bylaws regarding actions that require approval of the members, the Association's activities and affairs shall be managed, and all corporate power shall be exercised by or under the NAUI BOD's direction.
SECTION 6. RESIGNATION AND REMOVAL.

A. Resignation. Any NAUI Director may resign at any time by giving written notice of such resignation to the Chairman of the NAUI BOD. Such resignation shall be effective upon receipt by the Chairman of the NAUI BOD. The Chairman of the NAUI BOD shall notify the other members of the NAUI BOD as soon as possible by electronic means or other suitable method. The vacant seat and office may be filled pursuant to Article V, Section 7.

B. REMOVAL BY NAUI BOD FOR CAUSE.

(i.) Should any member of the NAUI BOD absent himself or herself without due notice and cause, from any two meetings within a calendar year, duly called pursuant to these Bylaws including electronic conferences and teleconference meetings, the NAUI BOD, by majority vote of the directors then in office, may declare the seat vacant.

(ii.) The NAUI BOD, by majority vote of the directors then in office, may declare vacant the seat of a NAUI director who has been declared of unsound mind by final order of the court, or upon final conviction of a felony.

C. Recall by Members Upon Motion of the NAUI BOD. Upon passage of a motion, any NAUI Director's status as a qualified NAUI BOD member may be called up for discussion by the NAUI BOD for any reason pertaining to that member's ability to function effectively as a NAUI Director or for any reason deemed by any NAUI BOD member to be in the best interest of NAUI. Upon passage by vote of a majority of the NAUI Directors then in office of such motion, discussion shall ensue regarding that member's ability to function as a NAUI Director and the impact on the Association of said NAUI Director's actions or non-actions, including but not limited to violations of the Code of Conduct of NAUI BOD Members. After or during such discussion any director may move for a recall of said NAUI BOD member under discussion. Upon a two-thirds majority vote of the NAUI Directors then in office in favor of recalling said member, the NAUI BOD may place the recall on the agenda of a Formal General Membership Meeting, or may call a Special Meeting of the members to vote on the recall pursuant to Article IV, Section 4, or initiate a member action by written ballot pursuant to Article IV, Section 7.

D. Recall By Members As Initiated By Members. Members may initiate a recall of a NAUI Director by calling a Formal General Membership Meeting or a Special Meeting for that purpose pursuant to Article IV, Section 4 of these Bylaws. Such action may also be taken by written ballot pursuant to Article IV, Section 7.

SECTION 7. VACANCIES. In the event of any vacancy on the NAUI BOD for any reason, the NAUI BOD shall continue to conduct business. Unless the vacancy was created by the recall of a NAUI Director by the members, the remaining directors on the NAUI BOD have the option of selecting a director who meets all requirements of Article V, Section 4 D by two-thirds vote of the NAUI Directors then in office to serve until the next regularly scheduled election. At that time a NAUI Director shall be elected pursuant to the guidelines for the election of NAUI Directors as set forth herein in Article V, Section 4 A to complete the vacant NAUI Director's position and to serve out the remaining years of the term. If the vacated seat is due to a recall by the membership, or if the NAUI BOD fails to fill a vacancy, the members may fill the vacant seat.

ARTICLE VI
MEETINGS AND ACTIONS OF THE BOARD OF DIRECTORS

SECTION 1. ANNUAL MEETING. The annual meeting of the NAUI BOD shall be held during the first calendar quarter of the year and the date shall be set by the Chairman of the NAUI BOD and noticed in accordance with Section 4 of this Article. The meeting shall be held at the principal office of the Association or at such other place or places as may be determined by the Chairman of the NAUI BOD. An agenda of the activities to be conducted at the annual meeting shall accompany the meeting notice, but any proper matter may be presented at the annual meeting for action.

SECTION 2. REGULAR MEETINGS. The NAUI BOD may hold regular meetings at such time and place as they establish and noticed in accordance with Section 4 of this Article. NAUI Directors may submit agenda items in advance to the Chairman or the Secretary of the NAUI BOD, but any proper matter may be presented at the regular meeting for action.

SECTION 3. SPECIAL MEETINGS. Special Meetings of the NAUI BOD may be called by the Chairman of the NAUI BOD and any two members of the NAUI BOD or by a majority of the members of the entire NAUI BOD and noticed in accordance with Section 4 of this Article. Such a meeting shall be for a limited and specific purpose, which shall be noted in the meeting notice. Should a situation arise that, if not urgently addressed by the NAUI BOD, may result in a detriment to the Association, an emergency Special Meeting may be called by the Chairman of the NAUI BOD alone or three NAUI BOD members and noticed in accordance with Section 4 of this Article.

SECTION 4. NOTICE. Notice as used herein is defined to include first-class United States Postal Mail, courier service, telephone, facsimile, or electronic means, in compliance with Article XIII, Section 1. Notice shall be given to each member of NAUI BOD at least thirty days before an annual meeting (Section 1), fifteen days before a Special Meeting (Section 3), and at least 48 hours before an emergency Special Meeting, which 48-hour notice needs to be provided by telephone; facsimile or electronic means (Section 3).

SECTION 5. QUORUM. A majority of the NAUI Directors then in office shall constitute a quorum for the transaction of business. When the term vote is used in this document it means a majority vote of the quorum after a quorum is present, unless stated otherwise. Such a vote shall be considered the act of the NAUI BOD unless a higher voting requirement is called for by these Bylaws.
SECTION 6. ACTION WITHOUT A MEETING. Any action required or permitted to be taken by the NAUI BOD may be taken without a meeting if all members of the NAUI BOD (other than any director interested in a transaction so approved) shall individually or collectively consent to such action in writing. Such written consents shall be filed with the minutes of the proceedings of the NAUI BOD, and shall have the same force and effect as the unanimous vote of the NAUI BOD.

SECTION 7. TELEPHONE AND ELECTRONIC MEETINGS. NAUI Directors may participate in a meeting through use of conference telephone, electronic video screen communication, or other electronic transmission in compliance with Article XIII, Section 1 of these Bylaws so long as all of the following apply:

A. Each director participating in the meeting can communicate with all of the other directors concurrently; and
B. Each director is provided with the means of participating in all matters before the NAUI BOD, including the capacity to propose, or to interpose an objection to, a specific action to be taken by the Association.

SECTION 8. VOTING. Each member of the NAUI BOD shall be entitled to only one vote on any issue. No proxy voting shall be allowed.

ARTICLE VII
OFFICERS

SECTION 1. OFFICES. The officers of the Association shall be the Chairman, the Vice Chairman, the Secretary, and the Treasurer of the NAUI BOD, the Executive Director, and other such officers with such powers and duties not inconsistent with these Bylaws as may be appointed and determined by the NAUI BOD.

SECTION 2. TERMS OF OFFICE. Officers, except the Executive Director, shall be elected by the NAUI BOD from their own members at the annual meeting. They shall serve for one year and may be re-elected.

SECTION 3. INSTALLATION, COMMENCEMENT OF DUTIES. The NAUI BOD officers newly elected shall be installed and take office at the conclusion of the meeting at which they were elected or at such other time as the NAUI BOD may determine.

SECTION 4. CHAIRMAN OF THE NAUI BOD. It shall be the duty of the Chairman of the NAUI BOD (“Chairman”) to preside at all meetings of the Association or the NAUI BOD. The Chairman shall be an ex-officio member of, and may preside over any committee he may wish to, except the Elections Committee. The Chairman shall have the authority and power to create committees and appoint or remove the Chairmen of all committees subject to veto by vote of the NAUI BOD. He shall set the date and time for annual, regular and Special Meetings. The Chairman shall appoint all election inspectors. He shall have the authority to sign all contracts and any other obligations on behalf of the Association as approved by the NAUI BOD, shall be authorized to sign all checks and may execute such power as necessary under authority of the organization when the Executive Director is unable. Further, the Chairman shall have all powers provided under California law, the Articles of Incorporation, and these Bylaws, it being the intention to give the Chairman the broadest powers allowed under law.

SECTION 5. VICE CHAIRMAN. In the absence or inability of the Chairman, the Vice Chairman shall perform all duties of the office of the Chairman of the NAUI BOD. He shall, when called upon by the Chairman, assist in conducting the affairs of the Association.

SECTION 6. SECRETARY. The Secretary shall take and keep the minutes of all meetings of the membership, the NAUI BOD, and at other meetings as directed by the Chairman. The Secretary shall insure that all reports and minutes are prepared and distributed in a timely manner as established by the NAUI BOD. He or she shall have access to the corporate books, and the responsibility of ensuring that they are updated in a timely manner.

SECTION 7. TREASURER. The Treasurer shall oversee the maintenance of financial records and shall be responsible to ensure the necessary audits are undertaken and completed. Current financial records shall be kept at all times and reports on the financial status of the Association shall be submitted at all annual and regular meetings of the NAUI BOD.

SECTION 8. EXECUTIVE DIRECTOR. The Executive Director shall be appointed by agreement of the NAUI BOD and NSG BOD and need not be a member of this Association. The Executive Director is the Chief Executive Officer of NAUI the Association, whose performance shall be reviewed annually. The Executive Director shall have the delegated authority to transact the daily business affairs of the Association, to bind the Association to contracts within the authority granted by the NAUI BOD, to employ, discharge and to settle terms of employment of persons employed by this Association. The Executive Director shall have such other duties and powers as may be agreed and assigned by the NAUI BOD and NSG BOD.

SECTION 9. VACANCIES IN OFFICE. Should the office of the Chairman of the NAUI BOD become vacant for any reason, the Vice Chairman shall succeed to the office for the unexpired term. Vacancies in all other elected offices may be filled at the discretion of the NAUI BOD. Vacancies in all appointed or elected positions may be filled temporarily by the Chairman pending confirmation of the NAUI BOD.

SECTION 10. REMOVAL OF OFFICERS OF THE NAUI BOD. The NAUI BOD may, by two-thirds vote of the NAUI directors then in office, remove an officer from the office. Such removal shall not affect his status as a NAUI BOD member. Any such termination shall be effective upon tabulation of the vote.

SECTION 11. REMOVAL OF THE EXECUTIVE DIRECTOR. The Executive Director may, by a two-thirds vote of the NAUI directors then in office, be removed as Executive Director. Any such termination shall be effective upon tabulation of the vote.

ARTICLE VIII
COMMITTEES

SECTION 1. BOARD COMMITTEES. The NAUI BOD may, by resolution adopted by a majority of the directors then in office, create any number of Board Committees, each consisting of two or more NAUI Directors and only of NAUI Directors, to serve at the pleasure of the NAUI BOD. Appointments to any NAUI Board Committee shall be by a majority vote of the directors then in office. NAUI Board Committees may be given all the authority of the NAUI BOD, except for the powers to:
A. Set the number of directors within a range specified in these Bylaws;  
B. Fill vacancies on the NAUI BOD or on any NAUI Board Committee;  
C. Fix compensation of NAUI directors for serving on the NAUI BOD or any NAUI Board Committee;  
D. Amend or repeal these Bylaws or adopt new Bylaws;  
E. Approve amendments to the Articles of Incorporation of the Association;  
F. Amend or repeal any resolution of the NAUI BOD which by its express terms may not be amended or appealed;  
G. Create any other NAUI Board Committees or appoint the members of any NAUI Board Committees;  
H. Spend corporate funds to support a nominee or candidate for the NAUI BOD before nominations have closed or after there are more candidates than can be elected;  
I. Approve any merger, reorganization, voluntary dissolution, or disposition of substantially all of the assets of the Association;  
J. Or approve amendments, additions or other changes to the NAUI training standards.

SECTION 2. EXECUTIVE COMMITTEE. Pursuant to Section 1 of this Article VIII, the Chairman of the NAUI BOD and one or more additional directors appointed by the NAUI BOD shall serve as the Executive Committee of the NAUI BOD. The Chairman of the NAUI BOD shall serve as chair of the Executive Committee. The Executive Committee, unless limited by a resolution of the NAUI BOD, shall have and may exercise all the authority of the NAUI BOD in the management of the business and affairs of the Association between meetings of the NAUI BOD; provided, however, that the Executive Committee shall not have the authority of the NAUI BOD in reference to those matters listed in Section 1 above.

SECTION 3. ADVISORY COMMITTEES. The NAUI BOD may establish one or more Advisory Committees to the NAUI BOD. The members of any Advisory Committee may consist of directors or non-directors and may be appointed as the NAUI BOD determines. Unless otherwise provided by the NAUI BOD, all Advisory Committee members shall be appointed for one-year terms and may be re-appointed to any Advisory Committee. Advisory Committees may not exercise the authority of the NAUI BOD to make decisions on behalf of the Association, but shall be restricted to making recommendations to the NAUI BOD or NAUI Board Committees, and implementing the decisions and policies of the NAUI BOD or NAUI Board Committee and under the supervision and control of the NAUI BOD or NAUI Board Committee. The Association shall have the following standing committees, which operate as Advisory Committees:

A. Elections Committee  
B. Awards Committee  
C. Membership Committee  
D. Planning Committee  
E. Bylaws and Board Procedures Committee  
F. Finance Committee  
G. Training Committee  
H. Executive Review Committee

The Chairman of the NAUI BOD may establish additional Advisory Committees.

SECTION 4. COMMITTEE MEETINGS.  
A. NAUI Board Committees. Meetings and actions of NAUI Board Committees shall be governed by and held and taken in accordance with the provisions of Article VI of these Bylaws concerning meetings and actions of the NAUI BOD, with such changes in the content of those Bylaws as are necessary to substitute the NAUI Board Committee and its members for the NAUI BOD and its members. Minutes shall be kept of each meeting of any NAUI Board Committee and shall be filed with the corporate records.  
B. Advisory Committees. Subject to the authority of the NAUI BOD, Advisory Committees may determine their own meeting rules and whether minutes shall be kept.

NAUI BOD may adopt rules for the governance of any NAUI Board or Advisory Committee not inconsistent with the provisions of these Bylaws.

ARTICLE IX  
FISCAL AFFAIRS

SECTION 1. FISCAL YEAR. The fiscal year shall be a calendar year.

SECTION 2. ACCESS. The NAUI BOD or their duly authorized agents shall at all times have access to the accounts of the Association. The accounts of the Association shall be audited each year as of the last day of December. An annual financial statement shall be available upon request to all members at a nominal charge.
ARTICLE X
AMENDMENTS

SECTION 1. MEMBER VOTE AFTER NAUI BOD APPROVAL. Proposed amendments to these Bylaws may be presented in writing by any voting member in good standing to the Secretary for consideration by the NAUI BOD. If approved by the NAUI BOD, the proposed amended Bylaws shall be presented to the full membership for consideration at a General Membership Meeting, or a Special Meeting, either of which is properly called and noticed in accordance with Article IV, Section 4 above, or by written ballot pursuant to Article IV, Section 7.

SECTION 2. AMENDMENT AT A MEETING CALLED BY MEMBERS. Proposed amendments to these Bylaws may be voted on by the membership at a Formal General Membership Meeting or a Special Meeting called by the members pursuant to Article IV, Section 4 A.

SECTION 3. ADOPTION OF PROPOSED AMENDMENTS. Proposed amendments to these Bylaws shall be adopted by the members upon a 2/3 vote in support of the proposed amendment.

ARTICLE XI
PARLIAMENTARY AUTHORITY

SECTION 1. RULES OF PROCEDURE. The most current edition of Robert's Rules of Order Newly Revised or any publication that supersedes that manual shall be the final authority as to parliamentary procedure, insofar as they do not conflict with any provisions of the Articles of Incorporation, Bylaws, policy and procedure adopted by the NAUI BOD or the voting membership, or laws applicable to nonprofit corporations.

SECTION 2. RULES OF CONSTRUCTION. When used herein the masculine includes the feminine and the singular includes the plural, unless the context clearly indicates otherwise.

ARTICLE XII
DISTRIBUTION OF ASSETS

Upon a valid motion or upon the recommendation of the NAUI BOD to the membership and an affirmative vote by two-thirds of voting members voting in accordance with these bylaws, the Association may be voluntarily dissolved. Upon dissolution, all funds and property of the Association, after paying or providing for all of its known debts and liabilities, may be disposed of by the NAUI BOD and in such a manner as to be in the best interests of underwater sport diving.

ARTICLE XIII
ELECTRONIC COMMUNICATIONS

SECTION 1. ELECTRONIC TRANSMISSIONS. Unless otherwise provided in these Bylaws, and subject to any guidelines and procedures that the NAUI BOD may adopt from time to time, the terms “written” and “in writing” as used in these Bylaws include any form of recorded message in the English language capable of comprehension by ordinary visual means, and may include electronic transmissions, such as facsimile or email, provided (i) for electronic transmissions from the Association, the Association has obtained an unrevoked written consent from the recipient to the use of such means of communication; (ii) for electronic transmissions to the Association, the Association has in effect reasonable measures to verify that the sender is the individual purporting to have sent such transmission; and (iii) the transmission creates a record that can be retained, retrieved, reviewed, and rendered into clearly legible tangible form.

SECTION 2. ELECTRONIC TRANSMISSIONS TO MEMBERS. An electronic transmission by the Association to a member is valid only if the following requirements have been satisfied:

A. The member has affirmatively consented (and has not withdrawn consent) to the use of electronic transmissions, as required by the preceding section;
B. If the member is a natural person, prior to or at the time of consenting, the member received a clear written statement informing him or her of:
   (i) Any right or option to have the transmissions provided or made available on paper or in non-electronic form;
   (ii) Whether the consent applies only to that transmission, to specified categories of communications, or to all communications from the Association; and
   (iii) The procedures the member must use to withdraw consent.

ARTICLE XIV
SEAL

The Association shall have a seal of such design as may be approved by the NAUI BOD and in the form of and evidence below:
NAUI: Your Training Agency for 2015 and Beyond!

By Dave Ochs, NAUI 15981

It’s a great start to 2015, and be ready for more exciting things to come for NAUI members in the months ahead. Leadership on the Board of Directors and at HQ is invigorated, enthused and actively developing services and programs to move NAUI forward.

We continue to increase NAUI’s presence at dive shows with greater NAUI leadership participation and attendance by members. The annual Member Update has been completely revised with much more information important to NAUI members, including discussion about the proposed 2015 Bylaws revision to be voted on. I have continued to provide business seminars at many of industry trade shows to promote NAUI diving instruction as a professional career. In other action, the Board recently approved a Sidemount Diver specialty course and the Training Committee has created advisory panels to review and address Public Safety Diver and Scientific Diver programs. The NAUI/Disney Alliance has been renewed, and planning is underway to ensure NAUI maximizes the benefits to our membership from this very prestigious relationship.

Internationally, Randy Shaw visited both NAUI Pacific Rim and NAUI Europe service centers and Kathy Brownlow participated in events in Brazil with NAUI Mergosul. Derik Crotts (NSG chairman) and NAUI Middle East Representative, Reyadh Albannaw and his team represented NAUI at the Dive Middle East Exhibition in Dubai. The NAUI Board of Directors continues to work on training issues. A downloadable version of our NAUI Standards & Policies Manual is now available to existing members on the NAUI website, and for members wishing to remain current to conduct NAUI Leadership courses the Leadership eLearning update is also available at no charge.

There is one fundamental objective, one singular purpose for these efforts—to support NAUI members and businesses. Infrastructure, branding, promotion, product development, and customer service are all being enhanced to meet this objective. And there is much more to come in 2015 as we make use of modern technologies to develop a number of initiatives designed to benefit you.

So how can you as a NAUI dive professional benefit? Let me go back to a theme of my BoD election campaigns: Personal and Professional Responsibility. NAUI provides a fantastic array of tools for the scuba professional to build a growing and profitable business. As a NAUI member it is up to each of us to use these tools to very best of our ability to ensure success. No training agency can guarantee your success, drive customers to your business, or sell your services better than you. The success of your business is your responsibility, so take advantage of all the benefits and values NAUI provides and use them to build a profitable operation.

How do you do this? First, get back to basics. Make sure you, your staff, and your store present a neat and professional appearance. Make your business an attractive and enjoyable place for your customers to do business. Review your business model, plan, and policies, and make certain they are consistent with sound business principles. Keep your store well-stocked and well-displayed. Stay focused on quality in your training and other services, and demand quality performance from your employees—nobody cuts corners, not you, not your instructors, not your staff. Be the best! People will line up and pay top dollar for excellence (e.g., Apple), but nobody will do so for mediocrity.

Second, stay up-to-date and informed of NAUI services, products, programs, and policies. NAUI offers considerable advantages over other agencies that create significant benefits for NAUI members and businesses to maximize their profitability and success. In my interactions with NAUI members, I often encounter individuals who are missing opportunities due to misunderstanding or lack of knowledge of NAUI policies and programs. Far too many do not realize the value of using the NAUI Student Education Systems. Compare the price and content of what is included with NAUI’s Education Systems with any other agency and you will quickly realize the significant cost advantages and tremendous value of the included materials contained in each educational system. Also, other agencies actively pursue, compete for, and sell directly to their members’ customers; NAUI does not act in such a predatory manner. Think of how much business these other agency instructors and stores lose because their training agency outright took sales or diverted them to another facility. Invest some time reviewing your NAUI Standards & Policies Manual to regain an appreciation for the academic freedom you have as a NAUI professional, and give thought to creative ways you can institute and profit from the variety of training programs you can provide as a NAUI professional. Tandem Diver, Passport Diver, core courses, Training Assistant, specialties, tech, and leadership courses all offer an amazing array of opportunities to increase customer base and profitability. Do not let misunderstanding and lack of knowledge cause you to miss great opportunities for increased business.

Third, actively promote and sell your services! Too many scuba instructors, store owners, managers, and employees do not
know how to sell or have an appreciation for the absolute importance of selling. All the great products and services, all the great agency support and programs, all the high quality training and customer service, profit you nothing if you do not sell them to your customers. Selling is a skill and like any other skill, it can be learned, practiced, and improved. It is absolutely critical to the success of your business. These skills must be developed in you and your entire staff, including and most importantly, your instructors. Instructors are the most influential people in the dive industry and can have greater impact on store sales and profitability than any other employee. Your instructors must be an active member of your sales team. Instructors and divemasters from your store must wear and promote only the equipment used in training and sold in your store. If they do not, they are costing you money and need to be retrained—or let go. This may sound harsh, but think of it this way: You have invested time and money bringing these leaders onto your team, they are training students brought into your business by your promotional efforts and expense, and these students need equipment and continuing education. If your instructors and divemasters are not promoting these items from your store, your customers are going elsewhere to obtain them, and you have lost money—lots of money. Obviously, I am passionate about selling, and it merits a whole separate article, so I will wrap up with this recommendation: If you do not have strong sales skills, go get training. There is plenty of help available in seminars, books, the internet, and more. If you come to DEMA in Orlando, I will be conducting business seminars that include presentations on effective selling, and I invite you to attend.

I am the more excited about NAUI’s future than anytime during my eight years on the Board. It is a great time to be NAUI, and NAUI’s future is brighter than ever before. I am enjoying a very successful career as a NAUI Instructor, and I sincerely wish the same for each of you. We are members of a great Association with a proud heritage and exciting future, an Association committed to supporting us, its members. Take advantage of the reputation, skill, and opportunity you have as a NAUI professional to make your scuba career and business a success.

PS. This issue of Sources is packed with information regarding revisions to our Bylaws. These revisions are critical to NAUI. As a membership association it is only NAUI members who have the right and responsibility to make changes to our Bylaws. These changes are necessary to keep NAUI compliant with California Nonprofit Mutual Benefit Law. Please review the revisions and be sure you vote.
Moving Forward
By Dallas Edmiston, NAUI 4099, Acting General Manager

As we reach the end of the first quarter of 2015, a great deal has happened at NAUI Worldwide headquarters in Tampa, and there is a great deal more planned for the days and years ahead. As I write my first column for Sources as Acting General Manager, I am both humbled and excited about the tasks ahead.

As a NAUI member of many years, I never imagined I might one day help take the lead of our great Association. I am honored that so many members have expressed their faith not in only my leadership but also in that of the entire boards of both NAUI and NAUI Services Group (NSG). I can confidently assure the membership we are all committed to earning your continued respect and trust.

Since assuming my role in management, we have instituted regular meetings within our organization to examine anew our current policies, practices, and plans to better understand our strengths and identify where we can do better. With the input and support of both the NAUI and NSG Boards of Directors, we have already taken steps to communicate more effectively and to increase our participation in the diving community. Randy Shaw, Training Department Manager, has visited our NAUI Service Centers in Europe and the Pacific Rim; Derik Crotts, Chairman of the NSG Board of Directors traveled to the Middle East to meet with our members and international partners there; and NAUI representatives attending Our World Underwater in Chicago in February included myself, Timothy O’Leary, Director of Technical Operations, Kenny Wheeler, Midwest Territory Representative, David Ochs, Chairman of the NAUI Board of Directors, and Kathy Brownlow, Operations Manager at NAUI Worldwide Headquarters. In March, these individuals were joined at the Beneath the Sea show by Mike Dunst, U.S. National Territory Manager, Bill Legler, Northeast Territory Representative, and NAUI Board of Director members Michael Feld, Lonnie Sharp, and Chris Richardson. There they provided NAUI members with updates about the future, and they also presented to several hundred high school students about careers in diving (more specifically as NAUI Leaders) as well as met with industry leaders to reestablish NAUI’s role and position. You can expect to see more engagements, both domestically and internationally, as we meet with our members and service providers to ensure we remain in touch with the issues and concerns that impact our Association.

We have also refocused our social media engagement efforts, specifically on Facebook and Twitter. If you have not already done so, visit the NAUI Worldwide page on Facebook and “Like” us, and be sure to “follow” us on Twitter. Tell your students to do the same and help us promote NAUI!

Changes have been and will be made in the NAUI online store. In response to repeated requests from members, the NAUI Leadership and Instruction textbook and workbook are again available for separate purchase, and the Universal Referral Program (URP) paperwork is now available as a free download in the Members’ Only area at www.naui.org.

Your new management team has been on the job for only a short time, but we’ve been busy trying to meet the needs and expectations of our membership. Collectively, all of us share the mission to get out, talk with our members, and listen to your ideas. Visit NAUI.org to see where you can join us at many of the consumer dive shows or other regional diving events around the globe.

Please know that I will be working closely with the NAUI and NSG directors and our headquarters staff to continue to move our Association forward. It is a great time to be a NAUI member and it is my privilege to serve you.

Go NAUI!
Call for Nominations: 2015 Board Election

Nominations for the 2015 Board of Directors election open on May 1st. This is your opportunity to present those members who you feel would be an asset on our board as we grow and strengthen NAUI in the future. If you know a member who you believe has the vision and ability to be a constructive member the board now is the time to suggest them.

Any NAUI Instructor Member is eligible to stand for election to the Board if he or she meets the following three requirements: a nominee must have been an Active Instructor Member or Sustaining Instructor Member for at least three years immediately preceding the election date; must be in good standing with the Association; and shall be current in their financial obligations to the Association.

The deadline for receipt of nominations is Monday, August 17, 2015, and all nominations must be received at NAUI Headquarters by the close of business on that day.

You can send your nominations by email to nauihq@naui.org, by mail to Election Coordinator, NAUI Worldwide, 9030 Camden Field Parkway, Riverview, Florida 33578, or by fax to +1 813-628-8253. Nominations should include as much contact information as possible for the nominee and the nominator.

NAUI Universal Referral Kit is Online

The URP Student Kit (item #38418) is now available as a free download for NAUI members! A link is being posted in the NAUI Members’ Area of our website, but for the time being, you can access it directly at: http://www.naui.org/PDFfiles/NAUI%20URP%20Student%20Kit.pdf.

The Universal Referral Program (URP) was created to meet your students’ needs to complete their open water training with an instructor other than you. It was developed by a cooperative effort of several training agencies to benefit the recreational diving industry by simplifying the referral process and assuring quality referral training.

After preparing the student with your necessary knowledge (eLearning or conventional classroom) and skills, use the URP to refer them to complete their required open water dives with another instructor. The URP Kit contains the list of the open water skills required for NAUI certification; the referral instructor must be a current, active-status instructor but can be with any dive training agency. When your student has completed their open water dives, the referral instructor signs off on the completion statement, your student returns the completed form to you, and you register the student with you as the NAUI Instructor.
In the last issue, Part One covered tiny bubbles, tinier bubbles (micronuclei), and whether bubbles need tinier bubbles of micronuclei or can form without them—from nothing (de novo). Part Two builds on those events and picks up with cavitation and what determines if bubbles can grow or don’t get the chance (free energy and critical radius).

**What is Cavitation? This Gets Even More Interesting.**

In the simplest concept, cavitation is formation of any cavity, a space. In medicine, diseases can make pits, holes, abscesses, and cavities in the body, for example, in the lung in tuberculosis and in the teeth in dental decay.

In liquids, small gas-containing bubbles or cavities can occur when pressure is reduced. Marine propellers churning water (and impellers, turbines, and certain valves) greatly increase flow and reduce pressure, creating bubbles through cavitation. When these many tiny bubbles suddenly form and collapse against the blade, they make noise and eventually pit the blade. Anti-cavitation devices are important tools to extend the life of propellers and minimize submarine noise.

In nature, fast moving water such as waterfalls can eventually wear cavitation pits in rocks beneath. Some kinds of knuckle popping briefly enlarge joint space to draw dissolved carbon dioxide and nitrogen out of solution in your body fluids, causing brief bubble formations. (Other joint cracking is from non-bubble-movement traits such as parts grinding or snapping over and against each other.)

In supercavitation, enough cavitation occurs to make a bubble large enough to encompass an object traveling through the liquid, for example, to create high-speed torpedoes and supercavitating ammunition. Supercavitation reduces drag allowing very high speeds. Bullets, even full-metal-jacketed, high-powered rifle bullets, come apart upon hitting water. Specially made supercavitating bullets get through the air-water interface that stops regular ammunition, and retain velocity underwater.

There are many more interesting ways cavitation occurs. For this article, back to diving: For bubble creation in divers, simple cavitation was an important field of study that sometimes involved firing bullets (into solutions, not divers) to create the cavitation being studied.

E. Newton Harvey pioneered the cavitation field with experiments in both de novo and micronucleation theories of bubble formation. Harvey (1955) proposed various mechanical cavitation models for de novo bubble formation. The first is Reynolds’ Cavitation, where fluids flowing past constrictions, at areas of decreased lumen size, result in a low-pressure turbulence zone, creating bubbles. Next, if a surface is moved rapidly as in shaking or hitting the side, the contained fluid pulls away from the wall creating a low-pressure cavity. Once the tiny low-pressure zone is formed, gas molecules diffuse into the space. Harvey captured this phenomenon with water, then even more graphically with a more viscous substance (corn syrup). Studies have looked at body tissues (in a laboratory) that are full of dissolved gas (the tissues, not the laboratory). These tissues had no bubbles, even after experimentally subjecting them to large pressure reductions. However, when energy was added by moving the tissue (as with muscle contraction), bubbles readily formed.

Noise and vibration are abundant in the dive environment. Harvey (1955) showed de novo bubble formation rate could be accelerated by ultrasonic energy. He fired a bullet into the side of a water tank creating local pressure changes associated with the shock and sound waves. When each positive pressure field reflected from a surface, it became a negative wave that formed bubbles behind it. The driving force in gas phase production is the difference between the dissolved gas partial pressure and the absolute pressure (P – Pabs).

Shilling, et al. (1976) showed local fluid pressure is substantially reduced as the amplitude of the ultrasonic pressure wave increases and that the negative wave creates bubbles faster than the positive wave dissolves them.

Evans and Walder (1969) cited Harvey’s mechanical cavitation theories as bubble formation around an existing micronucleus, but Harvey’s early papers refer to these experiments as de novo gas phase production. In a 1955 report, Harvey stated that if blood vessel walls were hydrophobic (they repel water), “there would be every reason to look for gas nuclei,” but he demonstrated rounded bubble ends indicating hydrophilic vessel endothelium (likes to mix with or combine with water, common examples are salts, sugar, alcohols). In his experiments using the blood of cats in various states of cooperation (1944), he collected aortic blood in “very clean tubes” and subjected it to the vapor pressure of blood. No bubbles formed, leading him to conclude there were no gas nuclei present in blood. It probably should have been qualified to mean only “cat blood” until others were tested.

As an alternative explanation to nuclei, Harvey et al. demonstrated intracellular bubble formation in areas touched by microprobes or other surfaces and in areas...
where muscle is crushed against bone (1944b). Harvey also showed that while immobile supersaturated tissues showed no bubble formation even at high change in pressure (ΔP), movement of the area easily resulted in gas phase formation (1955). Harvey et al. demonstrated factors of fluid in motion resulted in bubble formation with more cat experiments (1944a). Bubbles rarely formed in motionless anesthetized cats at simulated 45,000-foot (13,716m) altitude decompressions. When their muscles were electrically stimulated to contract, not only during but also prior to exposure to high-altitude decompression, bubbles readily formed and were almost always seen moving in the vena cava (the large vein bringing deoxygenated blood back to the heart).

Gillis, Petersen, and Karagianes (1968) used a Doppler flowmeter and detected “embolic showers” which followed movement of their experimental animals after rapid decompression from one hour at 53 meters (174 ft). Buckles (1968) however, did not find that motion, induced by electrical stimulation, formed bubbles in hamster cheek pouches. Upon decompression, copious bubbles were observed in hamster circulation but not in the cheek pouch. He electrically stimulated the pouches, and although the pouch moved, bubbles did not result. He concluded that mechanical stress is more likely than factors of fluid in motion to result in bubbles. As you can see, many conclusions that people think apply to entire divers came from poking hamster cheek pouches.

Cavitation upon decompression at the boundary between hydrophobic liquids (don’t mix with water, such as wax, oils, fats, and one side of soap molecules) and aqueous liquids (watery) was proposed as the source of de novo bubbles by Hills (1967). Hills studied nucleation at the interface between an aqueous and a hydrophobic liquid. Lipid aqueous boundaries were assumed for the study to exist in the body. Mixtures of 90% glycerol or 30% acetic acid were used for aqueous solutions. Liquid paraffin was the oil phase. Air and acetylene were solute gases. Refractive indexes of the paired liquids were nearly equal to avoid reflection and refraction errors in identifying microbubbles. He tried to make sure to free the system of any pre-existing microbubbles. Results showed bubbles formed, almost without exception, at the liquid-liquid interface. The probability of cavitation also increased with extent of decompression, higher temperatures, and by using a more soluble gas.

A Critical Radius – A Bubble Lesson You Can Apply for Life

Don’t skip too much of this part. Get the basics of “critical radius” to make the end of this article clear, and also to better evaluate claims about how many bubbles are likely in certain circumstances. Don’t worry about the details or the equations. Get the general concepts.

Although Buckles (1968) stated, “There is no theoretical way to predict the absolute rate of nucleation or its dependence upon gas properties,” bubble formation rates (de novo) have actually been estimated. Gas molecules tend to auto-associate (stay with others of the same) rather than associate with solvent molecules (whatever the gas molecules are stuck in). At a critical point, the number of associated molecules becomes a gas phase. The number of molecules is assumed to follow Boltzmann’s distribution (also called Gibbs distribution), which predicts how much gas there will be (Flynn, Catron, & Bayne, 1981).

Probability that gas molecules associate together to make a bubble of a given size depends exponentially (to a rapidly increasing amount) on what is called the “free energy” or “Gibb’s Free Energy” of the bubble:

\[ \text{Likelihood} = N \exp\left(-\frac{\Delta G}{kT}\right) \]

(where DG is the change in Gibb’s Free Energy, k is Boltzmann’s constant (3.30 x 10^-24 cal/degree), and N is a numeric constant obtained by summing all collections of gas.
from single molecules to critical-size bubbles and equating the result to a total probability for the distribution of 1.0.

What does that mean? Bubbles have to be a certain size or else they don’t get to be bubbles. For less than critical size bubbles, G (the free energy) is too large to allow bubble formation. That means no bubbles. Growth of larger than critical size bubbles is made easier by this same energy, although very large amounts of energy are needed (Flynn, Catron, & Bayne, 1981).

What could all that mean? It is interesting. The Free Energy decides it.

• A small bubble (below critical radius) does not have enough outward pressure to counter surrounding pressure, and that means growth of that bubble is not favored.

• But, a lucky large bubble (above critical radius), has enough outward pressure that it can overcome surface tension and surrounding pressure, and expand and grow and be more bubble. It needs to already be a certain size before it gets to be lucky to grow more. That is the “critical radius”—the minimum size needed to favor getting more.

Just like many other things in the world, you have to start with a lot, before forces not only let you get more, but help you do it. Otherwise, you are crushed back into nothing. Lesson: Make sure you always keep a critical radius of your own means and determination. Or, be a lot of hot air.

How Much Pressure Change Is Needed to Cavitate De Novo? A Lot.

Harvey (1955) and Hemmingsen (1970) experimentally demonstrated a high amount of energy is needed to cavitate pure substances. Harvey found that extremely high pressure differentials, 100 to 1000 atmospheres, were required to form bubbles in fluids without resident micronuclei. Some general lesson as above, the more you start with and the more help you have, and the more help you have, the easier it is to increase what you have. Otherwise, it takes enormous energy.

Hemmingsen (1970) conducted experiments to determine the lower limits of de novo bubble formation for argon, oxygen, nitrogen, and helium in distilled water. Gas pressure applied was high enough, according to Hemmingsen, to dissolve most of the cavitation nuclei. The assembly was shaken 45 minutes to equilibrate, then transferred under pressure to capillary observation tubes ranging from 0.15 to 2.5 mm inner diameter. Pressure was returned to ambient within a “few seconds.” Any cavitation activity that occurred was almost always observed within 10 minutes. None of the gases cavitated at supersaturations less than 135 atmospheres.

Minimum supersaturation pressures without bubbles was 135 atm for argon and oxygen, 145 for nitrogen in 2.5 mm tubes, 170 for nitrogen in 0.6 and 1.1 mm tubes, and more than 270 for helium. Less soluble gases like helium required greater pressures for bubble formation. Hemmingsen concluded that gas concentration, not pressure was the determining factor in bubble formation. In a later experiment, Hemmingsen (1975) again showed that decompression from hundreds of atmospheres was necessary to form bubbles in very pure water.

The amount of energy postulated for de novo bubble formation was experimentally demonstrated to be much lower for organic substances like gelatin (Hills, 1977; Yount, 1979) and even lower for excised animal tissue (Harvey et al., 1944a; Harvey et al., 1944b). Results of experiments with organic substrates were thought to be more likely to be applicable to conditions of human hyperbaric exposures.

What Determines Bubble Growth? - The Easy Part

Bubble growth is better understood than bubble origin. Gas-saturated liquids are inherently unstable and like to revert to their stable thermodynamic state by releasing dissolved gas as bubbles (Hills, 1967).

But maintaining bubbles of small radii in a supersaturated liquid is energetically unfavorable (Flynn, Catron, & Bayne, 1981), so bubbles less than a critical radius tend to disappear. Bubbles reaching a critical size in the energy versus radius curve lose free energy by growing. Attaining critical radius and continued growth are dependent on surface tension (Flynn, et al., 1981) although surface tension effects are only important for very small bubbles (Shilling, et al., 1976), gradient of partial pressure (Bove, 1987; Shilling, et al., 1976), amount of time the gradient exists, presence of other gases, solvent capacity and perfusion of tissues involved (Bove, 1987; Shilling, et al., 1976), and diffusivity and solubility of the gas (Bove, 1987; Buckles, 1968; Harvey, 1955).

Growth of an existing bubble occurs by diffusion of gas from surrounding tissue when dissolved gas partial pressure is greater than ambient pressure. Diffusion continues until equilibrium is reestablished. Diffusivity is inversely proportional to the square root of the gas molecular weight (Flynn, Catron, & Bayne, 1981). Diffusion is important when adjacent tissues differ greatly in perfusion. During ingassing, slow tissue receives gas by perfusion from its blood supply and by diffusion from surrounding faster tissues. During decompression fast tissue unloads gas rapidly. Gas from slower tissue diffuses into fast tissue supplying more gas than predicted by perfusion-limited gas theories (Flynn, Catron, & Bayne, 1981).

Amount of gas dissolvable in a tissue depends on the solubility coefficient of the solvent tissue and solubility of the solute gas. Fat tissue absorbs five times more nitrogen than can water, making fat, although it is a slow tissue in terms of perfusion, a potential reservoir of inert gas. Solubility of a gas increases with increasing molecular weight (Shilling, et al., 1976), which makes carbon dioxide, a more soluble gas than nitrogen, very important in bubble formation. Helium is substituted for nitrogen in deep dives, because being less soluble, inert gas narcosis is lessened. However, being more diffusible, its substitution for nitrogen during ascent leads.
to isobaric counterdiffusion from transient supersaturation.

**How Big before Bubbles Can Persist?**

A bubble of about 0.1 micrometer (or micron) diameter is considered stable (Shilling et al., 1976), which is some 60 times thinner than human hair. Capillaries average about 7 micrometers, so bubbles of that size or larger will begin blockade.

According to Richard Vann at Duke, extravascular bubble micronecullae of 1 to 30 micrometers are believed to be present in tissue under normal conditions and are theorized to be the precursors of the intravascular bubbles observed in DCS.

Yount (1979) made a dramatic statement that for a given pressure schedule, above an initial minimum critical radius, all nuclei will grow to macroscopic bubbles demonstrating a one to one correspondence between a given critical radius and the ultimate number of bubbles. The implication is that each pressure schedule allowing formation of the same size critical radii will produce the same number of bubbles, which is associated with a given outcome severity of DCS.

**Looking to the Future (Or Why Worry about Bubbles?)**

Schedules of gas washout are important in gas phase formation. According to Weathersby & Homer (1981), if nitrogen is washed from tissue more rapidly than helium, then the peak supersaturations following decompression from saturation will be greater for nitrogen than helium. If bubble formation is de novo, then nitrogen will be more associated with decompression sickness than helium following saturation dives. If bubbles are easily formed or are always present, then breathing nitrogen should be associated with lesser incidence following similar saturation dives.

Gillis et al. (1968) argue that any gas embolus regardless of size is potentially dangerous. Hennessy believed it takes a certain volume of gas phase production before symptoms become apparent (Weathersby & Homer, 1981). Spencer and Clark (1972) mention the presence of venous micro-emboli in sheep before reaching the first stops of the Navy Decompression Tables. “Silent bubbles,” as these asymptomatic bubbles are called, are mentioned in the literature as common (Eckenhoff, Osborne, Parker, & Bondi, 1986; Weathersby & Homer, 1981; Wilson, 1985).

The decompression tables were developed to minimize occurrence of DCS through limitation of the extent of the gas phase. However, according to Shilling et al. (1976), although it is not yet conclusive if de novo or microneucleation is the gas phase starting point, dive procedures are selected as safe based on de novo energy levels as the rate limiting step. They point out that these procedures would not be safe if bubbles only need grow from an existing phase. The results to more work in this area may steer a new course in the development of future decompression schedules.

**References**


Operational diving requires arbitrary numbers of dives to various depths over periods of hours, and often days. Once a standard set of decompression tables has been constructed with the simple case of nonstop decompression, a repetitive dive procedure is a necessity. After any air dive, variable amounts of dissolved and free residual nitrogen remain in body tissues for periods of 24 hours or more. Similarly, elevated tissue tensions can promote, or sustain, bubble growth over the same time scales. This residual gas buildup (dissolved and free) will shorten the exposure time for subsequent repetitive dives. The longer and deeper the first dive, the greater the amount of residual tissue nitrogen affecting decompression on subsequent dives, and nonstop depth-time allowances for repetitive dives are reduced. Within dual-phase models, residual free gas phases are also included in procedures, imposing additional constraints on repetitive diving.

**Model History and Tables**
Table schedules for diving at sea level can be traced to a model proposed in 1908 by John Scott Haldane. He observed that goats, saturated to depths of 165 fsw, did not develop decompression sickness (DCS) if subsequent decompression was limited to half the ambient pressure.

Extrapolating to humans, it was reckoned that tissues tolerate elevated dissolved gas pressures (tensions), greater than ambient by factors of two before the onset of symptoms. Haldane then constructed schedules which limited the critical supersaturation ratio to two in hypothetical tissue compartments. Tissue compartments were characterized by their halftime. Halftime is also termed “half-life” when linked to exponential processes, such as radioactive decay.

Five theoretical compartments (5, 10, 20, 40, 75 minutes) were employed in decompression calculations and staged procedures for fifty years.

Some years following, in performing deep diving and expanding existing table ranges in the 1930s, U.S. Navy investigators assigned separate limiting tensions (M-values) to each tissue compartment. In the 1950s and early 1960s, other USN investigators and divers, addressing repetitive exposures and staging regimens for the first time, advocated the use of six tissues (5, 10, 20, 40, 80, 120 minutes) in constructing decompression schedules, with each tissue compartment again possessing its own limiting tension. Temporal uptake and elimination of inert gas was based on mechanics addressing only the macroscopic aspects of gas exchange between blood and tissue. Exact bubble production mechanisms, interplay of free and dissolved gas phases, and related transport phenomena were not quantified, since they were neither known nor understood. Today, we know more about dissolved- and free-phase dynamics, bubbles, and transport mechanisms, but still rely heavily on the Haldane model. Inertia and simplicity tend to sustain its popularity and use, and it has been a workhorse.

Standard U.S. Navy tables provide safe procedures for dives up to 190 fsw for 60 minutes. Dives between 200 and 300 fsw were tested and reported in the exceptional exposure U.S. Navy tables, including a 240-minute compartment.

The Swiss tables, compiled by Bühlmann, incorporate the same basic procedures, but with a notable exception. While the U.S. Navy tables were constructed for sea level usage, requiring some safe extrapolation procedure to altitude, the Swiss tables are formulated and tested over a range of reduced ambient pressure. The controlling repetitive tissue in the Bühlmann compilation is the 635-minute compartment.

Similar approaches focusing on deep and saturation diving have resulted in decompression tables for helium-oxygen (heliox), helium-oxygen-nitrogen (trimix), and mixtures with some hydrogen (hydrox).

Meters

While it is true that the table procedures are quite easily encoded in digital meters, digital meters are capable of much more than table recitations. Pulsing depth and pressure at short intervals, digital meters can monitor diving almost continuously, providing rapid estimates of any model parameter. When employing the exact same algorithms as tables, meters provide additional means to control and safety beyond table lookup.

When model equations can be inverted in time, meters can easily compute time remaining before decompression, time at a stop, surface interval before flying, and optimal ascent procedure. Profiles can be stored for later analysis, and the resulting databank used to tune and improve models and procedures.

With inexpensive microprocessor technology, there has been explosive growth in compact-digital-meters usage. Broader models can be incorporated into meter function today, increasing their range and flexibility. Although the biophysics of bubble formation, free and dissolved phase buildup and elimination is formidable and not yet fully understood, contemporary models treating both dissolved and free phases, correlated with existing data, and consistent with diving protocols can extend the utility of diving computers. Such bubble mechanical models will focus on bubbles and their interactions with dissolved gas in tissue and blood.

Statistics point to an enviable track record of decompression meter usage in nominal diving activities, as well as an expanding user community. When coupled to slow ascent
rates and safety stops, computer usage has witnessed a very low incidence rate of decompression sickness, below 0.01% according to some reports. Computers for nitrox, heliox, and trimix are online today.

**Empirical Practices**

Utilitarian procedures, entirely consistent with phase mechanics and bubble dissolution time scales, were developed under duress, and with trauma, by Australian pearl divers and Hawaiian diving fishermen, for both deep and repetitive diving with possible in-water recompression for DCS hits. While the science behind such procedures was not initially clear, the operational effectiveness was always noteworthy and could not be discounted easily. Later, the rationale became clearer.

Pearling fleets, operating in the deep tidal waters off northern Australia, employed Okinawan divers who regularly journeyed to depths of 300 fsw for as long as one hour, two times a day, six days per week, and ten months out of the year. Driven by economics, and not science, these divers developed optimized decompression schedules empirically.

As reported by Le Messurier and Hills, deeper decompression stops, but shorter decompression times than required by Haldane theory, were characteristics of their profiles. Such protocols are entirely consistent with minimizing bubble growth and the excitation of nuclei through the application of increased pressure, as are shallow safety stops and slow ascent rates. With higher incidence of surface decompression sickness, the Australians devised a simple, but very effective, in-water recompression procedure. The stricken diver is taken back down to 30 fsw on oxygen for roughly 30 minutes in mild cases, or 60 minutes in severe cases. Increased pressures help to constrict bubbles, while breathing pure oxygen maximizes inert gas washout (elimination). Recompression time scales are consistent with bubble dissolution experiments.

Similar schedules and procedures evolved in Hawaii among diving fishermen, according to Farm and Hayashi. Harvesting the oceans for food and profit, Hawaiian divers would make between 8 and 12 dives a day to depths beyond 350 fsw. Profit incentives induced divers to take risks relative to bottom time in conventional tables. Three repetitive dives were usually necessary to net a school of fish. Consistent with bubble and nucleation theory, these divers made their deep dive first, followed by shallower excursions. A typical series might start with a dive to 220 fsw, followed by two dives to 120 fsw, and culminate in three or four more excursions to less than 60 fsw. Often little or no surface intervals were clocked between dives.

Such types of profiles literally clobber conventional tables, but, with proper reckoning of bubble and phase mechanics, acquire some credibility. With ascending profiles and suitable application of pressure, gas seed excitation and any bubble growth are constrained within the body’s capacity to eliminate free and dissolved gas phases. In a broad sense, the final shallow dives have been tagged as prolonged safety stops, and the effectiveness of these procedures was substantiated in vivo (dogs) by Kunkle and Beckman. In-water recompression procedures, similar to the Australian regimens, complement Hawaiian diving practices for all the same reasons.
Responsibility and Safety Includes You

By Ira Barocas, NAUI 10126

The news out east this morning is full of the sinking of a tugboat on its way home after completing a job. The last boat in a three-tug convoy in stormy weather, it foundered and sank off Fire Island, an Atlantic barrier island. Weather conditions were poor, as was on-scene visibility, and the seas were running. Unaware of the emergency until hearing the mayday, the leading vessels circled back immediately, and the U.S. Coast Guard responded as quickly as could be expected given the circumstances.

Happily, three of the four aboard the vessel quickly donned immersion suits against the 37-degree (2.8°C) seas, and were picked up. Although treated for hypothermia, they made it home to family. The body of the captain of the tug was recovered later in the afternoon. He was not in an immersion suit.

What happened aboard the vessel, and why the captain was not in his “Gumby” suit will undoubtedly be the focus of the ensuing investigation by the U.S.C.G., the vessel’s owner, its insurer, and other interested parties, certainly including the mariner’s family.

Ever since Dr. Martin Nemiroff, a U.S.C.G. flight surgeon working in Alaska, was able to revive a three-year-old presumed dead after immersion in cold water in the late 1970s, there’s been a lot of work done on cold water survival—but as NAUI leaders know, cold is a flexible term and different for everyone. Cold in diving or boating is experiential, although each person will have a unique set of predictable responses. These progress from feeling slightly cold, shivering and the loss of fine mobility in the fingers, to unconsciousness, and ultimately, demise.

As a captain or diving leader, it is up to you to monitor those responses in the interest of safety and performance. You may feel physically quite differently than the people with whom you’re working, but it is their feelings that should govern your activities. Even in tropical or sub-tropical areas, cold is what you feel, not what you think. We’ve all learned that the effects of the difference between water and air temperature and a human’s typical body temperature is affected by general health, age, hydration, gender, body type, protective clothing, and in diving and boating particularly, experience and engagement in the activity at hand. Add to that the thinking behind one of my own teaching adages: “Not every diver can make every planned dive every day.” There are indeed times when one should “just say no.”

Diving leaders know this, but the subtle effects of peer pressure and unique individual feelings (and often not so subtle encouragements of friends, family, and leaders to get the dive done, particularly during open water training) may set up a situation with more risk than wise to pursue. Most NAUI leaders are very familiar with dealing with “cold feet” in these circumstances, and almost invariably create successful, exhilarated, effective divers whose sense of accomplishment is deeply gratifying. But sometimes not.

Boating however, especially on the professional level, has an entirely different dynamic. The master’s authority is pretty much inviolate in dealing with the safe conduct of the vessel. The considerations are the safety of the vessel, passengers (if any), and crew—in that order. (In case it’s not obvious why the vessel comes first, consider where you’d be without it!) Even so, it is as incumbent upon the vessel master to consider the state of the crew and the conditions at hand as it is upon the diving leader. Frankly, not adjusting to the conditions and their effect on human performance is irresponsible.

Whether onshore or offshore, dealing with water and wind, or with delicate operations and evolutions in ship work, regardless of the cargo carried, leaders who ignore the human element exacerbated by weather are kidding themselves. Experience is no proof against human disability, whatever the proximate cause.

Getting back to the tug, there’s no doubt that there was a two-person watch system in effect. In other words, two persons were on duty at any given moment in a 24-hour day. The rotation may have been in 12-hour segments, or eight, six, even four. Unless some company policy was in effect specifying the rotation, these decisions are often made by the captain. Perhaps there was such a policy, and perhaps it wasn’t followed. All that will become evident over time, but none of it will comfort those who lost a family member and friend.

Working my way up from the deck to the wheelhouse over many years, I saw the watch protocol depend on everything from when the master customarily napped to rigid company policies. Though there have been numerous studies of fatigue, circadian rhythms, sleep deprivation, effects of daylight, night work, etc., there has been very little trickle down to the day-to-day work life of mariners, as opposed to say airline personnel or even longhaul truck drivers.

Until that changes, incidents such as described at the outset will undoubtedly continue. Ignoring the human factor in assessing the feasibility of any outdoor activity at any level is inviting disaster. That said, on the professional level, if you’re out there, you have to deal with it, whatever it may be.

The Coast Guard’s statement this morning said that the captain panicked, and jumped into the near freezing water without bothering to put on his survival suit. Owning or running the vessel, leading or teaching a group of divers, being in charge confers no immunity. Consider this through a safe season.
The Continental Shelf

By John Heine, NAUI 5924

The relatively shallow subtidal area of the world’s oceans around the continents is called the continental shelf. This area generally extends from the shoreline out to a depth of approximately 150 m (500 ft). The width of this zone also varies greatly, depending upon the topography of the adjacent land. The continental shelf can be as narrow as 1 km (0.6 mile) to as wide as 750 km (475 miles).

The continental shelf area has obvious value for commercial fisheries, tourism and recreation, and oil and mineral resources. A variety of habitats exist in this zone, including rocky reefs, coral reefs, kelp forests, soft bottom communities, estuaries, mangroves, and seagrass beds. These habitats are influenced by physical factors such as input from rivers, sedimentation, water motion, tidal currents, variations in salinity, temperature, light, and nutrients.

Soft bottom habitats do not have a substrate type to which animals or plants can attach firmly, so the community of invertebrates are mostly infauna, which means that they burrow into the sediment. This would include animals such as worms and clams. Epifauna live on top of the sediment, and include organisms such as shrimp, amphipods, seastars, snails, and crabs. Algae or seagrasses are usually absent from these habitats. The major source of food and productivity comes from detritus, which is made up of drift algae and seagrasses, dead animals, and other debris that has settled on the bottom.

The soft bottom is a good habitat for demersal (bottom) fishes such as skates and rays, which excavate clams from the bottom. Many species of flatfishes, such as halibut, sole, flounder, and turbot camouflage themselves on the bottom, and are predators on crabs, small fishes, worms, and amphipods.

Seagrass beds occur in relatively shallow, protected areas of the continental shelf. Common tropical seagrasses such as turtle grass and manatee grass exhibit high productivity and standing biomass. They are consumed by sea turtles, manatees, sea urchins, and some herbivorous fishes. In temperate waters, eelgrass beds can be found in estuaries and protected coastlines.

The continental shelf habitats are those most often visited by divers. They are also subject to the dumping of garbage, sewage, industrial waste, and pesticides and fertilizers from agriculture. Most nations control the continental shelf surrounding them, and many are at last taking steps to preserve them as a valuable asset. All of us must encourage everyone to protect this natural and often endangered resource.

Got a Good Idea? Got Something to Say?

Other NAUI Members would like to know.

Report on ITCs, ITWs, and special courses in Diving World.
Submit articles to share your thoughts, insights, experiences, teaching ideas.
Contribute to Sources! It’s your journal!
Send submissions to poliver@naui.org
NAUI Presence at DMEX Is a Success

Reyadh Albannow (center) with five NAUI Instructors who were recognized for certifying more than 700 divers in 2014.

From March 3-7, 2015, the Dive Middle East Expo (DMEX), the largest diving exhibition in the Middle East, occurred in conjunction with the Dubai International Boat Show. Combining infrastructure, exhibitors, and global visitors into a unique setting make the show an ideal touch-point to raise awareness about NAUI and its growth, especially in the Middle East.

Through the support of Reyadh (Rey) A. Albannow, NAUI Middle East Service Center Representative, and Mr. Adel Al Sumait, the owner of Al Boom Marine, Derik Crotts, Chairman, NAUI Services Group, was invited to participate in this event and to provide a membership update.

“I was honored to have been provided the opportunity to visit one of our growing regions and meet so many dedicated NAUI members,” said Crotts. “To say that the DMEX and update venues and participation levels were impressive would be an understatement.”

The UAE Diving Village and Cultural Center served as the backdrop for the membership update. This setting couldn’t have been more appropriate, complete with artifacts and displays depicting the rich history of diving in the region. The diving village is managed by the Emirates Diving Association (EDA). EDA is responsible for regulating all diving activities in the UAE, promoting dive safety, preserving historical aspects in the gulf region, and enhancing environmental education to diving and non-diving communities throughout the UAE.

It is also the title sponsor of the Dive Middle East Exhibition.

“In addition to meeting all of the NAUI members, having the opportunity to meet with Ibrahim Al-Zu’Bi, Executive Director of EDA, proved extremely beneficial,” added Crotts. “There is a natural fit between what EDA is chartered to do and UAE and what NAUI does globally; especially as it concerns our NAUI Green Diver Initiative. We will look to develop a close partnership with the regional environmental leader.”

During the past four years nearly 300 NAUI instructors have been certified in the Middle East region. More than half, 175, come from three countries—Kuwait, UAE and Saudi Arabia. It’s an area full of excitement and enthusiasm for NAUI and diving.

NAUI Middle East members were updated on the proposed NAUI Bylaw changes that will be voted on during the 2015 election; briefed on the updated materials now in Arabic; provided a status update on future materials and given a copy of the NAUI Scuba Diver DVD with Arabic subtitles.

“I was impressed with the number of NAUI members who attended the update and came to the show,” said Mohamed Faraj Abdulla Jaber, NAUI 56120. “NAUI is still not well known in the region, especially here in UAE. Being a part of DMEX helped to show what NAUI is and what we represent. Also, having NAUI leadership here shows the commitment to the region and us. That is extremely important.”

One of the most impressive portions of the update was the recognition of five NAUI instructors who had certified more than 700 divers in 2014. This is an impressive number for any NAUI region and sets the bar high for all other NAUI leaders to attempt to emulate.

“I am happy that NAUI Headquarters came to provide us the update,” said Abulrahman Amiri, NAUI 55360, who certified more than 200 NAUI divers in 2014. “There are so many new things happening with NAUI that it was important for us to hear it firsthand. We listened, we heard, and we are even more excited now for NAUI’s future, especially here in UAE.”

Combining a dive and boat show (though in UAE there were more yachts than boats) brings an entirely new focus to the level of interest and commitment of the attendees. The show had more than 26,000 visitors and the NAUI booth, strategically positioned on the corner of the main traffic route to the harbor (and the yachts), ensured a steady stream of visitors that resulted in numerous leads and opportunities for NAUI Middle East.

“I am very happy with the update and the NAUI presence at DMEX,” said Rey. “It was our first time at this show and it was a total surprise to many that we were here. Our participation projected an agency that is committed to growth and development in the region. I have already arranged for several instructor crossovers and some even started during the show.”

Understanding the importance of brand awareness and image, Rey recognizes that NAUI has a great opportunity in UAE if it can solidify the instructor base and provide a projection platform for them.

“While we have 33 instructors in UAE, many of whom are in Dubai, we have no dive center to support their independent efforts,” added Rey. “We only have a two NAUI dive stores in UAE and it’s important to me that the independent instructors within Dubai have a NAUI Diving and Training Center to help support their efforts.

“The show has provided an opportunity to meet with several potential partners and I will be working to help make this vision become a reality in the near future.”
Thirty-seven divers is too many to name them all, but Joe does admit to being the guy in the black shirt holding the banner on the left.

Joe Lodmell (NAUI 42553) took his gang of divers to Bonaire last January to escape Maryland’s winter weather. Joe credits his concurrent training model for producing such a large and happy crop of fellow travelers. He had students from brand new divers all the way through ITC candidates on the trip with him.

NAUI ITC at Sipadan Island

Left to right: Course Director and Asia Pacific Training Manager William Tong (NAUI 40366); new NAUI Instructors Sam Ho (NAUI 56698), Alwi (NAUI 50596), Yusri (NAUI 56699), and Al Rashid (NAUI 56697; and NAUI Asia Pacific President Michael Tong.

Four new NAUI Instructors recently completed their Instructor Training Course at Mabul Sipadan Resort - Congratulations to all.

Scuba Quest of Sarasota Graduates Two New Divemasters

Pictured left to right: David Merullo, Instructor Mitch Nestor (NAUI 42000), James Wells.

Two new NAUI Divemasters involved in the Scuba Quest Dive Centers of Florida organization recently completed their course at the Sarasota location and are on their way to becoming NAUI Instructors.

USCG Capt. David Merullo has been a team member with Scuba Quest since 2006, assisting with classes and sales. He was first certified in 2002 as a junior diver and has been diving ever since. He’s now now approaching 28. He enjoys helping teach others enjoy great hobbies, not just in scuba but also in volunteer emergency communications. David is also a volunteer examiner for the ARRL, the Amateur Radio Relay League.

James (Jimmy) Wells has been diving since 2010. He started freediving and spearfishing off the beach and, he says, one thing lead to another. He loves the water and that transition to breathing beneath the waves was an awesome experience. Jimmy particularly thanks Mike Ross, his instructor, for teaching him what it takes to be the best at a leadership level, and he’s eager to continue to learn about leadership and instruction. He also knows he will have the support of all at Scuba Quest as he enters the hardest training thus far.

NAUI Course Director Workshop Hosted by the University of Southern Mississippi

Pictured from left to right: Greg Hidalgo, Bill Powe, and Chad Barbay.

A NAUI Course Director Workshop (CDW) was held in Hattiesburg, Mississippi, at the University of Southern Mississippi in December, 2014. Participating in the course were two great NAUI Instructor Trainers Bill Powe and Greg Hidalgo. Course Director Chad Barbay conducted the workshop.

Bill Powe runs the NAUI Scuba Program at the university and has been affiliated with the program since becoming a NAUI diver years ago under the tutelage of Dr. Charlie Burchell. Bill’s love and passion for diving allowed him to continue up the ranks to Course Director! The University of Southern Mississippi diving program has been in existence since 1974 and still remains as one of the premier university programs in the United States.

Greg Hidalgo from Lafayette, Louisiana, also was awarded with his NAUI Course Director rating. Greg is the owner of Divers Destination, which has been in business since 1986. In addition to being a successful dive-store owner, Greg also owns and conducts a Marine Biology Research Camp in Roatan, Honduras, every summer. This camp attracts kids from all over the country and teaches them about all the wonderful things that are beneath the sea. In addition to teaching scuba diving at the camp Greg and has plans to implement NAUI Instructor training there.
Viva Diving Hong Kong Graduates Five Instructors

NAUI Pro Gold Facility, Viva Diving in Hong Kong hosted an Instructor Training Course with NAUI Course Director Lam Yu Chung (NAUI 47524) and Instructor Trainer Chris Yuen (NAUI 49987) leading five candidates towards their goal of becoming NAUI Instructors. All five successfully passed the course in early February, and we wish them well in their future training of safe divers.

John Heine Receives Hall of Honor Award

John Heine (NAUI 5924) was unable to attend NAUI’s Awards Ceremony during the DEMA Show in Las Vegas, so NAUI National Territory Manager Mike Dunst made a special presentation in Florida, where John now lives. A NAUI Instructor for 35 years, John is a former Course Director and NAUI Branch Manager. He was the lead author for the NAUI Master Scuba Diver textbook and a Contributing Editor for Sources magazine for twenty-five years. He is also the author of several books on scientific diving techniques.

Wilfried Lichtert Completes ITC in Tenerife

Wilfried Lichtert finished his NAUI Instructor Training Course in Tenerife, Canary Islands, this past February. He had made his NAUI Divemaster certification with NAUI Francophone Representative Richard Plumes in 2000. After quite a number of dive jobs under other flags (PADI and SSI), he decided to become a NAUI Instructor. Richard is glad to present him as a very good and very professional instructor.
The Zenobia wreck in Cyprus is considered one of the top ten wreck dive sites worldwide. She lies in the Larnaka (English: Lanarca) harbor, and the municipality has an annual Zenobia Week event whose aim is to establish Larnaka as a distinct and excellent destination for divers and to promote the Zenobia shipwreck as a divers’ destination. This year’s Zenobia Week is scheduled for June 23 – 30, 2015.

Last year’s event was a great success, supported by the Cyprus Dive Centres Association as well as public entities, and other companies. NAUI Cyprus had a productive involvement, contributing in various aspects of the event including a seminar presentation by NAUI Cyprus Representative Nicos Nicolaou on “Diving and Future Trends”. NAUI Cyprus will be there again this year.

During Zenobia Week, there will be interesting activities for both divers and the general public including:

- Discounts on diving sessions to the Zenobia wreck and wreck diving specialty courses.
- Underwater photography exhibition and competition with prizes.
- Seminar with distinguished speakers.
- Outdoor painting exhibition with creations from Larnaka schools.
- Free glass-bottom boat cruises for the general public to the Zenobia wreck site.
- Exhibition of original items from the Zenobia.
- Freediving (apnea) contest.
- Underwater and beach clean-up campaigns.

Plan to be there. More information about Zenobia Week is at www.zenobiaweek.com

10 Reasons why Zenobia is ranked as one of the best wreck diving sites

1. Zenobia, a Swedish roll-on-roll-off ferry, was fully loaded when she sank on her maiden voyage off Larnaka’s fishing harbor in June 1980.
2. It is massive: 174 m (571 ft) length, 28 m (92 ft) width and 21 m (69 ft) height. This makes it the largest wreck in the Mediterranean.
3. The ship is still fully loaded with 108 trucks with all their cargo—including cars, military equipment, games, toys, food, telecommunications equipment, and all these are down there to explore.
4. One of the trucks was carrying one million eggs, most of which remain intact at the bottom of the sea after 35 years!
5. Zenobia has turned into an amazing reef with hundreds of fish species such as giant tunas, barracuda, kingfish, jacks, triggerfish, moray eels, stingrays, turtles, octopuses, and many others.
6. The wreck has enriched the biodiversity of the sea, and the diver can enjoy corals, sea anemones, and other sea fauna.
7. The waters in Cyprus seas are warm. In summer they reach 27°C (80°F), and in winter the minimum they can reach is 16°C (61°F), allowing diving throughout the year.
8. Zenobia is very accessible—only 10 minutes from the Larnaka Marina by boat.
9. There is exceptional visibility around the wreck, reaching up to 50 meters (165 Feet).
10. The sea in Larnaka Bay is very safe.

Zenobia is not the only wreck in Larnaka. There are five more wrecks in Larnaka Bay including a British helicopter!
From La Habana to Jardines de la Reina – Cuba

BY JEAN CHRISTOPHE GRIGNARD, NAUI 48973
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In a Hispanic atmosphere where Che Guevara and Fidel Castro are omnipresent, the Cuban capital is an amazing city where, even after the torments of time have taken a toll, the glories of half a century ago can still be imagined. During a walk in Old Havana or a ride on the Plaza de la Revolución with its impressive monuments, you will discover a city of contrasts and meet charming faces of locals who like to tell you about their country. A UNESCO world heritage city, La Habana is absolutely a city to be visited.

It is only a few kilometers from the city to the countryside, but what a gap. You are at an extraordinary coast with the so brilliant blue color of the Caribbean Sea. The coast and the sea invite you to discover the beaches and the marine wealth. Cuba offers a thousand facets, and still protected spaces offer themselves to nature lovers and scuba divers.

Lying 80 km (50 miles) off the south Cuban coast and paralleling it for 150 km (90 miles) is a paradise on earth, a place that only a few privileged divers and fishermen can access: the Jardines de la Reina (Gardens of the Queen). Discovered by Christopher Columbus more than 600 years ago and named after Queen Isabella of Spain, the archipelago of the Gardens are preserved and protected. They were established as a national park in 1996 by Fidel Castro, and they cover an area of 2170 square km (840 sq mi) with more than 600 cays and islands.

Against all odds, I had the opportunity to go there for one week and to be, with my partner,
The only divers present in this archipelago, the only other tourists being fly fishermen.

The journey to reach this paradise was long and tiring: a 10 hours flight from Brussels to Havana via Madrid, then a pick up at 4 AM for a six-hour bus ride, and finally a three-hour speedboat cruise. But the sight of the barge in the middle of the mangroves that would be our nesting place for six days erased the tiredness and discomfort of the long and harassing trip.

Rapidly settled in our cabin, we were curious to meet the people who would be diving with us, and to our greatest surprise, there was only one, our dive guide Tony. He explained that this week was dedicated for fishermen, but as there was one unused cabin left, they had accepted our request—giving us, by the way, a good discount. Tony explained the different dive sites and was very attuned to my desires and expectations as an underwater photographer.

As soon as I jumped into the turquoise water, I realised that I would be doing here the most beautiful dives of my life. The undamaged and undisturbed coral reef was flourishing, hosting a large variety of fish. Our first encounter was with a very curious goliath grouper, who looked me right in the eye and accompanied me as a guide. During the next dives, we always had some of them around. But the most fascinating of all were the Caribbean reef sharks. They were circling the boat even before we went into the water. While underwater, they kept coming close, keeping an eye on us as self-appointed guardians of this Garden of Eden. We also met many silky sharks gliding by gracefully and some nurse sharks, who were a bit more shy and quickly left the area where we were diving. In the canyons, decorated with undisturbed black coral, shoals of silvery tarpons barely moved as we swam through.

We also went by boat to visit above water sites of this protected natural area. It is rich in mangroves and palm trees and stretches of virgin white sandy beaches inhabited by iguanas and fearless Cuban hutias, large tree-living rodents endemic to the island.

One of the most impressive moments for me was snorkeling with a juvenile American crocodile. Tony stayed on board the boat, and he told my girlfriend to stay on the boat to take pictures from the surface. As I was getting into the water, he warned me to keep my fingers behind the holding bars of my camera housing. It was a thrilling experience, but I was glad to get back on the boat safe and sound and with all my fingers.

It was a wonderful trip, and the park has some of the most beautiful, most pristine diving you will find anywhere. I just hope Cuba will be able to continue to protect it from the pressures of increased tourism as unrestricted travel to Cuba from the U.S. reopens and grows. There are few of these last great places left.
[Editor’s note: In the fall semester of 2010, Tabitha was in my Basic Scuba course at the University of Texas in Austin. A statuesque blonde with an effervescent personality, she was a joy to have in the class. Then she moved on and graduated, and I did not hear of her until in January 2015, I received a photo from Michael Tong, president of NAUI Pacific Rim, with Tabitha proudly holding her Rescue Diver certificate and Michael’s comment that she was the new Miss Scuba International. I emailed Tabitha with astonished congratulations and asked for more information. What she sent me is so engaging and fun that, rather than my writing a boring news notice, here is her story in her words.]

A scuba diving beauty pageant! In a million years, I would have never thought I would be in a beauty pageant, or better yet, one to do with scuba diving. I’ve been diving since 2010 and have always been drawn to the sea. Growing up in land-locked Texarkana, Texas, I could only dream of a day I could go for a run on the beach, or even attempt something as daring as scuba diving. Little did I know, once I got to college my journey would begin.

The University of Texas, Austin is, to me, one of the greatest places in the world, and I know I wouldn’t be who I am today without my time there. During my junior year, I saw the option to sign up for a for-credit scuba diving class taught by Peter Oliver. I was having a great semester, hitting the prime of college: going to classes, bartending, but also working as a real estate agent and a zip-line guide. Then, right in the middle of my fabulous semester, my mother passed very unexpectedly, and I was smacked in the face by reality and fell into a very deep place. Returning to school, I had to answer the question whether or not I wanted to continue my course as a diver. No one would have blamed me if I quit, but the diving relaxed me, kept me entertained, and with the promise of the entire ocean out there, I persevered.

I still remember the open water dives. It was freezing! Our certification course dives were planned out months ago, and we couldn’t change the date. December 5th, 2010. I dove in a 5mm wetsuit, and despite my vivid memories of freezing my you-know-what off, I was hooked.

Four years after my certification, a friend I had met through an online travel contest, Chanel Hanson, who had competed as Miss Scuba USA in the Miss Scuba International pageant, said that they were looking for a representative for the current year. She posted online asking if anyone was interested, and I volunteered. It was pretty easy on my part, but other girls I would soon be competing against had gone through months of training and several rounds of competition to represent their countries.

I was lucky to secure an amazing sponsor through Body Glove/Dive N’ Surf as their only scuba diving athlete. Without them, I couldn’t have afforded to compete. While everything is covered by the pageant once you arrive, you still must pay your way to the location. Thank you to Body Glove/Dive N’ Surf for your support.

When I’m not diving, I do have a bit of a colorful résumé. I worked as a TV reporter in San Diego (freelancing for San Diego’s XETV, and for Fox Sports San Diego), a Jetpack Pilot/Instructor for Jetpack America, and a social media director...
for the sailing Magazine Cruising Outpost. It took a bit of convincing, but I was able to get off work from all my jobs for two weeks, and I boarded my plane to Malaysia on November 15, 2014.

Once I arrived in Malaysia, I was greeted by an adorable man with a sign: “Tabitha Lipkin, Miss Scuba USA.” My traveling wasn’t over. It had taken 30 hours to get there, but I still needed one more flight, a two-hour bus ride, and a boat to get to Mabul Water Bungalows.

I was one of 14 girls competing for the title, and I was nervous, not because I wanted to win, but more importantly, I wanted to make friends, and I wasn’t sure what these “beauty queens” would be like.

They were fantastic. Each girl was very unique and personable, and they came from all over the world. It was a two-week competition, and our first week was spent diving, getting to know each other, and learning the role we each play as individuals in marine conservation. The resort was the most magical place I had ever been. Situated over the water, we all were treated to the most incredible views of the island in the lap of luxury. Each day was jam-packed with activities from photoshoots to conservation workshops, and of course, all the joy we could soak up from the sea.

The diving was the most incredible I’d ever seen. There were so many creatures I can’t even describe. The majority of our diving took place on the house reef just outside the steps of our bungalows. It was easily accessible, and there was always a divemaster on hand. The best diving though was Sipadan. Only a 20-minute boat ride away, and you were in the center of an underwater metropolis. I mean it was like an underwater postcard.

The second week was more like what you might imagine from a beauty pageant. We were expected to be on our best behavior, with full make-up and hair each day to all different activities. We stayed at Sutera Harbour in Kota Kinabalu, Sabah, Malaysia. This is when things got a little more tense, and the girls started to quarrel a bit. It was, after all, a competition. We got out of our hotel each day for a variety of activities including a visit to a cultural village, and to a school for special needs kids. I loved this part, seeing some of the “real” Malaysia. It was beautiful, and the people were very welcoming.

The whole competition and the night of the finals are a bit of a blur. The finals took three hours. We had been judged from day one on our diving, knowledge of marine conservation, and our interactions with each other, but now it was show time.

The show consisted of each of us modeling our national costume (mine a Statue of Liberty/Wonder Woman hybrid), a bikini round (still trying to find and delete all photos), a stage talent (I actually did the CUPS song from Pitch Perfect), an evening gown walk, and finally a Q&A.

I still don’t know how I did it. I almost tripped during the national costume round, I was the least fit of all the other girls in bikinis, but I totally rocked my stage talent performance, and finally, I fumbled a bit during my Q&A. I had already been named "Miss Congeniality," and then somehow, five minutes after the Q&As, it was announced: “And Miss Scuba International is... U-S-A.” I was in shock and still am.

Now, I get to travel the world. In fact, I’ve been so busy since I won that I’m just now getting to the point where I can write about my experience. I’m so lucky.

In fact, at this very moment I am back in Mabul getting my NAUI Divemaster certification. Everyone has been incredibly supportive of my journey, and I would be honored if you’d follow me down this long road of endless possibilities. You can follow my social media:

Twitter/Instagram: @tabithalipkin;
facebook.com/tabithalipkinjournalist;
www.tabithalipkin.com/keepintabs
(I’m always posting!)
Although my country entered the First World War a year later, 1914 marked the centenary of the outbreak of the Great War, as my two veteran grandfathers always called it. So August 8, 2014, was to be my first dive on the bow of the Cesare Rossarol, and August 13, exactly one hundred years after the ship’s launching, was to be the final dive on the stern section.

It would be two separate dives. Although I had the underwater technology tools to dive on both parts of the wreck in one prolonged dive, I wanted my dives to be deliberate and thoughtful, to observe quietly and reflect on the remains of the Rossarol, and to be affected by the richness of the sea and the voices of the past. There was also my past—two grandfathers who served in and managed to return alive from that terrible war.

Ludovico De Filippi was born in Turin in 1872. He attended the Regia Accademia Navale in Livorno and emerged with the rank of lieutenant in the Italian Royal Navy. At the time of the war, a new invention—the airplane—was being adopted by the world’s military. De Filippi obtained a pilot’s license in France and then specialized in the use of seaplanes. He became a driving force in the new airplane department of the Italian Royal Navy and while serving aboard an armored cruiser, he converted it into one of the world’s first “aircraft carriers.”

After various operational duties and assignments during the conflict, De Filippi was assigned command of the Cesare Rossarol in March 1918.

The Rossarol was a Poerio class light scout cruiser, designed by the Italian navy in response to a similar vessel in the Austro-Hungarian fleet. She was built by the Ansaldo shipyards in Genoa and launched on August 13, 1914.

The cruiser was 85 meters (279 ft) long and 8 meters (26 ft) wide with a draft of 3 meters (10 ft). Propulsion was provided by Yarrow boilers and two 24,000 horsepower Parsons-Belluzzo steam turbines and three-blade propellers, enabling maximum cruising speed of 32 knots. Displacement was about 1,100 tons.

She had a crew of 129 men, including officers.

Armament was impressive: six Schneider 102/35 anti-aircraft guns, two Vickers 40/39 rapid-fire cannons, and four 450 mm torpedo tubes, with additional equipment for the transport and the laying of 42 mines.

Maybe it was because I was born in Turin as was Captain Ludovico De Filippi, the last commander of Rossarol, or because I knew of his gesture of giving his life jacket to a sailor who could not swim, but in some ways I felt I had to accomplish this dive on a certain day and in a particular year.
Pierpaolo Montali gets ready to visit the Rossarol.
The Rossarol entered service a few months after Italy’s entry into World War I. In November 1915 she was assigned to service in the southern Adriatic. In late December, she was transferred to Venice, joining her sister ships, the Guglielmo Pepe and Alessandro Poerio in Explorer Group II of Division IV.

In 1917, the Rossarol was refitted and her earlier guns were replaced with up-to-date models.

Following the November 3, 1918, signing of the Armistice of Villa Giusti with Austria Hungary, the Explorer Group was transferred to northern Adriatic and based in Pula for anti-submarine duties.

Less than two weeks later, on November 16, 1918, the Rossarol, under command of Captain De Filippi, left Pula to transport a Serbian official to the important regional capital of Fiume (Croatian: Rijeka) to convince the Serbian and Croatian irregulars in Fiume not to try to prevent the Italian occupation of the city.

So soon after the end of hostilities, the Austro-Hungarian navy had not yet distributed charts showing the exact locations of the various minefields laid in the Adriatic. At 12:45, while most of the crew was at lunch, the Rossarol struck a mine amidships, just aft of the bridge on the port side. The powerful explosion broke the ship in two: the stern sank almost immediately, while the bow continued its headway for several hundred meters before sinking. It was all over in just a few minutes.

Around a hundred men perished in the sinking, including the commander, De Filippi. Although rescue boats quickly reached the scene, only thirty-four people could be rescued. Commander De Filippi was seen disappearing into the sea after having given up his life jacket to a sailor, who implored the commander not to let him die in order that he might return to his wife and children.

For the episode, the Silver Medal of Valor was awarded to Ludovico De Filippi in May 1919, and that September a memorial monument was erected on Punta Munat not far from the site of the sinking.

The wreck of the Rossarol is less than a mile in front of the Adriatic town of Ližnjjan, Croatia (Italian: Lisignano). It lies in two sections on a muddy bottom with an average depth of about 49 meters (160 ft).

Shark Diving Center of Medulin (Medolino) is in a camping park seven kilometers (4 miles) from the city of Pula. It is run by my friends Vedran and Valentina and is well organized with equipment available that allows anyone qualified for this type of diving to conduct a dive on the Rossarol.

Summer tourists can easily dive on the upper structures of the Rossarol with a single cylinder, but I wanted to use dual cylinders with trimix and a deco cylinder so that we would have adequate time for comfortable, unhurried diving. I thought about using a rebreather, but concluded that entering the century-old wreck with its twisted and still sharp metal edges while carrying bailout cylinders plus photography equipment would not be easy or prudent. As it turned out Fabio, my diving partner, did manage to accidentally cut his glove on the wreck while the two of us were photographing (= me) and filming (= him) on our first dive.

Our first dive was on Friday, August 8.

After a half-hour cruise on a comfortable catamaran, which was even equipped with a lift to get a diver out of the water, we came to the buoy on the descent line to the bow section.

The bow section has a length of about 50 meters (165 ft) and is lying on the bottom completely overturned. Descending the mooring line, the dive begins from the point of the break and the gash that was produced by the mine explosion. One can enter the wreck at this point but must be very careful not to stir up sediment, which would prevent seeing the racks of live ammunition scattered all about.

Once on the wreck we swam towards the bow, passing breaks in the ship—evidence of the tremendous explosion as well as the passage of time underwater.

On the muddy bottom we glimpsed, through encrusting marine life, the star that decorated the ships of the Royal Navy of the time, and scattered around the wreck were scraps of all kinds, the telltale signs of a shipwreck.

A bottom time of half an hour was more than enough to view the entire, upside-down hull of the wreck. We ended our dive and began looking forward to the dive on the right-side-up aft section.

On Wednesday, August 13, we arrived at Shark Diving Center for our planned dive on the stern, the more impressive of the two halves, which lies on the bottom with a slight heel to starboard but almost upright in sailing trim.

The buoy on the stern is about 300 meters (328 yards) from the bow buoy. I was the first to descend.

Upon my arrival on the wreck, I was struck by the scenario: the armament seemed intact and almost ready for use, but pieces of the shipwreck were scattered everywhere.

I quickly photographed the pieces of artillery on deck, and we proceeded to descend to the bottom to examine the rudder and the twin propellers. There was much silt in suspension and poor visibility and I decided it was useless trying to make photographs. We also discovered that the ship was heeled enough that one of its two propellers as well as the rudder are almost completely buried under the blanket of muddy bottom.

Leaving the whitish silt cloud near the bottom, we ascended to go back along the
starboard side. Continuing on the deck, we saw parts of the torpedo tubes, one of the Vickers 40/39 anti-aircraft guns that had been installed in the 1917 retrofitting, and then the housing for the newer 1917 model Schneider-Canet 102/45 cannon with the seat for the operator.

During my tour, I could almost hear the excited voices of the crew, who were busy eating at the time of the explosion and sinking, especially when I saw alongside the wreck some personal effects belonging to men who died in this stretch of water so close to the shore.

Completing the tour on the deck, we examined the opened hatches under the guns and the ventilator shaft into the engine room. Along the bulkhead of the room I could see two gauges that are heavily encrusted from spending time underwater, but little else except decomposed junk.

Our time on the Rossarol had come to an end and so I began my ascent from the sea floor and the hulk of the Rossarol. The other divers in our group had already turned their dives and were on the ascent line. During my decompression, I had ample time to recall moments of the Great War as told in the stories of my officer grandfather.

Before arriving in Istria and Fiume, the fates obliged me to exit the highway at the Redipuglia Military Memorial, which is located near the Carso Battlefield in the area of the bitterly fought eleven Battles of the Isonzo. This memorial to Italy’s World War I dead is overwhelming. Stretching over 300 meters (1000 feet) up a hillside and averaging 125 meters (400 feet) wide, terraced crypts hold the remains of over 100,000 fallen soldiers (60% of them unknown)—a poignant reminder of the human costs of the Great War or of any war.
The fun began on a snowy mid-January day when National Territory Manager Mike Dunst called me and said, “I need you in West Palm Beach for the first two weeks of February.” When I asked him what was up he told me that New York’s Fire Department had called and the funding came through for the training program we had set up for them. “Dives start the first Monday of the month,” he said. I replied, “Mike, it’s a rough job but somebody’s got to do it, so it might as well be us.”

I flew down two days early because of flight schedules, and Mike joined me the next day. David Ochs joined us, and we went over the upcoming timeline of dives and class meetings for the two groups of New York’s Bravest that would be training for the next two weeks.

We met with the first group to go over the schedule, and there was one familiar face in the team: Frank Hauber, a NAUI IT who took our requalification workshop at West Point back in May. Frank is one of the main trainers for FDNY.

Mike and I were met by Craig Burns, our south Florida – Caribbean Rep, and Dave Ochs was there to send us off for our first day of diving. Seas were not as pleasant as they could have been. Some found it a bit more dehydrating than others, but the dives were good, learning took place, and problem solving would be discussed in a workshop classroom afterwards.

Realizing that public safety diving in zero visibility and recreational diving from a boat in rough, but clear seas are two entirely different scenarios, a lot was “take away” that very first day, and the classroom workshop afterwards, included firsthand discussions on seasickness, underweighting, and buoyancy control in currents without a tether.

Day two the ocean was much more cooperative. Getting back on board after the dives was much less challenging, and the current was not as prominent. With weighting dialed in more time was spent on buoyancy and air consumption drills. Mike’s workshop on hyperventilation and rescue once again had both parties learning from one another. Firsthand stories helped all of us know what to expect in circumstances not previously encountered.

By the third day we were all much more comfortable with each other and some of the personalities started to show. Kevin, the newest diver of the crew and a DM-in-training was their logistics man and certainly the comedian of the group. His quick wit and hidden hand signals in some of my pictures really had me on the lookout for editing my images. FDNY Captain Jim’s name was very easy to remember as that is where he spends a lot of his spare time—in the gym. I do not think there is one ounce of fat on that man. Towards the end of the day’s dive Mike found an American flag on the wreck that we used in a group picture.
In the classroom, Cameron was very good at improv with our lesson planning workshop. He earned a five with his presentation on sanitary seat covers and had everyone in stitches. “Code Brown” was something I never knew about. There was even some humor directed to their beloved captain on his preference for seating arrangements. This was truly one of the best lesson-planning workshops I have ever taught.

Day four took us south of West Palm to a smaller town that I grew up in as a kid, Boynton Beach. Trying to give FDNY some variety in their learning experience, Boynton Beach was a great part of the mix.

The first dive of the day was the deepest of the trip and showed them things they had never seen. A barking goliath grouper led to their hanging on the up-line for a longer safety stop in a bit of a brisk current. Classroom was another outstanding workshop by Mike Dunst on risk management. Being exposed to some of the things we as recreational instructors encounter every day was a real eye-opener to these FDNY professionals. The question and discussion period during this session was one of the best of the week.

Friday put us on the beach under the Blue Heron Bridge in Riviera Beach. During our briefing we discussed how they perform rescues as public safety divers with their specialty equipment and how we as recreational instructors do it. Once again a workshop was in order to give all a feel of the unknown, and learning took place for all of us.

Saturday Mike and I bid farewell to our new friends and vowed to see each other soon at the up coming Beneath the Sea show.

Our second crew of New York’s Bravest arrived along with a guest appearance by Randy Shaw, our HQ Training Director. Randy brought some important paperwork we would need at course completion and was able to meet the battalion chief, Richard Blatus, along with all of the others. This time there was more than one familiar face. Matt Seeman, another NAUI IT and team leader Brian Buirk were part of this team. I met Matt last year at the Beneath the Sea show and Brian this past summer on the 9/11 anniversary.

At this time, Mike had to leave the program for a prior commitment he had. I know you’re saying, “What could be more important than training FDNY special operations personnel?” Well, an already paid-for trip to Truk Lagoon was on Mike’s schedule. So it was Craig and me for group two. Like I said, rough job but somebody’s got to do it.

Seas were much more favorable for our first dive of the
second week. You might say they were as close to perfect as possible. It’s amazing when you see a body of water that big as flat as glass.

This time David Ochs was on board for the first day and helped the divemasters of our boat (Wetter the Better) with the touring portion of the dive. Matt and FDNY captain Jim Murray had some pretty impressive tech gear and Matt’s underwater camera looked like something out of a sci-fi movie. I was really amazed at the quality of some of the pictures Matt was bringing back on board. We got one at 60 feet with me holding up one end of the NAUI banner!

The training schedule for this group was similar to the first, but there were some interesting additions. In between buoyancy and air consumption drills, David Ochs was trying to give some of the guys training with some sort of snare.

A real treat, other than our excellent instruction was some of the wide variety of marine life our fearless firefighters were able to encounter. We saw everything from giant turtles to nurse, lemon, and hammerhead sharks. I’ll bet they don’t see those in the Hudson or East rivers!

Our schedule changed a bit. Because of the tides we needed to put the rescue beach dive in the middle of the week, and by week’s end, swells were approaching. The very smooth swells didn’t look like they would cause much of a problem, but they made us bag our Boynton Beach boat and head back up to West Palm. All got to see what the effect those large smooth swells had on the visibility 80 feet below the surface.

The last dive was probably the best one of both teams for buoyancy control. Because of the effect of those beautiful swells we did a deep blue-water dive in the Gulf Stream. With a 560-foot bottom, all were told to make sure nothing was loose because if you dropped it, you were not getting it back.

Once again, Matt got some great shots of a six-foot lemon shark that decided to do the dive with us, and before you knew it we were back on board heading for shore.

We were able to have a picture party afterwards with my topside pictures mixing it up with Matt’s underwater images. An awards ceremony for all the hard work followed with a great Italian dinner that FDNY Special Ops treated my wife and me to. Thanks guys!

I know there was a lot of hard work and time that was put into this program from both sides. The results showed, and all of us took something away from the program.

Top quality training and top quality members, NAUI members – the best in the world.
CNN proclaims Mons, Belgium, one of the 10 top destinations to visit in 2015. The European Union has designated Mons a 2015 Capital of Culture. Among this year’s numerous cultural activities in Mons, is ART OCEAN Exp’O. Based on an original concept of Jean Christophe Grignard, this exposition was produced by Art Ocean Photography with the support of la Fondation Mons 2015 and the active participation of S&R Piscine du Grand Large in Mons.

You are invited.

The swimming pool area of the Grand Large has been completely transformed for the occasion. Discover this unique environment, a journey in images and a feast for all your senses. It is an aquatic subtropical space made of contrasts, light, and transparency with submarine images, tropical landscapes, and art staged in a premier aquatic center. The whole is revealed in light and music.

Art Ocean Exp’O is both an out-of-water event, and during certain periods, underwater. You have an invitation to put on your swimsuit and dive in the Exp’O, a call to escape and to travel in an open window to extraordinary nature.

This exhibition is the product of hundreds of hours of research, more than three years worth of shots, and a full year of preparation, conception, and artistic realization. It is made of exceptional images taken during dives in the main oceans and seas of the globe.

Art Exp’O will be open every day through the end of the year and is constantly evolving and growing in phases. Beginning with about 250 photos, by mid-year there will be more than 150 square meters of exhibition. There is also a story, videos, slide shows, and original music composed for the show.

Come to Art Ocean Exp’o at S&R Piscine du Grand Large, avenue de la Sapinette, 20 à 7000 Mons (Ghlin), Belgium. The website <http://artocean.be/> has all the information, activities, events, and news.
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Putting Some “Fun” into a College Scuba Course

By Bernard Fuersich, NAUI 8940

When I walked into my Monday night, college credit, scuba class at Bergen Community College this semester. I distributed my course syllabus, medical forms, and waivers as usual.

I reviewed the course requirements including medical limitations, equipment needs, and attendance policy. Self-introductions were made, and class participation was discussed as well as the final exam and open water training.

“So we’re going to do the final written exam underwater?” a rather nonplused student questioned from the back of the class.

“You bet,” I answered, not really having thought that prospect through, however.

After some surprised mumbling among the students as well as raised eyebrows, I continued to outline the structure of the course.

As we progressed through the semester, that idea of taking the final exam underwater was discussed and developed further. One of my associate NAUI Instructors, Erik Fragoso, volunteered to laminate copies of the NAUI Scuba Exam and NAUI Dive Tables. Grease pencils were purchased to write with underwater. I ordered tables and chairs from our Buildings and Grounds Departments, and we were in business—or so I thought.

The night of the exam, we dropped the tables and chairs into the deep end of the pool (14 feet / 3.3 m). To our surprise the tables were buoyant and floated. Luckily, we had extra weight belts and weights on hand. You can actually see some of them on top of the tables in the photo.

The students used the grease pencils to check off the correct answers. The bonus to this event was cheating was virtually eliminated. Plus there was definitely a time limit (500 psi reserve). But the real bonus, most of all, was that the students had FUN taking their quiz.

Twelve of thirteen students passed the entire course and were certified; five of them are enrolled in advanced scuba programs; and the “word-of-mouth” advertising has been tremendous.

Put some fun into your scuba courses. It’s great advertising, and it can set you apart from your competition.

Share your Insights!

Other NAUI members would like to know. Share your thoughts, insights, experiences, teaching ideas.

Send them to poliver@naui.org. Contribute to Sources. It’s your magazine.
Adventures of a European Female Diving in Iran

By Karen Erens, NAUI 54653

Have you ever wondered if and how a Muslim lady would dive?

I have already travelled to several Muslim countries such as Egypt, Oman, UAE but I have never met a local girl who was a scuba diving instructor or just a scuba diver. It is always the “husband” that was a divemaster / instructor / dive guide during those dive trips. But this story is just a little bit different.

Being invited by our Iranian friends, Jean-Marc Claes (NAUI Representative Belgium) and I (staff instructor at Time to Dive) travelled to mysterious Iran. Our host, Nima, had been living in Belgium (my home country) and took his divemaster course together with me four years ago. Nima and his wife, Myriam, moved back to Iran and recently had a son. So he invited me and Jean-Marc to visit his family. The reputation of Iran in Western countries is most of the time less than positive, so I was very curious about going there and experiencing this country myself.

It started off being different even before getting there. During my trips to Egypt, for example, I dressed the same way I dress in Belgium, which in Egypt is not at all a problem. But to travel around in Iran, actually already the moment you enter the country (and took his divemaster course together with me four years ago. Nima and his wife, Myriam, moved back to Iran and recently had a son. So he invited me and Jean-Marc to visit his family. The reputation of Iran in Western countries is most of the time less than positive, so I was very curious about going there and experiencing this country myself.

But this story is just a little bit different.

It is not at all easy wearing a hijab if you are not used to it. It takes a little training to keep it in the good position while carrying suitcases or wearing a backpack. Windy days are terrible if you don’t want to knot the hijab under your chin, but I also discovered my advantage that the hijab is ideal to hide unwashed, uncombed hair or that the scarf is perfect to hide my blond hair as I always try to blend in with the local population.

Upon arrival in Teheran, the capital of Iran, we immediately experienced the most horrible thing about Teheran: traffic and air pollution (a problem that many large cities in the world suffer from). Every hour of the day, you have to slow down in a traffic jam. Because of the dense traffic and the very old cars, the air is so polluted that you really feel the bad air when you breathe, and I walked around with a constant cough. On the other hand, from the first minute entering a taxi, I was very grateful we did not rent a car ourselves, because traffic is as crazy as it can get. A road with three marked lanes is barely wide enough for five cars driving next to each other, but they do. Even in the taxi, it was a terrifying ride, with some crazy maneuvers to avoid collisions, so it was an experience to get to our friends’ house.

Except for the traffic, my first and lasting impression was very positive: the people are very friendly, the food in restaurants is excellent, and there are lots of very old cultural buildings. Slowly I got used to my hijab and long shirt and even started checking out shops that carried modern, stylish “hijab – coat – handbag” combinations. Women in all cultures like to be fashionable and attractive, and even with the Iranian dress code rules, women have found ways to express themselves with fancy and modern combinations. I felt suddenly very old fashioned with my Belgian head scarf and very simple long shirt without any coordinated color combinations—just a mix of western clothing with a Muslim touch.

We travelled to the cultural city of Isfahan, the historic Persian city with its ancient bridges over the river, the huge “Imam Square” (mentioned in Guinness Book of World Records) with two famous mosques, the old bazar, etc. The square was my favorite place in Isfahan. During the day it is visited by tourists, during the evening the square is filled with local people. They bring complete picnics and have dinner with the whole family at the square—kids, grandparents, and parents. It was amazing to be part of the evenings on the square with its local, friendly, and relaxed atmosphere, just strolling around and being amazed to see the picnickers, the local habits, and the kids playing in the grand fountain in the middle. We did not know where to look first; it was impossible to take in everything happening at the same time.

But we did not stroll around the square unnoticed. Local people were also very curious about us, and many times we were asked if we wanted to have a little chat with them. Very politely they would line up to talk to us and ask questions about Europe, and we were surprised how much world knowledge they had. A young girl wanted to practice her English, another young boy just wanted to know which country we came from, and all of them wanted to know about our impression of their country. The people were all very proud of their country, open, and friendly, even offering the share their food and drinks with us. Food is definitely a national sport in Iran, and they are good at it. Coming from Belgium, believe me, we know!
I enjoyed this hot and dry part of our trip, but we started to miss the sea. We had carried our complete dive equipment with us on this trip, including a big SLR camera with an underwater housing and strobes. After the hot desert climate, we really needed some water. Time to explore underwater Iran!

Nima wanted to show us what diving is all about at Kish Island, the very humid and hot “party island” of Iran. Party island should not be confused with the way western people think about partying. Everybody just wants to have fun by eating good food, shopping, having a good time with friends or family, doing holiday activities like swimming, driving muscle cars, or visiting historical parts. The difference on Kish is that all this is done without any alcoholic beverages but with some special men versus women rules that apply to activities you can do on holiday destinations.

For example, if Jean-Marc wanted to go to the beach, he could go to the beach next to our hotel, if I wanted to go, I had to go to the other side of the island, where a “women only” beach was located. Hotel swimming pools have different access hours for men and women. So my question became rather quickly: what about the diving?

Obviously scuba diving from the shore was separated for men and women, but what about boat diving? Doing some inquiries, it would be possible to allow me to dive with Jean-Marc if we chartered the boat 100% to ourselves. So Nima and Jean-Marc went out to find a dive center to explore the possibilities for diving the next day.

No problem at all, the dive center said. There would be a possibility to dive. Jean-Marc and Nima were planned on a boat dive the next day. And I? I would stay in the dive center for a shore dive because—because I am a female diver! This seemed to be a normal situation in Iran, and Nima agreed to it; but Jean-Marc, my romantic western partner, had difficulties accepting this.

Karen properly dressed to go out in public.

Diving in Iran continued on page 48
situation as he wanted to explore the underwater sites of Iran together with me. Finally, after what seemed like hours of world politics and meetings, an agreement was made, and the dive center would try to get permission for me to be on a private boat with male passengers (the dive guide, the captain, Nima, Jean-Marc, and me).

The dive was confirmed for the next day! Yes, we did it, now it’s “Time to Dive” in a new country, a new part of the Indian Ocean: the Persian Gulf.

All the names that creep most people out and are repeatedly reported in the media: piracy, violence, kidnapping, and more bad things, and we were going to scuba dive in the middle of it all? Yeah, always ready for adventure!

So next day I went to the changing room to put on my wetsuit, there was no walking around in a bikini in this dive center. The outside temperature was 40°C (104°F), but I had to close my wetsuit and put on my dive cap to cover up my body and hair. I quickly started to sweat all over. When our dive guide saw me in my wetsuit, he immediately gave me a XXL raincoat to put on over my wetsuit! Well, a hijab was not easy but this was ten times worse. I had to carry my dive equipment from the dive center to the boat, about 400 meters (a quarter mile) walking in this heat with equipment, wetsuit, hood, and a “full-body-covering” raincoat. I was completely exhausted and dehydrated upon arriving on the boat. Luckily we carried a big bottle of water, and once at sea, I thought that with the breeze the temperature would get a little better.

We planned go to a wreck, the only one “discovered” in Iran. There was no marker buoy on the dive site but our captain had a GPS and some mysterious coordinates.

The first attempt to set the anchor on the wreck failed. The second time the anchor held, so I pulled off the raincoat and jumped into the water. It was like jumping into a hot bath with a wetsuit on! We immediately experienced a very strong current, so heavy activity and no way to lower body temperature. Donning our equipment, we descended the anchor line. I was praying for a thermocline, but my dive computer stayed at 34°C (93°F)! The hottest dive ever, and I was wearing a 7mm semi-dry suit. I will admit I am always a bit of a cold freak, but this was really just too warm.

Finally at 30 m (99 ft), we swam into the thermocline, but the temperature was still 32°C (89°F). We explored the wreck at a depth of 35 m (114 ft), but were a bit disappointed as there were not a lot of fish or other things to see on the wreck, and after only 15 minutes, we ascended again to the surface. I had to put the raincoat back on and could not open my wetsuit to cool down. I drank the complete bottle of water that I brought with me. A 15-minute boat ride later, we had to carry the dive equipment back to the dive center, and then finally I could take off the wetsuit and take a cold shower. I was completely exhausted—I had never experienced this feeling. I drank liters of water and felt as tired as if I had been diving a full day with multiple dives instead of one short dive.
Lesson learned: pretty harsh environment for women to dive this country!

The next day we went to check on another dive center that had several female dive instructors. I was very curious to see them carrying out their job and compare it to mine back in Belgium.

I already knew the part about changing clothes in a small changing room, but this time I only put on my own “lavacore” undersuit, which has some thermal protection, and of course a nice raincoat, but this time one that was a little smaller and easier to walk in. I noticed that my colleague female instructors had cut off the sleeves of their raincoats and underneath they wore a Lycra shirt with long sleeves and leggings. A bandana was used as a “dive hijab” and they felt very comfortable in those clothes. Towels were not necessary; the dry and hot wind blew like a hair dryer. Being cold? That was word one can only dream of at Kish Island.

A new day of diving, a new dive center, a new adventure.

Jean-Marc, Nima, and I were placed into different groups. Guess how? Correct! There was the standard gender segregation. On the ladies’ boat, even our captain was female! I was mixed in with eight “discover-scuba” divers on our boat, but service was perfect. I was assigned my own chaperone divemaster (divemistress?). At the dive site my boat and the one with Jean-Marc anchored about 200 m (220 yards) from each other, so we agreed with hand signals in the air to have an underwater “date.” My chaperone agreed, so Jean-Marc and I managed to meet up underwater and dive together, but we never found a deeper spot than 3.5 m (10 ft). We saw some blocks of coral (the water is just too warm for corals to grow here), and there was no use to go any deeper as we could see it was only lots of white sand. Diving in my skin suit was absolutely the best decision of that day. The water temperature was still 34°C (93°F), and I was very comfortable in the water. After a dive of 75 minutes, we decided to end our underwater date, and each of us swam back to our proper, segregated boat (no mistakes allowed!). Then it was raincoat and hood and boat ride back to the harbor.

We did not see anything really special while diving in Iran. Iran is not really the country to travel to for some good diving, but it was a quite an experience to dive the “Iranian way,” see how the female dive instructors and divers found a way to dive comfortably, and see dive professionals teaching scuba in every way they can. I am very happy to have had this experience and will never forget this way of diving. Although I prefer preparing my dive equipment in my swimsuit and putting on my wetsuit without worrying about covering my hair and other parts of my body, I do respect their culture! We are used to our methods in scuba diving but in Iran, they are used to their way of living and so also of diving.

After all, diving is a part of all cultures, and we all JUST DO IT!
Swimming with Dolphins
By John Christopher Fine, NAUI 4431

Bottlenose dolphins are the stars at Dolphins Plus.

Dolphins are protected marine mammals, and it is unlawful to capture or injure them in the wild. Among the most intelligent creatures on Earth, most people find dolphins, especially the bottlenose dolphin, alluring. While it is rare to be able to see them underwater in the wild and encounters are truly special events in the open ocean, programs have been developed by many marine mammal parks that enable human interaction with dolphins. One of the oldest dolphin swim programs is Dolphins Plus in Key Largo, Florida.

Before the Marine Mammal Protection Act was passed, many dolphins were owned by trainers and were considered pre-act animals and used in shows and educational programs. Descendants of those dolphins continue to live in marine parks and aquariums. Their use in swim programs in protected lagoons is permissible under federal and state laws that protect wild dolphins.

In 1979 Dolphins Plus began promoting swim with the dolphins programs. It was such a success that they expanded operations using dolphins born in captivity. Dolphins Plus now has two locations in Key Largo, Florida. One is on the ocean side at Mile Marker 99.5, the other in a cove at Mile Marker 101.5 on the bay.

Dolphins Plus encourages interaction and conducts programs with dolphins as therapy animals that enable young people with behavioral problems or unique issues to interact with their dolphins. There are dolphin experiences for all ages. One of the most popular programs is their Structured Swim Program.

Ethan Kleinschmidt, one of the trainers at the bay side Dolphins Plus at Dolphin Cove, took us down to the briefing area. He explained dolphin behavior and what to expect once in the water with them. “The dolphin population expanded through natural birth, so this facility was opened in 1998. There is a twenty-foot-deep dolphin lagoon. A chain link fence is the only thing that separates our dolphins from Tarpon Bay,” he explained.

The fenced lagoon is subject to tide changes so it remains clean. Fish, lobsters, and crabs also live in the dolphin lagoon. As fish grow they can no longer pass out through the fence so make the lagoon and mangroves their home.

“We have a platform so kids can sit on their parents’ hips. In all we have eight male and four female dolphins at this facility,” the trainer said. “Their ages run from baby Isaac who is three-and-a-half years old to Samantha who is over thirty. Ethan related that a dolphin at Marineland who had just died was 62 years old.

“In the wild, age depends on predators, the amount of food, and their ability to fight disease. As dolphins age they become more suited as therapy friendly for kids. Some dolphins are more patient.” Ethan explained the behaviors we could expect once in the water with the dolphins. He cautioned about keeping fingers away from their eyes and blowholes.

Dolphins use echo location by sending out sounds that come back as echoes. The echoes are interpreted through fluid in the lower jaw that receives the returning signal and transmits it to the brain.

Dolphins like to be rubbed. Ethan said that dolphins shed their outside skin every few hours, likely ten times a day. It keeps them streamlined in the water. Rubbing dolphins is
appreciated especially on their bellies.

Ethan stressed a few important rules, that would make common sense to most people, then fitted us into wetsuits and life jackets. Trainers were working with dolphins when we arrived at the long lagoon side pier. We were to work with Julie, age seven, and Leo, age ten. Brian was on the dock to take photographs of us in the water.

Across the lagoon trainers were giving dolphins their annual ultra sound check-up. Down the dock youngsters were working with a trainer learning how natural behaviors are channeled so dolphins respond to hand signals and whistles trainers wear around their necks.

The winter water in the lagoon was a chilly 71° F. Absorbed by our two beguiling bottlenose dolphins the hour passed too quickly. Emily, the trainer assigned to work with us, had Julie and Leo swim underwater to us and blow bubbles from their blowholes. They presented their dorsal fins and gave us high-energy rides. There were feet pushes. Emily had us hold a large hoop and signaled the dolphins to jump through it. There were kisses as the dolphins put their faces into cupped hands and touched our faces.

Dolphins Plus’s structured swim lasts about an hour-and-a-half total—a half-hour for the briefing and the rest of the time spent in the lagoon interacting. There are natural swim programs as well. Guests are supervised by a trainer but left to swim with the dolphins at their own pace in the lagoon. Dolphins Plus also offers a shallow water experience and sea lion encounters.

For many families dolphin encounters are life-changing experiences. Children become enthusiasts and remember the interaction with these marine mammals forever. Adults enjoy what is a unique exchange between marine mammals and humans in the lagoon environment. The experience is not only thrilling fun, it is educational. For more information visit www.dolphinsplus.com or call them at 305-451-1993 or 305-451-4060.

Photos © Myriam Moran and John C. Fine
Using Underwater Obstacle Courses for Skill Development and Assessment

By Jeffrey D. Coelho, NAUI 14102, Lynn Fielitz, and Jason A. Suby

Introduction

An underwater obstacle course can add creativity and variety to an interactive scuba lesson. An underwater obstacle course is a series of activity stations that provides scuba diving students the opportunity to participate in and demonstrate a wide variety of scuba diving activities. Underwater obstacle courses can offer enjoyable confined water challenges while developing basic scuba skills, problem solving and decision making abilities, and equipment management skills. In addition, opportunities to practice basic skills help students learn to avoid injuries and accidents. Students with sound basic scuba skills, decision making aptitude, and the ability to handle their equipment are better prepared and safer divers.

Benefits of Underwater Obstacle Courses

Obstacle courses can include typical scuba skills such as doffing and donning, mask clearing, basic buoyancy control skills, or unusual skills such as underwater jigsaw puzzles, lift bags, throwing and catching underwater “missiles,” knot tying, low visibility diving, and other tasks. The variety of stations included in an obstacle course is limited only by the instructor’s imagination, time available, and the current skill level of students. A variety of skills can be combined to form a challenging, fun, and motivating experience for students.

Instructors can use obstacle courses to assess students’ performance on a variety of skills and activities. As students move from station to station, instructors can supervise and evaluate performance on selected skills. Students can be timed to see how fast they negotiate selected obstacles by setting up competitive situations and challenges for efficient skill utilization. Members of buddy teams can evaluate each other’s performance. Obstacle course stations can include problem solving by presenting students with a scenario...
written on an underwater slate. The scenario can describe a situation that the student must evaluate, and then respond with an appropriate solution. Preset courses can be used for underwater navigation teaching the use of a compass.

Obstacle courses allow students to practice and demonstrate a variety of skills in one session. The obstacle course can be designed as a culminating event to integrate many of the skills students have learned during the scuba course. For example, buoyancy control and equipment management can be emphasized by making students doff their equipment and swim through a suspended plastic trash barrel (barrel has bottom cut out). Students must remove their scuba unit and push the equipment through the barrel as they follow. Equipment management while controlling buoyancy is essential when negotiating this obstacle.

Another station can involve a weighted mesh bag of gloves, mittens, and hoods that is placed on the bottom of the pool. Students can put these items on while underwater and try clearing their masks and regulators, doffing and donning equipment, or buddy breathing. They can experience the lack of sensitivity, restriction, and increased buoyancy that these items often produce.

Blackout masks can be used to expose students to low visibility diving situations. Specially darkened masks or placing a covering over the diver’s eyes will limit the visibility and have the students experience the sensation of diving with limited visual input.

Risk Management
Scuba instructors should always promote and model safe diving practices. Underwater obstacle courses can be an effective way to highlight safe diving by providing students with opportunities to practice effective risk management procedures. Negotiating obstacles under the supervision of an instructor allows students to receive additional feedback about performance and tips about safety. The awareness and knowledge they acquire about risk management during the negotiation of an underwater obstacle course will help students make thoughtful decisions about safety in the future.

General supervision of an underwater obstacle course is necessary to ensure students are meeting standards and practicing effective risk management skills. Instructors should position themselves where they can observe the entire obstacle course but also be able to move to any obstacle to provide assistance and guidance to

**Underwater Obstacle Course continued on page 54**
training

Underwater Obstacle Course continued from page 53

students having difficulty. Some obstacles may require closer supervision than others because of safety and/or assessment issues.

Underwater obstacle courses are very effective in promoting the buddy system. Students should be required to be with a dive buddy during the negotiation of all obstacles. Selected obstacles can be designed to encourage responsible buddy and assisting skills. Out of air scenarios, communication problems, and other activities requiring a dive buddy are essential elements of an underwater obstacle course. Stressing the buddy system and encouraging student cooperation increases overall safety.

The ability level of the students is an important consideration when developing an underwater obstacle course. The obstacles or “stations” should be challenging but within students’ present capabilities. Obstacles should be designed around the primary skills and activities that students have already learned. Obstacles can become more challenging by including obstacles that require completion in a specified amount of time, combining a variety of skills, or requiring teamwork among a group of divers. For example, a station that requires students to doff and don their equipment may offer more challenge if students must doff and don with their mask off. Although some combinations of skills may not have been practiced previously, all activities included in the underwater obstacle course must be within the current ability levels and capabilities of students.

**Obstacle Course Station Creation**

Obstacle courses provide an enjoyable and challenging learning environment for students to demonstrate their skills. The more opportunities students have to practice skills, the better prepared they become for the rigors of diving. The variety of obstacle course stations is limited only by instructors’ imagination, time available, and students’ levels of ability. The following are suggested activities, and descriptions of underwater obstacle course stations:

Open ended trash barrels to swim through: Each trash barrel is submerged in a column of water determined by a specific length of rope. One piece of rope is tied to the handle of the barrel, and another is tied to the end through a pre-drilled hole. Each rope is attached to a buoy with enough buoyancy to hold the barrel stationary at the desired depth. The lower side of the barrel is weighted so that it will be steady and not float. Students must doff equipment while keeping regulator in mouth; push equipment through the barrel and don equipment on the other end. Alternately, a barrel may be suspended vertically in the water column.

Lift bags: Students must learn proper operation of lift bag while working with a buddy. Together, they can practice raising and lowering a weighted object attached to the lift bag.

Submerged hula hoops: Each hula hoop is submerged by a specific length of rope (determining depth of hoop) and enough...
weight to keep it in place. Students must hover off and maneuver through the hoops while managing their equipment. A quiet but effective fin kick is necessary in order to complete this task without touching the hoops. Swimming upside-down through the hoops adds additional complexity to this exercise.

Bag of gloves, mittens, hoods: A mesh bag is submerged, attached to weight belts that provide enough weight to keep the bag of equipment suspended vertically with the opening at the bottom. Students don gloves or mittens and hoods underwater to experience the effects of some of the additional gear used in colder water diving. With this gear on, students can practice tying and untying ropes or even doffing and donning gear.

Knot tying: A weighted rope is secured to the bottom of pool. Students can hover off and practice tying a variety of knots. Wearing gloves while tying knots can also be required.

Weights to vary buoyancy: Weights ranging from two up to ten pounds are placed on the bottom of the pool. Students can place different sized weights in BC pockets to feel the effect that increased weight has on buoyancy. Students will practice achieving neutral buoyancy with different weights added.

Cargo nets to crawl under: Submerged cargo nets or platforms work well for this exercise in buoyancy control. Maneuvering through in a face down position without touching either the overhead net or platform or the bottom of the pool is the standard for success. Additionally, students may be challenged by repeating this exercise in the face up position.

Underwater toys to toss: Varying sizes of rubber torpedoes can be used underwater in groups of two or more. A simple game of catch will demonstrate just how much resistance water provides on the throwing motion. In addition, a dive ring may be used as a target on the bottom of the pool.

“Blackout mask” buddy swim: In groups of two, one buddy removes mask and places a piece of opaque fabric over eyes and then replaces the mask. The fabric must be cut larger than the contact area of the mask on the face. The other buddy serves as a guide, as the buddy team moves about and practices buoyancy control in a simulated low visibility environment.

Descent line: A descent line is attached to a pool ladder above the surface at one end and to a weighted milk crate resting on the bottom at the deepest end of the pool. The length of line used for this will vary depending on the grade of depth from shallow to deep. An additional line is attached to the weighted milk crate to another ladder directly above. This additional line ensures that they milk crate will not move towards the diver as they are descending the line. Enough weight must be added to the crate so it does not come off the bottom of the pool when the diver is descending. Students begin at the surface and descend the line while equalizing until reaching the crate. A controlled descent is the objective of this obstacle.

Summary
Underwater obstacle courses are an enjoyable and creative way to have students experience a variety of skills to enhance their diving ability. The obstacles can be tailored to the ability level of the divers and teach them to be safe divers. Instructors can use obstacle courses to add diving scenarios to their instruction while providing students with a challenging learning environment. An underwater obstacle course can add creativity and variety to an interactive scuba lesson.

About the authors:
Jeffrey D. Coelho, Ed.D, currently serves as the Director of Instruction for the Department of Physical Education at the United States Military Academy. He is the former Scuba Program Director in the department and taught scuba to cadets and faculty members from 1990 to 2012.

Dr. Lynn Fielitz is the Associate Director of Instruction in the Department of Physical Education at the USMA. He has been scuba diving for over 10 years.

Jason A. Suby currently serves as the Director of Sports Medicine and is an Assistant Professor for the Department of Physical Education at the USMA. He has been teaching scuba diving year round to cadets since 2012.
Your students researched and found which organization was the best to educate them and teach them safely. They came to the dive shop to buy their mask, fins, and snorkel and to see the classroom where they would be learning about their diving adventure. They found out that you were the top instructor. Now they want to know exactly the what, when, where, and how of their course! A course syllabus given to your new aquanauts in advance or at the first day of class is the way to start their adventure. Here’s what one might look like.

**NAUI Scuba Diver Course Syllabus**

**Instructor Information:**
- Name: Ivan Todive
- Phone: 813-555-3483 (cell)
- E-Mail: safescuba@gmail.com
- XYZ Dive Shop: 813-348-3999

**Instructor Certification:**
- National Association of Underwater Instructors (NAUI) #34567

**Course Information:**
- Title: NAUI Scuba Diver certification course
- Prerequisite(s): Comfortable in the water

**Schedule: Where and when:**
- Academic class meets at XYZ Shop. [days/dates/times]
- Confined water class meets at Downtown YMCA, 123 Southwest Parkway. [days/dates/times]
- Open water dives will be conducted at Jones Quarry on successive weekend days (Saturday + Sunday. Dates to be determined: see below).

**Methods of Instruction**
- Online Learning (NAUI eLearning)
- Classroom presentations and discussions
- Videos
- Course textbook readings
- Supplemental readings
- Homework reviews (Fill-in-the-blank)
- Final multiple choice exam
- Confined water skills & confined water skills competency
- Open water skills & open water skills competency

**Course Description:**
Upon successful completion of all homework, exams, confined water skills, and open water skills you will achieve certification as a NAUI Scuba Diver!

This is an entry level course designed to give you the necessary skills to safely conduct open water dives. Some of the many skills you will learn include: buoyancy, proper weighting, marine conservation, equipment assembly, scuba diving skills, dive planning, and common equipment maintenance. This course covers basic knowledge on equipment, diver physiology, and the marine environment. You will learn the elements of safe diving and learn and practice diving techniques and protocols both at the surface and underwater.

**Questions addressed:**
- a) What is the equipment like?
- b) What’s it like to scuba dive?
- c) If I am not a great swimmer can I dive?
- d) My ears hurt when I swim to the bottom of a pool. Can I still learn to dive?
- e) What is it like to dive in a quarry, a lake, a river, and the Caribbean?
- f) Am I too old? Am I too young?
- g) Is it scary? Is it dangerous?
- h) What’s it like to wreck dive?
- i) Are there other advanced courses?
- j) What’s a wetsuit? What’s a dry suit?
- k) What about sharks?
- l) What is drift diving?

**Course objectives Some of what you will learn:**
- How to assemble your equipment.
- How to maintain your equipment.
- How to check your equipment.
- Dive planning.
- Buoyancy checking.
- Dive tables theory and use.
- Diving with a buddy.
- Handling and using scuba equipment.
- See underwater pictures and objects.
- Learn what it means to become certified.
- Learn what NAUI is and what we do.

**Learning outcomes. Some of the skills you will develop:**
- Various water entries and exits in full scuba gear.
- How to breathe on scuba.
- How to clear any water from your mask.
- How to locate a dropped regulator and clear the water from it.
- How to remove and replace your scuba unit above and under water.
- Use of weight systems and achieving proper buoyancy.
- Basic self-rescue and basic buddy-rescue.

**Course calendar:**
- Do your homework. Assigned chapters or eLearning units should be read before class. Assigned homework should be completed before class. Assigned topics should be reviewed before class.
- We will review eLearning units in class.
- There will be a final written exam on the last day of class.
- Water skills competency will be evaluated.
throughout the course and assessed on the
last pool session.
• Open water dates will be confirmed at the
last class / confined water meeting.

Course Policies:
• You may bring coffee, water, or pop to
class but please no food.
• Please prepare and do all reading and
written homework assignments before class.
• Visitors and children are not a part of our
class should not attend.
• All electronic devices such as cell phones
should be turned off during class.
• If you are going to be late or not able to
attend a class, please call beforehand as
soon as possible.
• You will be responsible for transporting
and taking proper care of all equipment
during confined water training at the pool.
• Missing a confined water class is of great
concern. New skills are built upon
previously learned skills. You will not be
able to continue to the next pool session
until you have made up the missed one.
• You will be responsible for transporting
and taking proper care of all equipment
during confined water training at the pool.
• Enrolling in the course and paying the
class fee does not automatically mean you
will pass and achieve certification as a
scuba diver. You must possess the necessary
knowledge and achieve comfortable
performance of the skills to be certified. If
you are unable to accomplish this in this
class, remediation will be offered.

Referrals:
• If upon completion of academic and
confined water skills, you wish to do your
open water training dives elsewhere, for
instance on vacation, we will provide a
written referral for you that says you have
completed the knowledge and confined
water training requirements.

Supplies:
• Please bring note-taking materials to class
and use them. Always bring your textbook
to class.
• You will need to bring your own mask,
and snorkel to confined water and open
water meetings.
• During confined water and open water
training, you will be responsible for
transporting your gear to and from the
pool and the quarry and to take proper
care of all equipment.
• There will be additional costs paid directly
to the quarry that include a use fee and
tank air fills fees (see below).

Grading:
• In the unlikely event you don’t pass all of
the course requirements and/or you are
unable to perform all of the required scuba
skills and academic skills, remediation will
be offered, and we will work to bring you
to the necessary level of knowledge, skills,
and comfort to be a safe diver.
• Although unlikely, if you have great
difficulty, you may need additional
training at another time.

Attendance policy:
• Be on time.
• Attend all classes.
• If you must be late, call me on my cell
phone.
• If you miss an academic class you may be
able to attend the next academic class if
all study and written homework has been
completed and you come prepared for the
next class.
• If you miss a pool session, you must make
it up before attending the next scheduled
pool meeting.

Open Water Dives
Our open water dives will be completed on
one weekend, meeting both Saturday and
Sunday. Plan on being at the quarry all day
on both days.

Our open water location will be at Jones
Quarry. It is about two hours distant. We will
give you a map.

We will meet at the quarry, NOT at the dive
shop. We will meet at the quarry at 9:00 AM
each day.

You’ll need to provide your own
transportation and lodging. (Lodging is
available nearby. Camping is available at the
quarry park.)

Please organize and bring all of your
equipment to the dive site. Bring a ground
cloth for your gear.

Each day, bring a small, nutritious lunch
and plenty of water.

Each day bring your dive tables and dive
logbook.

There is a $25 quarry use fee each day: two
days = $50. Overnight camping fee is $10.

There is a $9 fee for air fills at the quarry.
You will start with a full tank from the dive
shop when you pick up your gear, but plan on
three air fills: $9 a fill = $27.

The quarry only accepts cash or personal
checks.

We will perform a skin dive and four scuba
dives: five total.

As for inclement weather, please plan on
being at the quarry at 9:00 even if it is
raining. I will call you to cancel due to
weather (lightning) conditions and will
cancel as soon as I can determine/guess that
the weather is likely to be too bad. Please
don’t be upset if I call you at 6:00 am or when
you are already on the road to the quarry. If
we must cancel, we will reschedule.

You will be successful and you will have a
great time!!!!!

If you have any questions, or concerns,
please call me at any time.
The Three-Ring Circus: Concurrent Training

By Chris Richardson, NAUI 17055

During an ITC, instructor candidates are introduced to the concurrent training model—along with a whole bunch of other information. Sometimes concurrent training gets lost in the noise.

I call the concurrent training model a “Three Ring Circus” because it involves many moving parts with the Instructor/Course Director being the ringmaster. The model is not intuitive to new instructors, however it is possible and highly profitable to the instructor that aspires to it. It also offers a better educational experience to students because of the interaction they get with other divers, the leadership team, and you.

This model is a proven training model that maximizes efficiency and increases customer participation in continuing education programs through leadership levels.

The model in application is having multiple level courses running at the same location at the same time under the same lead instructor. This is accomplished by the use of leaders in training, certified assistants, and understanding standards (particularly the difference between direct and indirect supervision).

The model works best when all engaged (store, instructors, leadership) encourage and teach Scuba Diver students that taking an Advanced Scuba Diver course as soon as possible is the most desirable continuing education option. I know that some instructors feel that the new diver should gain an experience base first, then return for continuing education, but in my view, although well-intentioned, it leads to higher dropout rates.

We teach the entry-level students how to dive in the limited conditions, environment, and depths of the Scuba Diver class. In the Advanced Scuba Diver class, we teach them in conditions that are more varied, with more depth, and more activities, as well as introduce them to how to maximize their FUN and do specific activities while diving. Nobody gets certified with visions of doing mask clearing skills, they get certified with visions of taking pictures, learning about, counting or shooting fish, or exploring shipwrecks—in short, the very things we introduce and start to teach on the Advanced class!

When the Scuba Diver course is conducted at the same time as a concurrent Advanced Scuba Diver class the entry-level students get to observe students who have recently completed their Scuba Diver certification doing activities that are more exciting than what they are doing (repeating skills in open water that they have already done in the pool). Their observation and interaction during surface intervals with Advanced class students will make the Advanced Scuba Diver class an easy sell. It is exciting to new divers when you introduce advanced dives that involve the use of specialized equipment (U/W photo or video, search and recovery with lift bags, using reels). The use of equipment during the Advanced class generates interest and excitement as well as increased sales.

In addition to the Advanced class being conducted on the same weekend as entry-level open water dives, basic specialties, leadership, and instructor programs are also offered. By exposing students of all levels to other students higher on the “ladder” it encourages and demonstrates that advanced training is fun and attainable.

A concurrent training model training weekend will vary some with every instructor, but here is a possible schedule. It is very full and requires good orchestration for you and your assistants, but the work more than pays off.

Wednesday evening before training weekend: Have a nitrox classroom session. Invite the students from both the Scuba Diver and the Advanced Scuba Diver class to attend and learn nitrox so they can dive it the following weekend and receive the Nitrox Diver certification.

Saturday
07:00- Breakfast with assistants/divemasters during which you brief them on the day’s activities and expectations. Certified assistants will participate on all dives as appropriate and as standards permit.
08:30- Instructor briefs the ASD students on their first dive.
08:30- Divemasters/assistants meet with SD students as they assemble gear for first dive.
09:00- Instructor conducts ASD dive #1.
09:40- Instructor debriefs ASD dive and briefs ASD dive #2.
10:00- Instructor briefs SD dive #1.
10:20- Instructor conducts SD dive #1.
10:20- Divemasters/assistants dive with ASD dive #2.
11:20- Instructor debriefs SD dive #1.
11:30- Instructor/divemasters debrief ASD dive #2.
07:30- BBQ lunch on site, brief ASD for afternoon dive (or dismiss the ASD students to meet later for night dive. Remember that ASD students can dive a maximum of four dives per day if conditions and readiness permit.)
13:00- Instructor dives SD dive #2.
13:00- Divemasters/assistants dive ASD dive #3 (if done).
14:00- Instructor debriefs SD dive #2.
14:10- Instructor/divemasters debrief ASD dive #3 (if done).
14:30- Instructor briefs SD dive #3.
14:40- Instructor dives SD dive #3.
16:00- Instructor debriefs SD dive #3.
17:00- Gear cleaned and packed. SD students dismissed.
18:30- ASD night dive (ASD dive #3 or #4).

**Sunday**
08:30- Instructor briefs ASD students.
08:45- Instructor briefs SD students
08:45- Divemasters/assistants dive ASD dive (dive #4 or #5 depending on previous day)
09:00- Instructor dives SD dive #4.
10:15 Instructor debriefs SD dive #4.
10:20- Instructor/divemasters debrief ASD dive.
10:30- Instructor briefs ASD dive #5 (or #6) and just completed SD students on their first ASD Dive!
10:45- Instructor/divemasters/assistants dive
12:00- All students complete dives, SD and ASD (and Nitrox Training) and certified! Your leadership and instructor students are on their way as well!

Let’s talk money and time.

Assume you’re not doing the concurrent education model and your average SD class is six students and you charge $500 per student. You run one SD class per month.

You average two students from each SD class to take an ASD class and you charge $400 per student. You run one ASD class every two months.

You run one divemaster class a year and normally have four students and charge $800. This takes two weekends plus many evenings.

You run one instructor class a year and charge $1500 and normally have two students. This takes two weekends plus many evenings.

The above would mean that you have $51,800 in training revenue, and you will be teaching 22 weekends a year. That averages out to $1,177 each weekend training day.

Let’s look at the concurrent training model. It has been my experience that shops and instructors that successfully employ the concurrent model increase continuing education by at least double. However, to be conservative we will look at a 50% increase in continuing education enrollment.

That means that you have three ASD students from every SD class versus two.

It would also mean you teach six divemasters a year and three instructors.

Now your revenue from teaching is $59,700 and you are only teaching 12 weekends a year! That works out to $2,487 per weekend day!

Of course, you will still be teaching many evenings.

These calculations did not take into account basic specialties and the increase this model brings in them. It also doesn’t take into account the opportunities you now have from opening an additional 10 weekends for other activities, such as travel, or simply mental health.

I hope this article presented something to mull over. It is not easy to get in the groove, but I assure you that once you do it can be run safely, within standards, and enjoyably.

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More than a Dive Instructor: The Power of Change

By Jeffery Hansler, NAUI 5834

As scuba instructors, we have an opportunity to change people’s lives for the better. It’s an awesome opportunity and responsibility—and I’m not talking about the skill of diving. I’m literally talking about changing people’s lives for the better and making the world a better place as a result.

Think back to when you were in school. Who was your favorite teacher? What made them different?

My guess is your favorite teacher did more than just teach you the subject matter.

My guess is they:
• surprised you.
• made learning fun.
• connected with you.
• cared about you.
• challenged you.

The point is they did more for you than just cover the subject matter. That’s why you remember them, and maybe it’s even why you became a scuba instructor—they developed in you a love for teaching others.

I know what you’re thinking: “I do this already with my scuba students.” And I’ll bet you do. Which is why the recommendation I’m about to make will be so easy for you to implement. In fact, it’s been a part of the NAUI culture for almost as long as NAUI has been in existence.

The recommendation is for EVERY NAUI Instructor to widen their influence to:
• encourage volunteer engagement for social change, and / or
• address some of the disturbing trends in society today.

NAUI and I are sure every instructor out there constantly reinforces environmental awareness—and this will continue to be a critical social issue moving forward. That’s one.

We can do even more—it simply takes a concerted effort in your dive program planning. The list of areas to address is endless and limited only by your awareness and vision.

For example, our diving programs attract a great many teenagers. I love working with them; they are eager to learn and excited about their future. Too often, we see teenagers who are overweight. This isn’t surprising since being overweight is a common problem in developed countries and an epidemic problem in the United States.

I never had a problem with weight until recently when my work with a client group involved constantly eating out, drinking, and sitting. In a relatively short time, I put on forty pounds. It affected my mobility, my mental alertness, and my health. And because I’m no longer a spring chicken, it has taken me a long time to take off the weight (I’m still working on it). I mention this only to say that I can relate to the commitment required to lose weight and the trials and tribulations along the way. The value of outside support from people who are connected and care is extraordinarily powerful. This is how we feel about our students anyway, so why not use our influence to guide them to a healthier lifestyle.

And just because they’re diving doesn’t mean they’ll automatically lose weight. All you have to do is look around at a scuba show to see diving does not automatically result in a healthy body mass.

No matter what cause or issue you choose to address in conjunction with your scuba program, knowing the following facts about human behavior will help you successfully guide others through your planning and in your communication.

• Humans are motivated by two basic drives: seeking pleasure and avoiding pain.
• Decisions are made through two systems: automatic (unconscious) and reasoning (conscious)
• When talking about change for the most part we are talking about changing habits.

Going back to the example of being overweight, it is easy to see how human behavior highlights the causes of the problem and also provides a guide to the solution.

Being overweight from overeating:
• We are biologically designed to seek high fat and high salt diets and avoid pain by eating those things.
• Most of the time we are in automatic mode and eat when food is available.
rather than think about the necessity of eating.

- The habits that put you in an overweight state are unlikely to change unless there is a conscious effort to change (or circumstances force your habits to change).

Setting up circumstances to reduce weight by lowering calorie intake and increasing the calorie burn:

- The trick is to make burning calories so fun that they can’t get enough—plenty of opportunity here with diving. What are other activities you can add to your program to make burning calories fun?

- Move them from the automatic mode to the reasoning mode regarding eating and food choices. Talk about mealtimes, healthy food choices, and link being healthy to exciting diving activities.

- Give them a recommended eating checklist for divers to set up new habits. Keep your recommendations simple—too many choices make change harder. Talk about the effect diving has on the human body: dehydration (suggest they drink a glass of water or two after a dive and wait before eating) and that hunger bump (suggest they eat slowly and focus on vegetables and fish after diving).

You have an amazing opportunity as a diving instructor to influence your students for life. Value the opportunity and put it to good use. And whatever cause or issue you decide to address, I know you’ll be a success at it.

NAUI Instructor Jeffrey Hansler, CSP, is an expert at organizational development, leadership, and persuasive communication which includes skills of influence, negotiation, sales, body language, micro-expressions, and authority. He may be reached at jhansler@oxfordco.com or 714-225-7461.

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Pool Training Aids and Activities

By Bill King, NAUI 6297

Students can master skills while they are “playing” in the pool. Your students may think that it is just a game, but they are actually practicing important skills until they become automatic. If they are playing, they do not feel under the pressure of having to “perform” the skills for you and your assistants. You will find that many of your students learn better when the pressure is removed. Even something as ordinary as a 10-minute evaluation float can be turned into play.

Here are a few ideas that you can incorporate into your confined water time. If you have any favorite confined water activities of your own, why don’t you share them with the rest of us. Write and describe them. Tell us what skills they are being reinforced. You will be surprised how many skills your students may be improving with a simple challenge game.

Toys For 10 Minute Float/Survival Swim

[Float]

Visit your local toy store and pick up some children’s pool toys to help pass the time during the required drill. Wind-up dolphins, boats with working propellers, Frisbees, spouting plastic whales, and other such silly toys make the 10 minutes of time fly by before your students realize that time is up.

Toys will bring out the kid in your adult students. They play with the toys, toss them to a partner, and take special pride in showing each other how the toys work. No one ever said you couldn’t have fun hanging out at the pool. If it’s not toys to keep students entertained, force them to listen to all your diving jokes. After all, you have a captive audience for 10 whole minutes. All they can do is splash you if they disapprove.

Blindfold

[Equipment Familiarity---Night Diving---Tethered Diving]

Don’t use the blindfold underwater. Use it on the pool deck before the students get into the water. Tell your students that after several sessions they should be able to put their gear together blindfolded. Then, do it. Make them assemble tank, regulator, and BC while blindfolded.

Tell them they are on a night dive without the benefit of a lantern to dress by, or tell them they are on a secret commando raid and lights would give away their position.

Do you offer any specialty courses that require line tending such as ice diving or river rescue? If so, try blindfolding the tenders after they have demonstrated some proficiency with line tending. The blindfold prevents them from seeing what the diver is doing, which means the tender must rely on feel only rather than sight. This is a much more realistic simulation of an actual line tending experience.

Assemble A Box Or Structure Underwater

[Competiton---Mask Off---Nervous Neophyte---Neutral Buoyancy---Tasks]

From assembling small plastic toys to large homemade PVC construction models, students generally enjoy “working” underwater. Focusing a new diver’s attention on a specific task takes the emphasis off breathing and off the idea of being underwater. It’s great for nervous newcomers.

Teamwork becomes important when working in tandem with a partner. This is especially evident when Team A is working together to do a better or faster job than Team B.

Give your students some additional challenges. After they become proficient at assembling your underwater structure, set some strict new guidelines. For instance, have them repeat the process while remaining neutrally buoyant throughout the exercise, or at least challenge them not to touch the bottom of the pool or break the surface. Or have them complete the exercise without wearing a mask.

Gold Doubloon Treasure Hunt

[Buddy Diving---Low Visibility]

With blacked out masks, students scour the bottom of the pool for coins that you have sprinkled about. Continue sprinkling the coins while students are searching. In this way, you can ensure everyone’s success by showering coins in front of those who have wandered away from the larger field of coins.

Students hold the coins or place them in small goody bags you provide. Have buddies hold hands or use buddy lines to remain together. Students should all be cautioned to move slowly, as others will be in the pool also blindfolded.

Count the totals when everyone is finished, and perhaps award the team with the most by giving them a certificate good toward the next advanced course where “treasure hunting” will be an integral part of your course.

Underwater “Etch-A-Sketch”

[Communications---Equalizing Ears---Games---Nervous Neophyte---Problem Solving---Proper Ascents---Slate Use---Stations---Surface Dives]

The “Quest,” or underwater Etch-a-Sketch, replaces the diving slate. It does all that a slate does, plus it erases with a single sweep. And maintaining a sharp pencil point becomes a thing of the past.

Small imitation Quests are found in children’s toy stores. They are smaller and less durable, but they are excellent for use in the pool.

Use the underwater Etch-a-Sketch to work out problems underwater with students.
training

instead of surfacing to discuss the matter with students. Divers need to learn thinking and problem-solving underwater. If you permit them to develop the easy habit of surfacing, even in shallow water, whenever they have a question or problem, you will not be doing your students any favors.

Quests can be used for explaining tasks at different stations. Leave a detailed Quest at several stations in the pool, and tell students they and their buddy must complete all of the skills they find written. When they have completed the skills listed, the students should leave their initials on the Quest. You should check your original wording frequently because the Quests do erase easily.

Play tic-tac-toe on a Quest. Play it to calm jittery first-timers, or play it to pass the time while waiting for others to complete skills, or play it whenever you want. For new divers, the game takes their mind off breathing underwater. It’s a simple, fast activity. Even young children know how to play tic-tac-toe.

Play it as a scuba diver, or play it as a snorkeler. When snorkeling, you can have the class advance from shallow to deeper water. People who have a difficult time keeping their heads underwater while learning to breathe from a snorkel can benefit by playing tic-tac-toe. The only rule is that they cannot make a mark or look at the Quest unless their faceplate is in the water.

Snorkelers can play tic-tac-toe in deep water, leaving the Quest turned carefully upside down on the bottom after each move. This requires their buddies to surface dive, turn the Quest over, and contemplate their next move underwater while holding their breath. Another challenge is for both players to submerge and play an entire game on one breath while on the pool bottom.

Sign Language or Invented Hand Signals

Beginning students have in their textbooks a full page or more of basic “universal” hand signals for use underwater. Yet, how many of these do we actually use before our students enter open water?

Review all the hand signals in the text, and then set up occasions in the pool where you can communicate these signals with your students. If you practice a simulated boat dive, you can show the “boat” signal near the end of the pool dive, indicating it is time to return to your boat. Place plastic toy lobsters, crabs, sharks, eels, etc. around the bottom of the pool and practice appropriate signals whenever swimming past these critters. If you have toys or pictures in the pool of anemones, jellyfish, or other harmful critters, you can point your fist at these “dangerous” sea creatures.

Before looking in the text with your class, ask the students what signals they would invent to convey particular messages. Your students might come up with some surprisingly correct signals, especially for critters such as sharks, crabs, and lobsters.

Rings On Pegs

Visit a large, children’s toy store and purchase a plastic cone surrounded by plastic rings of various colors and sizes. The largest ring is at the base of the cone, and each of the other rings is slightly smaller than the preceding one. To place the rings correctly on the cone, the correct order must be maintained.

These plastic pieces are hollow and will not sink unless you drill holes and fill them with lead or sand.

Snorkelers can practice surface diving to assemble the pieces, either one at a time or all at once. If you have more than one of these toys, you can have relay races or team competitions.

Musical Regulators

Place student scuba units on the edge of the pool deck with primary regulators and octopus regulators dangling in the water. Space the units so they are within easy underwater swimming distance from one another for your students. Be sure the cylinders are secure on the pool deck so they will not roll or be pulled into the pool. You might add one extra unit, if you wish.
Tell the students to submerge their heads and begin breathing off their regulator. On your command (a predetermined underwater signal, such as the tapping of a metal pole on the bottom), all students swim underwater while exhaling slowly and locate another scuba unit to provide them air. Anyone who surfaces for any reason is out of the game and must sit on the side of the pool. Anyone caught holding his or her breath when swimming from regulator to regulator is also out of the game.

As the game continues and students are now comfortable moving on signal, you begin to remove a regulator here, a regulator there, a set of regulators now and then. Essentially, the number of available regulators underwater slowly begins to disappear. While you are at it, you might as well turn off a cylinder or two and leave the regulator in the water. Pre-warn them that this may happen so it becomes part of the game.

Eventually, only one regulator mouthpiece remains functioning. Divers are free to buddy breathe and share regulators with others if they so desire. The last diver left breathing underwater is declared the winner. It is not unusual to have co-winners.

Believe it or not, students like this game, and they learn quite a bit from it. There is the stress of the competition, the practice of exhaling without the regulator, the use of another’s regulator, the possible need to give the out-of-air signal and begin buddy breathing on a buddy’s single regulator, and the uncomfortable feeling of running low on air and desperately searching for a donor.

What better way to imprint on your students the conviction that they know they never want to run out of air? Play musical regulators in the safety of a swimming pool with your students’ heads only inches below the surface to imprint your message.

If the above seems a little too dramatic for your students’ ability level, have students move clockwise around the pool one at a time. As soon as the first student swims to the second one, the second student starts swimming to the third student, and so on. Each time a student comes to another scuba unit, he or she breathes off the new regulator. This exercise omits all the stress experienced when regulators begin disappearing and students are forced to share air.

Mats Floating On Surface

Want to get students to develop the habit of always looking up as they ascend? Place several large floating mats in the deep end. When your students see the mats, you won’t have to say much to remind them to look where they are going. They will soon remember to look up when going to the surface.

Most small gymnasium mats float, and some pools with classes in springboard diving may already have the mats available for your use. Large foam cutouts of sea critters are also available. Crabs, lobsters, and fish can adorn the surface of your pool to remind divers to look up.

Of course, you can use canoes and coolers and boxes and such. However, you will not want to use any floats that would cause injury if someone accidentally hit their head, and large objects with a high profile above the water line could prevent you from seeing students floating behind the object.

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Sub-Aquatic Sports and Service, Battle Creek, MI  June 20-28  269-968-8551
Captain Slates SCUBA Adventures, Key Largo/Tavernier, FL  July 11-20  305-451-3020
Learn SCUBA Chicago, Chicago, IL   August 8-16   773-599-3483

“THE QUALITY DIFFERENCE”
NAUI Professional Development Units Quiz

A score of 75% on the following question set will earn a total of 0.25 PDU for the 25 questions involved. Answers should be submitted to Training Ventures using the online submission form at http://www.pdus2u.com or the Answer Sheet form found in this issue.

1. Nominations for the 2015 Board of Directors election open on:
   a. April 15
   b. May 1.

2. The proposed revision of the NAUI Bylaws:
   a. provides for “international advisors” to attend and participate in meetings of the NAUI Board of Directors.
   b. brings our bylaws into alignment with provisions of the California Nonprofit Mutual Benefit Corporation Law.
   c. Re-designates the position of NAUI President as “Executive Director” with responsibilities to both NAUI and NSG.
   d. all of the above.

3. The survival suits that can be worn by crew in event of a boat sinking in frigid waters are often called:
   a. ArmorAll suits.
   b. Pillsbury Doughboys.
   c. Michelins.
   d. Gumby suits.

4. Supercavitation caused by torpedoes moving through the water acts to:
   a. reduce drag.
   b. improve accuracy.
   c. suppress noise.
   d. reduce speed.

5. Bubbles whose size is above “critical radius”
   a. have a large surface tension that will cause them to shrink.
   b. have large surface area, and the greater surrounding pressure will shrink them.
   c. have enough outward pressure that they will grow.
   d. have no surface tension.

6. The continental shelf generally extends from the shoreline out to a depth of approximately:
   a. 100 m (330 ft).
   b. 150 m (500 ft).
   c. 250 m (800 ft).
   d. 350 m (1150 ft).

7. The dive tables constructed by John Scott Haldane in the early 20th century limited the critical supersaturation ratio of theoretical tissue compartments to:
   a. 1.58 to 1.
   b. 1.75 to 1.
   c. 2 to 1.
   d. 3 to 1.

8. Zenobia week (June 23 – 30) will be held in Larnaka municipality in:
   a. Cyprus.
   b. Greece.
   c. Turkey.
   d. Lebanon.

9. The ART OCEAN Exp’O in Mons, Belgium, continues:
   a. until July 15, 2015
   b. until September 1, 2015.
   c. until October 31, 2015.
   d. until the end of the year.

10. The résumé of Miss Scuba International Tabitha Lipkin includes her experience as a(n):
    a. commercial diver.
    b. champion competitive swimmer.
    c. TV sports reporter.
    d. illustrator of children’s books.

11. The recent FDNY Staff Training Workshop in Florida included skills unfamiliar to the participants, such as:
    a. buddy breathing.
    b. buoyancy control.
    c. emergency oxygen administration.
    d. tethered diving.

12. The Cesare Rosarol sank in November 1918 when:
    a. it was torpedoed by a German submarine.
    b. it ran aground during a storm.
    c. it struck a mine.
    d. the seacocks were accidentally left open.

13. The Rossarol rests on a muddy bottom at a depth of:
    a. about 24 meters (79 ft).
    b. about 35 meters (115 ft).
    c. about 49 meters (160 ft).
    d. about 65 meters (213 ft).
14. The Jardines de la Reina lie about:
   a. 40 km (25 miles) off the south Cuban coast.
   b. 60 km (35 miles) off the south Cuban coast.
   c. 80 km (50 miles) off the south Cuban coast.
   d. 100 km (60 miles) off the south Cuban coast.

15. Jean Christophe Grignard’s guide on his first dive in Cuba was:
   a. a school of barracudas.
   b. a curious goliath grouper.
   c. a Cuban divemaster who had been diving in the Jardines for 35 years.
   d. all of the above.

16. One of the toys that Bill King suggests to turn a 10-minute float into a game is:
   a. 10-pound (4.5kg) weights.
   b. water pistols.
   c. boats with propellers.
   d. balloons.

17. King suggests that large mats and other objects floating on the surface can be used:
   a. for surface resting stations.
   b. in finning tug-of-wars.
   c. to divide the pool into several practice areas.
   d. to teach students to look up on ascent.

18. Jeffery Hansler says NAUI scuba instructors should teach more than just cover the subject matter. He suggests they also:
   a. promote increased environmental awareness.
   b. encourage volunteer engagement for positive social change.
   c. advocate healthy life habits and fitness.
   d. all of the above.

19. NAUI’s 1963 course standards required:
   a. at least two open water training dives for certification.
   b. at least twelve hours for in-the-water skill instruction and supervised practice.
   c. no more than twelve students per single instructor for in-the-water class session.
   d. that criteria in these standards NOT to be exceeded.

20. Chris Richardson says that a plus of a concurrent training program for entry-level students is:
   a. they get to see advanced students doing more exciting diving activities.
   b. they can experiment because the instructor is not watching them as closely.
   c. their tuition and fees are lower.
   d. more “playtime” is available.

21. The idea that Bernie Fuersich presents for adding fun to a scuba class is:
   a. require the students to master the snorkel ditch and recovery before certification.
   b. have an air-ring contest—most air rings on a single breath wins.
   c. a pool “night dive” with dive lights but all other lights off
   d. taking the final exam underwater.

22. One reason that dolphins like to be rubbed, especially on their bellies, says John Fine, is that:
   a. they are ticklish.
   b. they shed their outside skin every few hours.
   c. it assures them that they have trained their humans well.
   d. it helps remove fungi and bacteria.

23. Iranian dress code rules, says Karen Erens:
   a. made it easy for her to blend in.
   b. do not prevent women from expressing themselves with fancy and modern combinations.
   c. were confusing and inconsistent.
   d. meant that she had to spend half the morning dressing to go out.

24. True or False? Karen found that gender separation did not apply when scuba diving in Iran.
   a. True
   b. False

25. Jeffrey Coelho uses underwater obstacle courses to:
   a. offer enjoyable confined water challenges while developing various basic scuba skills.
   b. confront students with difficult to impossible challenges.
   c. identify potential leadership candidates.
   d. build dive team solidarity.
INSTRUCTIONS:
If submitting online:
You can submit your answers to the PDU Quiz electronically. Go to TRAINING VENTURES’ site at http://pdus2u.com and follow the instructions.

If submitting by mail or fax:
1. Fill in all of the information requested to insure proper PDU credits.
2. Write the month and year of the Sources issue and indicate quiz subject, if appropriate (such as S&P questions). Or describe some other home-study origin for this PDU submission.
3. Using a soft pencil, black out the correct answer to each question in the answer section. If you change your answer, erase your previous mark.
4. Include a check or money order representing $6 for each separate quiz (in U.S. funds drawn on a U.S. bank) payable to “TRAINING VENTURES.”
5. Enclose the answer sheet and the check or money order in an envelope addressed to: TRAINING VENTURES, P.O. Box 1078, Crystal River, Florida 34423-1078, and mail it to Training Ventures.
6. Training Ventures will score the quiz, award the appropriate PDUs and return a transcript to you.
7. You may enclose several quizzes and submit one check (for $6 times the number of quizzes). in a single mailing if you wish.

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Apply PDU credit to:
[    ] This year for next renewal.
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Go to the “Student Registration” store area of www.naui.org

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SOURCES — SECOND QUARTER 2015

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Our current 2012 NAUI Standards and Policies Manual is about 300 pages long with 50 named diver courses and seven leadership and instructor courses. At our beginning in 1960 there were two (Scuba Diver and Instructor). Sport Diver followed (roughly the equivalent to Advanced Scuba Diver). Defined NAUI leadership training began with the first Divemaster course in Canada in 1976.

Here is the earliest NAUI course standard statement. It appeared in the March 1963 issue of NAUI News, our mimeographed periodical newsletter.—Editor

Operational Standards for Student Courses of the National Association of Underwater Instructors

The following standards are part of an ongoing effort to elevate instructional programs in underwater activity throughout the world. It is not enough to merely set high, unrealistic standards and sit back in smug satisfaction. The only operative approach is to find a point below which no instruction may settle and still be acceptable.

It is important to remember that these and rational standards of other organizations are merely the MINIMUM required. The exceeding of such minimum criteria is highly encouraged at all times. The foundation for establishment of these standards is based upon studies indicating that they will generally serve to provide sufficient learning of the fundamental skills and knowledge in fifty percent of the adult students seeking instruction. Our continued studies will help revise this prediction and influence changes in standards as they are needed.

1. Length of Skin and Scuba Diving Instructional Course.
   No less than twenty hours will be recognized for any course under NAUI sanction unless special waiver is approved by the Board of Directors. Only extraordinary circumstances will justify such a waiver.

   1.1. No less than twelve hours shall be provided for in-the-water skill instruction and supervised practice.

   1.2. No less than eight hours shall be provided for classroom lecture on the technical aspects of diving.

   1.3. Preparations prior to a class, following a class, travel to a diving area, and other activities not an integral part of the instruction will not be allowed in the hourly countdown.

   1.4. Open water class activity will not be counted as a part of the twelve-hour in-the-water requirement unless extraordinary circumstances justify approval of special waiver by the Board of Directors.

2. Scope of Subject Matter.
   All courses must expose all students to the knowledge and skills expressed in currently recommended course outlines and textbooks of this association.

3. Number of Students.
   No more than ten students per in-the-water class session may be instructed by a single certified instructor. Lecture classes are not to exceed twenty students under this rule.

   Special use of teaching assistants to exceed this quota in moderate amounts with proper justification may be approved by the Board of Directors.

4. Open Water Experience.
   An instructor is obligated to see that arrangements for open water experience are made for each graduating student either by referral or direct supervision. This obligation is over and beyond the course requirement but highly recommended by the association.

5. Reference to Equipment.
   An instructor should at no time directly evaluate brand name equipment before a class or single student. Only basic principles should be analyzed. The principles may be identified with a brand, but only as a reference and not as a direct instructional technique.

[These typed standards were followed by this handwritten gloss:]

Critique

The Association is fully aware that in some areas and for specific teaching situations the above standards are not feasible. NAUI exists to serve the individual instructor and not to create unrealistic obstacles. By the same token, we are a professional rather than a commercial organization.

Standards can be waived (if irrefutable justification is presented) but never lowered.
Don’t choose to be ordinary…
Choose to be NAUI.

NAUI Instructor and workshop training scheduled in conjunction with DEMA 2015 in Florida. Make plans to attend.

NAUI Instructor Training Course
October 28 - November 4

NAUI Instructor Crossover
November 3 - 4

Instructor Trainer Workshop and Course Director Workshop
November 1 - 2

Course Director Trainer Workshop
October 30 - 31

Are you an extraordinary dive leader? NAUI is the name synonymous with extraordinary diving leaders for more than 55 years. Choose to excel. Choose NAUI.

For more information, scan the QR code. Or call us at 800.553.NAUI (6284). Outside the U.S. call 813.628.6284 or visit www.naui.org.

Photo by Richard Alvarez, 2010 photo contest entry.
Get Ready to Make Magical Memories!

The Seas Pavilion with Nemo and Friends in Epcot® will be the site for NAUI hosted dives during this year’s industry trade show in November. Tickets are on sale now. Space is limited for the Epcot® Dive Quest program at the Walt Disney World® Resort, so reserve yours today!

To purchase your experience, please visit our website at www.naui.org, or scan the code to the right.