

Currents

Quarterly Leadership Journal for Scuba Educators International
April 2009

Welcome

Welcome to the spring issue of *Currents*. Waters are warming up and scuba classes are in full swing. New materials are now available to support your classes including the Open Water workbooks and OW packets, and the rescue manual is finally in stock. YSCUBA struggled with the rescue manual for at least five years and SEI Diving got it in print after 3 months. This is symbolic of what you can expect from us in the future.

To remind you, *Currents* is your publication, and submission to *Currents* counts towards continuing education, so we encourage participation in this newsletter. Articles or information can be sent to currents@seidiving.org. We prefer Word for articles so that we can format it into In Design, but we can also accept pdf and In Design files. Pictures and figures should be referred to in the text and attached separately with proper labeling. All pictures should be resized to a resolution of no more than 300 dpi using IrfanView or another photo sizing tool (available for free on the Internet). Please scan all files and pictures for viruses before sending.

In Memoriam

A good friend to our program, Joe Strykowski was the first Chairman of the Advisory Committee for YMCA SCUBA. For many years Joe was a dynamic driving force in the program and the scuba industry. In recent years he has lived in the Crystal River, Florida area where he was active in the protection of the manatees and headed up the *Star Thrower Foundation*. Joe's book, *Diving for Fun*, was a popular text for new divers going through four editions from 1969 through 1994. He published several other works as well.



This past year, Joe embarked on a two-year around-the-world sailing cruise. The trip started in the United States, across the Atlantic, down the Eastern side of Africa, and was headed up the West side in the Indian Ocean near Madagascar when they were hit with a storm that ultimately capsized the craft. According to the surviving crew member Leo Sherman, the 43 foot catamaran *Queequeg II* was hit by a 50-foot wave. Joe and Sherman were trapped inside one hull of the

vessel, and decided to move to the other hull. Sherman strung a line and swam to the second hull but Joe never followed and was nowhere to be found when Sherman swam back to check for him. Apparently Joe, 73, has been lost, as was the boat's builder Quen



Quen Cultra, Leo Sherman, and Joe Strykowski on *Queequeg II*

Cultra. Sherman escaped on day two by chopping through the upturned hull and being rescued by a Korean freighter.

In 1973, it was Joe's call to my house one evening during dinner that got me involved in YScuba leadership. He asked me to take over as Region Commissioner of five states in Mid-America – a position I held until being asked to join the national advisory committee. It is with great sadness that I report this tragic event to our leadership.

Tom Leaird

Announcements

Training Opportunities

Instructor Update:
Tallahassee, FL, April 4, 2009
Contact Dan Marelli

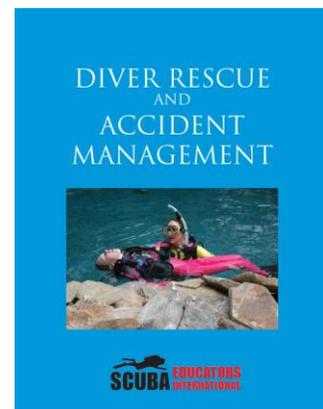
Instructor and Crossover Institutes:
Muncie, Indiana, May 14 to 17, 2009
Contact Tom Leaird

Note: Please let us know your training future events so they can be publicized here. In this area we will post news about upcoming training opportunities. Since *Currents* is published on a three month cycle we can only accommodate courses that involve long range planning. As we move forward we hope to go to a two-month cycle, which will allow us to report additional planned courses.

We have had a number of questions about who to contact regarding leadership crossovers. It is always best to start with the headquarters (info@seidiving.org), where the Program Administrator will direct the request to the appropriate person.

Publications

DRAM Manual - Scuba Educators International is pleased to announce the publication of *Diver Rescue and Accident Management*. This updated publication continues the long tradition of SLAM by providing the most current information on diver rescue and management of a diving accident. Manuals are full color and use a perfect binding so should offer years of use to leadership and students in the DRAM course. Manuals are \$20 plus shipping and suggested retail is \$30. Your students will recognize the quality in this publication. In addition to the manual we have also released the DRAM Instructor guide complete with laminated pool and open water skill sheets. Each DRAM Instructor guide comes with Power Point slides for the classroom as well as the exam, answer sheet, and exam key in electronic format. A new and welcome addition to



the Instructor guide is a field neurological exam chart that Instructors should photocopy for their students so that they can perform a rapid “neuro” exam on an “injured” diver. The Instructor guide is required for Instructors who wish to teach a DRAM course.

Open Water Course Student Workbooks, by Tom Leaird, SEI Diving CEO

I began developing a workbook system many years ago. Comparing learning retention (exam scores) I have found that the average student in Open Water class will achieve a score of from five to ten points higher when the workbook is used.

Two workbook sets are available from SEI Diving, one for Instructors teaching the subject method, and the other for teaching the dive profile method. Each set contains two booklets. Part A is for take-home reading and completion. Part B workbook is for taking notes during the classroom sessions. This system is designed to match the required text *Scuba Diving, 3rd Edition*. The workbooks, SEI Diving air diving tables, and the SEI Diving logbook are packaged together in an attractive portfolio as the *Student Packet*. The portfolio will also hold a copy of *Scuba Diving* as well as pen and pencil, so the student needs to carry only one thing to class each week.



In practice, students receive the *Student Packet* at the beginning of the first class session and take notes during that session in Part B. Between sessions, students read the assigned chapter(s) in the text and answer the assigned questions in Part A workbook. When the students arrive at class the Part A is turned in for grading. A class assistant goes through the assignment and places a correct answer for any misses. In addition, I ask my assistants to put the reference page in the text where the correct answer can be found. I use a copy of the form from the *SEI Diving S & P Manual, Part IV, Page 24*, to record the misses.

Here is the most valuable part of the system. As the course progresses, I watch the student scores for hints that the student is not doing his/her homework or that there are concepts that are not understood. This is an opportunity to offer additional assistance, tutoring or just ask the student to become more involved. From my experience, when I add up the misses from all the weeks and subtract from 100, that will be within a few points of the student’s final exam score. As an example, if a student has accumulated 30 misses in the workbook Part A, his exam score will be below passing in the area of 70%. For that student that has only missed 10 questions in the workbook, his/her score will be near 90%.

Some Instructors want to retain the take-home answer sheets in the student’s record. I do not. I merely maintain the record form in the course file. I feel there is no advantage in having that large pile of paper in my files plus the students have it for future reference. I feel that using this system is a tremendous benefit to the students and their learning progress and highly recommend it for each of our Instructors.

Student Referral Packets

SEI Diving now has *Student Referral Packets* for students who wish to complete the open water portion of their course in another location. The packet contains the necessary information and form to complete prior to sending the student to a referral Instructor. The student then visits the referral site, conducts the necessary dives and skills under supervision, and returns home with their paperwork completed so that the original Instructor may certify them. The referral packets may be ordered from the SEI Diving office.



Diving Safety and Diving Medicine Articles

Decompression Theory by Dan Marelli, SEI Diving Program Development Director

Diving is a field where progress is constantly being made, and the field of diving medicine is no different than other areas of diving in making advances that move our understanding of human physiology forward. Many of these changes result in safer practices. For example the U.S. Naval Experimental Diving Unit experimentally examined the air diving tables used by the Navy and, based on their research, modified many aspects of the diving tables. Significant changes were made to the no-decompression stop table, the surface interval table, and the repetitive group table, as well as the decompression tables. The result of this research has been published in the U.S. Navy Diving Manual, revision 6. It is downloadable free from the Supervisor of Salvage & Diving website http://www.supsalv.org/pdf/DiveMan_rev6.pdf or can be purchased as a hard copy from Best Publishing. The SEI Diving air diving tables and nitrox tables were modified from the U.S. Navy revised air diving tables.

In addition to this step forward, interesting articles on decompression theory have appeared recently. Instructors who are interested in this topic should join the regular blog on the Scubadoc website: <http://scuba-doc.com>. Dr. Ernest Campbell of Gulf Shores, AL is the Scubadoc. Recently he has published abstracts of papers dealing with decompression theory. Some of the results are interesting and may lead to better understanding of and prevention of Decompression Sickness (DCS). A few that caught my eye dealt with activity or compounds that resulted in diminished rates of DCS or at least in vascular bubbles. One study suggested that caffeine may increase the cardiac rate and result in lower incidence of DCS, though the research was done on pigs and divers should use caution in extending these results to humans. Another study suggested that diving frequently reduces susceptibility to DCS in humans, and we have always advocated diving frequently to keep skills sharp. Now there may be a medical reason for doing so!

Theories of why DCS occurs have been examined in other recent papers, including one theory that gas bubbles may not be the underlying cause of DCS but a secondary and exacerbating factor. The researchers theorize that the primary cause of DCS are the by oxidants in the tissues caused by absorption of large amounts of oxygen. It is suggested that antioxidants such as Vitamin C may be preventative although again, divers should not assume that this research suggests taking Vitamin C prevents DCS. It will be interesting to see where this line of research goes. Other research has recently suggested that nitric oxide (NO), produced during exercise, may help to prevent DCS. Exercising 24 hours before diving has been shown to reduce the level of bubble formation in divers, and recent research shows that mild exercise during the

decompression stop (in decompression divers) and short bouts of strenuous exercise post-dive also reduced the number of venous bubbles. Studies were performed on military divers and may not be directly transferable to sport divers. Nearly all of the exercise-related research on DCS mentions the role of nitric oxide in prevention, so stay healthy and exercise a day before diving to generate plenty of nitric oxide!

Safety Stops and Deep Stops by Dan Marelli, SEI Diving Program Development Director

The practice of making safety stops has become common and highly recommended over the past decade, mostly as a result of research supported by DAN and the dissemination of the information that slowing down at the end of a dive is an excellent way to reduce the risk of DCS. SEI Diving recommends 3 minutes minimum at 15-25 fsw and research from DAN demonstrates little benefit from staying longer than 3 minutes at the safety stop.

Another kind of safety stop began to creep into the diving practices of some divers in the mid to late 1990s called the deep stop. Deep stops are relatively short safety stops that are taken at depths deeper than the traditional safety stop. The initial interest in deep stops was created by biologist Richard Pyle, who learned that a deep safety stop for a few minutes kept his reef fish from suffering from effects of being brought from 200 fsw to the surface. Diving physiologists listened to Dr. Pyle and many technical divers began incorporating deep stops into their decompression profiles. Although stopping at depth increases decompression time, it was thought to decrease the risk of DCS.

The theory supporting the practice of deep stops is complex and the Undersea and Hyperbaric Medical Society (UHMS) recently convened a symposium on the topic, producing a volume called *Decompression and the Deep Stop Workshop Proceedings*. Over the next few newsletters I will try to wade through the important information in this 329 page volume and how it relates to recreational diving and our recommended diving practices.

Some recreational training agencies took up the topic of deep safety stops in the late 1990s, and issued recommendations for dives deeper than 40 fsw. The recommendation was to take a deep safety stop at one-half the depth of the dive for 1 minute and then ascend at 30 fpm or less to 15-20 fsw and stop for 3 to 5 minutes, then ascend to the surface. Recent research has demonstrated that this procedure did not allow for a long enough stop at the deep stop, and DAN's researchers recommended a deep stop for at least 2.5 minutes at one-half the depth of the dive, a proper ascent to 15-20 feet and a traditional safety stop for 3 to 5 minutes. How this stop time relates to no-decompression stop times is unclear, but practicing deep safety stops is an issue that the SEI Diving leadership should examine in great detail if we can reduce the risk of DCS. More to come in the next *Currents*.

SAFE DIVING PRACTICES: What are they and why are they important?

By James Lapenta, SEI Diving Instructor

Part I - Getting Started This article may be reproduced for use by any SEI Diving Instructor. It is my sincere hope that every SEI Diving student is made aware of the importance of following Safe Diving Practices and Procedures.

Scuba is a super recreational activity with low risks of injury when well-trained and pursued in a safe manner. When we think of Safe Diving Practices what comes to mind? 'Diving with a buddy



at all times'? 'Not going beyond your training and experience'? 'Not diving in conditions that could be hazardous'? Certainly these are some very good ones. But safe diving practices start before we even get near the water; perhaps long before, when we have only just decided to take up the sport.

At some point you decided to take up scuba. Hopefully when you made this decision you took some things into account, such as 'Can I afford it'? 'Do I have the time'? 'Is it something I really want to do'? Since you're reading this you obviously answered yes to these questions. And you have begun using safe dive practices by obtaining the proper training from a qualified Instructor.

Continuing in this mindset will go a long way towards ensuring that your diving is safe and enjoyable for years to come. This relates back to the statement about not going beyond your training and experience. Will you be ready to do any dive after your first class? Of course not, but by continuing to gain experience and seeking out qualified instruction, the limits on to where, when, and how you dive will begin to diminish.

I also hope you have also asked yourself if you are physically, emotionally, and mentally able to take on the challenges that scuba diving will subject you to. Hopefully you've had a physical within the last year or two, are in relatively good shape, use tobacco or alcohol only in moderation if at all, and try to get some type of exercise on a somewhat regular basis. This can be a demanding sport and being in good physical condition, although you don't need to be a super athlete, can help you avoid injury, reduce the amount of stress, and ensure that you have fun as well as are safe.

Diving can be mentally demanding as well as physically demanding. You are about to undertake a sport where you will be using scuba gear to recreate in what most people would consider a hostile environment. The aquatic realm is hostile because we cannot breathe under or in water, and we therefore must rely on mechanical means to exist there. We should always be aware that diving accidents are rare, but if something does go wrong we will need to extricate ourselves and maybe our buddy from a situation in order to avoid being injured. For some divers this can be a daunting task. The equipment can seem complicated at first and to some, confining. The mask may bring uneasiness in those who tend to be claustrophobic. Poor visibility can do the same. For people who are uncomfortable, gear adjustments or restricting themselves to certain environments may be a solution. Divers who are continually uncomfortable may wish to consider another outdoor activity instead of scuba.

You may also need to consider if any medications or treatments you are taking are contraindicative to diving. Anything that makes you sleepy, creates trouble staying focused or impairs concentration, or is used to control a condition that may be less than friendly to diving may cause you to reconsider this activity as well. At all times the use of recreational drugs and excessive alcohol consumption should be a clear indication that you and diving do not mix.

Once all of these factors have been considered, and nothing seems to preclude you from pursuing scuba diving, your diving experience will focus on the practices that relate directly to going into the water. We have already mentioned how proper training adds to the safety of diving and will now investigate that concept further. In your beginning open water scuba class you learned many new skills, practices, and a lot of information. You learned much about the function of scuba equipment, how to adjust and care for it, and how to inspect. You also learned how to enter and exit the water safely, and how to move through it efficiently. In addition, you were told how to plan your dives and how to know when a dive has come to an end. Finally, and perhaps most importantly, you learned how to decide if diving conditions on a particular day are

unsafe or not. In the next issue of *Currents* I will explore safe diving practices once the divers are geared up and ready to go.

Next Time: Let's Go Diving!

Insurance

If your scuba liability insurance expires on June 30, please make sure that you renew it and send proof of renewal to the Program Administrator. The master policy is held by Willis North America, but we also accept Witherspoon and Associates insurance and others. All insurance policies must list SEI Diving or Scuba Educators International, 1623 W. Jackson Street, Muncie, IN 47303 as an additional insured. Instructors in countries outside of the US must follow procedures required by laws in your country. If you have questions please address them to us at info@seidiving.org.

Editorials

In this space in the future will be editorial comments from the *Currents* Editor or Assistant Editor.

Notes from the Field

The SEI Diving Regional Coordinators are encouraged to provide the latest news from their area. In the future you will learn about exciting training courses of interesting dive sites in the regions. Coordinators: this is your column so take advantage of it!

Feedback

The SEI Diving Board and professional staff wants to hear from you. Attached to this edition of *Currents* is a survey requesting that you provide input on the SEI Diving materials and products being offered. Future surveys will address other issues but, as always, we want to hear from you and help you to make SEI Diving the best scuba training agency in the U.S.

Environment

SEI Diving leaders will remember that April 22 is Earth Day. As we celebrate the 40th anniversary of Earth Day and the 50th year of excellence in scuba education, we should remember that our underwater environments need protection and that some of these environments are the most diverse places ever studied. If your local diving group gets involved in a coastal cleanup, seagrass planting, or other supportive event please let the *Currents* staff know and send pictures.

Administration

Meet your Board of Directors:

Tom Leaird, CEO, Muncie, IN

Ken Nemeth, Director at Large, Atlanta, GA

Dan Marelli, Program Development Director, Tallahassee, FL

Tim Thorsen, Board Member, Pensacola, FL

Jim Wetzel, Board Member, Clinton, SC

News & Events

Upcoming meetings and events

DEMA. DEMA will return to the Orlando Convention Center November 4-7, 2009. SEI Diving will have a presence in a high-traffic location and we will take advantage of this opportunity to show off our new materials and publications. If you are interested in assisting us at DEMA contact the headquarters at info@seidiving.org.

Contact Us

Contact the *Currents* Editors at currents@seidiving.org or call 850-443-2177.

SEI Diving Contact List

General questions, scuba certifications, replacement of lost cards, and leadership renewals

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