

NEWSLETTER OF THE NATIONAL ASSOCIATION OF UNDERWATER INSTRUCTORS
AND THE NAUI DIVING ASSOCIATION

All views expressed in articles which carry a by-line are those
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IQ7—SUPER SHOW

by Arthur Ullrich, IQ7 General Conference Chairman

IF YOU ARE COMING TO IQ7 — DO NOT READ THIS.

If you haven't decided yet or if you think you can't, please give me your attention.

Just think what it would be like if every NAUI Instructor showed up at IQ7 and you didn't. They all just might (well, most might) because it's important to keep informed and they know it.

This year's program will be so full of great speakers on hot important topics, you won't know where to start. In a nutshell, the program will have 24 sessions with 2-4 speakers in each, 4 general sessions with 1-3 speakers in each, 4 exhibit hours with over 60 exhibitors and presentations by exhibitors during the exhibit hours, some exhibitors will demonstrate their equipment in the pool with time for you to try out the hot new exotic stuff.

I think this will tell you just how good the program already is, Vance Brand, Apollo Astronaut (at the time of this writing he is in space on the Joint Russian/U.S. Mission) has asked to be on the program — would you believe we already have such a good program arranged, we don't know if we can work him in. And that's the truth.



Fun — OH, YES! It starts with your arrival when you begin running into all your old friends and start making new ones. Then on Friday night the "Let's See Who's Here Party" in the exhibit area will be a blast. It always is. Saturday night we will all dress up and run off to the Miami Beach Convention Center for a great Underwater Film Review. This year it's an all NAUI show. Just NAUI members on the line-up and have they put together some outstanding films? Tzimoulis, McKenney, Giddings, Cahill, Woodward, Calhoun and perhaps a surprise.

The best is yet to come. Sunday when the presentations end, IQ7 goes on to go diving. Yes, this year IQ GOES DIVING — to the Keys, to the Bahamas, to Bonaire, to the Virgin Islands, wherever you want, but it's all a part of the show. So many diving resorts are putting out their best prices and their best packages, we can't begin to list them all, but we will send a list if you ask.

Rick Frehsee photo



The Awards Luncheon on Saturday is set to surprise many. Why? Because they don't know they're receiving awards — and neither do you.

We want to make it double — even triple hard for you to stay away so we added some door prizes. You'll drool when you see them — all expense paid week-long diving vacation for two — equipment — a cruise for two — and more are being added. Oh, wow! All you have to do to qualify is be there.

Economical? We always get to the bottom line. First, look at the Carillon Hotel rates, they have really given us some inflation fighters as low as \$18 single. Budget Rent-A-Car has made some very special rates available to us also if you need a car. California travelers can fly round trip as low as \$225. The diving resorts have dropped their package prices for diving and best of all, it's all tax deductible.

If that's not enough — we will even let you in FREE if you bring 15 others with you and we'll pay your hotel and meals if you bring 25. Now top that!

Don't tell me you can't get away — or it costs too much — YOU CAN'T AFFORD NOT TO BE THERE.

After all this, if you don't show up I'll think you're sick in bed.

If you want more information on IQ7, drop me a line and I'll send you everything.

Whatever you do, you don't want to miss this one. See you there.

-NN-

BAHAMAS UNDERWATER PHOTO TREASURE HUNT

The ads say it all. "The Bahamas—not out of the way, just out of this world." "The Bahamas—turn left at Miami."

And what are the Bahamas? Just 700 sun-drenched islands surrounded by 100,000 square miles of warm crystal waters, and rimmed by soft pink or white beaches. Gentle breezes whisper through casuarina trees and sway the stately palms.

For the diver, the Bahamas offers the full gamut of the underwater world—wrecks, blue holes, reefs, the world's third largest barrier reef, drop-offs, coral galore, infinite varieties of marine life, and the facilities to enjoy it all.

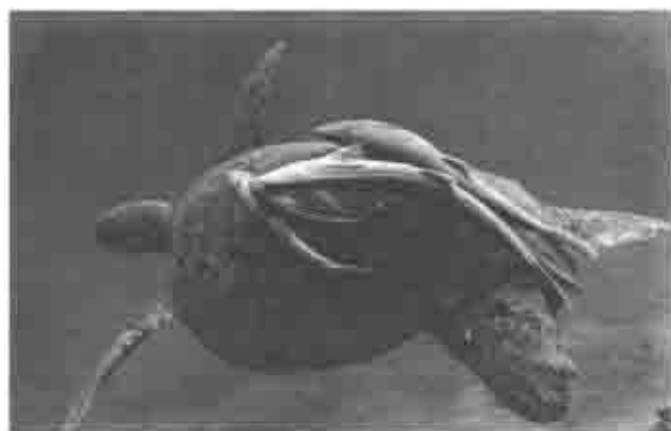
More than a dozen resorts and organizations cater specifically to the underwater enthusiast. Many have special dive boats, instructors and guides. Some offer certification for the novice. Others use the short resort diving course which enables the novice to enjoy the reefs and shallow diving under supervision.

This year, immediately following IQ7 at Miami Beach a unique diving event is planned. The Bahamas Underwater Photo Treasure Hunt, with a top prize of \$1,000 cash plus a week for two at one of the dive resorts, is slated for September 28 to October 4.

The event is not a photo contest, but rather a hunt in the true sense of the word. Divers will be required to identify and stalk their quarry and finally shoot them—on film. The contestants will be given a list of approximately 35 subjects and one roll of film. The divers who come closest to shooting all the marine subjects will be declared winners at each resort, and the winners will engage in a "playoff" in Nassau to determine the overall winner.

The winners at each resort will also win a week for two at a different resort, and the second and third overall winners will receive \$500 and \$250 respectively. There will be many other prizes as well.

The event is open to all certified divers, and will be limited to the first 150 applicants. The dive resorts involved include the Andros Beach Hotel and Small Hope Bay Lodge on Andros, Stella Maris Inn on Long Island, Current Club, Eleuthera, Romora Bay Club, Harbour Island, Spanish Isles Resort at Spanish Wells, and the Underwater Explorers Club in Freeport.



Bob Halstead photo

Special post-convention packages are available that include air transportation from Miami to the resort of the diver's choice, all meals and accommodation for four days and four nights, plus air transportation to Nassau, three nights accommodation at the Ambassador Beach Hotel, two cocktail parties, an awards banquet, registration fee, film and film processing. The total package, with double occupancy is \$355, and also includes six dives at the dive resorts. Additional dives can be arranged in Nassau.

The only additional charges will be American and Bahamian departure taxes of \$3.00 each, transfers and meals in Nassau.

For additional information contact Bahamas Underwater Photo Treasure Hunt, Suite 904, 200 S.E. 1st Street, Miami, Fla. 33131.

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THE
BEST IQ
EVER!

PLAN TO ATTEND
The Seventh International Conference
on Underwater Education in
Miami Beach, Florida
September 26-28, 1975



EXHIBITS!
FILM SHOW!
FANTASTIC PROGRAM!

NDA General Membership Meeting September 25, 1975, 6:30 p.m.

FREEPORT PRE IQ

Scubahas in Freeport, Grand Bahamas has planned a combination diving holiday and seminar prior to IQ in Miami. A chance for NAUI instructors to tune their minds and bodies before the main event in Miami. All NAUI instructors and wives are welcome. Several discussion periods are planned concerning divers on holiday and good habits versus bad. An experiment with non-diving wives involving a resort orientation course will be conducted with instructors in attendance, comments will be solicited at the completion of the lecture, pool work and open water dive. This should be of special interest to resort diving instructors. All instructors will be interested in learning of the deficiencies of certified divers on holiday, these divers habits and attitudes are a direct reflection on their instructors. The discussion will include a list of deficiencies and a solution to the problem. Each instructor will be given time to submit their comments before the group.

Many of us are placed in a position to not only teach a full basic course, but an orientation resort course as well. Our daily duties also include programming certified divers in good diving habits in an effort to contribute to the experience they are gaining. This is a total commitment to diving instruction.

Results of our discussions will be published in hopes of gaining the assistance of all instructors who send their students on holiday emissaries of their brand of teaching.

All instructors interested in four nights and three days of diving, with all meals and lodging included at a very special price should contact Bob French, NAUI 1356, at Scubahas, P.O. Box F 1261, Freeport, Grand Bahama Island.

Let us help our students gain the experience beyond their basic class that will identify them as good safe divers.

INNER SPACE PACIFICA '75 PHOTO COMPETITION

The NAUI Instructors of Hawaii and the Hawaii Council of Diving Clubs will be co-sponsoring the Innerspace Pacifica '75 Underwater Photo Competition. This will be the 7th such contest to be held in Hawaii as a part of the Innerspace Pacifica Film Festival. This year also marks the first time that the instructor and sport diving communities in Hawaii have joined together to support such a project.

The contest will be open to all non-professional underwater photographers and will have divisions for Black and White prints, Color prints, and Color Slides. First place winners will receive beautifully handcrafted plaques and

ribbons. Ribbons will be awarded to all 2nd place, 3rd place, and honorable mention winners. There will also be awards for Best of Show and Best Hawaiian Entry. A photographer may enter as many photos as he wishes. The entry fee will be \$3.00 for each entry unit. An entry unit will consist of 3 prints or 4 slides.

All entries will be judged by a panel of experts from the field of diving and commercial photography. Winning and selected photos will be on exhibition at the Innerspace Pacifica '75 Film Festival on November 7th and 8th in Honolulu.

All entries must be received by October 15, 1975. For complete rules and entry forms contact: William Reed, 98-1465 Kaonohi St., Alea, Hawaii 96701.

Bob Halstead photo



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IQ7 POST CONFERENCE DIVE "INNOVATION"

A terrific diving vacation may be enjoyed while teaching Sport Diver or Advanced Scuba Courses during the six day diving tours offered by the Caribbean School of Aquatics, Inc. (of San Juan, Puerto Rico). The instructor goes free when he brings his class of 6-10 students. The students pay only \$290 per person.

The school's dive charter boat, the "Innovation" is one of the finest in the Caribbean. She is a custom built 36 footer, fully equipped for extended diving excursions. During the summer and fall months, the "Innovation" makes six-day island hopping dive tours between Puerto Rico and the Virgin Islands.

If you have a few interested students, but cannot put together a whole class, there is space on tours arranged in Puerto Rico.

A special tour is scheduled to follow IQ7 (29 Sept-4 Oct). This will prove to be an exciting adventure: top-notch diving, coupled with top-notch divers.

For more information contact: Jeff Woodward, NAUI 2052, The Caribbean School of Aquatics, Inc., Hyatt Hotel, P.O. Box 4195, San Juan, Puerto Rico 00905—(802) 723-6090.

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**Plan Now
to Attend!**

THE CONFERENCE for ALL DIVERS

SEPT. 26-28, 1975

THE **Carillon**

68th TO 69th STREETS

MIAMI BEACH, FLORIDA

HEAR DIVING EXPERTS • WORKSHOPS • FUN

VALUABLE DOOR PRIZES • GREAT EXHIBITS

BEAUTIFUL FILM SHOW • AWARDS LUNCHEON

SEE OLD DIVING FRIENDS • GREAT EDUCATION

DIVE FLORIDA AND THE CARIBBEAN AFTER

Join Us for IQ7

Write for Information:
NAUI HEADQUARTERS
22809 Barton Road
Colton, California 92324



**FOR
ALL
DIVERS**



SEPTEMBER
26-28
1975

MIAMI BEACH,
FLORIDA



**National
Association
of Underwater
Instructors**



SIMPLIFIED PROCEDURES FOR OCEAN DIVERS AT ALTITUDE by C. L. Smith, NAUI 2299

PROCEDURAL CHANGE	RULE
1. Weightbelt adjustment	Remove 2½% of total weight of diver and ocean gear from weight belt (3 to 8 lbs).
2. Flying after an ocean dive	For most dives wait 3 hours, or until in repetitive dive group D, before leaving sea level. For extreme dives, wait 12 hours.
3. Diving immediately on arrival at altitude	Treat as a repetitive dive. Adopt a repetitive dive group letter at arrival of at least: D—for altitudes below 7000 feet; F—for 8000 feet; H or J—for higher altitudes.
4. Decompression	<ul style="list-style-type: none"> • If dive is not too deep, use capillary depth gauge readings directly with the U.S. Navy dive tables to determine allowable bottom time. Use readings directly for 60 ft/min ascent rate and decompression stops (if any). • If dive is deep or if capillary gauge is not available, use any other depth gauge and: determine equivalent ocean depth, ascent rate and decompression stop depth; apply the equivalent ocean depth to the U.S. Navy dive tables to obtain allowable bottom time.
5. Depth gauge correction	<ul style="list-style-type: none"> • For capillary gauges subtract 3% of reading per 1000 feet of altitude, if altitude is above 3000 feet. • For all gauges other than capillary, first add 1 foot per 1000 feet of altitude, then add 3% of reading.

A CRUSHING EXPERIENCE

Part of a "How to Teach" Series *by John Wozny, NAUI 1442*

Do you believe learning is a change in behavior? Do you believe maximum learning takes place when there is maximum student participation to bring about the greatest change in behavior? Can we agree such concepts as student participation, involvement, interest, and motivation are involved in learning? Can we agree there are different levels of participation? I suggest three main levels. Passive,

as sitting in a class listening to a lecture. Next, watching a demonstration or an experiment being performed by somebody else. And finally, actually taking part in the demonstration yourself. I



John Wozny

call the second level the vicarious level and the third the active level. It is the concept of participation that keeps teachers constantly searching for new ways to present material. New ways to get students involved. How does a teacher make a student "want" to come to his class? How to stimulate the students to teach themselves. They must you know. A teacher can only guide a student in the direction the teacher, in his wisdom and experience, wants that student to go.

In teaching diving physics, I go through all three levels of participation. I start out with several charts to give the students a picture of what I'm talking about. Since pressure in diving physics is based on 1 atmosphere, we spend some time discussing the atmosphere. This is more confusing than most people realize since the students sitting in the room can't see it, they can't smell it, and they can't feel it. Many people don't even believe it is there.

All this time the students are sitting quietly, perhaps taking a note or two, and just perhaps occasionally nodding a head in agreement, but actually wondering what on earth all this has to do with visiting the world of Lloyd Bridges and Jacques Cousteau. After all, that's what they spent so much money and time for. So far the charts and lecture has been what I call passive involvement. Not much happened.

Now I reach down under my table for an empty tin can. It is really an empty duplicating fluid can. The price for these cans is right because they are thrown away. Now comes the

second stage of participation. Holding the can up I go to the black board and draw a sketch of the can large enough for everybody in the room to see. Then, using a ruler, which I carry with the rest of the demonstration equipment, I use the nearest students to give me the dimensions of the can. Using these dimensions the students must decide how to figure the entire area of the can. Some want to multiply length times width times height. Others will leave off the top and bottom, but finally we understand that to get the total area you must double the area of the front, top, and side and add them all together. By now everybody is involved in thinking without even realizing it. They are involved because they don't know who you are going to call on next, so they all start to think.



Ed Johnson photos

The general direction we are heading is to have the students discover how much total force will act on the can if you can remove all the molecules from inside. They now know the total area, 228 square inches, and knowing that atmospheric pressure can exert a pressure of 14.7 pounds per square inch on each square inch the next move is simple. Multiply the total area in square inches by the pressure on one square inch. But they never believe the answer. It is around 3350 pounds. That is over a ton and a half. There has been some involvement, but doubt is mirrored in many eyes in the room. How to dispell the doubt in those eyes? How to stimulate learning, or the desire to learn?

Again I reach under my table. This time for my trusty Bunsen burner. It is connected to a small propane tank which can be bought at any hardware store. You don't even need the Bunsen burner. You can buy a device that screws right

CONT. NEXT PAGE

A CRUSHING EXPERIENCE . . . Cont.

on top of a propane tank and is used for soldering. You can even use an electric hot plate for this part of the experiment. The main point is that if something is heated it will expand. And if I heat the can the air inside will expand and leave the can when the lid is left off. Then to speed up this action I point out another little known Law of Physics that says that if you put a little bit of water in the bottom of the can and heat it, the steam that results will be the original water expanded 1700 times as it changes from a liquid to a vapor, and pushes most of the original air in the can out with the steam as it leaves. They still don't believe.



So, as I chatter on about the empty can with a hole in the top and compare it to the heads of many of the students in the room, I fire up the burner and heat the can as quickly as I can. This only takes about two or three minutes. You can tell because you can see the steam pouring out of the can. While the can is heating I attach a snap clip to it so I can carry the can around the room with me. The next thing to do is lift the can off the heat. Give it a few seconds to cool, at least until the steam has stopped leaving the can, and then screw on the lid. First make sure the lid has a gasket in it or something which will not allow any air to go into the can. Then, carrying the can by the snap around the room, you hold it up high and all eyes in the room are fastened on that can. At first nothing happens and you pretend it isn't going to work. Then there is a slight bulge inward with a slight popping sound, and in a minute or two that can is crushed as flat as though a truck had driven over it. They believe. They believe! For the first time, many of them have seen the effects of this tasteless, invisible atmosphere which they cannot feel. It is exciting. I call this vicarious participation.

-NN-

CAN YOU PASS AN IQC?

by Bret Gilliam, NAUI 3234

Here's a nice controversial subject I am sure we can all agree and disagree on with vigor. I would like to see a much more stringent re-certification requirement for NAUI active teaching instructors; why? . . . because there are some in our ranks who are no longer keeping current on modern developments in equipment and teaching techniques, and who cannot pass even our minimum standards for watermanship.

With our present policy it is possible for almost anyone to remain in an Active (Teaching) status simply by certifying the minimum number of basic students annually. The other requirements are easily met.

I propose we retain the present re-certification policy but add one other stipulation to this effect:

"To maintain an Active (Teaching) status, the instructor must attend and successfully pass all water, written, and oral testing programs in an IQC every other year from the date of his original NAUI membership. No other service or project shall excuse the instructor from this obligation."

This type of strict re-certification policy will ensure our instructors in the public eye will be at least minimally qualified in all areas of instruction. I also think it would serve as a healthy peer self-regulation to keep our organization's standards this high. I cannot understand why any concerned member of NAUI would object to this stipulation unless he himself was not proficient enough to pass our IQC program.

How many of us have seen instructors that look like they haven't gotten wet since they were certified, or are so poorly informed on modern equipment evolution that they cannot properly advise their students? I have, and I would like to see these instructors either update their watermanship and knowledge or go on inactive status. A strictly enforced re-certification requirement would go a long way toward weeding out those persons who are perhaps less than qualified.

I know that this article will trigger a host of member opinions and, hopefully, the exchange will help us to formulate a needed revision of our current policy.

-NN-

**DON'T BE ONE OF THE
FEW WHO ISN'T AT IQ . . .**

**COME TO MIAMI BEACH
FOR THE DIVING TIME
OF YOUR LIFE!**

BETWEEN THE BUBBLES

by Owen Wells, NAUI 3897
and Ron Bolden, NAUI 2196

Many conditions and requirements of Diving set this sport apart from any other. One of the most unique is weightlessness. Unlike *Weight-watchers*, you can control your notion of weight as you can float, sink or become weightless at will.

Becoming an astronaut or a sky diver offers this feeling, but few of us can become astronauts and sky diving provides several minutes of duration at best. Scuba can offer an hour or more of free suspension.

The average person cannot reach outer space, but with safe training, good equipment and self confidence you can visit "The Underwater World of Jacques Cousteau" and Lloyd Bridges.

The environment underwater is totally alien to the human mind and body. The pressure of the water, a medium 900 times denser than our atmosphere, squeezes and tries to crush the diver. It distorts his vision and all but eliminates his practical hearing. The cold water tries to suck all of the heat from his body. Darkness and limited visibility seem to close in on him and can fill the untrained diver with fear.

In order to survive under these conditions, the scuba diver must carry an extra, thick, rubber skin, extra eyes, his own atmosphere to breathe and sometimes electronic ears. He must also carry his "cool." Panic is the number-one enemy of the scuba diver.

The scenery of the "Underwater World" differs immensely from that of land. Plants look like animals and animals like plants. And some plants and animals look like rocks and minerals. The world underwater is a topsy turvy world and to understand and share just a little is the best natural high. In the oceans you can swim through floating forests of kelp 100 feet high or cross meadows of coral and anemones.

At about 20 feet, in clear water, the reduced light filters red out of the diver's spectrum. Colors continue to fade, with greater depth, until at about 80 feet a serene blue-green hue

remains. This too will be filtered out until no light can penetrate the greater depth. Yet, with artificial light, all of the colors of the spectrum blaze into view in the form of fauna, fish, and coral.

Divers, like Sir Francis Drake and Christopher Columbus, are seeing places that few people have seen before. The polar icecaps have been crossed and every year a different team of men and women stand on the summit of Mount Everest. Over 99% of our continents have been explored or photographed by man. Diving brings the explorer into the inner space encompassing 70% of our globe with 99% unseen by man. The oceans are now, and probably always will be, unexplored. On the bottoms of the seas are sunken ships, treasures and whole cities whose streets only the fish travel. More of these lost bits of history are being found by the average diver every day, not just by the professionals.

Probably since he first developed eyes and watched the birds, man has wanted to fly. He employs planes, falls in parachutes, hangs from giant kites and floats in balloons. But only in his dreams does man have wings. Flying is very close to Diving. The slow, liquid motion of the diver is like the bird in flight, soaring over canyons or drifting above deserts of sand. The diver can move in every direction, right side up, upside down, almost inside out.

Only in the underwater skies can man himself come close to flying. In the "Underwater World" man can actually perform fantasies which before were only visualized in his dreams.

Venture into your dreams. Sport diving provides the excitement of discovery, the challenge of science and the muscle-tone of good conditioning.

We hope sharing our reflections aid you to appreciate the science we love.

Thank you.

Acknowledgment: This thesis was rewritten by Owen D. Wells, NAUI 3897, using substantial portions of an original essay written by Ron Bolden, with his permission. I wish to express my gratitude to Ron for his beautiful idea and for being an excellent diving buddy at the NAUI Instructor Qualification Course in Monterey.

Editor's Note: This article is being published for use by the members as an introductory presentation to diving.

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YOU'RE THE SOLUTION TO WATER POLLUTION

IN-HOUSE NEWS

IT'S TIME TO DO WHAT YOU OUGHTA DO . . .

It's that time of year again, when so many members procrastinate—renewal time. This year, more than ever, we need to get through the entire renewal process as quickly as possible. We're going to make things better for you. Here's how:

The Credit Memo system at Headquarters is being discontinued. A separate account is being established for each instructor. The account will be in the form of a ledger card and will reflect your status, your current balance and your activity with the organization. We will be able to trace and research your orders instantly. Won't that be great?

The Ledger Card system will be set up through the renewal process. You will not have a separate account with all the related benefits until you renew for 1976. Please help us to help you by renewing now.

Additionally, we need to clear all the outstanding credits out in the field. Use any credits you have with your next order, or return them for a cash refund. **ALL CREDIT MEMOS WILL BE VOID AFTER OCTOBER 1, 1975.**

So, do what you oughta do . . . renew now. To hold down costs, there will only be a one month grace period on services this year. The mailing of NAUI News and the ability to register students or purchase materials at a discount will cease if you do not renew. In a more positive manner, we encourage your renewal for the pride of NAUI. You had to work hard to earn a highly respected status in diving, so hang on to it. NAUI has retained nearly two-thirds of all instructors ever certified . . . That's an impressive record, and we want to make the same claim next year. Every renewal helps—it helps you and it helps NAUI. Do it; write now . . .

-NN-

MAKE LIFE A LITTLE EASIER . . .

Review the following procedural problems, and see where you can make changes in your procedures. If you will follow the correct

procedures, you'll not only make life easier for the Headquarter's staff, but for yourself as well!

1. Please fill out the student registration forms yourself, do it neatly, and fill in all required blanks. Do **NOT** pass the form around and have each student fill in the information.

2. If teaching for a shop, college, university or other facility which will be paying for the costs of registrations and materials, have the facility include your name on purchase orders.

3. If a certification is not issued and you wish to void the card for credit, return the **CARD ONLY** for a \$1.00 credit. If a complete registration package with wall certification and emblems was ordered, keep everything except the card and use the materials at a later date. Also, do not issue any unused credentials to a new student.

4. Canadian Instructors should always make checks to NAUI payable in U.S. funds.

5. Please throw away all your old Material Order Forms and use only the new form.

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FOR BETTER SERVICE . . .

HELP US HELP YOU

Student Registrations should be back to you in less than two weeks. If not, call or write. Do not delay—we may never have received the order or something else has gone wrong.

Book Orders should arrive in four weeks, unless you paid extra postage for faster service. If your books do not arrive, call or write.

If you have a problem, the following information will help us solve the problem:

Your Name
Your NAUI Number
Your Address
Your Phone Number
Date of the Order
What was ordered
Receipt Number
Number of Check

We're making our service better and faster to eliminate problems, but if you should have troubles, help us help you. Thank you.

-NN-

WANT TO KNOW WHAT'S HAPPENING?
Attend NAUI General Membership Meeting
Thursday, September 25, 1975—7:00 p.m.
Carillon Hotel, Miami Beach

IF YOU CARE,
BE THERE . . .

—NAUI INSTRUCTORS ONLY—
YOU MUST SHOW YOUR
CARD FOR ADMITTANCE

ASSISTANT INSTRUCTORS— WHAT THEY MAY AND MAY NOT DO

Some instructors are so proud of their assistants they feel the assistants are qualified to take over diving classes. Even though the assistant may teach diving under the direct supervision of an instructor, the assistant is not to take charge of the instruction. This sounds somewhat contradictory and puts the issue into a "grey" area of interpretation. Let's examine some complaints on the use of assistants and state flatly what assistants can and cannot do in instruction.

An assistant, even a certified NAUI Assistant Instructor, may **not** conduct a training dive and evaluate the diving ability of students. Complaints have been made about instructors on the shore, on a boat or on a float overseeing diving activity while the assistants "check out" the students. This is a violation of NAUI standards, for the instructor does not have control of the students. The instructor must judge who is qualified to dive through personal evaluation. It is the instructor's signature that goes on the registration form and certification card, not the assistant's.

Since the NAUI instructor is required to be present at all times during a diving class, it means the assistant cannot teach the course and then have the students tested and evaluated by the instructor later on in the course. This is another complaint received from time to time.

Assistant instructors may not work with students during the performance of potentially hazardous exercises during instruction. Example: If a buddy team is being evaluated and the exercise is an emergency swimming ascent, it is a violation for the instructor to accompany one student to the surface while the assistant accompanies the other student. Why? The instructor is not in control of the student with the assistant.

Well, what can the assistant do?, you ask. An assistant instructor can be a safety diver who controls the class while the instructor evaluates individual students. The assistant can provide an orientation dive for students after the instructor evaluates their skills and determines their adequacy as divers. The assistant can demonstrate proper execution of skills for the instructor. The assistant can work on skill development of non-hazardous skills with individual students. Example: A student has difficulty mastering snorkel clearing after instruction while the rest of the class is not experiencing difficulty. Have the assistant work with the individual. The assistant instructor can

present lessons—in the classroom, in the pool, and at the open water site—as long as a NAUI Instructor is present and in control. Assistant Instructors are valuable to buddy up with a student when you have an odd number in a class. The Assistant Instructor can act as a Divemaster in organizing and setting up your training dives. Assistants are great to work with students offering tips and suggestions on gear handling, suiting up, and so on. The Assistant Instructor is most useful in handling paper work and equipment. Instructors need good, enthusiastic and capable assistants in order to do a better job of instructing.

One other complaint sometimes received is that the instructor never got into the water. Let's hope this complaint isn't made about you. Proper use of assistants doesn't make them do all the water work. Establish some credibility—show your students you can dive . . . early and all during the course.

Remember assistant instructors are not qualified to be instructors. They are qualified to learn how to instruct and to support instructors. You as an instructor may feel your assistant is superb, but that determination has not yet been made by a nationally recognized certification organization. Until the assistant earns a credential as a nationally certified instructor, don't jeopardize the assistant or yourself by having the assistant do what only you are sanctioned to do . . .

For more information, reference NAUI News, January, 1974, page 13—"What Is The Role of The Assistant Instructor?"

-NN-

RESULTS OF FISCAL YEAR VOTING

Ballots were mailed to the membership to seek approval to change the fiscal year of NAUI from September 1 thru August 31 to January 1 thru December 31.

The following totals were verified and are on record at Headquarters:

Approval	1,163
Disapproval	68
Not Valid	13
Total	1,244 votes received by June 30

With the approval obtained, NAUI's year is now the calendar year. This means you will be required to pay 16 months dues for the 1976 renewal, but dues will not be required again until January 1, 1977. From then on the dues cycle will be on a calendar year basis.

Please renew promptly for 1976.

CONT. NEXT PAGE

UCLA DIVING SAFETY RESEARCH PROJECT

Glen Egstrom, NAUI 937 and Past-President of NAUI, is directing a research project sponsored by NOAA, the State of California Resources Agency and Mr. Leonard Greenstone.

The purpose of this research project is to broaden the bank of scientific knowledge currently available to divers, researchers, diving educators and equipment manufacturers. The project is designed to explore the full range of variables affecting the diver's performance: equipment function and configuration, learning efficiency, biomechanical effectiveness, social and psychological aspects of diving stress, emergency procedures, and a comparison of current diver training methods.

The Project at the UCLA Performance Physiology Laboratory is a nonpartisan effort which was developed to capitalize upon the accumulated expertise and resources previously established by the research and underwater work performance projects.

Specific studies include weight belt tests, social interaction observations and measurements, biomechanical analysis, learning effectiveness experiments, diving equipment tests.

More detailed information on the project is available from the Dept. of Kinesiology MG-218, University of California, 405 Hilgard Ave., Los Angeles, CA 90024.

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IN-HOUSE ONE-LINERS

- California Assemblyman Cline has withdrawn Bill 515 regarding scuba diving regulations!

- NAUI Canada soon plans to have a monthly column in the NEWS.

- The NEWS for 1976 will feature a "Personality Spotlight" each month of NAUI Instructors nominated by the Branch Managers and members of the Board.

- NAUI Instructors, Assistant Instructors, and Skin Diving Leaders are all members of NDA. You do not need to join or renew.

- James Wilson, NAUI 3803, Harvard Professor and crime expert, appeared on the John Chancellor CBS television evening news.

- June, 1975 was the best June in the history of NAUI! Thanks to all for the excellent support. The improved service from Headquarters has helped to spark business.

END OF IN-HOUSE NEWS

EMPLOYMENT

Please send listings to the Editor, NAUI News. Each listing will be run once, and you may request to have it repeated if necessary.

INSTRUCTORS SEEKING POSITIONS:

Bill Boudreaux, NAUI 2782
1002 Vista Sierra
Plano, TX 75074
(214) 424-6355

Bruce Nyden, NAUI 2186
3512 Williamette
Corvallis, OR 97330
(503) 753-7564

Ben Scotkin, NAUI 3709
498 Sherwood Pl.
Stratford, CT 06497
(203) 377-3620



WET SUIT CHAFING? TRY THIS . . .

Many divers are bothered with chafing behind the knees caused by the rubbing of the wet suit while swimming. There are several cures—see which one is best for you.

First, and simplest, is to rub vaseline behind your knees prior to donning your wet suit. Secondly, try wrapping a layer of plastic food wrap, such as Saran Wrap, around your knees before suiting up. Thirdly—and this one is wild—buy a pair of one-size-fits-all panty hose and wear them under your wetsuit. You'll find the hose will prevent chafing, will make it easier to put your suit on and take off, and will be warmer. Just don't let the rest of the fellows catch you putting them on if you happen to be a fellow also! It helps a lot if you tell them what you're going to do and why before you do it . . .

The vaseline and Saran wrap will work well in other problem areas, like under the arms and the crook of the elbow.

If you have other ideas on how to make diving more comfortable, please share them with our readers. It's so pleasant to dive when you aren't bothered with equipment problems.

-NN-

THE MEDICAL EDITOR'S COLUMN

by Dr. Charles Brown



DIVING LORE

(Reference this column,
Feb. NAUI News, page 11)

TIME TO EXPLORE SOME MORE LORE

17. The feet up, head down position usually keeps bubbles from entering the brain. This commonly taught misstatement of a generally accepted practice is inadequate because it doesn't say enough. The idea is of course that bubbles tend to rise. The first-aider remembering the rule as stated may contrive to raise the legs and lower the head while the trunk remains flat, and congratulate himself on a good job. Actually, he has accomplished nothing.

The arteries of concern, that is the innominate and the left carotid, spring from the aortic arch within the chest, not the neck, so the attitude of their openings is not changed by tilting the neck. It is necessary rather to tilt the body as a whole. We'll call this the reverse slant position. To go all the way we'll add 20 left tilt, which compensates for the back to front course of the aortic arch as it passes from right to left.

That settled, we may now ask whether this standard reverse slant position really does what it's supposed to. It was recommended originally as a first aid measure for victims of lung-overpressure air embolism during transport to a chamber. However, many authorities feel this amounts to locking the barn door after the horse is stolen. The bad bubbles are already in the brain and no more are likely to come. If this is correct, the reverse slant may still be either good or bad. It may be bad because the acutely damaged brain already suffers from edema, and creating a back pressure in the veins will make this worse. It may be good because (1) decompression sickness bubbles might also be forming for some time after the dive, and any that gets through the lungs to the arterial

circulation should be directed away from the head; (2) certain animal experiments indicate that putting a brain embolized victim in reverse slant may dilate the small vessels enough to let the obstructing bubbles pass through.

I favor the position for most diving accident victims for an entirely different reason, which I believe to be of overriding importance. It helps prevent aspiration of vomitus into the lungs, which is a very common cause of death.

18. The reverse slant position is always best for transporting air embolism victims. Remember that there are exceptions to every first aid rule, and common sense must always be the final arbiter. Here are three situations where reverse slant should not be attempted: (1) Uncontrolled, serious bleeding about the face, head, or neck, as it would be aggravated; (2) Serious breathing difficulty, especially in an obese person, as reverse slant allows the abdominal viscera to compress the chest cavity and hamper lung expansion; (3) Logistic difficulties. Don't attempt the position if arranging for it would delay transport, or if it would interfere with watching or assisting the patient in essential ways (CPR, bleeding, vomiting).

19. Paralysis of both legs shortly after a deep dive usually means air embolism. Not if we're talking about lung overpressure bubbles. These usually go to one side of the brain and produce hemiplegia, that is paralysis of the right arm and right leg, or of the left arm and left leg. Paralysis due to decompression sickness bubbles, on the contrary, is usually due to spinal cord damage and manifests itself as paraplegia, meaning both legs involved, or less often quadriplegia, meaning all four limbs. The reason gas emboli in the two disorders behave so differently is the subject of current debate and research.

20. Sudden, severe leg pain as you leave the water should be managed as bends. Such might indeed seem dictated by the old adage, when in doubt, recompress. But is there really that much doubt? First, did the dive even approach no decompression limits? Next, recall that bends pain rarely appears so early on. Sudden severe pain upon leaving the water should suggest acute envenomation, usually jellyfish; look for welts. Certainly it could be due to abrasion or laceration or cramp, but these should be obvious.

To be continued

— IMPORTANT CHANGES —

PLEASE TAKE A LOOK!

Printed on these colored pages are a copy of the new Material Order Form and Price List. These are also being mailed in all orders, plus a separate mailing of new information to instructors.

•

PLEASE STOP USING THE OLD FORMS!

Please use the new prices and discount schedule. The only price increases are on items where the supplier has increased the price. By using the new discount schedule and buying in as large a quantity as possible you can actually save some money.

Also, please note these lists include all materials and services provided by NAUI. Are you using all you need?

... THANK YOU ...

MATERIALS

PUBLICATIONS/FORMS

[illegible]


EMBLEMS


No.	TYPE AND LEVEL	Price	Qty.	Amount
		TOTAL EMBLEMS		
		TOTAL ALL MATERIALS		




Instructions: PLEASE . . .

- Type* or print clearly using the same names for all items as on the current price list of materials and services.
 - Keep *third* copy (pink) of this form for your records and mail in the first two copies.
 - Write or call if you have a problem with the order and give the serial number of the form along with date mailed.
- *Form is set for typewriter spacing.

This is your Return Address Label

Printed Name 

Address 

City  State/Prov.  Zip/Country 

Instructor Name and Number if not included in address

Name _____ No. _____	
Date sent by Instructor	Reference this Number if a problem occurs. SERIAL NUMBER
Date Received by HQ.	

MATERIALS - Total		
\$5. to \$25. Deduct 10%	\$50. to \$100 Deduct 30%	
\$25. to \$50. Deduct 20%	Over \$100 Deduct 35%	
Deduct Member Discount		
SUB-TOTAL		
Only Calif. residents add Sales Tax.		
or, if for Resale, list Resale No.		
SUB-TOTAL		
POSTAGE - MATERIALS ONLY		
Check One	<input type="checkbox"/> Surface rate within U.S. no extra charge	
	<input type="checkbox"/> Priority mail within U.S. add 10%*	
	<input type="checkbox"/> Surface rate outside U.S. add 5%	
	<input type="checkbox"/> Priority mail outside U.S. add 25%*	
*You will be billed for additional cost		
SUB-TOTAL		

SERVICES (No tax or discount)

REGISTRATIONS

No.	LEVEL	Price	Qty.	Amount

DUES AND RENEWALS

INSURANCE

	TOTAL SERVICES	
Special Delivery for Registrations	\$1.00	
TOTAL ALL MATERIALS, POSTAGE, SERVICES		
Paid on current balance or credit used		
	TOTAL ENCLOSED	

OFFICE USE:

Check No. _____		By _____	
Previous Balance	Debit <input type="checkbox"/>	Credit <input type="checkbox"/>	_____
Paid on Account		<input type="checkbox"/>	_____
This Order	Debit <input type="checkbox"/>	Credit <input type="checkbox"/>	_____
Current Balance	Debit <input type="checkbox"/>	Credit <input type="checkbox"/>	_____

NAUI Price List of Materials and Services

August, 1975

MATERIALS — Use Discount

EMBLEMS

Sew on Crests	\$2.00 each
Lapel Pins	\$4.00 each
Pressure or Water Transfer Decals	\$.50 each
Rubber Wet Suit Decals	\$1.50 each

No.	LEVEL	Crests	Decals	Pins	Wet Suit
01	Skin Diver (Sr. the same)	A	A	NA	A
02	Skin Diving Leader	A	A	NA	NA
10	Junior Scuba Diver	A	A	NA	NA
20	Basic Scuba Diver	A	A	A	A
30	Sport Scuba Diver	A	A	NA	NA
40	Advanced Scuba Diver	A	A	A	A
50	Specialty Diver	NA	NA	NA	NA
60	Assistant Instructor	NA	NA	NA	NA
70	Instructor	A	A	A	A

A — Available NA — Not Available

SERVICES — (No Tax or Discount)

DUES AND RENEWALS — per year

Instructor	\$25.00 (Prorated first year)
Assistant Instructor	25.00
Skin Diving Leader	25.00
Late Fee (30 days overdue)	5.00

LIABILITY INSURANCE — 1975

\$300,000	\$45.00
\$500,000	50.00
\$1,000,000	55.00
Additional Insureds (facility only)	5.00 each

REGISTRATIONS (Also submit Student Registration Form)

No.	LEVEL	CARD ONLY	CARD, CERTIFICATE, CREST AND DECAL
03	Skin Diver	\$1.50	\$2.50
04	Sr. Skin Diver	1.50	2.50
11	Jr. Scuba Diver	1.50	2.50
21	Basic Scuba Diver	1.50	2.50
31	Sport Scuba Diver	1.50	2.50
41	Advanced Scuba Diver	1.50	2.50
Rec	Recertification at any level, register as new student	1.50	2.50
Rep	Replacements, any level by instructor	1.50	2.50
51	Specialty Diver: Cave	NA	Package includes Specialty Certificate and Training Record
	Deep, Leadership, Ice	—	
	Professional, S and R	—	
	Environment, Collecting	—	
	Photography, Wreck	—	
05	* Skin Diving Leader	NA	25.00
61	* Assistant Instructor	NA	**25.00

*Also provides services including NAUI News

**No Crest or Decal

FORMS

No.	ITEM	PRICE
107	Log and Record Combined	\$3.00
108	Log Book	1.50
109	Training Record	1.50
110	Diving Log Transfer Slate — set of two	1.00
115	Nu-Way Tables (30"x40") Set	7.00
117	Decompression Tables	10 for 1.50 or 50 for 5.00
118	Instruction Posters	10 for 1.50 or 50 for 5.00
119	Waiver and Release Forms	25 for 1.50 or 100 for 5.00
120	Medical Exam Forms	25 for 1.50 or 100 for 5.00
121	Member Letterhead Paper (100 sheets)	3.00
122	Business Cards (Complete separate form)	250 for 10.00 500 for 15.00 1000 for 25.00
123	Blank Certificates (any level of certification)	.50
124	Assistant Instructor Course Materials	1.00
125	Blue Books	No Charge
126	Instructor Course Posters	No Charge
127	Student Registration Forms	No Charge
128	Order Forms	No Charge



SEE REVERSE SIDE FOR PUBLICATIONS

NAUI Price List of Publications

August, 1975

101	NAUI INSTRUCTOR HANDBOOK \$10.00	404	SKIN DIVING AND SNORKELING \$1.75
102	PROCEEDINGS OF THE SIXTH INTERNATIONAL CONFERENCE ON UNDERWATER EDUCATION \$15.00	405	THE DIVEMASTER MANUAL \$3.55
103	DELUXE 3-RING BINDER \$4.00	406	THE TREASURE DIVER'S GUIDE \$15.00
104	THE COMPLETE GUIDE TO CAVE DIVING \$3.95	407	DIVING WEST \$3.95
105	COLD WEATHER AND UNDER ICE DIVING \$3.95	408	HUMAN PERFORMANCE AND SCUBA DIVING: PRO- CEEDINGS OF THE SYMPOSIUM ON UNDERWATER PHYSIOLOGY \$3.50
106	DOWN TO THE SEA WITH BOOKS: NAUI INTERNATIONAL BIBLIOGRAPHY OF DIVING AND RELATED SCIENCES \$2.95	409	COMMERCIAL OIL FIELD DIVING \$12.50
107	DIVING LOG BOOK AND TRAINING RECORD COMBINATION \$3.00	410	BUSINESS OF DIVING \$14.95
108	DIVING LOG BOOK \$1.50	411	SAFE CAVE DIVING \$7.50
109	DIVER TRAINING RECORD \$1.50	501	CAMERA BELOW (Out of Print)
110	DIVING LOG TRANSFER SLATE \$1.00 (for two)	502	DIVERS AND CAMERAS \$5.95
111	SCUBA TANKS: HIGH PRESSURE CYLINDERS FOR DIVING \$3.95	601	DIVER'S NAVIGATION MANUAL \$2.75
112	SCUBA REGULATORS: AIR PRESSURE REDUCTION VALVES FOR DIVING \$3.95	701	AQUATIC SAFETY AND LIFESAVING PROGRAM \$4.95
113	INTERNATIONAL LISTING OF CHAMBERS 1974 EDITION \$2.95	702	LIFESAVING AND WATER SAFETY TODAY \$2.95
114	LEGAL ASPECTS OF UNDERWATER INSTRUCTION \$3.95	703	NATIONAL LIFEGUARD MANUAL \$4.95
115	NU-WAY CHARTS \$7.00	704	MEDICAL ASPECTS OF SPORT DIVING \$7.95
116	NAUI NEWS SUBSCRIPTION \$12.00 per year	705	LIFEGUARD TRAINING: PRINCIPLES AND ADMINISTRATION \$8.95
117	DECOMPRESSION TABLES Sets of 50-\$5.00, Sets of 10-\$1.50	706	ADVANCED FIRST AID AFLOAT \$5.00
201	PILOTING, SEAMANSHIP AND SMALL BOAT HANDLING \$9.95	801	MARINE AQUARIUM KEEPING: SCIENCE, ANIMALS AND ART \$11.95
202	BOATMAN'S HANDBOOK \$3.95	802	HOW TO PRESERVE ANIMALS AND OTHER SPECIMENS IN CLEAR PLASTIC \$1.95
203	BASIC SEAMANSHIP AND SAFE BOAT HANDLING \$4.95	803	DIVING AND DIGGING FOR GOLD \$2.00
301	DIVING COMPANIONS: SEA LION, ELEPHANT SEAL, WALRUS \$12.95	804	THE COLLECTOR'S ENCYCLOPEDIA OF SHELLS \$19.95
302	OCTOPUS AND SQUID: THE SOFT INTELLIGENCE \$9.95	901	FISHES OF NORTH AMERICA \$9.95
303	THE LIVING SEA \$12.50	902	SECRETS OF THE SEA - MARVELS AND MYSTERIES OF OCEAN AND ISLAND \$16.95
304	WORLD WITHOUT SUN \$17.50	903	IN THE CORAL REEFS OF THE CARIBBEAN, BAHAMAS, FLORIDA AND BERMUDA \$12.50
305	LIFE AND DEATH IN A CORAL SEA \$10.95	904	EXPLORING PACIFIC COAST TIDE POOLS \$3.95
306	THE WHALE - MIGHTY MONARCH OF THE SEA \$9.95	905	THE FISHWATCHER'S GUIDE TO THE WEST ATLANTIC CORAL REEFS \$6.95
307	THREE ADVENTURES: GALAPAGOS, TITICACA, BLUE HOLES \$9.95	906	COMMON SEASHORE LIFE OF SOUTHERN CALIFORNIA \$2.25
308	DIVING FOR SUNKEN TREASURE \$10.95	907	COMMON SEASHORE LIFE OF THE PACIFIC NORTHWEST \$2.25
309	THE SILENT WORLD \$10.95	908	SUBTIDAL MARINE BIOLOGY OF CALIFORNIA \$4.50
310	THE SHARK: SPLENDID SAVAGES OF THE SEA \$9.95	909	THIS GREAT AND WIDE SEA - AN INTRODUCTION TO OCEANOGRAPHY AND MARINE BIOLOGY \$3.50
311	CAPTAIN COUSTEAU'S UNDERWATER TREASURY \$12.50	910	WAVES AND BEACHES: THE DYNAMICS OF THE OCEAN SURFACE \$2.50
401	THE NEW SCIENCE OF SKIN AND SCUBA DIVING \$4.95	911	DANGEROUS MARINE ANIMALS \$5.00
402	DIVING FOR FUN \$3.60		
403	GENE PARKER'S COMPLETE HANDBOOK OF SKIN DIVING \$1.95		

Be sure to take the member *discount* on all materials. Only pay tax if in California. If materials are for resale, provide resale number and do not pay tax.

DISCOUNT SCHEDULE ON TOTAL MATERIAL ORDER

\$5 to \$25	10%
\$25 to \$50	20%
\$50 to \$100	30%
Over \$100	35%

CURRENT TRENDS

THE TRAINING RECORD VS. THE C-CARD

by Steven M. Barsky, NAUI 2076

If you were to start diving with a new buddy, what would you want to know about his or her diving experience? Think about the sort of things you would like to know about a person whom you are about to dive with for the very first time. A person whom you may be dependent upon for your life . . . Or, worse yet, who you may be responsible for if something happens to them. How do you know what qualifications they have? The answer is obvious—most of the time, you don't know their qualifications or experience.

I wish I could say, "The C-card is dead; long live the log book and training record! Unfortunately, I can't! The more I think about it, the more I realize just how unfortunate the C-card situation makes things.

When a person comes into a dive shop bearing a C-card, you really know very little about them. You know: (1) his name, (2) when he was certified, (3) how long his course was, and (4) who the instructor was . . . That's it! You don't know if he has ever been diving: at night, in the ocean, in surf, at depth, in caves, under ice, etc. You don't know how many dives he has made. You don't know what additional training he has had. The information available to you is minimal unless you have some feel for who his instructor was, or the places he says he has been diving. This entire situation, however, could be easily remedied.

Let's get progressive! Let's substitute the log book and training record for the C-card! Here's why!

(1) The certification card gives minimal information on a diver's background. The log and training record give the person's entire diving history.

(2) The C-card appears to a basic student as a goal—an end to itself. The log and training record encourage advanced training, i.e., continuing education.

(3) The C-card tells you nothing about a diver's recent activity level. The log and training record tell you how much diving he/she has done recently.

(4) The C-card gives no information on a person's regional diving experience. The log and training record give you an environmental chronicle.

(5) The C-card makes diving services available to individuals who perhaps should not have



access to them. The log and training record make it possible to scrutinize a person's level of experience and training.

(6) The C-card does not conform to, or help prevent legislation. The log and training record both conform to, and helps stave off, current and pending legislation.

(7) The log book encourages the diver to keep diving. The C-card provides no such encouragement.

(8) The log book is an excellent personal record providing individual satisfaction, information on marine life activity, a record of best visibility months, etc. The C-card makes the diver "information poor."

Let's eliminate the certification card—entirely. In Europe, the C-card does not exist. Conversely, the log book and training record is universally accepted by C.M.A.S. (the World Underwater Federation). Since NAUI is the only recognized U.S. member of C.M.A.S. it would seem only logical for us to make this much needed change. If you need a further example, we can turn to the U.S. Sport Parachute Association as a fine model. They have used the log book/training record system for years with excellent success.

We, as members of the finest sport diving instructional agency in this country, have the opportunity to make a truly radical change in the philosophy of sport diving education. The elimination of the certification card and its subsequent replacement by the log and training record would have a tremendous positive impact on our sport. We would be providing a service to the dive shops, the dive boats, and the diving resorts. Most of all, we would be providing a service to the individual divers and to ourselves, the instructors. NAUI has the potential to provide real leadership in this area. Besides, wouldn't it be nice to know what's going on in the mind of that black wet suit swimming next to you?

-NN-

NIGHT DIVING PROCEDURES

by Bob Wetzel, NAUI 4062

Eventually, in your diving experience, you will be afforded the opportunity to participate in one of the most exciting and beautiful phases of sport diving: the night dive. Although there is always apprehension on the part of the diver new to it, night diving is, and can be made as safe as the daylight diving you are familiar with.

As with daytime diving, or with all diving for that matter, the key to safe diving is *safe procedure*. The first rule of diving is, of course, never dive alone. This applies to night diving as well, but where we needed only one buddy for daytime diving, in night diving we must have two. One on the beach, or as the case may be, on the boat, and one in the water. The safety factor here is two-fold. One, the person on the beach is present to mark, with a light, the point of entry/exit so a safer, more navigable route can be followed by using the tended light as a point of reference. Two, the person may be needed to provide or go for help in an emergency. The rules to follow in selecting an observer are the same as those in picking a buddy. You must be able to trust their responsibility.

Once we have selected the personnel for the dive, we must look at the equipment required. The old Coleman camp flashlight was fine for the desert, but will not fit our needs. It is not water-tight and does not provide the extremely powerful beam that we require. There are several lights on the market that will perform effectively on a night dive; a dive shop is probably the only place you will find one. The requirements of an underwater light are that it is water and pressure proof, has a substantial case to protect it from rugged use, and it should be capable of putting out at least 60,000 candlepower. The dive light should be inspected before each use for possible leaks. Each diver must carry a light and have some means of attaching the light to his body so it will not be lost when freeing hands for work. A wrist rope is a good example. Do *not* attach the light to your weight belt or to *any* straps for that matter. Along with the large dive light the diver should carry a small auxiliary light in case of failure of the primary light. These, if not owned, can be rented at some dive shops. When using the light under water, make slow sweeping motions with it, avoid jerky movements as these will only cause you to miss some of the beauty you are there to see.



Other required equipment for night diving is as follows: luminous pressure proof watch with bezel, luminous compass, luminous submersible pressure gauge, luminous depth gauge, and the chemlite. All of these things you probably possess or have access to except the chemlite. The chemlite is fairly new in sport diving, but is a must for night diving. Tied to the back of the diver's tank, it enables buddies to identify each other's position even with the dive lights out. Though they can only be used once, the cost is only \$1.00 to \$1.50. Though the price is small, the value of them is virtually incalculable in an emergency.

After the people to be involved, and the equipment to be used have been chosen, the next step is where to dive. Those who have been diving for some time don't really care whether the dive is off the beach or off of a boat. For those who have never been night diving, however, the boat is recommended. Entry and exit are easier, water is generally cleaner, and observation is easier when the divers can be watched from a point above the water. Also, the ship radio is immediately available in case of an emergency. If a beach dive is to be made, establish a point of reference aside from the beach observer so triangulation can be used to determine position. Know where the nearest phone is. Know what local emergency numbers are.

CONT. NEXT PAGE

NIGHT DIVING PROCEDURES . . . Cont.

ONLY DIVE IN AREAS YOU ARE FAMILIAR WITH!!!! Diving in areas you do not know can result in a situation that could be very dangerous. Insufficient knowledge of currents, bottom topography, and marine life is a stepping stone to disaster.

Once you have entered the water and are ready to make your descent, signal your observer that you are alright. When you get to the bottom, take a moment to orient yourself to your daytime checkpoints, then proceed with your dive. Should you, at any time, become separated from your buddy, you must *not* surface immediately. First, with your light on, make one slow 360° revolution, keeping an eye out for him. If you do not spot him, turn your light out and repeat the same process looking this time for *his* light. If you do not spot him this time, surface, let your observer know you have a problem. Wait where you are! Your buddy may return to the surface to find you there. He may have been just behind a rock when you lost him. This is a good time to reconfirm your plans for the rest of the dive. Let your observer know you have found each other so you don't have a rescue operation going on needlessly. You may, at one point in the dive, become confused as to the direction of the surface. If this should happen, and it does to everyone more than once, simply follow the direction of your bubbles and you will have no problem.



Night diving is safe and enjoyable when divers are properly trained, planned and equipped.

—Al Giddings
photo

When preparing to make your exit, signal the observer, take a heading on their light and head in. This practice is to be used on beach and boat dives as divers are, at the end of the dive, more tired than at any other time. To have someone watching you is always a safer procedure to follow. When you are out of the water, dry off, have something to rid you of the night's chill, and head home.

"The ocean, some say, is most beautiful when she lies in darkness. Probe her, discover her, but above all, respect her."

-NN-

PHOTO FLASH

by Gary L. Chesnut

Hopefully, many of us will be packing scuba gear and camera equipment for a summer trip. In this article, I hope to provide some helpful hints and suggestions for coming back with pictures and cameras that work.

Film:

1. Take more than you need, it is always more expensive at the dive resort.
2. Hand-carry your film—Kodak says do not X-ray film or ship with luggage—Airlines guarantee their equipment will not fog film—I trust the manufacturer.
3. Don't open film until ready to use and store in a cool dry place—replace used film in the supplied container after use.

Paul Janosi photo



Insurance:

1. Check with your own company and travel agent for adequate coverage. Most air carriers protect only to \$500. If you are deep into UW photography, it's probably inadequate.
2. Address labels should be affixed to all luggage.

Packing Gear:

1. Anything not hand-carried should be in a locked case that is sturdy, with at least 1" padding on all sides. Padding should be of a soft, shock absorbent material.
2. Be especially careful that glass and plastic lens and lens covers cannot vibrate against something that can scratch or mar the surface.
3. Hand-carry delicate equipment when possible.

How To Pack:

1. Do make a list of all equipment you wish to take and check it off as you pack it and when you repack it for the return trip.
2. Pack all tools, grease, cleaning accessories, alcohol and batteries.
3. I try to carry at least one camera with me to insure some pictures, even if nothing else arrives.

GOOD DIVING—CLEAR WATER—and
GOOD PHOTOGRAPHY

Reprinted from
Diver's Delegate, June, '75

DIVING THE MILKY WAY

by Basil VandenHazel, NAUI 4024

Do sport divers need a special diet?

Does diving require a well-nourished body?

These are some of the questions that divers are asking themselves today. And rightly so, as a person in good physical condition will be a safer buddy to dive with. One's physical condition is, of course, determined to a large extent by the daily intake of well-balanced meals.



Basil VandenHazel

It is the purpose of this article to stress the advantages of milk. Milk is an almost perfect food because it contains all the types of nutrients that divers require: fats, proteins, carbohydrates, minerals, vitamins and water. Milk by itself is, however, not a complete food, as not all elements are present in the right quantities to nourish a hard-working diver.

What are the uses of milk in a diver's body?

Firstly, there is milk-protein which is easily digestible and used to build and maintain muscles and heart tissues essential to a diver under stress in currents or cold water. Milk sugars and milk fats provide the diver's tissues with energy and heat, both essential in the cool ocean waters or the frigid waters of North America's Great Lakes. Milk is an outstanding source of calcium which is required for vigorous heart action. Divers' hearts work extremely hard to circulate the oxygen-carrying blood to all tissues.



These divers of the Woodstock, Ontario YMCA Subaqua Club know the value of milk for their activity.

Editor's Note: This photo is used to emphasize the need for milk. The requirement of vests and instruments is recognized.

The minerals calcium, phosphorus and vitamin D help in the building of teeth and healthy bones. Weakened bones are fragile and are more susceptible to fracturing on impact with rocky shores, boats or UW obstacles. The iron present in milk aids the hemoglobin in the bloodcells that carry oxygen. A lack of iron makes a diver anemic, a risk to himself and to his diving buddies. Vitamin A helps to keep the lining of nose, throat and lungs moist. A severe shortage of this vitamin speeds dehydration of the lining of the respiratory system.

Roughly 87% of milk is water. This water will raise the water-level of the diver's blood and tissues slightly, before a dive. The excess water in the tissues will compensate for the loss of water through the respiratory system with every inhalation of the dry, compressed cylinder-air.



How much milk should a diver drink with his meals? Experts in nutrition state that the normal adult requirement is about half a quart or half a liter a day. It seems that sport divers prior to a series of dives will undoubtedly benefit from the consumption of at least one quart or one liter of milk per day.

When milk is part of a properly-balanced diet consisting of green vegetables, meats, eggs and brown bread there will be no need for divers to consume large quantities of vitamin or energy pills. The diet of professional divers under periods of stress should be prescribed by a medical doctor familiar with diving and the diving environment. There is no doubt at all that a glass of milk a day will help to keep underwater fatigue away and will, thus, bring about safer and more enjoyable diving.

The photograph shows divers of the Woodstock YMCA Subaqua Club, Ontario, preparing themselves for a dive. It must be added here that Woodstock is known as the dairy capital of Canada.

-NN-

DIVERS' CRAMPS

by Wayne Harper, NAUI 3176

NEW PRODUCTS AND TECHNIQUES YOU CAN USE TO MINIMIZE LEG AND MUSCLE CRAMPING

Almost every top diver I have visited with over the past several years has had an experience with muscle cramping in the water. Usually this cramping is in the large muscles of the leg which are used for propulsion; however, cramping in the arms and legs is not uncommon. It is also interesting to note that the physical condition of the individual does not seem to be a factor in this problem, and in fact there would seem to be a greater incidence of severe muscle cramping in the diver whose physical condition more closely approaches "lean body mass."

My interest in this problem led me into a number of conversations with athletic team physicians and athletic trainers who deal with similar problems with their AAU athletes. I think almost any athlete who dives for sport considers diving to be strenuous from the standpoint of exercise resistance and muscle stress. On this premise, the methods used by several of our top AAU trainers came to my attention and I will pass them on to you as the methods and the products used have been extremely effective for me and should be most helpful for any sport diver or instructor.

It is most important that the muscle not be allowed to go into full fledged tetany (cramp) otherwise painful muscle pulls will occur (charly horse). To avoid this, most trainers use either quinine sulfate or a calcium product called FOSFREE®. I personally use FOSFREE® because it prevents the intense cramp from occurring and is much less expensive than quinine. FOSFREE® does not require a physician's prescription and is available in most pharmacies. For best results, 2 to 3 FOSFREE® tablets should be taken 2 hours before you dive.

Many trainers handling competition swimmers also advocate the use of electrolyte drinks and/or slow release salt tablets as the swimmer loses a great deal more electrolyte via sweat

than one would imagine. Compound this with equipment and wet suit plus hard distance swimming and you can appreciate the problem. I have had excellent results with a product called SLO-SALT-K® which is a sodium and potassium chloride slow release tablet. SLO-SALT-K® releases its electrolyte components over a four hour period, which provides excellent coverage for most diving periods. I usually take 2 FOSFREE® and 2 SLO-SALT-K® tablets 1½ to 2 hours before a dive. The use of FOSFREE® plus SLO-SALT-K® together, provides supplementation of all the mineral ions whose depletion will predispose toward cramping.

Last, but certainly not least, good nutrition is a key to superior athletic performance. Your diet should contain at least 1 gm. high grade protein per kilogram (2.2 lbs) of body weight per day plus adequate fat and carbohydrate to act as fuel during periods of high intensity such as a very active diving program. Since most of my activities are on the weekend, I try to follow a daily regimen of calisthenics and stretching exercises to maintain my muscle flexibility and tone. I also "carbohydrate load" my diet Monday through Wednesday, then have a high protein, low bulk diet Thursday and Friday, with waffles and lots of syrup on the weekends. This is a light bulk, high energy diet for performance.

I have had excellent personal results with FOSFREE®, SLO-SALT-K® and a program of physical training and strict dietary control of my nutritional status. Each of these factors play a role in gaining superior performance, greater stamina and freedom from painful and often times potentially dangerous muscle cramping. The above methods and products have been used by many of our most successful Olympic athletes. I am sure you will find these methods as useful as I have in my enjoyment of our beautiful sport.

Medical Editor's Note:

One can't argue with success, so I wouldn't try to dissuade Mr. Harper from his program. Indeed, he makes some good points. Nonetheless, to help maintain perspective, certain comments are in order.

Salt loss is no problem for most divers. They are usually in cold water, which removes body heat fast and inhibits sweating. Anyway, sea water is cheaper than electrolyte pills, and I suspect most divers swallow enough to prevent any deficit.

Secondly, the diet described may be fine for athletic fellows, but wrong for middle-aged fatties. Individualization is important.

The fundamental cause of cramping remains unknown. The subject deserves a future article. Thanks to Mr. Harper.

-NN-



LETTERS

Letters of interest received by NAUI Instructors, Branch Managers, Board of Directors, Headquarters and the NAUI News Editor are presented in these columns.

IQ6 PROCEEDINGS GREAT!

I just received my copy of the IQ6 Proceedings and I want you to know that I think it is one of the most important publications that NAUI has ever put out. It is really great!

The Proceedings publication will prove to be a much used reference source by divers in all phases of instruction. It serves as a means of "attending" all those sessions at an IQ that you missed, and will probably stimulate attendance by readers who would not have traveled to IQ7. The inclusion of photography and diagrams greatly adds to the content of the volume; I know I wished that there was some way of recording that information during a speaker's presentation and now you have done it for us.

We intend to work a lot of the Proceedings material into our next NAUI Advanced Diver Program.

Unfortunately, when I attended the IQ, I picked some poor presentations to sit in on and I wondered if my experience was being shared by other attendees and speakers in the other session rooms. After reading the Proceedings, I realize that I must have been unfortunate in picking those very few sessions that were poor; because the rest are fantastic! I hope that NAUI will make this Proceedings volume the first in an annual series. Keep up the outstanding work; you guys are doing one helluva job out there!

Bret C. Gilliam, NAUI Instructor 3234

MINIMUM AGE LIMIT FOR SCUBA— A LETTER TO THE INDUSTRY

Dear Sir:

As operators of a diving resort we are concerned over an apparent lowering of the minimum age limit for scuba training by recognized U.S. instruction agencies. In past months we have hosted several families with children as young as eight, with scuba training leading to junior certification. In some cases we were asked by the parents to provide and verify the open-water checkout for the child; in most instances we refused to do so.

To explain why, let us cite one example: The eight-year-old was small for her age; however, she had been given pool training along with her parents, in their home town. The child seemed somewhat indifferent about scuba diving; it was

her parents who were insistent that she become involved, at this early age. Question: is an eight-year-old physically and mentally mature enough to handle scuba? Had the certifying organization actually assured the parents that their child was old enough to dive? If so, is this a wise move at a time when we are trying to convince lawmakers that diving is a generally safe sport?

In far too many instances we discovered the parents indeed were pushing their children into scuba diving; incredibly, we have actually had to persuade adults to let their children, for safety's sake, wait a few years. Surely resorts and dive shops could avoid being placed in this difficult situation if the instruction agencies agreed upon a reasonable minimum age limit for all scuba trainees.

*Yours sincerely,
Nancy & Ron Sefton
Grand Cayman, BWI*

Editor's Note: NAUI standards specify the minimum age for Junior Scuba certification [Conditional] as 12. A Basic Scuba card cannot be obtained until age 15.

RE THE L.A. COUNTY ORDINANCE

Dear Jon (Hardy) and Ralph (Shamlan):

I want to use this brief note to express to you my gratification for the tremendous amount of work you have undertaken in response to our questions regarding your proposed "self regulation" of the scuba industry and sport.

As you know, upon the completion of our meeting in March with Supervisor Hahn, we had agreed you would work with Bill de la Garza and other members of our staff to put into appropriate form the details of how the "self regulation" mechanism would work and I know you and your colleagues have done a great deal of work to get the materials to us. Now that we have the materials and have met on the morning of June 26, 1975, I will review the presentation at length with our staff, and as soon as I possibly can, I will make a recommendation to the Board of Supervisors.

Again my thanks to you and I hope you will extend to your colleagues who have worked with you my sincere gratification.

*Seymour Greben, Director
Department of Parks & Recreation
Los Angeles County*

CONT. NEXT PAGE

DIVEMASTER SEMINAR LAUDED

Dear Tom (Tumilty):

I wish to thank you and your staff for a most enjoyable and educational experience at the Divemaster Seminar. I was made more aware of several potential problems by the seminar, and had fun while learning. Also, actual open-water experience is much better than either reading about these problems, or attending discussion sessions regarding them. One word sums it up—great.

I thank you again for a well-organized, well-run course. You are certainly carrying out the motto: SAFETY THROUGH EDUCATION.

W. J. Dowkes, NAUI 3925

**REPLY TO INFO REQUESTED
ON LIFE INSURANCE FOR DIVERS
(NAUI NEWS SEPT. '74)**

I had recently acquired a life policy from the Aetna Life and Casualty Insurance Co. 151 Farmington Ave. Hartford, Conn. 06115. Although I am not paying any additional premium as a diver certain questions regarding my underwater activities came about. The insurer seemed most concerned with the possibility that I would engage in wreck diving. Other questions brought about were that of maximum depth and the number of hours that I would actually spend underwater annually. I stated in a letter that although I was interested in wreck diving it was for the most part inaccessible since a boat was needed. I also stated that my diving was usually limited to 50 feet or less and my diving time was about 12 hours per year based on one hour per dive. I did stress that I was an instructor and I was paying a relatively small premium for one million dollars of personal liability insurance through NAUI. I had taken one additional step to convince the insurer that my sport was a safe one. The Aetna has a film which they will lend to instructors called "Fun 'n' Fathoms". The film promotes safe diving through a certified diving program. I informed the Aetna that I use the film in my classes and that their film states how diving can be safe if one is trained properly through a certified program. I was later informed by my insurance agent that my policy was readily accepted.

Robert J. Bockholdt,
NAUI 2430

**TO: DIVING DEALERS
AND INSTRUCTORS**
FROM: COMMERCIAL DIVING CENTER
**SUBJECT: MANDATORY SCUBA
CERTIFICATION**

The Commercial Diving Center, based in Wilmington, California, continues its leadership role of advancing the quality in training men for the commercial deep sea diving industry.

Commercial Diving Center now requires all students to be certified scuba divers prior to acceptance for a course at CDC. Each student is required to present a photo copy of his certification card along with his application form.

The mandatory certification of scuba training from a national, international, or military training agency becomes effective with the August, 1975 class.

In making the milestone decision, CDC's Director Jim Joiner stated "Over 80% of our current students are already certified when they apply for a class, but not everyone is 'comfortable' in the underwater world and of those who are not certified when they come to us, there are some, we feel, who have withdrawn because they were influenced to some extent by a feeling of inadequacy underwater."

CDC feels the students will benefit greatly by taking the scuba course first and experiencing the pleasures of sport diving.

"The only place a diver can experience that side of the underwater world," said Joiner, "is with the highly qualified sport diving stores and instructors throughout the world. These people are in the business to lead a diver into complete competency while he enjoys the pleasures of sport diving hobbies. Furthermore, the place to find out that he's not suited for activity in the underwater environment is near the student's home—at a dive store/school—not after he has traveled perhaps thousands of miles to begin his training at CDC."

During a sport diving course, moreover, the student is exposed to just about every brand of equipment available to a diver. This is of definite value to him when he comes to CDC and is more likely to be familiar with any type of scuba gear that's assigned to him.

CDC will appreciate your cooperation in advising inquiries about commercial diving courses of our new policy related to mandatory scuba.

We would like to take this opportunity also to thank you for the very fine work you're doing toward better diving in all its aspects.

Commercial Diving Center
CONT. NEXT PAGE

THE "UGLIES"

Dear Jon,

When you were in Washington, D.C. we had a brief discussion about the uglies. I told you that it was my thinking that the body was not able to tolerate the rapid partial pressure changes on the rapid descents. I found an article that may help us warn others of this problem.

The article is by my friend Ed Vail, Ph.D., respiratory physiologist at the Naval Coastal Systems Laboratory, Panama City, Fla. It is entitled "Diving Safety and Lung Ventilation." It is published in the "Proceedings of the Sixth and Seventh Annual NACD Seminars and Research Papers by NACD Instructor Candidates." I doubt you have a copy since it has only been off the press less than two weeks. Therefore, I'll quote one paragraph:

"Diving Safety Rule: It may not be wise to make a very rapid descent wherein rapid compression may reduce effective lung volume. When this occurs with thoracic squeeze and gas trapping then inadequate lung ventilation will lead to hypoxia and immediate accumulation of carbon dioxide. Therefore, a carefully planned dive should include stops at stated intervals to allow the lungs to equilibrate with the pressure changes."

Two weeks ago I spoke to Dr. Vail at the 8th NACD Seminar in Jacksonville and he believes that the CO₂ causes the dizzy feelings.

I hope this can be of help to you. Until IQ7.

John R. Kessler, NAUI 3590

WEIGHT BELT DITCHING

Dear Jon,

I'd like to take this time to thank you for some of the mind-stimulating talks and meetings that I was able to attend while you were in the Washington D.C. area. It was doubly beneficial for me since I was able to meet some of the more conscientious and concerned NAUI instructors in the D.C. area.

In reviewing my notes, you once stated that we need a way or phrase to tell divers to "throw" their weight belts away. The only catchy phrase I can think of is "Flip and Pitch" (Flip open the buckle, and Pitch it away). Or perhaps "Flip—Grip—Pitch" (Flip open the buckle, Grip the belt, and Pitch it away). I feel that the former would get the point across if it is explained with the latter meaning.

I hope this can be used for a start in solving a serious problem.

See you in Miami Beach.

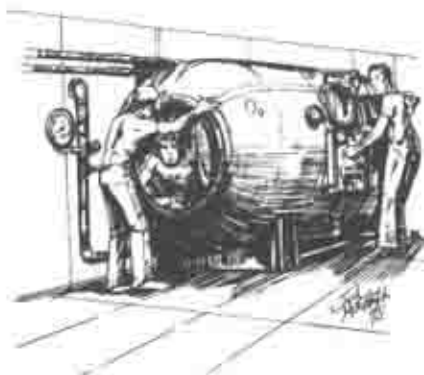
John R. Kessler, NAUI 3590

THE ELUSIVE CHAMBER

Dear Dennis,

Today I spent 45 minutes trying to obtain the phone number and address for the Hyperbaric Chamber in the Naval Shipyard at Long Beach. To my astonishment, this information does not seem readily available. Long Beach directory information was no help. I thought perhaps the U.S. Coast Guard could help. After speaking to the Commander of the Port at Long Beach and the Search and Rescue Unit, I again failed to obtain this info. Several dive shops in my area were contacted and none of them had the phone number. Finally, the Long Beach Fire Department was able to give me the number of Naval Information where I was able to get the chamber's phone number.

Granted, I was inquiring for my own general information and it was not an emergency, but the problems I encountered in getting the chamber's phone number left me with a definite feeling of insecurity. This type of emergency information should be readily available for any divers in need.



Perhaps NAUI News and the NDA Newsletter could publish the phone number and address, along with a suggestion that all dive shops and other facilities involved with underwater diving do the same.

With many in the diving public making an effort to see that our sport is as safe as possible, this seems one area where communication could be improved.

Many thanks for your attention and help.

HYPERBARIC CHAMBER

7500 E. Carson

Long Beach, Ca

Phone: 420-5522

Terry O'Halloran, NAUI 3784

Editor's Note: Perhaps you should try to contact your local chamber . . .

END OF LETTERS

HIGH ALTITUDE CONFERENCE GREAT . . . THE DECOMPRESSION TABLES MAY NOT BE!

by C. L. Smith, NAUI 2299

Dear Dennis:

We had an outstanding High Altitude Diving Conference this year at Lake Tahoe, and Bob Tolar should be congratulated on pulling together such informative speakers and such a well organized dive. I really enjoyed the opportunity to discuss technical matters with Drs. Bell, Buckles and Brown. We all seem to be on the same track re altitude dive tables and, in particular, Dick Bell and I are paralleling each other in computer simulations of tissue nitrogen uptake during dives. As Dick pointed out in his presentation, the E.R. Cross tables (even after adjustment for fresh water) are actually more conservative than the Navy tables at sea level. This fact may soon be reflected in new, less demanding, altitude tables which narrow the gap with the standard sea level schedules.



Bob Tolar, NAUI 2238, organized and directed the first High Altitude Diving Workshop in 1974. The event was outstanding and has contributed significantly to current thinking about diving at altitude. Bob repeated the activity in '75 and produced another outstanding event.

I had a very interesting and lengthy discussion of decompression sickness and the mechanics of tissue nitrogen uptake with Dr. Charlie Brown on Sunday by the hotel pool. The enclosed is an open letter to him which might be of interest to the readers of NAUI News.

Dear Dr. Brown: (NEWS Medical Editor)

I thoroughly enjoyed our conversation on decompression sickness during the NAUI High Altitude Diving Conference at Lake Tahoe, and have been thinking further about this business of bubble formation depending on tissue pressure gradient rather than pressure ratio. As you will remember, we both felt (as does Prof. Hills) that the U.S. Navy dive tables are more geared to manage bubbles in the body than to prevent them in the first place. Moreover, bubbles ought to be caused by a pressure differential, while ratios are more appropriate to describing their size per Boyle's law. In this light the graphs of empirical pressure ratio tolerance (by Dwyer, I think), which were presented as the basis of the Navy tables, are

especially suspicious as they are plotted against final tissue pressure. The ratio tolerances due to Workman are also curious, as they depend upon the dive depth. I thought you might be interested in the results when these empirical tolerances are plotted against other parameters.

First, thinking that the pN₂ gradient might really be the underlying factor, the ratio tolerance curves were replotted to become "difference tolerances." That merely exaggerated the curvature, making the limits even more dependent upon final tissue pressure and depth. This would strengthen the opinion that bubble avoidance is not actually the basis of the standard decompression schedules, and that empirical evidence was gathered against an unfortunate parameter.

Second, on the growing idea that bubble management is what the Navy tables really do, the tissue tolerance data were re-plotted against a new depth parameter under the following assumptions:

- that bubbles do form near the beginning of ascent, and initially have a fixed size for each tissue.
- that the empirical tolerance is really a limit on the bubble size (diameter) acceptable to each tissue.

If these assumptions are viable, the depth dependence of the Navy limits should disappear when the pN₂ ratio graphs are adjusted to account for simple Boyle's law expansion. Bubble diameter, rather than volume, ought to be the actual trouble-maker, as that would govern insults due to emboli. Sure enough, when the limits are re-plotted against the cube-root of the tissue-to-ambient pressure during ascent from the depths of the Dwyer curves, the graphs are flattened to horizontal and a new set of pN₂ tolerances emerge which are not dependent on depth or pressure. In other words, any depth dependence of the tolerance vanishes if care is taken to maintain the original bubble diameter at the end of ascent!

This exercise reinforces the conviction that the U.S. Navy dive tables, through their origin in "Haldane's rule" and their empirical adjustment, essentially manage the quantity and size of bubbles to an acceptable "silent" level, rather than prevent their formation. Perhaps if this were recognized at the outset, the tables would not have been placed on such a complex basis. It also makes one wonder about the safety of repetitive dives, in view of the "pulmonary bubble trap," doesn't it?

-NN-

WHAT'S A DEMA?

by Jon Hardy, NAUI General Manager

People were running and shooting, pointing their fingers at each other and saying the sky is falling. Legislation was on the sport of diving. Freedoms, lives and businesses were being ruined. Amid all this, one association started laying down the money for attorneys, meetings, travel, letters and more. Of course they had a lot to lose, but then we all did, but only DEMA had the cash to start the battle. Yes, we each joined the fight to the best of our ability, but none of us have been able to put out as much.

DEMA—The Diving Equipment Manufacturers Association—made up of some 23 manufacturers has been with us for some time. With a generally low profile working on promotion of the sport and equipment manufacturing standards, DEMA has helped bring the industry together. Then when the entire diving community needed help, men like Chuck Buchanan of Sportsways and Ralph Shamlian of Farallon, both working through DEMA helped supply the support and much needed information to keep the sport viable in the face of adversity.

There are many facets to our sport, but three main components stand out: The manufacturers/retailers, the instructors and the divers. The diver needs equipment and instruction along with a place to dive. That's what it's all about. We each do our thing in support of this.

What's a DEMA? It's a *cooperative* venture among *competitors* to promote a fun, safe, responsible sport.

—NN—

KEEP THE NEWS

Do you save your issues of the NEWS? Most members do. How do you save them? Are they piled in a heap or stuck in a drawer? Many have found an excellent way to preserve the NEWS is to keep them in the Deluxe Binder available from NAUI. The large capacity accepts a year or more of the NEWS easily. Order a Deluxe Binder today to organize and protect your copies of the NEWS. The Binder is only \$4.00, less your member discount. Keep the NEWS. They are a valuable reference and information source. The last issue of each year provides a bibliography for articles printed during that year, so save each issue.

Hint: The Deluxe Binder also works great for the NAUI Technical Publications such as Cave Diving, Ice Diving, and Scuba Tanks.

WE WON'T FORCE YOU TO GO TO IQ7



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Calendar of Events

INSTRUCTOR QUALIFICATION COURSES:

Oct. 3-5 **Moncton, NB, Canada**
NAUI Canada
Box 510, Etobicoke, Ont. Canada

INSTRUCTOR TRAINING COURSES:

Sept. 6-13 **Palm Beach Shores, FL**
Glenn Taylor, Director
Box 15933
West Palm Beach, FL 33406

SEMINARS, SYMPOSIUMS AND WORKSHOPS:

Sept. 5 **Los Angeles County ADP Seminar**
(Open to the public)
Held at: Hall of Administration
Board of Supervisors' Hearing
Room #381, 500 West Temple St.
Los Angeles, CA 90012

Sept. 13-14 **Sea-Space '75 Symposium**
Box 77035, Houston, TX 77027
Attention: Jack Allyn

Sept. 19 **Los Angeles County ADP Seminar**
(Open to the public—see Sept. 5)

Sept. 20 **Underwater Film Review**
Boston, MA
Fred Calhoun, Director
Box 291 Back Bay Annex
Boston, MA 02117

Sept. 25 **NAUI/NDA General Membership Meetings**
Carillon Hotel, Miami Beach, FL
NAUI Headquarters, Box 630
Colton, CA 92324

Sept. 26-28 **IQ7**
Carillon Hotel, Miami Beach, FL
NAUI Headquarters, Box 630
Colton, CA 92324

Oct. 3 **Los Angeles County ADP Seminar**
(Open to the public—see Sept. 5)

Oct. 4-5 **North Atlantic Underwater Convention**
Rockport, MA
Fred Calhoun, Director
Box 291, Back Bay Annex
Boston, MA 02117

Oct. 17 **Los Angeles County ADP Seminar**
(Open to the public—see Sept. 5)

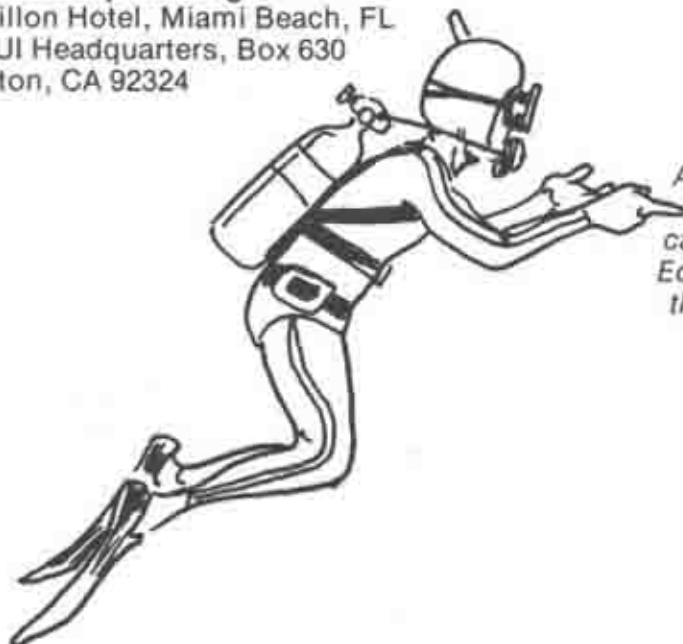
Oct. 31 **Los Angeles County ADP Seminar**
(Open to the public—see Sept. 5)

Nov. 1-2 **Equipment Technology Seminar**
Los Angeles, CA
Steve Barsky, Director
Underwater Sports
Breakwater, Santa Barbara 93109

November **Equipment Technology Seminar**
Chicago, IL
Don Pittan, Director
Box 142, Berwyn, IL 60402

Nov. 9 **NAUI-NASDS Instructor Dialogue**
Holiday Inn, Blossom and
Cambridge Streets, Boston
Contact Fred Calhoun

Nov. 14 **Los Angeles County ADP Seminar**
(Open to the public—see Sept. 5)



We would be happy to list Sport, Advanced and Specialty Courses by NAUI Instructors as part of our calendar. Just get your listing to the Editor 6 weeks before the first day of the month of the issue in which you would like the listing to appear.

— Book Review —

by Art Ullrich, Director of
Special Projects

IN THE CORAL REEFS OF THE CARIBBEAN, BAHAMAS, FLORIDA AND BERMUDA

This is the first work I've seen containing such a comprehensive description in text and beautifully colored photos of the underwater life of what must be the most popular diving territory in the Americas.

The author, Hans W. Hannau has put together, with the input of many (some NAUI members — Dave Woodward and Bob Farrelly), a description of the beautiful diving area of the Western Atlantic including the geography — reef life and treasure hunting. Additionally, contributing authors present a short description of the Miami Seaquarium, Bermuda Aquarium, Hydro Lab, Island Resource Foundation,

International Underwater Explorers Society, International Oceanographic Foundation, and others.

This volume is a beautiful resource of information and some of the most beautiful underwater photos of the crystal clear waters of the South Atlantic.

135 pages — 9-1/4 x 10 — color — \$12.50.



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Miami, Florida
Sept. 26-28, 1975

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ADDRESS CORRECTION REQUESTED