NDA
AUI
"Safety Through Continuing Education"

NAUI NEWS
OCTOBER 1975

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

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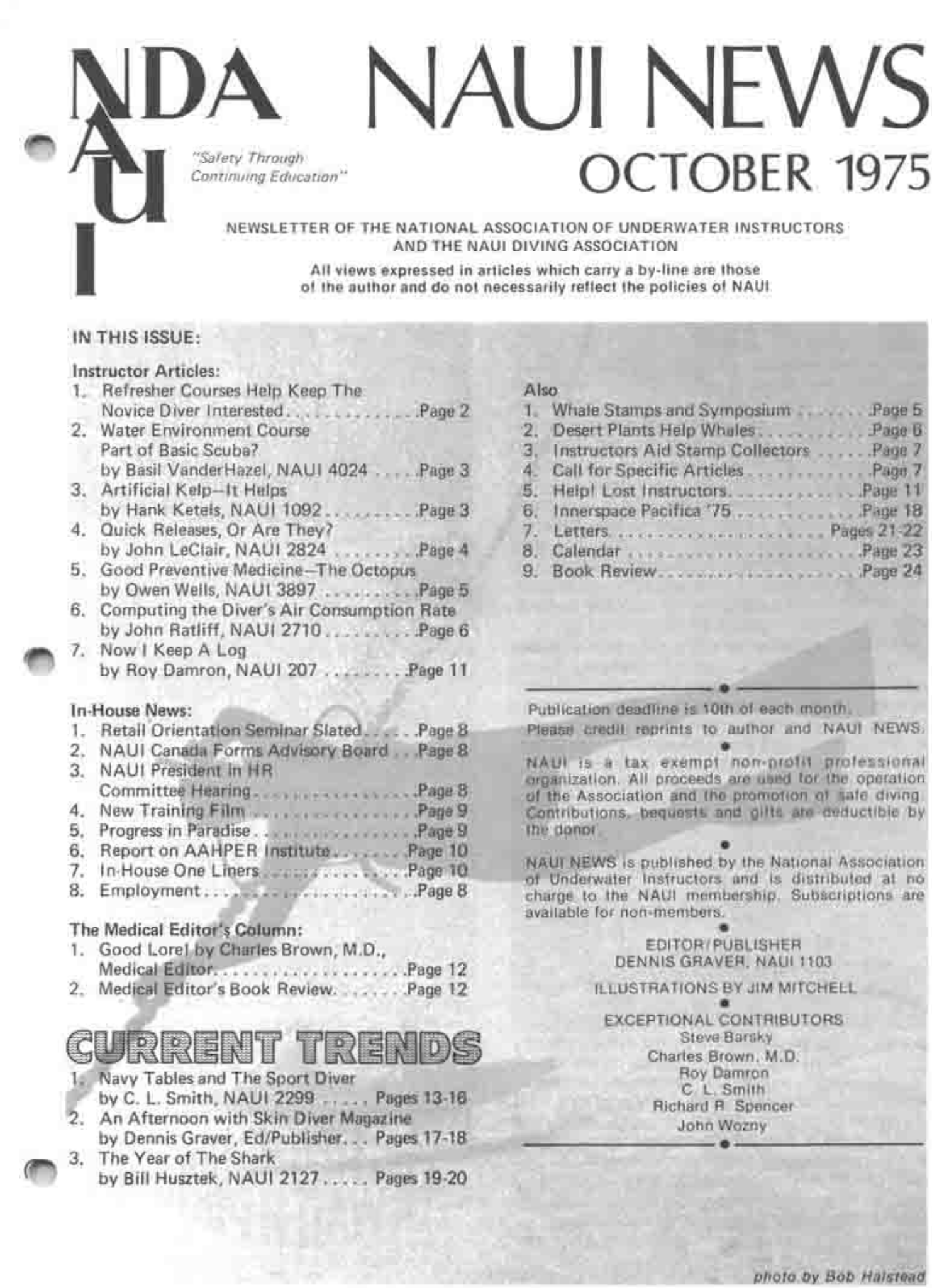

photo by Bob Halstead

REFRESHER COURSES HELP KEEP THE NOVICE DIVER INTERESTED

by Hank Ketels, NAUI 1092

Hank Ketels

This past quarter as I was milling through my mailing list, it struck me how few of some of these divers I still see at the beach. In Northern California our available beaches for scuba are limited enough that on a normal weekend you should run into more than just a few of your past students. My policy upon basic graduation is to help guide the diver toward joining a local dive club, and most generally they join the Sierra Club Dive Section. In fact, I don't know of a club that has as many weekend outings planned as does the Loma Prieta Sierra Club of Northern California. Even at that, my thoughts were of the diving drop-outs and what could I do for this group that put so much time, effort and money into such a beautiful sport, only to forego it after their ocean experience.

I thought about a Refresher Course For Previously Certified Divers. To me it seemed perfect, but to the school administration it seemed a bit late for the present spring quarter Community Service bulletin. Nevertheless we advertized it on short notice and started with eight students. The course ran for six days as follows:

Day 1 Review of swimming skills and skin diving skills. Lecture on equipment. Points of diving to re-kindle their interest in diving. (2 hrs.)

Day 2 Review all scuba skills, no lecture (2 hours)

Day 3 All lecture, Chapters 4-6 and 7 in textbook "Safe Skin & Scuba Diving" (2 hours)

Day 4 Pool work in full wet suit, vest work, buoyancy checks, dressing, etc. Lecture Chapter 8 and 9 (2 hrs.)

Day 5 Skin diving check-out at Monterey—9 a.m.-12 Noon. Basic scuba check, Monterey. Entries, exits, mask clearing, emergency swimming ascents, surface snorkeling—3-5 p.m.

Day 6 9:30 a.m. Scuba dive for study of marine life, practice life saving techniques.

2:30 p.m. Choice of their own buddy and complete a beach dive without teaching assistant or instructors as chaperons.

All total, the class lasted about sixteen hours which included pool work, complete review of textbook, wet suit check-out, one skin dive and three scuba dives.

Dick Clarke photo

At the conclusion of their final dive, you have never seen eight more happy faces. These people all felt they had re-affirmed their confidence in themselves and they saw once again what they had been missing by not diving. When talking with them, many felt the four additional ocean dives were what they wished they could have had as soon as possible after their initial basic class. Through proper advertisements, next time this class is certain to grow in large proportion.

This class also gave me a chance to use two of my new assistant NAUI instructors, Mike O'Rourke and Donn Hile. Both did excellent jobs and when the times comes, will become excellent full time instructors.

As long as I remain at Foothill College our diving itinerary will always be — Skin Diving, Basic Scuba, Basic Scuba Refresher, Sport Diver Course, Advanced Course and Summer Trips abroad. The refresher course may not be the same itinerary, but it will always remain in our program.

I think this new added dimension to our program will spread, as it is needed if we want to keep our divers current and our motto "Safety Through Education."

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WATER ENVIRONMENT COURSE PART OF BASIC SCUBA?

by Basil Vanden Hazel, NAUI 4024

Should basic scuba courses be enlarged by a unit on water quality? Will a 20-week, 60-hour course be acceptable to potential sports divers? These were some of the questions two NAUI instructors asked themselves when they set down to develop a "Water Environment Course." One of the instructors, Phil Dunbar - NAUI 2529, brought a wealth of experience in advanced diving instruction and audio-visual techniques. The second instructor, Basil J. VandenHazel - NAUI 4024, A.C.U.C. 370 EA, is an environmental biologist with the Oxford County Board of Education.

In the summer of 1974 the outline of a proposed course was submitted to the local Y.M.C.A. and the adult education department of the county board of education. The course was approved by the two co-operating agencies and received a provincial (state) grant to cover expenses incurred for bringing in additional lecturers and for fieldtrips. In addition to satisfying the requirements of the NAUI basic scuba course, lectures, fieldtrips and lab sessions were provided dealing with topics such as:

- water properties (density, solvent action, heat capacity, etc.)
- water pollution (how man abuses the properties of water when getting rid of wastes.)
- water testing for bacterial and chemical pollutants.
- water biology: food chains, food pyramids and food cycles.
- the effects of water pollution on aquatic life.

As described in *Skin Diver Magazine* of April 1975 in the article "Ocean Dumping Expose", millions of tons of liquid chemical poisons are still legally dumped in the Gulf of Mexico. Many cities along the south shores of the Great Lakes dump raw sewage into this precious reservoir of drinking water, DDT is found under the ice of the Arctic and mercury has caused the death of over 100 people in Japan. Divers should be aware of this destruction of the waters around us. What about the air we breathe? If burning garbage dumps and incinerators are found in the vicinity of air stations divers run the risk of inhaling toxic plasticicers.

Divers are environmentalists, they demand pure air and unpolluted waters. They could act as environmental watchdogs and report oil blobs on beaches, large fish kills and study the effects of large-scale use of insecticides on fishlife in mangrove swamps and small lakes.

It might also be useful to bring about co-operation between regional diving associations, state protection agencies and naturalist groups such as the Canadian Nature Federation, the American Audobon Society and the Sierra Club.

Through a brief unit on water quality divers can become aware of their responsibility in the protection of life on spaceship earth.

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ARTIFICIAL KELP — IT HELPS

by Hank Ketels, NAUI 1092

This past year at Foothill College we have been experimenting with pool lane lines as artificial kelp beds, and believe me, it will tire you out and tangle you like the real stuff. Practicing your surface kelp dives are always very easy to do in the open water of the pool environment, and the student always has such a neat feeling of how easy he drops to the bottom after lifting himself high out of the water with little or no resistance. But now throw in the lane lines and it is just like the first time you had the basic diver practice it in the ocean, in real kelp beds.

One other dimension to this is the surface swimming or crawling over the kelp bed that the student may some day face, if not accidentally at least intentional during their ocean diving experience for their first "C" card.

If you have the opportunity and the available equipment, give this one a try and do it both as a skin diver and as a scuba diver.

Pressure applied along the edges, by the students helping to keep the kelp in place, tightens up the lane lines and will give the same sensation of having surfaced in a patch of kelp.

Mike O'Rourke photo

It takes a bit of work to set up and remove from the pool, but I assure you, after having given it a year's try, the students have shown less reluctance of venturing into kelp beds, and we find that they do a superior job during their actual kelp work when being checked-out.

The students also think it is neat and a lot of fun. Isn't that part of what we are trying to teach?

QUICK RELEASES, OR ARE THEY?

by John LeClair, NAUI 2824

John LeClair

The term "quick-release" is usually the most commonly mentioned and most important feature considered when divers or instructors talk about weight belts. A one-handed, one-motion maneuver which unlocks or separates the buckling mechanism is a widely accepted meaning of the phrase "quick-release." The term however is really deceptively simple and quite possibly misleading for two reasons. First, some commonly used buckles are not "quick release" in the true sense of the above definition. Second, the act of unlocking or separating the buckling mechanism does not insure that the weight belt will fall easily, freely and unencumbered from the diver's body.

Stop for a moment and reappraise your own concept of the words "quick release." Are you actually telling people that you simply release the buckle and presto, the weight belt is gone?

There are four major buckling devices used widely, others exist. These include the Wire Buckle (e.g. Aqua Craft C-28 or Global #143), the Flip/Flop Hinge Door Buckle (e.g. Aqua Craft C-41 or Global #140), The Velcro Stick Strip (e.g. Aqua Craft C-33 or Global #142), and the D-Ring Set Up (e.g. Aqua Craft C-25). Only the Wire Buckle and the Velcro Strip are a true quick-release, i.e. one-hand, one-motion to open the buckle. Both have their own drawbacks. The Wire Buckle model is not easily adjustable. The Velcro Model easily picks up sand and grit, further the strap is often difficult to grab hold of with heavy wet suit mitts on. The Flip Flop Buckle is widely used and very practical in teaching settings. It does not truly operate as a perfect quick release. If more than 6 inches of strapping is drawn through the buckle, then merely opening the hinge door (one-hand, one-motion) doesn't guarantee the two ends of the weight belt will completely separate. In fact it might take one-hand and two motions or two hands and two motions to effect a release immediately.

Like the other styles the Flip Flop Buckle has disadvantages also. Many of them warp and bend easily, if banged too hard the hinge door will fall off.

The principle of the D-Ring Buckle is such that forgetting to reroute the end strap back through the top D-Ring makes the belt no better than a chain and lock around one's waist. When the D-Rings are set up in the proper "Quick release" fashion it takes two hands and two separate and opposite motions to undo.

The fact that every acceptable buckle isn't a full quick release is the truest sense of the definition is not an extremely disturbing factor. What is of concern, however, is that most of us end there. We seem to suggest that as long as the buckle is of the quick release variety then it takes one-hand and one-motion or two hands and two motions at the most to release the belt. Herein lies the difficulty. There is a distinct difference in simply releasing a buckle and between the belt dropping free and clear from the diver. It is very easy due to body position and other gear for the weight belt to NOT fall freely or to become entangled.

Weight belts don't always drop readily from a person who assumes a vertical, up/down position in the water. A neat enclosed indentation around the back portion of the waist, the bottom of the backpack and the posterior end of a person is made where the weight belt can rest. The belt is effectively locked into this inconvenient spot. When you bend slightly forward the bottom of the tank moves away from the posterior end of the body allowing space for the weight to slip out. Most of my basic students find they must change position or pull the weight belt out to the side in order for it to fall freely.

Quick-Release is very important, but it should go in concert with other motions of equal value to insure that the belt drops free and unencumbered. After unbuckling, the belt should be drawn firmly away and to the side of the diver before letting go of the strapping. This method isn't foolproof, but certainly doesn't leave people believing that quick release mechanisms in and of themselves insure a belt coming free in every instance.

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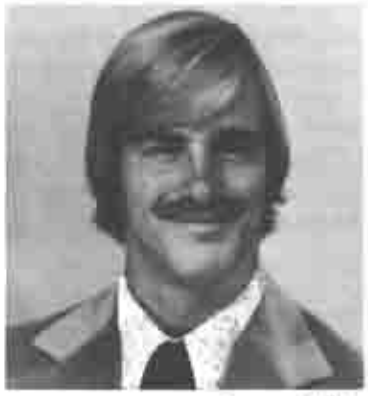
GOOD PREVENTIVE MEDICINE— THE OCTOPUS

by Owen D. Wells NAUI 3897



Owen Wells

Sitting at 30 feet in murky water, you signal "OK, Stop.", to a girl who is demonstrating her ability to safely buddy breath. She reaches back for the valve to regain her regulator and has difficulty locating it. Her eyes start to grow and you place a firm hand on her shoulder. She starts reaching wildly and the bubbles from her mouth cease. You place your octopus in her mouth. She relaxes and does not panic.

This student could easily have bolted for the surface and embolized had it not been for quick action. It has been my experience that having an octopus regulator has helped me to more easily prevent potential accidents and is a necessary piece of equipment for all instructors and assistant instructors.

Beginning divers are usually apprehensive about taking the regulator out of their mouth, particularly in deeper, open water. This is the huge, psychological advantage the octopus has over buddy breathing. A student can see a free regulator waiting with uninterrupted air. If he needed it, you would be right there. That simple fact helps students to relax and perform better.

More relaxed students is a good reason for an octopus but the best is more control over potentially dangerous situations. As safer scuba is our goal, I urge all of us to use and promote octopus regulators.

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WHALE STAMPS AND NATIONAL WHALE SYMPOSIUM

The United States has been the leader in the effort to protect the great whales. The U.S. whaling industry has been phased out and all whale products are banned from entering this country. The whale has become a symbol of endangered species and a focal point of concern for conservation groups.

We at the National Whale Symposium would like to join Scott McVay of the Environmental Defense Fund in urging the U.S. Postal Service to produce a group of commemorative whale stamps. Such a set of stamps would aid in correcting the mistaken impressions of the true shapes of whales, as well as forwarding the conservation of the whales and honoring these beautiful and endangered mammals. The proposed set that is pictured below was designed by Larry Foster, of General Whale, who is recognized as a leading illustrator of whales.

If you would like to help urge the Postal Service to consider a whale commemorative series, write to: *Mr. Steve Dohanos, Chairman, Citizens' Stamp Advisory Committee, U.S. Postal Service, Room 10422, L'Enfant Plaza West, SW, Washington, D.C. 20260*

This block of five stamps represents the five species of great whales considered to be most rare and endangered. They are all baleen whales and each species has a very distinctive configuration. Since the blue whale sometimes approaches 100 feet in length, its stamp would be roughly twice as long as the others.

On November 8-12, 1975, the National Whale Symposium will be held at Indiana University in Bloomington, Indiana. The Symposium is a multidisciplinary public conference to study and celebrate the whales and dolphins; it is sponsored by Indiana University and such organizations as the National Audobon Society, World Wildlife Fund and Friends of the Earth.

The Symposium will gather together experts and virtuosos in the social and natural sciences, arts and humanities to explore the different relationships between man and the whales in the past, present and future, and most importantly, to draw national and international attention to the preservation of these endangered mammals. Over fifty distinguished biologists, musicians, environmentalists and scholars will be participating in the conference.

The Symposium is a conference for the concerned and interested public. All who attend the program of lectures, discussions, exhibits, films and concerts will help to bring needed attention to the preservation of the whales and the establishment of a new human ethic toward all of the earth's wildlife.

All are invited to attend the conference. For additional information, including details about accommodations and registration, please write:

The National Whale Symposium
605 South Fess Street, No. 3
Bloomington, Indiana 47401
Telephone 812 - 339-1484

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COMPUTING THE DIVER'S AIR CONSUMPTION RATE

by John Ratliff, NAUI 2710

Knowing our air consumption rate is important to all divers, for it shows how well adapted the diver has become to the underwater environment. It may also show physiological stresses, such as cold, work and tension and therefore should be computed at least once in a while, and preferably on every dive. When the diver knows the rate of air consumption, all that's needed is the depth of the dive to plan the dive so to prevent running out of air.* The following example illustrates a simple method of making this calculation.

If a diver dives to 33 feet and uses 2000 psi on the bottom, he has used:

$$\frac{2000 \text{ psi}}{2475 \text{ psi}} = \frac{X}{71.2 \text{ cu ft}} \qquad \frac{2000 \times 71.2 \text{ cu ft}}{2475} = X$$

X = 57.6 cu ft of air used on the bottom

Since he spent 45 minutes at deptn (where he used 2000 psi), he actually was breathing at a rate of:

$$\frac{57.6 \text{ cu ft}}{45 \text{ min}} = 1.28 \text{ cu ft/min on the bottom}$$

However, this must be corrected to a surface equivalent if it is to have meaning on future dives. Therefore, his bottom time air consumption rate (1.28 cu ft/min), corrected for the surface would be ½ that of the actual consumption rate at the pressure at that depth (33 feet) is twice that of the surface. An easy way of calculating the presure at depth is to multiply the depth times the change in pressure per foot of depth (.445 psi in sea water, .433 psi in fresh water). However, the absolute pressure must be used in the calculation, and so the atmospheric pressure (14.7 psi at sea level) must be added.

.445 psi X 33 = 14.7 psi
Absolute pressure = 14.7 psi + 14.7 psi
Absolute pressure = 29.4 psi

$$\text{SACR} = \frac{14.7 \text{ at surface}}{29.4 \text{ absolute}} \times 1.28 \text{ cu ft/min.}$$

surface air consumption rate (SACR) for the time spent on the bottom = .64 cu ft/min.

*This procedure cannot take the place of a pressure gauge as many variables could throw the calculation off.

To be less confusing, only the bottom time air consumption rate should be used. This is so time spent in ascent is not used in the calculations and this would tend to give an inaccurate consumption rate on the bottom. For calculating the absolute pressure, a constant depth during the dive should be used. Some useful formulas include:

(psi/ft depth X depth) + 14.7 spi = absolute pressure of the dive

$$\text{SACR} = \frac{\text{atmospheric pressure}}{\text{absolute pressure}} \times \frac{\text{Air consumption rate}}{\text{on the bottom}}$$

$$\text{Air consumption rate on the bottom} = \left(\frac{\text{psi used}}{\text{rated psi for the scuba tanks}}\right) \times \left(\begin{array}{l}\text{the number of cubic feet the scuba hold}\\ \text{at its rated psi}\end{array}\right)$$

National Association of Underwater Instructors

DESERT PLANT MAY SAVE WHALES FROM EXTINCTION

submitted by Richard Spencer, NAUI 1025

A nondescript desert shrub called the *jojoba* may save giant sperm whales from extinction and keep millions of American cars running smoothly as well.

The jojoba shrub, which grows wild in Southern California, produces a liquid wax that can be used in place of sperm oil.

Until recently, there was thought to be no substitute for the whale oil, which is used in petroleum products and in automobile transmission fluid.

But scientists have determined that jojoba bean oil is similar to sperm oil. The plant grows throughout the Southwest.

American stockpiles of sperm whale oil have been running out since the U.S. banned the importation of all whale products in 1971.

General Motors reported recently that some 5,500 cars had malfunctioned because the oil had been removed from transmission fluid. GM also warned that about 3.3 million cars built between 1973 and 1975 could be expected to fail for the same reason.

Some 40,000 jojoba shrubs have been planted on two Indian reservations in San Diego County. This is believed to be the first attempt in this country to cultivate the plant.

Israel is also pushing development of the shrub, which grows to 10 feet in height.

—San Gabriel Valley TRIBUNE
Friday, May 30, 1975

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INSTRUCTORS AID STAMP COLLECTORS

by Bill High, North Pacific Branch Manager

One facet of stamp collecting involves commemorative covers. These are envelopes that document special events such as space flights and cruises of research vessels. Many philatelists strive for covers which record saturated dives in habitats, mini-subs and others.

Cover collectors come from around the U.S. and the world. During the 1970 Tektite program we team members serviced 1,000 envelopes from about 25 countries.

The North Pacific Branch of NAUI has handled these envelopes for many oceanic events. NAUI people are involved in the programs and are willing to do the considerable work associated with autographing or otherwise marking hundreds of letters to be returned through the mails to those who sent the covers. Instructors Denny Bowman, Bill Schroeder, A.Y. Bryson and Ian Ellis are a few who service covers.

During the fall, 1975, HELGOLAND, a German habitat will operate off Massachusetts in a multi-nation program. It is a big event for cover collectors. A heavy flow of envelopes are already arriving at this Branch office to be held for various team dives. Because of the anticipated volume, we have limited the allowable covers sent directly to us. Each collector may send only two, even though six different dives are scheduled. Several years ago, I received nearly 50 covers from one person. Somehow we must control that!

Those collectors wishing to have an envelope travel to the ocean floor with each team must call directly upon a NAUI instructor for help. Its our way of having those who are interested in the sea learn who and where their local instructors are.

There is no cost to the NAUI instructor. If you receive a call or visit from a collector wishing to send envelopes to us through you, just tell them to write YOUR name and NAUI number on their letter to the N. Pacific Branch office. Dive shop instructors should invite the collector to stop by and have you sign the envelope before they mail it to us.

We suggest you aquaint all callers with your professional service. We know you are, by far, the best scuba instructors in the world, why not tell them. They may have friends or family who want to try our sport.

This program is one of many ways NAUI people try to help your business. Don't forget, there is no work or expense on your part. The collector furnishes everything and does the mailing. You authorize me to handle up to 6 extra covers by allowing your name to be listed on their request for service.

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CALL FOR SPECIFIC ARTICLES

While many interesting articles are received for the News, we are not fortunate enough to get practical diving information very often, so a call for specific articles is being made. Can you contribute information on the practical aspects of diving?—the "how to do it?"

Our readers would like to know how to teach or how to do such things as:

- Navigation (Surface, Natural and Underwater)
- Buddy Diving
- Surf Passages
- River Diving
- Boat Diving (Large and Small)
- Breath-hold Diving
- Kelp Diving
- Limited Visibility Diving
- Diving Lifesaving
- Dive Planning
- Search & Recovery Diving
- Light Salvage
- Wreck Diving
- Many other practical diving information topics . . .

If these or similar topics are your special area of knowledge, why not share your accumulated knowledge and experience with thousands of other divers by writing for the News?

Please send your articles along with a photo of yourself to the Editor, NAUI News, Box 630, Colton, CA 92324.

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IN-HOUSE NEWS

RETAIL ORIENTATION SEMINAR SLATED

NAUI is a membership organization and as such, is vibrant and alive. When it is time for change, for modification, for innovation, our organization responds because it is *our* organization. Consequently, we have realized as an organization and as individuals, our relations with the diving equipment industry can be strengthened to avoid confusion and misconceptions on both sides. We realize many of our instructors are employed in dive stores and need to procure additional training vital to successful performance as an employee in a pro store. As an answer to these and other needs, we are offering the NAUI Retail Orientation Seminar.

The objective of the Seminar is to give NAUI instructors an exposure to the skills necessary to make them a valuable employee in a professional diving store. This type of information cannot be thoroughly covered in an Instructor Training Course and has not previously been available through NAUI. However, because so many of our instructors are employed in the diving retail business, we feel an obligation to make this training available. The Retail Orientation Seminar will include information on:

- How to Get a Job
- Sales Techniques
- Store and Course Promotion
- Diving Equipment Design
- Dive Store Management
- The Business Aspects of a Dive Store
- Compressors and Filtration Systems
- Store Layout
- Equipment Repair
- Plus! Major manufacturers will be on hand with presentations on how to sell their equipment.

The program will be held at the Redondo Beach High School on Nov. 1 & 2, 1975. Please reserve a space for yourself no later than October 15. Enrollment for this program is limited. Tuition is $40. Mail your check now to: Steven Barsky, Director, Underwater Sports, Breakwater Marine Center, Santa Barbara, CA 93109.

NAUI CANADA ADVISORY BOARD

Appointment of a seven-man Advisory Board to NAUI Canada has been announced by Britton O. Mockridge, President of NAUI, Canada.

Members of the new Board include: Mr. C.B. Davis, Toronto (Chairman)—Past President NAUI International, Past President NAUI Canada; Dr. Glen Egstrom, Professor of Kinesiology, University of California, Los Angeles—Past President NAUI International; Surgeon-Captain D.J. Kidd, D.S.C., C.D., M.R.C.S., (Eng.), L.R.C.P. (Lond.), Command. Surg. Maritime Forces, Pacific; Mr. Donald McCuaig, Toronto—Director, Physical Education Project, National Council of YMCAs; Miss Jocelyn Palm, Toronto—Executive Directors, Royal Life Saving Society of Canada; Mr. Al Thiessen, Toronto—National Directors, Red Cross Water Safety; Mr. Reginald Vallintine, London, Eng.—President, British Sub-Aqua Club.

"We expect the new Advisory Board will lend great support to NAUI Canada because of the recognized expertise and experience each member possesses in their respective fields of aquatic endeavor, and we are extremely fortunate to be able to call upon such persons for advice", Mr. Mockridge said in a statement.

NAUI PRESIDENT PARTICIPATES IN HOUSE OF REPRESENTATIVES COMMITTEE HEARING

NAUI President Larry Cushman recently traveled to Washington, D.C. to participate in the House of Representatives Research and Technology Committee hearings on offshore energy development. The House Committee, which is chaired by Congressman Oland Teague (D-Texas) is investigating legislation for outer continental shelf research and development. Larry served as a diving industry advisor to Mr. Carl Savit, Chairman of the National Ocean Industries Association (NOIA).

EMPLOYMENT

NAUI INSTRUCTORS SEEKING EMPLOYMENT

Raymond Jarvis, NAUI 2909
2112 N. Brandywine St.
Arlington, VA 22207

John D. Briggs, NAUI 2570
Gretna Hill R.F.D. #1
Poughkeepsie, NY 12601
Phone: (914) 635-3728
Seeks full time position in Florida

Jim Dunn, NAUI 3368
670B W. Hamilton Ave.
San Pedro, CA 90731
(213) 833-6522

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NEW TRAINING FILM AVAILABLE

"SCUBA" is an introduction to the sport of scuba diving and covers the basics involved in teaching students how to adapt themselves to the underwater environment through competent instruction.

The film was produced by North American Films, Inc., of Tarzana, CA, with Richard Bansback, an avid diver of Magic Film Works, doing the actual filming and Kam Cooney, NAUI 955, assisting and consulting.

Filming was done at the West Valley YMCA in Reseda, CA, at the NAUI Freshwater Diving Workshop at Lake Mead, NV, Santa Barbara Island, and several Southern California beaches. NAUI acted as technical consultant on the film.

The correct techniques in the use of equipment are demonstrated, as well as the learning of additional diving skills. Actual scuba classes are observed, and students are followed from the swimming pool to the ocean for practice and to build confidence. "SCUBA" is a film for underwater safety and Physical Education classes. The 16mm Color and Sound film runs 15 minutes and lists for $200.

For information concerning "SCUBA," contact: North American Films, Inc., Tarzana, CA 91356.

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PROGRESS IN PARADISE

by Roy Damron, NAUI 207

Ten years ago there were very few scuba instructors in the United States. Being of an adventuresome breed, one of them moved to Hawaii. He was the first to settle West of California. Today there are about 60 living on those small dots that cover a map of the Pacific. For a long time we were isolated from NAUI Headquarters by distance and time. The only materials we were certain of receiving from HQ were Course Certifications because they were sent Air Mail. All else was carried aboard the "Slow Boat to China" which meant forever or never.

Last year our BOD began to investigate the possibilities of de-centralizing HQ activities. This would lighten their workload and also give local areas more control over individual problems. The idea of dividing branches into local (isolated) chapters was brought forth. You can't be more isolated than being on an Island in the South Pacific, soooo, in January of '75, Jon decided to let us run a test. The object was to see if we could improve our condition by handling a large amount of our own business.

In February we received two big boxes from HQs containing diplomas, patches, decals, forms, bluebooks, Instructor Handbooks, dive tables, posters, and all the supplies that had taken so long to receive in the past. We organized a steering committee, opened up a floating office (what other kind would be appropriate?), scheduled workshops, seminars, IQCs. We were off and running.

One obvious necessity for people with mutual interests is an informative newsletter so the NAUI Coconut Wireless was born. It has been hand-cranked and published each month since April with much input and participation. Now Instructors on Okinawa, Guam, Johnston Island, Hawaii, Maui, Kaui, etc . . . know more about what one another is doing and they feel much nearer to each other. To encourage input, a questionnaire was sent out with our June Issue. It covered areas such as workshops/seminars, how often, how much, what subjects, etc. Organization of committees: by ballot or appointment. Chapter Name: (some of the more colorful suggestions offered: Islanders, Pineappleland, Paradise, Coconut Branch, and even NAUInesia (ugh!!).

A brief recount of the first six months of '75 follows:

We held a General Membership meeting, four seminars on a variety of subjects such as Equipment, Photography, Light Salvage, and Marine Biology. A visitor from HQ (Art Ullrich), who was passing through, spent an evening with all the instructors who could get together, to bring us up to date. In May the eight instructors on Guam held an IQC that you read about in a very clever article in August NAUI News. We have a Film Festival (Innerspace Pacifica) set for November 7 & 8. The festival will be the big event of the year and Jon Hardy will be vacationing in these parts at that time. We will take advantage of his presence by holding a NAUI General Membership meeting, as well as a Dialogue open to all local instructors, shops, boats, clubs, and divers.

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CONT. NEXT PAGE

UM-AAHPER UNDERWATER EDUCATION INSTITUTE

by Lee H. Somers, Ph.D., NAUI Board of Directors

An Underwater Education Institute sponsored by the American Alliance for Health, Physical Education, and Recreation (AAHPER) and The University of Michigan's Department of Physical Education was conducted in Ann Arbor. Other co-sponsoring agencies included the National Association of Underwater Instructors (NAUI), Professional Association of Diving Instructors (PADI), Young Men's Christian Association (YMCA) and the Michigan Sea Grant Program.

This unique institute was organized to accommodate a wide spectrum of individual ability and interest in professional aquatics activities. Special emphasis was placed on professional training of instructors of skin and scuba diving for physical education and recreation programs.

All persons with interest in the area of skin and scuba diving were encouraged to attend this program. Persons currently certified as scuba diving instructors were provided with the opportunity to upgrade their knowledge and skill in addition to receiving special training in hyperbaric chamber operation, diving medicine, and the latest teaching techniques. The primary objective of the institute was to train and certify new scuba diving instructors. Persons who met the high standards of skill, knowledge, and teaching proficiency qualified for certification as a scuba diving instructor or assistant scuba diving instructor by NAUI, PADI and/or the YMCA.

In recent years there has been an increasing demand for organized scuba diving and hyperbaric chamber programs in colleges, universities, and governmental agencies to serve both scientific and recreational interests. Such programs require professional supervision and, in many cases regulation. This institute included a special session in diving program development and supervision. All attendees were trained in hyperbaric chamber operation and pressurized to a simulated depth of 190 FSW. Special training in first aid, lifesaving, and CPR under the auspices of the American Red Cross and the Michigan Heart Association was included in the institute's program. Attendance was no guarantee of certification. All applicants for instructor certification had to meet the standards required by the various certifying agencies in order to receive scuba diving instructor or assistant instructor certification.

The two-week course covered a variety of topics relating to diver education, program management, and organized diving.

National Association of Underwater Instructors

IN-HOUSE ONE LINERS

James Q. Wilson, NAUI 3803 and crime expert, has authored a new book, "Think About Crime".

Chief Petty Officer William R. Rhodes, NAUI 2579, recently participated in a record 1000 foot plus open water excursion from a chamber with another Navy diver and two British divers.

If you want to serve on staff at an Instructor Training Course, contact the Branch Manager and Course Director in your area. Staffs are usually selected up to a year in advance, so don't wait.

Bob Widmann, Mid Pacific Branch Manager, has completed his third scuba course at the University of Alaska in Fairbanks. Bob travels North each year to train Alaskans to dive. He also made a dive in a glacier melt pond on the last trip, BRRRRRRR . . . The Fairbanks "Daily News Miner" carried an excellent article on Widmann, NAUI and diver training.

John Dickerson, NAUI 2785, was featured teaching diving in the Bowling Green, KY Daily News.

James L. Haynes, NAUI 2115, and Tom Kenney, NAUI 1038, co-directed a NAUI ITC in Adana, Turkey in the midst of the latest disagreement. The course was a success even though all communications were cut off.

Members of the NAUI Headquarters office staff have completed a NAUI Basic Scuba course conducted by Jon Hardy, General Manager.

During the first quarter of '75, the diving business in the U.S. was off 20%, but off over 35% in Los Angeles County. How's that for legislation helping diving?

It is past renewal time for all instructors, so get those dues in if you haven't already. Insurance is not due until 1 January and Skin Diving Leaders and Assistant Instructors do not have to renew until March of '76.

END OF IN-HOUSE NEWS

HELP! LOST INSTRUCTORS . . .

If anyone has a current address for any of the following members, please send the new address to NAUI News, NAUI Headquarters.

[illegible]s Amrein	1734	James Gordon	3241	Bob Mackey	Z0104	Vincent Staley	1730
[illegible]toria Acitores R.	L00073	Charles W. Gale	1269	Diane M. Lussier	Z0322	William Springstead	1238
Kenneth F. Abasolo	3291	Kurt Alan Greminger	Z0102	Roger Meade	2807	Dennis Turner	3311
George Bawkin	2117	Lee Greenstone	2905	Don McPhee	2934	Patrick Tunney	704
Eric Arumae	3292	Douglas A. Gray	1268	Jim McEvoy	3663	Jack Trageser	2272
Bernard Arsenault	3579	Jonathan C. Goyert	3906	Dougall McDonald	Z0184	Edward K. Suit	2415
Jane Armstrong	L00104	Terrance Frohm	3236	Mort Mason	1510	Clifford Sugden	1220
Wayne Anderson	3794	Warren F. Heineman	1588	Michael Nolan	2320	Al Zeigel	L00088
John Choate	2368	Donald Heckert	0986	Thomas M. Murphy	2863	Patrick H. Wolter	2137
William S. Cadow, Jr.	A-84	Steven L. Hay	Z0209	Duncan Milne	2400	Richard L. Wilkins	3114
Dennis Busse	2503	Arthur Hastings	3948	Robert Michie	TA2016	Graeme Vance	1261
Don H. Brown	3833	F. Gail Hamer	3490	Ronald Meyers	2523	Warren Tyler	1884
Robert Brooks II	2118	Guy Grondin	3563	Howard Parker	3356		
Michael W. Bonnell	2632	Lloyd Ives	220	Gary Lee Olson	1847		
Robert G. Davenport	2603	Chris F. Hugo	3577	Mitsukiro Okada	3404		
William Crowe	3016	Stephen Howard	2283	Jim Odriozola	2864		
Rupert Lee Crenshaw	3961	Gene Hobdy	1843	Paul D. O'Brien	3738		
Richard Crane	1721	Walter Hetz	2639	Charles C. Nugent, Jr.	3374		
Dennis A. Cox	992	Charles Kenny	1227	Larry Scharfe	2933		
Alen Comeau	L00002	Patrick Keegan	2728	Rene Saldana W.	L00082		
Robert G. Ernst, II	2044	Marc Jolin	1629	Cyril Rollins	3408		
Cloyd Dunn	699	Lewis P. Johnston	2677	John Roby	2794		
Ken Drakely	2461	Rodney R. Johnson	2727	Michael Rives	3420		
Mike Dodge	3649	Brad N. Jenson	2232	Peter Price	3886		
John Dickerson	2785	Bob Lavoie	3661	Connie Petrunka	L00042		
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Dale Franklin	1879	Richard A. Kohn	3627	Howard Smith	2767		
Kevin Foley	3217	Matthew Kindred	2556	Dan Simpson	2237		
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[illegible]fan Fabiszewski	3975	Nancy Napravkin	3187	Ronald L. Scharmen	2234		
Susan Ranney Evans	1111	John R. Maloney	4123	Dennis Strachan	3087		

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NOW I KEEP A LOG . . .

by Roy Damron, NAUI 207

During the May HCDC Meeting the problem of legislation was brought to the floor and it was agreed that most of the clubs are against re-certification. I would like to clarify the situation. As you know the first law controlling diving was passed in Los Angeles County last fall. Now such laws are pending in California, Florida and other areas. When it was first proposed in L.A. County it stipulated that a diver had to be re-certified by retaking the water and written test every two years. After the diving organizations successfully pointed out that one of the major reasons for accidents was lack of continuing experience, the law was softened to read that a diver must *either* retake the exams or show proof of continued diving activities. This can be done by presenting a log with a certain number of dives recorded. Presently the major instructional organizations are attempting to have the L.A. County law repealed. They can only achieve this by proving that they can accept the responsibility of the diving fraternity. This will surely include the requirement that divers keep a log to prove that they are active. Those of you who only dive every few months may not agree that you are rusty, but you who dive regularly know that we must get wet to stay sharp.

So it comes to this. Either we retake the tests every couple of years to prove we are still capable, or we keep a dive log. I'm sure you will agree that the latter choice is the easier of the two.

I have been diving since 1957 and yet never logged a dive until January of this year, when I decided to see what it is like. Now, I regret that I did not start sooner, because all of those dives in the past are vague memories or completely forgotten, whereas the ones I have made this year are recorded for me to review and re-live, if I should so desire.

If you get a book and start filling it in you may find that it is really quite interesting, just as I have.

-NN-

THE MEDICAL EDITOR'S COLUMN

by Dr. Charles Brown

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

GOOD LORE!

21. The most important items in your first aid kit are bandages, antiseptics, and splints. Not if you mean business. When you open that bag, the items on top should be your weapons against things that can kill quickly: a tourniquet, an oropharyngeal airway, and a syringe of adrenaline for the occasional anaphylactic shock. Next might be dimes for the phone, emergency numbers, and a pen and tags for recording information.

22. In a diver with uncertain air supply, fast breathing would indicate carbon dioxide excess. Not at all. It would be most unusual to find that much CO_2 contaminating compressed air. Furthermore, with a pumping rig bad enough to permit CO_2 contamination, carbon monoxide would probably be the greater hazard. Fast breathing in a diver usually reflects exertion, exhaustion, cold exposure, apprehension, or panic.

23. Authorities substantially agree about shallow water blackout. Wishful thinking. Although instructors usually have a pat definition of the term hyperbaric, authorities have not achieved a concensus opinion. Doctor Miles, who probably coined the term, thought of it as due to summation of factors including the use of oxygen rebreathers. Others implicate CO_2 intoxication, and still others blame the CO_2 deficit deriving from the hyperventilation of panic. The Strykowsky text defines it as the hypoxic syncope of breath-hold divers. I would suggest the term shallow water blackout be abandoned in favor of the term underwater blackout, which may be due to one or more of many causes.

24. Students who get into trouble usually do so between five and fifty feet. On the contrary, as Dr. Glen Egstrom has often pointed out, the place for trouble is usually the surface. Most problems begin on the surface: negative buoyancy, rough water, seasickness, water in snorkel, leaky mask, poor condition, panic and hyperventilation. Problems which begin below are often not apparent till the distressed diver surfaces. We may conclude that: 1) safety below depends upon good training and the buddy system; 2) the majority of distressed student rescues will depend upon recognition and assistance by competent surface personnel.

To be continued . . . .

Medical Editor's Book Review

Advanced First Aid Afloat by Peter Eastman, M.D., 115 pp. with glossary and many illustrations.

First aid has been defined as the immediate treatment of injury or illness before a physician's services can be obtained. Most manuals assume that such professional help will be rather promptly available.

But how do you handle a dislocation if the nearest help is two weeks away? Or an abscess? heart attack? amputation?

Dr. Eastman has combined 30-plus years of medical experience with an extensive background in ocean yachting to produce an excellent how-to guide for the adventurer forced to become an instant physician.

The book makes no mention of diving-related problems, and a few of its recommendations are subject to debate, but it nonetheless should go with anyone who ventures far from help.

-NN-

THE NEWEST TEXTS ARE NOW AVAILABLE FROM NAUI

Here are four of the newest texts available. Each was written with specific objectives and to fill specialized teaching needs. It is important for you, as an underwater instructor, to review each to see just how it can serve you in your own specialized teaching situation. We strongly recommend that you review these new texts now.

JEPPESEN SPORT DIVER KIT

The new JEPPESEN SPORT DIVER KIT, with workbook, is a very well prepared learning system containing coordinated text and workbook with a student record folder. Material is presented as the student needs to know it. It's factual, up-to-date and comprehensive. The manual is modularized, containing four parts:

The Equipment, The Diver, The Environment and The Dive—Each of these parts is broken down into learning modules allowing the instructor to assign subjects in any order. The manual has 266 pages of text and 26 pages of references and index with hundreds of well done, clear photos and illustrations with enough color to be attractive and interesting.

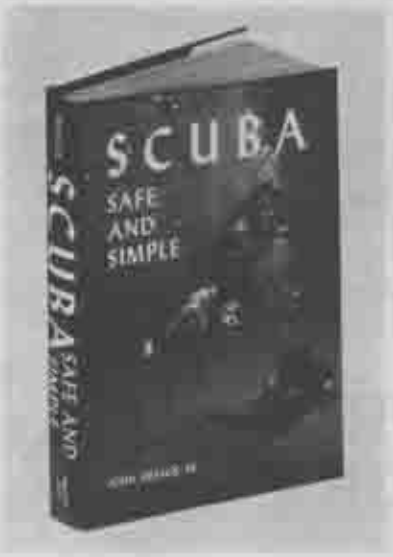
The workbook contains exercises covering appropriate phases of the manual and presents practical questions which relate well to actual diving activities. Detachable test answer sheets give the instructor the option of administering the quiz or allowing the student to self-quiz. The student file folder is designed to maintain a permanent record of each student's performance.

This kit is not an encyclopedia, nor is it a picture book training manual. It is well designed, useful and practical for today.

324 pages — 6 x 9 — 1975 — $8.95 No. 412 (WORKBOOK & MANUAL AS A KIT)

SCUBA—SAFE AND SIMPLE

by John Reseck, Jr.



This has to be the first truly fun-text ever written. It is a different kind of scuba book, one that gives the reader an enjoyable but painless way to become a water-safe, water-smart diver. Reseck blended his long years of experience as a champion diver, underwater instructor and teacher with his people-insight and wit, and put together this easy-to-read text which covers all of the vital topics, but keeps the reading light. You can get an idea of his approach when you look at some of the chapter titles like: The Stuff You Need, Skills Tricks and Sneaky Things, Mother Nature's Part, The No-No's That Live In The Sea, Say Cheese, Special Places and Neat Things, and many others.

John Reseck, a member of the NAUI Board of Directors, put this text together in simple, everyday language, covering the subject well without ever being boring.

Art Bachrach, Ph.D., said of the text, "I am certain you will find this book to be instructive, interesting, technically sound and extremely enjoyable." You will—and it is. An unusual text by a remarkable author.

240 pages — 6 x 9 — 1975 — $8.95 No. 413

SKIN & SCUBA DIVING, SCIENTIFIC PRINCIPLES AND TECHNIQUES
by John L. Cramer, Ph.D.

This modern and up-to-date learning system covers the entire subject for the new diver. The manual is complete, well written and easy to read. It follows a logical sequence with hundreds of well done photographs to illustrate the point and to insure understanding.

Ten chapters are easily integrated into ten lessons for the course, flowing in a sequence which lends itself to a contemporary scuba course. The depth of coverage stays on the point and provides the essential information without becoming too technical or burdensome with non-essentials.

This book points out the fun of diving without the use of threatening terms or too much emphasis on diving injuries. The text also graphically illustrates many skin and scuba diving skills in a step-by-step fashion to condition a student for the practical exercises.

This text and study guide are completely supported by a 35mm film strip series with audio track on tape cassettes. There are film strips and tape cassettes for each of the class sessions. The photos in the film strips follow very closely the photos in the text. The sound track is a complete back up in support of the text material.

The film strip/tape series is sold separately. The text and study guide are designed for flexibility and can be used with or without the film strip/tapes. Order manual and study guide from NAUI. Film strips and tapes can be ordered from Bergwall Productions, 839 Stewart Avenue, Garden City, NY 11530.

Manual — 172 pages — 8 x 10 — 1975 — $6.95 No. 415
Study Guide — 72 pages — 8 x 10 — 1975 — $3.50 No. 416

SAFE SKIN & SCUBA DIVING
by Henry Ketels and Jack McDowell

SAFE SKIN & SCUBA DIVING is a safety oriented guide to underwater diving. Researched and written by a NAUI Instructor, and former combat diver, this easily-understood handbook is remarkably easy to use. Skin and scuba diving skills are discussed, equipment is described in considerable detail, and underwater physics and physiology are presented in simplified fashion. The importance of formal instruction and certification is stressed. The dive tables and bibliography are in the appendix and the book is illustrated with more than 60 drawings and 20 photographs.

234 pages — 7 x 9 — 1975 — $5.95 No. 417

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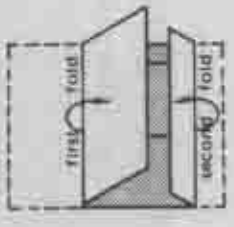


CURRENT TRENDS

NAVY TABLES AND THE SPORT DIVER

by C.L. Smith, NAUI 2299

Have you ever made a dive which was difficult to reconcile with the U.S. Navy dive tables? Have you ever returned to the boat from a dive that seemed pretty safe and found that strict application of the Navy procedure required an alarming amount of decompression? If you have, you are not alone. These situations are all too common, and occur for good reason. The Navy dive tables are as simple as they are because they are based on a very simple depth profile. A standard dive is supposed to comprise immediate descent to some depth, followed by a stay more or less at that depth and then direct ascent to the surface. If such a profile is followed the tables are safe, but not conservative. Sport divers don't always follow such a standard schedule, however. The person who uses scuba for fun often varies his depth a great deal during his dive, perhaps remaining deep for only a few minutes and then spending the major part of his total bottom time at modest depths. Strict application of the Navy dive tables to this situation may well require a stiff decompression schedule that isn't warranted by the actual dive profile. In this special respect, the Navy tables prove to be conservative.

To illustrate an extreme case, consider the diver who descends an anchor line and finds himself in 100 feet of water. After a bottom time of only three minutes at that depth he ascends to 30 feet, where he spends an hour before surfacing. Back on the boat he tries to look up his repetitive group letter, but, naturally, he never finds it. According to one policy of the Navy tables, he should assign the total bottom time of 63 (or 65?) minutes to the greatest depth, i.e., 100 feet. This would have required stops of 17m at 20 ft. and 39m at 10 ft; a total decompression time of 56 minutes! Invoking the delayed ascent exception, considering the entire stay at 30 ft to be a delay in a "normal" ascent to the surface, is no help. That rule would have required a decompression time of 58 minutes before surfacing. In actual fact, after diving this example depth/time profile, it is safe to ascend directly to the surface without making any stops at all. The diver who does so will have less nitrogen tension in each of his tissues than the amount allowed by a Navy no-decompression dive which puts him in repetitive dive group E! In effect, any extra nitrogen load picked up in the fast tissues during the brief stay at 100 ft will have bled off during the long dwell at 30 ft, while the slow tissues still have not had time to saturate. In other words, decompression actually takes place throughout the latter part of the dive. As another extreme case, consider the common policy employed by cautious divers in following a marginal deep dive with a stop at 10 feet before surfacing. Although we feel this is safe—and don't we all do it?—it often violates the Navy tables. Stopping for 10 minutes at 10 feet following a 100 ft dive for 24 minutes, for example, is a clear violation. The Navy, not anticipating this situation, would count this as a decompression dive of 34 minutes at 100 feet and have us stay an additional 15 minutes at 10 feet to make up for it!

Jack McKenney photo

The Navy Decompression tables are not practical in many sport diving situations

After a few experiments of this type the sport diver understandably begins to draw away from strict use of the tables and looks for another way to handle his problem. The most common method is to apply his judgement—and judgement mustn't always by discounted—to arrive at a compromise depth which seems to fit the intent of the Navy procedures. This practice is unfortunate, and perhaps dangerous, but it has had some success. A better method would be to use an accurate and trustworthy decompression meter which would automatically account for the actual depth profile. Sadly, currently available D/C meters are suspect on both counts.

CONT. NEXT PAGE

SPORT DIVING TABLES

There is no mystery in determining the relative safety of any particular dive. The same tissue models used by the Navy can be subjected to simulated dives, and nitrogen uptake can be calculated in exactly the same way the Navy does it. That is, any desired depth/time profile can be drawn, and the pressure exposure and resulting inert gas uptake in each body tissue can be computed according to sport dive profiles and in the tedious calculations which would be required to cover them all. Some are more interesting than others, however, and safe policies can be made for a limited number of special cases. By "safe" it is meant that the nitrogen tensions in each body tissue after surfacing from the sport dive can be held less than they would have been in a standard Navy no-decompression dive.

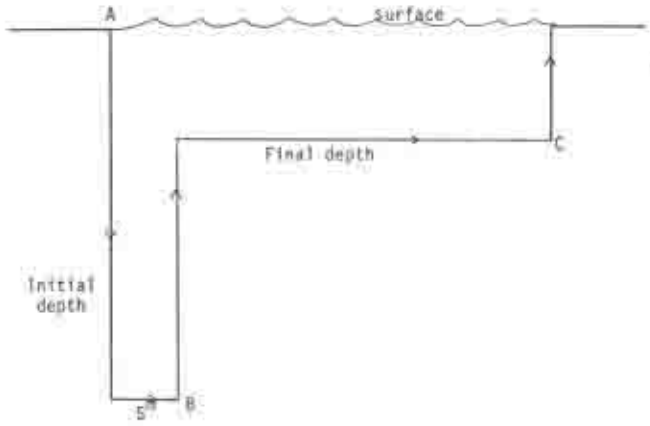
This has been done for two example situations and the results are presented in the following tables. In each, initial descent is made to some appreciable depth, after which the diver ascends to a modest one for the majority of his total bottom time. No decompression stops are necessary for either. These two profiles were chosen to represent typical sport diving sequences which are otherwise difficult to handle, and which would require unrealistic decompression schedules according to the U.S. Navy timetables. The results are given, not as procedures to be followed, but as illustrations of the benefits of spending time in shallow water after a deep excursion. In fact the Navy tables should always be followed whenever possible. Those given here merely afford some insight into the relative safety of the compromises that divers sometimes make.

The tables were prepared by simulating nitrogen uptake in each of the six tissues of the Navy model of the body during the indicated dive profile. After ascent from the final (shallow) depth, the nitrogen tension in each tissue was compared with the value resulting from a no-decompression dive made according to the Navy tables. A total bottom time was then found which ensured that each tissue contained less inert gas following the sport dive than it would if a Navy no-decompression dive had been made. This procedure is conservative in that absolute tissue tolerances are not approached, and any margin of safety present in the Navy tables is retained. In fact the tension in many tissues is thereby held far below the levels allowed by other, deeper Navy no-decompression dives. It is important to recognize, however, that the results apply only to the depth profiles as indicated, i.e., the deep excursion must be made first.

THE INITIAL BOUNCE DIVE

This example depth profile is typical of the diver who descends an anchor line and discovers that he is deeper than he had intended. As shown in the following diagram, he ascends to a lesser depth after a maximum of 5 minutes bottom time at the deep one. The deep portion of the dive must be made first; allowable total bottom time is dramatically reduced if it is made later. All ascents and descents are made at 60ft/min. Per the usual definition, the 5 minute bottom time at the initial depth is measured between the points marked A and B in the diagram, i.e., from beginning to descent until the start of ascent. The total bottom time of the dive is measured from point A to point C. The maximum allowable bottom times without decompression stops are given in Table I for single dives as indicated. Various first and second depths are included, and the repetitive dive group letter is given for each maximum allowable exposure.

TABLE I
INITIAL BOUNCE DIVE DEPTH PROFILE



- Bottom time for initial deep dive is less than 5 minutes, measured between points A and B
- Total bottom time (combined time for both portions of the dive) is measured between points A and C
- Deepest part of dive *must* be made first

As an example of the use of Table I, consider an initial dive to 120 feet for a bottom time less than 5 minutes, followed by ascent to a depth of 60 feet for the remainder of the dive. The initial depth appears in the left column, and the second, lesser depth at the head of one of the other columns. Reading across from the initial 120 ft. depth, the value 55m is found under the column headed 60 ft. If this is the first dive of the day, the maximum allowable total bottom time is

CONT. NEXT PAGE

TABLE I INITIAL BOUNCE DIVE: MAXIMUM ALLOWABLE TOTAL BOTTOM TIME

After less than 5 minutes bottom time at this depth:	It is safe to finish a single dive at these depths for total bottom times as shown: 80 ft	70 ft	60 ft	50 ft	40 ft	30 ft
130 ft	37m	45m	53m	92m	190m	more than 5 hours
120	37	46	55	93	191	
110	38	47	56	94	192	
100	39	48	57	95	193	
90	39	48	58	96	194	
80	40	49	58	97	196	
70	40	50	59	98	197	
60	40	50	60	99	198	
50	40	50	60	100	199	
Final repetitive dive group letter is:	I	J	J	L	N	O

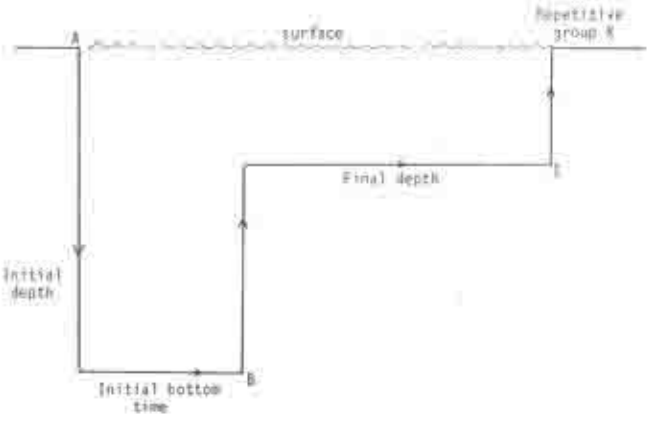
thus 55 minutes, after which direct ascent to the surface can be made safely. If the maximum of 55m between start of the initial descent to 120 ft and beginning the final ascent from 60 ft were actually spent, the final repetitive dive group letter would be J. The diver would then have exactly as much nitrogen in each body tissue as if he had made a maximum no-decompression dive to 60 ft. for 60m per the Navy tables.

Note that application of the Navy tables to this profile would require a total of 69 minutes at decompression stops! Separate decompression is not necessary in this special situation as the two fastest body tissues (those having half-times of 5m and 10m) have ample opportunity to bleed off their excess nitrogen load during the long stay at 60 feet. The remaining tissues are slow enough that they never accumulate as much tension at 60 feet as they would have du-much tension at 60 feet as they would have during a full 60 minute stay.

THE SHALLOW FINISH

This depth/time profile is typical of those who follow marginal deep dives by stopping in shallow water for some time before surfacing. It is similar to the initial bounce dive just described except that longer times are spent at the initial depth. As shown in the following diagram, an initial descent is made to some appreciable depth for the maximum single-dive bottom time allowed by the Navy tables at that depth without decompressing. Ascent is then made to some lesser depth where the diver remains for the rest of his (extended) dive before surfacing. As in the initial bounce dive, direct ascent to the surface is safe at any time. An allowable total bottom time (the deep and shallow together) without separate decompression is given in Table II for a variety of initial and final depths. For practicality, the exposures are limited to those which the diver in repetitive group letter K. Group K was chosen as it represents a reasonably safe and usual nitrogen load, while still emphasizing the benefits of spending time in shallow water at the end of the dive. The table says, in effect, that a Navy maximum no-decompression dive to any depth can be followed by a further stay in shallow water without danger and without the need for a separate decompression stop. Note that 50 feet, and in some cases 40 feet, is not shallow enough to give much benefit.

TABLE II
SHALLOW FINISH DIVE PROFILE



- Bottom time for initial deep dive is measured between points A and B
- Total bottom time (combined time for both deep and shallow portions of dive) is measured between points A and C
- Deepest part of dive *must* be made first

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TABLE II SHALLOW FINISH: ALLOWABLE TOTAL BOTTOM TIME TO REACH REPETITIVE GROUP K*

Initial depth, ft	Bottom time at initial depth	Final Depth:	Total bottom time to reach group K, minutes 50 ft	40 ft	35 ft	30 ft
130 ft	10m		75m	110m	135m	225m
120	15		15	90	125	210
110	20		20	85	115	190
100	25		25	80	105	145
90	30		30	80	105	140
80	40		40	75	85	120
70	50		50	50	85	120
60	60		60	60	95	125

As an example of the effect, consider a dive to 100 feet for 25 minutes followed by ascent to 40 feet for some time before surfacing. In actual fact the diver may safely remain at 40 feet for as long as 130 minutes, a total bottom time of 155 minutes. If he does so each tissue of his body will contain no more nitrogen than it would if he had made some no-decompression dive according to the Navy tables. His repetitive group letter would be quite high, however, limiting his diving for the rest of the day. Table II shows an allowable total bottom time of only 80 minutes for this dive, resulting in repetitive group letter K after surfacing. As explained in the profile diagram, total bottom time is the combined time spent at each of the two depths, from beginning of initial descent to the start of final ascent.

If the Navy procedures were applied to this dive of Table II, a total of at least 26 minutes for further decompression would be required at stop depths of 20 feet and 10 feet. The reason the bottom times of Table II are allowable is that decompression actually takes place at the lesser, final depth. The nitrogen load acquired by the fast tissues during the deep initial part of the dive bleeds off during the shallow portion, "making room" for the additional amount picked up by the slower tissues during the last part. It is crucial, of course, to make the deep part of the dive first. If the dive profile and the maximum total bottom times of Table II are observed, the nitrogen tension in every tissue at surfacing will be less than it would if a Navy no-decompression dive had been followed, and the repetitive dive group letter will be K.

Of practical interest to those who routinely stop at 10 feet for awhile after a marginal deep dive, note that virtually any deep dive up to the no-decompression limits can be safely finished off at a depth less than 30 feet for a stay up to two hours!

CONCLUSION

The foregoing discussion and tables illustrate some of the shortcomings of the U.S. Navy procedures when applied to sport diving, and show what benefits might be possible if tables were made to accommodate the kind of diving we do. If any simple conclusion can be drawn from the results it is this: any single no-decompression dive can be followed by a long stay at a depth less than 30 feet before surfacing. This in itself vindicates those divers who stop in shallow water after a deep excursion even though the practice violates the letter of the Navy tables.

Will practical tables for the sport diver appear in the future? Probably not. They would be too complicated for general use, and the Navy tables are already too difficult for most people to follow. The ultimate answer, I am convinced, is an accurate and reliable decompression meter which tracks six or more body tissues. This would permit the diver to follow any depth profile he chooses while ensuring that none of his tissues approach their individual and collective tolerance levels of nitrogen. The technology is available today; production is only a matter of cost and consumer demand. A pressure transducer (depth gauge) and timer could be combined with a miniature electronic calculator, for example, to form a water-tight package which would be smaller and much more capable than present day decompression meters. Until these appear, and the sport diver is willing to rely on one, the U.S. Navy tables (perhaps modified here and there) are still our best bet.

AN AFTERNOON WITH SKIN DIVER MAGAZINE

by Dennis Graver, Editor/Publisher

SDM'S VIEW ON DIVING'S LEGISLATIVE FUTURE

Jon Hardy and I met recently in Los Angeles with Paul Tzimoulis and Jack McKenney of *Skin Diver Magazine* to discuss the long range effects of legislation on the sport of scuba diving. Tzimoulis, Publisher of *Skin Diver*, opened with an alarming statement, "Legislation is the greatest threat to diving within the next five years." Hardy and I had been optimistic that a total repeal of the Los Angeles County ordinance might establish a precedent to deter legislation against divers in other parts of the country. Paul and Jack feel, however, repeal in Los Angeles would be only a small victory. "There will be many battles to fight all over the nation," they said. One of the most serious problems which may lead to restrictive legislation involves Florida cave diving, according to Tzimoulis. Paul feels, and rightly so, a guide service is needed for regional orientations. Just as resort guides evaluate diving ability of tourists and then take the tourists on guided reef trips, guides are needed and should be sought for other regional differences including caves. Paul made an interesting comparison of an experienced diver venturing unguided into an underwater cave to an experienced mountain climber attempting to climb the Matterhorn unassisted by a local guide. Both ventures would be extremely dangerous and foolhardy. Regional orientation, which Paul feels is needed but should not be mandatory, will reduce accidents, improve safety and help prevent legislation.

Hasn't recognition of the need for training and the requirement of a national credential helped diving? Certainly, but the *Skin Diver* staff believes the credential is only valid at the time it was issued. An on-going record of diving activities—the log book—is the best method of determining the diver's background, experience and recent activity. The log book will become a diving passport within the next five years. *Skin Diver* feels the standards for training divers are fine, but too often the end product does not meet the standards. "Training of divers must be strengthened and strictly enforced," Paul Tzimoulis emphasized. Cooperation of instructional agencies, increased national standards and quality control of instruction will all develop of necessity, to combat legislation within the coming years. It will be more difficult to become and remain an instructor, so the shift will be toward the professional instructor. *Skin Diver* feels there will be fewer instructors, but these instructors will do a better job of training.

SKIN DIVER . . .
Keeping Divers Informed
•
***THE* Publication**
For Divers

When asked if legislation would affect diving equipment or establish equipment standards, Tzimoulis suggested the government has learned a lesson in attempting to make automobiles safer. "The government is not equipped to establish diving equipment standards," Paul remarked. "Any equipment standards will be self-generated within the industry." This makes sense, for equipment problems are negligible—accidents are nearly always due to diver error.

With keen insight, the *Skin Diver* staff slashed through the current superficial problems and outlined difficulties of the future which would result from diving legislation. "The vast majority of divers currently assume the responsibility for safety, but when the government intervenes, individuals transfer responsibility to the government," Paul stated. That's a shocker. Could diving be less safe with laws than without? Another vast problem is all the negative publicity generated by a few hypercritical people in diving. This publicity results in more attention focused on diving accidents, more law suits and more claims. The only threat greater than legislation to be faced in the coming years is insurance. The premiums for liability insurance could easily become so prohibitive as to put an end to sanctioned, professional training. No agencies could exist, and people would learn to dive from friends as they did 25 years ago. . . . Frightening isn't it? The instructors will be forced to protect themselves in the coming years. "In order to fight the insurance problem, an iron-clad training program is required," says SDM. Allowing instructors to do their own thing in training divers may soon become a way of the past just to retain insurance protection.

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AFTERNOON WITH SKIN DIVER . . . Cont.

"What will legislation do to the growth of the sport?", I asked. *Skin Diver* is of the opinion that growth will be directly related to training quality. There is a relationship between training, insurance and legislation. Train the divers well, the insurance and legislative problems decrease and the sport grows. Train the divers poorly and, . . . you can guess the outcome. Tzimoulis wants to keep people in diving and feels diving travel will help a great deal. "Don't lose the 2% of the base population who can and will learn to dive," Paul urged.

What else does *Skin Diver* see in the future related to legislation? More control over boat diving operations, again created from within by necessity; *ocean* training required for certification; the cost of instruction increasing sharply to support the professional instructor; continuing education in diving being widely accepted by the individual diver; and importantly, increased cooperation within the diving industry to combat diving legislation.

Paul Tzimoulis, Publisher

Jack McKenney, Editor

Two of the key figures in the diving industry predict the future effects of legislation

Tzimoulis and McKenney, as key figures in the diving industry, certainly changed our perspective of the future and added to the challenge to be met by NAUI. Our thanks to these fine gentlemen for their insight into tomorrow. *Skin Diver* Magazine will watch very closely the trends in diving and will promote training—to push diver training as the pivot point for diving. The industries only, but very fine, major diving publication will place an ever increasing emphasis on diver education.

The time has come for diving to unite. It takes individual concern, cooperation and support to develop our sport. Help promote the needed concepts—regional orientation, use of the log book, continuing education, and safe diving practices. It requires self discipline and divers who will confront offenders. This is the real enforcement—from within, not by retailers, manufacturers, instructors and boat operators. When divers dive safely and personally call down those who do not, our legislation and insurance problems will diminish and diving can regain a reputation of a safe, healthy, life-time family sport.

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INNERSPACE PACIFICA '75 READY TO GO

SKIN DIV[illegible] photo

Hawaii's annual INNERSPACE PACIFICA '75, film festival and International Photo Contest is again adjusting its sprockets and slide mounts for another saturation experience featuring the world's greatest underwater films and photographs by international artists. This year on November 7 and 8, in association with the very active Hawaii Association of Diving Clubs, the new "West Pacific-Region" association of NAUI Instructors promises another success. Actually the real glory goes to the personalities and artists who have agreed to present their latest fantastic achievements in underwater photography. To drop a few names, the world famous Al Giddings, who has become a household word, is to be the Master of Ceremonies and personally present his new film "Sea of Eden." Giddings, when not traveling around the world on motion picture assignments has assembled an epic featuring caves, drop-offs, and exciting adventure in the exotic islands of Palau. Jack McKenney, Editor of Skin Diver Magazine, is sending his widely acclaimed new movie "Fish Antics." Anglefish, batfish, jacks, rays, and flounders are some of the beautiful and interesting subjects highlighted from Australia and the Caribbean. We will also have his classic "Quarry Diving." At date of this writing other confirmed goodies include Robin Lehman's "Sea Creatures," Jim Dutcher's "Drop by Drop to the Sea," as well as "Otters: Clowns of the Sea" by Bill Bryan, "Ocean Gallery" by Bill MacDonald and a local talent, Tom Jacobus will present his multi media slide show of Micronesia "Moods of Truk."

Not to be outdone, there will be showings of the photo competition winners between the movies and in the display area where local diving interests will also have booths for browsing during the social hours prior to both evening shows. With different movies each night, the doors will open at McKinley High School auditorium next to the Honolulu International Center around 5 p.m. and the show will start at 7 p.m. Each evening show tickets are on sale through dive shops, dive clubs, and commercial ticket distributors for $3.25 advance sale or $3.50 at the door.

This is the biggest single diving event from Hawaii each year. Don't miss the adventure, it may take weeks to decompress!

-NN-

THE YEAR OF THE SHARK

by Bill Husztek, NAUI 2127

With the popularity of books and films such as Peter Benchly's "Jaws" and Cornel Wilde's "Sharks' Treasure," the water-oriented public and the diver in particular is being constantly re-vividly reminded of the unpleasant prospect of becoming the target for a rampaging beast from the depths, when he ventures into the water. Further there seems to be little or nothing which he can do to avoid the danger. So it is that sharks and shark attacks have become more serious than ever before. Well that may be. But if it is then it will not be because sharks are any more numerous or voracious than ever before, but rather that there are more people going to the water than ever before.

Inexpensive boats, innovative diving gear and a host of other popular aquatics developments are contributing to this greater number of human contacts with the marine environment, thus more man-shark encounters. These as well as the strange fascination which we all have regarding people being eaten or maimed by rampaging sharks has lent momentum to the trend. Even so one must wonder if the danger is really more serious than before? Simply put based on statistics and experience, the answer is . . . No.

There are, however, some points of interest to the sport diver which are fact and will help he or she to better relate to sharks in the ocean. There is on an average about one large shark per square mile of surface in every ocean of the world, and this includes many lesser bodies of water as well. With this in mind, the reader will quickly realize that any time you are in the water regardless of where, you will be within ½ mile of the nearest large shark!

Having fished, dived, swum or just sailed on the major seas of the world, my own observations have proved the truth of the above. In spite of all those sharks, I have rarely seen one of them while I was in or around the water. Other divers to whom I've spoken and this includes many fishermen, surfers and body surfers, have universally agreed with my conclusions. In other words, although there is a huge shark population, they rarely bother people.

There are reasons for this. First with regards to divers in the water, they are usually too preoccupied with other things to see sharks swimming nearby even though the shark may come close enough to see them! Sharks, as most animals do, have an uncanny ability to know which way a person is looking and just how far he can see. Unless something unusual is stimulating them, they will go out of their way to avoid being seen.

From "Sharks' Treasure"

To see sharks predictably the diver need only call them in by appealing to the shark's curiosity or hunger, and often these are one and the same. Commonly spearfishermen and fishermen come into close contact with shark. The reason is simple. Both are catching fish. A wounded fish sends out messages on two levels. First it thrashes about creating underwater noises that are like a dinner gong to the nearby predator. Second, if speared or wounded, the fish spreads blood and waste products in the water which are carried along on currents as chemical trails and bring the hungry shark in like the smell of barbecuing steak brings your neighbors.

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Divers not wanting to meet curious, hungry and often aggressive sharks should simply not spear fish. If you must, keep the kill well clear of yourself. Remember, once a shark has located a wounded fish, he will rush to the area because in the shark's world, first come is first served! If the fish is close to you, he may, in the dash to get it, take a piece of you without knowing it. Just as a pet dog or cat might accidentally bite you while trying to get a tidbit of food from your hand. Needless to say such a mistake by a shark of say three or four feet could mean the loss of a hand in the process.

Paul Janosi photo

Statistically, to the best of my knowledge, there has only been one recorded fatality due to shark attack in the past 20 years in Hawaiian waters. This a boy on a surfboard near Lanikai. I know of many other encounters of man and shark but only one certain attack, this is on a spearfisherman at night on the island of Kauai. In this case the fisherman had his catch attached to his person when he was bitten. Diving at night is bad, spearfishing at night is worse, and tieing those fish to your belt . . . simply suicide.

The message seems obvious, divers and swimmers who aren't enticing sharks rarely see them though the shark is often nearby. Shark attractions are highly varied; from bleeding, struggling fish which are their natural food, to strange noises, splashes, etc.

What do you do to protect yourself if you see a shark? Most experts agree that you should get out of the water. That's good advice if you can follow it. But if you are a long way from shore or boat that simple solution may not work. In this case, try to understand what you've done to attract it to the point of coming into the open. Remember he didn't have to show himself just to see you. The fact that it did is either a mistake or a deliberate act. In the case of the mistake, the shark will normally be in the process of leaving even as you watch. If it persists, circles or in other ways shows intense interest, then there is something about you or perhaps the area that has raised its interest.

If you aren't spearfishing, lobstering, banging metal objects, or dangling bright shiny or flashy objects such as camera housings, chrome instruments, etc. like some giant fishing lure, then you may well have trespassed into the shark's territory. Regardless of the cause move deliberately, steadily away from the point of encounter, there is no need to tell you to keep an eye on the animal, and watch its reactions for more clues to why it's interested in you. You won't be able to let it out of your sight.

If you have been spearing or whatever, stop. Get rid of your catch even if it means giving up gun, stringer, or other gear. Then of course leave the area.

Self-defense against a fast moving shark is pretty hopeless. Unless you've been planning the encounter and armed yourself with an anti-shark weapon, there is virtually nothing you can do. You have as much chance of stopping a rushing shark, which incidentally can move at speeds upwards of 40 m.p.h. and outweigh you by two or three times, as you have of stepping off the curb in front of a car moving at the same speed down the Pali Highway and stopping it.

It's depressing to consider it from this point of view. Most pro divers simply don't worry about the possibility. They take prudent precautions to avoid the meeting entirely then go about the real business of diving. Worrying about their physical condition, that of their gear, and the prevalent water conditions. Because basically most experienced divers have come to recognize that sharks, while existing, are a normal part of the environment and most likely will not interfere with their dive, whereas waves, and currents may easily batter or wash them away. Poorly designed, maintained, or misunderstood equipment can seriously injure them and bad physical conditioning will bring on quick fatigue or diving disease.

So the experienced diver tends to list the shark menace as just this side of things that go bump in the night, if not a good way to hold attension at a cocktail party. Sharks were a part of the sea before man existed. The only thing different this year is everyone has become aware of them.

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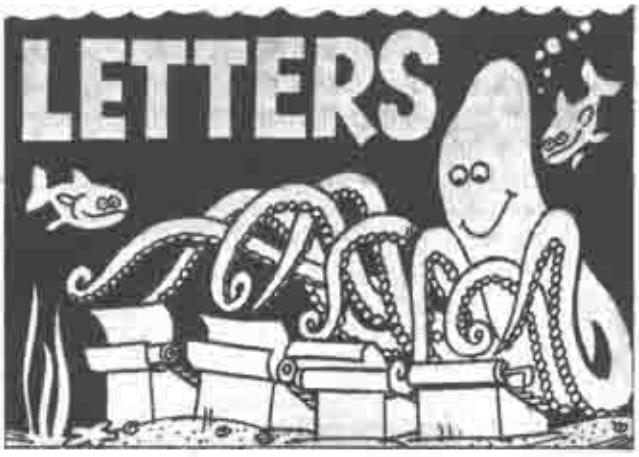

Letters of interest received by NAUI Instructors, Branch Managers, Board of Directors, Headquarters and the NAUI News Editor are presented in these columns.

INDIVIDUAL LIFE INSURANCE

Dear Jon:

Just a short note to state affirmatively that I am able to write individual life insurance of all types for divers at standard rates.

As you know, life insurance is very personal and cannot be bound with any insurance company. A life insurance application must be submitted for each individual and depending upon amounts of insurance solicited or age, there maybe a physical examination required by the insurance carrier.

Thank you very much for thinking of me and I would be most happy to respond to all inquiries either by letter or telephone on a confidential basis.

Yours very truly,
Ronald A. Young
Vice President
Albert G. Ruben & Co.

Dear Dennis,

In my view, one of the finest and informative articles ever to appear in NAUI News was the August *Facts about NAUI*. Informed instructors can help a great deal to make our organization grow. Facts and figures are a giant step for all NAUI instructors.

Now we can see for ourselves that the HQ staff is underpaid, that postage cuts deeply into the financial pie and that those who handle our transactions are human after all (even downright pretty).

Bill High
NAUI 175

JOHN HODGSON COMMENDED

I took a scuba-diving course this spring under instructor John Hodgson, and I would like to let you know that I enjoyed the course, and I think that John is a tremendous instructor both in the classroom as well as in the water.

Yours in safe diving,
Alex Kerkkamp

RON GAINSFORD LAUDED ON THE REBOUND

About a year ago, I received my 'Basic Scuba' certification from NAUI instructor Ronald Gainsford (OA72). Several months later I received an Instructor Evaluation form in which I gave Mr. Gainsford a rather poor rating.

I wish now to reestablish my opinion or shall I say to reconsider my opinion of Mr. Gainsford.

At the time of the evaluation I was quite a neophyte to the world of diving and diving instructors. In other words, I was really too damn ignorant about diving instructors to objectively evaluate Mr. Gainsford . . . as a net result of my ignorance I made statements regarding Gainsford that were totally inaccurate & unfair to say the least!

It is only now, after almost a year of meeting other divers and other instructors, that I feel that I am qualified to objectively evaluate Mr. Gainsford. So, let the records show that

Ronald Gainsford #OA72 is truly one of the most knowledgeable & personable instructors that I have encountered. The man was quite intelligent in all aspects of diving instruction. Over the months that have passed since I returned the inaccurate evaluation form, I've come to realize that Gainsford relayed information to us in a unique manner. What he taught became instinctive within me. It wasn't as if he drilled the information into me with traditional 'school teaching' techniques. He has a subtle way about him that reeks knowledge and one is actually unaware of what or how much one learns from someone like this until he or she stops to think of it (or intil he or she encounters other divers who were unfortunate not to have Mr. Gainsford for an instructor.)

In any case, I felt that Mr. Gainsford's record should not be unjustly blemished by a mere 'rookie in a big mans league . . .'

I therefore decided to write this note hoping that NAUI will commend Gainsford for a job well done. If NAUI could have everyone as talented as Ronald Gainsford the world would be a better place to dive in!!

Thank you Ron Gainsford!!

Sincerely,
George S. Sliman

CONT. NEXT PAGE

TIM TRAVIS PRAISED

Gentlemen:

My son, Brian Friedman, recently completed the NAUI-accredited Underwater Course conducted by Navy Lieutenant Commander D.T. "Tim" Travis at Rodman Naval Station, Canal Zone.

What a tremendous job Commander Travis and his assistant instructors did to assure that Brian and the other members of the class received top-notch instruction, and became totally competent in an underwater environment. They constantly stressed safety, and gave close and careful supervision to the practical water training, as well as to proper equipment selection and care.

When it comes to conscientiousness, thoroughness, enthusiasm, and ability to impart his knowledge of underwater activity, I just don't think that Commander Travis has a peer. He conducts a great course. Because of this, I can let my son have the experience of Scuba and skin-diving with complete confidence that he will do it properly and safely.

Sincerely,
Egon E. Friedman
GS-12 DA Civilian
News Media Officer

WHAT IS A DIVE?

During the past several months I've read many acceptable and logical definitions of a "dive." But the majority of these definitions involve some form of tangible criteria, i.e., time and depth. Before we try to answer "what" we should first answer "why" do we dive? We dive for fun, relaxation, sport, money, fulfillment of the mind, challenge, excitement, sensationalism, exploration, or just to get out of the house. After defining "why" brings us to a more intangible and personal meaning of "what" is a dive?

In direct relation to the above, a dive is a learning experience—positive or negative—regardless of time and depth factors. If you roll off your boat and find conditions worse than you originally surmised and you safely abort the dive that was a learning experience and *can be* qualified as a dive—not a good one, but a (safe) dive. Whether the experience is an immediate one that will benefit you during later dives, or a recollection from a previously made dive. Were all of the objectives (goals) of the dive plan accomplished? Did you get that photograph or special shell? Did your students perform as expected? Did *you* learn anything from your students?

A dive is a continuing educational process that in some form makes each new dive more enjoyable and you a safer diver/instructor. The day we fail to learn from a diving experience, no matter how minute, is the day we should sit back and re-evaluate our own diving practices.

John R. Kessler, NAUI 3590

MORE INFO ON PERSONAL PROPERTY INSURANCE

Dear Art:

Under the Homeowners and Tenant's Policies, an addition which I often use for divers and diving instructors is increased limits endorsement for coverage on the contents away from the premises. This is usually good for the person who has a Tenant's Policy and has only $1,000 on contents away from premises. In many cases he may have more than $1,000 worth of diving camera equipment with him on a weekend of diving. By using the increased limits you can increase the total to the limit desirable.

Another helpful endorsement for the diver is an extended theft endorsement which covers loss by theft of property unattended in any vehicle or watercraft, even if that vehicle or watercraft is not locked. Under the normal Homeowners or Tenant's Policy, coverage is not extended if the auto shows no signs of forcible entry or is not locked.

One other possibility is that camera equipment may be covered under a Camera Floater or diving equipment under a Sporting Goods Equipment Floater. By doing this, the coverage is on an "all risk" basis rather than on a named peril basis. This coverage is based on a territory that is worldwide rather than just in the United States.

I hope these additional ideas on insurance coverage will be helpful to other instructors and if, in the future, you have any other questions regarding insurance we would be pleased to helpyou to answer them from both an insurance aspect and an avid diving instructor's point-of-view.

Yours very truly,
Paul E. Janofsky,
NAUI 2952
A. Mason Blodgett & Associates

END OF LETTERS

Calendar of Events

INSTRUCTOR TRAINING COURSES: (1976)

Jan. 28-May 12	**San Diego, CA** (Semester ITC, San Diego State University) Mark Flahan, Director 4971 Mt. Gaywas Dr., San Diego, CA 92117
Mar. 6-June 5	**Rockport, MA** (Weekends) Fred Calhoun, Director Box 291, Back Bay Annex, Boston, MA 02117
April 10-17	**Catalina Island, CA** Homer Fletcher, Director 2273 Cove Ave., Los Angeles, CA 90039
June	**Atherton, CA** Martyn Perry, Director Menlo School & College, Menlo Park, CA 94025
June	**San Diego, CA** NAUI South Pacific Branch 4971 Mt. Gaywas Dr., San Diego, CA 92117
July 23-31	**Peterborough, Ontario, Canada** NAUI Canada Box 510, Etobicoke, Ontario, Canada
August	**Charlotte, NC** Ed Hipp, M.D., Director 1350 Kings Dr., Charlotte, NC 28207
August	Chicago, IL George Buetow, Director 2100 S. 9th Av. Maywood, IL 60153

SEMINARS, SYMPOSIUMS AND WORKSHOPS:

October , '75	General Membership Meeting **Honolulu, HI** Roy Damron Box 15516, Honolulu, HI 96815
October	Diver Safety Seminar **Bellevue, WA** Sharon Dodge 8706 55th Ave. N.E., Marysville, WA 98270
Oct. 4-5	North Atlantic Underwater Convention **Rockport, MA** John Burrage 74 East Main St., Hopkinton, MA 01748
November	Equipment Technology Seminar **Chicago, IL** Don Pittan, Director Box 142, Berwyn, IL 60402
Nov. 1-2	Equipment Technology Seminar **Los Angeles, CA** Steve Barsky, Director Underwater Sports Breakwater Marine Center Santa Barbara, CA 93109
Nov. 1-2	Charter Boat Diving Workshop **San Diego, CA** Mark Flahan, Director 4971 Mt. Gaywas Dr., San Diego, CA 92117
Nov. 1	South Pacific Branch Meeting **San Diego, CA** Mark Flahan 4971 Mt. Gaywas Dr., San Diego, CA 92117
Nov. 8-9	Film Festival **Honolulu, HI** Roy Damron, Director Box 15516 Honolulu, HI 96815
Nov. 9	NAUI-NASDS Instructor Dialogue **Boston, MA** – Holiday Inn Fred Calhoun Box 291, Back Bay Annex, Boston, MA 02117
Feb. 1, '76	NAUI Dives Maine **Portland, ME** NAUI North Atlantic Branch Box 291, Back Bay Annex, Boston, MA 02117
Feb. 27-29	Ice Divemaster Seminar **Trenton, Ontario, Canada** NAUI Canada Box 510 Etobicoke, Ontario, Canada
Mar. 6-7	Diving Emergencies Workshop **San Diego, CA** NAUI South Pacific Branch 4971 Mt. Gaywas Drive, San Diego, CA 92117
Mar. 20-21	Man In The Sea Symposium **Seattle, WA** NAUI North Pacific Branch 6531 N.E. 198th St., Seattle, WA 98155
April 2	Diver Legislation Meeting **Boston, MA** Wayne Anderson, Director Box 908 Hyannis, MA 02601
April 3	Underwater Symposium and Film Review **Boston, MA** Fred Calhoun, Director Box 291, Back Bay Annex, Boston, MA 02117
April 25	NAUI Instructor Underwater Film Review **San Diego, CA** NAUI South Pacific Branch 4971 Mt. Gaywas Dr., San Diego, CA 92117

NAUI ADVANCED DIVER PROGRAMS

Oct. 13-Dec. 14	**Greenwich, RI** Willard Smith, Instructor 754 Main St., E. Greenwich, RI 02818 Phone: 884-5141

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

SCIENCE DIVING
International Proceedings of the 3rd Scientific Symposium of CMAS Edited by Nick Flemming

Here is a book published in England, but in stock at NAUI Headquarters while supplies last. This limited edition Proceedings contains the texts of 46 papers ranging from Archaeology, Biology, Geology, and Physiology to Technology each representing the most advanced work being carried out at the time. This volume will be a great help and a guide to marine scientists generally, illustrating the ways in which man underwater is contributing to an understanding of physical and biological phenomena under the sea.

For the serious minded diver and scientist this is a must. It's not light reading, but well worth the money for this important collection of papers. Professionally done on high quality paper—a permanent reference for any library.
282 pages 8¼ x11¾ $13.00.

National Association of Underwater Instructors
NAUI HEADQUARTERS
BOX 630
COLTON, CA 92324

ADDRESS CORRECTION REQUESTED