

# Buddy Line



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Newsletter of Fraternal Order of Underwater Swim School, Key West, Florida

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November 2003

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## President's Corner by Don Stone

Reunion 2004 planning is moving along well. You are going to want to arrive early so you don't miss Lunch With The Shark at noon Friday, May 7, at Consolidated Divers Unit, current home of the famous UWSS Shark. This will be followed by a visit to the Unit and will be our only activity not on Amphib Base Coronado. Friday evening we'll have the Ice Breaker at Club Coronado with plenty of food, drink and good company.

Saturday's schedule begins with a continental breakfast, which is followed by a visit to Navel Special Warfare Group 3 and Special Boat Unit 12. Scheduling these visits has been greatly facilitated by Bernie Campoli's contacts within those units.

The Saturday evening banquet will be at Club Coronado. Capt. L. R. Bremseth, Commodore of Naval Special Warfare Group 3, and his wife, Marlena, will be our honored guests and the Commodore will speak about recent developments in Special Warfare, providing operational commitments allow,

As it stands right now, the business meeting will be held Sunday morning. This is a tentative schedule, and may vary according to later developments. I expect to be able to reserve a block of rooms at Navy Lodge North Island – it's on the beach and just a few minutes from the Amphib Base. I recommend that you plan on arriving in Coronado on or before Thursday, May 6, so that you will be ready for Friday's activities that begin at noon.

Several members of FO/UWSS, including Bob Barth and Bernie Campoli, are members of The Historical Diving Society, an organization that is devoted to the history of diving, diving equipment and diving techniques. When I attended their rally in Key Largo recently, their historian, Rocky Rockwell, and I made a deal to join each other's group. Rocky collects and renovates old scuba rigs and will be bringing to the reunion some examples of the rigs we used in Key West. We can't wait to see that good old Scott Hydropack – right? Rocky's story on BUD/S new two hose regulator is in this issue of Buddy Line.



## BUD/S Mysterious Mentor

By Kent Rockwell

The 1949 French Aqua-Lung, two stage, double hose, regulator became the first open circuit scuba regulator to be tested and then adopted by the US Navy.

Used for fleet requirements; the same basic regulator would sail on for 23 years while evolving into the Royal Aqua-Master model. Then, with declining sales the US Divers Company (now Aqua-Lung America) discontinued their twin hose line in favor of the single hose regulator. However, Navy training units still used the Aqua-Master and the Navy fought hard to prolong its life. They scoured civilian dive stores for spares (some originally from Navy surplus) and even purchased licensed built copies of the Aqua-Master from Biomarine. When Nemrod brought the Snark III back into production the Navy purchased those regulators until they, too, were discontinued.

Now the Navy was in a bind. Their Basic Underwater Demolition /Seal (BUD/S) training school needed twin hose regulators for pool competency training scenarios. The twin hose regulator offered BUD/S students relatively inexpensive familiarization with the soft, pliable twin hose system found on all military rebreathers. And with over a thousand students a year attending BUD/S the twin hose regulators were seeing a lot of abuse.

Continued on page 4

**UWSS LOGO ITEMS**



The following logo items are available, so send in your orders and they will be shipped pronto. Prices include shipping. Availability subject to change. We can obtain other items, such as sweat shirts, if there are enough requests.

- White Beefy-T shirts..... 13.00 ea, 2 for 23.00  
Logo front and back (pocket or no pocket – your choice)  
Sizes L, XL, XXL, Childs 10/12 (no pocket)
- Ash gray Beefy-T shirts..... 14.00 ea, 2 for 25.00  
Large logo on back, small logo on pocket  
Sizes L, XL, XXL, Childs 10/12 (no pocket)
- White Polo shirt ..... 18.00 ea, 2 for 33.00  
Small logo on pocket, 50/50 cotton/poly  
Sizes L, XL, XXL
- Ash Polo shirt ..... 19.00 ea, 2 for 35.00  
Small logo on pocket, 50/50 cotton/poly  
Sizes L, XL
- UWSS logo decal ..... 2.00 ea
- Coffee mug with logo ..... 11.00 ea
- Cap – natural with logo ..... 11.00 ea  
7.00 ea if ordered with shirt

Send payment with order to Don Stone,  
1440 SW 5<sup>th</sup> Ave  
Boca Raton, FL 33432



**Secretary/Treasurer's Report**

Membership November 2003  
102 regular members  
75 associate members

Account Balance August 2003	2745.91
Interest	+1.12
Dues	+ 50.00
Logo items sold	+ 54.00
Postage	-76.00
Account Balance November 2003	2775.03

**FO/UWSS Mission**

The Fraternal Order of Underwater Swimmers School was formed in order to keep lines of communication open between personnel of the armed forces who were staff or students at the Navy Underwater Swimmers School Key West, Florida. Associate membership is open to family, friends, and associates of UWSS students and staff who share an interest in the goals and activities of the FO/UWSS. Associate members will not have voting privileges.

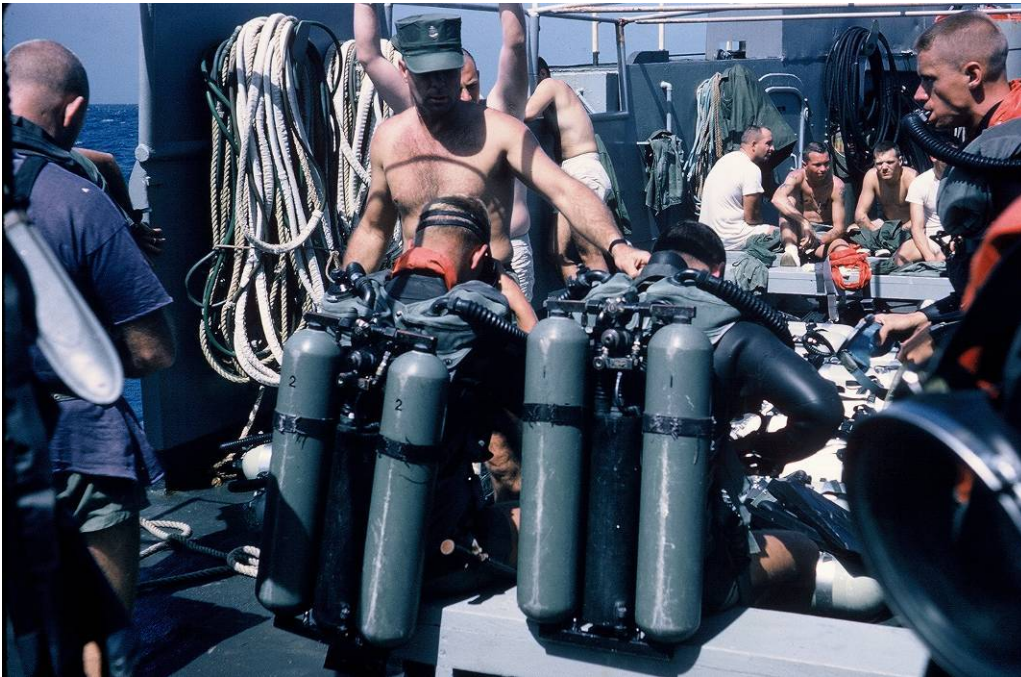
One of the most important reasons for our existence as an organized group is to plan for and participate in biannual reunions, which will be held at various locations to be selected by members' votes.

**FO/UWSS Officers**

- President ..... Don Stone
- Vice President..... Chris Seger
- Secretary/Treasurer ..... A. Dee Clark
- Historian ..... Erasmo Riojas

The Buddy Line newsletter is published quarterly in February, May, August and November. Buddy Line editors are Don and Art Stone. e-mail: [stonefish7@cs.com](mailto:stonefish7@cs.com) or [uwssbuddyline@cs.com](mailto:uwssbuddyline@cs.com) snail mail: 1440 S.W. 5<sup>th</sup> Ave., Boca Raton, FL 33432 phone: (561) 391-6727 fax: (509) 472-6492

**Historical Information Requested**  
Specific information is needed on schedules, training events, testing, content of classes, etc. at UWSS for inclusion in a history of Navy Diving being written by Tom Hawkins for the Office of Naval Research. Please contact Doc Rio, UWSS Historian, by phone at (281) 485-0177 or e-mail at [elticitl@mi-vida-loca.com](mailto:elticitl@mi-vida-loca.com).



The Mark VI semi closed circuit scuba was designed to use mixtures of inert gas such as nitrogen or helium together with oxygen. The increased percent of oxygen gave the diver the great advantage of reduced decompression time, but as depth increased, the percent of oxygen had to be decreased to prevent oxygen toxicity and, of course, decompression time increased.

These apparatuses were designed primarily for EOD divers and were very quiet, non-magnetic and gave long bottom time.

Pictures from Merle Simonson



## BUD/S Mysterious Mentor By Kent Rockwell

Continued from page 1

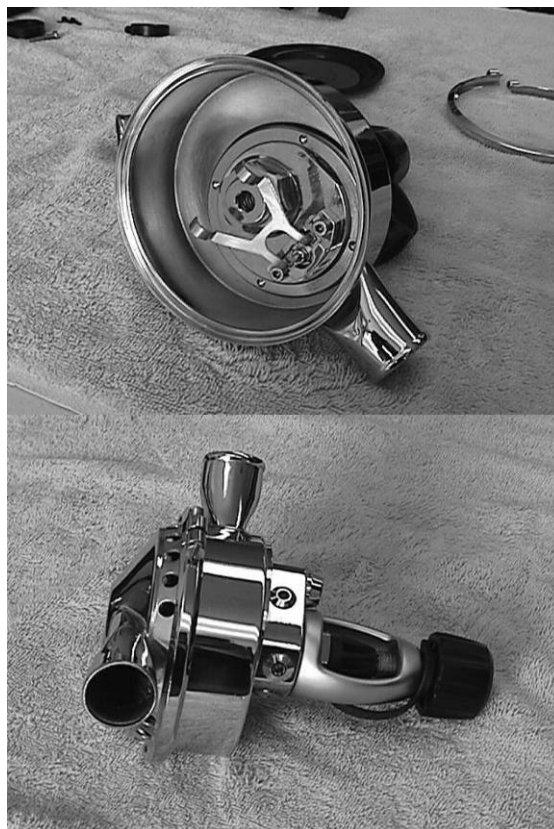
In July of 1999, Lt. John Morris, Diving Officer at BUD/S, called on Aqua-Lung America (ALA) with an urgent request for help. His request was twofold: first help with their aging Nemrod Snark IIIs and secondly, develop a replacement regulator. ALA's Dominique Sumian (Military Product Manager), Dave Stancil (VP of Military Sales) and Carson Atkinson (ex-BUD/S instructor and Program Manager) conducted research into the viability of a new double hose regulator at ALA's headquarters in Vista, California. In Panama City, Florida, Bill Bruhmuller (retired SEAL and Aqua-Lung Program Manager) did research at the Naval Experimental Diving Unit (NEDU). Sumian, Stancil and Atkinson visited the BUD/S facility at the Naval Special Warfare Center in Coronado, California on October 22, 1999 to determine the Navy's requirement for Fit, Form and Function and to obtain SPECWAR community approval. According to Dave Stancil, one of the Mentors strongest supporters, ALA has long been committed to supplying the Navy community and jumped at the challenge to provide a unique product. The name Aqua-Master II was considered but Morris's (BUD/S) suggestion of Mentor was attached to the new regulator.

In November of 1999, ALA's management, headed by President Don Rockwell, approved the project(s) and by mid December, plans were put into place for both Phases I and II. A Snark III sample was sent to Aqua-Lung France (ALF) for the Phase I hose design. These pieces were modified from ALF's OXY-2C rebreather line and a prototype set was available by January 3, 2003. Mid July saw ALA deliver 100 sets of hoses and mouthpieces to BUD/S for the Snark III upgrade.

At La Spirotechnique (now Aqua-Lung France) a young engineer, Yannick Bonnemaïso, was tasked to design the new regulator. Bonnemaïso required the Mentor to breathe freely to 135 fsw and worked hard to beat current single hose regulators as well. By November of 2000 the first of 5 prototypes was up and running, and deliveries were made on the first of December. The prototypes were initially delivered to NEDU for testing and although one needed to be cleaned, lubed and re-assembled the regulators performed flawlessly.

However, due to the nature of the regulator's usage and short test period, NEDU only certified the regulators to 25fsw in the pool. The 200 production units were soon to follow and were shipped to ALA for testing before delivery to BUD/S. The only change we could find in the production units was the addition of a neat little Aqua-Lung logo Laser etched into the center of the chrome covers. The Mentor cost the Navy around \$995 each, as opposed to the Snark III's \$798 price tag several years before. Not too bad when you consider costs of design, tooling, manufacturing and testing for only a few hundred items.

The Mentor is really a beautiful thing to look at. Although originally specified in black chrome, its bright work is first rate and overall finish really pleasing, It is a two stage



balanced regulator not unlike the original Aqua-Lung. Its first stage is based on the diaphragm type Conshelf XIV and most of the component parts are common with the Spiro Titan and XLC regulators. For convenience the rather thick first stage housing features two low-pressure accessory ports and one high-pressure gauge port (SPG).

The second stage features a horseshoe shaped lever actuating a downstream poppet valve. The unique feature here is that the poppet seat is inserted from the outside of the regulator body and is adjustable with a hex wrench. The lever bracket, that the second stage lever pivots in, is the critical part of the design and ducts air into the regulator body from the first (intermediate) stage and aims it down the intake hose. The resulting "venturi" action helps evacuate the regulator housing,

pulling the main diaphragm in and opening the second stage valve completely. Thus, the regulator feeds the diver air directly from the first stage with an over pressure action pioneered on the Aqua-Master and Royal Aqua-Master models.

The exhaust, on the other hand, has a rather small mushroom valve located in the regulator's front cover. We were not too surprised when Mentor project engineer, Ed Szostak, pointed this out on the computer printouts from their ANSTI breathing simulator. Inhalation work-of-breathing (WOB) proved to be better (lower) than an exemplar XLC single hose regulator, however, the Mentor's exhalation effort was at or above the maximum limits. This could be tiring at any real depths.

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## BUD/S Mysterious Mentor Continued

In August of 2002 we test dove the Mentor in the College of Oceaneering training tank in Wilmington, Ca. We found the effortless inhalation work to be a real pleasure and this demonstrated just how close to perfection Aqua-Lung engineers have come in two hose regulator design. And, though the exhalation pressure could be more demanding (although not objectionable at our low work rate), swimming prone lowered the hydrostatic pressure at the regulator helping the diver to exhale.

Carson Atkinson and Ed Szostak ably hosted our tour of the Aqua-Lung facilities and Ed's R&D lab. We watched a regulator cycle through its paces on the fabulous ANSTI machine and, at the end of our visit, Ed brought out a sealed Aqua-Lung box, cut the tapes and lifted out one of five stunning "gold-plated presentation" Mentors. We did ask and both men reminded us that Aqua-Lung America, unfortunately, has no plans to sell Mentors, gold plated or otherwise, to the civilian market.



## Mackenzie's Diary

*Robert B. MacKenzie, a 1957 UWSS graduate retired after 30 years service in the Marine Corps, shared the diary he kept of his days as a UWSS student. Here are more excerpts from his diary.*

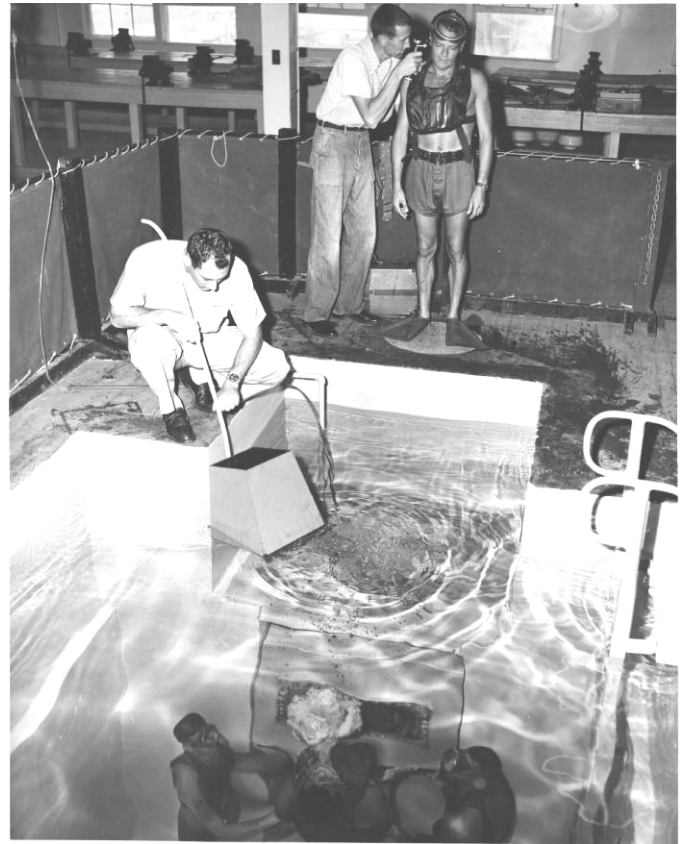
**20May:** All morning we had class and practical work on the assembly and disassembly of the Scott Hydro-Pac. This rig weighs over 70 lbs., has two tanks and an attached face mask. It holds 2150 lbs. of air. We adjusted, tightened, unscrewed, took apart and, in short, examined the whole thing quite thoroughly. None of us can call all the names of the parts, but I think everyone can perform necessary maintenance of the gear.

This noon, our checks arrived, plus an announcement from USAFI that I have been transferred from the Survey of American Literature course to the Physical Geography course. I think the latter will be easier to deal with, since the time consumed may be spread out. With that fool English course, I would have had to spend a lot of time all at once - an obvious impossibility for someone in this school.

Right after noon muster, "Bravo" group took off for their 1,500 yard swim on the surface, while we in "Alfa" stayed in the barracks for the free ascent in the 12-foot tank. Each of us did it correctly and completely twice. The procedure was as follows:

1. Make a surface dive - a good one - no legs flapping on the surface and using no hands when one is under the surface. We were carefully instructed on this point, since Commander Roe doesn't like his khakis wet.
2. Come up under the diving bell and put two or three good breaths into the lifejacket.
3. Back out of the bell - on each side an instructor holds

Dr. Aquadro & Bobby Roper checking out students during twelve foot free ascents. Photo from Lee Barber



onto the handles on the belt we wore.

4. Look to the instructor on the right; wait until he nods his head.
5. Exhaust all air on this signal, drop the arms to the side, and look straight at the surface.
6. If the instructors think that all air has been expended that all the proper motions have been made, they let go the handles and the swimmer rises to the surface - using neither hands nor feet for propulsion, and continuing to exhale air all the way to the top - to prevent air embolism.

"Bravo" returned from their swim - best time being 31 minutes. "Alfa" left for our torture. There's always the Monday blues - a weekend of inactivity on top of a few beers adds up to a day of discontent for anyone.

Al and I did it in 28 minutes and were tops again - by two minutes over Willy Anderson and Bill Bostain, and by 3 minutes over Wallace and Kellar. Great jubilation by Al and I over the victory.

To celebrate, we invited Bill Rice (Ltjg) over to the Navy slop chute at night for a beer or so. He went to Mankato State Teachers, taught last Fall in Byron, and knows innumerable mutual friends at Carleton. He also was kind enough to bring me up to date on all the building going on in Rochester since my last visit 14 months ago. Altogether, it was a very pleasant evening.

**Membership Application**

**Fraternal Order of Underwater Swimmers School**

Full Name: \_\_\_\_\_

Wife's Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_ E-mail: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Branch of Service: \_\_\_\_\_ Dates of Service: \_\_\_\_\_

Dates & Class # at UWSS: \_\_\_\_\_ or Associate Membership: \_\_\_\_\_

Send copy of class picture if you have one.      2 Year Membership \$25.00

Make check to A. Dee Clark, Treasurer and mail to 1315 Garner St., Nacogdoches, TX. 75961

**The way it was**



**The way it is**

The shark has traveled a long way



Fraternal Order of Underwater Swimmers School  
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