



# HISTORICAL DIVER

The Official Publication of The Historical Diving Societies of  
South East Asia Pacific, Canada, Germany, Mexico, Russia and the U.S.A.

Volume 11 Issue 1

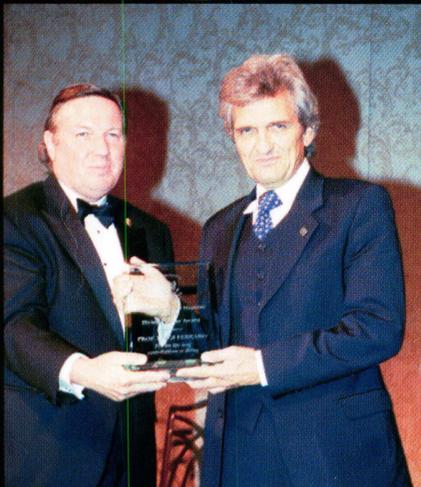
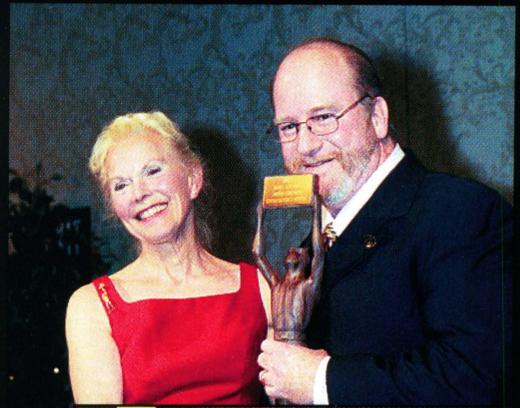
Number 34



## American Aqua-Lung Double Hose Regulators

- The Second World Congress of Underwater Activities • U.S. Navy Mentor Regulator •
- Robert Hooke's 1664 Scuba • History of Kirby Morgan Part III • Dacor Diving Lung •
- Santa Barbara Helium Demand Helmets • Commander Doug Fane • Wheeler North •
- Jim Church • Luis Marden • John C. "Greek" Maillis •

Diving Industry Awards Gala 2002  
Las Vegas, NV



Row 1. Paul Tzimoulis and Geri Murphy; Wyland and Francine Cousteau; Zale Parry and Brian Cronin.  
Row 2. Dr. Peter Bennett; Paul Tzimoulis and Bob Hollis; Ron Kipp;  
Row 3. Leslie Leaney with Paulo Ferraro; Zale Parry and Hillary Viders; Leslie Leaney and Bob Rusnak;  
Dorothy and Lucinda Bridges with Wyland.

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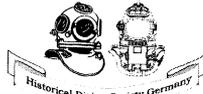
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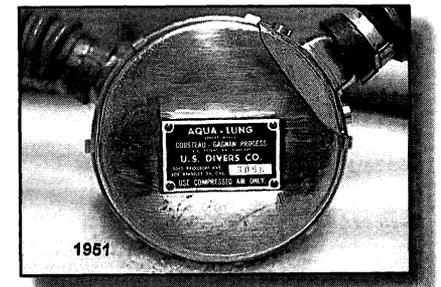
Number 34

## FEATURES

**The Second World Congress of Underwater Activities . . . . . 32**  
 Forty years ago many of the world's leading divers congregated in London for the Second World Congress of Underwater Activities. This historic event was organized and hosted by the British Sub Aqua Club, which is currently celebrating its fiftieth anniversary. Society Advisory Board member Andreas B. Rechnitzer, Ph.D. attended the meeting in his capacity as Vice President of CMAS. In Part One of a series, he recalls the opening day with speeches from The Earl Mountbatten of Burma, Jacques-Yves Cousteau and Luis Marden.



**A Guide to American Two Hose Aqua-Lung Regulators 1949 - 1973 . . . . . 37**  
 As the Aqua-Lung celebrates its 60th anniversary, scuba historian Mark Howell presents a pictorial review of the American regulators that launched recreational diving.



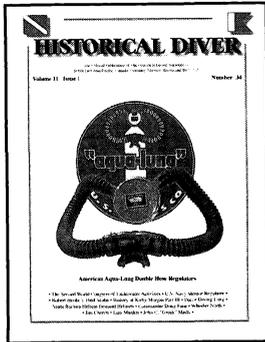
**A History of Kirby Morgan Diving Equipment — Part Three. . 44**  
 Editor Leslie Leaney completes his conversations with Bob Kirby and Bev Morgan, and covers the company's masks from the KMB-8 of 1967 through to the current day.



**Robert Hooke and the 1664 Scuba . . . . . 48**  
 In 1664 Robert Hooke developed a scuba system that may well have been the world's first. As the Royal Society of London prepares to commemorate the 300th anniversary of Hooke's death, U.K. based diving historian Peter Dick records some of the details of this early diving invention.



## ON THE COVER



A 1968 U.S. Divers Golden Royal Aqua-Master, produced to celebrate the 25th anniversary of the invention of the Aqua Lung. In the background is a version of the U.S. Divers corporate logo, which was used during the last half of the 20th century.

### Other Features

Editorial	7
Board of Directors – Dan Orr President	8
HDS-USA 2003 Conference Information	9
New Members	10
In The Mail and In The News	11
3rd Annual Diving Industry Awards	12
HDS-USA 10th Anniversary Conference	13
International Scuba Hall of Fame	17
HDS-USA Directors 1992— 2002	18
International Reports	
HDS-USA	19
HDSSEAP	20
HDS Canada	23
HDS Germany	25
HDS Mexico	27
HDS Russia	29
HDS France	30
The Navy’s Mysterious Mentor	42
SCUBA Workshop — Dacor Diving Lung Part II	50
Helmets of the Deep	54
The E.R. Cross Files	56
Classic Diving Equipment Groups	57
Webb’s Maritime Auction — New Zealand	60
Internet Auctions	62
Philippe Tailliez’s Last Voyage	64
In Memory — Commander Doug Fane	65
In Memory — Wheeler J. North	67
In Memory — Jim Church	68
In Memory — Luis Marden	70
In Memory — John C. “Greek” Maillis	72
Classified	73

## HISTORICAL DIVER MAGAZINE

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THE OFFICIAL PUBLICATION OF  
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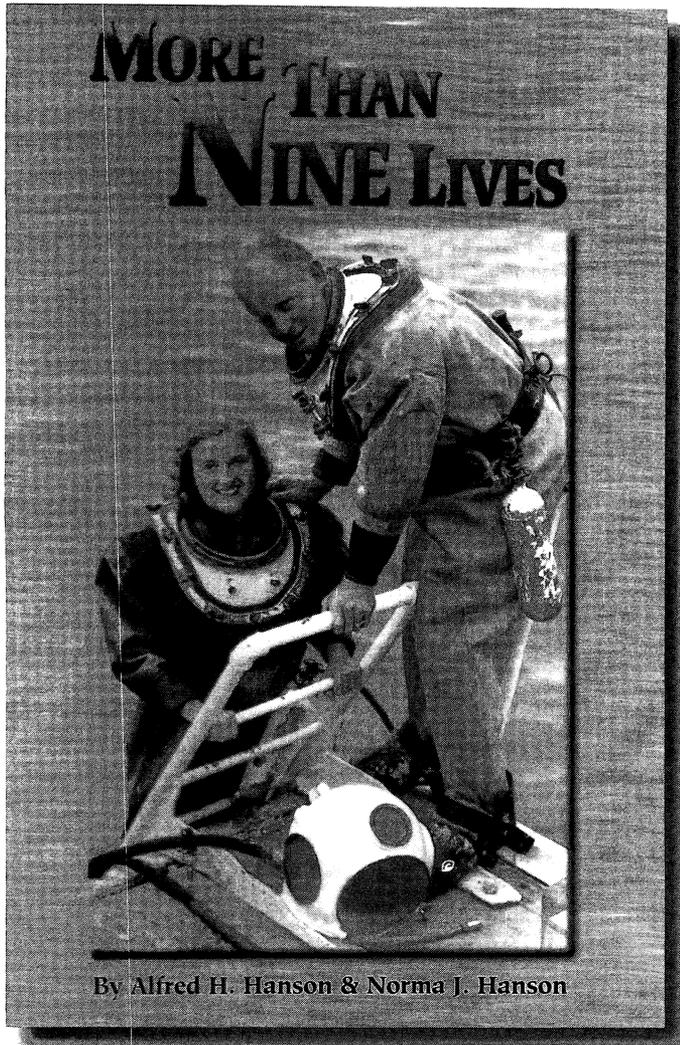
### DISCLAIMER

Diving is a potentially hazardous practice and if practiced incorrectly, or with incomplete planning and procedures, can expose a person to considerable risks including serious injury or death. It requires specialized training, equipment and experience. **HISTORICAL DIVER** is not intended as a substitute for the above or for the diver to abandon common sense in pursuit of diving activities beyond his or her abilities. **HISTORICAL DIVER** is intended as a source of information on various aspects of diving, not as a substitute for proper training and experience. For training in diving, contact a national certification agency. The reader is advised that all the elements of hazard and risk associated with diving cannot be brought out within the scope of this text. The individuals, companies and organizations presented in **HISTORICAL DIVER** are not liable for damage or injury including death which may result from any diving activities, with respect to information contained herein.

# More Than Nine Lives

By Al and Norma Hanson

HDS-USA Exclusive. 500 copies only



*More Than Nine Lives* by Alfred Hanson provides a detailed overview of his life and work as a deep-sea diver. His life was jam-packed with adventures both above and below the sea. His amazing stories will appeal to anyone interested in diving and the ocean seas. A finely crafted book of 703 pages, the reader will enjoy its compliment of numerous photographs.

Torrance R. Parker  
Founder, Parker Diving Services, Inc.

A magnificent personal accounting of the deep sea diving careers of Al and Norma Hanson. It covers Al's work in abalone, harbor, salvage, construction and commercial diving. These sections of the book will be of great interest to any scholars of West Coast maritime history as well as international Society members who wish to learn more of American diving history through a first hand account. Norma also donned a helmet and joined Al, working as husband and wife team. Together they gained international attention as a tourist attraction when they demonstrated the art of deep sea diving under a glass bottom boat at Catalina Island. Their careers also involved working for Hollywood films, including Disney's *20,000 League's Under The Sea*. The Hanson's are well known and respected divers, and this unique book is the result of their combined memories of an amazing journey through adventures over the last half century and more. In it you will encounter the careers of Otis Barton, Dick Anderson, Colonel John D. Craig and others, plus a wealth of stories from helmet diving's recent past. At 703 pages this book is not a light read, and is comparable in size to a D.D.S.O. It is hard bound

with an illustrated dust jacket, and contains numerous photographs. Note: Members are informed that the book *price* is mis-printed on the dust jacket at \$29.95. The actual price is \$40. Please remember this. There are two domestic shipping options so please clearly indicate which one you wish when ordering.

This is an HDS-USA exclusive title. This first printing is limed to **500 copies ONLY**. Each copy is signed and numbered by Norma Hanson. Allow up to one month for delivery. The book is sold on a first-come-first-served basis, and is expected to sell out quickly.

## Limited Edition

Hard bound in dust jacket, 703 pages, b&w photographs. \$10 domestic Priority Mail, \$6 domestic Media Mail. CA Res add 7.75% sales tax. Contact HDS office at [hds@hds.org](mailto:hds@hds.org) or Fax 805-692-0042 for overseas rates.

With this issue we welcome our newest sponsor company, Aquala. The company's classic dry suits were "standard equipment" for many early recreational divers, and we are delighted to have one of America's original diving equipment manufacturers support our work.

In each decade anniversaries of different events clock up another ten years and pass further back into history. In diving history the third year of the decade is of great significance, and in this issue we touch upon a few, but not all, of the important milestones contained in the year 2003.

Fifty years ago, Oscar Gugen and Peter Small co-founded the British Sub Aqua Club. Perhaps this group's finest hour came in 1962 when they organized and hosted The Second World Underwater Congress in London. At the time, Advisory Board member Andreas B. Rechnitzer Ph.D. (Andy to his colleagues) was Vice President of C.M.A.S., and in this issue he recalls the opening of this historic meeting.

Part of Andy's early career was with Scripps Institution of Oceanography, and this year they celebrate their centennial year. Andy was at Scripps in 1950, and, with Conrad Limbaugh, was using a new tool of scientific scuba diving: - the recently imported French Aqua Lung. The Aqua Lung also celebrates an anniversary in 2003, as it was 60 years ago that Cousteau and Gagnan took it for its first open water dive in the River Marne in Paris. In this issue scuba historian Mark Howell provides an illustrated record of all of the double hose Aqua-Lung regulators that were available in America.

Having managed to tie Andy Rechnitzer to three historical anniversaries in 2003, we have so far failed to connect him to our fourth, although at a stretch we could link his 1950 scuba activities with similar events over 340 years ago. For it was in 1664 that Robert Hooke developed an early scuba unit, and in this issue Peter Dick presents some of the details from his research into Hooke's career. Peter's paper will be part of a conference at The Royal Society in London, commemorating the 300th Anniversary of Robert Hooke's death in 1703.

So, we have a very interesting issue and we hope you enjoy this underwater journey back to the origins of some of this year's anniversaries.

Leslie Leaney and Andy Lentz

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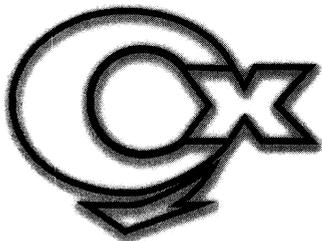
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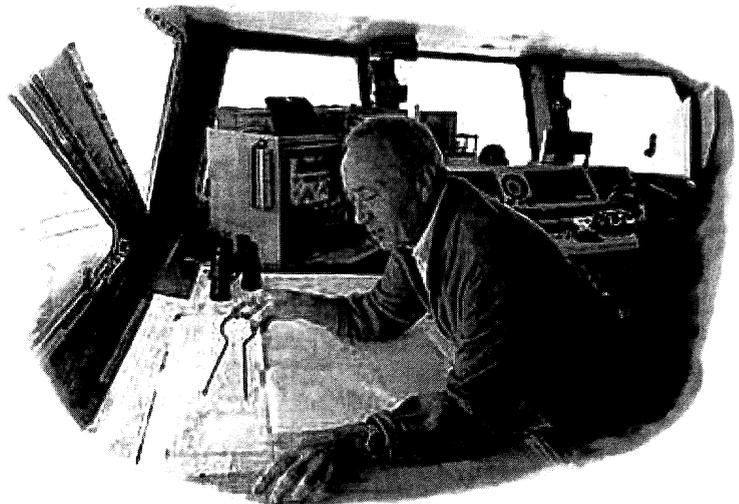
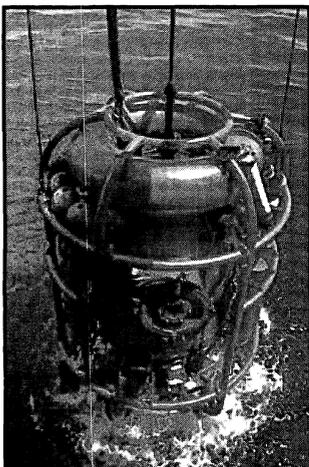
The Members of the Board of Directors are pleased to announce the election of distinguished diving industry executive Dan Orr to the Presidency of the Society. Dan has been involved in the diving industry for nearly 40 years and is currently Executive Vice President and Chief Operating Officer for Divers Alert Network (DAN). He came to Divers Alert Network in 1991 and was responsible for developing and implementing DAN training programs, including the internationally successful DAN Oxygen First Aid Course. Prior to coming to DAN, he was the Associate Diving Officer at Florida State University and, before that, he was Director of Diver Training Programs at Wright State University in Dayton, Ohio.

Dan has Bachelor's and Master's degrees in Biology and has authored and contributed to many books and magazine articles including co-author of DAN's new Pocket Guide for Diving Safety series. He has been a featured speaker at Beneath the Sea, Our World-Underwater, Underwater Canada, DiveScapes, Boston Sea Rovers, International Conference on Underwater Education, SeaSpace, Undersea and Hyperbaric Medical Society (UHMS) and many others. He has also been the recipient of many awards for diving safety, including Diver of the Year from Beneath the Sea, the NOGI from the Academy of Underwater Arts and Sciences in Sports/Education, the Leonard Greenstone Award for Diving Safety, and the Our World-Underwater Award. He is the Chair of the Our World-Underwater Scholarship Society's Rolex Scholar Selection Committee and past Chairman of the Board of Directors of the Academy of Underwater Arts and Sciences.



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**HDS-USA 2003 Conference**  
**in association with Jules Undersea Lodge**  
**October 4-5, 2003**  
**Key Largo, Florida**



Join the HDS at its first East Coast Conference. Held in The Florida Keys, and hosted in association with Jules' Undersea Lodge, the weekend event will feature a welcoming reception, a full diving history speakers program, an evening BBQ and a full day of classic helmet diving. Key Largo is also home to John Pennekamp Coral Reef State Park — America's first undersea park — and numerous recreational diving centers and family oriented attractions. Key Largo is situated south of the major international airport in Miami. DEMA 2003 will be held in Miami three days after the HDS conference, so come early and enjoy some great diving history and some great warm-water coral reef and wreck diving. Jules' Lodge is a former research habitat that has been converted into the only underwater hotel in the world. The facility provides a full range of diving services. The Conference is limited to 180 attendees, on a first come, first served basis. Participation in the diving program is open solely to attendees. Book early to avoid disappointment.

**Friday, October 3, 2003. 6pm - 9pm**  
**HDS reception at Jules' Undersea Lodge.**  
**Cash bar and cafe.**

**Saturday, October 4, 2003. 9am - 5pm**  
**HDS Annual Conference at the Holiday Inn, Key Largo. LIMITED TO 180 attendees.**  
Speakers to be announced. Conference tickets are \$30. Evening BBQ from 6pm - 9pm ticket— \$25. SAVE. Joint Conference/BBQ ticket—\$50. **Tickets available from the HDS office at 805-692-0072 or email hds@hds.org.**

**Sunday, October 5, 2003. 9am - 4pm**  
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**Jules' Undersea Lodge** is located at 51 Shoreland Drive, Key Largo, Florida 33037. Telephone (305)451-2353, Fax (305)-451-4789. Email [info@jul.com](mailto:info@jul.com). Log on to [www.jul.com](http://www.jul.com). For information on the Florida Keys, log on to [www.SEE-FloridaKeys.com](http://www.SEE-FloridaKeys.com)

**Key Largo Resorts** are the official Conference hotels. Prices quoted are for Single/Double Standard room, plus tax. Mention HDS CONFERENCE to secure the special rate.

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Glenn Milstead  
Bradey A. Mitchell  
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Jack Munro  
LCDR Patrick Murphy  
Scott Naughton  
Harold E. Nething  
James Newberry  
Jack Newman  
James C. Nicola  
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T. H. Ong  
Dennis Owens  
Tom Packer  
Allan Palmer  
The Bill Paterson Family  
Michael Peers, *Bermuda*  
Scott Povey  
Jeffrey Prentice  
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Sidney Robbins  
Scott T. Robinson  
Greg Rohrback  
Roy Safanda

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Frank P. Scholz  
Henry Schwartz  
Michael R. Shaw  
Jeffrey Silcock  
John Smith  
Tony E. Snyder  
Bret Stolp  
Greg Stone  
Ethan Sudul  
Brian T. Sullivan  
Robert F. Sullivan  
John S. Svenningsen  
Paul L. Taylor  
Stephen K. Taylor  
Howard Teas  
Lindrel Thompson  
James Thomson  
Jack Tomanica  
Roberto Trindade, *Brazil*  
Chet Tussey  
Peter Van Dyk Berg Jr.  
David Veasy  
Steven Waterman  
Robert P. Weed  
Terence Welch  
Dennis Wilcox  
John Williams  
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Gregory A. Wischmeyer  
William E. Wood  
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Robert O. Yeagle  
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Mary E. Zontek

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Leslie Brix-Nielsen, *Australia*  
Garry Carn, *Australia*  
David Coulter, *Australia*  
Ted Eldred, *Australia*  
Andrew Feguson, *Australia*  
Aaron Ible, *Australia*  
Daniel Lewis, *Australia*  
Michael Mc Elroy, *Australia*  
Peter Phipps, *Australia*  
Scott Rickards, *Australia*  
Robert Scott, *Australia*  
Sue Thurston, *Australia*  
Adrian Ward, *Australia*

### HDS Canada Members

Curt Smecher, *Canada*  
Tom Beasley, *Canada*  
Brendan Coyle, *Canada*

## The Origins of the Buddy System



A pair of early UDT swimmers stand in front of underwater demolition equipment.  
U.S. Navy photograph

The following is an edited excerpt from a letter from respected scuba historian Nick Icorn.

In May of 1943 the Navy Department appointed LCMR Draper Kauffman to establish guidelines for the adoption of training methods for the Naval Combat Demolition Units (NCDU). This was set up at Ft. Pierce, previously the “Scouts

& Raiders” schools under the guidance of the Marine Corps. The buddy system became a function of the early surf training. These were primarily demolitionists drawn from the Seabees, Marines, and Army personnel. Swimming was not a strong requirement. The NCDU’s were used at the Normandy Beach landings of D-Day, 1944. At the same time a swimmers school was established on Maui in the Hawaiian Islands. This was the official beginning of the UDT teams for Pacific operations. Each unit consisted of one hundred men and officers. By the end of WWII, twenty teams were in operation (2000 swimmers). The buddy system was firmly established. Later, as O<sub>2</sub> breathing equipment became available, this buddy system was mandatory due to numerous medical problems encountered.

In 1949 the French Aqua Lung compressed air units became available in America, and scuba diving began to take off. The early descriptive booklets packaged with the Aqua Lung noted that a swim buddy was insurance against difficulty in the water. The first U.S.A. non-military scuba diving guidelines were constructed by Conrad Limbaugh, Diving Officer for the Scripps Institution of Oceanography in La Jolla. His early training program was physically demanding and became a standard for early courses.

The first U.S. public training program was in Los Angeles County in 1954, and was conducted by Bev Morgan and Al Tillman. Instructor courses were implemented in 1955, with four the first year and one each year after. This was the beginning of formalized instruction in the U.S.A. The buddy system was stressed throughout training.

Nick Icorn is a former Director of HDS-USA and curator of The National Underwater Museum.

**Editor’s note.** Further to Nick’s letter, author Wyatt Blassingame states in his book *The U.S. Frogmen of World War II* “As soon as he returned to Maui.....Kauffman announced that no UDT man could participate in the coming expedition unless he could swim at least one mile. And he set his men to practicing. They swam in the surf and in the open ocean. They swam during daylight hours and at night. And always they swam in pairs, the buddy system, so that if one man became exhausted, or if he were wounded, there would be someone close by to help.”

## IN THE NEWS

**Russian and Italian books.** In recent issues we have advertised the HDS Italia book *La Subacquea di Carta*, and the HDS Russia book *The History of Russian Diving*, Issue 1, as being available from HDS-USA. To keep the price of the books at a reasonably affordable level they are shipped via sea mail. Due to some shipping problems overseas, both books were delayed but should be in stock by the time you read this. If you ordered either of these books you should be receiving them soon. Please be patient.

**Win your own ROV!** The Marine Advanced Technology Education (MATE) Center, in conjunction with Seabotix, Inc., is raffling an LBV (Little Benthic Vehicle) System, with profits donated to the 2003 national student ROV competition coordinated by the MATE Center and the Marine Technology Society’s ROV Committee. Tickets are \$25 each or 5 for \$100. Contact Jill Zande at [jzande@marinetech.org](mailto:jzande@marinetech.org) or Chris Roper at [chris@roperrsources.com](mailto:chris@roperrsources.com).

**Oceanology International.** This international trans-Atlantic show alternates between USA and UK. The show provides a venue for the attendees to catch the current leading edge equipment of ocean technology. The 2003 show is being held on June 4-6 in New Orleans, and returns to ExCel in London on March 16-19, 2004. For more information log on to [www.oceanologyinternational.com](http://www.oceanologyinternational.com).

**Missing SDM text.** In the last issue there was some text missing from the announcement of *Skin Diver Magazine* on page 13. The end of the article should have read, “It was with no little historical irony that the announcement was made only days before Chuck Blakeslee presented his paper on the founding and early history of the magazine at the HDS-USA 10th Anniversary Conference. The Society will be publishing Chuck’s paper in 2003.”

**3rd Diving Industry Awards Gala  
Las Vegas, Nevada  
October 24, 2002**



Photo © 2002 D.I.A.G., by Alesse and Morton Petchler

*Back row: Ron Kipp - DEMA Reaching Out Award, Hillary Vidars - AUAS NOGI, Paolo Ferraro, representing his father Prof. Luigi Ferraro - HDS Pioneer Award, Dr. Peter B. Bennett - DEMA Reaching Out Award.  
Front row: Bob Rusnak - HDS E.R. Cross Award, Geri Murphy - AUAS NOGI Award, Alec Hardy and Vickie Durst, representing John Hardy - DEMA Reaching Out Award, Charlie Jehle - DEMA Reaching Out Award.*

The Historical Diving Society (HDS), the Academy of Underwater Arts and Science (AUAS), and the Diving Equipment and Marketing Association (DEMA) presented another successful awards evening in Las Vegas. Adding to the high profile event were two new Icon awards presented by famed marine artist, Wyland, who, along with fellow artist Guy Harvey, painted magnificent canvasses during the banquet. These original paintings, along with other donated items were auctioned off to the approximately 450 industry guests, and raised funds for the three non-profit groups.

The HDS presented its Pioneer Award to Prof. Luigi Ferraro of Italy. Unfortunately Prof. Ferraro was unable to attend, but his eloquent and amusing acceptance speech was delivered by his son Paolo, who accepted the award on his behalf. New York's Bob Rusnak received the Society's E.R. Cross Award for services to the HDS.

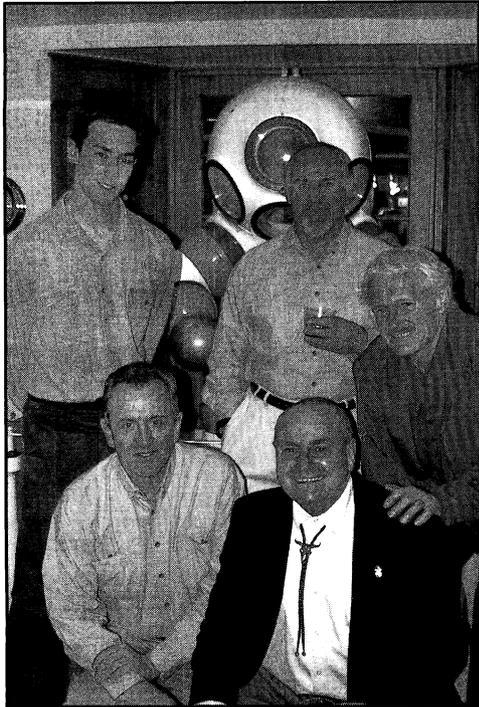
The Academy of Underwater Arts and Science presented its NOGI awards to John Cronin for Education, Bob Hollis for Science, Geri Murphy for Arts, and Hillary Vidars for Distinguished Service.

The Diving Equipment and Marketing Association (DEMA) presented their Reaching Out Award to Dr. Peter Bennett, John Hardy (posthumously), Charlie Jehle, and Ron Kipp.

Details of each recipient's career have can be found in issues 31, 32, and 33 of this magazine.

The first of Wyland's Icon awards went to the late Captain Jacques-Yves Cousteau, and was accepted by Francine Cousteau. The second went to the late Lloyd Bridges and was accepted by his family.

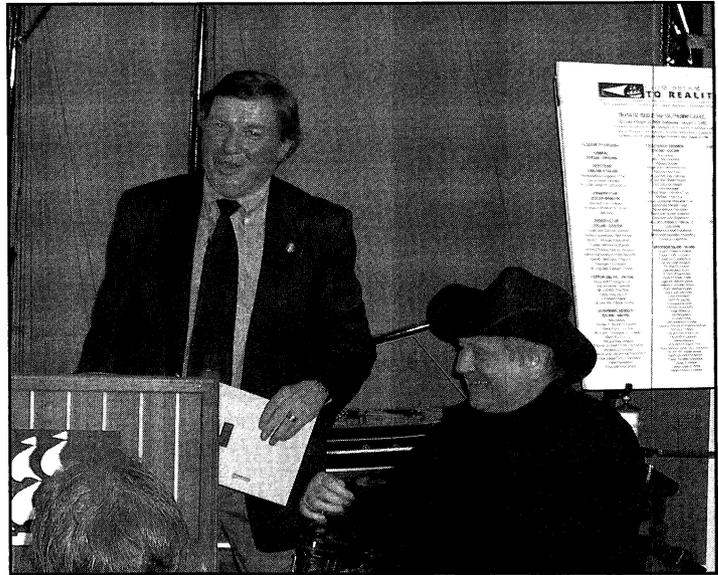
**HDS-USA 10th Anniversary Conference  
Santa Barbara, California  
October 18-20, 2002**



All photos ©2002 Steve Barsky

*Visitors from HDS SEAP.*

*Standing: Peter Weir, Brian Davis, Dave Moran  
Kneeling: Graham Weir, Bob Ramsay.*



*Leslie Leaney thanks Lad Handelman for his service as an  
Advisory Board member*

On the morning of Sunday, October 18, 1992, the HDS-USA was launched at Santa Barbara City College. Exactly ten years later, on the evening of Friday, October 18, 2002, the HDS-USA threw a party at the Santa Barbara Maritime Museum to celebrate. The 10th Anniversary of HDS-USA was an event that, during preceding years, many folks doubted would ever happen. The trials and tribulations of steering a small volunteer non-profit through the political, financial and personal-agenda tempests of the international diving industry over a ten year period gave even the most dedicated and committed members cause for concern. But we made it.

**HDS-USA 10th Anniversary Party**

To honor the Society's 10th anniversary, the Museum hosted a party and previewed its Salute to American Diving exhibition which featured items of American manufactured diving equipment from the collections of several HDS members. Venoco Oil of Carpinteria very generously sponsored the complete evening event, which was catered, and which also included the presentation of plaques to every person who had served on the Board of Directors during the previous 10 years. There were several dozen of these 10th Anniversary plaques, and their manufacture was sponsored by the Sea Pearls company. Special plaques were presented to Sidney Smith, for his

guidance and counsel in forming the Society as a non-profit, Phil Hawes for his guidance, support and marked lack of invoicing in legal affairs over the years, and to Lad Handelman for his service as an Advisory Board member. Lad's involvement and support has gone far beyond any reasonable call of duty to the HDS, and the inscription on his plaque was for his services as "The Godfather," in recognition of the many offers he has made, which HDS could not refuse.

**10th Anniversary Conference**

The actual conference was held the next day, Saturday, October 19, 2003, at the Business Forum at Santa Barbara City College, and members from as far away as Mexico, Australia and New Zealand attended. A special effort had been made by Conference organizer Leslie Leaney to bring together a group of international speakers for this anniversary conference. Historians from the Societies in Russia, Australia, America and Italy had accepted invitations, and their presence was made possible by the generous sponsorships of USA members Jack Byers, Howie Doyle of *Underwater Magazine*, Tracey Robinette of Divematics and Lee Selisky of Sea Pearls. The following is only a record of the speakers and their topics. The full content of each speaker's paper will be published by the HDS-USA later this year.



All photos ©2002 Steve Barsky

Chuck Blakeslee with the late “Big” Jim Christiansen’s daughter Vickie.

**Chuck Blakeslee, HDS-USA: The Early History of Recreational Diving as Recorded in Skin Diver Magazine.** The day’s first speaker was Chuck Blakeslee, who was introduced by HDS Director Bob Wohlers. Along with his partner Jim Auxier, Chuck Blakeslee is recognized as the father of diving periodical publications in America. Sadly, Jim had recently passed on and was, as Chuck noted, now a “cosmic mariner—destination unknown.” In December 1951, Chuck and Jim printed 2,000 copies of the first issue of *The Skin Diver Magazine*. The magazine grew with the infant sport and early issues have now become essential research documents for American recreational diving historians. During the months prior to the conference, Chuck had been supplying images from his files to Bob Wohlers, who volunteered to assemble the visual presentation. Bob’s artistic eye and technical ability provided a constant stream of classic photos and advertisements from Chuck’s archives. It was as if a visual time machine were running behind Chuck, supporting his very personal recollections of the formative years of America recreational diving. During his 50+ years in the diving industry, Chuck had never given a paper on this subject and it was ironic that the *Skin Diver Magazine* he had created closed its doors only a few days before Chuck’s presentation. Those members fortunate enough to have seen this presentation will no doubt tell you it was well worth waiting for, and the HDS hopes to be able to persuade Chuck to present his paper again at a future date.

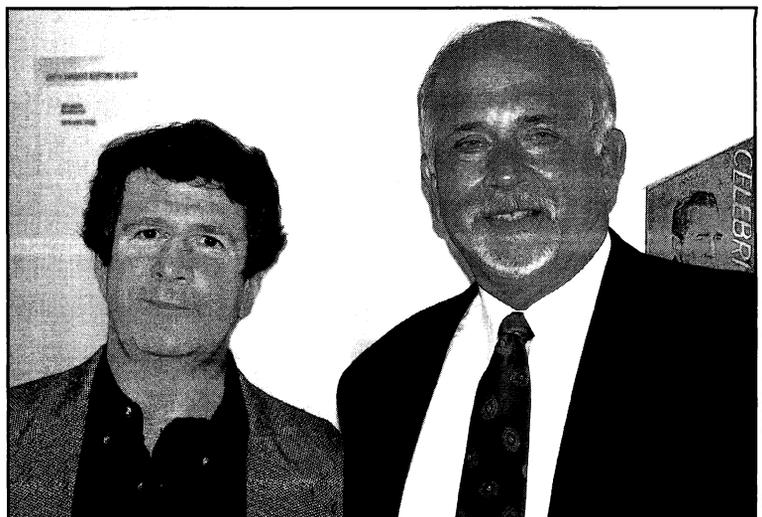
**Dr. Alexander Sledkov, HDS Russia: A Brief History of Russian Deep Diving.** Dr. Sledkov is the founder of HDS Russia and was introduced by HDS Director Jim Cunningham. Although still jet lagged from his flight from

St. Petersburg, Russia, Dr. Sledkov ensured everyone was very wide awake with his paper on Russian deep diving. Starting back in the 1800’s and traveling through to the modern day, Dr. Sledkov presented numerous Russian diving images that had never before been publicly shown in America. Speaking in English, with a healthy degree of humor shaded from Cold War times, Dr. Sledkov also presented depth and date figures that had some commercial diving historians in the audience listening with disbelief. Indeed, clarification and confirmation of the figures was requested from the audience to ensure that they had not mis-understood them. Dr. Sledkov also made reference to articles in *Historical Diver Magazine* and noted he was working on joint research with various American-based members via the internet, and hoped to supply more articles in the future. Part of his research had already been published in the HDS Russia publication *The History of Russian Diving*. In addition to his knowledgeable presentation, Dr. Sledkov’s courteous and professional demeanor during his visit to America earned him a great deal of respect and admiration from American and international members, most of who had never witnessed a presentation from a Russian diver before. The “Sasha” fan club is already planning for his return.

Following this presentation, the traditional HDS-USA BBQ lunch, organized by Shane and Genny Anderson, was served at the College Marine Diving Technology Department.

**Bob Ramsay, HDS South East Asia & Pacific: The Clifford Anti-Paralysis Diving Suit.**

Bob Ramsay is a co-founder of the original Diving Historical Society Australia & South East Asia,



All photos ©2002 Steve Barsky

HDS Russia’s Dr. Alexander Sledkov and HDS-USA Director Jim Cunningham

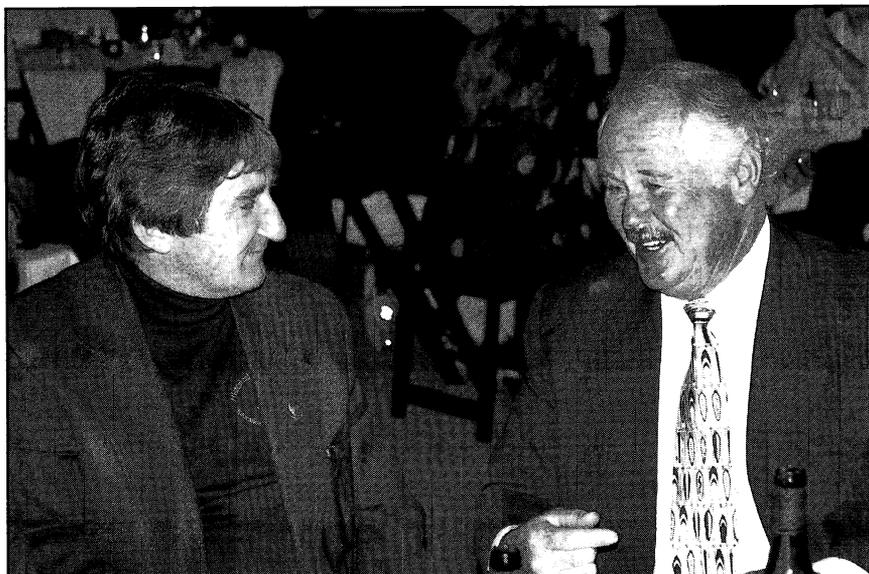
and was introduced by former HDS Director Bob Kirby. Bob started his paper by acknowledging that much of the research he was to present had been done by HDS-SEAP member Jeff Maynard, and supplemented by contributions from Andy Andrews and the Clifford family. Bob noted that Clifford's efforts to develop a deep diving suit were related to a pearl diver's income. The deeper and longer the pearl diver was able to operate, the more pearl shell he was likely to find, and the more money he was likely to earn. The technological development of Clifford's equipment was highlighted through a series of patents that were filed during the

1920s and 1930s, and Bob quoted from the patent specifications to highlight various segments of his paper. The formation of Austral Submarine Inventions around 1930 provided Clifford funding for development, and Bob referenced the involvement of John le Noury as test diver, with ultimately tragic results. At the completion of his paper Bob was joined on stage by Bob Kirby. During the days prior to the conference, both Bobs had been examining a rare Clifford double helmet that was on loan to the Society, and they invited attendees to join them on stage for a close examination of the helmet and a Q&A session. This provided everyone with a close-up inspection of this unusual piece of diving equipment and allowed detailed questioning of Kirby and Ramsay.

Giancarlo Bartoli of HDS Italy was to have been the conference's closing speaker, but a last minute family emergency prevented him from attending. Unable to find a suitable replacement at short notice, Leslie Leaney introduced a European documentary on the career of Advisory Board member Hans Hass.

#### **Hans Hass, The Man Who Discovered the Sea.**

This 1998 one-hour video, as yet unreleased in America, covers the diving career of Hans Hass and includes footage from many of his early films. The second from last segment of filming took place in Santa Barbara at the 1998 HDS Hans and Lotte Hass Film Festival, and features HDS members Al Giddings, Ernie Brooks, Sylvia Earle and Stan Waterman, being interviewed at different locations around the city. It would be hard to pick a single highlight from this magnificent tribute to Hans' career, but his return with Lotte to the XARIFIA (a few weeks after the festival) is especially memorable. The aerial footage of the couple standing at the bow of the immaculately maintained XARIFIA, as it cut through the deep Mediterranean blue off Monte Carlo, is a Hans Hass



*Kent Rockwell with Conference sponsor Jack Byers.*

All photos ©2002 Steve Barsky

image that will probably remain fixed in the memory of most divers who attended the conference.

#### **10th Anniversary Banquet**

In the evening, attendees returned to the Maritime Museum which had been configured to host the banquet. Many of the helmet displays had been wheeled to the edge of the dining area and seemed to stand watch over the tables during the evening. One of the biggest historical diving events of 2002 was the raising of the turret of the MONITOR off North Carolina. The divers were from the USN working from commercial diving sat systems. This was the first time that a joint project such as this had been undertaken, and there had been extensive coverage in the media. The MONITOR Marine Sanctuary has been managed for many years by HDS member John Broadwater, and we were pleased to have John come back to his "west coast home" and give a talk on all the amazing events that he had overseen during the year. An expanded version of what John presented can be found at [www.oceanexplorer.noaa.gov](http://www.oceanexplorer.noaa.gov).

#### **Classic Diving**

The faithful re-assembled at the Museum on Sunday morning for the traditional helmet diving exhibition hosted by the Central Coast Working Equipment. This diving event proved a popular attraction for many of the overseas members and out of town visitors, as well as the general public who are always attracted to this living demonstration of American diving history. (Unfortunately, the Society staff were unable to participate in this event as they had to load vans and head across the deserts to Las Vegas to set up at the DEMA show.)

**2003 Conference [www.hds.org](http://www.hds.org)**

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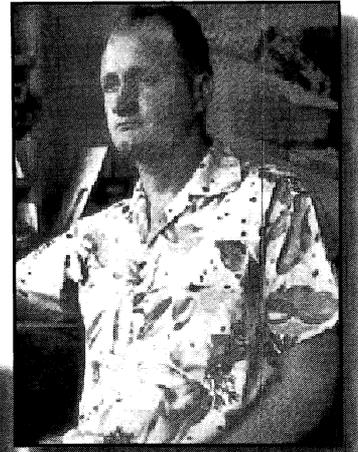
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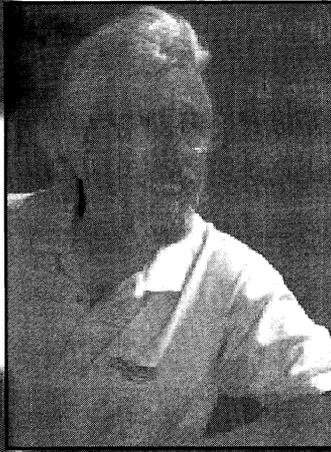
**International Scuba Diving Hall of Fame  
Cayman Islands  
2003 Inductees**



*Chuck Blakeslee*



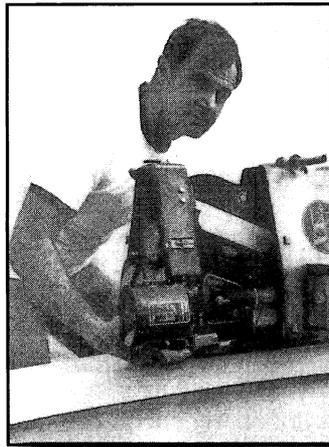
*Jim Auxier*



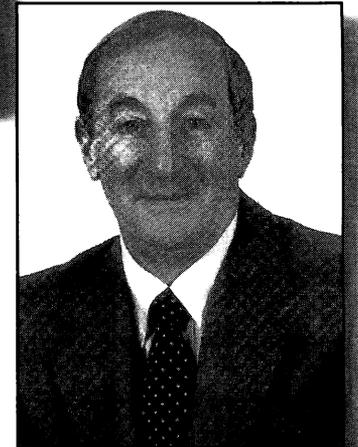
*Jean-Michel Cousteau*



*Frederic Dumas*



*Jordan Klein*



*Frank Scalli*

On January 16, 2003, six of recreational diving's pioneers were inducted into the prestigious International Scuba Diving Hall of Fame, located in the Cayman Islands. The black tie event was presided over by the Honorable W. McKeeva Bush, OBE, JP, the Minister for Tourism, Environment, Development and Commerce, and MC'd by respected American diver Paul Tzimoulis.

Inductees being honored this year were Jim Auxier, Chuck Blakeslee, Jean-Michel Cousteau, Frederick Dumas, Jordan Klein and Frank Scalli.

This was the third induction ceremony for the Hall, and it was complimented by the honoring of notable Caymanian divers. "This is the first year that Cayman's industry pioneers are being recognized and it is my dis-

tinct pleasure to acknowledge and thank our Caymanian pioneers — Arthle Ebanks, Adrien Briggs, Capt. Clint Ebanks, Sam McCoy and Ron Kipp — for their dedication and contribution to the scuba diving industry," said the Hon McKeeva Bush.

The Cayman Islands are recognized as one of the world's top diving destinations, and they have taken the lead in bestowing national recognition on the international personalities who have pioneered recreational diving. Inductees are nominated and voted for by a Board of Directors comprised of the Honorable W. McKeeva Bush, OBE, JP., Cathy Church, Captain Charles Ebanks, Ronald L. Kipp, Werner Kurn, Leslie Leaney, Rodney McDowall and Paul Tzimoulis.

## The Historical Diving Society USA Directors 1992-2002

1992 — Founders: Skip Dunham and Leslie Leaney

1992 — Steering Committee: Skip Dunham, Leslie Leaney, Mike Von Alvensleben

1993 — Steering Committee: Steve Chaparro, Skip Dunham, Leslie Leaney, A.L. “Scrap” Lundy, Mike Von Alvensleben

1993 — Board of Directors: President, Leslie Leaney; Vice President, Skip Dunham; Treasurer, A.L. “Scrap” Lundy; Secretary, Steve Chaparro  
Board Members: Ron Karlsson, Dr. Sam Miller, Torrance Parker, Lisa Glen Ryan, Mike Von Alvensleben

1994 — Board of Directors: President, Leslie Leaney; Vice President, Skip Dunham; Treasurer, A.L. “Scrap” Lundy; Secretary, Steve Chaparro  
Board Members: Ron Karlsson, Dr. Sam Miller, Mike Von Alvensleben  
Membership Secretary Christl Karlsson, Administrator: Lisa Glen Ryan

1995 — Board of Directors: President, Leslie Leaney; Vice President, Skip Dunham; Treasurer, A.L. “Scrap” Lundy; Secretary, Nyle Monday  
Board Members: Don Barthelmess, Steve Chaparro, Ron Karlsson, Dr. Sam Miller.  
Membership Secretary Christl Karlsson; Administrator: Lisa Glen Ryan.

1995 — Summer, Board of Directors: Chairman, Skip Dunham; President, Leslie Leaney; Vice President, Skip Dunham; Treasurer, Andy Lentz; Secretary, Nyle Monday  
Board Members: Steve Barsky, Don Barthelmess, Steve Chaparro, Ron Karlsson, Paul Linaweaver M.D., A.L. “Scrap” Lundy, Dr. Sam Miller.  
Membership Secretary: Christl Karlsson; Administrator: Lisa Glen Ryan.

1996 — Board of Directors: Chairman, Skip Dunham; President, Skip Dunham; Vice President, Paul Linaweaver M.D.; Treasurer, Andy Lentz; Secretary, Nyle Monday.  
Board Members: Steve Barsky, Don Barthelmess, Steve Chaparro, Nick Icorn, Ron Karlsson, Paul Linaweaver M.D., A.L. “Scrap” Lundy, Dr. Sam Miller

Executive Director: Leslie Leaney; Membership Secretary: Christl Karlsson; Administrator: Lisa Glen Ryan.

1997 — Board of Directors: Chairman, Paul Linaweaver M.D.; President, Don Barthelmess; Vice President, A.L. “Scrap” Lundy; Treasurer, Andy Lentz; Secretary, Nyle Monday

Board Members: Steve Barsky, Bonnie Cardone, Steve Chaparro, Nick Icorn, Bob Kirby.

Executive Director: Leslie Leaney;

Recording Secretary: Kristine Barsky

1998 — Board of Directors: Chairman, Paul Linaweaver M.D.; President, Leslie Leaney; Secretary/Treasurer, James Forte

Board Members: Bonnie Cardone, Skip Dunham, Bob Kirby, Nick Icorn, Bob Christensen, Steve Chaparro, Shane Anderson

Executive Director: Andy Lentz

1998-99 — Board of Directors: Chairman, Lee Selisky; President, Leslie Leaney; Secretary, James Forte; Treasurer, Blair Mott

Board Members: Angela Tripp, Paul Linaweaver M.D., Bob Kirby, Nick Icorn, Gary Maines, Shane Anderson, Bob Christensen, Steve Chaparro, Brad Doane

Executive: Director Andy Lentz

1999-2000 — Board of Directors: Chairman, Lee Selisky; President, Leslie Leaney; Secretary, James Cunningham; Treasurer, Blair Mott

Board Members: Bonnie Cardone, Angela Tripp, Bob Kirby, James Forte, Gary Maines, Bob Christensen, Brad Doane, Bob Wohlers, Kent Rockwell

Executive Director: Andy Lentz

2000-01 — Board of Directors: Chairman, Lee Selisky; President, Leslie Leaney; Secretary, James Cunningham; Treasurer, Bob Wohlers

Board Members: Bonnie Cardone, Gary Maines, Kent Rockwell

2001-02 — Board of Directors: Chairman, Lee Selisky; President, Leslie Leaney; Secretary, James Cunningham; Treasurer, Bob Wohlers

Board Members: Howie Doyle, Kent Rockwell



# HISTORICAL DIVING SOCIETY USA



The 2002 HDS Conference and Rally was another great success with members traveling from New Zealand, Australia, Canada, Russia and various states to hear presentations on diving history. Details of the events are recorded elsewhere in this issue. After the conference was over there was a mass convoy exodus from Santa Barbara across the California and Nevada deserts to Las Vegas, for the new DEMA Fall show. The Society's two DEMA booths were well attended and thanks are due to volunteer staff Mark Howell, Bob Rusnak, Greg Platt, and Kent Rockwell who worked closely with booth manager Andy Lentz. The layout of this DEMA was such that although HDS was not at the far end of the hall, a round trip to the entrance was measured in increments of miles, not yards. The Third Annual Industry Awards Gala, organized by DEMA, AUAS and HDS, proved to be another success with a much improved running time and the usual "who's who" of diving's past and present in attendance. "The caliber of divers at this event is almost unbelievable. I've never witnessed anything like it," raved New Zealand's Dave Moran. During the evening, Wyland and Guy Harvey created two original paintings that were the highlight of the live auction which raised funds for the three organizing groups.

In previous years DEMA had been the first show of the American season but with the move to the fall it has



*Dr. George Bass (l) and HDS France Vice President, Pierre-Yves Le Bigot, at Underwater Intervention in New Orleans.*



*Society co-founder and former Chairman, Skip Dunham (l), receives his 10th Anniversary plaque from current Chairman Lee Selisky, in a special presentation at DEMA.*

now become the last. The first show of 2003 was Underwater Intervention in New Orleans which was attended by HDS France Vice President Pierre-Yves Le Bigot, HDS Canada President Phil Nuytten and Secretary Virginia Nuytten, David Smith of the newly formed HDS Scotland and Leslie Leaney and Andy Lentz of HDS-USA. An informal meeting was convened so that everyone could give an update on the status of their group. The Society will be at the 2003 shows in Boston, New Jersey, Chicago, Fort Lauderdale, Houston, Long Beach, California, ADC Gulf and Western Chapters Conference in Las Vegas, DEMA in Miami Beach and other smaller regional events. Check the calendar at [www.hds.org](http://www.hds.org) for dates and exact locations.

The annual HDS-USA Board of Directors meeting was held in January at Lad Handelman's home in Santa Barbara. The most significant change for the 2003 Board was made when Dan Orr was elected President, replacing Leslie Leaney who had served five years in the position. Leaney accepted the volunteer staff position of Executive Director, and Andy Lentz accepted the volunteer staff position of Comptroller. These are the same two members who also produce this magazine. Directors Bob Wohlers, Jim Cunningham and Kent Rockwell were all re-elected for their second 3-year term, but Cunningham resigned from the position of Secretary due to pressure of work. He was replaced by Jill Leaney. Lee Selisky remained as Chairman.

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## HISTORICAL DIVING SOCIETY SOUTH EAST ASIA PACIFIC

2003 Annual Rally  
Honors — Ted Eldred



*Peter Phipps, Ted Eldred and Lester Smith viewing a display of  
“Porpoise” regulators, Annual Rally 2003*

Albury in southern NSW was the venue for the 2003 Annual Rally and our special guest was our Honorary Life Member, Ted Eldred.

The diving displays provided on Saturday by Helmet Fetish and Descend Diver Training were well attended. Around half the group dove the Helmet Fetish special HF12 Chinese helmet, a DESCO Abalone helmet, or a SuperLite. Around 50 dips were completed at the Descend Divers training area close to town.

The Rally Dinner was attended by two young filmmakers, one of whom is the grandson of Commander M. “Batts” Batterham. Batts was an ex RN Diving Officer, who moved to Australia and was involved in the early years of the RAN dive training program. Later Batts became involved with Ted Eldred and Bob Wallace-Mitchell in producing and marketing the “Porpoise” regulator. Ted and Batts also ran the first formal recreational dive-training course in Australia at the Melbourne Baths in 1954. When Ted and Nick Batterham (grandson) were introduced, Ted’s son Tony was also present, and both agreed that Nick had a strong resemblance to Batts.

The speakers began with Jeff Maynard talking on “150 Years of Diving in Australia,” a great talk il-

lustrated by extracts for Jeff’s new book, *Divers in Time*. Due mainly to the pearl shell industry, Australia has been at the forefront of many diving innovations since the 1629 breath hold treasure recovery and 1853 standard dress treasure recovery. Many other Australian diving milestones were covered during this interesting talk.

Next up was Des Williams whose topic was “Diver Harold Chadwick.” Des had worked with Harry to record his diving career, and after Harry’s death, this process has continued with the support of Harry’s daughter Gail Chadwick. It was a delightful presentation of mainly readings from the very complete and detailed diaries that Harold meticulously kept. This mine of information is eventually being turned into a book by Des.

Mel Brown arrived with a small truckload of early Australian Scuba gear. Mel began collecting Australian diving memorabilia in his role of Australian Underwater Federation historian. This work over many years has resulted in the largest known collection of recreational diving equipment in Australia. Mel talked on the Davies Lung c.1951, made by welding steam pipe to forged ends, then welding two together to make a twin set, and the Ted

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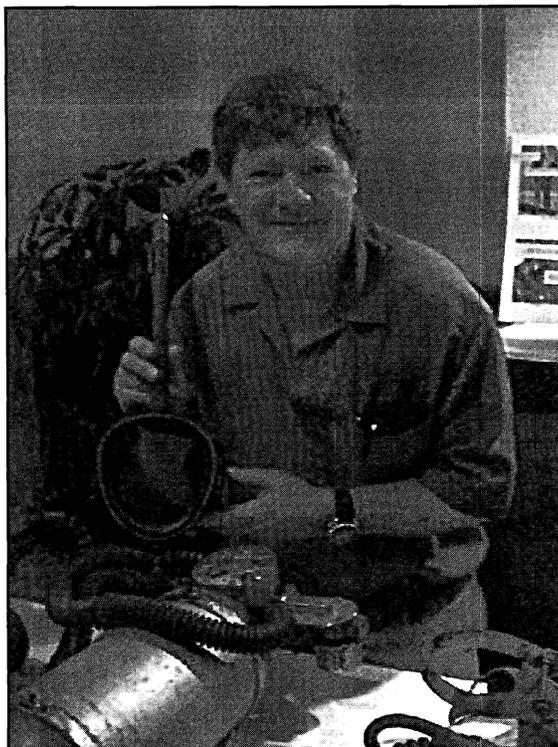
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Baker scuba c1951, of used WWII aircraft oxygen parts. Having these two very rare sets available was the first chance that many had to ever see them. Some excellent examples of the "Porpoise" and many others were also on display.

Captain Bob Scott gave a great recollection of the salvage, recovery and eventual restoration of a Japanese "Zero" from Rabaul in PNG.

The Ted Eldred Award is the new HDS SEAP Annual Award. Recipients may be anyone, member or not, who fulfills the Society's aims. It was a great pleasure and honor to have Ted Eldred attend to present the award, and the Society could think of no one more fitting to receive this inaugural Award than Ted Eldred himself. Ted regaled us with some first-hand tales of the early development concepts of the Porpoise regulator. "Member of the Year Award" was presented to Peter Green, and Des Walters received the "Diver of the Year Award."

Thanks to all who attended, and to Jeff Maynard for arranging the program on Sunday, Des Walters for arranging the diving display on Saturday, Geoff and Rachel Reed for working through Ted to design and produce the "Ted Eldred Award," Graham Weir and Helmet Fetish, Ted Eldred for agreeing to leave Mandy at the kennels and attend the Rally, and the speakers, Bob Scott and Des Williams.



*Mel Brown with part of his wonderful collection of early Australian Scuba. Annual Rally 2003*

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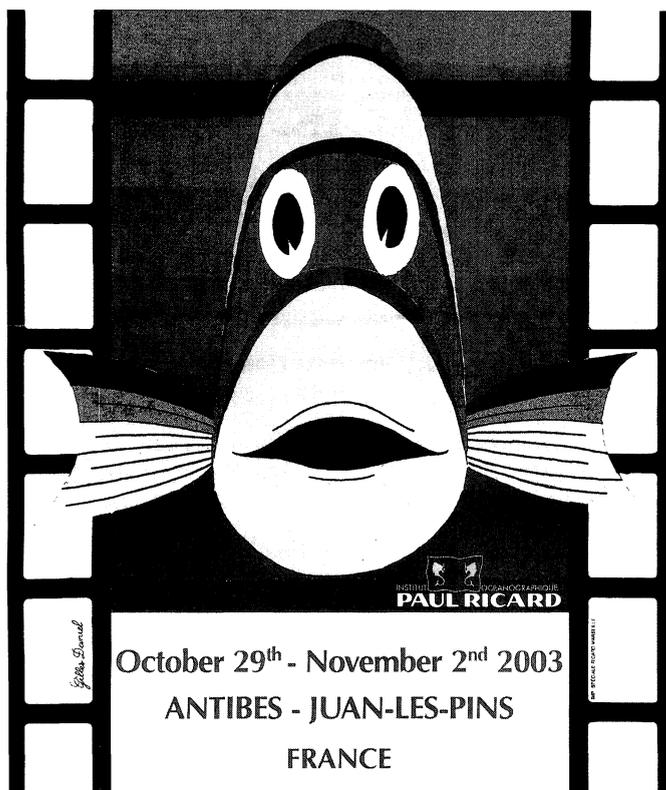
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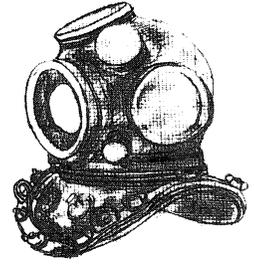
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## More from the HDS Canada archives.... MacInnis Foundation Research Expedition "Arctic IV", 1974

In the spring of 1974 more than fifty specialists from the USA and Canada took part in Arctic IV, the most ambitious underwater expedition to the Canadian High Arctic to that time. The expedition was coordinated by diving physiologist Dr. Joe MacInnis and lasted two months in 24-hour daylight on the ice near Resolute Bay, NWT. Fourteen specific scientific enterprises were on the programme, but a common goal was clear: to study the potential impact of man's invasion on the delicate arctic ecosystem, and to learn about our ability function in that environment.



*HDS Canada Director Don Leo Heaton tends arctic cameraman Rick Mason during the filming of National Film Board of Canada's "Arctic IV". Note the Swedish "Unisuit," and the use of the two stage 2 hose regulator as primary breathing gas source, and the two stage single hose regulator as the back-up or "come-home" source. Contrary to popular belief, single hose regs do work in the 28 degree Fahrenheit water but only for short periods before ice builds up on the first stage spring. Mason is using a Jordan Klein movie housing.*

*"Arctic IV" cameraman Ernie Brooks III has his core temperature measured by the U.S. Navy's Wally Jenkins after a dive to Ed Link's "SPID" (Self contained, Portable, Inflatable, Dwelling). Before the dive, Brooks had swallowed a battery-powered "radio pill," which would broadcast accurate temperatures for several hours. The pills were expensive electronic devices (of the day) and were recovered by the judicious use of a long-handled kitchen strainer after being expelled with varying degrees of difficulty ("like forcing a golf-ball through a garden hose" was one comment).*



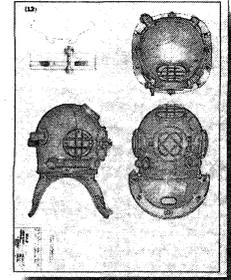
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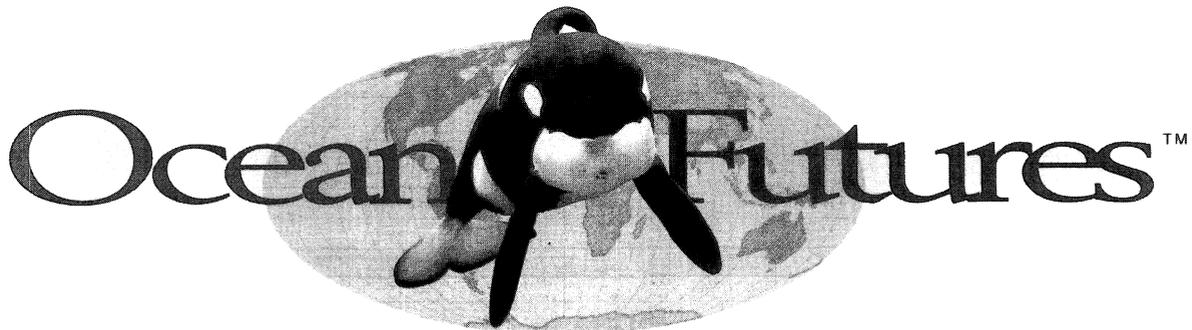
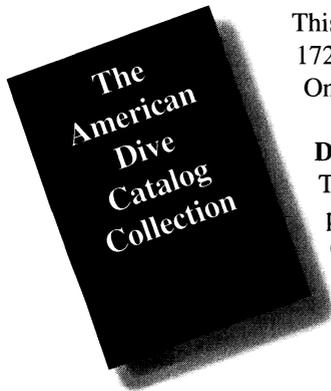
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*Jean-Michel Cousteau — Keiko*

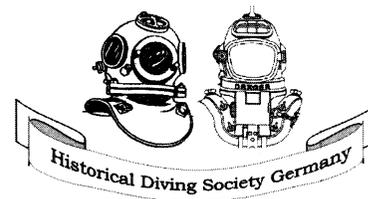
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Our German editor Michael Jung continues his research through the files of the Hans Hass Archives, and has located a 1946 hand-written letter from a member of G.E.R.S. to Hans Hass. The following text is as near as we can get to accurately deciphering the writing. The letter establishes early indirect contact between Cousteau and Hass only a few months after World War II ended. At this particular time Hass had published two books and produced two films and Cousteau had produced three films. Cousteau's first book was published the month after this letter, in May 1946, and Hass is mentioned in the text.

Our thanks to Michael for his continuing investigations in Europe that provide us such interesting material from this critical time in the development of self contained diving. Perhaps our friends at HDS France can tell us more about the author of the letter.- Leslie Leaney

Doctor BUGARD  
Surgeon Lieutenant Commander  
French Navy  
Care of Capitaine de Maison-Rouge  
French liaison officer  
Residence Platz, Salzburg

Saturday April 27th, 1946  
Groupe de Recherches ?? du Fort  
Toulon Var

Herr Hans Hass,

I am belonging to the French Navy, and my service is quite interested on your underwater films and pictures. We have already read your books "Photojagd am Meersgrund" and "Unter Hayen and Korallen." I have already met your friend Herr Von Wurzian who is actually in Hamburg and I have had a long meeting with him.

We intend to make films underwater next summer on the French Riviera and we are preparing a special mission to the Red Sea to take pictures of sharks and tropical sea animals.

We would be very interested if you could join us in France next summer. You may have heard about the French diver Mr. Cousteau who has made two films under the sea, "Par dix-metres de fond" and "Epaves." I belong to his team and we offer to you an official proposition to come to France.

I am passing through Austria and I have heard about your actual residence in Zinkenbach, so I expected to meet you there. Herr Hubert will give you this letter if, unfortunately, I can't get in touch with you.

Will you kindly write to me about those two important points.

1st) Are you ready to spend one month in France next summer (June or July)? 2nd) How much do you intend about payment for one month.

If this proposition has your agreement, you must go to the French Liason officer, Capitaine de Maison Rouge, Residence Platz in Salzburg and send a letter to me through him.

The best way to go to France is to ask a permit to Innsbruck (French Zone of Austria) through the French Liason Officer in Salzburg. Then in Innsbruck ask a permit to France through the French Naval mission.

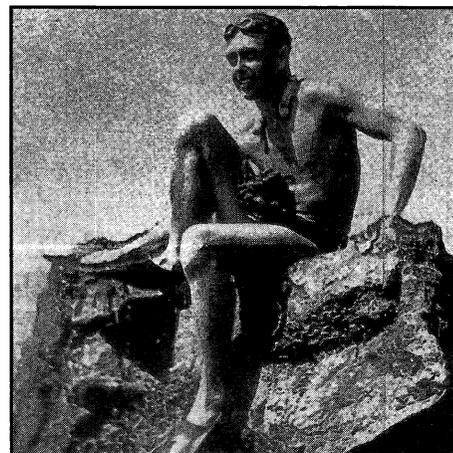
You must write to me first. The Capitaine de Maison Rouge will send me your letter.

I am going back to France tomorrow and I will do the necessary about your permit. You can meet me in Salzburg at the Transit Hotel "Gahler-Brau" until Sunday night.

Hoping to have good news from you,

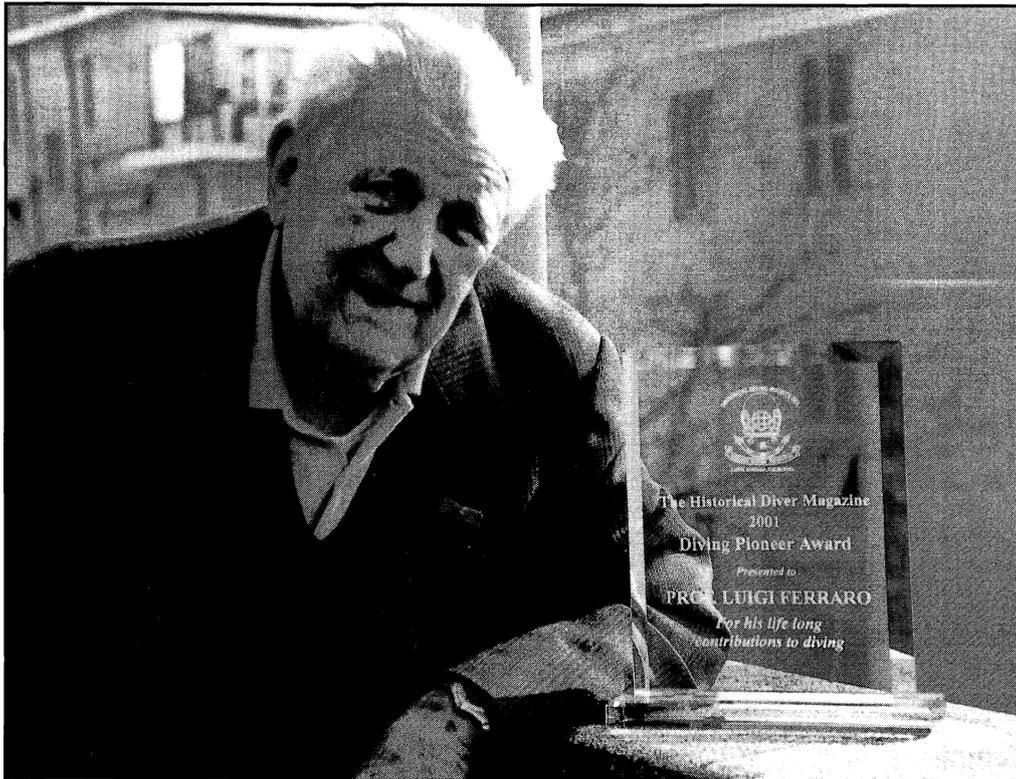
Sincerely yours,

Dr. Bugard



*Hass in a photo from a 1942 copy of  
Fotojagd am Meeresgrund.*

**Historical Diver Pioneer Award winner Prof. Luigi Ferraro**



*Prof. Luigi Ferraro photographed in Genova, Italy, with the Historical Diver Pioneer Award*

We salute The Historical Diving Society and its members for preserving the legacy of the diving industry.



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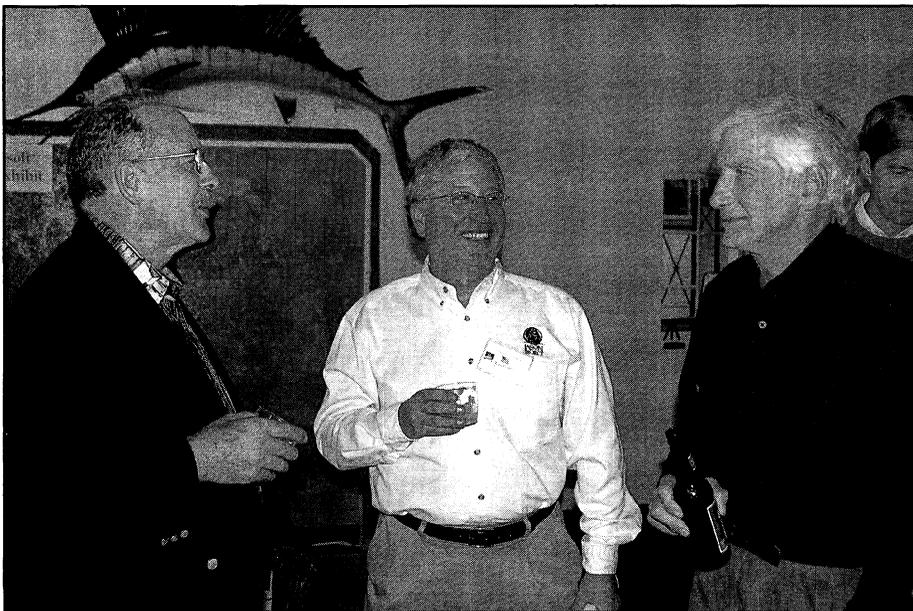
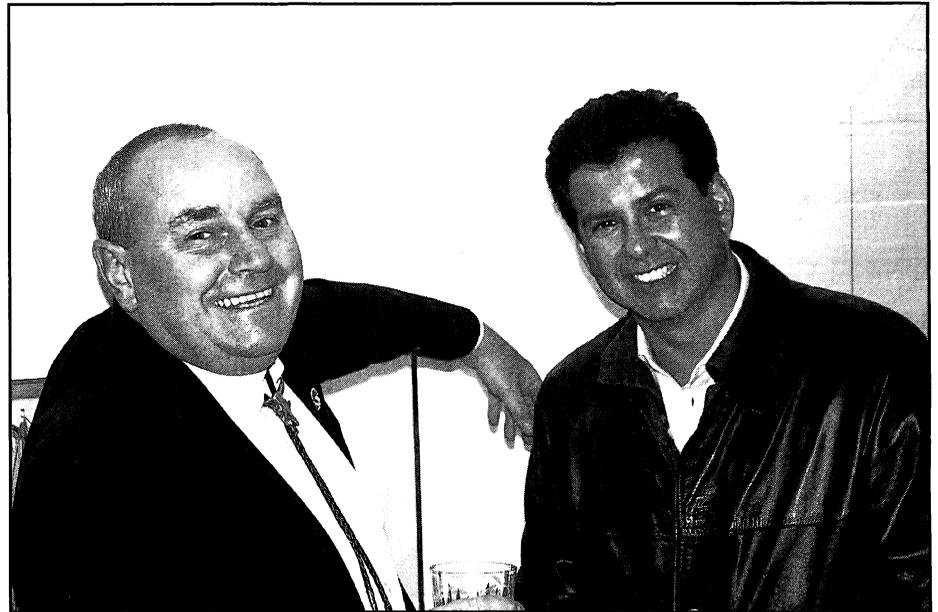
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## Historical Diving Society Mexico

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*Conference speaker Bob Ramsay from Australia with HDS Mexico President Manuel Lazcano.*



*Sealab diver Bernie Campoli with the Jason Project's Brad Proffit and Dick Anderson at the Museum reception.*

HDS President Manuel Lazcano was pleased to attend the HDS-USA conference in Santa Barbara and meet with many of the international members there. It was a terrific meeting with interesting history presented by different Society groups from around the world. Our thanks to Steve Barsky for letting us use his photos from the conference.

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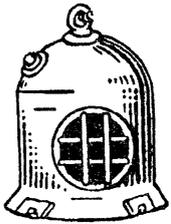
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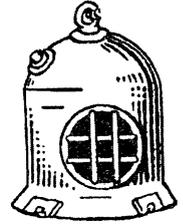
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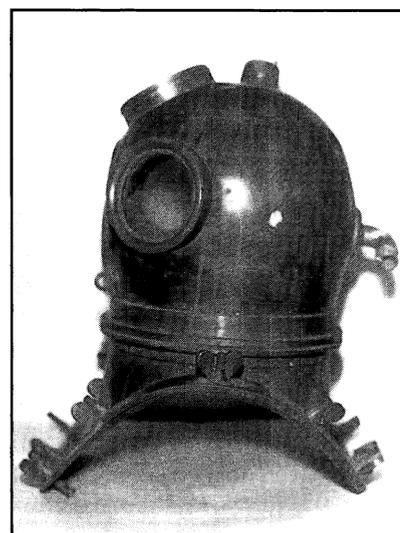
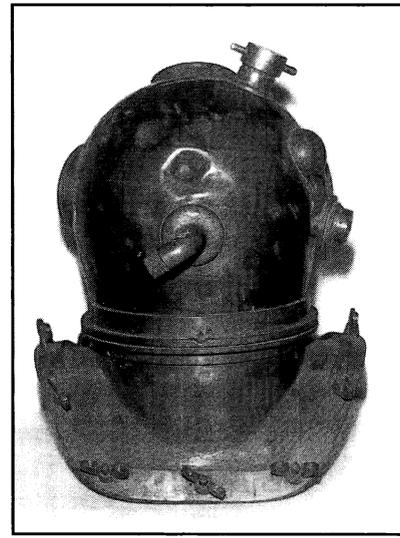
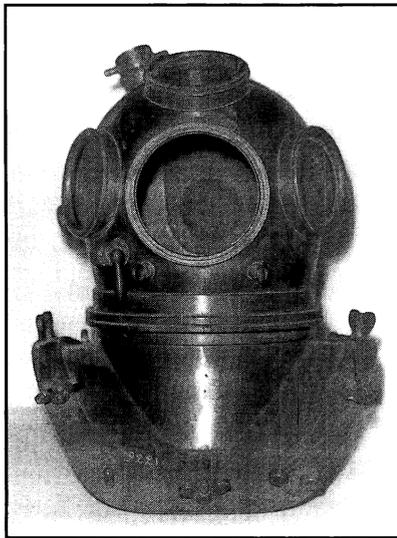
## Historical Diving Society Russia

Dr. A. Sledkov, Director  
Gagarina Prospect 67, SPb  
Russia 196143  
sledkov@mail.admiral.ru



### Historical Diving Helmets from the Central Naval Museum in St. Petersburg by Georgy Rogachev & Alexander Sledkov

At different times, HDS Russia will present various helmets from the Central Naval Museum in St. Petersburg. Before manufacturing their own equipment Russia bought many foreign helmets, some of which date back over 130 years. We will start with a helmet for our new friends at HDS France.



#### Denayrouze, France. Serial number 31, circa 1872

This is an early 12 bolt helmet with a breastplate shaped similarly to a pearl diving helmet. It has an interrupted thread neck ring which is non-recessed. You can still see the gasket. The brass bonnet neck ring is very thick and similar to the one on the Sadler helmet in Historical Diver Issue 11. It has a spitcock but is missing the face plate and the front strap/brale. The helmet inventory number is 9221 and it has survived over 100 years in very good condition.

**HDS France**  
39 Rue Gaston Briand  
16130 Segonzac  
France  
HDS.France@wanadoo.fr

France arrives also!

It is with this short statement that we announce to French enthusiasts of diving history that HDS France is born.

Our first meeting took place on November 1, 2002 at Antibes, during the World Festival of Underwater Images. We would like to announce the main aims of the Society.

1. Assembling as many of the people and organizations concerned or interested in the subject of diving history as possible.

2. Promoting a better knowledge of diving history by different presentations and special events.

3. Informing the French authorities of the need to establish a National Conservancy of diving technology.

This is a wide and ambitious program, but we will start at the beginning. We already have more than 60 members, some of who are specialists in 18th and 19th century diving history.

At the beginning of February 2003, HDS France successfully participated in the 5th French National diving exhibition in Paris. During this exhibition Philippe Damon, one of our new members, introduced his newly printed book titled. "Les Plongeurs de l'histoire," which is about more than twenty French early diving equipment inventors from the first half of the 19th century.

We are preparing for our next display at the 30th Antibes underwater film festival at the end of October 2003. We are also planning a large meeting with historical lectures for our members in the autumn.

Our newly created logo was recently approved by the Board of Directors. The logo connects the old French half-helmet (known as the "groin") of Rouquayrol-Denayrouse with the international "alpha" diving flag. Our goal was to connect the knowledge of the past with the actual activity of scuba diving.

The first issue of a small and modest HDS France bulletin is generously provided by HDS-USA in March 2003, as an enclosure with the American *Historical Diver Magazine*, and both of these will be mailed to our French members.

With this bulletin we hope to contribute to a better education concerning the very important place of France in the diving history of the world. We also intend to tell our members about the diving history of other countries, and to especially let them know of the activities of the other foreign HDS's all around the world. Our message is now delivered. Thanks again to all the other HDS's that have, and will, contact us. We hope to meet all historical diving enthusiasts and friends soon.

Maurice Braud, President / Chairman

The Board of Directors of HDS France are: Mr. Maurice Braud, President / Chairman; Mr. Philippe Rousseau and Mr. Pierre-Yves Le Bigot, Vice Presidents and Vice Chairmen; Mr. Gérard Loridon, Secretary; Mr. Maurice Raphael, Treasurer.

*President Maurice Braud (l) and Vice President Philippe Rousseau (r) with HDSUSA  
President Leslie Leaney at the HDS France booth in Antibes.*

# HISTOIRE DU DEVELOPPEMENT SUBAQUATIQUE EN FRANCE

## H.D.S. FRANCE

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La France arrive !

C'est par cette formule, laconique et dynamique, que nous avons informé un certain nombre de passionnés de l'histoire de la plongée, de la création d'HDS France.

L'assemblée générale constitutive tenue le 1<sup>er</sup> novembre 2002 dans le cadre du Festival Mondial de l'Image Sous-Marine, à Antibes, a permis de préciser les principaux objectifs de notre association.

- 1) Regrouper le plus grand nombre possible de personnes et d'organismes qui s'intéressent à ce sujet.
- 2) Promouvoir, par diverses actions et manifestations, une meilleure connaissance de l'histoire de la plongée.
- 3) Sensibiliser les pouvoirs publics français à la nécessaire création d'un Conservatoire National de la Plongée.

Vaste programme. Commençons donc par le commencement. A ce jour, nous comptons déjà plus de 60 adhérents, dont plusieurs spécialistes du 18<sup>ème</sup> et du 19<sup>ème</sup> siècle.

Nous venons de participer, avec un succès certain, au 5<sup>ème</sup> Salon de la Plongée qui s'est tenu à Paris, début février. L'un de nos tout nouveau membre, Philippe Damon, y présente son livre sur « les Plongeurs de l'Histoire », concernant une vingtaine d'inventeurs français du 19<sup>ème</sup> siècle, dont certains sont méconnus.

Nous préparons notre participation étoffée au 30<sup>ème</sup> Festival d'Antibes, fin octobre.

Par ailleurs, nous espérons pouvoir organiser à l'automne prochain, nos premières rencontres sur l'histoire de la plongée.

Le logo qui accompagne ce texte vient d'être adopté par notre bureau. Il associe le casque « groin » de Rouquayrol-Denayrouse et le pavillon alpha des plongeurs pour marquer notre volonté d'associer la connaissance du passé et l'actualité de la plongée.

Le premier bulletin d'HDS France devrait être diffusé en mars, avec *Historical Diver*, généreusement mis à notre disposition par HDS USA.

Nous souhaitons, certes, par ce bulletin, contribuer à une meilleure connaissance du riche passé historique de la France dans ce domaine.

Mais nous désirons aussi faire connaître à nos adhérents, celui des autres pays et, en particulier, les activités des HDS existantes à travers le monde. Le message est lancé. Merci aux HDS qui le recevront, de nous contacter.

A bientôt, amis de l'histoire de la plongée !

Le conseil d'administration d'HDS France est actuellement formé de cinq personnes:

Maurice BRAUD, président – Philippe ROUSSEAU et Pierre-Yves LE BIGOT, vice-présidents – Gérard LORIDON, secrétaire – Maurice RAPHAEL, trésorier.



**Maurice BRAUD**  
Président

*Président Maurice BRAUD (g) and Vice Président Philippe ROUSSEAU, avec HDSUSA Président Leslie LEANEY, a Antibes, dans la stand HDS Français*

**A Classic Divers Meeting**  
**The Second World Congress of Underwater Activities**  
**London, England, October 18-23, 1962**  
**By Andreas B. Rechnitzer, Ph.D.**

*This year the British Sub-Aqua Club celebrates its fiftieth anniversary. One of the Club's greatest achievements during its history was the organizing and hosting of what could be described as a "world summit" of diving leaders. Our Advisory Board member Andreas B. Rechnitzer, Ph.D., was Vice President of C.M.A.S. at that time while Jacques-Yves Cousteau was President. Both Cousteau and Rechnitzer attended the Conference, and in the following article, Rechnitzer recalls pertinent details from this historic meeting that was held over 40 years ago. The article will appear in five parts. Leslie Leaney*



*Opening speech. (L to R) Lord Mountbatten, Colin McLeod, Jacques-Yves Cousteau, article author Andreas Rechnitzer, and J. Dumas.*

Courtesy A. Rechnitzer

the individuals leading them. The challenges for future diving activities were illuminated by each speaker and by the actions being contemplated or already started. I was impressed too that the speakers, and those attending, were so willing to share their individual ideas and concepts. Advancements were occurring in all quarters and it was a heady time for those interested in getting man into all of the world's oceans in unprecedented

comfort and safety. There was an extraordinary level of attendee excitement that prevailed throughout the conference. The camaraderie developed at the meeting continues to live in my memory bank.

My recall was stimulated by reviewing my own records and the published proceedings, but my personal library copy of the proceedings could not be found. Fortunately, the editor of *Historical Diver Magazine* provided me with a copy of the *Second World Congress of Underwater Activities*, Westminster, England, edited by Bernard Eaton, Editor of *Triton*, published by the British Sub-Aqua Club, 1963; 181 pp. I have excerpted from this document to convey the flavor of this first class congress and to provide identification of the key players of the day. I have also summarized and paraphrased speakers' remarks so as to be both concise and accurate. Each of the presentations have been edited, albeit severely, not only for brevity, but also to ensure that remarks germane to divers reappeared in this article. The Congress program was comprehensive in subject content and, in retrospect, was attended by some of the star contributors to the advancement of underwater activities in the twentieth century. The Congress organizers set a new standard for conference quality and implementation. It markedly influenced similar events, such as the Fifth Annual Convention of the Underwater Society of America, organized by Pablo Bush Romero and convened in Mexico City, June 1964.

## **PART 1**

### **Introduction**

Forty years ago the author and several hundred other divers attended a now historical conference in London, England. In this short article I will attempt to summarize the content of the C.M.A.S. Second World Congress of Underwater Activities. This landmark divers meeting was hosted and organized by the British Sub-Aqua Club (B.S.-A.C.). Most copies of the formal published proceedings of this meeting have largely disappeared. It is, therefore, the purpose of this article to bring key information delivered at that seminal meeting back into a contemporary and more enduring publication.

I was impressed at this conference, more than any other that I have attended, by the rapid changes in state-of-the-art in diving protocol, technology and applications of diving. The London meeting was a pivotal point for those who dreamed of opening new horizons for man to enter into the sea. This congress, more than any other in that era, succeeded in bringing most of the key players to London for a week of communicating and friendly exchange of new knowledge. We were treated to descriptions of innovative investigations underway by

A significant portion of the Congress program was convened in Church House. It is an impressive facility arranged for this international meeting of divers. Church House is one of England's most historic buildings. The surroundings became even more important when I learned of its illustrious history. In November 1940, during WWII, Church House suffered a direct hit on its Assembly Hall, but due to the exceptional construction of the building only minimal damage was done. The Prime Minister of the day, one Mr. Winston Churchill, was so impressed by this fact that he requisitioned the building for use by the two Houses of Parliament when London was threatened by the Luftwaffe. The building was used for this purpose in 1940, 1941, and 1944. Many historic speeches and events took place within the building during this time and one in particular was the announcement, by Mr. Churchill from the stage, of the sinking of a WWII British nemesis, the German battleship BISMARCK. On 27 November, 1945 the first meetings of the United Nations Preparatory Commission and Security Council were held here.

Another venue for the meetings was the Royal Geographic Society's 770-seat Lecture Theatre, and this was the venue for a portion of the program. The history of the Royal Geographic Society enshrines such famous names as Livingstone, Stanley, Scott, Shackleton, Hunt and Hillary and is, in fact, the history of British Geography, exploration and discovery in the nineteenth and twentieth centuries. I was personally impacted by the history and the elegance of this Society's facilities.

### **The Opening.**

Mr. Colin McLeod, Chairman of the British Sub-Aqua Club opened the Congress with the following:

"My Lord, Ladies and Gentlemen: for the British Sub-Aqua Club and for the Confédération Mondiale des Activités Subaquatiques (C.M.A.S. a.k.a. World Underwater Federation), this is a great and truly historic day, and for those of us who have been concerned in the organization of this Congress it is the end of the long, hard trail. We have often wondered, during the past months, whether it has all been worth the immense amount of time, anxiety and work, to bring our venture to this stage. However, now that we note that some 30 countries are sending representatives — they may be already here but they certainly are coming — and also that the members of the British Sub-Aqua Club from all over the country have supported us so well. I am sure the B.S.-A.C. has no regrets at undertaking the responsibility of staging this Congress in

## **CONTENTS OF THE CONGRESS**

*Chairman:* Colin McLeod, Chairman B.S.-A.C.  
*The Opening:* The Earl Mountbatten of Burma  
*Era of "Homo Aquaticus":*

Commandant J-Y. Cousteau

*The Challenge of Photography:* Luis Marden

### **FARMING THE SEA**

*Chairman:* Sir Alister Hardy

*Fight and Competition on the Sea Bed:*

Professor Gunnar Thorson

*More Fish for the Sea:* James Shelbourne

*Scientific Uses of Free Diving:* Robert Forster

### **MEDICAL FRONTIERS OF DIVING**

*Chairman:* Surgeon-Captain Stanley Miles

*Deep Diving:* Dr. Albert Bühlmann

*Experiments in Safe Decompression:*

H. V. Hempleman

*Problems of Living on the Sea Bed:*

Captain Albert Behnke

*Selecting Divers by Brain Impulses:*

Surgeon-Cdr. Pierre Cabarrou

*Loss of Consciousness Underwater:*

Dr. Albert B. Craig, Jr.

*Operation Pre-Continent No. 1:* Dr. X. Fructus

### **HISTORY UNDER THE SEA**

*Chairman:* Sir Mortimer Wheeler

*Viking Ships:* O. Crumlin-Pederson

*Underwater Caves of Gibraltar:*

Dr. John Waechter & N. C. Flemming

*Excavating a Byzantine Wreck:* George F. Bass

### **TOOLS FOR THE JOB**

*Chairman:* Peter Small

*Modern Equipment for Locating Wrecks:*

Dr. Edwin A. Link

*Working at Depth Without Decompression:*

Dr. Lino Pellegrini

*Experiments In Photography:* Victor de Sanctis

*Demonstration of a New Device for Communication Between Divers:* J. D. Woods

### **QUEST OF THE SEA**

*Chairman:* Commander J. Hamlyn, R.N.

*A New Theory of Atoll Formation Based on Underwater Observation:* Dr. Hans Hass

*Towards the Limits of the Continental Shelf:*

Hannes Keller

*Exploring the Ocean's Everests:*

Dr. Jacques Piccard

the first place. Indeed, I think we are very proud to have brought it to this successful conclusion.

"I think this Congress is well timed. There is every indication that a completely new era in underwater development is now at hand. The Cousteau and Link experiments in the South of France, Hannes Keller's deep diving research, and our own Royal Navy's successful free ascent trials in the Mediterranean are, I think, indications that the future has great promise.

"What we have tried to do is to provide a platform on which the great ones of the underwater world can tell something of their work, and, we hope, perhaps discuss together all the important steps that now lie ahead. If we can say in 10 years' time, looking back on the major underwater developments that have taken place, that these were started at the 1962 World Congress in London, then I think our work will not have been in vain.

"It is particularly fitting, I think, that today we are honored by the presence of one of the truly great men of our country and of the sea, and especially so because of his very keen interest and participation in various aspects of underwater swimming. It is therefore with the greatest pleasure that I shall now ask Lord Mountbatten to officially open the Second World Congress of Underwater Activities."

Admiral of the Fleet, The Earl Mountbatten of Burma, K.G., P.C., Chief of Defense Staff, then delivered his

remarks: "Mr. Chairman, Ladies and Gentlemen: As you probably all know, your President of this Conference is the Duke of Edinburgh, and he and the Queen at the moment are acting as host to the King of Norway on his state visit to Edinburgh. I was up there for half the visit, I have just got down because I have to get back to the Ministry of Defense to do some work. Before I left, His Royal Highness asked me to say how particularly sorry he was that he could not open this Conference, but the state visit obviously had to take priority. He sent a message of goodwill and great interest. His own special personal message has been printed in the program."

After congratulating the organizers of the conference and welcoming all the delegates to the City of London Lord Mountbatten commented that the fog that blanketed the area for a couple of days and nights would likely dissipate soon. He offered a special welcome to Commandant Cousteau, President of the C.M.A.S., and commended him for his manned habitat successes. He also recognized the pioneering work of Dr. Edwin Link who had recently kept a diver at 200 feet for one day and for more than three days at a lesser depth, working on a mixture of air and helium which obviously has a very great future. Hannes Keller's planned attempt to reach 1,000 feet and survive was highlighted. He welcomed Hans Hass and Jacques Piccard, both of whom are now house-

## Join Forces for Safety and Practical Regulation Within our Industry

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- Development and Communication of Industry Consensus and other Safety Standards

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Despite industry knowledge that a three-man team is an absolute safe minimum, many bid requests still specify a two-man team. Accidents and fatalities continue to take place when companies and persons undertake hazardous underwater operations without proper knowledge and training regarding the dangers inherent in such practices. For this reason, videotapes are developed and provided to address issues such as: "Why A Three-man Dive Team"; "The Hazards of Differential Pressure"; and "Underwater Burning Safety". Additional multi-media presentations will be developed as a means of furthering education throughout the industry.

Other educational materials include periodic safety alerts, tutorials, industry presentations, and a program of updating previously issued Consensus Standards.

### Why Hire An ADC Member?

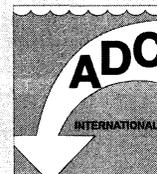
An ADC Member is one that has agreed in writing to adhere to all applicable regulatory requirements, including the ADC Consensus Standards for Commercial Diving Operations; a document recognized globally as a comprehensive guide to the conduct of safe commercial diving and underwater operations.

An ADC Associate Member company is one that fully understands the equipment needs of the underwater industry; has incorporated the highest standards of safety and quality control into the end product, and is willing and able to provide guidance and assistance in evaluation and preparation of bid specifications.

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hold names, along with the many other distinguished people with great records, too numerous to welcome by name. He also paid tribute to his own submarine service for their free ascent escape from 260 ft. from a submarine resting on the bottom.

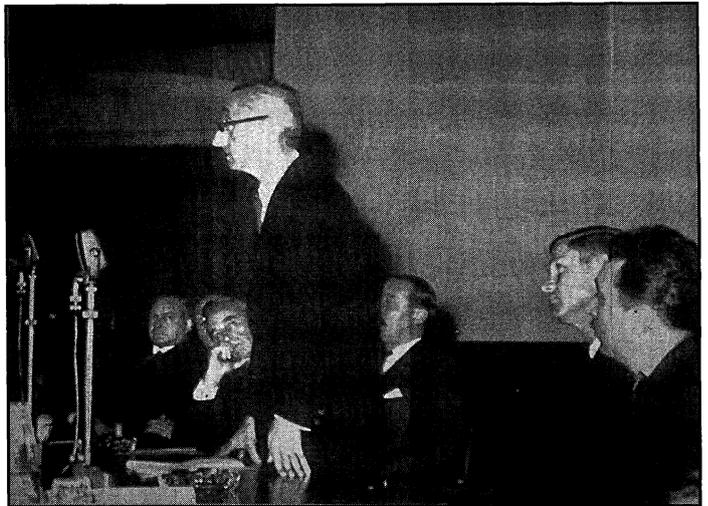
After looking at all of the lectures listed in the Congress program, it was apparent to Mountbatten that almost every conceivable subject of interest was covered by experts. He then covered his own career and involvement with one-man submarines and scuba diving. "In 1949 I came across the first Cousteau-Gagnan compressed air Aqualung. Of course, nobody can possibly put that on without getting the greatest thrill of their life, and at that moment I was a complete and firm addict to the game."

[Author's note: Lord Louis Mountbatten served in a variety of prominent military and civilian posts. He was assassinated by the Irish Republican Army in 1979.]

### **Era of "Homo Aquaticus"** **By Commandant J.Y. Cousteau**

#### **President, C. M. A. S.**

Commandant Cousteau brought to this Congress his startling perspective as to what the future might hold for man in the sea. He recognized that current research into modifying man to operate his circulatory system by surgery for some other means called for a new departure and the development of a new man, "Homo Aquaticus." "We need not be too afraid of this change as we have the experience that you can find volunteers for anything. In space research today great progress is being made in deriving the flow of blood from under the left arm to a regenerating cartridge worn at the belt, so spacemen can be independent of traditional respiration. As a matter of fact, his respiratory system will be negated. If this option is perfected for spacemen, these results will immediately be used underwater. The only difference is that we will have to fill the lungs with an incompressible liquid. Then these men, Homo Aquatics, will be able, after the results of experiments on highly developed animals, to show their ability to resist pressures down to 1,500 or 2,000 m. Man could then move from the surface to this great depth mechanically or freely at any speed, with no decompression problem at all. This new man will probably be born there, and you'll have surgery at his birth in an underwater hospital filled with water and there will be theaters, there will be Parliaments underwater and probably new nations. This category of man will not be permanently confined to underwater. After employing a reversal procedure to return the man to his air breathing lung system, they will be perfectly able to walk on land, still with their cartridge, changing it from time to time. They will be-



*"Homo Aquaticus." (L to R) Unknown, Lord Mountbatten, Jacques-Yves Cousteau (standing), Colin McLeod, Andreas Rechnitzer and J. Dumas. Courtesy A. Rechnitzer*

able to go skiing as well as to live underwater. This birth of a new man is in line with nature. We have examples of it. We have good evidence to think that sea mammals, or mammals which have returned to the sea, the seal for example, have probably been either dogs or close cousins to dogs. There's a certain mystery as to what ancestor the dolphins and porpoises have, nevertheless they were plain mammals returning to the sea."

[Author's note: It is likely Cousteau was influenced by experiments with mice and a dog whose lungs were filled with an isotonic solution to determine if it was possible to extract oxygen from the underwater environment; these animals survived and proved that the hypothesis was correct. When these mammals were removed from the underwater bath the solution was quickly removed from the lungs. The dog continued to live again in an air atmosphere and even produced puppies. Research into this concept of getting manned underwater for extended periods and operating successfully by deriving adequate oxygen from the environment and eliminating toxic gases, as on land, as yet has not been substantially advanced and certainly not to the point where conversion to a prototype "Homo Aquaticus" has appeared.]

### **The Challenge of Photography** **by Luis Marden** **President of C. M. A. S. Photography and** **Cinémaphotography Committee**

Mr. Marden reminded us, "As everyone knows, the first successful pictures to be taken underwater were made by a Frenchman, Luis Boutan, in 1893. Boutan went to extraordinary lengths to obtain what can only be described as remarkable results in the face of obstacles

that would give pause to ordinary men. "With the impressive virtuosity of the French savant, Boutan, in the years between 1893 and 1900, first made pictures by time exposure in shallow water, then took instantaneous photographs under the same conditions (at an epoch when instantaneous photography was not too common on land). He went on to take pictures by a submerged flashlight of his own invention which anticipated the magnesium-filled flash lamp, and finally designed an unmanned depth camera to photograph by electric floodlights. Boutan published the first book on the new art, *La Photographie Sousmarine*, in 1900, and other experimenters were moved to follow in his lead-soled footsteps.

"Boutan had had to work with troublesome wet-collodion plates. After the invention of the dry plate, with its infinitely greater ease of handling and higher sensitivity, progress was fairly rapid. The first undersea color photographs were made in 1926 by the American biologist Dr. Samuel Longley, with Charles Martin of the National Geographic Society. They used the extremely slow Autochrome plate, and in order to obtain sufficient light for an instantaneous color photograph, they were forced to employ the staggering amount of one pound of magnesium flash powder per picture. In modern terms, that monumental explosion equaled the light of 2400

flashbulbs. The daring pioneers nearly blew themselves up, but succeeded in photographing for the first time the brilliant color of the coral reef.

"Underwater photography became really practical with the advent of the small hand-held camera and fast film. The invention of self-contained diving apparatus made the undersea photographer truly mobile at last, and now he had the potential of taking pictures under the city almost as readily as he had done on land." Marden continued to describe the physical conditions underwater that affected the collection of underwater images. He addressed the subjects of water clarity, illumination, the use of cameras, and the film types of that era.

He noted in his closing remarks that France had pioneered yet once more, this time with the world's first amphibious camera. The camera that he was describing is the well known 35mm Calypso-Phot. Marden established the state-of-the art of underwater photography in 1962 and declared that others are likely to expand underwater photography in all areas.

*Part II, Covering the presentations Professor Gunnar Thorson, James Shelbourne and Robert Forster, will appear in issue 36.*

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# A Guide to American Two Hose Aqua-Lung Regulators

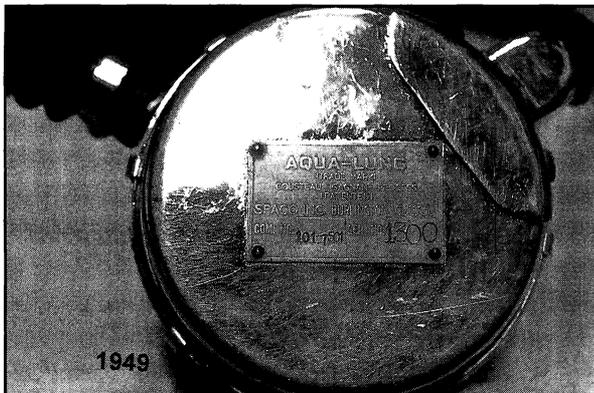
1949 - 1973

By Mark Howell

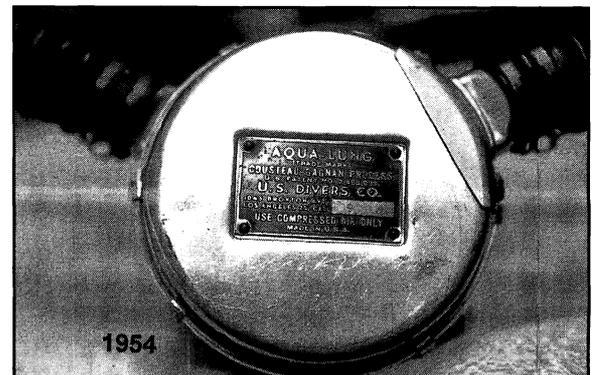
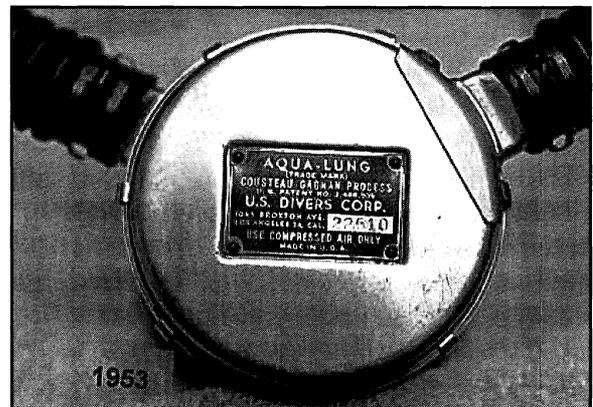
Collectors of U.S. Divers double hose regulators sometime disagree on the evolution of the identification plates attached to all of their early regulators. Over the past few years I have learned a great deal about this evolution. I have achieved this through personal observation of early regulators that I have acquired from their original owners, the study of sales brochures and catalogues, and by talking to some of the early recreational diving pioneers. The following is my initial time line of evolution of these plates, and there is certainly some room for discussion with respect to the dates I have assigned to the plates of different models. However, because the most often asked question among regulator collectors seems to be "What year is this model?" I have been definitive as to the dates of regulator production. The timeline chart will help to put the model changes in more perspective. We start over 50 years ago, in January 1949, when Jacques-Yves Cousteau first set up distribution for his Aqua-Lung on the east coast of the United States. From that date we gradually progress through to 1973 which was the last year that production ran. U.S. Divers eventually phased out the double hose regulator in 1975.



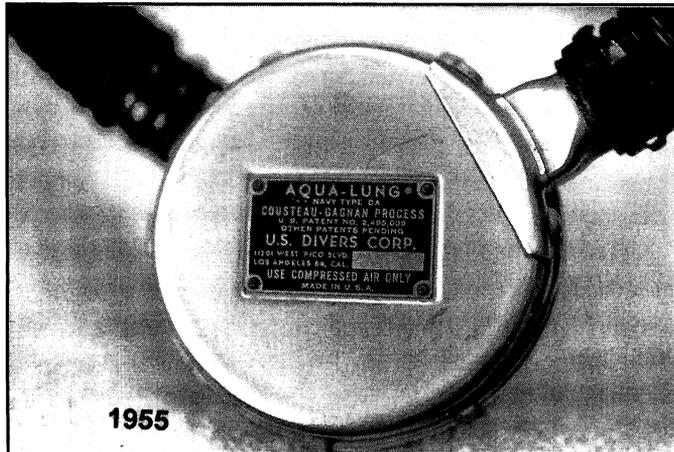
**1950-1952.** West coast distribution was secured by René Bussoz. The Aqua-Lung was sold through René Sporting Goods, at 1045 Broxton Avenue, Westwood, California. The identification plate remained 1 1/4 by 2 inches and surface mounted with four rivets. The background color was black with raised chrome lettering.



**1949.** The Aqua-Lung was first distributed on the east coast by Spaco Inc. of Burlington, Vermont. The identification (ID) plate is rectangular in shape, 1 1/4 by 2 inches, and surface mounted with four rivets. It is not countersunk into the bottom box as later models are. The example shown has raised letters and hand stamped numbers. The plate is non-magnetic, which leads me to assume that it is made of brass or copper, with what appears to be a satin platinum type finish. There is some evidence that the background color was black.

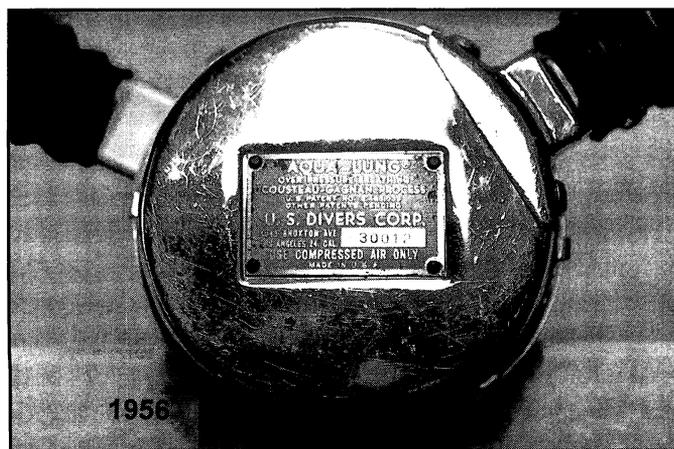


**1953-1954.** This was the first year that the Aqua-Lung was manufactured in the United States. Several changes occurred in 1953 production. The identification plate was still riveted, but it was now counter sunk into the bottom box assembly. I refer to this change as flush mounted and from this date forward all rectangular identification plates are attached this way. The famous 1045 Broxton Ave address is still on the plate but the background color is now blue with raised chrome lettering. Sometime around 1954 a green background plate appeared.



1955

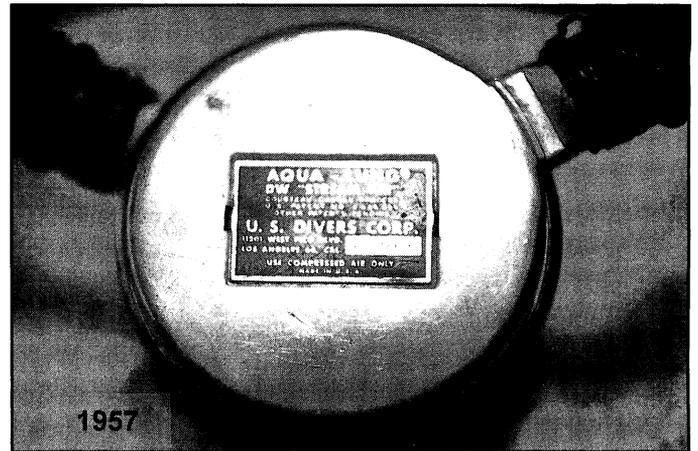
**1955.** It was this year that U.S. Divers relocated to 11201, West Pico Blvd. This was the first year for the Navy Type DA model regulator with the new address. The identification plate was flush mounted with four rivets, and the color was black, with raised chrome lettering. This was also the year the DX over-pressure model was first offered. The DX had a riveted plate with a yellow background, and it retained the old 1045 Broxton Ave address.



1956

**1956.** Two new models were introduced this year. The DW Stream Air had the new identification plate, which featured two tabs that bent over to attach it to the housing, instead of the rivets. The DY Jet Air regulator was also new, but it did not have an identification plate or serial

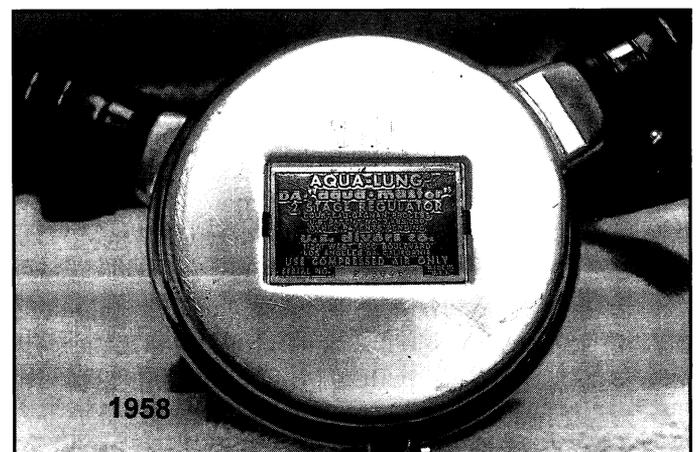
number. It came in two versions. One was made of a high impact fiberglass phenolic compound, and was brown in color. The second version was black cycolac plastic. Both had the lettering molded into the bottom box. The Navy Type DA and the DX over-pressure continued on from the previous year.



1957

**1957.** The new bend over tabs were now used to attach all plates except the DX which continued to use the four rivets. The Navy Type DA had a slight name change to the DA Navy Approved. The identification plates for the DA came in four colors: blue, black, yellow, and orange, and all came with raised chrome lettering. The DW Stream Air and the DY Jet-Air continued on from the previous year.

**1958-1959.** From 1958 onwards, all the rectangular identification plates had the bend over tabs. The rivets were gone forever. The DW Mistral took the place of the DW Stream Air, and it had a yellow plate with the raised chrome lettering.



1958

**1958** was also the first year for the DA Aqua Master. Together with the DA Two Stage, these regulators had a blue tag with the raised chrome lettering.



1960

**1960.** U.S. Divers relocated its operation to 3323 West Delhi Ave, Santa Ana, California. There were only two models in this year: the DA Aqua Master and the DW Mistral. Their identification plates are the same color as the previous year.



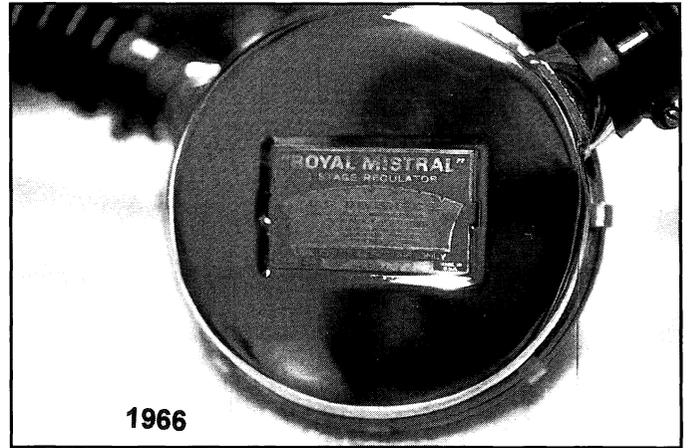
1962

**1961-1963.** A slight address change again occurred in 1961, when the street name of Delhi Avenue was changed to Warner Avenue. The company's physical location did not change. The DA Aqua Master and the DW Mistral continued on and a black plastic Jet Air, without a plate, was introduced for these three years.



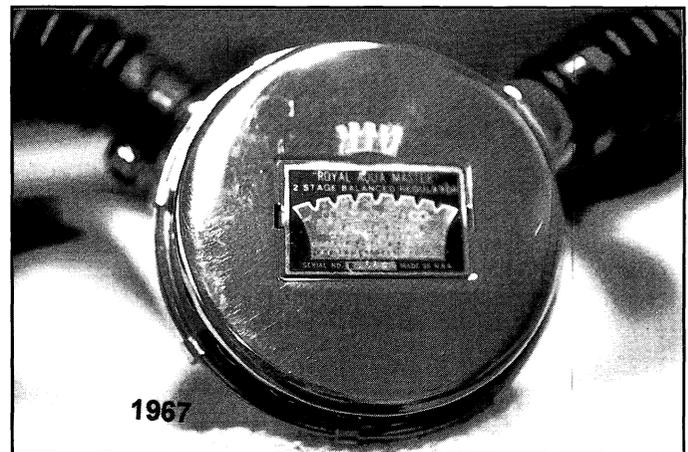
1964

**1964-1965.** In 1964 the company introduced the Royal Master. It had a beautiful identification plate. A large gold crown dominated most of the tag. A blue perimeter and raised chrome lettering gave it a classic look. The DA Aqua Master and DW Mistral still remained in production. In 1965 the Royal Mistral was introduced. It also had a great looking ID plate, which featured a large gold crown, surrounded by a field of red, and finished off with raised chrome lettering.



1966

**1966.** U.S. Divers product line-up this year was the same as 1965 except that the name of the Royal Master was changed to Royal Aqua Master.

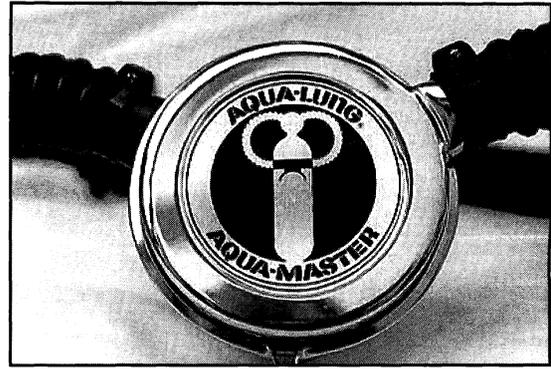


1967

**1967-1969.** Through these years the models remained the same: DW Mistral, DA Aqua Master and the Royal Aqua Master. The Royal Mistral was dropped from the line in 1968.



**1968.** The Golden Royal Aqua-Master. U.S. Divers was proud to present the Golden Royal Aqua-Master to celebrate the 25th anniversary of the Aqua-Lung. The regulator is finished in a bright gold plating. The identification plate is rectangular, 1 1/4 by 2 inches. The back-ground color is black. A large crown dominates the center of the plate with the words “25th anniversary” centered in the crown. Jacques Yves Cousteau’s signature is at the bottom. The crown, most of the lettering and the perimeter are finished in what looks like chrome or silver. Production was limited to only 100 units.



**1970.** This year saw the demise of the traditional U.S. Divers identification plate. The familiar rectangular shaped metal plate was changed to a round silver stick-on decal type label. There were no serial numbers on the new sticker. Instead the company stamped the serial number into the top box assembly. The DW Mistral continued on with the old rectangular plate, but this was the last year it was produced.



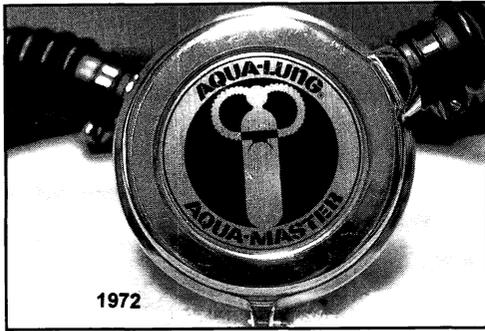
**OUR FOUNDER & INSPIRATION**  
Captain Jacques Yves Cousteau

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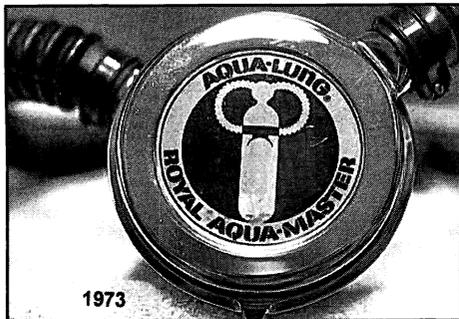


**FIRST TO DIVE**





1971-1972. Production continued with only two models: the Aqua Master and the Royal Aqua Master. In late 1972 the Aqua Master was dropped from the line.



1973. This was the last year of production for the Royal Aqua Master. Units were still available for a couple of years until inventories were depleted.

The American company of U.S. Divers had almost a 25-year production run with their various double hose regulators. Not bad for a design that originated in 1943. The double hose regulator dominated the diving scene in the 1950s and early 1960s. Photographers especially prized it because the air exhausted at the diver's back and did not interfere with their camera's field of vision. Today, these regulators from the dawn of American scuba diving are prized by countless collectors around the world. They are restored and maintained with care, and are often used at classic diving rallies across the country.

Author's note. For a complete set of color photos of all the models discussed here log on to the California Classic Equipment Divers web-site at [www.CalClassic.org](http://www.CalClassic.org). Tips on the maintenance of these types of two hose regulators can be found in *The Scuba Workshop* column, by Kent Rockwell, in this and other issues of Historical Diver Magazine.

**The Author.** Mark Howell started free diving in 1958 off the beaches of Southern California. A certified scuba diver since 1963, Mark is a collector and restorer of vintage diving gear. He is a member of the Historical Diving Society and California Classic Equipment Divers, and enjoys keeping the history of sport diving alive.

### U.S. Divers Double Hose Regulator Time-Line

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73
Aqua Lung, Spaco Inc. (metric)	X																								
Aqua Lung U.S. Divers Co (metric)		X	X	X																					
Aqua Lung (blue label)					X	X																			
Aqua Lung (green label)					X	X																			
Navy type DA							X	X																	
Over-pressure DX							X	X	X																
Stream Air DW								X	X																
Jet Air DY (brown phenolic & black cyclac)								X	X																
Navy Approved DA									X																
1000 Two Stage DA (no hooka)										X															
1008 Mistral DW										X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1010 DA Aqua-Master										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1020 Jet Air (black cyclac)												X	X	X											
1046 Royal Master																X	X								
1054 Royal Mistral																	X	X	X						
Golden Royal Aqua-Master (25 <sup>th</sup> anniversary)																				X					
1046 Royal Aqua-Master																		X	X	X	X	X	X	X	X

## The Navy's Mysterious Mentor By Kent Rockwell

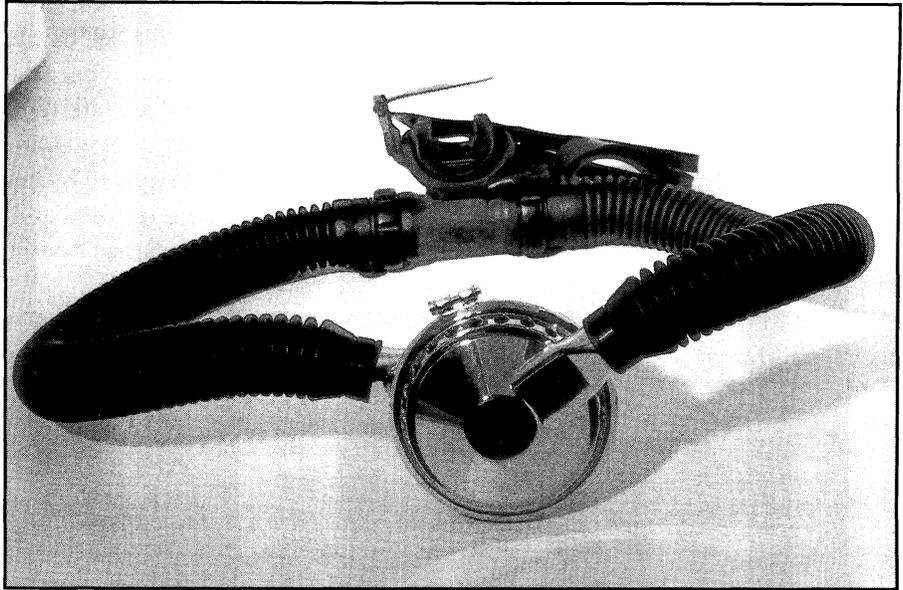
Diving equipment historians do get lucky, on occasion, when determined research uncovers rare and unpublished documentation. However, finding these materials can be time consuming and governed by happenstance; and as memories fade with time the facts become hazy and the details distorted.

Imagine our luck when we were offered the opportunity to investigate the continuing legacy of the original Aqua-Lung, the now mysterious and historically significant Mentor double hose scuba regulator. Mysterious in that, even within the scuba industry, few have heard of this limited production regulator and significant in that a scuba icon, long thought technologically outdated, would again see production.

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 another 23 years while evolving into the Royal Aqua-Master model. With declining sales, the U.S. Divers Company (now Aqua-Lung America) discontinued their twin hose line in the early 1970s 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 scouted civilian dive stores for spares and even purchased licensed copies of the Aqua-Master from Biomarine, but the handwriting was on the wall. When Nemrod brought the Snark III back into production the Navy purchased those units until that regulator, too, was 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 current military and civilian rebreathers. And with over a thousand students a year attending BUD/S the twin hose regulators were seeing a lot of abuse.

In July of 1999, Lt. John Morris, Diving Officer at BUD/S, called Aqua-Lung America (ALA) with an urgent request for help. His request was twofold: first help with their aging Nemrod Snark IIIs and secondly,



*Aqua Lung Mentor double hose regulator*

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, while Bill Bruhmuller (retired SEAL and 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 (a kind of wish list for the regulator) and to obtain SPECWAR community approval. The name Aqua-Master II was considered, but Morris's (BUD/S) suggestion of Mentor (meaning trusted counselor or teacher) was attached to the new regulator.

In November of 1999, ALA's management, headed by President Don Rockwell, approved the project(s). According to Dave Stancil, one of the Mentor's strongest supporters, ALA had long been committed to supplying the Navy community and jumped at the challenge to provide a unique product. By mid December, plans were put into place for both Phases I and II. A Snark III sample was sent to France for the Phase I hose design. These pieces were modified from ALF's OXY-2C rebreather line and by mid July ALA delivered 100 sets of hoses and mouthpieces to BUD/S for the Snark III upgrade.

At La Spirotechnique (now Aqua-Lung France or ALF) a young engineer, Yannick Bonnemaïso, was tasked to design the new regulator. Yannick wanted the Mentor

to breathe freely to 135 fsw and hopefully 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 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 25 fsw in the pool. The 200 production units were soon to follow and were shipped to ALA for testing before delivery to BUD/S. Production regulators were virtually identical to the prototypes with only a neat little Aqua-Lung logo laser etched into 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 figure costs of design, tooling, manufacturing and testing for only a few hundred items. Each Mentor was sent with a spares kit of rubber bits (diaphragms and O-rings).

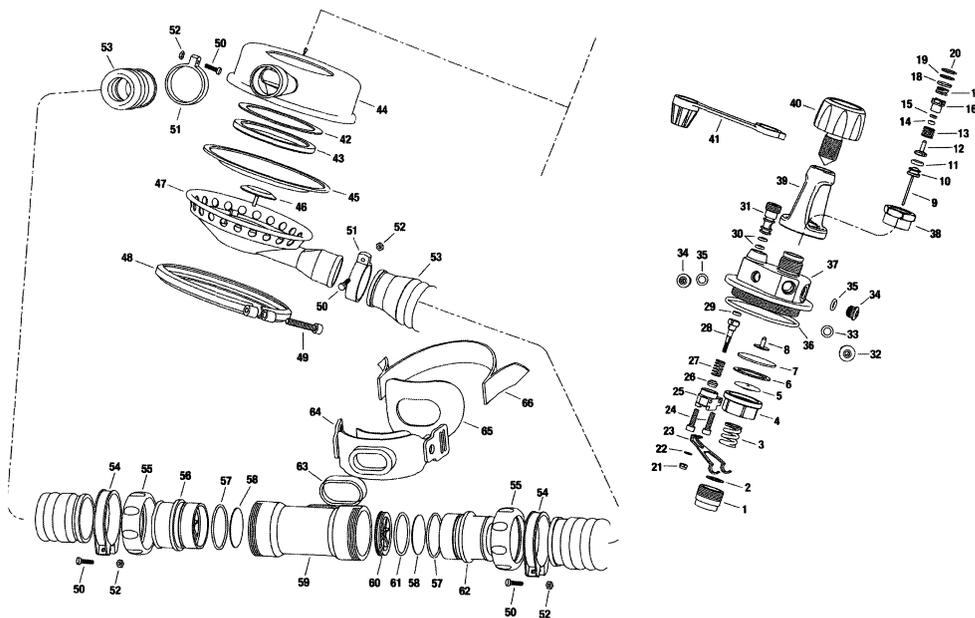
The Mentor is really a beautiful thing to look at. Although originally specified in black chrome, its bright work is first rate and overall finish really pleasing. It is a two stage balanced regulator not unlike the original Aqua-Lung. Its first stage is based on the diaphragm type Conshelf XIV. Most of the component parts are common with the Spiro Titan and XLC regulators, and the rather thick first stage housing features two low-pressure and one high-pressure port. 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 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 down the intake hose. The resulting "venturi" action helps evacuate the regulator housing, sucking the main diaphragm in and opening the second stage valve completely. Thus the regulator feeds the diver directly from the first stage with an almost supercharged effect. 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 proved to be much better than an exemplar XLC regulator, however the Mentor's exhalation work was at or above the maximum limits.

In August of 2002 HDS members test dove the Mentor in the College of Oceanering's training tank in Wilmington, California. We found the inhalation effort to be, well, effortless, and a real pleasure, actually. Although the exhalation pressure seemed more demanding (although not objectionable at our low work rate) the lower hydrostatic pressure at the regulator helped while swimming prone. However, the overly large diameter rebreather style hoses exerted undue pressure on the mouthpiece causing us to swim with our hands pulling the hoses down. Lanyards attached to the shoulder harness, as used on many of the up-scale rebreathers, could easily counter this.

Carson Atkinson and Ed Szostak ably hosted our visit with a tour of the Aqua-Lung facilities and Ed's R&D lab. We were given a demonstration of the fabulous ANSTI machine and actually watched a regulator cycle through its paces. 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 Mentors. Both men reminded us that Aqua-Lung America, unfortunately, has no plans to sell Mentors, gold plated or otherwise, to the civilian market, and ALA stocks spares restricted for U.S. Navy owned Mentors. Aqua-Lung offers no more printed material than we have published here.

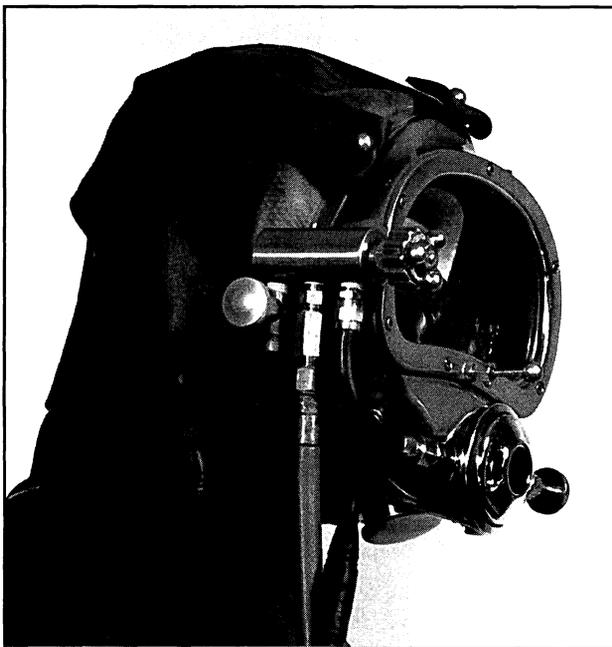
### Mentor Exploded Parts Drawing



**The History of Kirby Morgan Diving Equipment**  
**by Bev Morgan and Bob Kirby**  
**in association with Leslie Leaney**  
**Part Three**  
**Kirby Morgan Diving Masks 1967-2003**

*In Part Three, Bev Morgan and Bob Kirby cover the history of the company's masks up to the present. Parts of the article are based on Morgan's history of the company and mask model numbers may have been assigned retroactively by Morgan, for ease of reference. A more personal accounting of Kirby's involvement in the company can be found in his book Hard Hat Divers Wear Dresses, which is available exclusively through the Society. Since we started this series, various interesting details about the company's equipment have emerged, and I am currently compiling material for a fourth part of the story which will appear in this magazine at a later date. Both men were interviewed separately in California in August 2002 and March 2003. Kirby was also interviewed in December 2002 — Leslie Leaney*

**Kirby:** I left the company around 1968. This was the time of the Pacific Instruments drama and that whole mess has its own chapter in my book. After I left, Bev had Dick Quitner manufacture a three hole valve for the side block. (This allowed a source of emergency air to be plumbed to the mask.)



**1967. KMB-8. Kirby Morgan Band Mask 8 (KMB-8)**

The Kirby Morgan Band Mask 8 was the first of the company's masks to sell on a large scale. It had several improvements over the KMB-7. Primarily, there was a provision for attaching a bail-out bottle for emergency breathing gas supply. This mask was manufactured in 1967 though to 1969. The company states that they sold well over 500 of these units.



**1969. KMB-8 1/2. Kirby Morgan Band Mask 8 1/2**

The Band Mask was licensed for manufacture to U.S. Divers in 1969. The side valve was changed in 1970. This replacement side valve had restricted orifices and the company recommends that this mask should not be used in excess of 125 feet.

**Kirby:** Around this time I was back in aviation, working over at Santa Barbara airport and I'd drop in and visit with Bev once in a while to see how he was doing. Bev sold KMB-8s to U.S. Divers. They modified it to their scuba tank valve arrangement. This was OK, but the valve was incapable of adequate flow rates. Ed Tolorino was the U.S.D. design guy and he was the guy that came up with the oral nasal idea. U.S.D. gave him their whole commercial line and the 8 1/2 was solely a U.S.D. product.

**Morgan:** I had a machine shop doing my metal parts. They changed their name to "General Aquadyne"

and started making masks and helmets in competition to our products. About this time the 1970 U.S. Divers budget for the KMB-8 Mask was 125 units, and they received orders for 800! So everyone who couldn't get the KMB-8 (because they had no stock), bought Aquadyne. According to Gordon McClimit, who was the U.S.D. brass, they could not budget for any more until 1971. And they didn't. So Aquadyne had a great year. And that really pissed me off! In 1971 USD budgeted for 1000 units. The mask was better than the Aquadyne and U.S.D. had a good year. Sold all 1000 of them. U.S.D. continued with adequate production and moved the masks until Kirby came back with me. After lengthy litigation with U.S. Divers I won the rights to manufacture the Band Mask. In 1988 I bought the whole U.S. Divers Commercial Division thereby regaining the complete rights to the all Trademarks, including "Kirby Morgan" and all Trade Dress protection (this includes the actual shape of the mask), and all copyrights to the manuals, and logos.



**1975. KMB-10. - USN Mark 1. Kirby Morgan Band Mask 10 - U.S. Navy Mark 1 Mask.**

This mask was made by U.S. Divers from 1975 until 1988 when production ended. It was also named the USN Mk 1 mask. The USN Mk 1s had black frames and the civilian KMB-10s were orange. In 1988 Bev Morgan bought the Commercial Diving Division of U.S. Divers, thereby regaining rights to the mask. This purchase included the rights and tooling to the KMB-10. At the time of the buy-out the KMB-10 design was in need of improvement to the level of the then current Kirby Morgan designs. This was done and the improved mask was named the KMB-28.



**1973. KMB-9. Kirby Morgan Band Mask 9.**

This mask had an improved side valve, a change in the adjustable regulator handle and an injection molded plastic main frame. It was made by U.S. Divers from 1973 to 1975.

**Kirby:** I'm a little foggy about the dates but this mask was injection molded as opposed to our usual hand molded fiber glass.

**Kirby:** This was all U.S.D. A whole new side block was designed for these. But on the Navy version there was no way to disconnect the hose from the regulator or side block, so you had to take the whole unit off to do any work on it. The injected molded plastic of that day had a feature called "cold flowing." Many plastics had this problem which is where the molecules do not have elongated strands for strength. Consequently, continued pressure at any one point may cause cracking to occur. This problem eventually showed up a year or so later due to internal stress. The problem was solved a couple of years later with improved materials.



**1976. KMB-18. Kirby Morgan Band Mask 18.**

This fiberglass mask incorporated many improvements over the KMB-10. Manufacturing by Diving Systems International (formerly, and now called Kirby Morgan) began in 1976. At first it was named HeliOx-18. Several customers believed it was only for use with mixed gas so the name was changes to DSI-18, until 1988. With the buy-out of the Commercial Diving Division of U.S. Divers, the name “Kirby Morgan” was regained by Bev Morgan and continues to be used to the present day.

**Kirby:** I connected back up with Bev in 1974 and came up with the toilet seat neck seal for the Superlite 17. The HeliOx 18 was a last minute effort to save the company as we had spent all the money on the 16 (KMH-16 helmet). To get some money Bev mortgaged his house and took a big risk there. He asked me to do the same. Mortgage mine. But I did not have any equity in it so I couldn't help. Bev put all his eggs in the basket of HOPE. A massive risk because if it didn't work out he'd lose his house and everything. If it didn't work on my side at least I'd have somewhere to live. He took all the real risk and deserved to get the rewards of success. If it happened. And it did. There were some folks who felt that I lost out on the split of the company here. But I don't see it that way at all. I am happy with what I received from the split, for taking almost no financial risk.

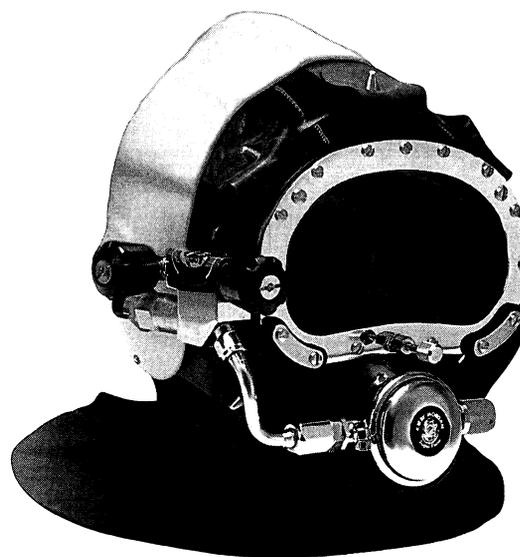
**Morgan:** By 1979 we were killing Aquadyne. I even bought the building they were operating in. They got so nervous they moved to Carp [Carpinteria, a small town east of Santa Barbara] and finally self-destructed.



**1987. DSI EXO-26 Mask**

Bev Morgan, working with Pete Ryan, the head engineer at Diving Systems, designed the EXO-26 Mask.

**Morgan.** This mask was our first attempt at injection molding an entire mask. Although the tooling was very expensive, the cost per part was much lower so we could compete with other molded masks on the market. Selling for under half of the price of a Band Mask, this unit is doing very well and has established a following of customers that enjoy the simple design.



**1988. KMB-28. Kirby Morgan Band Mask 28.**

This mask is nearly identical to the KMB-18. The primary difference is the main fame which is injection molded. The company reworked the KMB-10 mold, changing molding procedures and used a new, stronger material. This, together with utilizing the other improvements the company introduced on the KMB-18, has updated the 28 to the current state of the art.



### 2002. Morgan SuperMask 48

The Morgan SuperMask (patent pending) is a light-weight modular full face mask that allows for easy and rapid adaptation to various self contained underwater breathing apparatuses as well as surface supplied systems.

The mask frame and rigid components are made of high impact plastic. The face seal is made of the highest quality silicone that conforms to the diver's face. The modular removable mouth pod is designed to quickly interchange, allowing the diver multiple breathing gas options. The mask is also designed to accept various wireless communications configurations.

The removable lower pod is a feature unique to the SuperMask. When diving, the pod is easily removed and replaced on the mask for diver capability to buddy-breathe, use a snorkel or an octopus or perform an "in water" gas switch.

With the pod sealed to the mask, the flexible, silicone pod cover allows the diver to quickly place the regulator mouthpiece into the mouth or dive with it free of the mouth for communications. With the mouthpiece in, the regulator may be used without the pod being sealed to the mask.

The mask may also be used surface supplied. KMDSI is currently developing several different pod configurations for both open circuit and rebreather use.

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**The Historical Diving Society**

# Robert Hooke and the 1664 Scuba

by Peter Dick

*In July 2003, HDS member Peter Dick, will present a paper at a conference to be held at the Royal Society of London, on the self contained diving gear designed by Robert Hooke (1635-1703). The conference is held in association with Gresham College, and coincides with the 300th anniversary of Hooke's death. It is intended to commemorate the life and work of an unrecognized English genius. The full story of Hooke's achievements will come to light at the July conference, but as a prelude, the following article, based on Peter's research, provides an introduction to a fascinating era in diving history. - The Editor.*

Robert Hooke was a slightly built man with a crooked back and, reportedly, a grumpy temper. His personal work covered a number of subjects, including diving, but he quarreled with Isaac Newton and, unfortunately, was later ostracized by the scientific community. Consequently it seems, despite serving the Royal Society for most of his adult life, there is no existing portrait of him and he was buried in an unmarked pauper's grave.

He was among the very first, if not the first, to appreciate that air was not a single gas but had two parts: one which supported combustion, which in those days equated with life, and one which did not. It is against this background, and an impending war at sea, that Hooke was to come up with the first truly self-contained equipment on record, which was almost certainly used underwater.

The English astronomer Edmund Halley is generally considered a founding father of diving, mainly because of his ideas for a bell supplied with casks of air from the surface, and pictures of the diver being able to work outside a diving bell. Dating from 1721, these images were widely published later in the eighteenth century, with the whole story expanding in the nineteenth century. By the twentieth century many otherwise credible sources all but believe that Halley had invented the diving bell. In fact Halley borrowed on earlier ideas, though to his credit he did improve and add to them. The story in fact begins around 1660 and in-

volves the first practical trials of what we would today call SCUBA gear.

It all took place under the auspices of the Royal Society of London, which was a gathering of eminent and clever gentlemen, who first began meeting to discuss experimental philosophy in the 1640s. They received a Royal charter from England's King Charles II in 1662, which was the same year that a young man named Robert Hooke became their curator of experiments "for the King's pleasure." Hooke had been Robert Boyle's assistant during the period that led to Boyle's 1660 book laying out what we today know as Boyle's law. It also became known as Mariotte's law in Continental Europe, after the French scientist who rediscovered it in 1673.

This law, which equates the volume of a gas to the pressure it is under, is today considered vital knowledge to all divers. However, it was to be as late as 1671 before it was knowingly reduced to a practical level that could be understood by bell divers of the day. In early July that year the Royal Society met in Sheerness at the mouth of the River Medway, which enters the estuary of the River Thames. Here they lowered a 50 inch high cylinder with a valve in the bottom to various depths up to 19 fathoms (114ft/35m). The valve was closed at depth, trapping water and compressed air inside, and brought back to the surface, where the air compression could be measured. An ingenious device, it was almost certainly designed and probably constructed by Robert Hooke, who was good at making one-way valves and who also had a great life-long interest in what we now know as the science of oceanography. These experiments allowed the Royal Society to produce a table of air compression which showed that at 33ft/10m, one-half the air volume remained, by

66ft/20m one-third remained, etc. We now know by calculation that these early figures are correct. These results were later extrapolated down to 1947ft/600m and published in tabular form, as the Society felt they would be of use to divers. As an historical footnote, that depth is, of course, somewhat deeper than the present record for diver-involved open water work in the Gulf of Mexico.



*Engraving of Halley's Diving Bell*

Hooke's interest in diving can probably be traced to 1658, when Bishop John Wilkins, a founding member of the Royal Society and whose experiments influenced its interests, published a book called *Mathematical Magic*. This book contained the results of his experiments on how long divers could last in a given volume of air. These findings were part of the idea Wilkins had for whole colonies of people to live out their complete lives in an underwater habitat. This was obviously a very advanced concept considering it was published almost 350 years ago. However, for Wilkins the main problem became how air could be supplied for respiration, and Hooke was later to take up this challenge.

The Royal Society began investigating diving on its own account in 1660, when they built a lead diving bell. This was tried out in a dock at Deptford (the Royal dockyard sited on the River Thames near London) when, according to the diarist John Evelyn, their diver lasted half an hour. That is, after half an hour he signaled to be brought back to the surface, as the air in the bell had become too foul to breathe. They had possibly been spurred on by events in Sweden where, between 1658 and 1661 Colonel Hans Albrecht von Treileben, using a diving bell and an international crew of divers, had successfully raised guns from five wrecks.

Then, in late 1663, work began at great depth on the wreck of the *Wasa* in Stockholm harbor. It was a time when a second naval war between England and Holland was in the air, and having a workable method for salvaging wrecks would have been very advantageous. The Royal Society must have discussed how air could be supplied for respiration, because in November of that year Hooke said that he had thought of a method of taking air down to a bell underwater using buckets.

Diving obviously had its problems and, in February of 1664, the Royal Society convened a committee to try to find workable solutions. Given an impending war at sea things must have had an air of urgency, as a week later they came up with a scenario in which a diver wearing a diving dress (they called it a bag about the diver) walked out from a diving bell on the bottom, breathing from air trapped in the bell. The diver was to return to the bell as necessary to recharge its atmosphere with fresh air, which was to be taken down to the bell using up-turned buckets. As one bucket was being taken down full another one came up empty, much like the buckets in a well. This system of replenishment was tried out successfully as an experiment in front of the Royal Society. We know from later evidence that this method of supplying air was Hooke's idea, though he was to receive no credit for it when Edmund Halley finally perfected the method in 1716. Hooke also proposed supplying the diver with a pair of thick convex spectacles for seeing underwater.

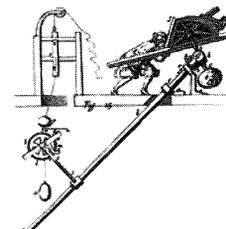
A week later Hooke informed Society members that he had thought of a way of diving that was safer and better than using a bag. He then described two cylinders which were joined by pipes, with the diver breathing from air as it passed from one cylinder to the other. Of course there were problems with this idea, but the services of a diver from Deptford were secured and he worked under Hooke's direction. With research, it is possible to work out that this equipment was developed further, and on June 22, 1664, it was reported to the Society that "...the diver had been underwater with the new instrument a pretty good while."

So there we have it: evidence of the first SCUBA to be used successfully underwater. The story does not quite stop there of course, as we do not know exactly how Hooke had solved all the problems involved, though we do have a good idea. For instance, he was not below personal experimentation, as he later built a rarefaction engine in which he subjected himself to a reduced pressure — which in those days equated with a lack of air, as experienced on the top of mountains and underwater. In this light, it is not impossible to imagine his deformity limiting his ability to support heavy diving gear and get underwater to try out his gear for himself.

So, for the moment it is fair to say that we have two new diving pioneers: Robert Hooke and an unknown waterman from Deptford who was the world's first self-contained diver. That is, he carried his own air supply, could roam the bottom at will and hopefully tackle a work load with a direct hand-on capability.

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# SCUBA WORKSHOP

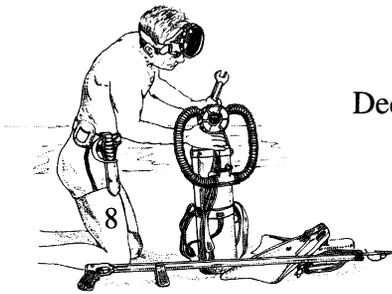
## EDUCATION THROUGH PRESERVATION

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by Kent Rockwell

### PROJECT SIX—DACOR DIVING LUNG

#### Two hose regulator (Part Two)



In 1954 a September chill swept in off Lake Michigan, buffeting the small Superior Tea & Coffeehouse in the Chicago suburb of Arlington Heights. As was their morning habit, two men sipped from steaming mugs while studying a pencil drawing on a scrap of paper. Satisfied, they signed and dated the sketch and asked the waitress to do the same. Wallace F. (Wally) Mitchell, design engineer and millionaire, and Sam Davison, Jr., future millionaire and future diving equipment mogul, were brainstorming over yet another scuba regulator design for Sam's embryonic company, Dacor.

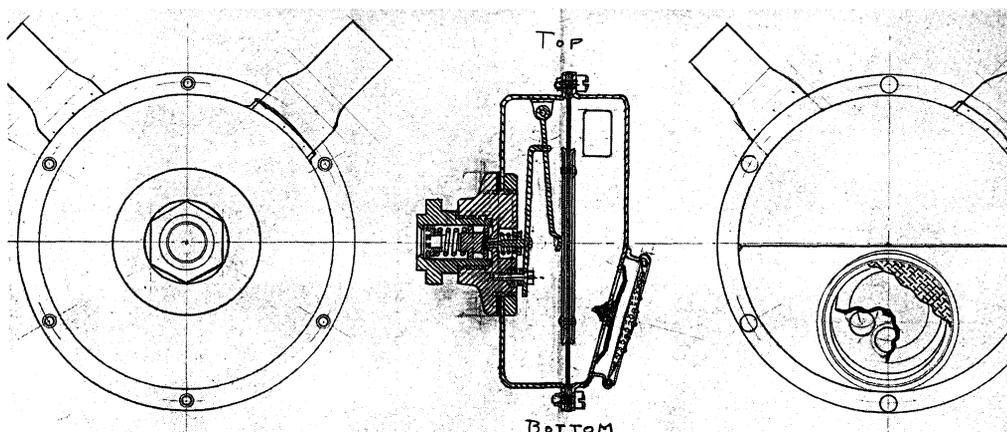
In October 2002, with Dacor historian Jerry Powell, I studied over 176 drawings dating from mid 1954 to mid 1955 and was amazed at the advanced designs. Sam's crude sketches and Wally's neat draftsman's-style renderings gave us a unique insight into Dacor history and the minds of the men that created it. Wally taught Sam advanced gas control mechanics and Sam taught Wally scuba diving theory. With over one hundred patents to his credit, Wally would add several more during his long association with Sam Davison.

We found sketches of single and twin lever, two-stage regulators with single and dual diaphragms and up to eight different exhaust valve systems (that attempted to circumvent Cousteau's duckbill exhaust patent). From these utilitarian designs sprung chest mounted regula-

tors, regulators built into tank valves, regulators operated by biting, full-face masks with built-in regulators and over a dozen single hose regulator concepts. These single hose regulator drawings were four years ahead of Sam LeCocq's trend-setting Sportsways Waterlung and featured advanced down stream second stages and even piston first stages. We can only wonder why Sam Davidson waited six years to introduce his Dart single hose regulator or enlarge his twin hose mouthpiece and check valves even though the Navy's Experimental Diving Unit (NEDU) had failed the R-1 regulator on several occasions and had even pointed to the tiny mouthpiece valves as the main culprit.

We were fortunate to find Sam's production prototype regulator and eight experimental regulators as well (circa July 9, 1956). Sam and Vern Pedersen experimented with various lever and spring combinations and hand formed ducts in an attempt to improve the R-1's breathing effort. Vern was one of Sam's earliest cohorts, an experienced diver and early dive shop owner, and a talented hands-on fabricator. Vern said the original design was "pretty much a dog" and he had built many of the experimental regulators in an attempt to increase the venturi action with the intake hose. However, the Dial-A-Breath feature (an adjustable vane from a Desco patent) was the only modification to the original design until the R-4 variant appeared in 1962. This experimentation bore fruit, many years later, when Vern produced the successful Pacer regulator with its "Ventura-Matic" device. Vern was director of manufacturing at the time and was touted by Sam as being "one of the greatest regulator experts in our industry."

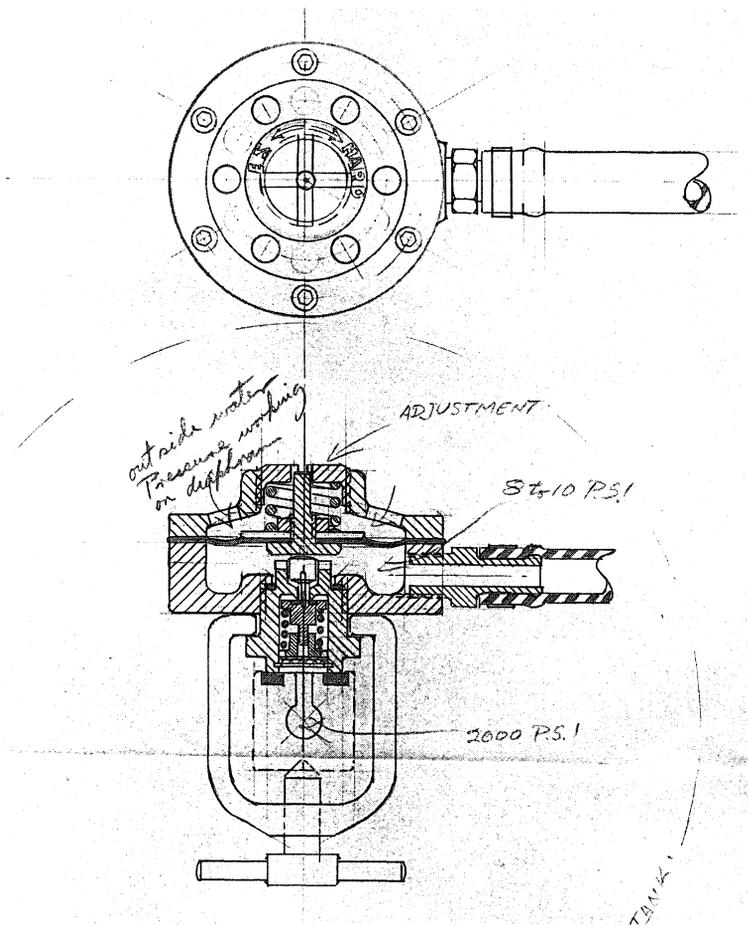
The experimental regulator we found most interesting was an un-plated affair that featured an oblong brass block bolted to the back of the regulator housing. Both the first and



SELF REGULATING AIR VALVE for UNDER WATER BREATHING DEVICE  
SINGLE STAGE AIR PRESSURE REDUCTION

INVENTED BY Wallace F. Mitchell  
WITNESSED BY J. M. Davison

DATE Sept 21 - 1954 PLACE Arlington Heights  
Sept 21 - 1954



metal parts in our 50/50 mix of white vinegar and distilled water but were careful to leave the parts in for only a short time. We used a toothbrush to work on stubborn corrosion and decided against using the harsher action of an ultrasonic cleaner as we have seen these machines remove already thinning chrome and the enamel from cover emblems. We finished by washing the rubber parts in warm soapy water along with the metal pieces (to neutralize the 50/50 bath).

After a careful inspection with a strong light and magnifying lens we began assembly with the high pressure blocks, making sure the high pressure seats were clean and their cone interfaces smooth. We installed the snap ring correctly with its sharp edge outward. The high-pressure blocks fasten to the intake housings with five screws and a low-pressure port screw for the R-3 and a second stage valve assembly for the R-4. The slotted screws must be fairly tight in order to seal the interstage diaphragm and housing and necessitated using the hollow ground screwdriver. The R-3's hollow port bolt can be easily snapped off so we used less torque on this item. We mounted the regulator on a tank valve for support and added the levers. Keeping our face and body parts clear we slowly opened the high-pressure valve and noted

leakage on the R-3. There is neither adjustment nor a way to check the interstage pressure (IP) so we replaced the first stage diaphragm and spring and the second stage

second stage valves resided in this block and were linked by a cross-drilled channel. Although the first stage was the familiar diaphragm style upstream regulator, the second stage was a tilt valve with a long thin actuating arm. Coupled with the large diaphragm this system should have produced a fairly light breathing regulator. Sportsways came out with their Dual Air regulator in 1961 and it featured a similar diaphragm first stage and a tilt valve second.

Scuba Workshop restored two Diving Lungs for this article. We chose an early R-3 Dial-A-Breath and a late model R-4 regulator with the upgraded lever system, larger mouthpiece barrel and valves. For tools we chose a proper flat blade screw driver set (not chisel point but hollow ground blades) along with a fine pair of Tru-arc bent nosed snap ring pliers, an interstage pressure gauge (for the R-4) and a common six point socket set. The Diving Lung is probably the easiest regulator to work on and has been coined by many in the industry as the *Briggs and Stratten* of regulators.

Following Dacor's manual we disassembled the regulators but did not separate the high-pressure blocks and yokes as the primary valve bodies are screwed in with an interference fit. What appears to be a large screw driver slot on the body's inner end is actually an air channel and should not be forced with any tool. We soaked the

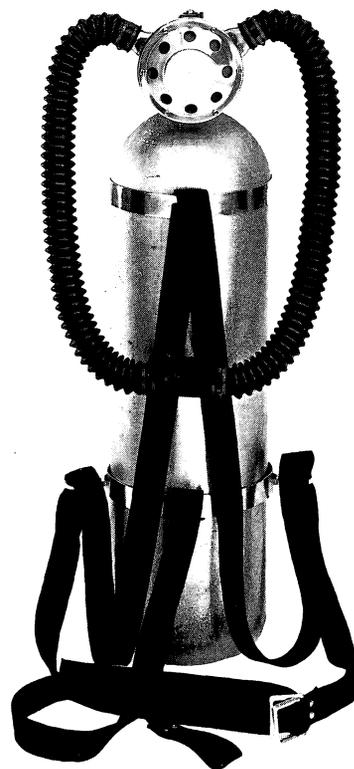


Sam Davison, Jr. and Vern Pedersen

rubber seat. This fixed the leak but in testing we found the cracking pressure to be up around 1.75 inches at 300 PSI. The R-4 has a small adjusting screw in the first stage diaphragm's center bolt allowing us to set the IP to 140 PSI (300 PSI tank pressure). We then increased the IP until the second stage started to leak. This lowered the cracking pressure from an initial 1.5 inches to about 1.1 inches (Jerry has seen .9" or lower on some R-4s). Our final IP check was 162 PSI. We installed late style diaphragms made of a thinner and more flexible neoprene, added the covers and hose assemblies and hit the water.

We found both the R-3 and R-4 a bit heavy breathing; for once the inhalation cycle began each required a constant demand effort to obtain a full breath. The venturi assist feature of the Dial-A-Breath vane should have relieved this work; however, they breathed no harder than contemporary regulators of the day. The stiff corrugated hoses did put a strain on the well-designed and quite comfortable mouthpiece bit. We can see, from examining Sam and Wally's early drawings, that in 1954 they had the technology to build a Diving Lung that would have been "state of the art" for many years.

*We remind readers that our sole purpose in producing this column is to help historian / collectors understand and preserve their historical artifacts for display and not for use as an actual life support item in or out of the water. The information presented here in no way implies that this qualifies the reader as a scuba repair technician nor is a substitute for proper training and demonstrable mechanical skills in life support, scuba and high-pressure systems. We can in no way guarantee or qualify anyone's work or that what we print here will work, even in an emergency. [See Disclaimer on page 5.]*



*Production prototype diving lung*

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by Sir Robert H. Davis

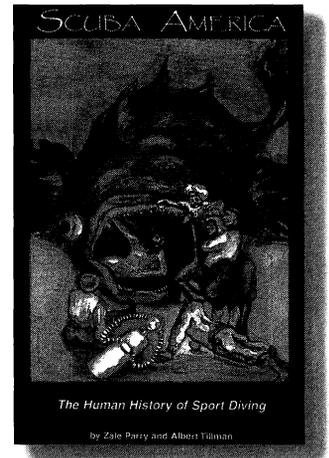
Containing a history of Siebe Gorman equipment including their many styles of diving helmets. Limited edition published to celebrate the 175th anniversary of Siebe Gorman in a two volume set bound in reflex blue with gold embossed covers

with matching dust jackets. Both volumes come in a reflex blue presentation slip case. 712 pages over 650 photographs, line drawings and illustrations. Each set individually numbered. Limited edition of 1500 copies only. For a review and chronology refer to HISTORICAL DIVER Issue No 6. Price \$150.00 p.p. \$15.00. CA residents add 7.5% sales tax. Contact HDSUSA for overseas shipping rates.

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**The Human History of Sport Diving**  
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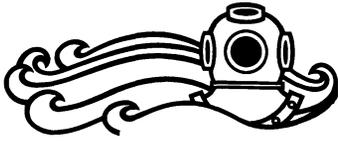
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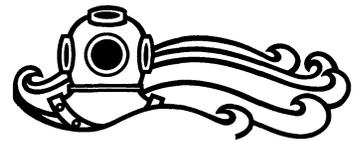
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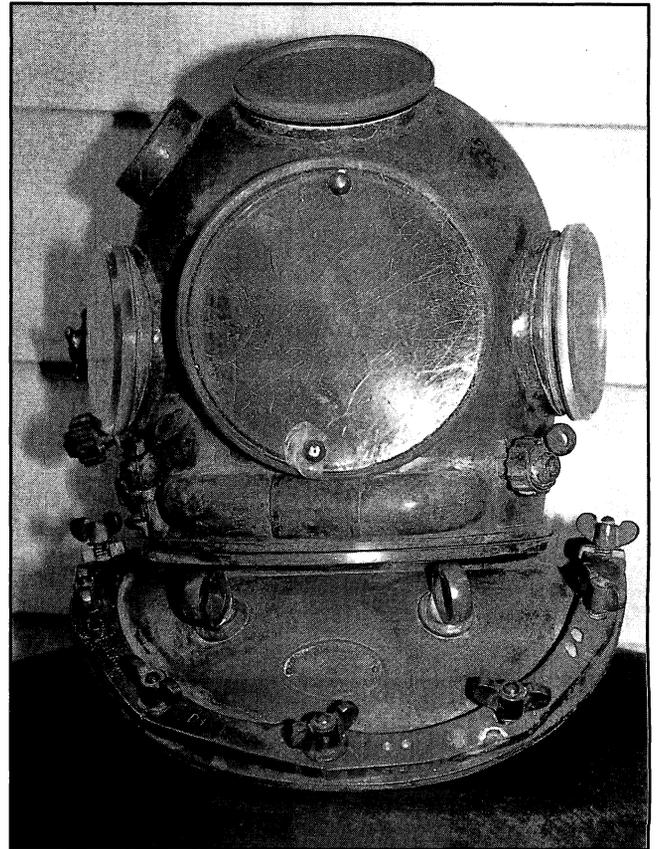
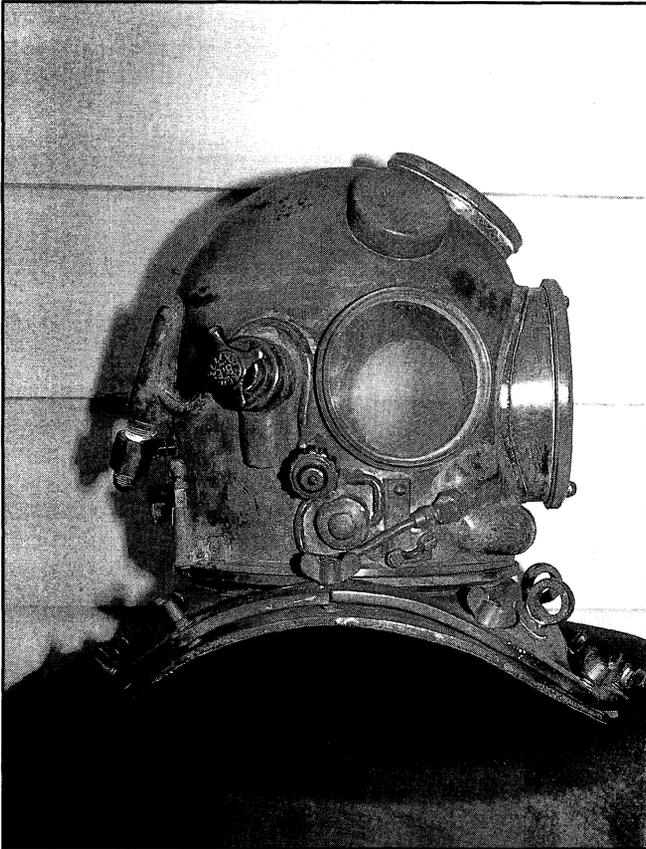
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# Helmets of the Deep



**Santa Barbara Helium Demand Helmets**  
by Leslie Leaney



In the early 1960s work requirements in the off-shore oil field diving industry were pushing diving operations to extreme depths. Using only air as their breathing gas, divers regularly worked in the 200 - 250 foot range, with some doing even deeper excursions. Much of their efficiency was impaired by narcosis and lengthy decompression. The U.S. Navy had already proved the viability of deep diving with mixed gas. Santa Barbara based abalone diver Hugh "Dan" Wilson is credited with introducing helium gas diving into the commercial oil field industry in 1962. Working with Sam LeCocq and Clark Smith, Wilson modified a standard Japanese abalone helmet and installed a Sportsways demand regulator system. Instead of free-flowing gas through the helmet the diver breathed off the mouthpiece of a standard scuba regulator installed below the front face plate. Author Scrap Lundy references Wilson's system on page 153 of his book *The California Abalone Industry*, and shows Wilson dressed

in his rig with the first stage of the scuba regulator positioned at his left hip. On November 3, 1962, Wilson successfully completed a dive to 420 feet with this rig. Lad Handelman and Whitey Steffens joined Wilson and formed General Offshore Divers, Inc., and this company eventually evolved into Ocean Systems Inc.

With the success of the 420 foot dive, it appears that General Offshore Divers and/or Ocean Systems had other demand helmets built. In recent years HDS members have located two Desco helmets that were converted for demand, one of which has an Oceans Systems company tag on it. In recent months a Yokohama that was converted for demand has also turned up.

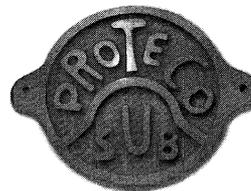
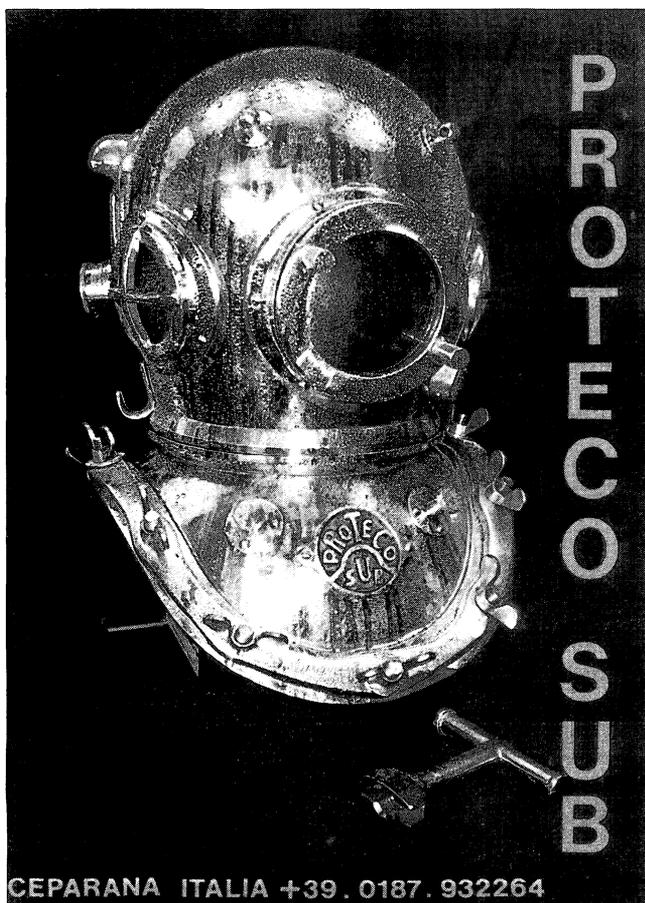
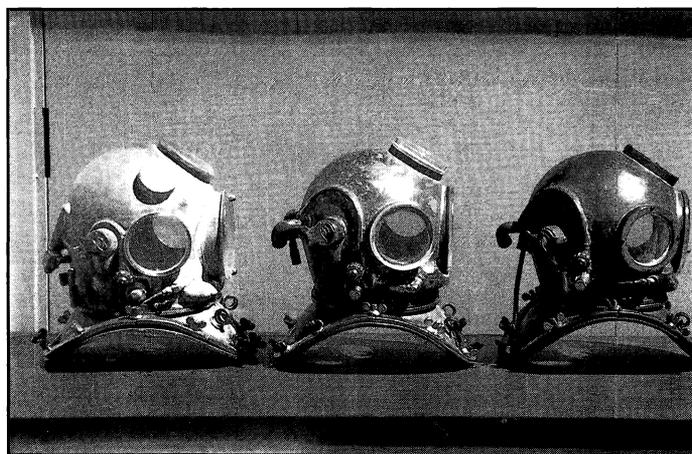
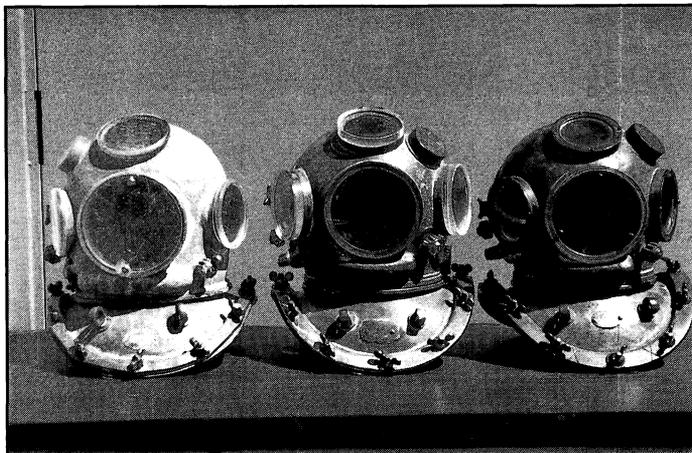
In March 2003 the HDS arranged for all three helmets to be brought to the Santa Barbara Maritime Museum where Bob Kirby inspected them. After checking through the various modifications and plumbing, Bob's feeling was that the Yokohama was probably the earlier

of the three. It was noted that, unlike Wilson's original helmet, all these three had the scuba first stage built into the helmet shell.

These demand helmets mark the beginnings of mixed gas commercial diving. They were followed in 1963 with 4 light Morse commercial helmets modified for Murray Black's Divcon, and in 1964 by 4 light DESCO abalone/agar/sponge helmets modified by Bob Kirby and others, for Associated Divers. One of the Desco demand helmets remains on permanent display at the museum.

All photography ©2003 L. Leaney.

*Author's note.* More information on the beginnings of commercial helium diving can be found in *Historical Diver Magazine* #20, Development of the Kirby Helium Recirculator, by Bob Kirby and Leslie Leaney; *Historical Diver Magazine* #32, "A History of Kirby Morgan Diving Equipment," by Bev Morgan, Bob Kirby and Leslie Leaney; *Commercial Oil-Field Diving*, by Nick Zinkowski, Chapter 13; *The California Abalone Industry*, by A.L. "Scrap" Lundy, Chapter 7, "The 1960's, Unlikely Partners The California Abalone Industry and the Offshore Oil Industry;" *20,000 Jobs Under the Sea*, by Torrance Parker, Chapter 18, "Diving. For Oil."



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## THE E.R. CROSS FILES

### Wishing he were dead?

In the last issue, Bev Morgan related a tale of Gustav Dalla Valle's constant recurring regret that he did not kill Jacques-Yves Cousteau when he had a chance (*A History of Kirby Morgan Diving Equipment*, HDM # 33, page 50). In the back of my memory I recalled seeing a photograph of these two pioneer divers together and set about locating it in the mountains of files around the office. I had Andy hold Bev's page up until deadline, but could not locate the image, so the issue went to press without it. Naturally, a day later I located the image in part of E.R. Cross's files, and we are reprinting it here. Better late than never. On the back of the photo there is a stamp stating Copyright by Victor De Sanctis. Mention Obligatoire. Historians of recreational diving and underwater photography will immediately recognize the name of the famous Italian underwater photographer. There was no text stating where the photo had been taken, but I recall seeing it in a *Skin Diver Magazine* around the time



Photo: Victor De Sanctis

CMAS was formed. Cousteau was the founding President of CMAS and Dalla Valle was part of the American delegation. From the expression on his face it would seem that Cousteau is particularly unmoved by whatever case Dalla Valle is pleading, and we can only wonder if the thought "I-aa should-aa killed-aa heem-aa when-aa I-aa cooudd-aa" was again surging through Gustav's brain.

Leslie Leaney



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## Classic Diving Equipment Groups

preserve the classic equipment of America's rich diving heritage. These groups often contain divers who are members of the HDSUSA. The activities of these groups are not official HDSUSA functions and the HDSUSA is not involved in any of the activities of these groups, a sad situation that the HDSUSA is forced to endure. This column is produced solely for the interest of our readers. Please consult the HDSUSA disclaimer at the front of this issue.

### Brass Hat Diver

Brass Hat Diver has a busy summer planned. On March 20th we have plans to dive Barracuda Reef off Diana, Florida, but boat space is limited. This is a great chance to get your heavy rig or shallow water helmet in the ocean where visibility is usually 75 feet or greater. Next up is a dive demonstration at Westec Marina in Hollywood, Florida. We will be using a Morse 1A hand pump, along with 12 bolt heavy gear and shallow water diving helmets. This will be a great photo opportunity for the public. On May 16th thru 18th we will be assisting the HDS USA in their booth at Ocean Fest 2003. This event has always been a lot of fun and we're honored to be able to help out again this year. Marineland of Florida will be holding their 65th anniversary in June of this year, and we have been asked to return and give dive demonstrations for this celebration. Brass Hat Diver has many impromptu dives and demonstrations. For more information please contact us through our web site: [www.brasshatdiver.com](http://www.brasshatdiver.com).

### California Classic Equipment Divers

The CCED is "Diving Into The Past." Remembering the good time everyone had at "Dive Into History" held at Point Lobos each year, the CCED has decided to host a similar event at the historic Banning's Landing in Wilmington, California. In association with the HDS, the event to be held on Saturday, October 18, 2003, will be a tribute to E.R. Cross who owned the Sparling School of Diving and trained many of the early divers who worked in the Los Angeles Harbor area. During the morning CCED members will present a diving demonstration using classic hard hat and vintage scuba gear. A catered lunch is planned at noon, with guest speakers to follow. (Several people have been contacted as potential lecturers. Speakers will be announced at a later date). There will also be a large collection of classic diving equipment on display throughout the day and tables for those who have "Swap and Sell" items. Banning's Landing has ample parking and handicap facilities. A limited number of reserved tickets are available at \$20 each which includes access to the lectures, exhibits and lunch. Tickets may be purchased by contacting Charlie Orr.

On January 18, 2003, at the College of Oceaneering Dive Rally, we were honored to have Bob and Bill Meistrell, co-founders of Body Glove, as special guests. Identical twins and now in their mid-70s, they went diving together for the first time in many years. Bill used the Kirby-Desco helmet while Bob dressed in with a Chinese hat. If anyone had doubts of their diving ability, it was soon forgotten as these two pros hit the water, as much at home as if they had just tipped back in their Barcaloungers to watch TV. Both men were inducted into the Diving Hall of Fame and the Pioneers of Surfing in 1990. Contact: Charles Orr (310) 834-7051, E-mail: [neverbent@aol.com](mailto:neverbent@aol.com). Website: [www.calclassic.org](http://www.calclassic.org)

Due to the prevailing liability laws in America the HDSUSA does not conduct any in-water activities. Some American based divers have formed groups to restore, operate and



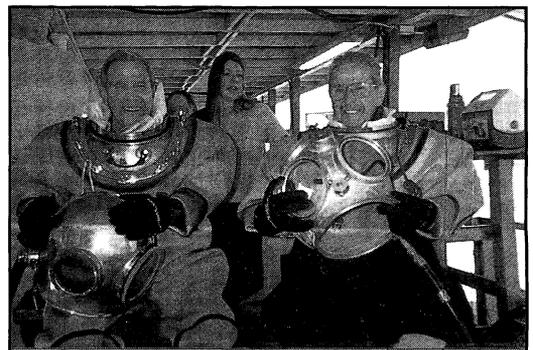
*Leon and Kimlin Lyons diving at Marineland, Florida*

### Diving Into The Past A Tribute To E.R. Cross

Saturday - October 18, 2003  
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Equipment Exhibit & HDS Booth  
Lunch & Presentations

Reserved Tickets - \$20.00  
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by Jocko Robinson.

*Bob and Bill Meistrell at the College of Oceaneering Dive Rally.  
Bob (l) has a Chinese hat and Bill (r) has the Kirby-Desco*

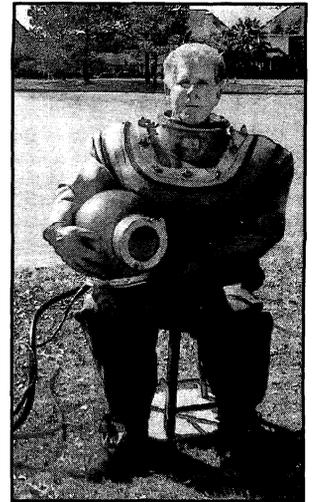
## MOAV

MOAV Inc. announces the winner of the 2002 fund raiser MkV knife raffle: Don Barthelmess, Jr. Don is the current Director of Santa Barbara City College's Marine Diving Technology Department. Congratulations Don.

Dateline Katy, Texas. HDS member MOAVBilly auditions for the CBS reality TV show Survivor. The following article was published in the local Katy newspaper:

### **Katy's Bill Gronvold Tries To Convince CBS He's A Real "Survivor:"**

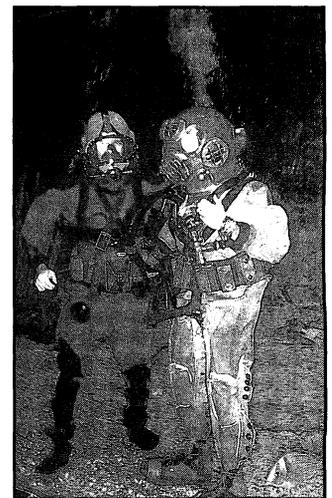
Bill Gronvold, a longtime resident of Katy, and a fan of the CBS reality show Survivor, recently sent in his audition tape to be on the show. The audition tape was filmed in the lake at Cinco Ranch. Bill donned the classic old hard-hat diving helmet and gear similar to that used in the film Men of Honor. Fully suited up, he weighs in at over 400 pounds. For the descent, he was attached by hose to an air compressor and two-way communication. Bill is heavily involved with the Marine Division of the Texas Historical Commission in investigating and identifying Civil War shipwrecks throughout southeast Texas. Bill is also a realtor and buyer's agent for Liz Carter & Team with Century-21 Western Realty. Bill's entry was due February 11, and his family and friends are now awaiting the results.



*MOAV Billy waits for his call to be on the Survivor show*

## NEDEG

The year 2003 got off to an active start for the Northeast Diving Equipment Group when 20 members spent four days diving at the Epcot aquarium at Disney World in Orlando, Florida, between February 27 and March 2. Bob Rusnak and Steve Sokoloff brought MkV's, and Bob also brought his Korean hard-hat rig. Jerry Takacs and Jim Boyd brought SuperLites, and Dave Hill had his Kirby-Morgan band mask. This year we brought our own compressor, which was rigged up outdoors and provided plenty of air for two divers at a time. Nearly two dozen Disney staff divers used our gear, and all the members got plenty of time as heavy gear or scuba safety divers. Twenty-seven feet of 77-degree saltwater with lots of fish, a few sharks and perfect visibility in February ain't hard to take. While the HDSUSA put on a museum display booth, the NEDEG populated the FantaSea diving tank at the huge Beneath The Sea scuba show at the Meadowlands Convention Center in Secaucus, New Jersey, on March 28-30. The highlight of the show was the entire day Saturday when students at the Divers Academy International were invited to dive Jim Folk's MkV and Lenny Speregan's and Jim Boyd's SuperLites. The students dressed and tended each other and had a day-long blast. Lenny and commercial diver Gene Ritter kept the dive site moving right along throughout the show. On Sunday, New York Jets football star #55, Marvin Jones, dived Jim's SuperLite. The show went very well, and a lot of divers got time in the tank. The NEDEG Dive Rallies at the Willow Springs Quarry Park near Reading, Pa., will be held on the Memorial Day (May 24-26) and Labor Day (August 30-September 1) holiday weekends.



*Jay Rogers in MkV and Russ Miller in SuperLite 27 at Disney World Epcot aquarium in February 2003.*

**For details of regional rallies, meetings, etc. contact the following groups:**

**The Undersea Heritage & Exploration Society.** A Non-Profit Corporation. John F. Hoover, Executive Director. Phone 512-288-7067 <http://www.geocities.com/uhexo>

**New Jersey. Northeast Diving Equipment Group.** Jim Boyd, organizer. Phone (973)948-5618, [www.geocities.com/boyddiver](http://www.geocities.com/boyddiver)

**Colorado Working Equipment Group.** Contact Ross Boxlitner, Phone (970) 278-0738 email: [dypcdyvr@cs.com](mailto:dypcdyvr@cs.com)

**California Classic Equipment Divers.** Charlie Orr, organizer. Phone (320)834-7051 [www.geocities.com/cced\\_barstad](http://www.geocities.com/cced_barstad)

**Florida's Treasure Coast.** Marc Cohen (954)565-9754.

**California Central Coast Working Equipment Group.** Scrap Lundy, organizer. Phone (805)963-4151

**MOAV South East Texas.** A Non-Profit Corporation. Bill Gronvold, Phone (281)861-6478 or [moavbilly@moav.net](mailto:moavbilly@moav.net)

**New England Underwater Working Equipment Group.** Paul Harling organizer. 551 Washington Street, Gloucester, MA 19030

**Dutch Working Equipment Group.** Kees de Jonge at [helmduiken@chello.nl](mailto:helmduiken@chello.nl) or Bert Dodde at [info@divingheritage.com](mailto:info@divingheritage.com)

**Brass Hat Divers.** [www.brasshatdiver.com](http://www.brasshatdiver.com)

## TREASURE COAST

We had a great turnout for our rally on 30-November and 01-December at the Jules Undersea Lodge in Key Largo. Everybody was ready to work off all that Thanksgiving food by doing some great diving. The rally was sponsored by Morse Diving of Rockland, Massachusetts and owner/manager Ken Downey had given us some goodies to give away at this popular yearly event.

Drs. Joe and Sally Bauer brought some great shallow water helmets and Marc Cohen brought his A.J. Morse & Son, Inc. 4 window commercial helmet (#3450) along with 400 feet of air hose and all the associated gear. Rick Ford supplied the air from the massive air compressor at the facility. Mark Tohulka, Rebecca Gaines, and Dr. Sally Bauer took some great underwater photos and Ken Lindroth helped tend divers. *The Florida Scuba News* sent a reporter, Brad Bertelli, to cover the event.

Underwater visibility was perfect with lots of marine life. This will be the perfect place to have a big international diving rally around the time of the 2003 DEMA show in Miami. Our next upcoming rally at the Jules Undersea Lodge will be on 24-25, May 2003, which is Memorial Day Weekend. Several members have acquired new and old helmets that they are anxious to try out that weekend. *Sport Diver* magazine will be there with a reporter and a photographer. Sharkhunters, an organization for the history of German U-boats in WWII, will also be there with a meeting afterwards. They will be talking about, among other things, the many allied ships sunk off the Florida coast during the war. We hope to see everyone there!

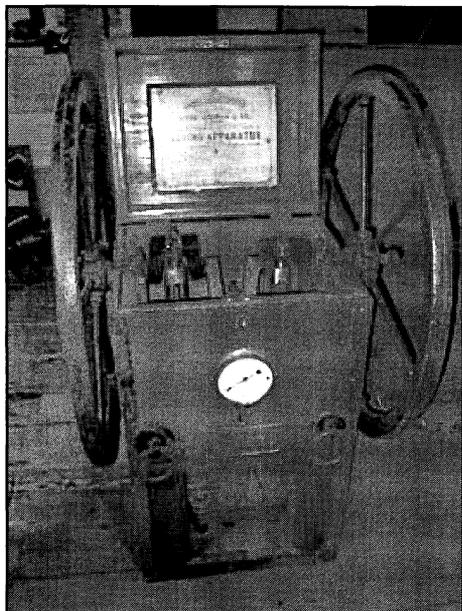
We helped the Battleship MASSACHUSETTS (BB59) memorial/museum at Battleship Cove in Fall River, Massachusetts locate their misplaced Mark V hard-hat gear and hopefully they will have it on display again soon. Battleship Cove is the world's largest display of WWII naval ships in any one place, with the Battleship MASSACHUSETTS as the centerpiece of the collection. The heavy cruiser SALEM memorial/museum in Quincy, Massachusetts, is also looking for a volunteer to take care of their Mark V diving gear locker in their "adopt a space" program. For more information, call Mike Condon at 617-479-7900. For more information, contact Marc Cohen at 954-565-9754.

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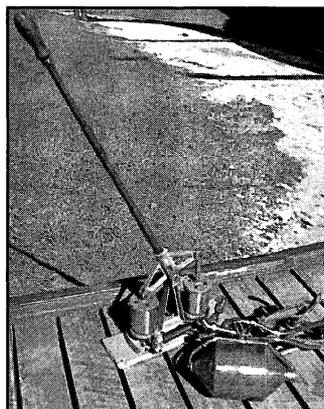
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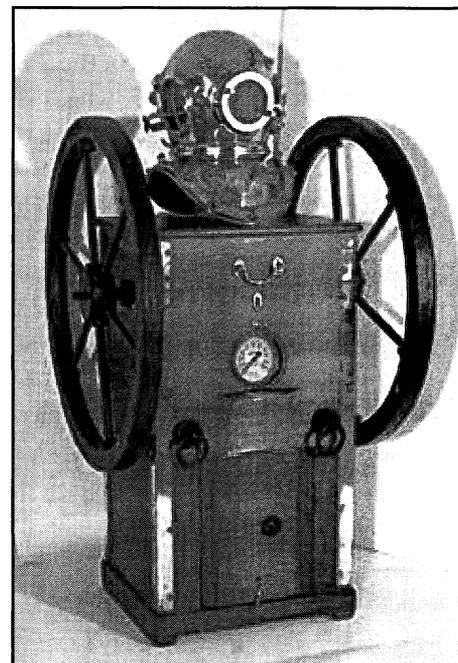
*Lot 717*



*Lot 749*



*Lot 751*



*Lot 87a*

Australian-based member John Hempstalk informed us of this auction. The following details came via the internet. Prices are in New Zealand \$'s. The exchange rate has fluctuated a lot since the auction but is approx. NZ \$1.80 = US\$1.

Lot 87a. A Siebe Gorman copper and brass 12 bolt diver's helmet and rotary action pump, in brass bound mahogany chest with twin fly wheels, marked Siebe Gorman. Sold NZ\$ 34,000.

Lot 717. A Siebe Gorman dive pump apparatus wooden cased, complete with pressure gauge and Siebe Gorman plaque, circa 1880. Sold NZ\$ 15,000

Lot 749. A diving suit complete with brass helmet, boots and air cord (hose). Sold NZ\$ 4,400

Lot 751. An Italian hand-operated dive pump and aqua lung. Sold NZ\$ 900

Lot 1029. A Korean copper and brass diver's helmet. Sold NZ\$ 3,400

Lot 1082. A diver's helmet in brass and copper, with 12 bolt collar and helmet. (Ed. This looks like a Chinese TF 12) Sold NZ\$ 3,600

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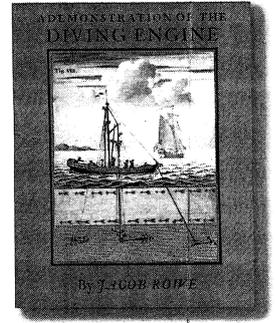


Front

Back

**A Demonstration of the DIVING ENGINE by Jacob Rowe Limited — First Edition of 750 numbered copies.**

The late seventeenth and early eighteenth centuries saw an increased interest in the business of diving, and a proliferation of new designs of equipment. One of these divers was Jacob Rowe, who used the "barrel" type of apparatus to salvage materials from the bottom of the sea. Rowe was a man of great drive and determination, achieving two remarkable feats of marine salvage, during an era when underwater salvage was just beginning in earnest. Here, for the first time, is printed his treatise on diving, describing in detail how his apparatus was constructed and used. Not only is Rowe's treatise the first known English monograph on diving, it is also one of only a handful on the subject, in any language, written during the eighteenth century. Rowe's manuscript is accompanied by an accounting of his life and work by Mike Fardell and Nigel Phillips. Published by the HDS-UK in association with The National Maritime Museum, Greenwich, England. 30 pages, facsimile manuscript and illustrations, hard bound in dust jacket. \$30 plus \$6 domestic. Contact us for overseas p&p. CA residents add 7.75% sales tax.



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## INTERNET AUCTIONS

Internet auctions and sales during recent months. Prices are rounded to the next highest dollar. The content of this column is provided in good faith by members for general interest and is not a definitive guide. Vendors' opinions of what items are, and what condition is, are not consistent. The HDS-USA and HDM are not responsible for any errors in descriptions, listings and prices. Items that Failed To Meet their Reserve (FTMR) have their highest bids listed.

### HELMETS

#### AMERICA

DESCO Abalone helmet #1029. Striped to metal. Top light removed and shell patched. Missing brales, nuts, exhaust valve control, non-return valve. \$3,160

Alfred Hale of Boston, bonnet fed 3 light, missing straps, nuts, front light port guard, heavily dented, missing one breastplate stud, with patina. Breastplate had been converted with an additional exhaust control. \$8,700

R. Kirby 4 light Yokohama conversion with R. Kirby tag. Braised re-inforcing line across top of bonnet. \$7,780



*Alfred Hale of Boston*

Morse Mark V dated 11-6-18, #2698. Retaining a lot of original tinning. Replaced front port glass, 4 point exhaust handle, 6-sided nuts instead of regular wing nuts. \$10,110

Schrader Mark V dated 11-43. Retaining most of its tinning. Stated as matching numbers on brales and helmet. Appeared complete and in very good condition. Sold \$7,700

#### JAPAN

TOA, 3 light. Stripped to metal. Spun bonnet, missing straps, nuts, port guards cut off. Very good condition. Located in Australia. FTMR \$2,075

Yokohama 4 light. Kirby style bonnet with most of tinning. \$3,950

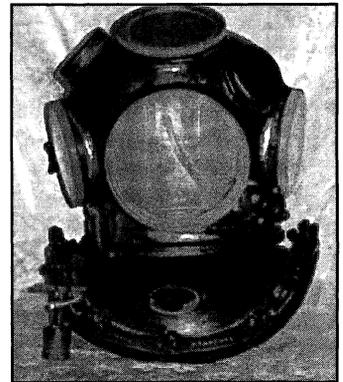
#### UNITED KINGDOM

Siebe Gorman 3 light in very well used condition. #5781 on bonnet neck ring. Missing manufacturer's tag. Located in Chile. \$3,000

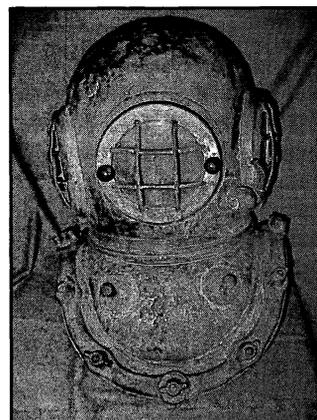
Siebe Gorman 3 Light stripped to bare brass and copper. Bonnet #17555 on breastplate #10089. Missing manufacturer's tag. Located in Australia. \$4,000



*R. Kirby 4 light*



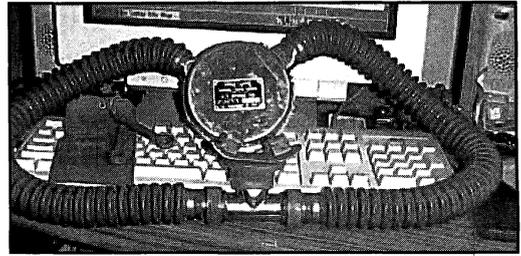
*Yokohama 4 light*



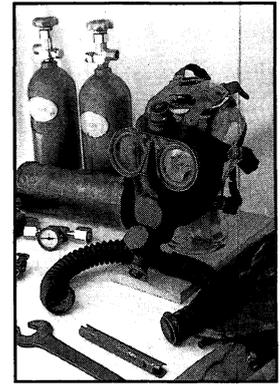
*Siebe Gorman 3 light  
#5781*

## VINTAGE SCUBA

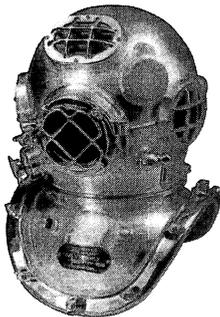
**Churchill** Fins in Box \$281, \$26  
**Cressi** Spring Gun \$25  
**Australian Dawson** Regulator \$79  
**Desco** Jack Browne Mask \$199, \$103, \$199, \$238, \$200  
**Divair** Model E \$377, \$163,  
**Dacor** C-3 \$200, \$78, \$53, Dart \$58, \$51, R-1 \$207  
**Demone** Tank & Regulator \$600  
**Victor Berge** Mask \$266  
**Healthways** Scuba Star \$44, Scubair \$30, \$21, Scubair J \$35, \$48,  
 (1961) Scubair \$36, (1957) Scuba \$152, \$64, (1960) Scuba \$65, \$114, \$160, \$36, \$130,  
 (1962) Scuba \$94, \$81, \$77, \$147, \$127  
**1952 LARU** Lambertsen rebreather \$1300  
**Nemrod** Snark III \$154, \$150, \$71, \$114, \$50, Snark II \$76  
**ScubaPro** Regularor (early) \$38  
**Scott** Hydro-Pak Mask \$405, \$275  
**Widolf** Mask \$331,  
**MSA** Rebreather \$100  
**SeaHawk II** Camera Housing \$174  
**Northhill** \$406  
**Sportsways** Navy \$51, Sport Diver \$42, Malibu \$42, \$29, \$81 w/ tank, Hydro Twin II  
 \$315, B \$23, \$56  
**US Divers** AQUA-LUNG, COUSTEAU-GAGNAN Process,(early) DA \$1691, (early)  
 DA \$228, \$238, \$333, DA Aqua-Master \$103, \$511, \$310, \$86, \$85, \$173, \$138, \$152, Aqua Div \$105, Stream Air  
 \$462, Navy DA \$238, Royal Mistral \$498, (2) \$900, Jet Air \$155, Mistral \$60, \$153, \$294, \$162, \$168, \$185  
**Voit** 50 Fathom \$275, \$128, \$168, Trieste \$267, \$174, \$190, Blue \$611,



Early AQUA-LUNG \$1691



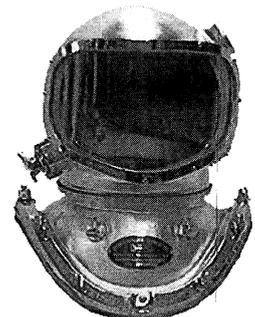
1952 LARU Lambertsen rebreather



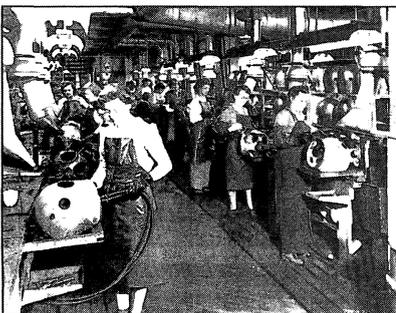
U.S. Navy Mark V  
Diving Helmet

## DESCO CORPORATION

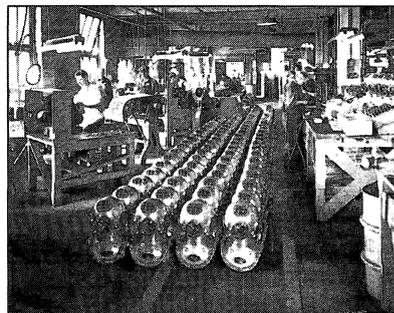
has a long and proud history in the commercial diving industry. We are proud to sponsor the Historical Diving Society in their efforts to preserve and share the inventions, and stories of the events and people who made the diving industry what it is today.



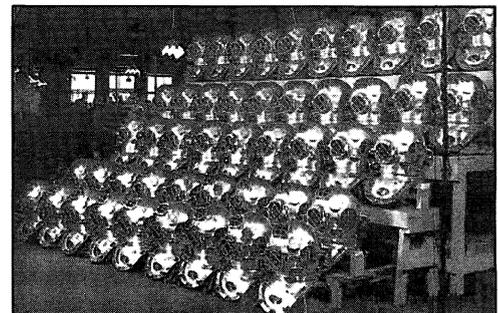
DESCO Fisheries  
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The Soldering Line



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## Philippe Tailliez's Last Voyage



At 3 pm, on Friday, November 29, 2002, on the embankment of Honor of the Maritime Headquarters of Toulon, the family of Cdt. Tailliez handed over his ashes to the French Navy (Marine Nationale) for dispersal at sea.

A large representation from The Association of the Diving Mine-Sweepers attended, as did the Association of Military Combat Divers, including their President Pierre PIHAN.

A French naval band gave the ceremony an impressive and dignified tone befitting this great sailor and prestigious diver, who we had all come to accompany on his final voyage to sea.

There were two speeches recognizing the remarkable career of Cdt. Tailliez. One was given by the Admiral of the Prefect of Maritime, who retraced the life of this great pioneer, and another was given by the mayor of Toulon, who reminded us all of Cdt. Tailliez's "spirit" and love of humanity.

For me, as a simple diving sailor, it was my chance to pay my respects to the one who was my Pasha, my mentor, in GERS in 1955, before his ashes were dispersed to the sea off Cape Cépet. Perhaps his ashes will rest on the wreck of the Artesian, where Cdt. Tailliez made me do my first dive to a depth of 56 meters.

Gerard Loridon  
HDS France



Photos ©2002 Philippe Livoury



Photos ©2002 Philippe Livoury

Vendredi 29 Novembre, à 15 heures, a eu lieu la remise des cendres du Cdt Tailliez par sa famille à la Marine Nationale sur le quai d'honneur de la Préfecture Maritime de Toulon

L'amicale des Plongeurs Démineurs était largement représentée ainsi que l'Amicale des Nageurs de Combat dont le Président Pierre PIHAN était à nos côtés.

Une garde d'honneur impressionnante, la Musique des Équipages de la flotte ont donné à cette cérémonie une grandeur correspondante au grand marin et surtout prestigieux Plongeur que nous sommes venus accompagner pour son dernier appareillage.

Deux discours furent prononcés. Celui de l'amiral Préfet Maritime qui retraça la vie de ce grand Pionnier que fut le Commandant Tailliez. Celui du Maire de Toulon, Ministre qui évoqua l'esprit et l'humanisme de Philippe Tailliez.

Pour mon compte, le simple matelot plongeur que j'ai été, je suis venu saluer celui qui fut mon Pacha au GERS en 1955, avant que ses cendres soient dispersées au large du Cap Cépet. Peut être sur l'épave de l'Artesien, là où il me fit faire ma première plongée profonde à 56 mètres.

Gerard Loridon  
HDS Français



## In Memory Commander Doug Fane

Upon returning to the UDT operations at Little Creek (part of the Norfolk Amphibious Base), Fane discovered that the U.S. Navy planned to dissolve UDT and he had a major involvement in saving UDT Teams. Fane was instrumental in making many advancements in UDT equipment and diving operations during the late 1940s. He searched out technologies conducted by the U.S. Office of Strategic Services (OSS) during WWII, and located Dr. Christian Lambertsen, who had developed the Lambertsen Amphibious Respiratory Unit (LARU). Fane helped establish UDT training facilities in St. Thomas, U.S. Virgin Islands, and led groups of UDT divers in developing diver lockout from submarines, use of diver transport vehicles, closed-circuit breathing systems, underwater navigation techniques and other innovations.

Lt. Cdr. Fane recruited Lt. Fennimore Johnson, a highly-respected underwater still photographer and cinematographer, to document UDT operations in St. Thomas. These valuable visual aids greatly helped the advancement of the UDT.

He saw what the Italians and British had accomplished with their diver transport vehicles during World War II, and Fane built on these successes to advance diver transport vehicles and operational techniques even further. This led to the development of today's SEAL Delivery Vehicles (SDVs).

In mid-1949, Lt. Cdr. Fane searched out the co-inventor of the Aqua-Lung, engineer Emile Gagnan. Fane convinced him to bring two of his Aqua-Lungs to Little Creek, where Fane and his UDT tested this new scuba. Lt. Cdr. Fane was able to get the Aqua-Lung accepted by the U.S. Navy UDT.

Fane was Senior UDT Officer in Korea during 1951-1952. He led several hazardous missions in South Korea, and behind the lines in North Korea. UDT perfected their skills in guerrilla warfare and use of explosives for sabotage.

Upon return to the U.S., Lt. Cdr. Fane was assigned to the UDT base in Coronado, CA. He worked closely with early scientific diving pioneers at Scripps Institution of Oceanography, including Dr. Andreas Rechnitzer, Connie Limbaugh, Jim Stewart and Willard Bascom. Fane taught them about various aspects of diving, including the proper use of the new Aqua-Lung scuba system.

Fane helped UDT incorporate parachute jumping as another combat insertion means. During training operations at the U.S. Navy Station in El Centro, CA. Lt. Cdr. Fane and Dr. Robert Fulton developed the Fulton Pickup

Commander Doug Fane died of natural causes on Wednesday, November 13, 2002 (just three days shy of his 93rd birthday) in Ft. Lauderdale, Florida.

Francis Douglas Fane was born November 16, 1909, in Aberdeen, Scotland. He emigrated to the United States with his family in 1911 and became a naturalized citizen in 1934. He shipped out to sea on a freighter at age 16 and worked in the U.S. Merchant Marine.

In 1940 he received a commission as a Lt. JG in the U.S. Navy Reserves and was involved in combat action in the Aleutian Islands, Sicily, the Marshall Islands, the Marianas and New Guinea. After serving 34 months in the U.S. Navy, he joined the U.S. Navy Underwater Demolition Teams (UDT). Before reporting for training at Ft. Pierce, Florida, the 33-year-old Fane had to learn how to swim. He earned the nickname of "Red Dog Fane" because of his red hair and toughness. Promoted to Lt., Fane was in command of UDT Team 13 in 1945. He and his team were one of the first units into Japan.

After the end of World War II, Fane went to Europe to investigate combat diving activities. He conducted a detailed survey of all diving operations and developments, shipped critical diving equipment to the U.S. and brought combat diving specialists to advise the U.S. Navy UDT. This was the beginning of Research, Development, Test and Evaluation (RDT&E) within the UDT and later the SEAL Teams.

for diving boats to recover divers from the water at high speed.

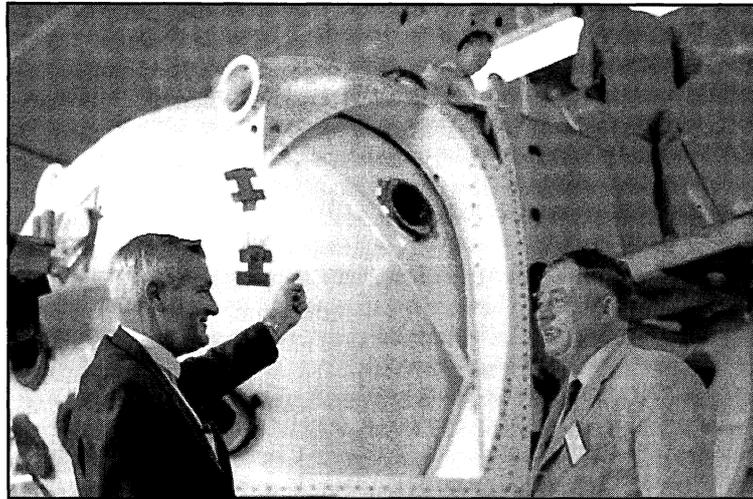
Recognizing the need for qualified diving medical support, Lt. Cdr. Fane was able to add the second Diving Medical Officer (Dr. Charles Aquadro) to his UDT. Their collaboration greatly advanced diving with air, oxygen, mixed-gas (helium and oxygen) and tri-mix (helium-oxygen-nitrogen).

During 1952-1955, Lt. Cdr. Fane worked with Calvin Congwer, an engineer at Aerojet-General in Los Angeles, on the development of diver transport vehicles: the Swimmer Propulsion Unit (SPU) and the Minisub MK VII. Lt. Cdr. Fane also worked with a very talented engineer and underwater photographer, Dimitri Rebikoff, to incorporate the Rebikoff Pegasus diver transport vehicle into UDT.

Fane and his UDT divers were involved in the first dives under the Arctic ice using air scuba during 1953. This was part of the Defense Early Warning (DEW) Line across North America, to detect missiles launched from the Soviet Union.

Doug Fane was promoted to full Commander in 1953. He became Commanding Officer of UDT 1 in Coronado, California.

In 1956 Cdr. Fane and Dan Moore wrote an excellent book about the UDT, titled *The Naked Warriors*. The historical book documents UDT during World War II and the Korean War, and was republished in 1993 by the U.S. Naval Institute.



*Cdr. Fane and former UDT operator Jack Harris with deep submersible Beaver IV at Rockwell International.*

U.S. Navy, Cdr. Fane retired in 1960. Much of the vision and hard work of Cdr. Fane was the foundation for the U.S. Navy SEAL Team, which was formally launched in January 1962 by President Kennedy.

Fane and another UDT officer, Lt. Jon Lindbergh, formed a commercial diving company. Lindbergh is a graduate of Stanford University, an underwater engineer, an early pioneer in commercial deep saturation diving with Ocean Systems Inc. and is considered a leading expert in aquaculture.

In the early 1960s Fane spent considerable time in Japan and Southeast Asia. He was a correspondent to publishing companies and radio stations, and became editor of *The Asian Oceanologist*. He was an Instructor and Dean of Faculty at Yokohama Gaigo Business College in Japan.

Cdr. Fane received many honors and awards during his distinguished career, including numerous military commendations and medals: Presidential Unit Citation; Navy Unit Citation, European Medal with one star; Asiatic-Pacific Medal with three stars; Commendation For Bravery; Combat Service Medals with stars for European, Pacific and Korean Wars; the U.S. Special Operations Command Award; and many others.

Edward C. Cargile

*This is a brief summary of the eight-page biography on Cdr. Doug Fane from the recent CD, *Pioneers In Diving*, by Edward C. Cargile. For more details, contact Ed Cargile at [ecargile@cox.net](mailto:ecargile@cox.net).)*



*Cdr. Fane with Buckminster Fuller in Japan.*

## In Memory Wheeler J. North

Wheeler J. North, the genteel marine biologist who helped open the undersea world to scientific exploration in the 1950s through his pioneering dives in Southern California's lush kelp forests, passed away in Southern California on December 20, 2002. He was 80.

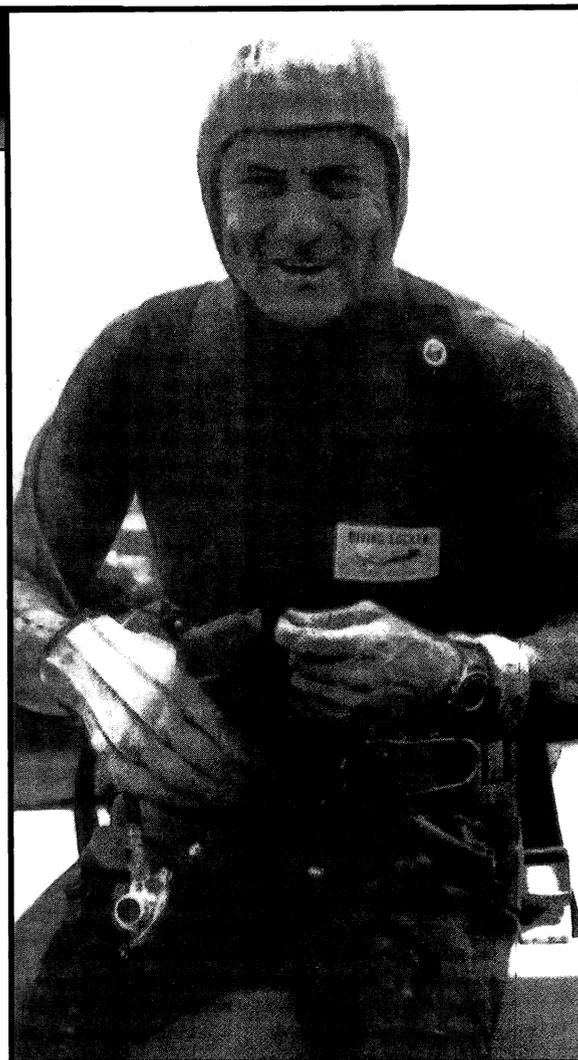
North had battled leukemia in recent years and was suffering partial paralysis and pneumonia when he died, said his son, Wheeler O. North of San Diego. "The world of science has lost one of its great marine biologists – and ecologists," said Mike Curtis, a senior scientist at MBC Applied Environmental Sciences in Costa Mesa, who spent years diving with North.

North, who lived in Corona del Mar and Costa Mesa for the past 40 years, was one of the world's first "aquanauts," or scuba-diving scientists. Overcoming a physical infirmity, he spent more than 30 years exploring the waters of California and Mexico, performing seminal studies on the nature and growth cycle of kelp forests and the effects humans have on them.

His dives in such places as Laguna Beach, Palos Verdes and Point Loma helped reveal that kelp forests are as vital and productive as any terrestrial forest since they provide food or shelter to more than 800 marine plants and animals. He took ocean-temperature measurements during his decades of diving, adding to science's understanding of how the El Niño climate phenomenon influences the size of kelp, the so-called "sequoias of the sea."

North also was a gifted wordsmith, writing in *National Geographic* in 1972, "At day's end, I often relax by lazily roaming the upper branches of the tall forest where I work. Creatures bizarre and beautiful swarm about me. Overhead, the tangled foliage almost obscures the daylight. But I need no tree climbing irons; only swim fins. The air I breathe is carried on my back. I am a scuba forester and the 'trees' I tend are giant vine-like streamers from the ocean floor off Southern California." His book, *The Golden Guide to Scuba Diving*, was published in 1968.

North was born on Jan. 12, 1922 in San Francisco. His family moved to the San Diego area a short time later, and North began exploring the tide pools of La Jolla Cove at age 7. His attention soon drifted to the kelp beds near shore. He wondered what type of fish lived amid the amber stalks and fronds of giant kelp, a curiosity North began to satisfy in 1949 when he purchased one of the first 10 Aqua-Lungs sold in the United States.



There were no decent wetsuits at the time. So North put on woolen underwear, hoping that it would provide some warmth during his first dives. It didn't. But it mattered little to North, who recalled those dives in 1995:

"Even at a shallow depth, I was immersed in a remarkable community. Fish of all kinds slowly passed by instead of fleeing like animals do on land. Eelgrass and kelp swayed with the current. I was mesmerized."

North's forays into the sea were interrupted in 1951 when he accidentally fell 15 feet down a cliff and broke his back and severely injured a leg. He recovered, but walked with a slight limp the rest of his life. He went on to earn a degree in environmental engineering and joined the research staff of the Scripps Institution of Oceanography in La Jolla in the mid-1950s, where he came under the tutelage of the legendary Conrad Limbaugh, creator of the nation's first civilian scuba-diving course.

North became a masterful diver and a prodigious researcher. In 1956, he started the Kelp Project, a research effort in which Scripps scientists spent five years doing exhaustive underwater studies of kelp. North also under-

took one of the most important challenges of his career – figuring out why kelp forests were shrinking off Laguna Beach, Palos Verdes and Point Loma. He determined that sewage flowing into the ocean helped feed the sea-urchin population, and that the urchins in turn feasted on the lower portion of kelp stalks. North later showed that the warm-water discharge from the San Onofre Nuclear Generating Station created underwater turbulence that made it difficult for kelp to grow offshore of the power plant. Both studies underscored the impact humans have on California’s near-shore waters.

North left Scripps in the early 1960s and joined the faculty of the California Institute of Technology, where he taught a popular marine-ecology course, among other classes. He split his time between Caltech’s Pasadena campus and the school’s Kerckhoff Marine Laboratory in Corona del Mar. During the ensuing years North and his collaborators developed techniques for restoring and transplanting kelp.

“His concern on Wednesday night was for the kelp plants we had planted off Laguna Beach the prior week and how they would survive the present storm,” said Chuck Mitchell, president of MBC Applied Environmental Sciences. North provided scientists and the public with an unusual perspective of such kelp beds by

conducting regular aerial photographic surveys of kelp canopy from an airplane that he slowly flew up and down the Southern California coast. He quietly sat in the plane, steering through the skies with an ever-present smile. “He must have been coded for the genes that expresses endorphins. He was eternally optimistic,” said Michael Hoffman, dean of graduate studies at Caltech. Over the years, North also taught scores of young research scientists to scuba dive, often using the coves off Laguna Beach as his classroom. He was something of a human squid underwater, outpacing people half his age despite the problems he suffered with one of his legs.

“I had all I could do in just keeping up with the end of his fins,” said MBC’s Curtis. Curtis’ boss, Chuck Mitchell, said: “Scuba was a tool and not some demonstration of macho. It enabled this classic ‘Caltech nerd’ with a pocket protector to make firsthand observations on the sea floor and begin a lifetime study of kelp. He has been and will continue to be an inspiration to generations of marine biologist and diving scientists.”

*Edited from text by Gary Robbins for the The Orange County Register.*

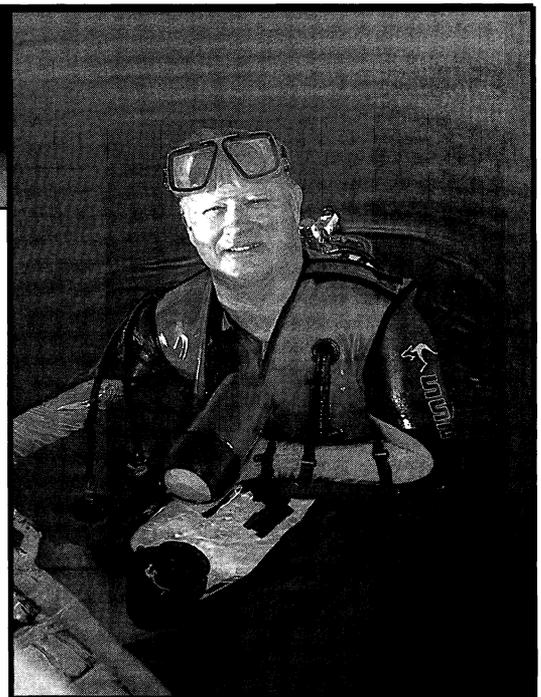
*Further details of Wheeler North’s career can be found in Diving Pioneers, by Eric Hannauer, 1994 Water-sport Publishing, which is available through HDS-USA.*

## In Memory Jim Church 1932 - 2002

On December 31, 2002, James A. Church, a pioneer in underwater photography, died at his home in Miami Lakes, Florida after a brief illness. From his early diving experiences in the Navy, in an old style hard-hat suit in Adak, Alaska in 1953, he went on to become a renowned authority on underwater photography. As an author, educator and lecturer, Jim was able to share unselfishly his knowledge with countless individuals, many whom are today’s leading underwater photographers worldwide.

Jim, a 1985 NOGI recipient for the Arts, was instrumental as a primary player in the evolution of underwater photography, as we now know it today. From his most rudimentary beginnings experimenting with an Argus C-3 in a leaky plastic bag, to always being on the forefront initiating new technology, his love for underwater photography remained strong.

Jim was born 1932 in Detroit, Michigan. The family migrated to California during WWII due to the failing health of his father. After his father’s death, Jim became the man of the house at age 13. At that time he started working for Bell Products cleaning the shop and continued there through out his school years, learning the welding trade. Graduating from Napa High School with class of 1950 he will be remembered by many for his musical talent playing Harry James style trumpet.



After school Jim joined the Navy for a 5-year hitch as a welder. He realized that without a college education, he would always remain an enlisted man, of sorts, throughout life. Returning home from active duty, he graduated from Napa Junior College and San Jose State with a degree in business. He later received his Masters Degree from the University of Hawaii. His life as an educator began as a business instructor, retiring from Gilroy High School. During his time in Gilroy, one of his favorite locations was the Monterey Bay area during which time he had great interest and provided support in the development of the Monterey Bay Aquarium.

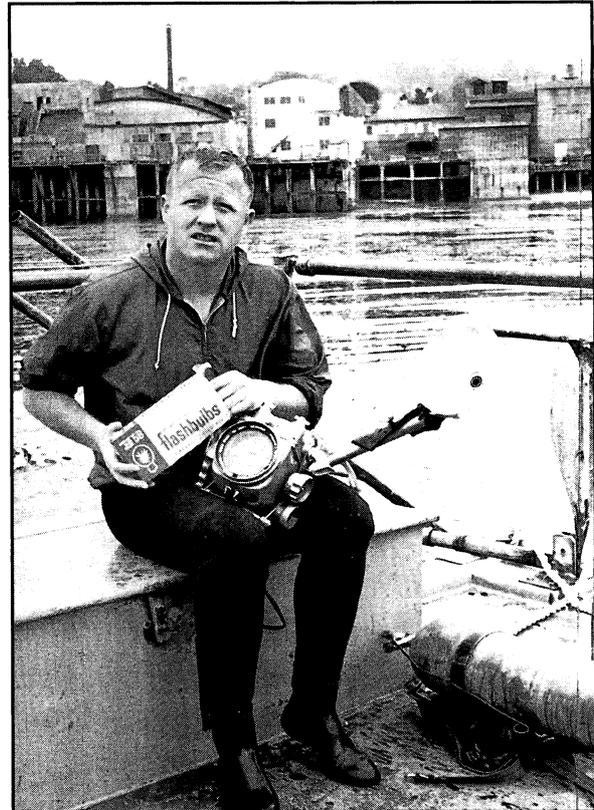
He began taking underwater pictures professionally in 1964 with a Calypso camera and flashbulbs. *Skin Diver Magazine* published Jim's first article "A Beginner's Guide to Underwater Photography," in the May, 1966 issue. Jim married Cathy in 1969 and together they were a professional team until they divorced in 1987. Since then, their underwater photographic ventures have been separate.

After that first article, Jim became a regular photo writer for *Skin Diver*, with articles that appeared in almost every issue from May 1966 to January 1999. At one point, at least one of Jim's articles appeared in each monthly issue for twenty years running. Many of today's professional underwater photographers started with a camera in one hand and Jim's articles and books in the other. Jim broke from meeting monthly magazine deadlines during the first part of 1999, but continued writing for the remainder of his life.

Jim's photographs and articles have also appeared hundreds of times in dive, travel and photography magazines, advertisements for companies such as Nikon and Kodak, as well as in numerous books, including *The Ocean World of Jacques Cousteau*. Jim's most recent advertisement shots were taken at Bikini Atoll for the Discovery Channel.

From 1989, Jim had been teaching underwater photography courses on the live-aboard dive vessels of the Aggressor Fleet. This was a very successful strategy because a majority of Jim's students came back for two or more additional courses aboard Aggressor vessels.

Besides being a natural teacher, Jim enjoyed writing instructional books on underwater photography. His first book, *Beginning Underwater Photography*, (1972) ran for five editions. His two books on strobe photography were well received, and *The Nikonos Book* (1979, Nikonos I, II & III) and *The Nikonos Handbook* (1986, Nikonos IV & V) are now collectors' items. Jim's most recent books are: *Jim Church's Essential Guide to Underwater Video* (1992), *Jim Church's Essential Guide to the Nikonos Systems* (1994, Nikonos V and RS also released in



German) and *Jim Church's Essential Guide to Underwater Photo Composition* (1998, also released in Japanese).

In recent years Jim also lectured at dive expositions around the United States. In a variety of lectures and seminars Jim presented a summary of how to use underwater still photo equipment effectively. He took the mystery out of balancing sunlight and strobe light, TTL, multiple strobe exposures and his special techniques for using strobes in turbid water. These seminars were considered a "must" by beginning or advanced still photographers.

He also lectured on the art and science of underwater videography. His video seminars concentrated on underwater shooting techniques. Jim presented his famous "fifteen practice drills" for camera handling, combining it with professional techniques for planning and shooting an underwater video movie.

Of all the accolades that Jim has received throughout his life, the one that meant the most to him was simply "Teacher."

Jim is survived and lovingly remembered by his brother David Church and sister-in-law Doris Church of Napa, sister Nina Church Smith of Santa Rosa and nephews, Harold Hayes, Jerry Hayes, David Hayes, John Smith, Ed Church and Lisa Church and their respective families.

From [www.jimchurchphoto.com](http://www.jimchurchphoto.com)

## In Memory Luis Marden National Geographic Magazine Photographer

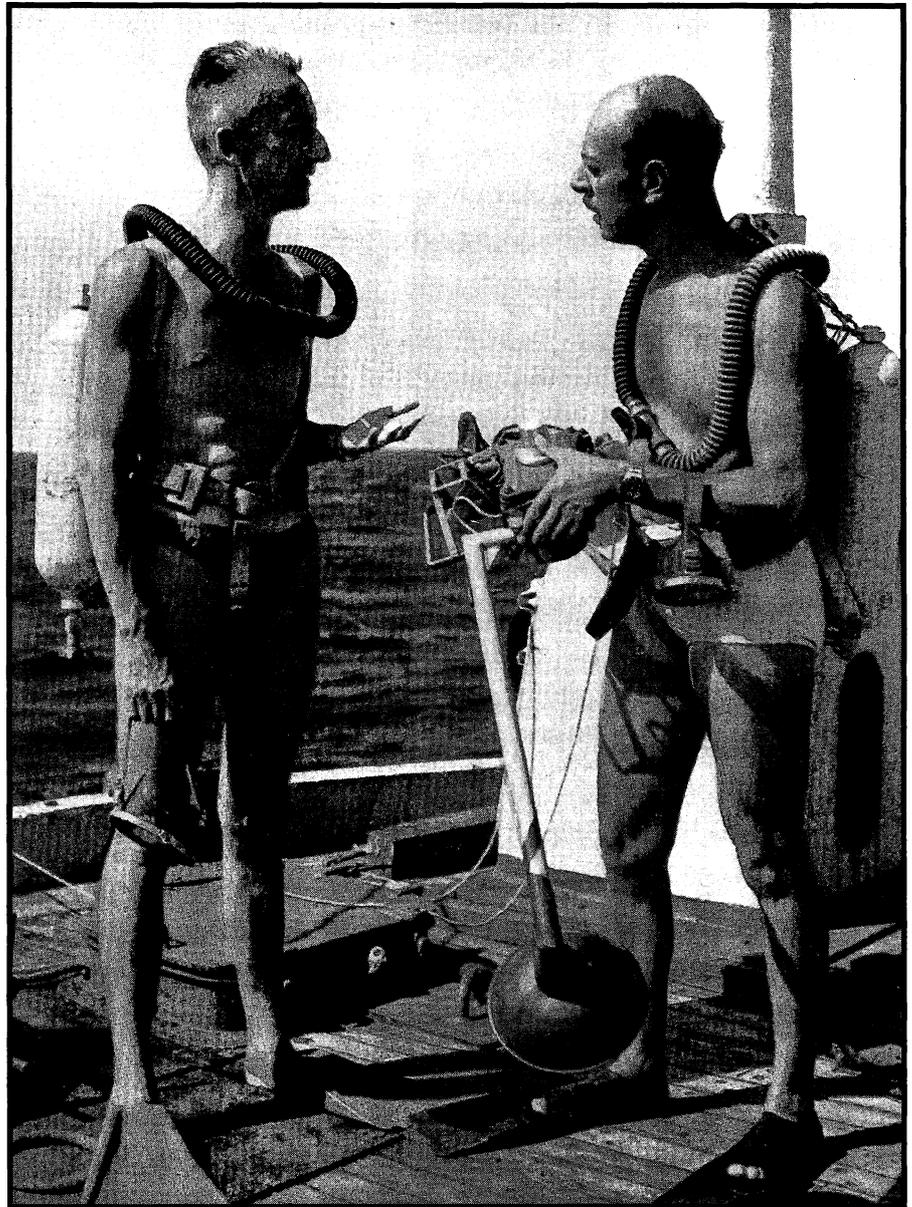
Luis Marden, former chief of the National Geographic foreign editorial staff, photographer, writer, filmmaker, diver, sailor, navigator, pilot, linguist, raconteur, boon companion and, oh yes, explorer, died March 3, 2003 of complications from Parkinson's disease, in Arlington, Virginia. He was only 90 years old.

Marden, who pioneered 35 mm cameras, Kodachrome and underwater photography at National Geographic had been ill for several years. At the National Geographic, he is remembered as an adventurer who learned to fly ultra-lights in his '70s, while he was becoming a computer tech-head. Among his exploits, Luis found the HMS BOUNTY, taught young John Kennedy to scuba dive (at the request of his mother), was a personal friend of King Hussein of Jordan, covered space exploration in its early years, and found a very rare egg of an extinct bird in Madagascar.

Luis worked at *National Geographic* magazine from 1934 until 1976, but stayed on as a freelancer with an office for another 20 years. His final article for NGM was "Restoring Old Ironsides," in June 1997, an article about the U.S.S. CONSTITUTION.

No one has quite summed up the *National Geographic* like Luis Marden. For over six decades - from the early 1930s to the late 1990s - he was usually found somewhere on the other side of the globe. But he was often enough seen in the halls and so was a familiar figure. For many years new employees being shown around might catch a glimpse of a bald man with a natty moustache quietly going about his business, but his passing was usually followed by awed whispers: "There goes Luis Marden."

Marden was born on January 25, 1913 in Chelsea, Massachusetts, a suburb of Boston. His real name was Annibale Luigi Paragallo, though as he grew up in near-



*Captain Cousteau and Luis Marden from the February 1956 issue of National Geographic Magazine ©National Geographic*

by Quincy he went by Louis Paragallo. While attending Quincy High School, he was introduced to photography through a chemistry class. Fascinated with watching images appear from seemingly nowhere, he quickly became hooked.

He did not go to college, choosing freelance photography while working at a radio station instead. While he hosted a radio program, "Camera Club of the Air," the station owners felt Paragallo was too difficult a name for

a radio audience. After casting around in a phone book, they came up with Luis Marden instead.

Marden so steeped himself in matters photographic that by the time he was 19 years old, he had written a book, *Color Photography with the Miniature Camera*, quite likely the first book ever published on 35mm color photography.

This expertise eventually brought him to the National Geographic Society, which prided itself on publishing quality color photography. When he first walked through the doors, a 35mm camera around his neck, no one could know that the slim young man with the dark moustache would become what one writer would call “the epitome of the Geographic man.”

**Uncanny Timing.** If one thing characterized the career of Luis Marden, it was being the right man at the right time in the right place. To begin with, when Marden was hired on July 23, 1934, photographers for *National Geographic* magazine carried bulky cameras with tripods and glass plates into the field. But things were on the verge of change. Marden arrived at the right time, arguing that small 35mm cameras loaded with the new Kodachrome film would revolutionize color photography. His persistence soon paid off, and for decades the Geographic was noted for its dynamic color photography.

Because he could speak Spanish, during World War II he became the Society’s “Latin America man,” sent on long rambling assignments throughout Central and South America and the Caribbean. Diving off Antigua in 1941, he saw his first coral reef and decided he had to photograph its riches.

Again he was the right man at the right time in the right place. Underwater color photography was in its infancy, but in the mid-1950s, working with Jacques Cousteau aboard the CALYPSO, Marden pioneered many of the techniques still used in underwater color photography to this day. Diving became one of his passions.

At the same time, the space age began — and it was Luis Marden, himself a pilot, science fiction buff, and general space enthusiast, who again was the right man to pioneer space coverage for *National Geographic*. At one point loaned full-time to NASA, he made innovative photographs of rocket launches and the activities of the Project Mercury astronauts.

**Finding the Bounty.** The high point in Marden’s career came in January 1957, when at Pitcairn Island in the South Pacific, Marden, diving day after day in dangerous swells, heedless of one islander’s grim prophecy — “Man, you gwen be dead as a hatchet!” — he found the remains of the fabled ship BOUNTY. The news made headlines around the world.

Marden was a polymath, the Geographic’s “Renaissance man.” Not only was he a photographer, he also

made 11 travelogue films for the Society’s lecture series. He was a gifted writer as well. He taught himself at least five languages and made inroads on several others. And he is cited six times in Webster’s *Third New International Dictionary* for words such as “snick,” “tot,” and “sevilana.” But he grumbled that he would not trust anything that used him as a source.

Above all, he pursued his interests so far that he often made new discoveries. His offhand mention of a sea anemone in the Red Sea flashing different colors became the first published report of submarine fluorescence. An orchid lover, he discovered in Brazil a new species of orchid, which was named *Epistephium Mardeni* in his honor. A devotee of H.G. Wells, he found in Madagascar two complete fossil eggs of *Aepyornis*, an extinct giant bird featured prominently in a tale by the English science fiction writer. And a lover of lobster dinners, he discovered a lobster parasite that was a new species of sea flea, dubbed, of course, *Dolobrotus Mardeni*.

**A “Corporal” Befriended by Kings.** Marden was equally at home with commoners and kings. He prided himself on being the “perpetual corporal” at the Geographic; yet as chief of the esteemed foreign editorial staff, he traveled around Jordan with King Hussein, was friends with the King of Tonga, and was knighted by the Italian government in a small ceremony in Washington.

Luis Marden never lost his capacity for wonder, for new experiences and new people, for good fellowship and fine wine. When admitted to the Underwater Academy of Arts and Sciences, his citation had read: “To Luis Marden: Tracker of cryptic animals, relentless spy of hidden natural phenomena, globe girdling gentleman, adventurer and linguist, delightful companion and undersea photographer nonpareil, senior staff correspondent of the National Geographic Society,” to which Marden had grumbled something about “hyperbole.”

Those who knew and remember him, however, know the description didn’t go far enough.

*Edited from articles by Mark Jenkins for National Geographic News, March 3, 2003, and Charlene Valeri (Manager, Contributing Photographers-in-Residence Program NG) © 2003 National Geographic Society. All rights reserved.*

*For further information on Luis Marden go to [www.nationalgeographic.com](http://www.nationalgeographic.com)*

**In Memory**  
**John C. "Greek" Maillis**  
1918--2002



John Maillis was born in Gary Indiana, and when he was only six months old his father took him to Kalymnos, Greece. Eleven years later his father moved to Tarpon Springs, Florida to dive for sponges in the Gulf of Mexico. This was the result of young John's grandfather having just been buried on the Alexandria Coast from a bends accident while working 32 fathoms deep. When the father came back to dive in America, he brought John with him.

As a pre-teenager living in Tarpon Springs, John began working for Tony Lerios, the renowned helmet maker and mechanic who maintained most of the sponge fleet's 150 boats. It was on-the-job training, going aboard to clean the sponge boats, and helping out in Tony's machine shop. John loved it. And it was better than school, because in class he could not speak English, and got in fights all the time.

When John turned 14, he made his first trip on the sponge boat *SOCRATES* as a deck hand with Captain/diver Diamandis Costas. The year was 1932, and his family had to sign a release paper before they took him on. On

the second trip out John got to dive, after one of the diver's developed black spots (bends) after coming up. Only 14 years of age, John was the youngest sponge diver in Tarpon Springs when he started his career. When he ended it at 81, he was the oldest.

During his prosperous 67-year career as a sponge diver, boat owner and captain, he became a legend in Tarpon Springs. George Billiris, a longtime sponge merchant who was a close friend of John had this to say: "He was an inspiration to all new divers coming in. He set many records for production over the years. He was a very stern captain, there was no wishy-washy. If you didn't show up when you were supposed to, your clothes were on the dock, and the boat was gone. He developed a very strong name in the sponge community and community at large."

I had the pleasure to work with Capt. John when I began surveying the Gulf of Mexico's deep water sponge beds in 1999. His knowledge of Gulf waters, pre-World War II sponge beds, and sponge lore was amazing. At 81, he was one of the hardest workers in our crew. The last diving of his illustrious career was done on that trip, helping to check bars 100 miles out to the Middle Grounds, then up north to Carrabelle, east to Steinhatchee, southward to Cedar Key, Big Bank, and back to Tarpon. John did not do it for the money. Instead, he did it because of his love for the sea, and to dive again on those long flat bars he loved so much. After that trip, knowing his diving career had ended, he turned his treasured sponge hook over to Taso Karistinos, a top sponge diver and producer still working out of Tarpon Springs.

A diver of the old school, he was admired by all who knew him for his ability to find sponge, strong work ethics, honesty, and zest for life. During the memorial service, and as a special tribute to Capt. John, his body was driven from one end of the sponge docks to the other, before going to the cemetery. This Greek burial tradition for divers had not been done for several decades. Survivors include his wife Mary, four daughters, Kalliope Walden, Stamatia Williamson, Katina Mercer, and Nancy Folks, two stepsons, Michael and Steven Reno, a sister, Sevasti Katras, 17 grandchildren, 22 great-grandchildren, and four great-great grandchildren.

Torrance R. Parker

## CLASSIFIED

**FOR SALE** or trade, brand new SCUBA PRO regulator, Mark I, Mark II, Mark III, Mark V, Mark VI, Mark VII regular or with pilot or Air I second stage. I would like to buy a SuperLite, used, in good condition. Roger FAX: 418-525-8893.

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**WANTED:** Four light Schrader helmet. Please send photos to: Pete Berdzan, 8 Tourmaline St, Chula Vista CA 91911

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**WANTED:** early U.S. Diver J-valve, pre 1953 with the side yoke mount. 1956 U.S. Divers catalog. Pair of WWII black Churchill swim fins. Any parts for pre 1953 U.S. Divers regulators (metric) double hose regulator. Call Mark ph: 949-770-4920, email LAFIREBOAT@aol.com

HISTORICAL DIVER Volume 11 Issue 1, Number 34

**CLASSIFIED RATES: MEMBERS:** .35 cents per word, \$2.50 minimum. **NONMEMBERS:** \$35.00 per column inch, minimum \$35.00 Payment must be made with order. Advertising copy should be sent to: HD Classified, 2022 Cliff Dr #405, Santa Barbara, CA 93209-1506

**Deadline for Advertisements in the next issue is  
June 1, 2003**

**KOREAN HELMETS,** Pre World War II. Three light, 12-bolt, with manufacturer's plates. Photos, prices, descriptions on request. Jim Shuttleworth, e-mail: jinipinxit@aol.com, PO BOX 93575, Industry, CA 91715-3575, (909) 595-6655.

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**OFFERED:** military surplus REBREATHERS and BOOSTER-PUMPS; in working order (some new) or for parts. Email for a current list: davidsimpport@zonnet.nl

**AVAILABLE:** Offered for sale one time only complete collection of double hose regulators (100 pieces) mostly U.S. Divers, some Healthways, Volt, Nemrod, Dacor, J.C. Higgins, Viking, Palley's, etc. Most are original, some are rebuilt, some in original box, some new in box. For serious collector only. Details on web site [www.goingunder.net](http://www.goingunder.net) Also available U.S. Divers body spanner wrench #1112 00 new, new straight mouthpieces, mushroom valves, poppets, etc. Email Ron at [goingunder@worldnet.att.net](mailto:goingunder@worldnet.att.net)

**DIVING HELMETS,** A.J. Morse and Son #1875. Very old 3 light \$4200. Morse Diving Equipment #4911 4 Light commercial hat \$3100. Desco Air hat #407 \$1500. Desco Commercial Divers quick release weight belt, 45# \$200. Hasalblat underwater case for 500MC with rings and light fittings \$1100. Call Richard Long 503-543-5415.

**FOR SALE:** Old diving magazines; hundreds of issues from 1960s on. Call 352-375-2297

**DIVING HELMETS ETC. FOR SALE.** Miller Dunn Style 1 Divinhood \$6,500; Heinke Pearler, hand formed bonnet \$7,000; TOA Pearler red tag with half dress \$3,800; Rat Hat ex-Phil Nuytten, sell or trade; Custom SuperLite 17 fully restored by KMDSI red with black chrome, the only one the company ever built \$5,250. 1 x USN Mark V dress size 2, good condition, and 1 x commercial dress size 2, good condition with replacement cuffs, both given to Dick Anderson by E.R. Cross, \$400 each, with LOA from Dick Anderson. Mk V knife by Vince, Easton, PA., with lanyard eye handle, near mint \$500. Mk V knife by KA-BAR, Union Cutlery, Olean N.Y., near mint \$550. All subject to prior sale. Leslie at [Lleaney@aol.com](mailto:Lleaney@aol.com).

# Historical Diving Society USA Membership Application

## Annual Membership Information

SPONSOR NAME (PLEASE PRINT): \_\_\_\_\_

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Brief description of your interest in diving. Maximum of 24 words (optional):

I wish my name, address, phone number and above details to be entered in the member register.  Yes  No

Signed: ..... Date: .....

**Please complete for Membership and/or Merchandise — Please Print Clearly or Type**

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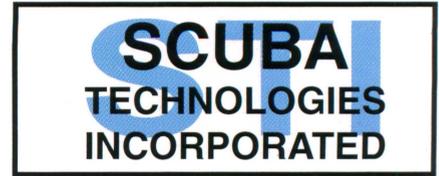
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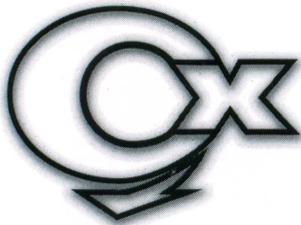
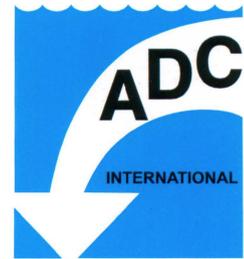
Diving Industry Awards Gala 2002  
Las Vegas, NV



Row 1. Tom Ingram and Charlie Jehle; Tom Ingram with Alec Hardy and Vickie Durst;  
Francine Cousteau, Dorothy Bridges and Zale Parry  
Row 2. The Bridges family; Guy Harvey (r) with auction winners,  
Row 3. Zale Parry and Bob Rusnak; Audio Visual maestro Bob Wohlers. Thanks Bob!  
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