"All I ask of each reader is this — don’t die without having borrowed, stolen, purchased or made a helmet of sorts, to glimpse for yourself this new world."

William Beebe, "Beneath Tropic Seas" 1928

Sadler — England

Porpoise — Australia

Espalion — France

• Underwater Intervention ’97 • John Gaffney • Max Gene Nohl • E. R. Cross Award •
• Ellen McDonald Rogers • John Galletti Award • Helmet Air Supply Requirements •
• The Infernal Diver • Mossback • Mr. A. E. Stove’s Helmet 1889 •
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A PUBLIC BENEFIT NONPROFIT CORPORATION
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Number 11 Spring 1997

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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.

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On the cover: This rare Sadler helmet from last century is featured in the “Helmets of the Deep” column, page 17. The 1950’s scuba diver is shown wearing a version of Ted Eldred’s Australian Porpoise single hose unit, covered on page 10. The panoramic view shows the ancient bridge spanning the River Lot in Espalion, France. The Rouquayrol Denayrouze self contained diving apparatus was tested beneath the bridge in the 1860’s. A report on the towns diving museum which features this unique equipment can be found on page 14. Cover photos: Steve Barsky - E. R. Cross library - Musee du Scaphandre, Espalion.

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Dear Member,

The last year has seen a tremendous amount of growth in the Society and it has been fairly difficult for us at the office to keep up with events. With membership now nearing 900, the increasing flow of mail, faxes, telephone calls and E-mail has outstripped our limited resources. We have been dealing with “emergency only” situations and hence there is a backlog of routine mail and correspondence that we are still trying to service.

In response to this rapid expansion the Board of Directors has initiated a policy where by its members volunteer to take over certain tasks previously administered by some of the Society Officers. A committee to oversee the acquisition of pertinent historical publications and related items has been established and is chaired by Don Barthelmess. An Exhibits Committee chaired by Steve Chaparro has been active for some time as have the Finance Committee and Planning Committee.

The actual day to day affairs of the Society are still run by the Officers, and administered by the Executive Committee who meet once a month. Full Board meetings are held quarterly.

This redistribution of Society duties will be accompanied by the relocating of the Society office from my house, where it has been operating since it was founded in 1992, to professional business quarters. We have also retained, on a trial basis, a mailing service to deal with all outgoing mail. There will no doubt be more changes in the near future.

All these changes are a necessary part of our growth and we are all working to try and make a better Society for all members. We all look forward to a historic future with you. Thank you for your continued support.

Sincerely,
Leslie Leaney
Executive Director

The Board of Directors wish to extend their thanks to the following new members for their support, and welcome them to the Society.

Jordi Minguez Cuevas, SPAIN
J. C. Peyre, FRANCE
David Ashe Anson
Jon G. Mundy
Jan de Groot, NETHERLANDS
Wayne Gzowski, CANADA
Jack Vilas III
Ang Song Chin, SINGAPORE
Keith Gordon, NEW ZEALAND
Francisco Ayarza Ordenez, CHILE
Raymond B. Butts
Karl P. Faesecke, GERMANY
Otho R. Cressey
Nicole Allen
William A. Headley
Leon P. Scamahorn
John Gray
Larry F. Findlay, SCOTLAND
Peter Dick, UK
M. A. Wheeler, UK

Fred Kaske
Tracy Davenport
Stu Dye
Dennis Divins
Adam Lichtman
Costantino Vetriani
Bob Campbell, UK
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Randy Slepp
Dr. Michael J. Johnson
Randy W. Ruhl
Jamie Lamb
Jim Colbeck
Brett L. Bangas
Clint Brady
Philippe Queruel, FRANCE
Linda Haymes
Robert Bodnar

HISTORICAL DIVER No. 11 Spring 1997
E.R. CROSS AWARD

The E.R. Cross Award is presented by the Board of Directors each year to the Society member who has done the most to further the goals and aims of the Society during the preceding year.

The Board of Directors is extremely pleased to announce that this year’s Award recipient is Peter Jackson.

In announcing the Award the Board made special reference to the two presentations that Peter gave for the Society on the Fleuss apparatus at the ’96 tek Conference, his review and bibliography of Sir Robert H. Davis’s Deep Diving and Submarine Operations in issue 6, his research on Hans and Lotte Hass, and his continued professional service as our UK representative.

A “shocked” Peter was presented the Award in Florida by Society Advisory Board member Hans Hass, who Peter gratefully acknowledged as “the reason I became a diver”. (The Editors believe that Lotte may have been of some influence too)

Our congratulations to Peter on this thoroughly deserved recognition.

JOHN GALLETTI AWARD

Each year the Association of Diving Contractors presents the John Galletti Award at its annual Conference. The Award is named in honor of one of the founding members of the A.D.C. and is presented to publicly recognize a diving industry professional who has provided substantial contributions toward making the commercial diving industry a better and safer environment in which to work.

This year the Award went to the late Joe Savoie.

Accepting Joe’s Award on behalf of the Savoie Family, Joyce Savoie made special reference to the efforts and support of Julie Rodruigez of Epic Divers, Howie Doyle, Jesse Dean, Jim Fowler, John Kane and the HDSUSA.

Addressing the ADC Board and membership Joyce noted that “Joe’s life was spent working with you and I am pleased to see that you have not forgotten him. The Joe Savoie helmet will endure as a milestone in diving”. Among family members accompanying Joyce at the award ceremony were her daughter Tonie and Joe’s younger brother Gary.

An outline of the career of Joe Savoie can be found in Historical Diver issue 8.

OFFICIAL SOCIETY POLO SHIRT

By popular demand the Society Polo Shirt is back. 100% cotton made in the USA. Dark Blue with Gold Society helmet logo. Sizes L, XL, XXL. $25.00, p&p $6.00 domestic, $12.00 overseas.

CA. residents add 7.75% sales tax.

OFFICIAL SOCIETY LAPEL PIN

MEMBERS ONLY.

The official Society lapel pin in solid Sterling Silver will be available in June to MEMBERS ONLY, shown here at its approximate size. $25.00. p&p $3.00 domestic, $6.00 overseas. CA. residents add 7.75% sales tax.
AUSTIN, TEXAS. SOCIETY member John Hoover (left) has taken a serious long term approach to recruiting new members, as shown in the above photo. On February 22nd he made Julie Barnett (center) an automatic family member when they were married in Austin, Texas. A strong HDS contingent from the Gulf Coast Working Equipment Group consisting of Paul Schenck (right), Pete Petrisky, Rick Kouns, Russell Miller and Wayne Gronquist of NUMA were in attendance. Julie has been a Society supporter and recently assisted the editors with some much appreciated translations. The diving theme even invaded the catering as seen in the “official HDS groom’s cake”. Our congratulations to John and Julie on their “historic” event.

SOUTH AFRICA. Heath Richards of South Africa is keen to acquire the business cards of divers and diving company’s to add to his collection that is displayed in his bar. Contact him at P.O. Box 3200, Cluster No1, Sunnigdale, Durban North, Natal, R.S.A. 4051.

NETHERLANDS. Andre Helgers is the Secretary of a dive club in Holland who is seeking ANY diving related materials for the club Museum. Badges, posters, magazines etc. Contact Andre at Buddy Divers Heythuysen, Heerstraat Zuid 43, 6099 A E Beegden, The Netherlands.

USA/UK. Be a PAL? The USA/UK connection continues to flourish in working equipment. America’s NEWEG ring master Jim Boyd recently received four videos of UK Working Equipment Rallies from his UK counterpart, Mike Watts. Unfortunately the videos are in the European PAL format. Can anyone help Jim out with transfers to our VHS format? Contact the ever enthusiastic Jim at 201-948-5618.

INFORMATION WANTED: Our French member Pierre Meyer would like to hear from any member having information on the Helicopter bail-up tank the “HEED II” (Helicopter Emergency Egress Device Type Two) such as manufacturer etc. Please contact Pierre Meyer, 26 rue Jeanne d’Arc, 67400 Geispolsheim, France.

HANS HASS. The first underwater film made by Hans Hass “Pirsch Unter Wasser” (Stalking Beneath The Sea) was selected as the opening film at the launch of the new Santa Barbara Underwater Film Festival. The film, made by Hans in 1939, was shown in it’s entirety with the original Austrian sound track and narration. Hans greeted attendees to the Festival via a five minute film clip which he had made with an Austrian TV crew, three weeks earlier. The Festival was organized by Ed Stetson, Dennis Divins and Don Barthelness and various other HDS members. Held on the campus of the University of California Santa Barbara, over 800 divers attended the evening Festival which also featured the work of Brad Doane, James Forte, Jim Knowlton, Doug Cummings, Tom Campbell and Brooks Institute of Photography.

CHICAGO. In April the Society displayed at Our World Underwater in Chicago for the first time. Several members had requested that we establish a presence in the area including Gerry Lang, Gregg Platt and NEWEG’s Jim Boyd, who skillfully hired Bob Rusnak to chauffeur him all the way from New Jersey to the show. Despite a 50 degree drop in temperature over a period of a few days and unloading the Society booth during a storm that had the snow falling horizontally, our presence drew a great deal of interest and some new members. Aggressors International’s Wayne R. Hasson, DESC0’s Ric Koellner, Skin Diver Magazine’s Paul Tzimoulis, UCLA’s Glen Egstrom and Dr. Art Bachrach were among the many visitors.

“Sea Hunt” enthusiast and historian Gerry Lang in the shadow of the “Master”.

Tom Squicciarini, Chicago diving legend Vern Pederson and Greg Platt.
Underwater Intervention ‘97, Houston, Texas.

Underwater Intervention is the combined annual conference of the ROV Committee of the Marine Technology Society (MTS) and the Association of Diving Contractors (ADC). Twenty three nations were represented in both the conference attendance and technical presentations at this years event. Captain Raymond Scott McCord, U. S. Navy Director of Ocean Engineering and Supervisor of Salvage and Diving, was the featured speaker at the plenary session. He gave an engrossing and detailed presentation on the methodology involved in the multi-agency location and recovery of TWA Flight 800, which crashed into the Atlantic Ocean on July 17, 1996. Society Advisory Board members Andre Galerne was present, as was Phil Nuytten who displayed his newly developed DOV (directly operated vehicle) which combines highly advanced ROV technologies with the advantages of having a human operator in situ. The HDS is the historical affiliate for ADC and the conference allows us the opportunity to meet many of our Gulf area and international members. U I ‘98 is scheduled for the New Orleans Marriott on Feb 9-11. Mark your calendars.

Captain Scott McCord is presented with a Plaque of Appreciation from ADC President Jay Crofton.

Keith Gordon, Managing Director of SeaROV Services of New Zealand, and Christopher Nicholson, President of Deep Sea Systems of Falmouth, MA, at our booth. Christopher was recently down on the Titanic and Keith is planning to revisit the Niagara.

Society member Jerry Provost of Vets Salvage Diving Inc. of Wayzata, MN, is shown at the Society booth with wife Sharon and son, Jerry Jr.

Oceaneering’s Johnny Johnston with Joyce Savoie and Mary Ann Galletti at the presentation of the John Galletti Award to the late Joe Savoie.

Akio Kawaguchi of Nippon Kaiyo Co. Ltd and Ichiro Nashimoto, M. D., Founder of the International Night Diving Kyokai, at the Society booth, purchasing copies of “The California Abalone Industry”.

HISTORICAL DIVER No.11 Spring 1997
John Gaffney

An important era in scuba diving history came to a close in the early morning hours of February 6th, 1997, when John Gaffney passed away in California. John had been ill and hospitalized for several days, but his death was sudden and unexpected, and his departure from this world has left a void in the scuba diving industry that will not soon be filled.

John Gaffney founded the National Association of Skin Diving Schools in 1961 and changed the name to National Association of Scuba Diving Schools in 1962. With the change of names, NASDS and John Gaffney began to set the entire scuba diving world on its ear. His concept for the dive industry was innovative, creative and original. Many of John’s ideas were industry “firsts” and were emulated by most of the agencies that entered the market. Later John Gaffney and the members of NASDS developed, invented and pioneered more programs and more equipment breakthroughs than any other entity in the diving business. Some of these include:

- First retail association in the diving industry 1962
- First plastic certification card 1964
- First BCD (buoyancy control device) 1969
- First to use underwater computers 1981
- First valve inspection on cylinders — VIP 1982
- First agency to approve NITROX 1992

At the January 1997 NASDS International Retailer’s Conference in Orlando, Florida, Mr. Gaffney was presented with the John Gaffney Lifetime Achievement Award. This award was created in recognition of Mr. Gaffney’s outstanding contributions to the dive industry and to NASDS, in a career that spanned more than 40 years. As a further tribute to Mr. Gaffney, NASDS instituted a separate achievement award, affectionately called “The Gaff”, which was presented for the first time this year. The recipient was Mr. Doug McNeese.

As a continuing tribute to Mr. Gaffney a special memorial fund has been set up by DAN (Diver’s Alert Network) and NASDS. Donations to the “John Gaffney Memorial” will be used to support research projects initiated by DAN in an ongoing effort to educate divers on the effects of various medical conditions while diving. Those wishing to pay tribute to Mr. Gaffney are asked to send donations to:

Diver’s Alert Network
Attn.: Cindy Courter or Sponsor
3100 Tower Blvd. Suite 1300
Durham, NC 27707

Edited from a NASDS press release.
INFORMATION WANTED. Max Gene Nohl.

More information has been received about the photos that appeared in issues 5 and 9. The following correspondence has been edited.

January 29, 1997

Gentlemen,

I was Max Gene Nohl’s Chief Assistant until he, his wife Betty and dog Penny were burned to death in (an automobile accident) in Arkansas in 1960. (They were returning from) a stay in some small town in the mountains of Mexico where they liked to go in the winter. After they died, leaving no children, I turned my attention to land archaeology.

I took the picture you show in issue 9, page 9. The underwater camera was made by me. The diving lung was not made by DESCOr by Max and I. Ten minutes underwater and you were a hospital case. The bellows were of cloth, and covered with a liquid rubber. The rig leaking like the devil. The soda-lime, plus water, filled you up in a hurry. The person in your photo is not Nohl but Ivan Vestrem, who was also assisting Nohl.

I was also barge master under Nohl’s salvage operations and had five divers working off and on. I also worked with Dr. End, Jack Browne, John D. Craig and DESCOr. During W W II we developed six different types of re breathers for US Navy. I had a shop and seven helpers in Chicago. During the summer I was Captain of a P. T. boat. I made three trips down the Miss. River to Florida. One time alone with a monkey. We all worked in Silver Springs on Tarzan movies.

When Nohl died he left me a lot of money. He knew that I was always messing with the Stock Market so his Will stated that I must use the money for having a good time. I did. I bought a Jaguar, a yacht, went to the Valley of the Kings and over to England for the crowning of the Queen in 1953.

I was the assistant editor of Deep Sea Digest, a small Kendall, Florida magazine. I was the person who persuaded Ada and Dimitri Rebikoff to move to Florida. They made secret underwater devices for our government.

I am now 86. Six weeks ago I was suppose to have died within 12 hours. I have fooled them all.

Sincerely,

James Lockwood. Illinios.

Editors note. HISTORICAL DIVER was established, in part, to be the disseminator of this type of unrecorded information to anyone wishing to research diving history. Your continued support of the Society enables us to provide this forum.

The monkey referred to is possibly the infamous one Jack Browne had as part of his “crew” on his Lake Michigan boat. Bernice McKenzie makes guarded reference to the boat in her interview in HD 1. Dimitri Rebikoff was an early sports diving pioneer famous for his Pegasus DPV and Strobe flash torpedo among other contributions.

The California Abalone Industry, A Pictorial History
by A.L. “Scrap” Lundy,
1997, 240pp., 324 photographs, charts, tables, bibliography, list of people interviewed (90), glossary, index.
Reviewed in HD 10.

Hardbound limited edition of 200 copies ONLY, available exclusively from HDSUSA with numbered and signed book plate. Each book can be personally inscribed by the author on request. $100. Softbound First Edition limited to 1800 copies ONLY. $39.50. Authors personal inscription by request.

For Overseas p&p please contact HDSUSA via fax or E-mail.
Scuba diving has a history extending a little over 40 years but, in that time it has become a recreational activity enjoyed worldwide by millions of enthusiasts.

As it is a relatively young sport, much of the development of scuba diving in Australia has gone unrecorded. Recognising this, the Australian Underwater Federation (AUF) has embarked on a programme of recording Australia’s diving history before it is lost forever.

Scuba diving emerged as a recreational activity following the development of the Aqualung in 1943 by two French men, Jacques Yves Cousteau and Emile Gagnan. It took some time for the Aqualung to reach Australia due to our remoteness from Europe, but a small band of divers had heard of this equipment and began experimenting with their own version of the design.

We owe much to these early pioneers. Some even lost their lives in developing the techniques that have made diving the safe sport it is today.

One of Australia’s early pioneers of equipment design was Ted Eldred. It was his development of the single hose, two-stage regulator that brought Australia to the fore in regulator design technology. This is Ted Eldred’s story!

- Mel Brown

By Ted Eldred

During my days as a youth in the 1930s, I lived in Sorrento on the Nepean Peninsula and trained actively as a swimmer. With Bass Strait on one side and Port Phillip Bay on the other, the environment stimulated an interest in diving. This interest developed into a financial concern when a severe storm caused extensive damage to the bay side coastline, sinking many small craft. Some remained on their moorings, partially submerged, others were carried by the currents into the deeper water of the shipping channels.

I was contracted by a local garage proprietor, who equipped with a barge fitted with a winch, developed a technique to salvage the boats. They were winched off the bottom and carried to shallow water where they were coupled to a tow truck and pulled clear of the water on rollers. I was employed to swim down and attach the winch rope to the craft. I had no equipment to assist me, and as winter began, the colder conditions, strong currents and decreased visibility made the job harder and more dangerous.

During this period I developed techniques which provided a practical foundation for equipment design later on. Goggles filled with fresh water is an example. By filling the space between the glass and eyes, it countered the hydraulic squeeze. I combated the cold by wearing close fitting woollen clothing, and practised a technique of muscle relaxation to
The first single hose two stage compressed air scuba was designed with one hose primarily to overcome the patent rights held by Cousteau and Gagnan for the Aqualung in 1947.

enable maximum work with minimal effort. To get to the bottom quickly I used hand held weights attached to a light line. I learned to hyperventilate prior to diving to decrease the carbon di-oxide tension, and then on ascent I expelled a small amount of air to again achieve the same effect. The developments were all focused on the aim of staying longer and working harder.

My engineering training began in the mid 30s when I was apprenticed for five years in the design and manufacture of production tooling. This was of great help when I established my own business in high-pressure diecasting of high tensile non ferrous alloys, and later aided manufacture of underwater tanks.

During World War II I worked in the medical profession, and assisted with the design and development of anaesthetical apparatus. It was at this stage I began my study of respiratory physiology and the underwater oxygen rebreather — the first free-swimming scuba.

By the end of the war in 1945 I had designed my first two rebreathers and was involved in tests and trials of the equipment. I was assisted by Dr. Geoffrey Kaye, senior lecturer on Anaesthesia and controller of Anaesthetical Research at Melbourne University, and Dr. Norman James, senior anaesthetist and foundation member of the Department of Anaesthetics at Melbourne Hospital.

During the following two years the rebreathers were further developed. A depth warning device was incorporated to warn the diver that he was exceeding the two atmosphere mark, beyond which it was dangerous to proceed. The device operated by restricting the diver’s breathing without closing it off enough to distress him.

Further development of the rebreathers was hampered by the lack of local knowledge of underwater respiratory physiology by the medical profession. Therefore, I contacted the Royal Australian Navy to study work conducted in England by the Royal Navy and Siebe Gorman Co.

With the assistance of the Royal Navy medical files extending back some 15-20 years, I was able to increase my knowledge of the respiratory requirements for underwater activity, and apply this knowledge to future designs.

It was at this stage I became aware of the Cousteau Gagnan “Aqualung”. Realising its potential, I made study of the patent, and by 1950 I had designed the first single hose, two stage scuba. During this time I met and was assisted by Comdr. Batterham, an experienced clearance diver formerly in the Royal Australian Navy. He was at that time in the Naval Reserve, and joined me in the manufacture of the single hose unit which appeared to have considerable potential. The new equipment was registered under the “Porpoise” trade name and the first units using disposal oxygen cylinders were manufactured as a home workshop project.

By 1952, Breathing Appliance Co. was formed and full scale production of the Porpoise design commenced in North Melbourne.

Rob Wallace-Mitchell, a sporting goods importer and distributor, was chosen to distribute the Porpoise products to the sporting industry. At his suggestion a training school - The School of Underwater Diving and Swimming - was established by Breathing Appliance Co., to provide both training and promotion.

The R.A.N. expressed an interest in the school and officially offered the services of Batterham and equipment. This was conditional on our acceptance of a syllabus designed by the R.A.N. to provide a standard of training useful in time of emergency. The school was established in 1954 at the Melbourne City Baths and was very successful. The course consisted of classes conducted two nights each week over a period of six weeks. Volunteer staff were trained to assist Batterham and myself and each pupil received both practical training in the use and service of air and oxygen equipment, as well as instruction in theoretical and medical requirements. Students also underwent a carbon dioxide build up and an anoxia test to familiarise themselves with their individual symptoms. The course culminated with a written examination set to the R.A.N. standards.

The school was in constant demand to provide demonstrations at swimming car-
This publicity shot of the first model "Porpoise" taken in 1954, was later the basis for a market wide advertising campaign.

The twin cylinder Porpoise scuba, shown here, was officially adopted by the Royal Australian Navy in 1954, making it the first navy in the world to use compressed air scuba for general use.

This unit featured an improved regulator with built in air reserve and a buoyant backpack. The single cylinder version had a quick release mechanism which dropped the cylinder assembly, leaving the diver wearing only the harness and buoyant pack.

nivals held in Victoria and NSW and generated considerable publicity and interest in diving. During 1954 and 1955, diving activity in Australia boomed, clubs were formed and local manufacturers started to copy the Porpoise single hose, two stage design.

In 1954, the R.A.N. had expressed a keen interest in Compressed Air Breathing Apparatus (CABA) and compiled a set of specifications for their requirements. The Aqualung and Porpoise designs were both evaluated by the Department of Defence Standards Laboratory in Maribyrnong, Victoria. The Porpoise design proved superior and thus more suited to the R.A.N. requirements.

The Porpoise Hookah was designed specifically for the R.A.N. and, along with Porpoise Scuba was being supplied to the R.A.N. as standard equipment. Ours was the first Navy in the world to adopt CABA.

Although foreign manufacturers, such as Siebe Gorman (UK), Heinke and Draeger (Germany), and Scott (USA), were all trying to compete for the Australian market, by 1955, Porpoise equipment dominated sales in Australia for both professional and sporting application.

Overseas, however, the Porpoise equipment was little known and many manufacturers were trying to find a way to duplicate the Cousteau Gagnan patent.

With the publication of "The Coast of Coral", a book by Arthur C. Clarke on the Great Barrier Reef, featuring the Porpoise equipment, things changed dramatically. The single hose, two stage principle was copied worldwide, and by 1960, was outselling the Aqualung.

Unfortunately, the Porpoise design was never patented as finance was always scarce and although 90 per cent of the production of Breathing Appliance Co. was being purchased by the Australian Armed Forces, it was impossible to raise local capital. There was very little interest in pioneering a new industry.

Between 1955 and 1960, many new features were built into the Porpoise scuba. A balanced pressure regulator was incorporated which enabled the entire cylinder content to be consumed without variation to the supply or breathing effort. A vacuum assisted demand valve was also added. The valve design required only the initial effort to commence the inhalation cycle and the apparatus automatically supplied the air flow on demand without further effort. This was quite a breakthrough as it enabled the diver to work harder at depth, free of the respiratory work load which normally reduced his efficiency.

Features such as this, put the Porpoise way ahead of competitors. But lack of capital severely restricted growth and finally in 1960 Breathing Appliance Co., was sold to L'Spirotechnique France, the subsidiary of L'Air Liquide, which owned the Aqualung patent. The name was changed to Australian Diver Spiro and I remained with the new company until 1962 when I left to become a freelance consultant.

Ironically in 1963, I was given an assignment by Normalair Australia, a subsidiary of Westland Aircraft England, to
re-design their respiratory equipment to meet the Australian Defence standards. I was successful in obtaining the largest order tendered by the Australian Armed Forces for a Damage Control CABA. This was achieved against strong competition from manufacturers worldwide and was my last design venture in the diving field. The irony was that I had to beat my own designs to win the contract!

**FOOTNOTE.** The AUF would like to hear from anyone who feels they may be able to contribute to our knowledge of early diving history. Please contact Mel Brown, AUF Historian, 9 Narelle Crescent, Woonona, NSW 2517.

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**USE OF THE PORPOISE**

**PREPARATION AND FITTING OF EQUIPMENT:**

(i) Check by the pressure gauge that the cylinder (i) contains sufficient compressed air for the time require underwater, including decompressions, do not leave this to quesswork (Consult the decompression tables on Page ???).

(ii) Attach the reducing valve (2) to the cylinder control valve (3), carefully wiping away any sand or grit from the connections.

(iii) Now by means of the rubber hose (4) attach the mouthpiece (5) to the reducing valve (2)

(iv) Turn on the main air supply, (one complete turn of the control valve (3) fully opens the system). Next immerse the complete unit in the water. Tell-tale bubbles will indicate a loose connection requiring either tightening or replacement of a sealing washer. Test again after adjustment. (A relatively small leak will waste surprisingly large quantities of air).

(v) Don the Unit, and adjust the harness, so that the cylinder fits comfortably on the back.

(vi) Now insert the mouthpiece (5) gripping the rubber teats between the teeth, and close the lips firmly over the flap (6) of the rubber mouthpiece. When the mouthpiece is comfortable, adjust the safety strap (7) around the head. Turn on main control valve (3) and make sure that the by-pass valve (8) is turned off.

(vii) Next fit the face mask or goggles and nose clip and swim fins (if used).

You are now ready to dive.

(viii) The mechanism of the Porpoise is so designed that even with the main control valve tuned on, no air is delivered through the mouthpiece until the wearer starts to inhale.

(ix) Should the main air supply run out while underneath, just turn valve (8) and there is a reserve supply of 300 lbs. p.s.i. to bring the diver to the surface.


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**Specifications:**

- Cylinder capacity = 40 cubic feet at 1800 p.s.i.
- Reducing valve pressure = 40 lb. p.s.i.
- Demand valve pressure = 2 oz.
- Cylinder, hydrostatically tested to 3000 p.s.i.
- Low pressure hose tested to 400 p.s.i.
The trails that guide us on our adventures back through diving’s history often begin and end in the most unlikely places. The trail back to the origins of single hose demand regulator scuba diving is no exception, and it provides us with a very interesting journey.

If we started out today (with the system enjoying total domination at your local dive store), we would travel back to the early 1960’s and the period of the regulator’s integration into commercial helmet design; then back to its arrival into the recreational market in the late 1940’s (covered by E. R. Cross in the last issue and Ted Eldred in this issue); and eventually we would accompany it back cross the Atlantic to Europe. There our journey would take us on a trail from the beaches of France up to the Massif Central in Southern France and eventually lead us to an ancient bridge that spans the River Lot in the small village of Espalion.

Our scuba journey will have taken us thousands of miles to a different place. It also will have taken us back over 130 years, to a different time.

For it was here, in the 1860’s, that a locally born mining engineer named Benoit Rouquayrol, created his “Reservoir regulator” apparatus that was to be used for entering mines that contained contaminated atmospheres. This apparatus was later referred to as the “Aerophore”. Rouquayrol was joined by another local man, Auguste Denayrouze, a young French naval Lieutenant. This team successfully developed a low pressure scuba diving unit that used a single hose demand regulator system. And they tested it under this bridge. It worked. Not only did it work then, it also works now.

In honor of their two not-yet-so-famous ances-
tors, the people of Espalion opened a diving museum to display this pioneering apparatus, and tell the story of its development. Housed in a huge 15th century red stone church in the center of the village, the museum opened in 1980. It got an important international shot of publicity in 1987 when Ray Sutcliffe and a BBC TV crew came and filmed a segment for their “Discoveries Underwater” series. The segment, which airs occasionally in the USA on cable TV, featured noted Belgian diving historian Robert Steinuit diving the apparatus in both surface supplied and self contained configurations.

Inside the Museum is a large display featuring three divers rigged in Rouquayrol and Denayrouze units, in different configurations. One is dressed in a full closed suit with the famous “snout” helmet, while the others are dressed in woolens and rigged for surface supply and scuba. In addition to housing the original 1860’s Rouquayrol Denayrouze equipment, the Museum contains displays of self-contained units by the French pioneers who followed in their footsteps. A chest mounted Scaphandre “Le Prieur” unit, including face mask, and in excellent original condition is displayed in a case with an additional Le Prieur pressure gauge set to one side for closer inspection. Although not an underwater unit, an immaculate Commeinhes two cylinder model, complete with face mask and hose is also displayed along with text and photos relating to its use. Items relating to Captain Jacques Cousteau and Emil Gagnan, and more modern self contained equipment, are also exhibited.

Although the main attraction’s of the Museum displays are the unique local items, there is a good representation of equipment from the around the world. These include a fully rigged German Draeger DM40, Canadian John Date, British Siebe Gorman 6 bolt, Russian 3 bolt, Italian Galeazzi one atmosphere suit, American Kirby Morgan Superlite 17, French Casassa, Piel, Comex, and La Spirotechnique, and displays of pumps, military and commercial items.

The walls of the museum are used to depict the evolution of diving equipment from the 1500’s. To emphasize this progression there are two life size divers rigged in a model of Klingert’s 1797 dress and a 1985 Lama bubble helmet rig.

As Jules Verne equipped Captain Nemo’s “20,000 Leagues Under the Sea” divers with Rouquayrol Denayrouze scuba units, there is a display featuring a bust of Verne and copies of illustrations from his book. There is also another large display case that contains various early catalogs and publications relevant to the inventions of Rouquayrol and Denayrouze. Both of the inventors are buried in the village.
The Museum is operated by an Association of local people, and is headed by its President Lucien Cabrolie, a relative of the Denayrouze family. It plays such a prominent role in the village that the post office franks out-going mail with an image of a diver in Rouquayrol Denayrouze apparatus standing by the ancient bridge.

The Musee Joseph Vaylet is one of the world's few diving museums and it contains historically important equipment that cannot be publicly seen anywhere else. It is one of the great destinations on our journey back through diving’s past and it is one that is well worth making.

Authors note. Espalion is not the final destination on our return to the origin of the single hose regulator. The journey will continue in a later issue. This article was made possible by our members Phillipe Rousseau, who made the necessary arrangements for my visit, and Colin Taylor, who handled all the logistics of travel and accommodation, skillfully avoiding a fire that closed the Channel Tunnel and a shut down of the Channel Ferries by striking French truck drivers. Also, my sincere thanks to Jill Desvergne of Aveyron, for coming to the rescue at the eleventh hour and translating for Lucien, Colin and I. Merci.

There is a seminar on diving history, with particular emphasis on the Rouquayrol Denayrouze apparatus, being held in Espalion on October 4th and 5th, 1997. Details are available from our member Jan de Groot, in Holland. Phone 011 31 70 511 47 40. Fax 011 31 70 517 83 96. (or see HD #8 page 5)
The intent of this column is to provide a forum for information on helmet diving equipment that was unable to be included in Leon Lyons book HELMETS OF THE DEEP. The text refers to page numbers in the book, which is available from HDSUSA. It is hoped that this forum will provide all of us with a greater understanding of equipment development, and submissions are welcome from everyone.
SADLER, London

The name Sadler can be traced back to the earliest days of English helmet equipment manufacture. When Colonel Pasley launched his underwater offensive against the wreck of the Royal George in 1839, his divers were equipped with helmets manufactured by both Sadler and Bethell. The Sadler diving dresses in use were based on the Deane’s “open” dress design. The Bethell units were of a “closed” or “tight” design but were objected to by Pasley’s divers and were converted to an “open” style dress.

The Sadler “open” helmets survived into Pasley’s second season on the Royal George in 1840. It was during this season that Augustus Siebe’s closed dress and pumps also arrived on the site. It would be this superior Siebe equipment that would establish a safer uniform design for future professional diving equipment. Siebe’s successful design would endure for over a century and eventually earn Augustus Siebe the title of “The Father of Diving”.

It is not known if any of the original Sadler “open” helmets have survived. It is possible that once the safer Augustus Siebe patent began to establish itself as the new standard in helmet design, that Thomas Sadler converted his helmets to a “closed” design to keep up with the competition. He was apparently manufacturing “closed” helmets by 1846. The bonnet of this helmet has some of the distinctive features from the Royal George period, especially the contoured frames of the two side view ports which are similar to the recently discovered Siebe/Deane “open” helmet circa 1830’s and the Augustus Siebe helmet circa 1840’s, that is in the London Science Museum. The side port glasses are convex, the breast plate of sheet copper and there are no lanyard hooks.

The side profile of the helmet shows a very unusual “flat top” style of bonnet, which is quite different to the bonnet shape of the other two “closed” Sadler helmets shown in this article. Also of note is the magnificent hand engraved manufacturers name which covers an area approximately 6 x 4 inches above the face port. The face port on all these Sadler’s is extremely small, but the original port on this model was larger than the one currently fitted. During restoration it was noticed that there is a large shoulder of solder built up around the circumference of the port frame inside the bonnet to fill in part of the original aperture.

The spit cock, at front right, and exhaust control would have been added some time after the original manufacture of the helmet. The area around the air inlet elbow has been reinforced.
with a patch and there is an elaborate helmet locking device positioned on the right side of the non-recessed neck ring.

We have been considering various theories as to why the shoulder area on the bonnet neck ring is so wide. One theory is that if the bonnet was originally from a Deane style “open” helmet it would be narrow in the neck and a conversion to a “closed” helmet, using a thicker neck ring, could help to reinforce any weakness in this area. (A. J. Morse shallow water “open” helmets have a narrowing at the neck which is prone to splitting with excessive use) It is possible that the bonnet of this helmet was an “open” Sadler that was later converted to Siebe’s “closed” design.

Whatever it’s original configuration, it has had an interesting life since it left London. It’s modern history starts with it being salvaged from an old Pacific shipwreck, located and acquired by Captain Ferret in Australia, flown to America as cabin baggage in the early 1980’s, and restored by Bob Kirby in Santa Barbara during 1996. The restoration and detailing of the Sadler engraving was done by Elise Shuman-Shadow and George Shadow.

The other two helmets shown are also believed to be by Sadler. They display the same small face port, distinctive small square Pearler style breast plate, contoured side port frames and a large flange neck ring on the bonnet. These helmets also feature an elaborate locking device, have no lanyard hooks for the weights, and have an unusual 10 bolt breastplate. They are located on Guernsey in the Channel Islands where it is believed they were used to construct the harbor in the 1850’s. Guernsey resident and HDS member Mick Peters knows of a Sadler pump that may have originally been supplied to the Island with the two helmets.

Leslie Leaney and Bob Kirby.

3. HISTORICAL DIVER issue 3, cover.
5. Castle Cornet Museum, St. Peter Port, Guernsey, Channel Islands.

Thanks are due to Mick Peters.

Photos of single Sadler helmet, Steve Barsky.
Photos of two Sadler helmets, Leslie Leaney.
Ellen McDonald Rogers was born in Michigan on September 19, 1926, the third of four children. Her father was a construction engineer and the family moved a lot. He worked for Worthing and he went wherever he was sent. Each of his children was born in a different state. The move to California was fortuitous for Ellen, because that’s where she fell in love with the sea. She learned to swim and swam in ocean almost every day for years. Her older brother, Joe, served in the Navy as a Submariner. He taught Ellen to free dive, using only mask and flippers, when she was 18 or 20. In those days lobster, fish and abalone were abundant off the Pacific Coast and Ellen was quickly hooked on diving for game. “I was a real predator,” she says. She has the pictures and newspaper clippings to prove it—my favorites are Ellen with a big lobster (the largest she ever caught weighed twelve and a half pounds) and Ellen with a halibut on a Palos Verdes beach. In those days the divers made their own drysuits using rubber sheeting they bought in Torrance. They wore Navy issue long underwear under the suits for warmth. Ellen and Joe loved diving so much they even spent a year as commercial abalone divers, using surface supplied air and Desco helmets. Ellen married David Rogers in 1948. They bought land in Manhattan Beach, California and had a house built on it. Ellen still lives there today. There was nothing there when they moved in, today the property is in the center of a thriving beach city. Ellen and David’s son, David, was born in 1950, their daughter, Dana, in 1951. When her children were growing up, Ellen liked to take them to the beach. At Palos Verdes’ Flat Rock one day, Ellen met Lillian Kimble Patton, a Northrop photo technician. Both women were avid free divers and they soon became diving partners, known in competition circles as the Mermaids. In 1958 they were the Women’s National Open spearfishing champs, earning their title in the finals free diving match in the Bahamas. Although he was susceptible to seasickness and didn’t like seafood, Ellen’s husband was supportive of her love of the sea. David Rogers helped her pick out an 18 foot boat in 1959 that she owned for 20 years. She took it to Catalina frequently. She and her brother also went out in his 40 foot boat, visiting all of the Channel Islands except the two farthest from the mainland, San Nicolas and San Miguel. After 10 years of free diving, Ellen bought a two hose scuba unit from Charlie Sturgill. She received no instruction in how to use it; her brother showed her how to set it up and they went diving. While we call it scuba diving, Ellen calls it “unit diving.” Her “unit” included a slender 2,200 psi tank. (Jacques-Yves Cousteau and his divers used four of these banded together.) Ellen also had a standard steel cylinder. Eventually she got a single hose unit. Scuba, however, never replaced free diving in her affections. Of the two, she always liked free diving best because it required minimal equipment.
Both of Ellen’s children tried free diving. Her son was susceptible to seasickness but Dana eventually became as skilled a free diver as her mother.

At the age of 36, Ellen went back to school, earning a BA in Fine Arts and English from Long Beach State. It took her seven years. She got her first teaching job at 42. She taught fine arts—sculpting, line drawing, etc.—at Huntington Park High School for 17 years.

With school and a family to take care of, Ellen had less and less time for diving and her boat. When she started working, she had no time at all. Little by little she gave up diving and eventually, she even sold her boat.

Ellen retired from teaching in 1984. David Rogers died in 1989. Today, she divides her time between a ranch in central California and the house she and David bought in 1948. A grandmother of five who loves animals, she has five dogs and a cat. She has made jewelry for her own pleasure for years, turning out marvelous creations of sterling silver and turquoise.

When I expressed regrets that I learned to dive too late to see U/W California in its most pristine state, Ellen nodded her understanding. “I had the best of it,” she said smiling.
AIR SUPPLY REQUIREMENTS
FOR HELMET AND SCUBA DIVERS
by E. R. Cross
HDSUSA Advisory Board Member
PART 1

An increasing number of sports divers, mostly members of the Historical Diving Society, are now using different types of traditional helmets for their recreational diving. Various models from several country’s are being used, including several American styles, a few British, some Japanese and at least two Russian design diving helmets. An equal assortment of open circuit scuba rigs are also in use by members of Working Equipment Groups (WEG’s). Although the Society is at this time not financially able to provide the mandatory liability insurance coverage that is necessary for any official HDS in-water diving activity, it is able to provide limited information relevant to the safe operation of some older equipment.

The following information is designed to answer some basic questions about air requirements for conventional closed helmets and open circuit, demand type scuba. Traditional helmet diving was done with old style hand pumps that provide a minimum supply of air for divers using them. More modern air compressors are able to deliver an increased air flow. All divers, surface supplied and self contained, should review their source of air to be sure at least a minimum supply is provided for their “at rest” diving.

AIR REQUIREMENTS

This brief report on air supply requirements will include what is needed for helmets used in hard hat diving, and also the air requirements for divers using open circuit, demand-type scuba. Breathing gas requirements for divers using the mixed gas equipment will be discussed in a later report. It will be noted that air supply demands for the various kinds of diving equipment may be radically different. Regardless of the type of equipment used, the amount of oxygen (O₂) required, and the amount of carbon dioxide (CO₂) produced, depends on the physical exertion (the work load) of the diver and their rate of breathing. Depth of dive and environmental conditions will influence work load and will play an important part in breathing gas demands. Whether using helmet gear or scuba, the experience of the divers, and their ability to adjust psychologically to existing conditions, will make significant differences in air requirements.

HELMET AIR SUPPLY

Conventional air supply helmets are basically small diving bells enclosing the diver’s head. The first functional diving helmets were manufactured with an open bottom and were called “open helmets” or “shallow water” helmets. Some of these helmets have been in use for a very long time by research and recreational divers and some are still in use today. Air is exhausted from around the bottom of this type helmet. This original open design evolved into the “closed” watertight helmet and dress outfit around the middle of the last century. In both “open” and “closed” designs, air for the diver to breathe usually enters the helmet through a valve system and is basically a free-flow air supply.

Air containing O₂ is inhaled by the diver. In the metabolic processes CO₂ is produced and exhaled directly back into the helmet. Unless there is an effective flow of air into the helmet and exhausted through the specially designed exhalation valve, or the bottom of an “open helmets”, a harmful buildup of CO₂ may develop.

It is important when planning a dive to assess not only the work load of the diver but all factors possibly contributing to the need for an excess of air. Only then will it be possible to establish the amount of air required for the particular dive.

The minimum air supply requirement for helmet divers is considered to be 1.5 cubic feet per minute per min. (cfm) at depth. This is essentially an “at rest” air requirement for circulation of air within the helmet and to exhaust CO₂. The air supply demand will increase with factors such as work load and other conditions mentioned previously. The maximum air requirement will possibly be at least four times the minimum requirement. It is important that the design of equipment can meet this demand if heavy work may be required or met with during the dive. This includes not only the design of the air supply system (air compressors or other source), but also the air hoses and valve systems involved in the supply of air. Keep in mind that air becomes more dense and requires more pressure to meet the volume required as depth increases. Air supply hoses might require larger diameters to meet this increased demand. This may not become an important factor at the shallow depths reached by recreational helmet divers. Also the strength (safe working pressure) of the hose must be considered with such increases in air needs. There are other require-
ments for a safe diver’s air hose. Primarily this is the hose’s ability to resist kinking that could shut off air supply. Also it should be tough enough to resist cuts and abrasion.

Along with the volume of air, the pressure of the air supply must also increase with depth. In sea water this increase in pressure with depth is .445 pounds per square inch (psi) per foot of depth. Simple formulas exist to determine both pressure and volume required at specific depths of water.

1. Assume you are planning a dive to a depth of 45 feet. This is equal to 1.36 atmospheres of salt water (At. S.W.), or 2.36 atmospheres absolute (At. Ab. S.W.). To find the required minimum air supply use this simple formula:

\[
\text{At. Ab.} = \frac{D + 1}{33} = \text{At. Ab.}
\]

or:

\[
\text{At. Ab.} = \frac{.45 \times 45 + 1}{33} = 2.36.
\]

Where: 
- \(D\) = actual depth of water:
- 33 = feet of water in one atmosphere of pressure.
- 1 = the atmosphere needed to change pressure to absolute pressure in atmospheres.

2. Minimum air required for helmet divers is considered to be 1.5 cfm at depth (pressure) of the dive. At a depth of 45 feet this becomes:

\[
2.36 \times 1.5 = 3.56 \text{ or, say,} 4 \text{ cfm. minimum.}
\]

3. Actual air requirements for helmet divers under considerable work load can be as much as 4 times minimum. The “air requirement factor” can be increased by increasing the minimum requirements by as much as 4 times.

4. Pressure requirement:

Besides an increase in volume with depth an increase in pressure is also required. In helmet diving this is usually equal to pressure at depth plus 40 to 50 pounds (psi). Or,

\[
P = D \times .445 + 40 \text{ to} 60 \text{ psi.}
\]

or,

\[
P = 45 \times .445 = 20 \text{ psi.} + 40 \text{ psi} = 60 \text{ psi at 45 ft.}
\]

5. Required RPM of MK III hand pump:

For example, consider the Mk-III hand pump has a constant of 0.194 and pumps at 80% efficiency. How many RPMs must the pump be cranked to provide for a helmet diver at a depth of 45 FSW?

\[
(D \times 0.194 + 6.4 \times 100) \div 80 = \text{RPM}
\]

or,

\[
45 \times 0.194 + 6.4 \times 100 = 18.9 \text{ say 20 RPM at 45 ft.}
\]

If depth is increased to 66 feet, the RPM requirements increase to 24 RPM. It has been my experience that the maximum RPM that can be sustained by a pump crew is about 30 RPM. With a MK III pump that is 80% efficient, usually the best that can be hoped for, 66 feet is just about maximum depth that air can be supplied with the MK III pump.

"Part II, SCUBA AIR REQUIREMENTS, will appear in the next issue."
Classic Diving

Due to prevailing liability laws the HDSUSA does not conduct any in-water activities. Working Equipment Groups, (WEG’s) consist of divers who actively restore and operate classic and antique diving equipment. The activities of WEG’s are not official HDSUSA functions, and are not functions of our Chapters. This column is provided solely for the interest of our readers.

Members of the Gulf Coast Working Equipment Group (GCWEG) have been selected again to participate in the IN-VINCIBLE Expedition, which is sponsored by the National Underwater and Marine Agency (NUMA). We will be diving in the Gulf of Mexico off Galveston, Texas in search of the Republic of Texas flagship, Invincible, which sank in the Gulf in 1837. NUMA has made great strides in locating the vessel and the GCWEG is proud to be a part of the effort to locate and recover this historically significant wreck. Diving operations will be headed again by John Hoover, Rick Kouns and Pete Petrisky with support by Paul Schenk, Russell Miller and Jimmy Cox. We will be using both surface-supplied and scuba in our search efforts which have been significantly aided by Mr. Jimmy Reynolds of ORE International, Houston, Texas. ORE has made available a sub-bottom profiler, which has enhanced our efforts to locate the wreck. The GCWEG would also like to extend a special thanks to Wayne Gronquist and Bruce Gustafson of NUMA for their continued support in allowing the GCWEG to continue in the search of the Invincible and Dan Wilson, Treasure Cove Diving, Galveston, Texas for his continued support of our efforts.

The GCWEG will be holding dive rallies through the summer and fall. We are happy to report that due to the heavy rains this winter and spring in Texas, our favorite dive locations are back up to snuff, with regard to water levels. Last summer we thought that we would have to repel of the side of the lake to get to the water and/or once there take a shovel to the bottom in order to get some depth. The GCWEG would like to invite any and all HDS members who would like to participate in either the Invincible project or our dive rallies to contact either John Hoover, (512)462-2372 or Paul Schenk (713)486-2157, for more details.

NEWEG Calendar of Events

AUG 30-SEPT 1. Labor Day Working Equipment Rally at Willow Springs Quarry, PA.

For information on the above contact Jim Boyd at P.O. BOX 759, Middleville, NJ 07855, 201-948-5618 or Jim Folk at Scuba Venture in Sinking Spring, PA, 610-678-2688.

OTHER GROUPS


TEXAS, Gulf Coast. Contact Paul Schenk, 3600 Bay Area Boulevard, Houston, TX 77058, Phone (713) 486-8312.

MKV DIVER

The HDS is proud to offer this highly detailed 8" (including base) cold cast bronze statue of a Mark V diver mounted on a hard wood base. It is an original design, individually hand finished by HDS member Agustin Rodriguez. These are available for the introductory member price of $135.00 until August 1st 1997. Orders received after this date will be billed at the non member price of $155.00. The price includes shipping and handling. Allow 6 weeks for delivery.

No sooner had we sent the previous issue to press, than we discovered a reference in our files from The Engineer, October 4, 1889 to Mr. A. E. Stove’s helmet. It seems to have much in common with the unit we featured as “probably Siebe Gorman”. We reproduce the Stove file here for purposes of comparison.

STOVE’S DIVING HELMET. The helmet joint illustrated by the accompanying engravings is made with the object of reducing the time occupied in making the helmet joint, and the number of parts in the helmet. The helmet has only one water-tight joint, which is made with out the use of bolts or nuts. It can be fitted to the diving dress in very much less time than is required to adjust the ordinary helmet to its dress, and has no loose pieces. The breast-plate has a circular metallic ring B forming the upper part or collar of the breast-plate, and having a groove formed therein to receive a fillet or beading on the collar C of the dress. The helmet also has a flange A, which is screw-threaded in section alternate to those on the breast-plate. To secure the helmet to the diving dress it is only necessary to place the breast-plate on the shoulders, draw the collar of the dress through the ring. The beading will then fall into the groove made to receive it, the helmet is then put on and given one sixth of a turn, which hermetically seals the flange on the collar of the dress between the helmet and breast-plate without the use of a single bolt, nut, or brass plate, and without holes in the collar of the dress. The sectional engravings, with Figs. 2 and 3 illustrate different sections. The helmet and dress is made by Mr. A. E. Stove, 11, Queen Victoria Street.

Frank’s Fishermans Supply

1947—1997 50 Years on Fishermans Wharf

A San Francisco Landmark

Nautical Antiques

We have a continually changing inventory of nautical antiques and diving helmets. Our in store display features U S N Mark V’s from 1918 through to WW II and Helium models, Miller Dunn Divinhoods, American commercial helmets and pumps as well as an array of diving accessories and nautical antiques.

We are located on the famous Fisherman’s Wharf and are open every day.
366 Jefferson Street, San Francisco, CA. 94133
(415) 775-1165 or Fax (415)776-6549
Information Wanted

DEEP AIR DIVE. From Historical Diver Issue 10.

E. R. Cross’ request for information on helmet dives in excess of 321 feet on air produced some response.

According to family members, Joe Savoie completed a 325 foot working dive on air for Dick Evans in the Gulf of Mexico in the late 1960’s. A photo of Joe entering the water for this dive is reproduced from the J. Ray McDermott & Co., Inc. Annual Report for the Year Ended March 31, 1970. We hope to acquire supporting documentation for the dive in the near future.

U. K. Contributing Editor Nick Baker submitted an article recording a dive to 344 feet by the Royal Navy in 1930. The dive was part of the trials carried out by the second Deep Diving Committee, and Nick’s article will appear in the next issue.

ALUMINUM FULL FACE MASK.

The three photos above show an aluminum full face mask. There is a threaded hole in the center of the top of the frame above the face plate. There is another threaded hole in the lower right side of the frame below the face plate. The perimeter of mask has a series of holes where some form of contoured face cushion was probably attached. (Similar to early Widolf masks) There is a large adjustable rubber band attached to the left side of the mask that goes around the back of the divers head and attaches to a hook on the right side with a large aluminum eye. Another rubber band is connected to the top of the mask but does not seem to attach to any other part of the mask frame. Does anyone have more information about this mask? Please send all information to the Editors at the Society address.

SEPTEMBER 13, 1997

Dive into History

The Historical Diving Society and
The California State Reserve at Point Lobos
Invite you to spend a fascinating day diving and learning about little known, but very interesting aspects of diving history.

Talks and slide shows by Bonnie Cardone and Bob Kirby.

FOR INFORMATION
Reserve Office — 408-625-2120
HDS Office: 805-963-6610 Days 805-963-4151 Evenings
MOSSBACK

*Historical Diver Dictionary. MOSSBACK (Moss’bak) n.*
A member of the diving community that has been in the water so long that moss has begun to grow on their back. Noted HDSUSA specimens: E. R. Cross and Ben Stone.

Eighty three year old Wade Meeker of Corvallis, Oregon, converted the surplus oxygen regulator (foreground) from Popular Mechanics’ plans in the early 1950’s. He also built the camera housing which he is holding.
Mr. Meeker’s first diving experience was in the Clackamas River at Carver, Oregon, in the 1930’s using a 5 gallon bucket as a helmet. Window sash weights were used as a ballast. It had no air supply, but he could walk across the river underwater before he needed to surface for a bucket full of “fresh air”.
He became seriously interested in diving when he met J.Y. Cousteau and saw the equipment Cousteau’s team was using at the end of WWII.
He was very active in diving in Oregon from 1950 to mid 1970’s. Submitted by Sid Macken.

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**HISTORICAL DIVER** No.11 Spring 1997 27
Book Review

The Infernal Diver


Reviewed by Peter Dick

I think that John Bevan had already guessed that I would buy a copy of THE INFERNAL DIVER. When he handed it to me there was already a note above his signature. “I hope you agree with most of this”. An understatement as, ignoring minor differences over the origin of a certain helmet, I agree with it all.

We are all occasionally guilty of presenting information superficially. It takes a very special motivation to delve deeper, adopt a lateral approach, make associations and pursue interesting paths to their logical conclusion. It can be a very lonely life, not to everyone’s liking. Many frustrations and only occasional euphoria when a connection is made. The result however, can be a journey through a period in diving history which is both informative and, above all, flows coherently.

John Bevan’s work certainly flows coherently and the journey he makes is truly wondrous, through the lives of John and Charles Deane for nearly a century (1796-1884). Readers will identify immediately with their personalities, more so on realising they were brothers at odds with one another. Not that the history of the equipment or events is shaded in any way. It is presented in a bright parallel format understandable to anyone who has heard of the Royal George or the Charge of the Light Brigade in the Crimean War, where John Deane acquired his name - "The Infernal Diver".

The scope of the information available is mind boggling. Knowing the period reasonably well, it would be unfair to say that I did not immediately flick through to identify certain key points. They were all in place and, while one or two queries must be expected in the future, it was impossible to spot them at first reading. The benchmark, is that I immediately began to learn things. The Deanes’ “green belt” for instance, I knew about. I have now seen a picture of it. You can too, on page 102.

Here is both a source book and a pleasure. Even if you have only just taken an interest in the history of diving, do not be put off in any way. If necessary take out a mortgage; at $110.00 the book is far from cheap, but is worth it. Just get hold of it, read it, enjoy it, but, above all, use it. Something tells me that there are going to be many more journeys in the future emanating from THE INFERNAL DIVER.

Peter Dick

This review first appeared in Historical Diving Times #17 and is reproduced by the kind permission of the author and Historical Diving Times.

Peter Dick lives near London, England and has spent several years researching early diving history. Like his friend John Bevan, he is an acknowledged authority on the Deanes and the development of early equipment.

The Infernal Diver

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HISTORICAL DIVER No.11 Spring 1997
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