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The Journal of Diving History

The Official Publication of The Historical Diving Societies of USA, Canada, and Mexico

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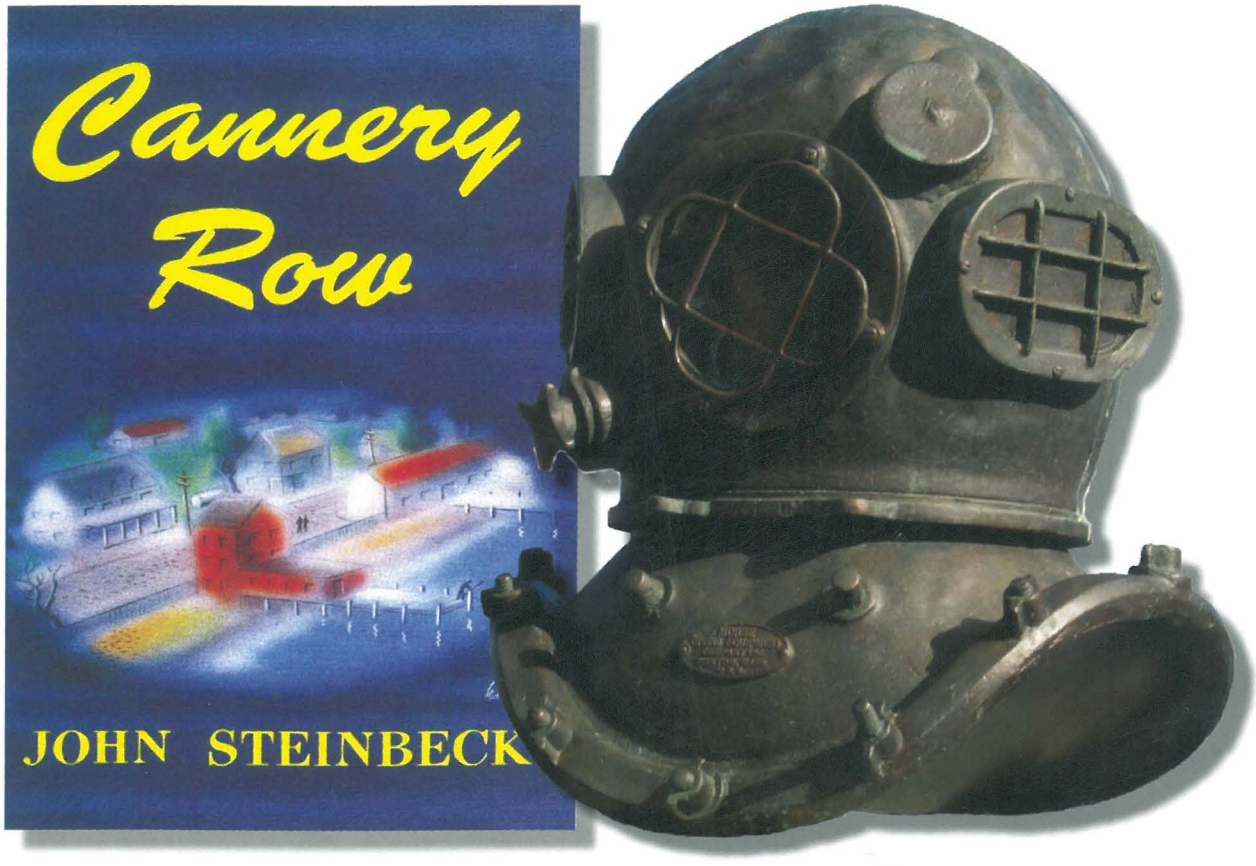

The Divers of John Steinbeck's Cannery Row

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THE JOURNAL OF DIVING HISTORY

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FEATURES

THE DIVERS OF JOHN STEINBECK'S *CANNERY ROW*

BY A.L. "SCRAP" LUNDY.....12

Recognized as one of America's leading authors and cultural figures, John Steinbeck had a strong connection to the sea. His books *The Pearl*, *Cannery Row*, and *Log from the Sea of Cortez* can be found on the shelves of many diving libraries, both in America and overseas. His contributions are internationally recognized by a Pulitzer Prize and a Nobel Prize, among many others. Steinbeck's adventures with Ed Ricketts combine both science and philosophy, while providing a west coast record of marine biology before recreational and scientific scuba divers probed deeper into the shallows of the shoreline. His 1945 *Cannery Row* became one of Steinbeck's most beloved novels, featuring a cast of low-lifes and misfits surviving on the central California coast. In this paper from the Society's 2008 Conference, A.L. "Scrap" Lundy presents the commercial diver's non-fictional story that records their contributions to the construction, expansion, and ultimate success, of the real Cannery Row.

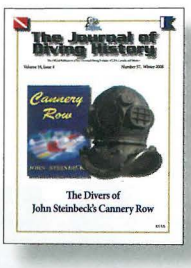
THE MSA REGULATOR

A Trio of Articles Reviewing MSA and CG Regulator Design circa WWII

BY PETER DICK & KEITH GORDON, DIAGRAMS BY BOB CAMPBELL.....19

In 2003 an Italian film crew recovered a cylinder and breathing regulator from a World War II American Sherman tank that had sunk in the Bay of Naples. Their interest in this unknown equipment eventually lead them to the editors of the Society publications in UK and USA. The editor's requests for information eventually yielded responses from Keith Gordon in New Zealand and also the late Reece Discombe in Vanuatu. And thus another chapter of international detective work into diving history began. The information supplied by Keith and Reece was reviewed and presented by Peter Dick, editor of the UK's *Historical Diving Times*. To give further perspective Peter added information on the WWII development of Cousteau and Gagnan's 1943 regulator. To expand this latest chapter of regulator research even further, UK scuba historian Bob Campbell provided supporting diagrams for the MSA.

CONTENTS



ON THE COVER

The cover of a First Edition of John Steinbeck's 1945 novel, *Cannery Row*, is shown with the full-size cast bronze helmet featured at the recently unveiled Cannery Row Divers monument. The monument was erected as a joint project of The Cannery Row Foundation and the Historical Diving Society and is located at San Carlos Beach, Monterey, California. *Monument photo ©2008 The History Company/ Michael Hemp.*

EDITORIAL

AND ANOTHER ONE BITES THE DUST!

The envelope in the days pile of mail looked like it contained the usual magazine subscription renewal letter. No big deal. The HDS has mailed out thousands of similar ones to divers like you over the years. But this one was different. When I opened it I was saddened to read that *Fathoms* magazine had decided to cease publication. *Undercurrents* would fill the remainder of my subscription obligation. But *Fathoms* gone! "Oh (expletive deleted)!!!!"

I loved *Fathoms*. For me it was the natural successor to *OCEANS*, which was as close as I had seen an American dive magazine come to being an underwater *National Geographic*. I looked up to *Fathoms* as an example of what could currently be achieved by a dive magazine with the right leadership and vision. Co publisher Brett Gilliam got it right from the beginning, and the mix of outstanding photography blended with travel, adventure, and articles by, and interviews with, legendary Mossback's, was pure pleasure. Plus they kept the adverts at a respectable distance using them as bookends for the uninterrupted content to nestle between. When David Fishman took it over, with Ethan Gordon as editor, they maintained that lay out. But now alas it is gone, to join countless other national and regional American diving publications that have become extinct over the years.

In these changing times, with America's economy sinking from recession to perhaps depression, the publishing business as we know it is not yet extinct, but it is certainly an Endangered Species. As more people turn to their lap top computers for the daily on-line news, several national daily newspapers are starting to circle the drain. Most of the diving print press is already down it, another recent victim being *Scuba Diving* magazine. In the big American picture we divers are left with *Sports Diver*, *Dive Training*, and the technical group's *Advanced Diver*, although the new *Diving Adventure* has recently entered the fray. Both PADI and DAN have their member benefit magazines, and the Association of Diving Contractors International has *UnderWater* magazine. And then there is us. The Little Engine that could. In 40 plus countries.

In 2009 we will enter our 17th year of publication. Our membership base includes several divers who collect diving magazines. And yes, they collect EVERY dive magazine from EVERY country. I recall a recent inventory listing from one of them that showed thousands and thousands of different issues. Some time ago one of the Society collectors estimated that, according to his calculations, the HDS publication had made it into the top 5% of the most successful American national dive publications, because it was consistently printed and still in operation. And we intend to stay that way.

The one thing that differentiates the HDS *Journal* from most other diving publications is that we are archived by numerous state and national institutions as part of their educational mission. Like our members, they depend on us for their flow of accurate diving history.

And that accurate history is 100% of our continuing story.

–Leslie Leaney, Publisher

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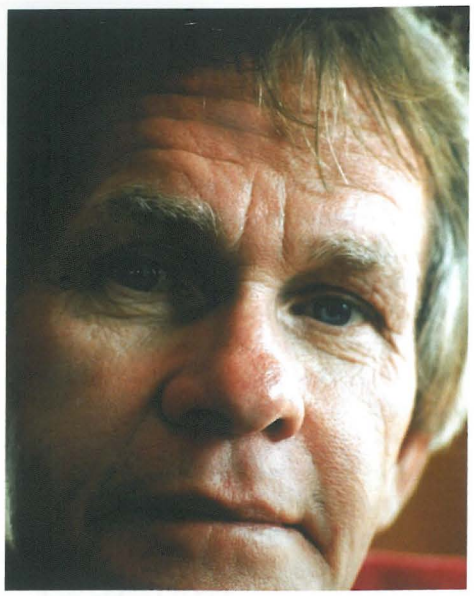
CONTRIBUTIONS: WE WELCOME CONTRIBUTIONS on any historical diving subject. Submissions can be made via e-mail (preferred) to hds@hds.org. Please send a typed hard copy in addition to any disk. Typed manuscripts are also welcome. Illustrations accompanying text are appreciated. Submissions should be sent to: Editor, Historical Diver, PO BOX 2837, Santa Maria, CA 93457, USA. Photos should be only high-resolution (300 DPI) JPG, TIF, PDF, or EPS files. Do not send photos copied from the Internet or printed on plain paper from your printer.

Bob Hollis Joins HDS USA Advisory Board



The Society is pleased to announce the appointment of Bob Hollis to the Advisory Board. Bob has previously served as President of the Society, and also served as President of DEMA.

Bob's career stretches back many decades. In 1956 he bought a two hose regulator and began scuba diving and became friends with three underwater photographers. At that time this was a brand new art and they made their own camera housings. Bob made a housing for his camera using Plexiglass.

When the first electronic strobes came out in 1958, he made underwater housings for them as well. In 1966 he opened a sporting goods, surfing, diving, and fishing store called the Anchor Shack, in Hayward, California. The store also sold a mail order line of Anchor Shack underwater photography equipment. These products were all hand-made and included a camera tray and ball joint arms, along with strobe and camera housings. One of the most successful products was an aluminum housing for Nikon and Canon cameras known as the Hydro 35.

Bob founded Oceanic in 1972, using the Anchor Shack photo line as its product base. Two years later the company's building burned down. When it was being rebuilt in 1974 Bob bought out his partner and purchased machinery and tooling for a plastic housing that could be used for several products. Bob added products to the Oceanic line. There were lights, lenses, carrying cases, a light-meter, camera and strobe housings, extension tubes and framers.

In 1976, Oceanic bought Farallon. That added fins, masks, snorkels, diver propulsion vehicles, knives, BCs and gauges, to the product line. Bob always knew the future of diving would be in electronics and in 1989 introduced the first Oceanic dive computers. Since then Oceanic has become known for leading the market with it's line of dive computers.

In recent years Bob has developed a resort and live-aboard in Papua New Guinea, and launched his Hollis line of equipment. His career achievements are recognized by the DEMA Reaching Out Award, NOGI Award, and induction into the International Scuba Diving Hall of Fame. Bob's contributions to diving have made exploring the oceans safer and more enjoyable for millions worldwide. More details of his career can be found in Bret Gilliam's book, *Diving Pioneers & Innovators*, available from the HDS Book Store.

Society Director Lee Selisky presents the 2008 Nick Icorn Diving Heritage Award to Lori Sikes and Dan Johnson at DEMA 2008.

HDS 2008 NICK ICORN DIVING HERITAGE AWARD

The Lockwood Pioneer Scuba Diving Museum Loves Park, Illinois

The Board of Directors is pleased to announce that the HDS 2008 Nick Icorn Diving Hertitage Award has been presented to the Lockwood Pioneer Scuba Diving Museum, of Loves Park, Illinois. In announcing the award the Board noted the tremendous efforts expended by Captain Dan Johnson in establishing the museum, and building its portable displays that travel to different events. The 2007 HDS Conference in Tarpon Springs was one of them.

The museum is named in honor of James Lockwood, who built scuba equipment in the late 1930s. Lockwood was born in Racine, Wisconsin and moved to Rockford as a young man. He was one of the early pioneers of the sport, building his own rebreathers in 1938. He developed an underwater camera housing that was used in the Tarzan movies of the 1930s and developed underwater props for the film, *20,000 Leagues Under the Sea*.

In 1937, Lockwood became friends with well-known diver Max G. Nohl, who set a record of 420 feet in 1937 for deepest dive made in a diving suit. Lockwood and Nohl worked on numerous projects with diving buddies and fellow pioneers Ivan Vestrem and Jack Browne, exploring shipwrecks in the Great Lakes. He also ran the submarine, *Peto* (the first submarine built in the Great Lakes), down the Mississippi River to the Gulf of Mexico on its way to Australia during World War II. Lockwood then set up a shop in Chicago to experiment on military rebreathers. After the war, he traveled extensively and worked with many professionals in the scuba diving world. He died in 2003 at age 92.

The mission of Lockwood Pioneer Scuba Diving Museum is to educate the public on the evolution of diving, as well as to teach about the history and future of the sport. The museum also emphasizes how saving the Earth, its oceans and waterways through marine conservation will benefit future generations.

For more information go to www.LockwoodMuseum.com.

ZALE PARRY TO BE HONORED AT BENEATH THE SEA SHOW

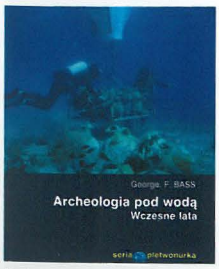
Society Advisory Board member Zale Parry will be honored as this year's Legend of the Sea of the Beneath The Sea show in Secaucus, New Jersey, on Friday, March 27, 2009. The event is co-sponsored by Beneath The Sea and the Historical Diving Society and features a private Champagne Reception in the Derby Room at the

Guests at Beneath the Sea will get an opportunity to meet Zale Parry.

Sheraton Meadowlands, where guests will get to meet Zale and mingle with other legendary diving figures. Tickets are $250 each. A set of four tickets buys a sponsorship and use of an organization's logo on all Legend of the Sea material. The admission price also includes admittance to the Meet the Fish n' Famous buffet dinner, cocktail party, and silent auction, which immediately follows. Former Legend honorees include Hans and Lotte Hass, Stan Waterman, and Sylvia Earle. For more information and for tickets contact Media House at 212-876-2639 or mediahouse@att.net. *Posted on www.hds.org/bulletins 02/08/09.*

EARLY GEORGE BASS BOOK PUBLISHED IN POLAND

Society Advisory Board member, Dr. George Bass, recently visited Poland as the guest of Karina Kowalska, who had translated his first book, *Archaeology Under Water*, into Polish. Although the book was originally published in 1966, Karina explains in a note that she chose it because it gives accounts of the early days of underwater archaeology. Karina is also the founder and curator of the Museum of Diving in Warsaw, and Dr. Bass spent several hours at the museum, as had Clive Cussler some time earlier. During his visit Dr. Bass also lectured at the Universities of Warsaw, Krakow, and Torun.



CREATURE FEATURE

The Society received a few emails regarding the obituary of Ben Chapman, The Gill Man, from *Creature From The Black Lagoon*. Several members had met Ben, and through the marvels of more recent technology, the internet provides an opportunity to see a brief interview with him in his later years. Ed LaRochellle guided us to www.youtube.com/watch?v=-IXP6Qj_4-w which features Ben and also some clips from the movie.

Ben Chapman as the Creature.

SEALAB REUNION 2009

The 40th SEALAB III Reunion will be held in San Diego, California on April 17-19, 2009. There will be a reunion of the people involved with SEALAB III and people who made up the whole SEALAB program, since the last project could never have occurred without the help and leadership of those who paved the way before. While the details are still being worked out, the reunion will be held at the Holiday Inn Bayside, San Diego. There will be a hospitality suite, dinner, speakers, and a great opportunity to tell those sea stories once again! Of course, many of the guys who were in those sea stories will be there to make sure they are really true! And, of course there will be a remembrance of those shipmates who have died over the course of years since the SEALAB program was created. More information will be available as the details are worked out. For now, mark your calendar and start saving your dollars to make this special get together! If you have any questions, please contact Jim Osborn at josborn846@aol.com, or Bob Bornholdt, bornhlt@aol.com. *Posted on www.hds.org/bulletins 10/8/08*

CALIFORNIA WRECK DIVERS ANNUAL BANQUET

The California Wreck Divers will host their 38th Annual Banquet at the Hacienda Hotel, El Segundo, California, at 5pm on March 7th. The guest speaker is Pat Clyne, who was executive Vice President of all the various Mel Fisher Enterprises. Pat was involved with the *Atocha* and *Margarita* recovery projects over a period for 35 years, and was chief videographer for all Mel Fisher's expeditions. For tickets and information log on to www.cawreckdivers.org. *Posted on www.hds.org/bulletins 02/08/09*

SHIP BOUGHT AT AUCTION TO BECOME WORLD'S SECOND LARGEST ARTIFICIAL REEF

The final fate of the USS *Hoyt S. Vandenberg* was determined in late 2008 when the 524-foot former navy vessel was bought by The First State Bank of the Florida Keys for $1.35 million at a federal auction in Virginia. The sale has cleared the way for the final preparatory work to be completed to bring the former World War II-era missile tracking ship to the Florida Keys, where it will be sunk six miles off the coast of Key West in early 2009. This will make the USS *Vandenberg* the second largest artificial reef in the world.

"DEMA is delighted to learn of the purchase of the *Vandenberg* and congratulates the city of Key West and the First State Bank of the Florida Keys for their perseverance in making the 12-year artificial reef project a reality," stated Tom Ingram, Executive Director of the Diving Equipment & Marketing Association. "We could not be more excited about the positive benefits the sinking of the USS *Vandenberg* will provide to the local Florida economy including the local dive retailers, charter operators and others in the scuba diving industry, as well as nearby

restaurants, hotels and others. The Florida Ships 2 Reefs legislation, enacted in 2008 with the assistance of DEMA and PADI, was designed specifically to accomplish this kind of development for local economies. According to a recent study by NOAA, the Vandenberg Artificial Reef is estimated to bring in an additional $6.2 million in annual revenues and a half-million dollars in annual sales taxes," Ingram concluded.

ADCI WESTERN CHAPTER MEETING

The ADCI Western Chapter will hold its 2009 conference on June 12, 2009 at the Marriott Portland Downtown Waterfront Hotel, in Portland, Oregon. All professional divers and HDS members are welcome. For further details, contact 281-893-8388.

ED LAROCHELLE JOINS HDS EDITORIAL COMMITTEE

Ed LaRochelle, who oversees our Scuba Auction column, recently joined the *Journal of Diving History*'s Editorial Committee as the Recreational Scuba Diving representative. His article on the Scott Hydro Pak was well-received, and in this issue he visits the introduction of AGA's Divator system into America. A bio of Ed's career can be found on page 8 of issue 56 of the *Journal*. We look forward to more historical scuba discoveries with Ed.

KNIGHTLY CONNECTIONS AND NORTHERN MONSTERS

I recently received the new *Journal of Diving History*, Number 56, Summer 2008, and I am in absolute agreement with all the those whose letters which are printed in the Mail section, including Stan Waterman, and also those HDS bibliophiles quoted whom I know so well: Phil Nuytten, Reg Valentine, and Peter Dick. I'm sure Bernard Eaton at *DIVER* will be envious of what you are doing.

This particular edition of the *Journal* fascinates me, as it is very well-written and beautifully illustrated, and I have a personal connection with five of the articles.

I remember the filming of Hans and Lotte in the Red Sea in 1950. They were using self-contained oxygen systems, as were Royal Navy divers. I had designed and built my own self-contained compressed-air breathing set when I was doing my National Service with the aircraft carrier *HMS Triumph* in Malta, and taught myself to dive. I was going much deeper than Hans and Lotte, but there were no sharks there. Lotte was a stunning beauty as your illustrations show. I got to know them both many years later when attending an Explorers Club Annual Dinner (ECAD) and I have met them at all the ECADs I have attended since. They are a wonderful pair.

The Pechters I have known for many years and I was sorry to learn of Mort's passing. They have photographed me many times and I have a photograph of them that I took with their camera at DEMA 99.

As for the patents article on 'Finch: Under Water Telephone,' I was at the US Naval Medical Research Institute 1967-70 with James Vorosmarti, who wrote that article, and have kept in touch with him ever since. I have a delightful photograph of him and me when he was my Commanding Officer!

It was good to see photos of my good friend, Sylvia Earle, who visited UK recently. My nephew collected her in Bristol where she was attending a conference and brought her back here to Dartmoor. I her took across the moor to the Warren House Inn for lunch. She and Graham Hawkes were Chief Executives of Deep Ocean Technology, of which I was Chairman of the Board. We have dived together many times and she gets me to the ECADs. While at Deep Ocean Technology I became the third person to drive and dive the Deep Rover, which gets a mention in the HDS Canada column of the *Journal*. And that brings me to another connection.

It was during the three years that I was attached to the NMRI that I went to a meeting in Canada, where I stayed with friends in their Ritz apartment. I was a keen fisherman, as they were, and it was on a Saturday that my host told us that he had learned of a lake which was full of fish but never fished – because there was a legend of a Lake Monster, Ogopogo, which kept fishermen away.

There were four of us. The girls were given pink tickets to go shopping and enjoy themselves, while we loaded a boat onto the roof of his car and drove to the Lake Okanosan. As we were unloading the boat by the lake side, a Red Indian suddenly appeared and said " Lake taboo! Ogopogo there!" I said, "We make Barbeque, make Ogopogo burgers," got into the boat, shoved off and started the outboard motor and drove to a creek, into which the breeze was blowing. The water was crystal clear, about 15ft deep, and there were bass and other fish, who's names I have forgotten, and large carnivorous fish (pike?), patrolling up and down, taking no notice of one another. We cast our various spinners and plugs and reeled them in. But the fish just moved out of their way. It was weird.

I was sitting in the stern of the boat, and then as I swung my plug over the starboard side to prepare it for another cast I saw three black humps moving through the water and leaving a wake behind them!

I was shattered!

Our leader said, "Come on John, what's the matter?" I pointed and he said "God!" The other two in the boat were equally shocked. I drove the boat back as fast as I could to where we left the car. We hauled the boat out and started lifting it onto the car, when one of them said "God, maybe it can come on land!" We drove off as fast as we could. No one said a word as we hurried back. We got into the apartment and drank gin and lime, too shocked to say a word. Then the girls came back. "What are you doing here? You said you'd be fishing all day." And then they ran through the apartment expecting to find girls there, in the cupboards, or under the beds.

Arthur C. Clarke, a fascinating author and friend of mine, who died recently, describes the Ogopogo and other lake monsters in his book, *Arthur C. Clarke's A-Z of Mysteries from Atlantis to Zombies*. There are fascinating accounts of the Ogopogo and the Loch Ness Monster. I have been to Loch Ness many times, have fished and dived there and never seen any traces of the monster. But I've met people in that area who have seen a monster, in the lake and ON SHORE!

In Scotland there is another monster in Loch Moran. And I met a ghillie who was shocked by seeing another monster in Loch Oich. He would never go back to that Loch again.

Personally, I think the lake monsters are in the same category as the Beast of Dartmoor and that of Exmoor. But there has never been a dead one. People certainly see those creatures, and I have talked to some of them. But I describe them as "Two-Dimensional," like photographs.

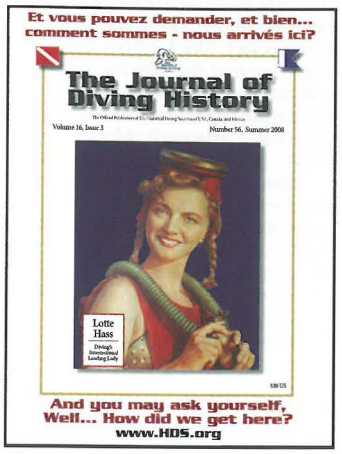
All the best to the Society and my many friends in the American diving world.

(Surgeon Vice Admiral, Sir) John Rawlins
Devon, England

Ed. – Amongst his many public service hats, Sir John is President of the HDS in UK and a member of the Society Advisory Board.

LOTTE HASS

I just received the HDS *Journal of Diving History* and I am



overwhelmed. The layout of the Lotte article is superb ... no ... fantastic! I am sure Lotte will be proud and glad. Thank you so much!!!

All the best!
Michael Jung
Hans Hass Institute
Germany

Ed. – Michael wrote the Lotte article but as we were behind schedule we

never sent him any proofs for approval. All credit goes to Daron.

I have enjoyed the *Historical Diver Magazine* since #13 (Fall 1997) with the photo of Jacques Yves Cousteau on the cover. I look forward to each magazine and the first issue of the new *Journal of Diving History*, #55, was great. But when I received issue # 56 I was really blown away. WOW! WOW! WOW!

Lotte Hass as the cover girl was wonderful. I didn't know half the things she had accomplished until I had read the article. I met her briefly in September 1998 in Santa Barbara at the HDS-Santa Barbara Underwater Film Festival honoring Hans and Lotte. She is a lovely woman.

Following Lotte I find an article about sea urchins in California. I knew about the ab divers, and knew some were diving for urchins, but didn't realize it was such a big business.

I tried my first sea urchin roe on Cannery Row in Monterey in 1965. I was scuba diving off the beach with friends and after we were finished with our dives we opened a couple of bottles of wine to wash out the salt water from our mouths. We got to talking with a couple of divers who were next to us on the beach, and were from France, and we offered to share our wine. Out of their backpack came a loaf of French bread. Out of their goodie bag came a couple of urchins, and after tearing up the French bread they opened the urchins and gave us each a taste of sea urchin roe. I'm sure it is an acquired taste, but I can say I've tried it!

Keep up the good work and I am looking forward to your next *Journal of Diving History*.
Best Regards
Jack C. Stewart
Santa Clarita, California

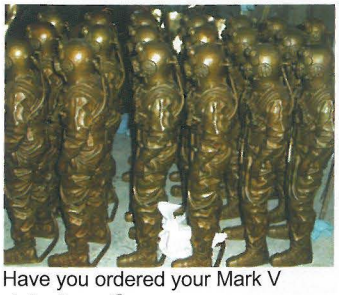
LUIGI FERRARO

I am pleased to inform you I have made an internet site dedicated to the memory of my father (www.luigiferraro.it). During his long life he has made so much for his country and for the diving activity that I think he deserved at least a tribute like this. I am sure your members would be interested to have a look at it.
My best regards,
Paolo Ferraro
Genova
Italy
Ed. – Paolo was also the former President of Technisub. His father, Luigi Ferraro, was awarded the HDS Historical Diver Magazine Pioneer Award in 2002, which Paolo received on his behalf at the Combined Industry Awards Gala in Las Vegas in 2002

USN MARK V STATUE UPDATE

Most of you know that two or three years ago a handful of us USN divers decided that we should build a bronze statue to honor graduates of all Navy Dive Schools, past, present, and future.

In the beginning we thought it should go to the Gun Factory in Washington, but that idea was full of holes. We then decided that this 10 foot tall statue of a dressed out Mark V diver would look good in front of the current Navy Diving school here in Panama City, known as NDSTC.


Have you ordered your Mark V statuette yet?

Donations to build this statue didn't roll in as fast as we had hoped so we had an exact replica designed, built and made available to sell. Half the proceeds would go toward building the big one. It took a year or so to get the details of the statuette designed like we wanted it to be, there was a lot of arguing, a lot more disagreements, some cussing but eventually the details were accepted and the statuettes started to be built. There are still a few of us who aren't talking to each other over all this but eventually things will be back to normal.

The statuettes stand about 21 inches tall, weigh just under 40 pounds, and are something to be proud of. The cost of $2,000 will make you even prouder.

Keep in mind that we are only making 300 of these things, and the sale of those 300 will pay for the eventual building and installation of the 10 footer in front of NDSTC. The cost of this statuette covers shipping in the U.S.

We are well aware that some of you are not able to spend $2K on a statuette. What we hope for is that you will get this information out to those who might want one. Nobody has one address book for all those out there so maybe between us all we can get the word out that these Mark V statuettes are here.

Please help us get the word out to the many divers in this country, as we have a long way to go and your help is important. Dave Sullivan and I are just two of several on the committee, and we will be your points of contact.

Your order for a statuette would be warmly accepted. Your help in spreading the word would be even better. We are building the list for batch number two as we speak.

The purpose of this whole effort is to sell these statuettes and build a 10-foot replica to be placed in front of the diving school. That is all. It will take every one of us working in one capacity or the other to get it done.

Please join us by forwarding this email to a diver. It wouldn't make any of us mad if you ordered your own statuette either.
Bob Barth,
bob.barth@mchsi.com
850-785-6249

Dave Sullivan,
george.sullivan@navy.mil
850-234-4162

As many of our readers may know, brass statuettes of a Mark V diver are being sold to provide money to erect an 10 ft. statue in front of the U.S. Navy Diving School in Panama City Florida. I have just received my personal statuette and I wanted to let everyone know that this is an beautiful, highly detailed, and ultra fine model and sculpture. Any diver would be proud to have one of these for their own. You can get more information about them at www.markvmonument.org.
Best wishes,
Jim Vorosmarti
Rockville, Maryland

UNDERWATER REPAIR INFORMATION WANTED

I am a volunteer at the Pump House Steam Museum, Ontario, Canada, formerly the Kingston Water Works from 1848 and 1896. We recently received underwater photos and video of the historic water intake pipe at the PHSM, which extends about 2,400 feet from shore and terminates at a large wooden crib. There are references to the inspection and repair of the suction pipe by divers. The repair at one time existed of pouring concrete sleeves around the flanges that connect two pipes.

I am wondering of any HDS members can assist with the following questions:

1. Any idea how the repairs might have been done?
2. Were there commercial diving companies at that time in Kingston or did they come from elsewhere?
3. Would the divers have the equipment, such as a hard-hat and an hand driven air pump with a hose from ashore?
4. How long could they work under water and could they do steel pipe repairs?
5. What sort of tools and and methods would they use?

6. How much might a diver have earned per hour of diving time and preparation?

I hope your readers might be able to give some answers or educated guesses about the above, and point me in the right direction for photos, articles, tools and equipment. We will be more than willing to keep you posted if you wish, and if we may ask for some comments later on about what we have found out. That would be much appreciated too.

Henk Wevers,
wevers@me.queensu.ca
Fax and phone 613-546-4154
http://me.queensu.ca/people/wevers and http://www.cityofkingston.ca/residents/recreation/museums/pumphouse/index.asp

Ed. – If you can assist Henk, please contact him directly.

JACQUES PICCARD

First of all I want to congratulate to you and all the HDS's stuff for the latest issue of *The Journal of Diving History*, Volume 16, issue 3. In my opinion is the best issue and full of interesting articles and I look forward to read the next issue. Congratulations.

Second, I have sad news. Probably you already heard the news that Jacques Piccard, the great scientist and underwater explorer who plunged deeper beneath the ocean than any other man, died in November. He was 86. Jacques Mayol introduced me to him at the time Piccard wrote the introduction to his book, *Homo Delphinus. The Dolphin within Man*, that we published in 2000.

I would suggest to include an article about Piccard and his underwater achievements in next issue of your *Journal*. What a great man. In 1960, he and U.S. Navy Lt. Don Walsh took the bathyscaphe named *Trieste* into the Pacific's Mariana Trench and dove to a depth of 35,800 feet - nearly seven miles (11 kilometers) below sea level.

Regards
Maurizio Candotti Russo
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www.idelson-gnocchi.com

Ed. – An obituary for Jacques Piccard appears on page 50 of this issue.

STAN AND SCOTT IN '55

After reading Ed LaRochelle's piece in the Vintage Scuba section of the last *JDH*, I am enclosing a picture that was sent to me by a client who chartered my boat and services in the Bahamas when I was a charter boat man for diving there in 1955. I recognize the Scott Air Pack, which was designed for fire fighters and briefly competed with

Stan Waterman in Scott Air Pack rig.

the Aqualung. I had one on my boat for the occasional guest who was claustrophobic when limited to mouth breathing. Note the single 1lb lead weights and absence of a B.C. in the photo.

Go well,
Stan Waterman
Lawrenceville, New Jersey

COMMERCIAL DIVING IN CANADA

I have had an old Siebe Gorman diving helmet in my possession for about 47 years. When I was a young man in my late teens I was hired by a diving company to work as a divers tender – a rather exciting occupation .

The name of the company was Island Divers Services located here in Nanaimo, British Columbia, Canada. The owners of the company were two brothers, Alex and Laurie McCracken, both divers. They also employed two other professional divers, Jack Sampson and Sonny Hodgson.

The company would be called upon to perform diving operations up and down the coast of British Columbia, sometimes salvaging a sunken vessel, or attending numerous marine accidents including diving tasks for the Royal Canadian Mounted Police.

As time progressed the R.C.M.P called upon the McCracken Brothers to train officers so they could be better prepared to fulfill the many police investigations and searches.

I had initially shown an interest in starting a career as a diver, which introduced me to the class of police divers being trained. It was fascinating to complete the course with them. I had shown such enthusiasm and interest the McCrackens decided to hire me as an on call tender, and to eventually become a professional diver.

Generally we would travel to large pulp mills and also to operations to retrieve a lost piece of equipment or clear the area at the base of the ladder. The ladder is the structure that carries the raw logs up and into the main pulp mill or sawmill.

We would also gather lost log bundling wires and large boom chains which had fallen into the ocean. I believe the company was paid ten dollars for each wire and fifteen dollars for each boom chain we retrieved. My duties required that I coil the wires, that were each about twenty feet long, then lay out the heavy chains. A count would then be completed, and it wasn't unusual to obtain 30 to 40 of each. The money for these would be paid to the diving company along with the flat day rate, so a fairly lucrative day could be realized .

The divers were never permitted to work longer than six hour due to regulations, and quite often the hours of work would be significantly reduced if a problem arose or the diver felt operations were not developing safely. The water was so dirty with the bottom silt that these dives would be carried out with zero visibility, and the work was all by feel. A normal day would generally show a count of 50 to 100 "sinkers," which was the name for water-logged logs. As the diver's tender I was responsible for safety that could be provided from the float.

On one memorable work day our diver was down fastening sinkers while a large boom boat was pushing logs in a neighboring boom. Unknown to us his push had started a progression of underwater sunken logs which came into to our dive area. All of a sudden our divers upper body came out of the water and he was screaming as the movement of the logs was crushing and trapping one of his legs. I will never forget his hollering as he came out and disappeared below the surface. Then he rose again just barely able to bend his head back to enable him to catch his breath. I immediately realized what was happening and ran out on the floats and booms waving the tug boat to back off, which he quickly did. I returned to the dive site got into the water standing on the submerged logs and held the divers head up to ensure breathing.

We were puzzled as to what we could do. We were unable to see below the surface and gauge the degree of his dilemma. The mill boom men were also stunned. However, one of them started prodding with his pike pole to see if he could loosen the log jam. The diver was calling out in extreme pain and almost passing out as I held his head above the surface.

Recalling the situation now, I was also frightened that I too might be swallowed up by the shifting logs. While the other boom men were prodding away and emergency help summoned, the cries of the diver continued.

Then the pike of one of the boom crew seemed to be wedged in the logs. To free it he gave it a mighty pull. But the pike had in fact penetrated the trapped divers right leg just above his knee. The diver was in such agony that this was not noticed until we eventually pulled him out and and his leg was a field of blood. We were able to lift him to safety and send him off to the hospital. I remained and collected and packed the dive gear. Eventually the diver recovered and was fine after local surgery, but what a fright. Safety procedures were initiated to prevent this from happening again.

On the lighter side my duties included laying out the equipment, powdering the wet suits, loading the dive truck or water borne C B company plane, assisting with transporting, and suiting the divers on their arrival. The divers were mainly responsible for their equipment, regulators and wet suits, but we worked as a team. Everything was duffle bagged and loaded. Amusing as it may seem one of my task was to reach down to the diver in the water as he held onto the float and dry his index and middle finger, light a cigarette, and hand it to him. Although distasteful for me, as I did not smoke, I certainly didn't complain. This break usually took place when the diver required that I release and remove his tanks enabling him to stay in the water. How things have changed.

Back at the shop the owners decided to throw out a lot of old bits and pieces of equipment and materials which had accumulated over the years and were taking up space. The clean up commenced and the pickup truck was loaded.

From the shop I saw a metal object to be hauled away. I took a closer look at it and discovered it was a copper and brass Siebe Gorman diving helmet. I asked if I could have it and they said "Put it in your car trunk or it's off to the dump." I took it and gave in the nickname Igor.

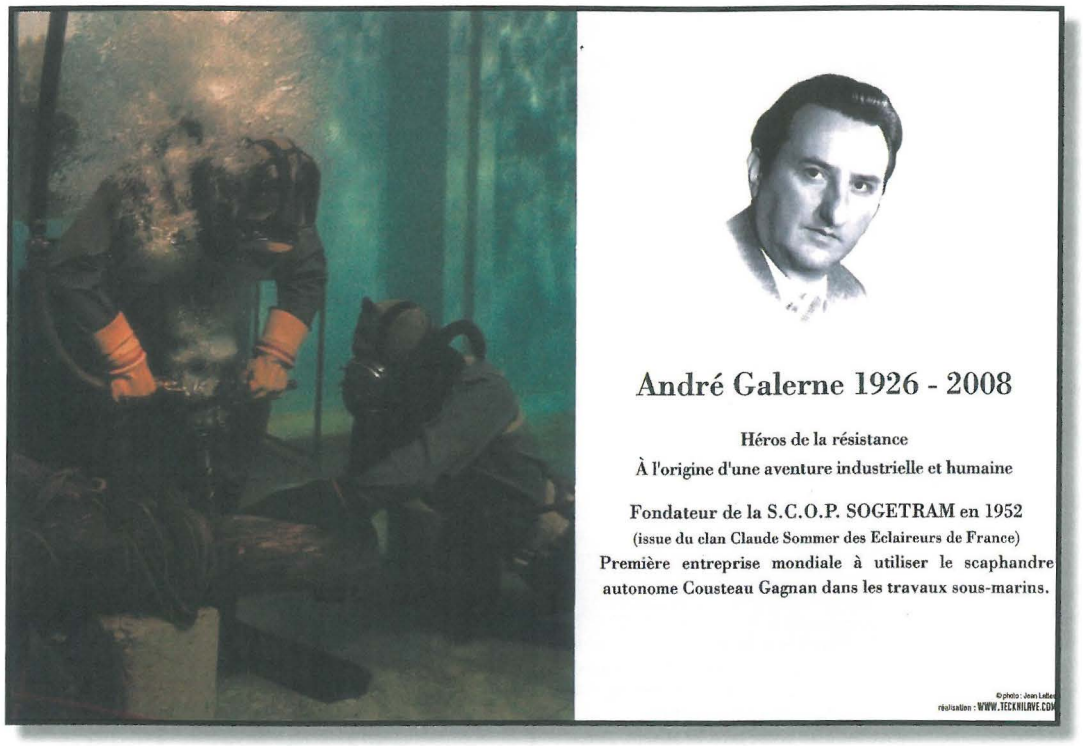
I was eighteen then. I am now sixty-five. I've had a lot of ups and downs in my life but always kept Igor with me. I certainly wish I could find a face port glass to complete the helmet.

By the way I decided to walk away from a career of diving as one of the divers I worked with was down one hundred and thirty feet and lost his weight belt. He rocketed to the surface, suffered the bends, and even with quick action to the decompression chamber he suffered paralysis in his lower body, never to walk again. I was not on duty that day as the tender, but his injury had a tremendous impact on me as we worked together so much. I continued as a sports diver for a number of years and experienced a lot of fascinating times. And Igor still occupies a prominent position in my living room.

Larry Allen
Nanaimo, British Columbia, Canada

Ed. – For more history on west coast Canadian divers read Historic Divers of British Columbia, by A.C. Fred Roberts, available from the HDS book store (www.hds.org).

Honoring André Galerne



Commemorative Plaque Dedicated in Marseille

André Galerne
Héros de la Résistance, Chevalier de la Légion d' Honneur
Précurseur et pionnier de la plongée professionnelle,
fondateur de la Sogétram

All photographs courtesy G. Koskas. ©2008 HDS France

On a sunny November morning in Marseille, several HDS members from America, Australia, Spain, and France, joined U.S. Consul Barbara Bartsch-Allen and a large contingent of senior French divers and their families to honor the memory of the great French diver, André Galerne, who passed away in 2008.

Galerne's contribution to advancements in diving and service to his country of birth were recognized by the unveiling of a commemorative plaque in Institut National de Plongeé Professionelle (INPP).

The ceremony was held on November 7, 2008. It was organized by INPP and Scaph 50, and specifically scheduled to coincide with a visit by several international diving historians. A recipient of France's Legion of Honor for his work with the Resistance in WWII, Galerne was also a U.S. citizen, and his contributions to his adopted country were recognized by the representative of the Consulate General of the United States of America, Consul Barbara Bartsch-Allen.

INPP Director, Captain (Rtd) Paul Gavarry lead the proceedings, which included tributes from Consul Bartsch -Allen, COMEX President Henri Delauze, INPP President René Olmeta, Scaph 50 President Bernard Cabrejas, FFESSM President Roland Blanc, Marseille districts 6 and 8 official representative Dominque Tian, and HDS-USA President Leslie Leaney, whose tribute was translated by the Society's French Representative Philippe Rousseau.

A prior commitment meant HDS France President Georges Koskas was unable to attend. Georges, who sent his regrets, had played an important role in organizing the visit by overseas HDS members. Among the notable guests were Jean-Luc Fiorina, President of the Musée Frédéric Dumas, Patrick Ponnot, Vice President of HDS France, HDS Advisory Board member Daniel Mercier, and Commandant Phillipe Tailliez's grandson, Félix. Numerous former Sogetram, COMEX, and military divers who were associated with Galerne's international career also attended.

A catered reception followed the ceremony and the foreign visitors were pleasantly surprised when INPP presented each of them with a copy of the exceptional French diving history book, *Une Histoire de la Plongée*, researched and written by Alain Foret and Pierre Martin - Razi. These gifts were made even more memorable by having both authors, who attended the ceremony, inscribe each book.

Accounts of some of André Galerne's career can be found in Chris Swann's book, *The History of Oilfield Diving*, which is available from the HDS Book Store (hds.org). His obituary appeared in *The Journal of Diving History*, issue # 55.

–Staff Report

(Left) American Consul Barbara Bartsch-Allen with American HDS members Sid Macken, Mark Howell, Leslie Leaney, Lee Selisky and Charlie Orr.

(Right) Paul Gavarry, René Olmeta, Henri Delauze, and Dominique Tian.

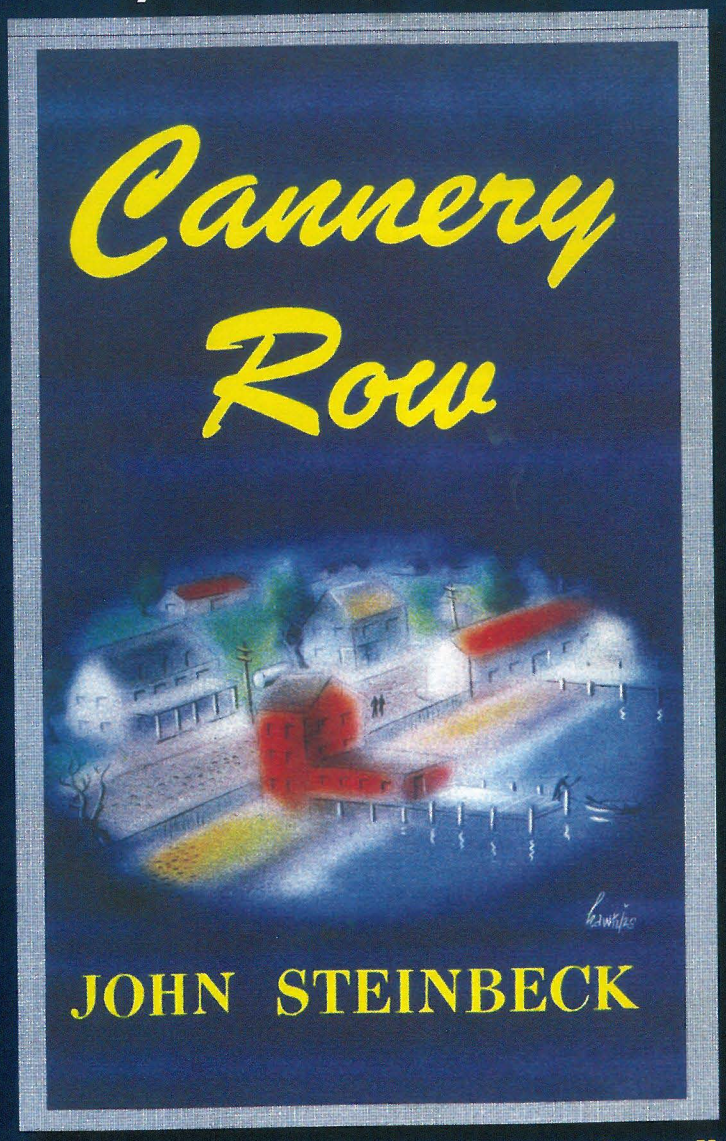
(Right) HDS Advisory Board member Henri Delauze, Musée Frédéric Dumas President Jean-Luc Fiorina, and Bernard Cabréjas, President of Scaph 50.

(Left) FFESSM President Roland Blanc with the Society's French representative, Commandant Philippe Rousseau.

(Opposite) The commemorative plaque honoring André Galerne at INPP.

The Divers of John Steinbeck's Cannery Row

By A.L."Scrap" Lundy



Many people know that for several years, primarily the 1930s and 1940s, the sardine industry in Monterey, California, was the largest in the U.S., and during World War II, Monterey became known as the Sardine Capital of the World. However, what is known to only a small number of people today is the fascinating story of how the sardine industry of Monterey gained its dominance.

In order to understand how Monterey achieved such large landings of sardines, it is important to know how the sardines were harvested in the early years of of the industry. Records show that this early period was from about 1905 to 1927. The early method of catching and moving the sardines to the canneries was very labor intensive and, as a result, slow and inefficient.

The sardines were moved from the boats to the canneries one manually-loaded bucketful at a time. Obviously, this method could only be used in calm water, which further impaired the process. The Cannery Row waterfront was over half a mile long, and it proved to be an obstacle in unloading the sardines from the boats. This distance made the building of a protective breakwater impractical. Without the protection of a breakwater, building piers out from the canneries for the boats to use was not feasible, as the fierce winter storms would severely damage or even destroy them.

In the mid-1930s, fishing boats with much larger capacities were coming into use. These new boats employed the mechanically-operated purse seine nets, which enabled them to catch far greater amounts of sardines. However, because Monterey's canneries had no piers, these new boats would not be able to unload there. Consequently, unless a far more efficient method of unloading the fishing boats was quickly developed, Monterey would not be able to expand its canning industry. In other words, it would not have developed to anywhere near the size that it eventually did.

One resident responding to this challenge was cannery owner Knut Hovden, and in 1927 he created the wooden hopper. Hovden's cannery was located where the older part of the Monterey Aquarium is today. The hopper he created was about 15 feet by 20 feet, and made of very heavy wooden beams, and was quickly accepted by the industry. The inside was shaped in a large V, which directed all of the fish dumped into it towards a 12-foot hole in the bottom. The fishing boats came alongside the hopper and offloaded their catch into it. During especially good fishing, some boats would carry as much as 100 tons plus and deliver it in the hopper.

Each cannery eventually had several hoppers, which were located about 200 yards into the bay and were secured in place by a four-point mooring system. The hoppers were a very innovative solution and solved Monterey's problem of being able to accept the increased capacity of the purse seiners.

With that problem solved, the next

California, pre 1927. Sardines being unloaded from a boat and moved to the cannery one bucket at a time. Courtesy Pat Hathaway Historical Collection.

Monterey, mid-1930s. Two sardine hoppers moored off Cannery Row. The Carmel name indicated the Carmel Cannery. Courtesy Pat Hathaway Historical Collection.

Monterey, late 1930s. Diver Eddie Bushnell getting dressed-in prior to a pipeline dive. Courtesy George Fraley Collection.

Monterey, 1942. Bushnell prepares to set off a dynamite charge that he had just placed to remove rocks from the path of a sardine pipeline.Courtesy George Fraley Collection.

one surfaced: How to get the sardines from the offshore hoppers to the onshore canneries.

Again Knut Hovden provided the solution to the problem. He planned to move the sardines from the hoppers to the canneries through pipelines that connected the two. Hovden's plan for solving Monterey's waterside sardine transportation problem would eventually prove to be an excellent one.

ENTER THE DIVERS

The initial problem with it was that for it to be operational, a method of installing and maintaining the underwater pipelines had to be found. And divers were the answer. Once employed, the region's heavy gear divers became the absolute key element that enabled the hopper and pipeline system to be installed and thereby Monterey's sardine industry to grow.

The contribution of these Cannery Row divers to Monterey's financial expansion cannot be overstated. Without the divers' efforts, the canning industry would have remained small and there most likely would not have been an area in Monterey called Cannery Row. It does not take much imagination to realize that if Monterey's canning industry had not been able to embrace the potential expansion that the purse seiners brought, John Steinbeck may very well have not had the locale, and the characters, to apply his storytelling genius to. Without the divers, his classic, *Cannery Row*, may never have been written.

Cannery Row was published in 1945, which also happened to be year of the largest amount of sardines landed. At that time, the locals did not realize that the end of the industry was slowly occurring in the form of ever-decreasing annual catches.

After the downward trend of decreased landings became established and accepted, local leaders decided to try and create a new fishing industry to replace their declining revenues. But the new catch they fished for did not have fins. It had legs. And it was called a "tourist."

To ensure every one of these potential tourists knew the name of their intended destination a street had to be renamed. The can-

neries were located on Ocean View Avenue. To capitalize on Steinbeck's novel success, its name was changed to Cannery Row.

Slowly this new "fishery" succeeded, as hotels, restaurants, and curio shops were built and gradually created the modern Monterey tourist industry that we see to this day. The lure of the name "Cannery Row" ensures a new booming industry, but don't forget the diver. For without him, none of this may have been possible. Steinbeck never forgot the diver, giving him a brief mention in chapter 13 of *Cannery Row*. "I wonder whatever happened to that guy McKinley Moran. Remember that deep sea diver?"

OF HOPPERS AND PIPELINES

The divers of Cannery Row had two primary jobs. They had to install the hopper mooring systems and then install and maintain the pipelines and maintain them. To install the pipelines and connect them to the hoppers required laying 600 to 700 feet of steel pipeline over a rocky sea bottom, and then connecting it to the bottom of the hopper using a 12-inch diameter rubber hose. To clear and level a path for the pipeline and remove large rocks, the divers sometimes used dynamite.

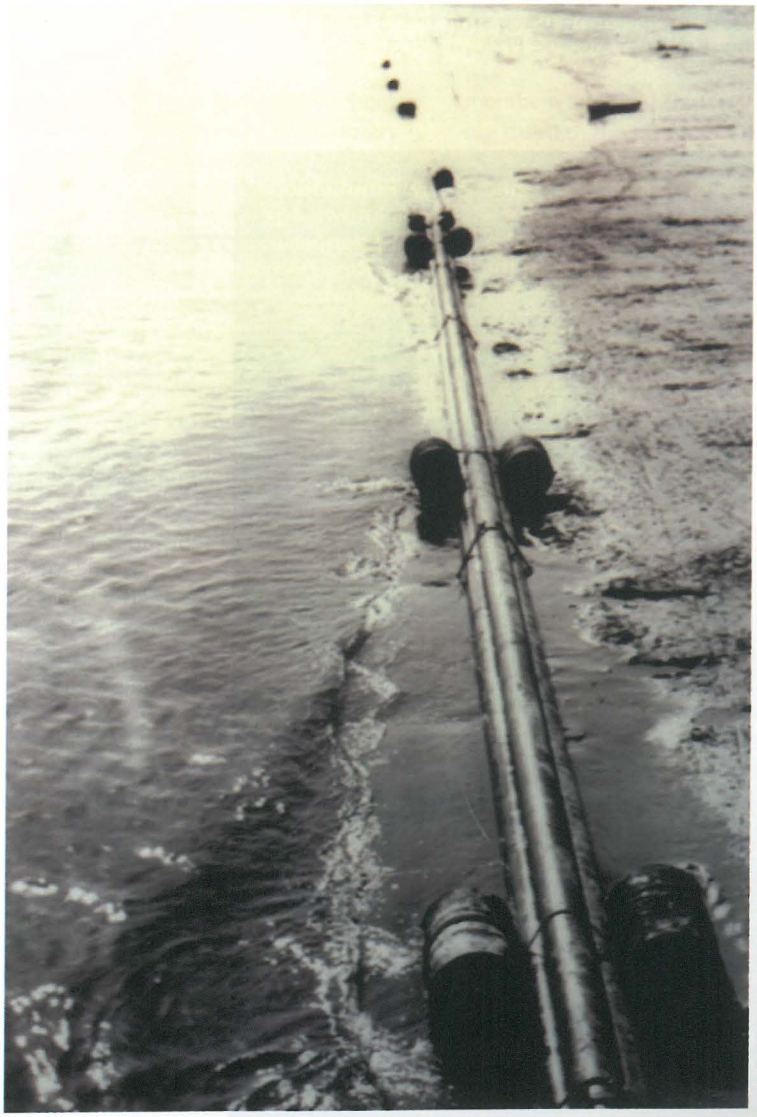
From 1927 to 1938, the divers constructed the pipelines by connecting individual 12-foot sections of pipe, and were bolting their flanges together on the bottom. For the most part, this was accomplished without having voice communications with the surface. The divers communicated with the tenders by signals on his life line. This was very hazardous work, as the visibility was usually poor and there could be a surge on the bottom that moved the pipe section.

After the diver had the pipe section section lowered to the end of the last section, he used a crowbar to move it to a position so he could use a long marlin spike to line up the flange holes and start bolting them together. For a 600-foot pipeline, this process had to be repeated 50 times.

To complete the job, the diver had to attach the flange of the 12-inch diameter rubber hose to the bottom of the hopper. A block and tackle was used to pull the hose to the hopper so the diver could bolt them together. Being in heavy gear underneath a wave-tossed hopper while trying to secure the bolts must have been a very difficult job.

Completing the pipeline connections under the ideal conditions of clear and calm water would be difficult at best. However, because the conditions were seldom ideal, the diver's job was very hazardous. In 1938, the pipeline installation became much easier as a method was developed that allowed the entire pipeline to be welded together on the beach near the tide-line. Then, by using empty oil drums attached to the pipeline, it could be floated, and then towed to the desired location where it was sunk in place.

Monterey, circa 1940s. Fishing boats used "Brailling" nets to transfer a large amount of sardines into the hoppers quickly. Courtesy Pat Hathaway Historical Collection.



Monterey, post-1938. A welded pipeline waiting for high tide so it can be towed into position to be sunk. Courtesy George Fraley Collection.

Monterey, post-1938. A pipeline in place after being towed into position for sinking. Courtesy George Fraley Collection.

The Board of Directors of The Cannery Row Foundation and of the Historical Diving Society wish to acknowledge the generous financial support of the following donors in the construction and completion of the Cannery Row Divers Memorial at San Carlos Beach, Monterey, California.

A. L. "Scrap" and Eric Lundy
Art and Jo Ring
Carol Bushnell & Joyce Bushnell
George and Sylvia Fraley
George Cole
Jim Caldwell
Leslie Leaney
Lee Selisky
Bamboo Reef Dive Shop
The Shake Family
Kirby Morgan Dive Systems, Inc.
Global Diving & Salvage, Inc.
Cannery Row Company
Cannery Row General Store (Mr. Rod Riggs)
Cannery Row Business Improvement District
Taste of Monterey Wine Tasting Room (Ken Rauh)
Monterey Plaza Hotel & Spa
Nancy Selfridge
Mr. and Mrs. Robert Kirby
Mr. Dennis Mar
Mrs. Ramona Reitz
Mr. and Mrs. Earl Stanley
Ms. Berry Jean Stallings
Mr. Tim Thomas
Brian Smith & Josephina Jimenez
Willie's Smokehouse (Tony Tollner)

Monterey, late 1940s. Sardines are transported up the fish ladder, which received the fish from the end of the pipeline and conveyed them up to the cannery. Image Courtesy Pat Hathaway Historical Collection.

The Cannery Row diver's other main job was the constant repairing of the pipelines and the rubber hoses. When a pipeline was rendered inoperative due to holes caused by erosion, or a twisted or plugged hose, all or part of the cannery had to be shut down. As a result, hundreds of workers were sent home until the repairs would allow operations to continue. Remembering that money and work were very scarce during this Depression era, to be sent home without pay was a serious matter. That fact made the diver's jobs all the more important.

HAZARDOUS TASKS

Under those circumstances, the divers were the most important men on Cannery Row. The divers repaired the holes in the pipelines by putting a piece of metal over the hole and securing it in place with a concrete filled cofferdam. Hose repairs usually consisted of replacing the old hose with a new one.

The diving equipment used was a mix of the heavy gear available in the 1930s. The dive system consisted of a boat about 26-feet long, a compressor, two air volume tanks made from hot water tanks and modified with a pop-off valve, a life line, and a diver with one or two tenders. The normal operating depth was 20 to 60 feet.

During the late 1930s, diver Eddie Bushnell was paid the then-huge sum of $13.50 an hour for his services. However, out of

Monterey, circa 1940s. Diver George Fraley on a dive in Monterey harbor. Fraley preferred the USN Mark V system, and is shown in a Schrader model helmet. Courtesy George Fraley Collection.

Monterey 2006. The rusted remains of a sardine pipeline at San Carlos Beach. The pipeline is located near the new Cannery Row Divers Memorial. Courtesy A. L. Scrap Lundy.

that sum he had to pay all boat expenses, replace equipment as needed, and pay himself and his tenders. One of his tenders was his nephew, George Fraley, who as a tender earned 50 cents an hour. That sort of money convinced George to become a diver.

It is remarkable testimony to the bravery and skill of the Cannery Row divers that so few accomplished so much that was vital to Cannery Row's expansion and subsequent fame. Unfortunately, two divers died in the line of pipeline duty.

One died because his tender did not tighten the bolts that held the bonnet to the breastplate and it came off, thus drowning the diver. The other death occurred when the dive boat accidently ran over the air hose and wrapped it in the propeller, shutting off the diver's air.

The first Cannery Row diver was Oscar Lager, who dove from 1927 until 1936. Eddie Bushnell was a tender for Lager and took over his diving business in 1936. Eddie was assisted by his nephew, George Fraley, Chester Bushnell, and Andy Skov.

Fraley started diving in the very late 1930s using the USN Mark V gear. Henry Porter was another diver in the late 1930s. Al Annand came to Monterey 1944 and dove until the late 1950s. Other divers who worked in the industry's waning years were Pete and Mitch Constanti, Larry Johnstone, and Ralph Nonella.

Today, George Fraley and Ralph Nonella are still alive and living in the area. In fact, both attended the 2008 HDS Conference and were present with many other attendees at the unveiling of the Cannery Row Divers Memorial at the San Carlos Beach Park.

PRESERVING HISTORY

In 2007, the Cannery Row Foundation, which seeks to preserve the history of Cannery Row, made 2007/8 the Year of the Cannery Row Diver. The Foundation decided to commemorate and preserve the history of the vital yet mostly unknown role the Cannery Row divers played in Monterey's development. The Foundation's project was lead by President Michael Hemp, and co-chaired by Sylvia Fraley and myself.

The Foundation's plan was to raise money to have a period helmet cast is bronze, and then bolted to the top of a concrete replica of a cannery piling. The piling would have weatherproof housings that presented the divers history and accomplishments. The Foundation selected noted local sculptor, Jesse Corsaut, to create the mold that the helmet was to be cast from. Anyone who has seen the results knew Jesse did a wonderful job. The HDS was approached to participate as a full partner in the project and quickly did so under the leadership of President Leslie Leaney.

To complete this type of project required the various resources of both organizations, both of which were readily forthcoming. The funds required to build the project came through the efforts of both the HDS members and the Monterey citizens donating through the Cannery Row Foundation. One group acting alone would have had a difficult time in raising the required amount.

Tim Beaver, Secretary of the HDS, quickly made his 1930s three-light commercial Morse helmet available to the sculptor in order to make the helmet mold. A news article on the project was published in the Society's *Historical Diver Magazine*, and the project was completed with financial contributions from Society members Global Diving & Salvage of Seattle, Kirby Morgan Diving Systems Inc., Jim Caldwell, Bob and Claudia Kirby, Leslie Leaney, and Lee Selisky.

MAKING MONTEREY PROUD

Looking back at the entire process of building the memorial, there were times when things looked grim. However, I get a very gratifying feeling which comes from the enthusiasm of all the people who eventually helped to make the project successful. From the project's very beginning, the various city committees involved in the permit process were very excited and happy about it. In fact, at one city meeting, a city council member wrote a check on the spot!

For those who worked on the project it was very interesting, but not at all surprising, to discover that most people in Monterey never knew of the Cannery Row divers. When they learned of the vital role the divers played in helping create

The Divers of Cannery Row

Monterey as it is today, they became very enthusiastic that the divers were finally being given the recognition they earned for their accomplishments.

San Carlos Beach in Monterey is recognized as one of the top dive destinations in the U.S., and it now offers the Cannery Row divers of today an opportunity to learn about the professional divers who preceded them. Today's divers may find pieces of the old pipelines on the bottom especially westward from San Carlos Beach.

This memorial project between the Cannery Row Foundation and the HDS demonstrated what positive results can occur in preserving diving history when groups join forced to make it happen. What could be next? The divers of the Golden Gate Bridge?

Thie is an edited version of a paper presented by A.L. "Scrap" Lundy at the May 2008 HDS Conference in Monterey, California. All photos courtesy Scrap Lundy. The publication of this article is made possible in part by Mystic Knights of the Sea, a proud sponsor of the HDS and The Journal of Diving History.

The Author

A former USN and commercial diver, Scrap Lundy is a Founding Director of the Historical Diving Society, and an internationally recognized authority on the history of abalone diving in America. His highly regarded research was published in the book, The California Abalone Industry, A Pictorial History, *which is available from the Society Book Store. His latest book,* Real Life on Cannery Row, *was published in 2008. He lives in Santa Barbara, California.*

The gear recovered from the DD Sherman tank in the Bay of Naples was tied to a life preserver and in a bad state of preservation. Images courtesy of B&B film.

THE MSA REGULATOR PUZZLE

By Peter Dick

The history of regulators for underwater use readily falls into two parts. The first would be the early 19th century development as a spin-off from coal gas regulators that was recorded in UK's *Historical Diving Times* (HDT), issue 16. The second would be the contemporary designs, whose origins lie with the equipment of René Commeinhes from the late 1930s, recorded in HDT and also HDS's *Historical Diver Magazine* (HDM) issue 44, and also with J.Y. Cousteau with Emile Gagnan from 1943, (recorded in HDM issues 13, 37, and 42.) The following series of articles introduces a new valve into the early 1940s period. They were put together by HDS SEAP's Keith Gordon in New Zealand, the Historical Diving Times, and UK's Bob Campbell, who produced some magical drawings.

Approximately five years ago B&B Film, an Italian documentary company, approached both HDS UK and USA magazines with a request for information. In 2003 they had made a TV film about the discovery and attempted recovery of a "waterproofed" Duplex Drive Sherman tank located in the Bay of Naples, which had apparently sunk during training for the planned invasion of the South of France in 1944. A number of sets of breathing apparatus had been recovered from it. B&B wanted to know if any HDS members could help them identify the regulators. The pictures they sent showed a rusty small capacity cylinder (5-7 liters) with, what appeared to be a regulator attached by a nut and cone nipple connection, while a single corrugated hose led from the regulator to a mouthpiece, in what had to be a pendulum breathing arrangement.

The *Historical Diving Times* (HDT) pointed out the relevance of the dating (1944), compared to the introduction of the earliest Cousteau/Gagnan regulators (mid-1943) in wartime France. Unfortunately, being so corroded, no identification markings could be seen on the regulator body and it could not be dismantled to look at the interior workings. B&B Film put out some feelers and had a letter printed in *Historical Diver* issue 40, but the whole thing eventually ground to a halt. They had intended to make a film about Duplex Drive tanks, but priorities changed and they eventually moved on to other projects.

In the meantime, the HDTimes had been in contact with Keith Gordon in New Zealand, who tells his story in the article that follows this one. Keith still owned one of the regulators – which, for the first time, we learned was of Mine Safety Appliance (M.S.A.) manufacture.

This, in turn, led us to contact the Mine Safety Appliances Company in Pittsburgh, Pennsylvania, who very quickly put us in touch with Gene Merry, who had been running the company in 1944. Mr. Merry turned out to be in his mid-90s, but his memory was still as sharp as ever and the story he told was very simple.

Sometime in the first half of 1944, M.S.A. were approached by the US military for a regulator and cylinder arrangement. As Mr. Merry put it, "The colonel I talked to said that it was an urgent request as a lot of our boys were getting drowned. It must have been urgent as they even stopped the Pennsylvania Flyer to collect the shipment and that was not an easy thing to do."

Asked if he could remember anything else, such as patent details, he answered "It was an off-the-shelf item, we had lots of similar designs."

Obviously the valve and cylinder arrangements missed the June 1944 D-Day landings, when it seems the American crews of Duplex Drive tanks were issued with Momsen lungs, but they obviously found their way to Italy in time for the invasion of the south of France, later the same year. They also went to the Pacific theatre of war, where there were many amphibious operations and many ended up being left behind as war surplus.

The Vanuatu MSA

By Keith Gordon

The advert from the 1954 issue of *Popular Mechanics* shows the M.S.A. valve incorporated in a twin set.

The wooden shipping crate arrived from Vila, Vanuatu. For its size, it was rather heavy. Consigned by Reece Discombe, it contained relics from his early diving days and had been shipped down by the veteran diver to add to a growing collection of diving equipment I was assembling for a dive museum.

In addition to a Siebe Gorman single-cylinder pump, there were the remains of some old diving systems, including a Siebe Gorman Tadpole regulator and some unidentifiable system components. One item attached to a small wire-bound, high-pressure cylinder appeared to be a regulator that originated from war surplus equipment.

The American forces had left a lot of equipment on Vanuatu (then the New Hebrides) and had dumped tons of equipment into the sea at a site that was to become known as Million Dollar Point. Reece had made a considerable amount of money salvaging bulldozers and equipment from this site in his early diving days following World War II. I was intrigued by the design features of the unknown single hose regulator and put it to one side, intending to question Reece on its origins and his use of such surplus equipment for diving.

A letter published in *Historical Diver Magazine* issue 40 attracted my attention, especially the photographs that accompanied the letter – they were of the same regulator/cylinder assembly that Reece had sent me. An Italian film unit had found five of the same units in an amphibious Sherman DD tank that had been recovered from the Gulf of Salerno and were asking for information on the equipment (see previous article).

I emailed the letter writer advising I had an example of the same and informed Reece of the query. Reece replied that wartime aircrew would have used the high-pressure breathing systems, as there had been a lot of these units lying about the island of Santo, where the Americans had a number of airfields. With a few modifications, Reece and his mates had adapted the single-hose units for diving. The Sherman DD tank units found off Italy had no doubt been intended as underwater breathing systems to aid crew escape, in the event of the tank sinking.

Checking through an old scrapbook from my teenage diving days, I came across an advert that had featured in a 1954

Popular Mechanics magazine advertising a "Diving Lung" using the same regulator. The Dive-Craft Inc, advert identified the regulator as a Mine Safety Appliance Co. Automatic Demand Regulator.

Further enquiries revealed that Mine Safety Appliance (M.S.A.) still exists and that they had manufactured these regulators during the war. I later found further reference to this regulator in an article that featured in *Historical Diver* issue 46 titled "California Scuba." The author, Wayne Miller, reported he had built a scuba unit using a war surplus regulator around 1948. An accompanying photo featured his unit with a regulator identical to the MSA regulator.

Reece was also a member of HDS-USA and read the same article. He emailed me commenting the unit illustrated was similar to the units he had used.

In the meantime, I had been in contact with Peter Dick of HDS-UK, and found that he too had an interest in the same regulator and was researching its background. The regulator was thought to have originated around 1943 and has some interesting design features especially when comparing with the Cousteau- Gagnan unit from the same era. It is ironic that the same issue of

(Above) Keith Gordon's M.S.A. regulator mounted on a wire bound cylinder.

(Right) The M.S.A. regulator with cover and diaphragm removed to show the double lever arrangement, which used mechanical advantage to open the valve against air pressure.

Historical Diver the Sherman tank unit letter appeared in, featured an article on Dick Anderson and Healthways' first single hose regulator, the Scubair. The article notes the use of a mushroom exhaust valve and a flush button purge valve, both features of the M.S.A. regulator many years previously.

Phil Nuytten of HDS Canada recalls using a MSA regulator in his early diving days:

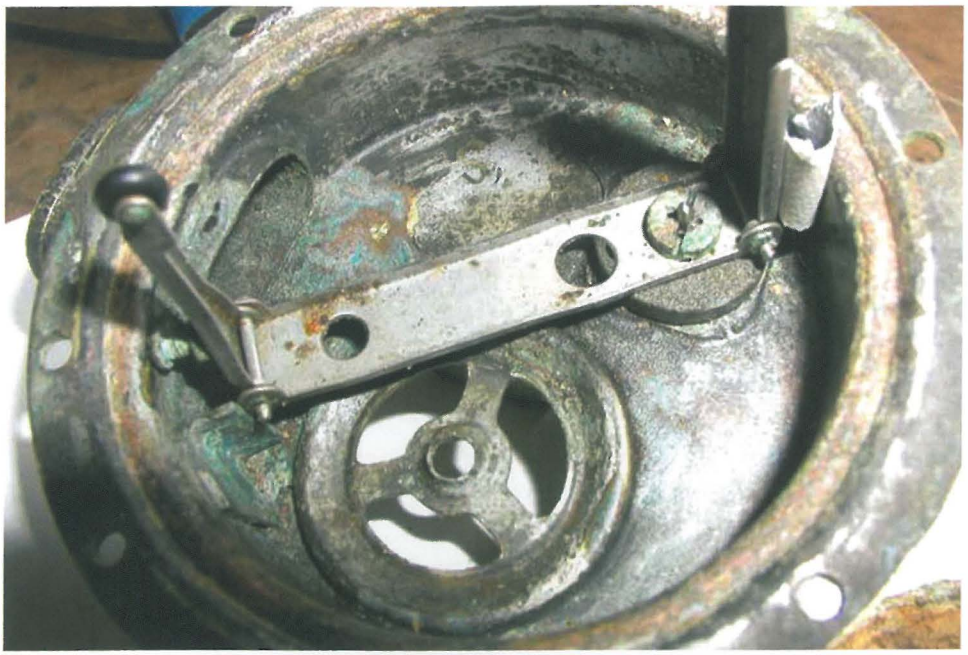
"The MSA regulators had a distinctive vegetable green color and a ¾-inch black corrugated hose about a foot long and an 'elbow' mouthpiece tee with a 'wishbone' isolation valve. The units were often converted for air-lung demand by substitution of the HP oxygen nut for a standard air nut, or by fitting a yoke to fit a medical O_2 'pillar' valve (similar to a Scuba K valve).

"The major problem experienced with these units was the orifice sizing – they breathed okay in shallow water, but were slow draggers at anything deeper than 40 feet. They did work deeper, but were no good for work.

"A secondary problem was the single hose – the exhaust air went back out through the small mushroom valve on the regulator housing. This was fixed by blanking off the housing exhaust and fitting two long gas mask hoses (about 24 inches), a one inch copper plumbing tee for the mouthpiece, and by clamping a short copper union and a flutter valve to the end of the exhaust hose which was attached back onto the regulator. I had an M.S.A. regulator as a backup unit in the mid-1950s and used it quite a bit. I drilled the HP orifice out, which helped, but it leaked air a bit!"

Peter Dick Comments on Keith Gordon's MSA Regulator

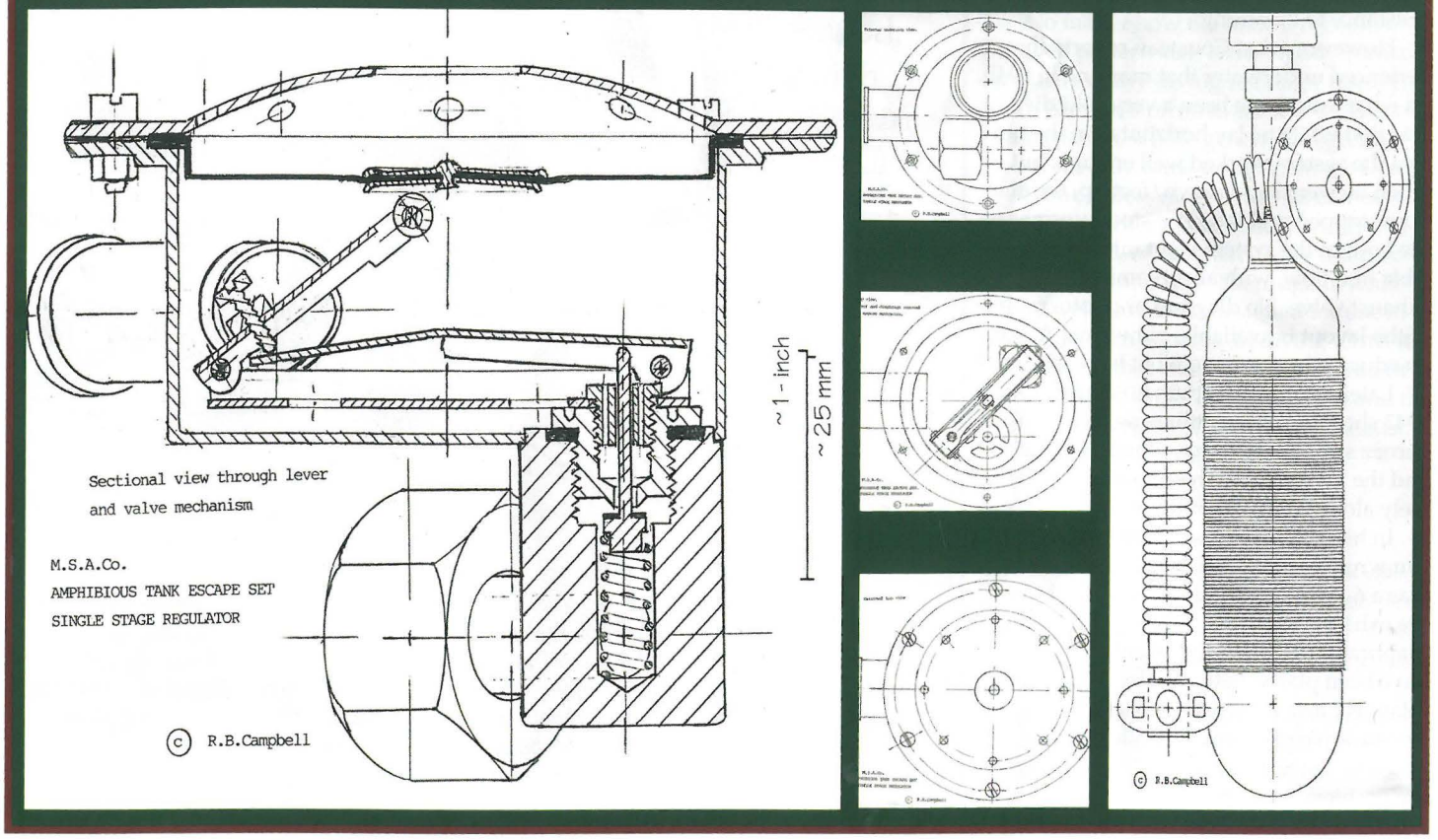
The good news about Keith's MSA regulator was that, being in relatively good condition, it could be dismantled. Having done this, he photographed the parts against a ruler and emailed them to the UK, where Bob Campbell sized them and made drawings. We reproduce the results here, with Bob's comments including that the "internal valve detail is pure guesswork," but that it was certainly a downstream valve with four jet outlets and that it bore comparison with the later Submarine Products Super Sealion regulator. It was also difficult for him to gauge the angle of the internal leverage system and he observed that while 'anchor' nuts had been used for the top cover they were in fact not anchored, which he said was probably due to an ad hoc alteration. As to the rest of the regulator layout, judge for yourself from Bob's drawings on the following page.



(Above) Regulator with the levers raised to show the fours jets in the valve. Note the rollers on the end of the levers and how close the mushroom exhaust is to the center of the regulator.

(Below) The diaphragm with its central metal plate with the regulator cover below. The measuring tape shows the assembly was small and compact.

BOB CAMPBELL DIAGRAMS THE MSA REGULATOR



An Exhaust in the WRONG Place

By Peter Dick

Keith Gordon's M.S.A. regulator has an important historical feature in its exhaust valve. It is an early 'mushroom' (flutter) design (1) installed at a time when 'duckbill' exhausts, as on the Fernez gear patented in 1912, were the norm. Figure 1 shows how a duckbill exhaust works. As noted earlier, this mushroom valve was placed as close to the centre of the diaphragm as possible, the importance of which will become apparent a little later.

Keith also pointed out another feature far in advance of its time: a 'flush-purge' facility offered by the hole in the regulator cover, through which a finger could depress the diaphragm and get an increased air flow. Equally important is that the regulator itself was clearly a well manufactured item, which can be dated at least to early 1944. This in turn implies that the design was available and may have been patented at some earlier date, perhaps years earlier. These details suggest that we should revisit established modern regulator history, which began in France in the early 1940s.

It was January, or the early spring of 1943, when Jacques Cousteau slipped into a quiet section of the River Marne near Paris to test a new diving apparatus which would eventually become known as the Aqua Lung. The regulator of this new system was the result of his cooperation with Emile Gagnan of the company L'Air Liquid, one of whose directors was Cousteau's father-in-law. The story is well known of how, when approached by Cousteau, Gagnan adapted an 'off-the-shelf' regulator he had designed for supplying cooking gas to car engines in wartime France (2). Thanks to Gene Merry, we now know M.S.A. provided the same 'off-the-shelf' service when the U.S. military came calling in 1944.

Diving histories usually dwell on the regulator, without necessarily mentioning that it had to be part of what we can call, a 'system,' in which it regulated the air flow from a cylinder of compressed air so that the diver could breath it at the same pressure as the surrounding water depth. It also allowed exhaled gas to be ditched via an exhaust valve without water getting back into the system.

The circular twin hose regulator design in common use during the 1950s was positioned on the diver's back, so that it was about level with the pressure centre of the diver's lungs (3) when he or she was swimming in a normal head up position.

By the diver turning on their back, the diaphragm was pushed deeper than the lungs and they got an often welcome but controllable 'free-flow' of air, that even allowed them to easily clear water from

flooded tubes. If the diver went head down, the diaphragm stayed about level with the lungs and they experienced little if any resistance to breathing.

However, what Cousteau reportedly experienced underwater that morning in 1943, on what must have been a very cold dive, was that while he lay horizontal on the bottom the system worked well enough, but when he went head down/feet up, the air flow stopped and when he stood upright on the bottom the system went into uncontrollable free-flow, with air streaming out of the exhaust valve. No diagram or photograph of the layout is available, but we can make an educated guess as to what it looked like.

Later film shots of twin hose gear from 1943 show Cousteau still using a curved Fernez style mouthpiece, which originally had the 'duckbeak' exhaust valve immediately alongside the mouthpiece.

In his 1953 book, *The Silent World*, Cousteau wrote that when he stood upright there was a 6-inch (~15cm) difference between the exhaust valve and the deeper regulator diaphragm. The regulator itself then, must have been placed between the cylinders relatively low down on his back. Hence the free-flow (see the accompanying diagram).

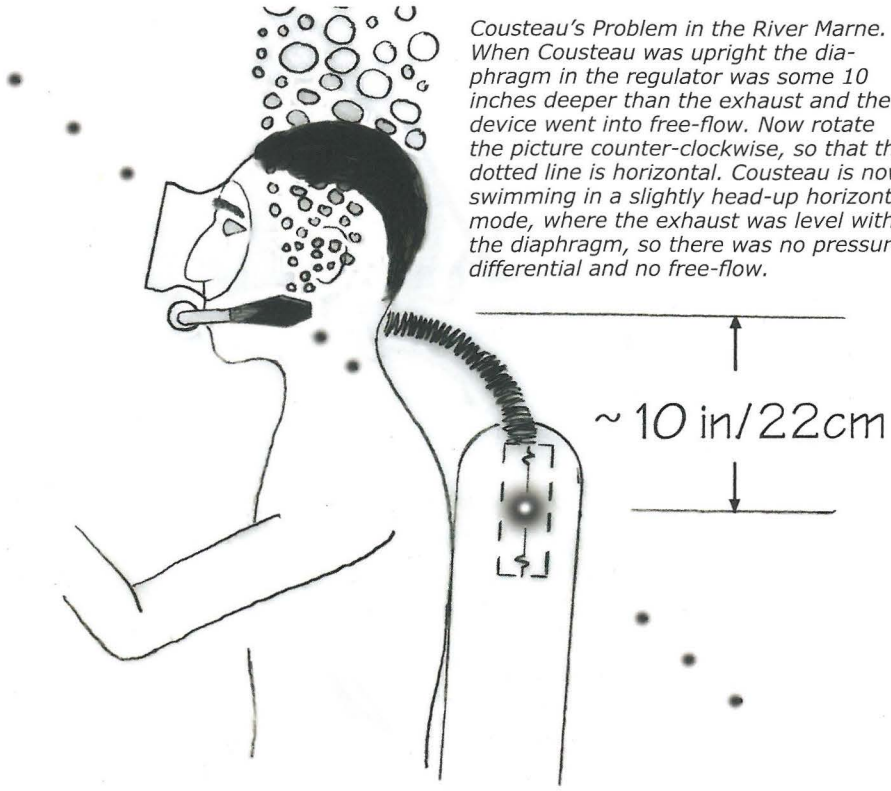
After the test dive they did not realize the problem immediately, as relayed in a wonderful extract from 1957's Undersea Explorer, by Cousteau's friend James Dugan,

"They drove back to Paris in silence, except for the mocking hiss of the regulator on the gas bag of Gagnan's car."

Dugan, incidentally, put the height difference at 10-in/~25.5cm. However, when realization hit Cousteau and Gagnan, reportedly at the same time, they placed the duckbeak exhaust valve at the end of a second corrugated tube alongside the diaphragm. Cousteau tried it out in a tank in Paris and it worked well. It was, for want of a better expression, a final version of this gear that arrived at Bandol railway station, in the south of France, in June 1943, as recounted in the very first paragraph of Cousteau's The Silent World. The rest, as they say, is history. So if you want the full story, read the books.

What can be said is that the free-flow problem was fortuitous. They could have gone home dejected and the whole idea forgotten. It was however, not in their nature, as it obviously prompted Gagnan to re-engineer the layout, which was to have major impact on future open-circuit diving history. So, what did that final, re-engineered version look like and how did it behave underwater?

The Fernez gear (patent applied for 14th May, 1912), with its ducks-bill exhaust alongside the mouthpiece, was well established and was adapted by Le Prieur in the



Cousteau's Problem in the River Marne. When Cousteau was upright the diaphragm in the regulator was some 10 inches deeper than the exhaust and the device went into free-flow. Now rotate the picture counter-clockwise, so that the dotted line is horizontal. Cousteau is now swimming in a slightly head-up horizontal mode, where the exhaust was level with the diaphragm, so there was no pressure differential and no free-flow.

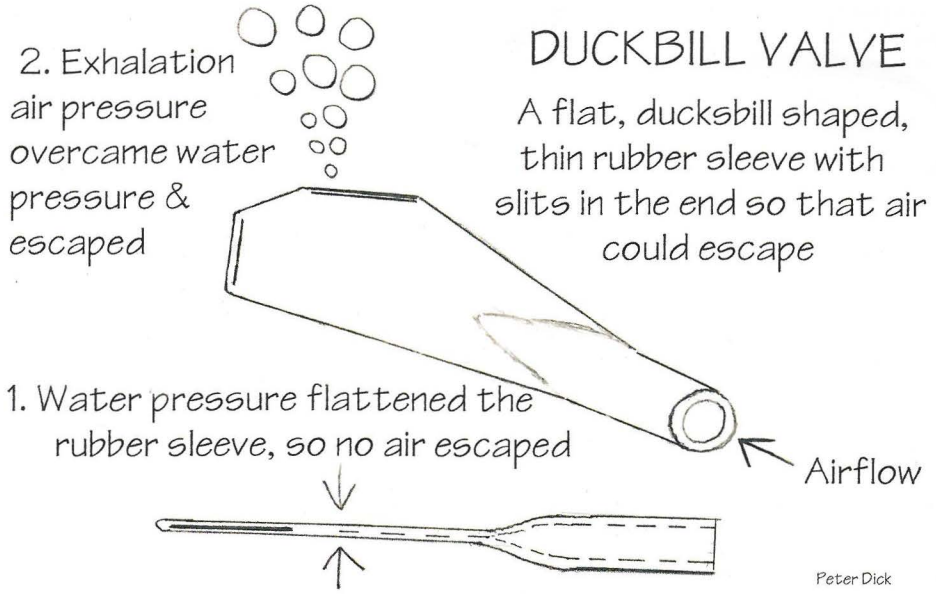
1920s and 30s, using a free-flow reduction valve. The main thing about all of the 1940s open-circuit regulator designs, including Commeinhes and the M.S.A. regulator, was that for the first time they were automatic, saving air by only opening on 'demand,' when the diver inhaled and pulled the diaphragm inwards.

In patent terms Cousteau and Gagnan (patent convention date, France, 8th July, 1943) (4) were ahead of Georges Commeinhes (patent first applied for on 7th February 1944), even though an earlier version of his gear was already in use in the south of France. This had an exhaust valve positioned at mouth level on a full face mask, yet there were no reports we know of telling of it suffering from any free-flow problems, implying that Gagnan's 'off-the-shelf' regulator was probably a lot more sensitive in its operation. While this sensitivity had probably contributed towards Cousteau's free-flow problem in the River Marne, it also made the regulator much easier to breath from once Gagnan had placed diaphragm and exhaust alongside on another.

Like the M.S.A. regulator in Keith Gordon's article above, we should suspect that Commeinhes regulator also did not behave quite as well at depth under load, compared to the Cousteau-Gagnan model, even though it was used to set a depth record of 50 meters/~162-ft in 1943. In the Autumn of that year Dumas, a member of Cousteau's team, was to beat this with a 64 meter/~207-ft dive using what surely had to be a superior regulator design.

Returning to what that earliest regulator system actually looked like, Cousteau's second underwater film Épaves (Wrecks) offers us the only, all too brief views, we have of it. That first operational model was positioned across the top of triple cylinders, around shoulder level. It somehow comes across as experimental, more so as HDS member Peter Jackson portrays it as a large D shape box, with the duckbill exhaust valve held by a bracket on the outside of the casing. It was also two-stage, with the first stage reduction unit at the base of the cylinders where the on/off controls were located. By comparison both the Commeinhes and M.S.A. regulators were single stage, which may partly account for any difference in performance.

The summer of 1943 was a period of experimentation for Cousteau and his team, in probing the limits of the new regulator. So much is indicated by the depth records. Interestingly, Épaves also shows a well manufactured circular regulator design, that appears to be much the same as the familiar 1950s twin hose layout with the duck bill exhaust inside the regulator cover. Most of the footage was obviously shot in 1943, but there is no telling if this dates from that year, or was added later. The specification for Commeinhes design (1944) shows it to be circular and the circular M.S.A. regulator dates from the same year or earlier. Of course, we must never forget that 1944 was the year that Commeinhes gave his life fighting for the liberation of Strasbourg. Given wartime limitations, could Gagnan really have turned out a well manufactured circular design that year, based on Coust-



eau's open water experiences?

It was however, the Cousteau-Gagnan circular twin-hose design that predominated, initially as a two stage, then single stage thanks to the venturi jet, at least until the mid-1950s and the introduction of single hose regulators. I may be wrong but these single hose regulators were, to my knowledge, always thought to be the first to incorporate compact circular mushroom exhaust valves and, as Keith Gordon said, a flush-purge facility. Until that is, the M.S.A. regulator came to light.

None of this should detract from the overall Cousteau-Gagnan technical achievement and Cousteau's own flair for publicity in particular, which led to the almost immediate introduction of the new self-contained diving gear into sports diving in the post war years. Le Prieur led the way in sports diving, and Cousteau finished the job along with Gagnan.

Keith's example of the M.S.A. regulator is well manufactured, round, and compact, being some 3½-in/89mm diameter. It was also a design which by 1944 seems to have already gone through a period of design evolution. The Gagnan gas valve had been an off-the-shelf item, as was the M.S.A. regulator which, on Gene Merry's evidence of the way it was introduced, was originally intended for a another, non-diving, use. Why then had M.S.A. already placed their mushroom exhaust valve as close to the centre of the diaphragm as possible? An ideal position for an underwater regulator, was it purely an engineering decision, or based on experimentation or even operational feed-back from some source?

I searched British Library records back as far as 1938 for any trace of an M.S.A. patent without success. It could even be that no specific patent existed. As Peter Jackson again pointed out, many of these things were adaptations of earlier patented designs for which no patent variation had ever been applied for. We do not even know what use the M.S.A. regulator was originally intended for, although given the nature of the company I originally imagined it was for fire fighting where, even today, breathing apparatus is often designed to be employed for a short time underwater.

Here Peter Jackson intervened, by consulting M.S.A. catalogues in his extensive collection for the general 1943 time period, only to find that all their gear was closed circuit. This led him to conclude that the regulator was likely as not for use in aircraft, and in one of his letters to me Bob Campbell had also alluded to this likelihood. To date however, Peter has not been able to locate any aircraft oxygen gear candidate in his files. Obviously there is more research to be carried out and this story has a lot further to run.

For this article I consulted the British patent of the Cousteau-Gagnan twin-hose regulator, which was finally granted to l'Air Liquide on 6th January 1949. The specification tells of a two-stage regulator with the exhaust valve 'maintained on the housing of the pressure reducing valve by any kind of securing means'. By using 'on' instead of 'in', it would appear to refer to the gear that had first arrived at Bandol in June 1943 which, admittedly on the evidence of a fuzzy film frame, which had the exhaust mounted outside the main regulator body. There again, it could be argued that the final Cousteau-Gagnan exhaust was in fact mounted 'on' the regulator, even though it was inside the protective cover on the 'wet' side of the regulator. This was separated from the all important 'dry' side mechanism by the diaphragm. On the other hand, the M.S.A. regulator mushroom exhausted directly on the 'dry' side.

No matter how the M.S.A. regulator behaved underwater, it has rightly earned its place in early diving regulator history. Keith Gordon's pictures show a well manufactured item, whose general design and layout we only came to expect in the late 1950s but, unless more evidence comes to light of its earlier introduction, we should date it as mid-1944, when it was 'adapted' to an underwater role. There again, while it may well have been designed for use in aircraft oxygen systems, in diving terms it had features that were definitely ahead of their time not just its circular design and the central location of the mushroom exhaust, but also the 'flush-purge' facility.

Notes

1. A mushroom valve is a flat piece of circular rubber, held in place by a central stalk of rubber. Air pressure forces its way past, then water pressure clamps it shut again. The holes it fitted over are clearly visible on the photographs of Keith Gordon's regulator.

2. In the UK, post-war Calor (Butane in USA) gas valve conversions (see HDTimes No.37) also proved sensitive enough to be used for diving.

3. See, Bennett and Elliot, The Physiology and Medicine of Diving.....(1975 ed.), pages 137, 139, then pages 35, 36 (eupneic = normal, unlaboured breathing)).

This series of articles on the M.S.A. regulator was first published in Historical Diving Times, *issue 44. They are republished here with the kind permission of Peter Dick, Editor, and Keith Gordon. All rights reserved.*

The Author

Peter Dick started diving in 1955, and during the 1960s he ran diving schools in Malta and Kenya before becoming a deep diver in the North Sea. He later developed a career as a consultant underwater engineer. His books include Underwater Diving, Basic Techniques, *London 1985, 1991, and* Application of Subsea Systems, *Tulsa, 1991. He is Editor of the* Historical Diving Times, *official publication of HDS UK.* *The author would like to thank Keith Gordon, Bob Campbell, and Peter Jackson for all their help and input in putting this article together. A special thanks should also go to B&B films, who first drew our attention to the M.S.A. regulator and then gave their permission to use any of their material. You can visit their website at www.bbfilm.tv. Expect a lot more in the way underwater and diving history from this company.*

The Five Fathoms Club

How a Group of Teenage Pioneers Launched One of The Nation's First High School Diving Clubs

By Larry Clinton, Jr.; Photos courtesy of Paul Gugliemino

The year 1953 turns out to be a pivotal period in the development of recreational diving. *The Silent World*, by Jacques-Ives Cousteau and James Dugan, became a best seller, and the beautiful descriptions and images in the book, as well as tales of daring-do in early issues of *Skin Diver Magazine*, kick-started public interest in the sport. Scuba equipment was still hard to find in many markets, so magazines like *Popular Science* began offering directions for making dive gear from surplus parts.

That year, a handful of teenagers in the sleepy town of Roslyn on Long Island's North Shore got the diving bug. After a few skin diving forays in Long Island Sound and some upstate lakes, they convinced their favorite teacher, Joe Albertson, to sponsor a dive club.

"Daddy Joe," as he was known by his adoring students, convinced the school principal that the club would have an academic as well as recreational focus. Diving field trips would help educate club members about marine biology; they would write reports and bring specimens back to school to share with other students.

The resulting Five Fathoms Club became the first high school dive club in the country. When you think of today's litigious society, this sounds like a huge risk. But during the Eisenhower era folks took chances, and actually accepted responsibility for their own actions (and those of their kids!).

Still, safety was an important consideration, and the name of the club was chosen when everyone agreed that 30 feet down would be the limit of their operations.

With the approval of the school administration and their parents, the teens (all boys – remember, it was the Eisenhower era), began collecting and testing equipment. Camera cases were fashioned from Plexiglas boxes and old plastic food containers. The kids took part-time jobs to buy gear they couldn't make.

Since diving was hardly a year-round sport in New York in those pre-wetsuit days, the club secured the use of various indoor pools to try out equipment and practice snorkeling techniques. *The New York Times* ran a photo story on one practice session, at the Navy's Special Devices Center at nearby Sands Point.

The boys even tried out a commercial shallow-water helmet with air supplied by a hand-operated compressor. Summing up the experience, Daddy Joe Albertson told the *Times*, "As of now, five fathoms seems to have become our goal instead of our limit."

The author (center), with dive buddies Bill Mclaughlin (L) and Chuck Hoffman (R), looking a little green around the gills returning from a dive trip to Sombrero Light.

All this was in preparation for a spring trip to the Florida Keys. Daddy Joe had contacted some dive operators in Marathon who agreed to take the boys to shallow sites such as Sombrero Light and Delta Shoal. A local community leader named Ruth Ivins got involved and found the club a beach to camp on at then-uninhabited Little Duck Key. She also persuaded a few locals to donate boats to take the boys out diving.

In April, 1954, Daddy Joe and his charges took off in two cars for the long drive to Marathon. It was an extraordinary privilege for 15-to-17-year-olds to be granted such freedom, and to qualify, boys had to be accepted into the club like a fraternity. Founding president Jerry Chester told the Times that a scholastic average of 77 was required. Most of the boys were school leaders, as well.

Upon arrival in Marathon, they found themselves in the middle of a heated debate between local fishermen and the early diving pioneers, who were mostly spearfishers and treasure hunters like the legendary Art McKee. In his book, *Marathon 1906-1960*, author Dan Gallagher says the anglers were concerned that the spearos would take all the big fish, "leaving the lesser ones for the blind hook-and-line fishermen."

The Five Fathoms Club were sitting in on a town hall meeting between the two sides, when Ruth Ivins carried the day by pointing out that if a bunch of high school kids was willing to drive all the way from New York to go diving off Marathon, there was great potential for a growing local industry. So the town embraced the club, and regulations were put in place to protect tropical fish, thus sustaining the allure of the reefs.

I joined the Five Fathoms Club in 1955, during my sophomore year at Roslyn High, and made my first trip south the following Spring. We were given extra time off during Easter vacation for this adventure, and took down an array of hacksaws, crowbars and other tools to collect specimens for the school biology lab. None of us had ever heard the term "ecology," and we assumed that the reefs would easily replace the sea fans, brain corals and sponges we pried loose.

By then, the shallow water helmet had been replaced by a triangular Jack Browne mask with a gasoline compressor. We each took turns with it, breathing underwater for the first time. I recall having to free dive down to untangle the hose when it hung up on a coral outcropping and kept my pal, Eddo Curran, from surfacing.

We tried a little spearfishing, but the only game fish that got close were barracuda. I could swear they knew the range

of each and every spear gun, and stayed just outside that range. I'd take a desperation shot and the 'cuda would flash a few feet away, then watch me reload with one flinty eye.

Whenever we were following one 'cuda, another would be stealthily trailing behind us. The fishermen had us convinced that barracuda were man-eaters. They warned us not to wear bright jewelry, and to get out of the water if we were ever bleeding. But our most dangerous encounters were with jellyfish and fire coral.

The author shows off the latest in scuba gear and dive knives in 1956.

By mowing lawns, babysitting and doing other odd jobs, we finally saved up enough money to purchase three Dacor Diving Lungs. These two-hose regulators featured variable breathing resistance and a built-in manual low-pressure reserve, which allowed them to be used with K-valve tanks.

The club contracted with a Marathon dive operator for scuba lessons, which we completed in one day. We glossed over decompression theory because the conventional wisdom was that with steel 72-cubic-foot tanks, we couldn't stay long enough at our 30-foot maximum operating depth to get bent.

Instead, we practiced archaic techniques like skip breathing to conserve air and buddy breathing (no one had invented the octopus regulator yet). Buoyancy control was non-existent in those pre-BCD days. We just strapped on enough weight to get down, and kneeled on the bottom while hacking away at the reefs. Then we all came home with gashed knees.

Our checkout dives were held in the murky lagoon of a local dolphin attraction, where the animals would leap out of the water to retrieve hoops and other objects being held by trainers on a tall platform. While some of us were in the water, others climbed the platform to take pictures.

The rickety structure slowly crumbled under their combined weight, and the boys wound up treading water with their cameras over their heads. Looking on from their nearby pens, the dolphins must have enjoyed that spectacle. The next year, both that dive operator and the dolphin park were out of business.

Nevertheless, we all qualified to share our new regs. This was in 1957, two years before the YMCA first began offering a national scuba certification. We received no C-cards or other documentation. If you could rig a regulator on a tank, that was good enough to get air fills or rent equipment at any shop.

When we weren't diving, Mrs. Ivins took us under her wing. One year she arranged a day of sailing on a boat called the *Olive Branch* that reportedly belonged to Ernest Hemingway (Papa was not on board). She even invited us to her home, where she treated us to turtle steaks, which were still a local delicacy in those pre-PC days.

The club tried to repay the town's generosity by taking on small public service projects. One year, we planted hibiscus bulbs at a school. In return, Mrs. Ivins invited us to attend a dance at the local Youth Center. It was fun, but we were so pooped from a day of diving that few of us joined in. Besides, the Florida kids were all doing the dirty bop, while we were still stuck in Lindy Hop mode.

My three trips to Marathon were the highlights of my high school years, even when I took my own 1953 Ford convertible which broke down three times on the way home. The independence and sense of responsibility we shared made those trips truly special. As the mother of one club member put it, "They seem to come back more grown up after a trip like that."

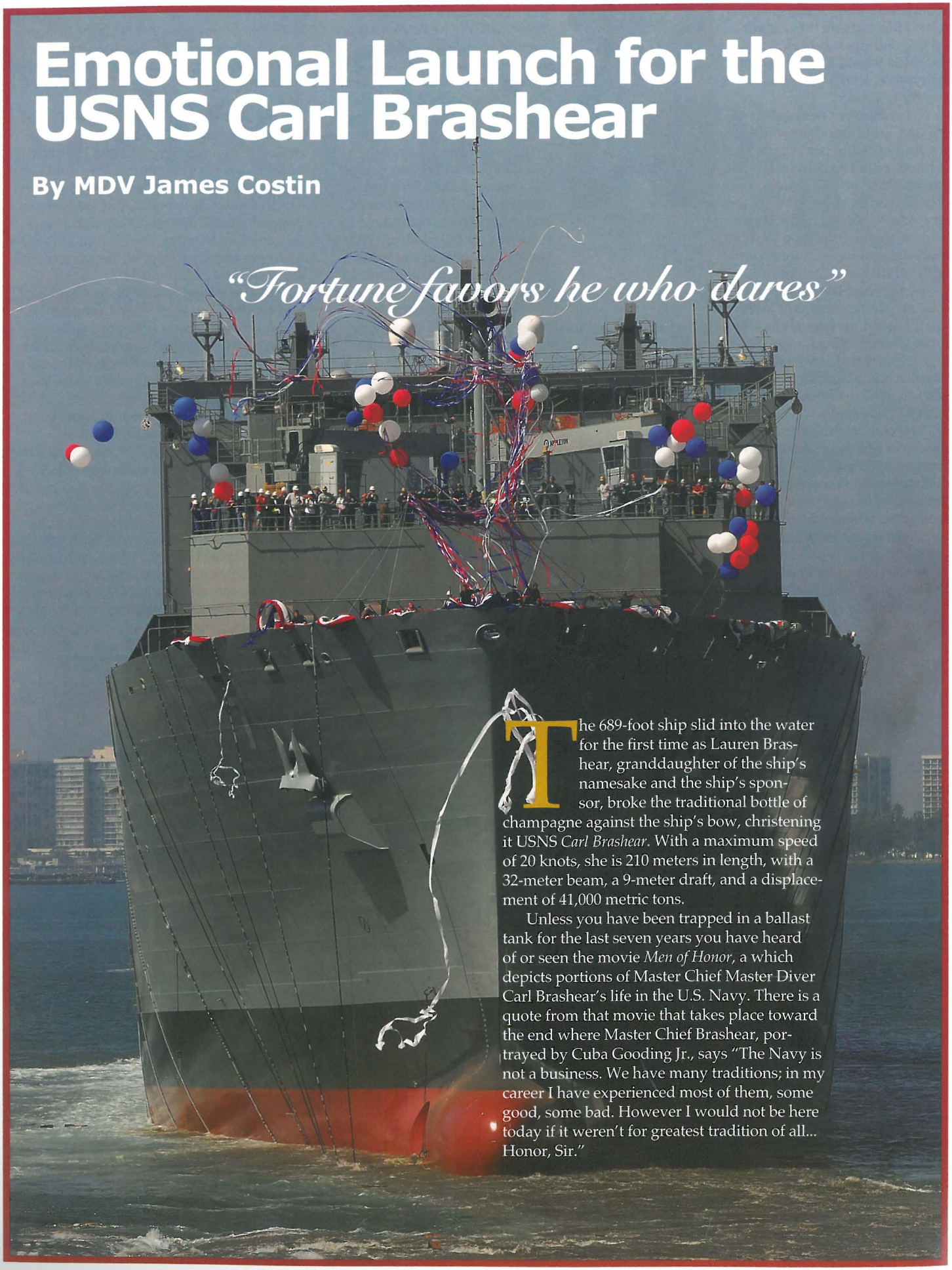
Besides, I got so hooked on diving I'm still at it, more than 50 years later.

The Author

A professional journalist, Larry Clinton, Jr. authored the Complete Outfitting & Source Book for Sport Diving, *and has contributed to* Skin Diver, Scuba Times, Undercurrent, *and dozens of other periodicals. He is still a proud and active diver and a long-time member of the Historical Diving Society.*

Emotional Launch for the USNS Carl Brashear

By MDV James Costin



The 689-foot ship slid into the water for the first time as Lauren Brashear, granddaughter of the ship's namesake and the ship's sponsor, broke the traditional bottle of champagne against the ship's bow, christening it USNS *Carl Brashear*. With a maximum speed of 20 knots, she is 210 meters in length, with a 32-meter beam, a 9-meter draft, and a displacement of 41,000 metric tons.

Unless you have been trapped in a ballast tank for the last seven years you have heard of or seen the movie *Men of Honor*, a which depicts portions of Master Chief Master Diver Carl Brashear's life in the U.S. Navy. There is a quote from that movie that takes place toward the end where Master Chief Brashear, portrayed by Cuba Gooding Jr., says "The Navy is not a business. We have many traditions; in my career I have experienced most of them, some good, some bad. However I would not be here today if it weren't for greatest tradition of all... Honor, Sir."

Master Chief Petty Officer of the US Navy (MCPON) Joe R. Campa Jr. speaks with actor Robert De Niro.

This was touched on again by Master Chief of the Navy Master Chief Campa when he said, "Although our Navy core values were adopted in 1992, I believe they very well could have been born the day Carl Brashear refused to give up being a Navy Diver. He made us see the value of staying true to ourselves and true to what we know to be right and just. He proved to us all that when a sailor is given the opportunity to succeed and they have the will, nothing is beyond their reach."

Webster defines honor many ways. One of those is: an evidence or symbol of distinction. That is what brought so many to San Diego, California on September 18, 2008.

From the dedication: "The ship honors Master Chief Petty Officer Carl Brashear, who joined the U.S. Navy in 1948 and was a Navy pioneer, becoming one of the first African-Americans to graduate from the Navy Diving School and the first to qualify and serve as a Master Diver on active duty. After being severely injured in a diving accident, Brashear's leg was amputated. Almost two years later, after strenuous rehabilitation and rigorous testing, he became the first person to be certified or recertified to dive as an amputee."

There are other names assigned to this class of ships that share this mark of distinction with Master Chief Brashear. Names like Peary, Byrd, Earhart, Lewis and Clark. These pioneers, men and women, answered the call to go into the unknown so our nation could prosper. They dared to dream of what was over the horizon, beyond the veil of the familiar and mundane.

Often knowing the sacrifices it would take, Carl's family accepted it. They knew that much of his career was going to be spent at sea. They understood his desire to serve our nation and looked up to him as a military man devoted to preserving the freedoms we enjoy as Americans.

Among the nearly 3,000 in attendance at the launch f the USNS *Carl Brashear* were Chief of Naval Operations Adm. Gary Roughead, Master Chief Petty Officer of the Navy Joe Campa, and actor Robert De Niro, who starred in the movie *Men of Honor*.

"This ship will stand for the same values of honor, courage and commitment that inspired and motivated Master Chief Brashear," said MSC Command Master Chief Kenneth Green, one of the ceremony's guest speakers.

Many will ask why did we name a support ship and not a diving vessel after Master Chief Brashear?

The answer is easy.

Navy Divers play a huge supporting role in the mission of the Navy and U. S. military. What is more fitting than that a Navy Diver who pushed through diversity to be thought of one our nation's great pioneers? Like a Navy Diver, this ship is multifaceted and will provide a huge capability to the US Navy fleet. The dry cargo/ammunition ships are operated by the Navy's Military Sealift Command and provide multi-product combat logistics support to the Navy Fleet.

This class of ship is a new Combat Logistics Force (CLF) underway replenishment vessel intended to replace the current capability of the Kilauea-class (T-AE 26) ammunition ships and Mars-class (T-AFS 1) combat stores ships.

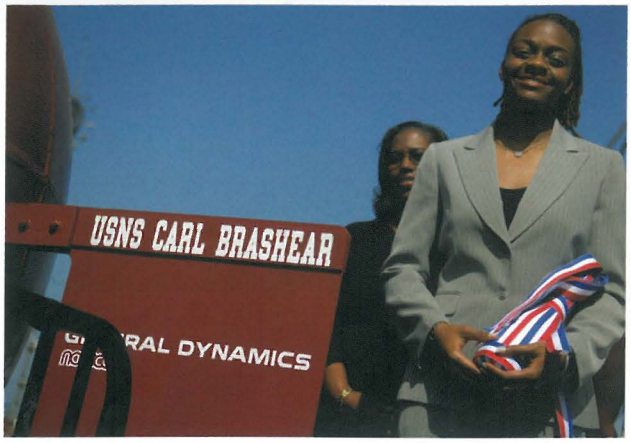
T-AKEs may also operate as battle group station ships when accompanied by a Henry J. Kaiser-class (T-AO 187) oiler. As an auxiliary support ship, T-AKEs directly contribute to the ability of the Navy to maintain a forward presence.

In its primary mission role, the T-AKE vessel provides logistic lift to deliver cargo (ammunition, food, limited quantities of fuel, repair parts, ship store items, and expendable supplies and material) to U.S. and allied Navy ships at sea. In its secondary mission, the T-AKE may operate in

concert with a Henry J. Kaiser-class (T-AO 187) oiler as a substitute station ship to provide direct logistics support to the ships within a Carrier Battle Group.

Ms. Lauren Brashear was presented with multiple gifts during the ceremony. The ship's new captain likewise received many gifts for display, including a MK-V dive helmet from SUPSALV Captain Richard Hooper. Diving memorabilia paintings designed by Chief Warrant Officer Rick Armstrong were also presented.

Master Chief Petty Officer of the Navy Joe Campa's closing comments on that day are an appropriate end to this tribute: "Ladies and gentlemen, we honor a great man today and in doing so we pay tribute to a great American family. To the Brashears, I'd like to leave you with this: his honor is yours. Just as you share his name, you share the immense respect of the entire United States Navy. We will forever remember Carl Brashear as a sailor, a diver, and a devoted father. But on this day, with the christening of this ship, we remember him as a good Chief, a proud American, and a man of honor."



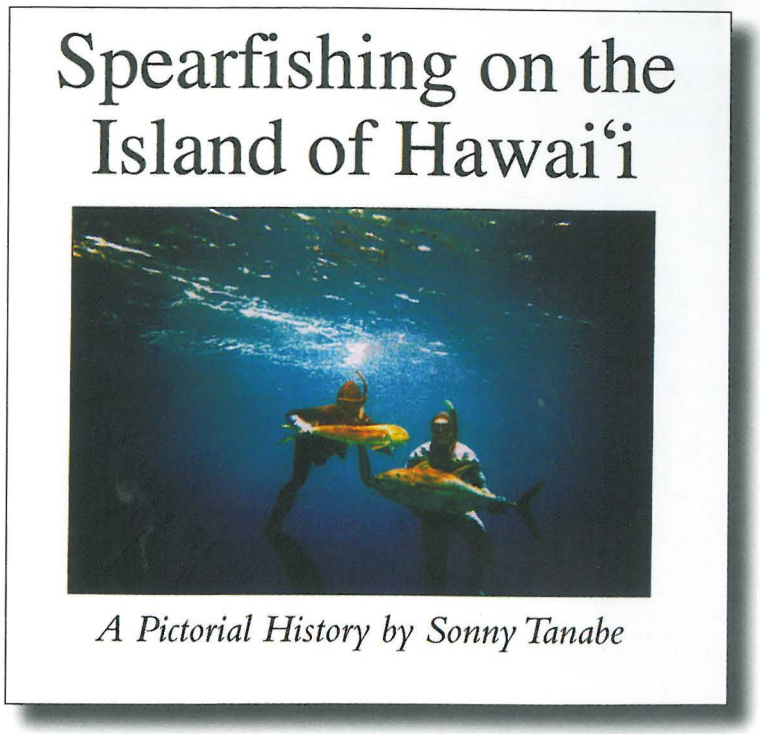
Carl Brashear's granddaughter, Lauren, christened the USNS *Carl Brashear* during the launch ceremony at General Dynamics NASSCO shipyard.

The Author

MDV James Costin is a Command Master Diver at NAVSEA 00C. He was assisted by contributing authors, Master Chief Petty Officer Joe Campa and Sarah Burford, of SEALOGPAC Public Affairs. Originally published in the December 2008 issue of Faceplate, *the official newsletter for the Divers and Salvors of the US Navy.*

Spearfishing in Hawai'i

Nyle Monday reviews
Spearfishing on the Island of Hawai'i: A Pictorial History
By Sonny Tanabe
Honolulu: Editions Limited
2007
ISBN 9780915013531



One of the great pleasures in "fishing" for new books on diving history is discovering publications which cover subjects or areas that have gone unnoticed before. Even new members of the HDS soon discover that diving history is literally as vast as the sea, and relatively little had been documented before the appearance of the Historical Diving Society. While the appearance of the Society has done much to encourage the recording of our underwater history, there still remain many blank spaces on our historical map which need to be filled.

For this reason, and as a former resident of Hawai'i myself, I was especially to happy when Sonny Tanabe's new book, *Spearfishing on the Island of Hawai'i: A Pictorial History*, was brought to my attention. The islands of Hawai'i have a tremendous history of diving going back to the earliest inhabitants of the chain, yet relatively little has been written about it. Mr. Tanabe's book, while admittedly covering only one aspect of diving activity, offers a great first step in filling the void.

This volume begins with an interesting overview of the history of spearfishing in Hawai'i, illustrated with wonderful historical photographs mostly drawn from the collections of the Bishop Museum. In his text the author details how the early Hawaiians carefully husbanded their ocean resources through a type of resource manager called a Konohiki. This person was charged with the responsibility of opening and closing areas or even specific species to harvesting. While most fishing took place using hook-and- line and nets, spearfishing was also quite common from both above and below the surface. The construction of spears is detailed in this opening chapter, from earliest times through the use of steel blades and on to the development of the "Hawaiian Sling" in the 1930s. With such a rich history, it is surprising that far more hasn't been written on this fascinating topic aside from some formal anthropological studies.

The remainder of the book consists of a photographic scrapbook of the author's spearfishing experiences from the 1940s to the present day. Most pages consist of a photo of the "catch of the day" and a brief narrative describing the people, places and fish involved. Within these pages appear many of the better known divers of the Hawaiian Islands, and particularly those of the Big Island.

Looking at some of the big catches in the early days, it is easy to see how much the underwater environment has changed over the years. As the author briefly alludes to, the sea was still pristine when he began his diving career, but overfishing and environmental problems have often drastically changed the undersea landscape.

While spearfishing – being by nature selective – can have nowhere near the impact of massive (and indiscriminate) commercial fishing, it is good to see that the practitioners of this sport have grown more and more aware of their responsibility for the sea, as the ancient Hawaiians surely were.

Mr. Tanabe also includes a chapter specifically dedicated to the hunting of ulua, a species which was thought by the Hawaiians of yore to be the symbol of the god Ku. An inhabitant of the blue water, the ulua is difficult to find and land, making it one of the most challenging and sought after fish for divers. The stories he recounts in his volume quickly make the reader aware of why the fish has gained this reputation.

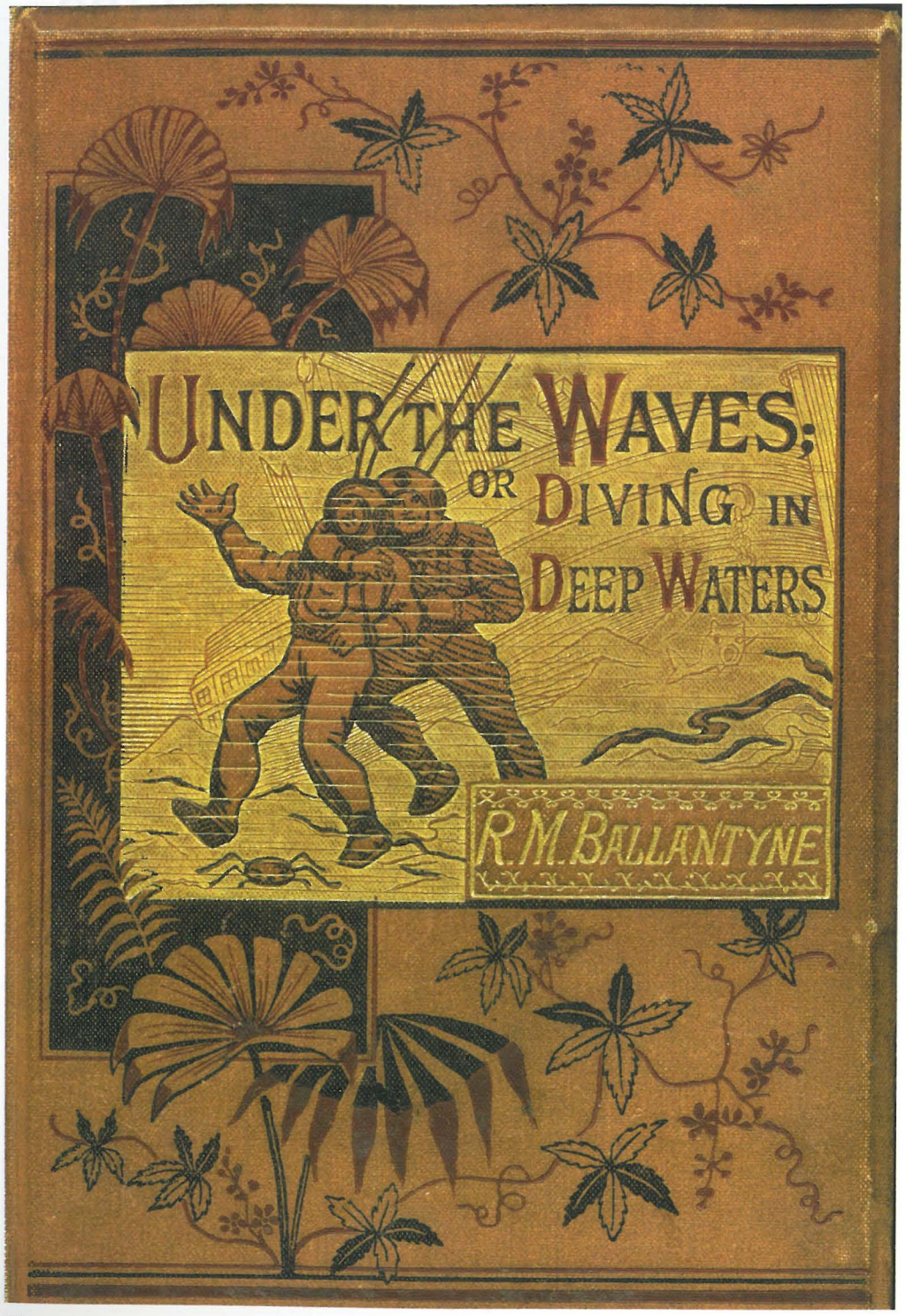
Another chapter is dedicated to spearfishing and other diving records set in Hawaiian waters. Photos of many record breaking fish are shown and written descriptions of how the fish were taken provide a good deal of information about spearfishing technique as well as fish behavior. While at first glace the book seems to be nothing more than a photo album, there is actually a great deal to be learned from its pages.

While the subject of this little volume is a bit different from those usually featured in this column, it is certainly a historical work worthy of adding to any library of diving history. The reader will get a real sense of place from reading this little volume as well as insight into the sport as practiced in the "paradise of the Pacific."

This book is available directly from Editions Limited, P.O. Box 10150, Honolulu, HI, 96816, or visit www.hawaiipublisher.com.

Under the Waves
or Diving in Deep Waters

Peter Jackson looks at R.M. Ballantyne's 1876 adventure story.



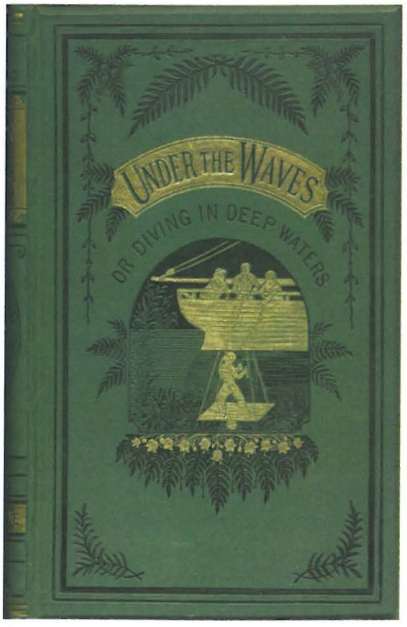
First published in 1876, *Under The Waves* was one of about 90 books by R.M. Ballantyne, the prolific and immensely popular 19th century author of boys' adventure stories.

Ballantyne went to great lengths to research his subjects, often living and working with people in the occupations and circumstances that formed the background to his stories.

His books, which held the reader`s attention with realistic action and adventure, were also educational, often in support of such worthy causes as the lifeboats and the fire brigades.

Under The Waves begins with our hero, 21-year-old Edgar Berrington, being taught all about diving as he begins his new career as a diver. He then sets off on a series of adventures both on and under the sea.

Like many of Ballantyne`s popular works, *Under The Waves* was reprinted several times and might be found (if you are very lucky!) in, I believe, eight different bindings, some of which are shown here. All editions shown were published by James Nisbet in London. I hope you enjoy them.



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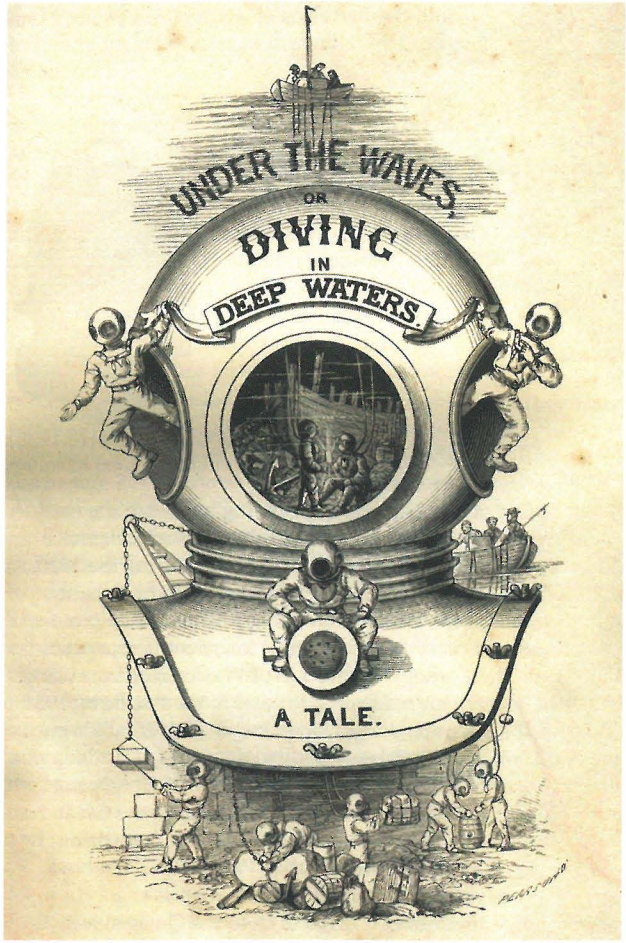
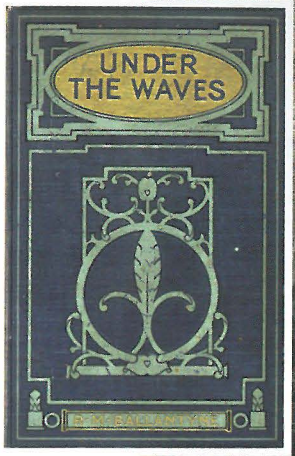
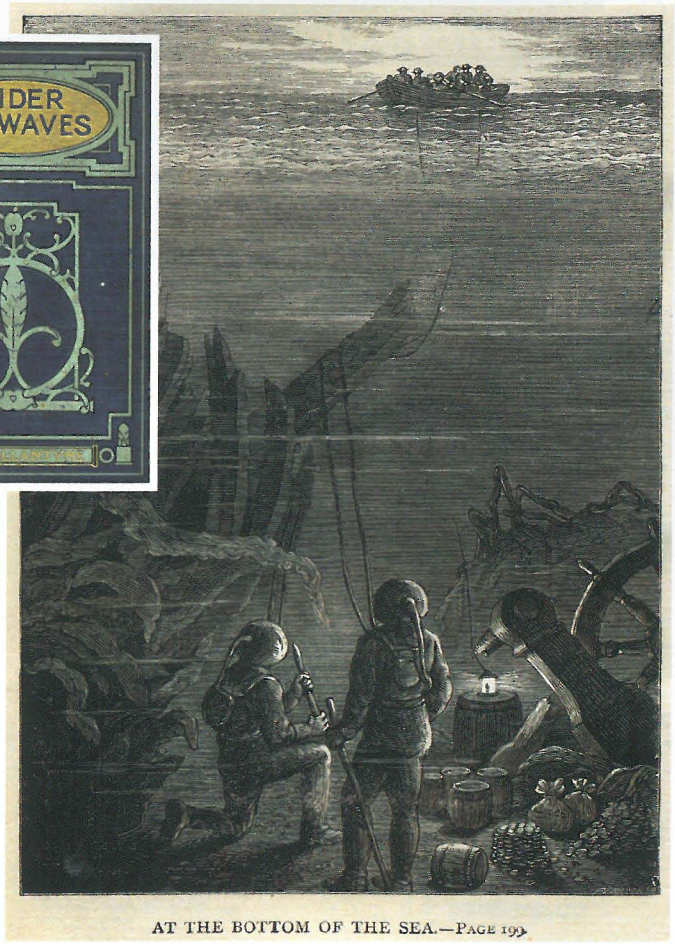




(Above) Cover 19th thousand (ND)

(Right) Book Ilustration

(Left) The famous title page.


AT THE BOTTOM OF THE SEA.—PAGE 193

The Low Isles Helmet & the Mel Ward Helmet From the Langley Collection

By Ed Slaughter, Historic Shipwrecks Officer/Diving Technology Curator
Queensland Museum, Townsville QLD Australia

Mel Ward Helmet (c.1930).
Courtesy of Queensland Museum.

Low Isles Helmet from 1928.

The development of the shallow water diving helmet in the early 20th century allowed scientists to experience the underwater world in its natural state for extended periods. During the 1920s, the Miller Dunn Divinhood and other open helmet systems became commercially available in the US. It wasn't long before marine biologists were employing the 'easy to use' helmets for scientific purposes. ' Dr A.G. Mayor from the Carnegie Institution of Washington was using a shallow water helmet for his research into coral in the Pacific by 1924, and Dr William Beebe scientific diving career began in 1925 while engaged by the NY Zoological Society.

In Australia however, this type of diving helmet was simply not available at this time. Scientific research and collecting on the Great Barrier Reef was undertaken either from above the surface or through a 'water scope' (glass bottomed viewing tube). Primarily it involved investigations of already dead organisms and dry reefs.

This paper briefly examines two helmets from the Queensland Museum Collection of used on the Great Barrier Reef, Australia for the purpose of scientific investigation.

The first use of the shallow water helmet for science on the Great Barrier Reef was by the British Museum Expedition to Low Isles led by Maurice Yonge in1928/29. The Expedition incorporated a number of academic disciplines and was the first comprehensive ecological study of coral reefs. In his 1930 popular account of the Great Barrier Reef Expedition, Yonge described the helmet.

"It is a cylindrical contrivance open at the bottom end and closed at the top, and made of galvanised iron. It looks very like a dustbin with a handle at the top and windows of plate glass in front. At one side there is a double-acting motor car-tyre pump which forces it down to the diver. A life-line of thin manila rope is fastened to the handle at the top."

MEL WARD'S HELMET

Another interesting early Australian marine biologist to use a helmet for collecting was Mel Ward.

His expertise in marine biology was honed over a number of field and research trips to the Great Barrier Reef, and Northern Australia and by the late 1920s, he had collected not only in Australia, but also in Samoa, Fiji and Hawaii, along the Atlantic and Californian coasts of the U.S.A., and in Cuba, Panama and Mexico. While in Cuba, he famously drew on his acrobatic skills in a daring feat to snatch a species of crab that lived in quicksand. He pioneered the use of goggles and diving helmets amongst Australian marine scientists, was the subject matter of the first underwater photograph taken on the Great Barrier Reef, and found turtle-riding "a fascinating sport, as exciting as anything I know".

He continued to collect for the Australian Museum throughout the 1930s, carried out research for the Raffles Museum, Singapore, and the Mauritius Institute.

At least by 1932, Mel Ward was donning a diving helmet in his collecting quests. His shallow water helmet had an unusually large face plate which would have provided excellent underwater vision. While accompanying Hollywood cinematographers through Torres Strait

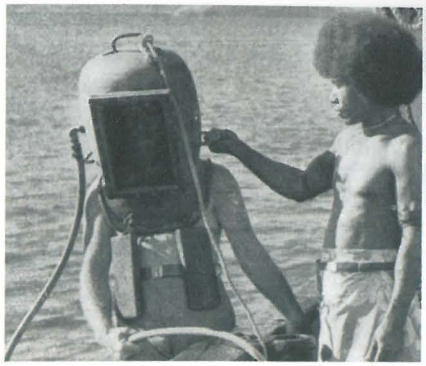
and Papua New Guinea, Ward's helmet came in handy for other uses as described by George Dromgold:

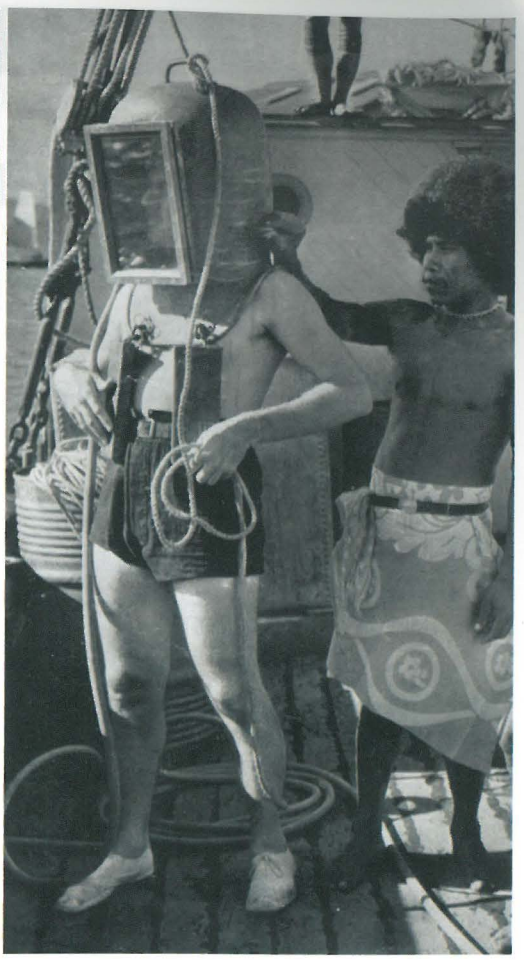
"Wearing Mel's home-made diving equipment, we took turn about the tedious task of replacing the torn copper sheeting on the Revel's bottom. Our [Papuan] crew boys had a long, hot work-out on the small air pump before the job was finally finished and, as a special reward for their steady grind, each of the five boys was allowed to explore the ocean floor in the copper helmet. "

In 1929 Ward was elected a fellow of the Royal Zoological Society, London, and was appointed honorary zoologist of the Australian Museum. He published in Australian and international scientific journals. Mel Ward died in 1966 and his extensive natural history collections (including 25 000 crabs) were donated to the Australian Museum, Sydney.

The helmet used by Yonge and his team was donated to the Queensland Museum after the expedition and is currently on display as part of The Langley Collection: a Heritage of Helmets exhibition, in Townsville, Queensland. Although of crude galvanised construction, the twin faceplate faces downward making it ideal for benthic surveys. Mel Ward's helmet is of high construction quality. This unique helmet was donated to the Museum in 2007 by Greg & Helen Langley as part of the Langley Collection of diving helmets and is also on display in Townsville.

Today, SCUBA diving is commonly used for studying marine biology of the Great Barrier Reef, and modern scientists are often unaware of the perils faced the pioneers of the field.



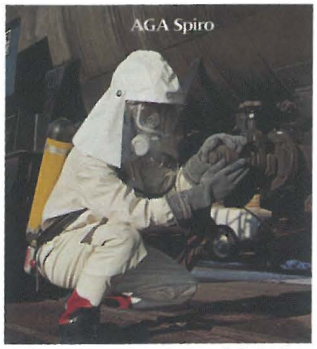


(Above and right) Mel Ward in his shallow water helmet, preparing to dive.

(Below) Diving helmet at Low Isles, Great Barrier Reef 1928/29.

The AGA Divator 324 System

Ed LaRochelle tells the story of how the amazing 324 was first introduced to the USA.



The Skin Diver ad (left) that started it all in the US. AGA Spiro (right) was the manufacturer of the Divator 324.

The June 1974 issue of *Skin Diver* magazine had an advertisement that got lots of interest. The ad announced the introduction of the Swedish AGA Divator 324 system to the American market. The system was nothing new to Sweden as it had been used in a wide range of services since the 1960's.

The AGA Corporation of Sweden has a life support division called AGA Spiro that makes survive air SCBA type units for fire fighting, hazardous environment, and also industrial and submersible SCUBA units used by Swedish Navy. In 1974 AGA Corporation opened an office in Secaucus, New Jersey. The European cylinders could not be sold or used in America due to DOT standards that differ from the European so Pressed Steel Tank (PST) was contracted to make the AGA cylinders in the U.S.. The PST cylinder cylinders were sent to Melbourne, Florida, to be assembled, pressure testing, and packaged. Packaged units were then picked up and stored at AGA's newly formed U.S. Division, called Under Sea Associates, the sales and shipping office, also located in Melbourne.

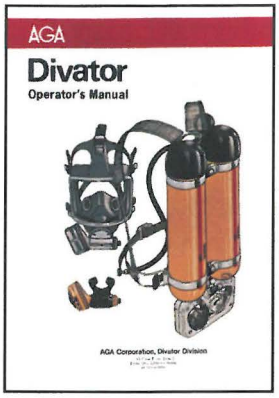
The Swedish Navy was a proponent of the Divator.

Not knowing how well the system would be received in the U.S., AGA Sweden sent an initial shipment of components and parts to assemble 500 units. Pressed Steel Tank was to manufacture 1,000 cylinders that would accommodate the assembly of 500 sets. Requests for dealership poured in to the Florida office, and things were off to a good start. But actual orders were small and on numerous occasions only for one or two units. The system cost dealers $320 and the full face mask cost $125. Dealers had many questions about this very new, highly versatile system, like *"How do I become a trained repair facility and where do I send regulators for servicing in the mean time?"*

The AGA system also handled a much higher cylinder pressure than was used in recreational diving at the time. At this time, in the 1970's, even 3000 psi was relatively new to the sport here in the US. New dealers soon realized they had to upgrade their air filling stations and upgrade their compressors and potentially purchase a booster to achieve the 4000 psi (4400 psi with 10% overfill) required by these new units.

The AGA full face mask was also a dramatic change for most sport divers. Not since the 1950's, with full face masks rigs by Scott, Normalair, and DESCO, had the public had such a system to dive. Therefore proper training for both the Divator and the optional full face mask was needed. Issues and questions about the system and its training arose and were not addressed quickly resulting in a decline of sales.

What made the Divator so different and what was the attraction?



To best supply answers to these questions I will describe my own experience with it. By the fall of 1975 AGA Corp. made some business changes here in the US. Under Sea Associates in Melbourne, Florida was closed. A new division was formed called the Divator Division, and the office and inventory were relocated to Foster City, California. Mr. J. Fahlman was the newly appointed Director.

I met Mr. Falhman when he walked into the dive store I was managing near Foster City. The tall, 6' 4," well figured man in his early 60's came in the store carrying two Divator cylinder sets and asked with a Swedish accent *"Can you fill these?"* I looked down trying to focus on what it was that I was looking at. *"Do you have a filling adapter for these?"* I asked. *"Yes"* he said, as I was looking for the fill pressure on the

Not since the 1950s with the Scott Hydro-Pac, Normalair, and Desco did the public have a system like the Divator.

system. When I saw it I said *"Oh my! I can't go that high."* Falhman said, *"That's OK. I only need to leak test the fittings on these two sets."*

For the rest of the afternoon he captivated my attention by showing me the features and benefits of this unbelievable system. It was so well engineered, made from state of the art materials, and was so versatile, that it was hard to take it all in at once. You could dive it for sport with the mouthpiece second stage or the full face mask. You could use the system as hookah and have the tanks as emergency back up if the surface supply stopped, or your air line was tangled and you needed to do a break-away. No problem. It was easy.

For wreck diving or any penetration dives the compact system had everything in easy reach because it was designed using the body mechanics as its design model. Remember, in Sweden this system was being used by the Fire Department, at commercial and industrial sites. No leaning forward to compensate for the weight of the unit, you could stand straight up. And in the water the small diameter 80 cubic foot twin tanks sat flat on your back. No hovering or torque from side to side. Your life line (low pressure hose) from LP port to mouthpiece did a figure eight in the front of your body, so it was easy to follow it from mouth to end in case you got it caught up on something. The reserve valves, at lower right, and the on/off valve at lower left, were all in easy reach.

Hooka setup.

In the fall of 1976 I went to work for Fahlman. At first I was part time, setting up the assembly line to make up more systems for sale. Several months later I became a full time employee of AGA Divator Division under Fahlman, doing all the assemblies and repairs of equipment coming to us from all over the US. I taught some repair clinics and even gave private lessons at NASA Aims to some Navy Seals training for a special project. (Or so they told me.) A few years later I saw Special Forces using the AGA mask in action, and it later became Navy issue. (Hmmmm).

Everything in Foster City office was going well, but sales were still down. To make things worse, the tanks we held in inventory were still from the original 1,000 made by Pressed Steel Tank back in 1974 - 75. Customers were beginning to complain about having only 3 ½ years or so left on hydro. A new order for 200 cylinders helped, but AGA Sweden was not happy with the progress and in 1977 ordered the U.S. division to close and sell off the balance of the inventory. Diver's Exchange Inc. (DIVEX) was the buyer and so I dismantled the assembly line and shipped it off with the inventory to Louisiana.

Just before the sale of the inventory I got some great deals on systems that I had already assembled with the older hydro date and I loaded up on extra parts and specialty tools. I had equipped many of my friends in the California Kelpdivers Association dive club diving with the Divator that at times people on the beaches of Monterey thought we were from the Cousteau team.

DIVEX took over the design in 1977.

Later on, INTERSPIRO Europe was distributing a newer, revised, version of the original Divator 324 and it was called the Divator MK II. Then Viking took over distribution and sales, and the Divator became available to the US again. Another interesting fact in this equipment's history is that the NASA space program had the Divator on board for the Challenger missions. They were there to be used in case a NASA mission had to do a splash down in the ocean.

The Calypso Camera

A complete Calypso set with flash and instruction manual.

By Sid Macken

The Calypso has three main parts, the lens, housing, and shutter assembly.

As long as there have been underwater photographers, there has been a dream of a "perfect" underwater camera. Even though Louis Boutan's first experiments, in 1893, utilized a camera enclosed within a housing, in short order Boutan was building waterproof cameras. Being the first of their kind, they were far from "perfect."

In 1954, E. E. Pedersen, of California, and Jordan Klein, of Florida, designed and marketed simple, waterproof cameras; the Aqua-Cam and Mako Shark respectively. But it wasn't until the later 1950's that a French adventurer and a Belgian engineer produced a truly amphibious camera that was not only compact and simple to use but also very adaptable and capable of taking high quality photographs. This camera proved very successful, and was used by divers, boaters, skiers, and other sportsmen who operated in wet or highly humid environments. The design was later refined by a world famous camera manufacturer and sold around the world. It became highly respected by underwater photographers and spawned a small industry for manufacturers of auxilliary lenses and other accessories.

Serial Number 771 (L) has the glossy finish and sport finder, while Number 4534 has the textured finish.

The Belgian engineer, with the elegant name Jean Guy Marie Josef de Wouters d'Oplinter, was a member of the crew aboard the research vessel *Calypso* on her first cruise in 1949. The vessel was captained by Jaques Yves Cousteau, who shared the same dream as de Wouters about creating a compact, easy to handle, underwater still camera. They spent much time discussing the concept during the *Calypso*'s voyage. De Wouters also worked for the French diving equipment manufacturer, La Spirotechnique, and on his return he began studying the design possibilities for such a camera. The prototype camera, called the Spiro, was built in 1957. Its outward appearance was remarkably common, but it had several distinctive features.

First, the camera was comprised of three components; the lens, the outer housing, and the shutter mechanism (which was attached to a top plate that carried the viewfinder, shutter release and advance mechanism, and film rewind knob).

The shutter mechanism fit into the housing and was locked in place by the bayonet mount lens. Second, the shutter was released and the film advanced by the operation of a single control. By rotating the mechanism counterclockwise the shutter was tripped. When released, the control rotated clockwise under spring tension. And, when rotated back to the starting location, the film was advanced and the shutter re-cocked.

Deceptively simple, this control activated a vertical, metal, focal plane shutter. And, of course, the camera was waterproof, sealed by o-rings.

The lens attaches to the camera with a bayonet mount that locks the three components together.

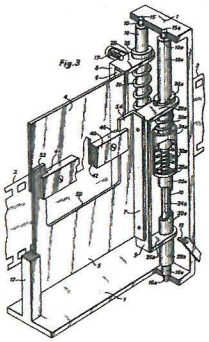
After some refinement, the camera came onto the market in 1958, under the name "Calypso" in honor of the ship on which the idea was born. The lens, a 35mm focal length Som Berthiot, f3.5, was sealed against the camera body by an o-ring, and was operated by two knobs; one for focus and one for aperture. A scale and pointer for each was easily visible through the front of the lens. La Spirotechnique also manufactured a battery / capacitor (BC) flash unit and sport-finder for the camera. The flash connector was located on the bottom of the camera and also acted as the attachment point for a small support tray that was integral to the flash unit. Other features of the camera included shutter speeds to 1/1000th of a second, a frame counter visible on the bottom of the camera, a shutter lock, and neck strap.

In the world of underwater photography, there had not yet been anything quite like it. The Calypso, its shutter mechanism, and flash assembly were unique, easily operated with one hand, and capable of taking professional quality photos to depths of 150 feet. And, it was affordable. I bought mine, in 1964, for $99 through an ad in *Skin Diver Magazine*. Consider that at the time

A closer look at the difference in finish and labels.

the Calypso came on the market, housings for Leica and other popular cameras could cost several hundred dollars.

De Wouters received numerous patents for the camera's design including five US patents, between 1958 and 1964, for the lens assembly, camera, and shutter mechanism. Initially, the camera was finished with a glossy black paint and faux shark skin covering, but somewhere around serial number 3500 several changes were made to the camera's appearance. The glossy black finish was replaced with a black textured paint. The Calypso logo, which had been imprinted in white beneath the lens at the front of the camera, was changed to a black logo on a silver colored plate. Originally, the serial number, originally imprinted in white at the rear of the camera to the right of the viewfinder, was relocated and stamped into the left rail of the accessory shoe on top of the camera. Some of the later cameras have "Made in France" painted on the rear of the top cover. The mechanical features of the camera remained unchanged.



The shutter from the US patent.

La Spirotechnique was the parent company of Aqua-Lung, and closely tied to U.S. Divers. The original packaging for the Calypso bore the La Spirotechnique name. In the United states, the camera was marketed in yellow and white U.S. Divers boxes.

The Calypso was a great camera, but even it wasn't "perfect". Three weaknesses in the design were the flash attachment socket, the rewind knob, and the lack of filter attaching threads on the lens. The threads for the flash attachment were machined into the aluminum outer housing and were subject to corrosion. The lack of filter threads made it difficult to add auxilliary lenses to the camera. And, with cold hands, manipulating the tiny rewind knob was a real problem. These were minor points indeed, but in need of some re-design.

Being a diving equipment manufacturer, cameras were not La Spirotechnique's expertise. Nikon, on the other hand, was a camera manufacturer and saw great potential in the Calypso design. La Spirotechnique sold the camera design to Nikon who revamped the design and, in 1963, introduced the Nikonos. An improvement on the Calypso in several ways, the Nikonos retained the general appearance, and shutter design. The changes included filter attachment threads on the front of the lens assembly, shutter speeds to 1/500th of a second, and a return to a smooth black exterior. Progressive revisions to the Nikonos added to function or durability through the Nikonos III model. The Nikons II fixed the flash socket corrosion problem, and a small lever was added to the rewind knob. Among changes in materials and the physical shape of the camera, the Nikonos III included a new, three pronged flash connection.

With the Nikonos IV, the original, all mechanical design (and Dewouter's shutter) passed down from the Calypso was lost. With the Nikonos IV and V, Nikon went to an electronic shutter and added automatic light metering.

The Calypso camera, as designed by Jean de Wouters and carried on in the Nikonos I through III, was remarkable in many ways, from de Wouter's unique shutter mechanism, to the myriad of aftermarket accessories manufactured by other companies. The cameras were not only used underwater by divers, but were favored by many professional photographers as a backup camera to be used when they did not want to risk destroying their more expensive cameras. The cameras were also popular with boaters and fishermen, and they often hung around the necks of soldiers slogging through hot, humid jungles. For me, part of the charm of the all mechanical design of these cameras was that they were virtually indestructable. As a camera repairman, I could receive a completely flooded camera, and more often than not, clean, lube, and reassemble it with out the need to replace any parts.

The Calypso camera holds an important place in the history of underwater photography, and today these cameras are sought after by collectors. In recent auctions the cameras have sold for anywhere from $800 to $1200, with some going as high as $2400. But, see the side bar for the most remarkable Calypso sale yet reported. (#5100 $12,100)

Calypso Sells for a Whopping $12,000

Diving equipment has, as you have seen in the pages of this magazine, become highly collectable. There are collectors for every facet of diving equipment from helmets to swim fins. Some collect anything dive related, but many specialize in specific fields. Underwater photography (its history, equipment, and literature) has attracted the attention of collectors in recent years, and there is a growing appreciation for the place underwater photography holds in diving history and the impact it has had on diving in general.

In the field of underwater photography, the Calypso camera holds a unique place. Of French design and manufacture, the Calypso was the first commercially successful, professional quality, amphibious still camera to come onto the market. And, collectors have kept their eye on the diminutive camera. Prices reflect the growing awareness of the place the Calypso holds, and collector interest in it.

Because prices vary according to condition, availability, and the whims of the collectors, they are ususally expressed in ranges. So, a Calypso camera in good condition with no accessories might sell for anywhere from $350 to $450. In recent months, two Calypsos, complete, in La Spriotechnique boxes sold, respectably, in the $2400 range. However, in an astounding online auction, a Calypso, serial number 5100, listed as new-in-box (a yellow and white U.S. Divers box) recently sold for a whopping $12,100. That puts the camera in the same price range as many diving helmets.

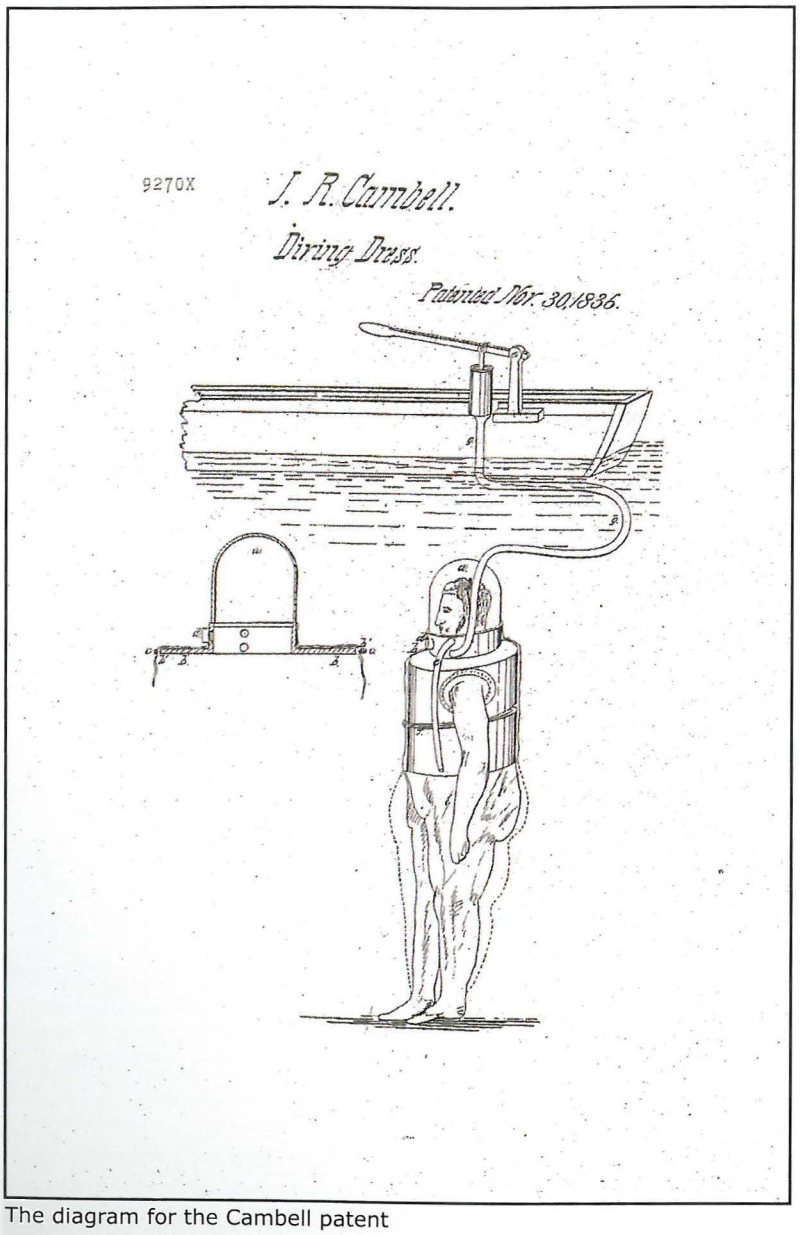
So what made this particular Calypso camera so collectible? The serial number, 5100, is about midrange as serial numbers go (the higthest I have seen in in the 8000's), so it was not the first Calypso by any means. It most surely had something to do with the "new" condition, and possibly that it was the only one that has shown up in a U.S. Divers box. The only people who could probably explain it are the winning bidder and the under bidder.

But whatever the criteria for this particular camera, the point cannot be overlooked that underwater photography, equipment, books, and ephemera has found its place in diving history and the collecting market.

–Sid Macken

Campbell's Diving Dress

By James Vorosmarti, MD



The diagram for the Cambell patent

John Reade Cambell was issued Patent Number 9270X for "improvement in the diving dress." The diving dress to which he refers was that of Nathaniel Wolcott, of Sidney, N.Y., which was patented April 18, 1834 and assigned on July 13, 1835 to Cambell.

Since there is no written description or drawing of Wolcott's dress we must rely on a note from the *Journal of the Franklin Institute* (vol XV, 1835), which describes only a "covering for the body made of water proof leather, oil cloth, or cloth covered with India rubber." A cap was provided of the same material with holes closed with glasses to see through and appropriate tubes for the supply air.

The "improvements" Cambell patented are the following. The original leather cap was replaced by a helmet made by a dome of glass attached to a copper band, which in turn was attached to a copper flange. In the specifications this flange was described as rectangular, but the drawing indicates it was circular. There is no description of how the glass dome and flanges were attached to each other.

The flange was also to be big enough for the diver to enter feet-first. From the drawing, this is obviously incorrect. From the drawing one must surmise that the entire helmet and flange assembly was placed on the diver's head after he had donned the rest of the dress.

Around the circumference of the flange was a groove. The suit, made from India rubber or gum elastic, was to come up over the flange and be held in place by a rounded metal hoop to force the suit material into the groove to make the connection watertight. In the copper band of the helmet a screw tap was to be placed, which could be removed when out of the water "to be able to commune through the opening."

Two other holes were situated in the band for the attachment of the supply and exhaust air hoses. The exhaust hose was allowed to dangle freely and is described as a method of controlling the diver's buoyancy. If held up, the air volume in the suit would decrease and make the diver heavier; if down the air volume increased and he became more buoyant.

The other "improvement" in the suit was the addition of two metal cylinders, which appear to be hinged together in the front of the diver. This contrivance was to rest on the diver's shoulders and had holes to allow the arms to extend out of the cylinder and move freely. The hinge was to allow the diver to bend or stoop. The purpose of the cylinder was to "prevent accident from a sudden exhaustion of air lest the Body might be compressed."

To complete the rig the suit was brought up over the cylinders and attached to the flange. One must assume that the arms were also covered by the suit, although the drawing does not show this, and if not, the purpose of the suit (obviously to provide a closed dress) would have been defeated.

I have found no information that indicates this dress was ever manufactured or used. The method of attaching the helmet to the dress is that described and used by Norcross in his closed dress, patented the year before.

Several problems are obvious. The glass dome was a good and novel idea to allow the diver a much better visual field, but since tempered glass was not available at the time, the helmet would have been easily damaged or broken, with disastrous results to the diver in the water. The cylinders would certainly not protect the diver from being crushed in the event of a sudden loss of air ,and it certainly appears to me that they would have made the dress extremely cumbersome to work in.

The increase in the air space in the suit could have added a great deal of buoyancy to the dress, which may or may not have been overcome by the weight of the cylinders.

There was no method for overcoming the buoyancy of the dress, either in the way of heavy boots or weights. Cambell was probably relying on the weight of the helmet and cylinders and the diver controlling the amount of air in the suit to provide proper buoyancy.

There is no method of attaching the exhaust hose to any portions of the dress, so the diver would have to constantly keep one hand on the hose to prevent rising or becoming to heavy.

One more problem is that there is no mention of how the helmet and the cylinders were attached to each other, if at all.

While this was another early attempt at providing a closed diving dress, and again predates that of Siebe, it does not appear to me to be a very practical or well thought out concept. One wonders whether Cambell was familiar with practical diving. The only original idea, however impractical, was the glass helmet, and credit should be given for that.

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 JDH are not responsible for any errors in descriptions, listings or prices. Items that failed to meet their reserve have their highest bids listed.

Helmet Auctions

AMERICA

DESCO USN Mark V. Recently manufactured bonnet on WWII breastplate # 268, date stated as being "Feb 1943." Appeared to be in good condition and stated as being diveable. Domestic ground shipping quoted at $320 did not help this one. FTMR at $4,938.

DESCO USN Mark V Helium helmet, matching serial # 1831, dated 12-1-44. Used condition with no tinning. Appeared complete but missing the rear canister.
Sold $10,500.

Kirby Morgan 16. Appeared in good condition but had been used as a display item only for 15 years. Located in England.
Sold $3,180

A.J. Morse & Son Inc. 3 light continental style commercial. Matching serial # 3182 stated as being made in 1937. Non factory communications. Well used but with some tinning remaining. Whip and commercial air control valve included. Domestic ground shipping quoted at $320 did not help this one either. FTMR at $4,850 and again at $5,300.

A.J. Morse & Son Inc. 3 light commercial with the horizontal side view ports. Matched serial # 3849. Appeared to be in good condition. No tinning, cracked side view port glass and missing communication inlet blanking cap.
Sold $5,211

Morse US Navy Mark V. This helmet had the number 2114 on both neck rings and straps but it was the opinion of knowledgeable members that these were definitely not original to this actual helmet. The bonnet was missing air channels, a transceiver recess, anode bar and spit cock. The bonnet was crushed into the breastplate to the extent that they would not separate. A more recent style Morse manufacturer's plaque was attached to the breastplate but was undated and unnumbered. It was thought that this might have been one of the helmets that Morse produced for display only. Despite its many problems it realized a surprisingly high price.
Sold $8,580

Reproduction Mark V

This is one of the newer MKV reproductions from Asia. Listed as Mark V Bronze Diving Helmet. MkV Mod 1, Serial # 82230, date 1941. A. Schrader's Son Division of Scovil Manufacturing Company Brooklyn NY, USA. Seller stated "As found, looks real, but not sure." Even with that warning, someone paid $1,903 for it.

Morse Diving Equipment Co. Inc. 3 light commercial stated as matched serial # 6719, Appeared to be in good complete condition.
Sold $4,000.

Schrader USN Mark V, serial #11328, dated 10-43. Appeared to be in good condition and painted silver. The serial number appeared to be one digit too long. This maybe because this was possibly an export order, or that the last digit "8" should be a "B". Stated as being from the Paraguay navy and located in South America but listed in Germany.
Sold $5,878

DENMARK

Hansen pattern 2 bolt. No tinning but complete and appeared to be in good condition. Hand made with visible brazing lines and with a modified air control system.
FTMR $7,433

FRANCE

A very well used 12 bolt French helmet used for sponge diving. Missing studs, nuts, and straps and with very large repairs to the bonnet shell.
Sold $2,700

JAPAN

TOA standard 3 light, with complete manufacturers plaque. Well-used but complete except for broken spit cock handle and missing screw for front located locking device. Located in Japan.
Sold $2,375

UNITED KINGDOM

Siebe Gorman & Co. Ltd. 12 bolt, 4 light. Mismatched #18,828 on #18,851. Uncommon 4 light with round ports. Located in Spain.
FTMR at $8,099.

Scuba Auctions

REGULATORS

Dacor Clipper C3-N s/n N1469. Excellent condition, very clean label, all original $272.50

Dacor Clipper C-2 s/n C3467. average condition, very clean label, all original $177.50

Drager model Delphin/Baracuda. Very clean, good condition, hose not original $382

Healthways DIVAIR model "A" s/n A-1863, circa 1954, brass casted body with chrome cover, nice looking clean label, hoses and mouthpiece not original $2,216

Healthways DIVAIR model "C" s/n C-7191 all original, bad hoses $250

Healthways ARMY Scuba (single hose regulator) s/n #1090 in like new condition. $140

Loosco "Dive Safe" s/n 60171, excellent condition, all original $565

La Spirotechnique mask/regulator combo, excellent condition, all original $547.50

Nemrod hooded mask/regulator combo, excellent condition, all original $415

Northill "Air Lung" s/n 6-2332 good condition all original with photo copy manuals $380

Northill "Air Lung" s/n6-2666 good condition all original $355

Rose Pro single hose regulator good condition, all original $169

ScubaPro "Visionaire" mask/regulator combo. excellent condition, all original $356

ScubaPro "Scubair J" s/n 6194 single hose regulator like new with the box, $347.50

Siebe Gorman Essgee Mistral good condition, all original $200

Siebe Gorman Heinke Merlin with SPG, fair to good condition, all original $140

Sportsways Waterlung "Dual-Air" s/n D-03314, good condition with clean label, $273.50

US Divers "GREEN LABEL" Broxton Ave. s/n 9095, circa 1952-53 with black unihose assy. good condition, $515

US Divers "BLUE LABEL" Broxton Ave. s/n 14648, circa 1953-54 with blue unihose assy. hoses cracking $406

US Divers "BLUE LABEL" Broxton Ave. s/n 14472, circa 1953-54 with Hope Page mouthpiece and hoses, $360

US Divers "Royal Mistral" s/n BM-1738, very good condition, $461.75

US Divers "Royal Mistral" s/n BM-2170, fair to good condition $455

US Divers "Royal Aqua Master" s/m R-12019, good condition $480

US Divers "Stream-Air" with yellow Mistral sticker s/n 62024 restored to original $430

US Divers "DY Jet-Air" early 1956 /57 model, no hoses or mouthpiece, $202.50

US Divers Military non-magnetic Aqua Master assorted parts, with one cover and label with s/n 240790
$846.50

US Divers Aqua Master s/n 907934 W. Delhi address, with the box, near new condition $598.50

Voit "Voit Lung" VR-2 two stage s/n 1324 with clean green label circa 1956, missing HP assy., yoke and screw, hoses and mouthpiece. $538

Voit "Voit Lung" VR-1 one stage s/n 8530 with blue label circa 1959, fair condition, complete original.
$510

Voit "NAVY" V66 s/n 2360 label and chrome in good condition, hoses not original. $405

Voit "Trieste II" V22 s/n 00307 like new condition with the original box. $800

Voit "Blue Fifty Fathom" V55 clean label and in general good condition, all original. $590

TANKS, VALVES, PACKS AND HARNESS

Supreme Divers twin tank set, Buffalo NY/Toronto Canada, with hydro date of 2/56 Manifold fully stamped by Supreme Divers, no harness. $152.50

US Divers "triple tank set" with matching dates on tanks and manifold 8/68. A complete set with harness assy. $1,225

US Divers 53 cubic foot tank with original box, new old stock dated 11/61. Original stickers on tank, all in good condition. $195

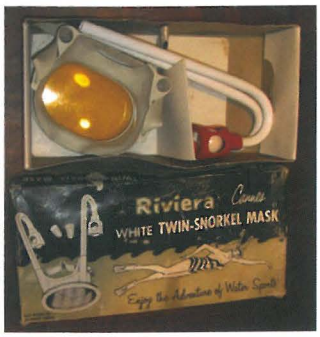
US Divers "UDS-1" triple tank set with shroud and harness, missing regulator, in overall good condition. $402

US Divers "Aqua lung Pac" 1965 model, complete and new old stock with original box. $125

MASKS, FINS, & SNORKELS

Siebe Gorman goggles circa 1940's, in very good condition. $78.80

Healthways twin snorkel mask "Sub Marine" missing snorkels, circa 1957. $141



Riviera twin snorkel mask new old stock complete with original box. $143.50

Sea Dive mask by Sea Net Mfg. black in color new old stock with original box and instruction paper. $229.70

Swim King twin snorkel mask complete with box, (box in poor condition), mask in very good condition and complete. $102.50

Swim King twin snorkel mask new old stock with original box. $355

US Divers full face mask called Look out, for double hose regulator. Good condition, circa 1958. $135.30

Voit mask by "Owen Churchill" green color circa early 1950s. $224.70

Voit mask by "Owen Churchill" and goggles by Johnny Weissmuller, mask has cracked lens, goggles in good condition, circa early 1950's. $201.50

Owen Churchill fins (pre Voit Churchill fins) green color in fair condition, circa early 1950s. $141

Voit Owen Churchill fins with adjustable foot strap, blue color with original box. $119

Voit Owen Churchill fins with adjustable foot strap, blue color with original box. $126

GAUGES & WATCHES

USN Mark I mod O, non-magnetic by Bendix Friez. excellent condition. $481

Blancpain "Fifty Fathom" the VERY difficult one to find, special order for Military, Milspec 3031 circa 1950s. $4,200

Waltham dive watch with Blancpain special order case, and 17 jewel movement by Waltham, very difficult one to find. $1,788

ODDS & ENDS

Boeing Seahorses Scuba Club patch. $159.25

Palm Beach Fin Divers, Florida circa 1950s. $53.50

Voit "Skin diving" a how to, vintage LP record blue vinyl complete with album cover and original 6 page Diving Review booklet. $162.50

Camera Auctions

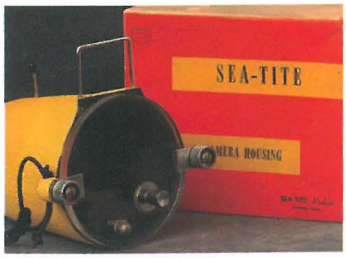
AMPHIBIOUS STILL CAMERAS

Fenjohn Goggler, including instructions and letter from Fenjon. $576

Nemrod Siluro camera, $203

Aqua-Cam with flash. $127.50

MISC. STILL CAMERA HOUSINGS



Australian Sea-Tite M housing with original box. $494

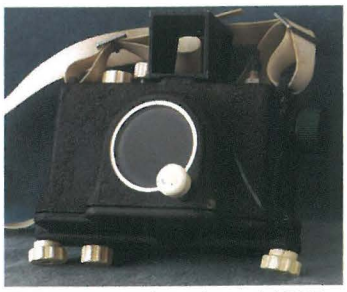
Hugy-Fot housing for Olympus OM SLR camera. $158.05

Rolleimarin IV housing, canvas carry bag, manual, and accessories. $733.56

Rolleimarin housing and Rolleiflex camera. $750

Seahawk MKI housing for Leica or Argus C4. $324.57

Giddings Niko-Mar I housing, $441.85



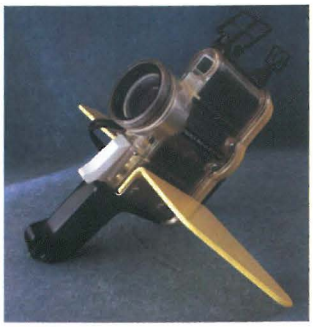
Orca camera housing. $1025

Housing and Russian Lubitel twin lens reflex camera. 1960's vintage. $789.99

MOTION PICTURE HOUSINGS

Bolex housing and 16mm camera, including wooden case, and accessories. $995
Sampson housing with Bell and Howell 16mm camera. $511,00

Homemade plexiglass housing and Bolex C8 movie camera. $350



Fujica Marine-8 Single 8 camera and housing. $112.50

Aqua Foto housing for Bolex 16mm camera. $360.55

Between issues of the JOURNAL of DIVING HISTORY

please visit

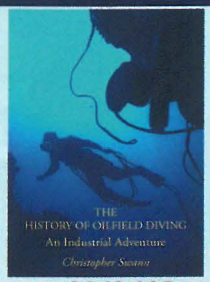
The Historical Diving Society's web site @

www.hds.org

New Products available from HDS!

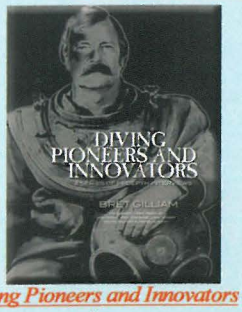
New Products

Helmets of the Deep
by
Leon Lyons
CLICK HERE for the details of this ultimate authority on the subject for collectors.

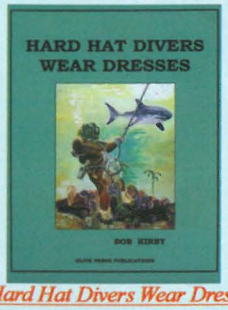


History of Oilfield Diving
by
Christopher Swann

A Guide to Articles on Helmets in *Historical Diver Magazine*



Diving Pioneers and Innovators
by
Bret Gilliam



Hard Hat Divers Wear Dresses
by
Bob Kirby

Recent Announcements from the Underwater World

"Historical Diver Magazine"
has become
"The Journal of Diving History"
to more accurately reflect the evolving content of the magazine.

A new web site design for
The Academy of Underwater Arts and Sciences/NOGI Awards

Recent Back Issues of Our Magazine (Under Construction)

A Special Award by HDS and Beneath the Sea

Extensive photo coverage from the ADCI meeting in New Orleans

In Memoriam André Galerne

Dedicated to preserving the history of diving!

DAN DEMA ADC

Videos of speakers at HDSUSA Annual Meetings!

HISTORICAL DIVING SOCIETY U.S.A.

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Early American Scuba Rigs at DEMA Decades booth

Attendees at DEMA 2008 in Las Vegas got to see a rare gathering of early American scuba diving rigs at the DEMA Decades of Diving booth. The booth was cosponsored by HDS and the DEMA and also highlighted historical diving events that occurred in decades ending in 8, starting with 1828. Displayed items included Louis Boutan's 1898 article on underwater photography, both the Bert and Haldane books on hyperbaric medicine, a CG 45 regulator, a Calypso camera and other items. The booth was located at the entrance to the show and manned by HDS Chief Operations Officer Sid Macken, who arranged for the loan of the display items. Three different American regulators were displayed on WWII vintage cylinders, each of which had an original early harness.

The Decades Booth at DEMA featured an impressive array of early scuba rigs. Photo © 2008 James Forte. All rights reserved.

The first, and perhaps the rarest of the three, was an original single hose Sport Diver Regulator, designed and manufactured in Wilmington, Los Angeles, by E.R. Cross. It was developed during 1948 and manufactured and marketed in 1949 while Cross was running the Sparling School of Deep Sea Diving. The regulator was attached to a WK & Co USN Type A cylinder, stamped 10-41 (October 1941) which had two USN inspectors stamps on the Kidde control valve. This Sport Diver regulator is currently the only model the Historical Diving Society knows of that still exists. Details of its development can be found in Historical Diver magazine, issue 11, Winter 1997.

The second regulator was a WWII era surplus USA military Diluter Regulator converted for scuba diving, which was attached to a WK & Co USN Type A cylinder, stamped 7-42 (July 1942) with a Kidde control valve. Some details of this type of regulator conversion can be found in Historical Diver magazine, issue 9, Fall 1996.

The third regulator was an uncommon twin hose Sea Horse regulator attached to a WK & Co US Govmnt. cylinder, stamped 1-43 (January 1943) with Schoenberger oxygen control valve. The actual regulator is surplus USA military Diluter Regulator.

HDS 2008 Great White Shark Dive with Rodney Fox

The second HDS Great White Shark Dive was held in October and featured our Advisory Board members Rodney Fox and Zale Parry as our "historical divers" (and in Rodney's case, the historical "bait.") This year the sharks were even more plentiful that 2007 with hours of constant action being enjoyed by anyone wanting to jump into one of the five cages. The new deep cage was christened on this trip by Rodney and Leslie Leaney, and saw continued action over the four days as sharks drifted up from the depths to inspect it. Making the trip across from New York to join the HDS group were several members of the Beneath The Sea organization. The 2009 dive will feature Bev Morgan, Bob Meistrell, Zale Parry and Ernie Brooks as our "historical divers," and there was still some space aboard the trip as we went to press. Contact Ed Stetson at ejstetson@hotmail.com.

Rodney Fox in Santa Barbara.

Prior to their adventures in Mexico, Rodney and Kay Fox visited Santa Barbara and were hosted, housed, and entertained by our good friend Hillary Hauser. The HDS partnered with The Marine Mammal Center to present an evening with Rodney at The Santa Barbara Museum of Natural History. Rodney's presentation on his career with Great White Sharks drew a good audience and our thanks go Monte Rook, who opened the evenings presentations, and Peter Howorth who handled many of the logistics for the event.

Kingston Underwater 2008

By Ben Davis and George Burt

What a great time it was! Rubbing shoulders and telling lies with a fabulous group of wreck hunters, amateur archaeologists, divers, historians and marine aficionados. All of them in attendance at the first (of more to come we hope) Kingston Underwater.

The event took place in two venues: Marine Museum of the Great Lakes on the waterfront, and Memorial Hall, Kinston City Hall.

The museum, a jewel in the opinion of the visitors, contains outstanding displays of paintings, photographs, models and recovered items from many wrecks, all under the watchful eye of the wonderful Anne Blake, Executive Director.

The highlights at the museum were presentations by Stewart Deline on both nights, and Kenn Feigelman on Saturday evening. Deline is a traditional Mohawk, environmental awareness speaker, and faith elder. He spoke about the degradation of the diving environment and what we can do. Feigelman's premier presentation of Rhapsody in Blue was a multimedia presentation showcasing the work of Deep/Quest 2 Expeditions. Audience members had the opportunity of speaking to both Deline and Feigelman following their educational and entertaining presentations.

In the foyer of the museum, information on the Adapted Scuba Association (ASA), the Confédération Mondiale des Activités Subaquatiques (CMAS), and the Historical Diving Society-Canada (HDSC) was available. Copies of *Diver Magazine* and *The Journal of Diving History* were also available for perusal.

Unfortunately, Gain Wong, founder and prime mover of ASA (an organization dedicated to teaching diving to persons with disabilities) had to cancel his attendance, so George Burt and Ben Davis took over his post. Both men also represented CMAS and HDS-Canada. Burt and Davis authored a questionnaire related to the potential of an historical diving museum, the results of which clearly showed support for the idea as an adjunct to the existing Marine Museum in Kingston. Of those who responded, 80 percent were certified divers or instructors and 55 percent were from the Kingston area.


Barbara Carson is flanked by the authors, George Burt (L) and Ben Davis (R).

Displays by groups and organizations concerned with diving and underwater exploration, marine archaeology, underwater film production, and environmental and water conservancy programs offered by governmental and non-governmental agencies were all on display at the Kingston City Hall.

The displays in the hall were well done. We were impressed with the depth (pun intended) of the work done by Preserve Our Wrecks (POW) and by Save Ontario Shipwrecks (SOS). Detailed information was available on many of the wrecks, including plastic cards upon which a drawing of the wreck was displayed. The card size was suitable to take with you on your dive – a nice touch.

The only equipment supplier in the Hall was Canadian Divers Ltd., represented by Jack Bomrich (formerly, and for a long time, with Dacor). Jack always has been, and still is, a highly respected, dedicated and helpful purveyor of quality diving gear.

Meanwhile, back at the Marine Museum site, Shark Marine Technologies, under the leadership of Jim Garrrington, had set up an ROV demo. The Shark Marine and Northern Tech Divers also demonstrated some drysuits and scuba gear while diving under and around the *Alexander Henry*, a decommissioned buoy tender, formerly operated by the federal government. This ship is floating in a flooded dry dock and is available as a bed and breakfast. It's a great place to while stay visiting Kingston.

Mentioning names is always hazardous, lest someone be omitted. However, a few of the many people who made Kingston Underwater a success are: Anne and Gord Blake for their leadership before, during and after the event, John and Carrol Schaeffer, Cataraqui Region Conservation Authority, Centre for Sustainable Watersheds, Kingston Power & Sail Squadron, Ontario Ministry of the Environment, Seadeucer Dive Charters. Also, we would like to make mention of 98.3 Fly FM, Cogeco Cable, Downtown Kingston Business Improvement Association, Kingston Economic Development Corporation and KingstonLinks.com and, of course, Barbara Carson.

Barbara is a most unassuming person. Her diminutive stature and shy nature may fool you, but she is a formidable diver, owns her own sidescan sonar-equipped dive boat, and is a founding member of the Marine Museum. She has been involved in discovering and identifying (along with Lloyd Shales and others) a number of wrecks in the Kingston area. Her diving career began in 1958 and continues to this date. She is typical of the dedicated divers of the Kingston area.

Next year take time to attend Kingston Underwater and enjoy the event, along with all the other things that great city has to offer. See you there!

Due to the prevailing liability laws in America the HDS USA does not conduct any in-water activities. Some American-based divers have formed groups to restore, operate and preserve the classic equipment of America's rich diving heritage. These groups often contain divers who are members of the HDS-USA. The activities of these groups are not official HDS-USA functions and the HDS-USA is not involved in any of the activities of these groups. This column is produced solely for the interest of our readers. Please consult the HDS-USA disclaimer at the front of this issue.

SPOTLIGHT: *Vince Scarponi*

Society member Vince Scarponi of Lebanon, New Jersey, recently received some regional publicity for his interest in historical diving equipment when he was featured on the cover of Hunterdon Life magazine dressed in his USN Mark V equipment. The article is entitled Diving Like Dad in World War II.

Vince's father Frank was navy diver in WWII and also in one of the first Seabee units. Frank was wounded at Okinawa, and never spoke much about his service but Vince took an interest in his diving and eventually acquired a working USN Mark V rig. When not working or diving his Mk V, Vince is a certified public safety diver volunteering with the Garden State Underwater Recovery Unit in Milford. He is also working on a children's book titled "Jack and the Helmet Diver." A regular at the Beneath The Sea show, Vince is passing on his love of diving history to the younger generation.

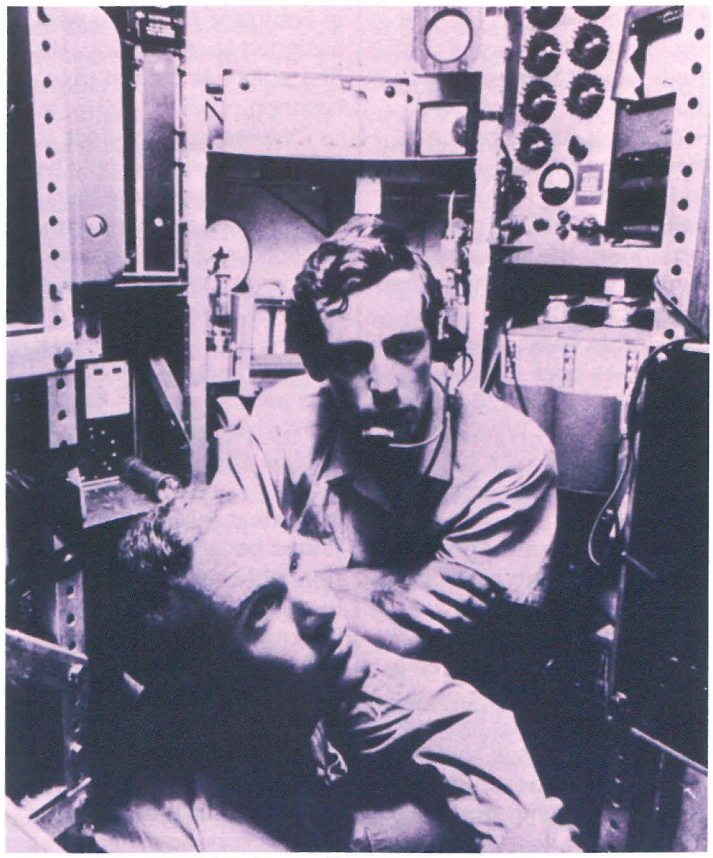
More information the article on Vince on can be found online at www.njnpublishing.info/hunterdonlife.html.

Jacques Piccard 1922-2008

Jacques Piccard died on November 2, 2008 at age 86. He was a deep-sea explorer, inventor, and marine designer, and went deeper into the ocean than any other man.

The feat for which Piccard became best known was performed on January 23 1960, when Piccard and Lt Don Walsh, of the US Navy, travelled nearly seven miles to the bottom of the Challenger Deep, in the Pacific's Marianas Trench. The craft they used was a "bathyscaphe", the *Trieste*, which Piccard had built with his father, the physicist Auguste Piccard. It remains the deepest dive ever carried out. The bathyscaphe was a deep-sea ship with a cigar-shaped hull above a small, spherical cabin, and travelled using the principles of buoyancy and ballast.

Piccard observed: "By far the most interesting find was the fish that came floating by our porthole. We were astounded to find higher marine life forms down there at all." The discovery of living organisms at such a depth was to prove an important argument against dumping nuclear waste in ocean trenches.



Jacques Piccard, with headset, and Don Walsh in *Trieste*.

Jacques Ernest Jean Piccard was born on July 28 1922 in Brussels, where his Swiss-born father was Professor of Physics at the University.

Auguste Piccard had always been fascinated by the notion of flying to a great height, and descending to great depths in the sea, envisaging using craft that operated on similar principles. In May 1932, when Jacques was nine, his father was carried by a massive balloon 10 miles into the stratosphere.

Jacques was educated at the Ecole Nouvelle de Suisse Romande in Lausanne and the University of Geneva, where he studied economics and subsequently became a lecturer. He then helped his father to construct a bathyscaphe, along the principles of buoyancy and ballast used in the balloon which had carried Auguste into the stratosphere. In 1958 one of these craft, *Trieste*, was bought by the US Navy, which retained Jacques Piccard as a consulting scientist.

It was the Navy which proposed the dive to the deepest known pit in the ocean's floor – the Challenger Deep, off the island of Guam. *Trieste* was modified to withstand the enormous pressure, and there were several preliminary test dives in the Marianas Trench, including one made by Piccard and Walsh to a depth of 24,000 feet.

When they made their historic descent in January 1960 the two men were squeezed into a tiny space in the craft's cabin (Piccard was 6ft-6in tall).

At 30,000 feet a window cracked; but nearly five hours after beginning their descent they touched down on the bottom. They were 27 times deeper than could be achieved by a conventional submarine, and remained there for 20 minutes, observing by the light of their lamps a shrimp-like creature and a white flat fish similar to a sole. They then returned to the surface.

Piccard described the expedition in his 1961 book, *Seven Miles Down*, written with Robert Deitz.

Piccard also invented and built several "mesoscaphes," vessels for use at medium depths which were unveiled as "the world's first tourist submarines."

During the Swiss National Exhibition in 1964 Piccard took 33,000 passengers into the depths of Lake Geneva. He continued taking children into the lake until he was in his seventies.

In 1969 Piccard was in the mesoscaphe which travelled for four weeks, at a depth of 1,000 feet, from the coast of Florida to Nova Scotia. The aim was to study the features of the Gulf Stream; also, NASA was interested in the feasibility of men living in space, in contained environments, for prolonged periods.

In the 1970s Piccard formed the Foundation for the Study and Preservation of Seas and Lakes and began warning about the dangers of pollution and overfishing. He continued to develop and build submersibles. He made his last dive at age 82.

In 1953 Jacques Piccard married Marie-Claude Maillard, with whom he had two sons and a daughter. Their son, Bertrand, completed the first non-stop round-the-world balloon trip – with the Briton Brian Jones – in 1999.

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Bob "Frogfoot" Weller 1925-2008

"I vividly remember the day Bob called on the VHF radio, trying to keep his voice calm. 'Taffi, you may want to meet us at the dock with a couple of reporters.' When Bob pulled his boat Pandion up to the dock, he could barely contain his excitement."

Taffi Fisher-Abt wrote this in the foreword to my biography about the life of Bob "Frogfoot" Weller. Taffi is the daughter of the late, legendary underwater explorer and treasure diver Mel Fisher. Bob and Mel Fisher were contemporaries. Mel died in 1998, and Bob October 13, 2008, in JFK Hospital, not two miles from his home at the end of what was once a turning canal for barges in Lake Worth, Florida.

Frogfoot died as he lived with great dignity, courage and grace. But back to Taffi's story:

"Come aboard Taffi, I have something to show you," Frogfoot told Mel Fisher's daughter on that eventful day in 1993. "When they slowly and delicately unwrapped the towel on the engine cover, there it was, a brilliant, dazzling, blindingly beautiful four-piece diamond jewelry set. The treasures glistened in the sunlight. The set included two large (about the size of the palm of your hand) unique broaches (one shaped like a butterfly and one shaped like a flower) and a matched set of earrings. They contained a total of 427 sparkling rare gray diamonds."

The underwater find was dubbed the Queen's Jewels and became a centerpiece in the displays at the Mel Fisher museum in Sebastian, Florida, where other treasures and artifacts recovered from the legendary Spanish fleet that wrecked upon these shores in 1715 are on exhibit.

These momentous underwater discoveries are Bob Weller's legacy. He always gave credit to his team of divers, his wife Margaret, Brad Williamson, Bill Cassinelli, Bob Luyendyk, and so many others that came and went in summer season.

Every season the Weller boat was out seeking treasure under contract with the State of Florida and the Mel Fisher group that owned many of the state leases and admiralty claims to the Spanish shipwrecks.

Bob would not relish a dirge to mourn his passing. His good sense of humor and happy nature requires a celebration of his life and remembrance of times that made laughter prevalent in the Weller household. His boat was a happy boat and there were many happy, and, thanks to Margaret, well fed crews that put to sea aboard the treasure hunting boats that he owned over some 48 years diving the Florida coast.

He was born in Monroe, Michigan, on May 20, 1925, and grew up in Wyandotte, where he lived with his family in a boathouse on the Detroit River.

"We were pretty poor. We went through prohibition and the depression. It was a time when all you were doing was trying to make a living. We had to put cardboard in our shoes to keep the snow out," Bob told me.

He earned twenty-five cents for hanging grocery store ads on doorknobs. It was 1932, Bob kept a nickel of his pay for himself to buy a pineapple pie and gave the rest to his mother.

Bob became an expert swimmer dodging ore carriers swimming across the Detroit River. He was on the swim team in high school, a powerfully built six-foot tall athlete. While he was studying to get into college, Bob was told by his homeroom teacher that the U.S. Navy was giving an examination that would enable those selected to go to college. He took the exam.

Two weeks later he was given his physical and sent to Williams College in Massachusetts. Bob continued swimming and his team won championships.

Upon graduation from Midshipman's school he received his commission in February 1945 and was assigned to the Pacific. His first ship was caught in a typhoon.

"Waves were 85-feet high off Guam The only two people not sick were the quartermaster on duty and myself. I spent 28-hours on watch without food or even a cup of coffee," Bob told me.

The Navy was good to Bob and his service in the Pacific memorable. He left service after the war only to sign on again and serve in combat in Korea. Weller joined naval forces aboard the light cruiser *Manchester*, became the ship's public information officer, helicopter gunfire spotter, gunnery main battery control officer and first division officer.

A former navy UDT man came aboard and Weller was told that the Navy was looking for good swimmers for their Underwater Demolition Teams. Bob applied and was accepted to attend UDT school in Coronado, California, once his ship arrived in California.

This led to the best assignment of Bob's navy career. As public information officer, he was flown back to California to arrange a homecoming for the ship. Weller met a Doctor Nolan and was introduced at a gala party in the Hearst castle, where he met actresses Dorothy Lamour and Barbara Hale. They helped

him set up the homecoming. Marilyn Monroe attended. Tommy Dorsey sent a telegram to the ship inviting officers to hear him play at the Hollywood Palladium. Bob invited Marilyn Monroe. After the performance, "She kissed me on the cheek. I didn't wash for a week," Bob laughed when he told me the story.

Frogfoot got his nickname during training in Coronado. Mail came addressed to "Frogfoot Weller." When mail call was yelled out the nickname stuck.

Bob served two tours in combat in Korea in 1951 to 1953. He was promoted to Lieutenant Commander and put in command of UDT Team 1. He and his men made many sorties behind enemy lines in frigid waters and in inhospitable, often freezing, conditions.

Bob was decorated many times and was given the Purple Heart for wounds suffered when shot out of a sub's torpedo tube on an underwater mission in Korea.

After the war he returned to civilian life and attended the University of Delaware under the GI Bill. Bob was the same age as his professors so made many friendships among them. His professors joined the dive club he formed at the university and they would often explore bays and ocean areas off the coast.

Bob became a demolition man for Atlas Powder and spent time in Tampa, Florida. He studied architecture and civil engineering. He was hired by Honeywell as a salesman.

After working in the Greensboro area he put it to his boss that they promised him Florida. He got the assignment in 1960. Every weekend after that Bob could be found on his outboard powered runabout in the Keys diving for treasure.

His first boat was made of plywood and powered by a 35 horsepower Johnson motor. The boat was called *Frogfoot*. Bob trailered it to the Florida Keys and began discovering galleons wrecked during a hurricane in 1733.

"I was diving for treasure in Florida before Mel Fisher even got here," Bob said one day. Bob and Mel and their families became good friends. Bob subcontracted shipwreck sites once Mel and his group obtained admiralty leases on Spanish galleons. During this time Bob and his friends discovered many new wrecks. It was finders keepers in the early days. Bob met many of the early pioneers in diving. He and Art McKee became friends. The friendship eventually led to Bob writing McKee's biography.

Bob loved what he was doing. He was joined in the great adventure by his wife, Margaret. Every day brought new discoveries and new excitement for the group of friends. They couldn't wait for the next summer season to begin, always planning, digging through research materials, waiting until the ocean was calm enough for them to dive in shallow water near the beaches where Spanish galleons were wrecked in hurricanes.

Bob and Margaret became the first family of treasure divers and shared that title with Mel and Deo Fisher. There were a few times when they were friendly rivals, even when Bob was working in conjunction with Fisher's salvage leases. Rivalry was great fun. They vied for who would find the most treasure or the most unusual artifact.

Bob shared his knowledge about sunken Spanish treasure by writing books and articles. His biography of Mel Fisher has proved to be one of the most popular titles in the field. Bob authored hundreds of articles and edited *Treasure Quest Magazine* with his friend and fellow author Ernie Richards.

"Nobody would remember Bob Weller," he told me once. "They all remember Frogfoot," he laughed. Thus he carried his Navy nickname onto the pages of his books and articles. Ernie Richards likewise was given a moniker that stuck: Bob called him Seascribe.

There was always great fun in the Weller household in Lake Worth. Bob offered seminars every year and arranged for speakers to address postulates in the treasure hunting field. Men like Burt Webber, discoverer of the *Concepcion*, John Potter, author of the famous treasure guide, and others joined Bob to share their knowledge and experience.

Bob's kidneys failed five years ago. It was a mysterious illness with undefined cause. It happened at the same time that his wife Margaret was in the hospital. They shared the same room. Bob and Margaret faced the illnesses with grace and both resumed their lives, Bob requiring kidney dialysis and Margaret caring for him.

While Bob didn't dive again he remained active guiding dive operations and acting as a consultant. He taught and gave counsel to everyone that asked his advice. The Wellers shared their home and hospitality with countless divers and friends. Margaret's Christmas tree and decorations were and will be the awe of all that enjoy them. It was often difficult to know whether divers attended Bob's seminars to learn or to eat Margaret's fine cooking.

There were always good stories and good times at Weller's Cove. There will always be good stories about this man that served his country bravely in two wars, found great treasures under the ocean, shared his experiences in nine exciting books and remained courageous to the end.

I have many cherished memories and wonderful photographs. One I know would make Bob smile.

It was taken one day when he returned from kidney dialysis. Margaret was preparing dinner. Bob decided to lay down on the sofa to rest. One of their beloved cats jumped up and plunked itself down on his lap and was being stroked. I had a silly pirate hat from a party and stuck it on Bob's head as he lay there. He didn't open his eyes but smiled, knowing that the photo would be a good joke. "Put a bottle in his arm," Margaret called out from the kitchen. "Make believe he's been tipping it down and is drunk." We did. Bob smiled all the more.

Even in adversity Frogfoot Weller kept his sense of humor and always his love of family and friends.

–John Christopher Fine

Walt Deas
1933-2008

Photo courtesy Dave Moran, Dive New Zealand

Walt Deas, a pioneer of British sports diving, died on May 28, 2008 after suffering a stroke. He died as he lived – immersed in underwater filming projects.

Walt started diving in Scotland in 1950, when scuba diving was in its infancy. He built his own diving suits and underwater camera housings. As a teenager he started researching books and papers for ship wrecks and good dive locations. He discovered the locations of two Spanish galleons. Like most who were pioneering diving at that time his first dives were with ex-Navy oxygen rebreathers until the aqualung became available in the mid 1950's. He was founder member of one of Scotland's first dive clubs, the Underwater Explorers of Dundee.

In 1956 he published *The New World - an Introduction to Underwater Exploration and Sport*, which was one of UK's earliest diving manuals. It was about this time that he read Arthur C. Clark's *Coast of Coral* in which Clark described the tropical seas round Heron Island off the east coast of Australia. Walt was so entranced by these descriptions that he and his wife Jean made the decision to emigrate to Australia, sailing on the S.S. *Himalaya* in 1959 on the emigrant's fair of £5 per head.

They settled in Brisbane and immediately became part of the dive scene. He and Jean visited the Barrier Reef as often as possible and started compiling a formidable photographic portfolio with his Rollieflex camera and Hans Hass underwater housing. Walt worked as a building supervisor and his trade as a carpenter helped sustain their life as "diving gypsies."

Walt set himself the formidable challenge of photographing every species of coral to be found on the reef with a wide angle shot to show the environment and a close up of the coral polyps for species identification. This work culminated in publication of *Corals of the Barrier Reef* in 1976.

Walt and Jean found Heron Island to be everything they had imagined and from that point on their lives became inextricably interwoven with that of Heron Island's development as a diving centre and Research Station. Walt's photographic and journalistic work started to appear regularly in publications such as *Animals, National Geographic, Skindiving in Australia, Sea Secrets, Triton, Sub Aqua*, and more recently *Scottish Diver*.

Walt became secretary of the USFA Queensland and in the early 1960s he organized several dive meetings that eventually led to the establishment of the Heron Island Divers Festival.

Between 1969 and 1976 Walt was the contributing Australian editor for *Dive South Pacific,* published in New Zealand. He was elected Australian Photographer of the Year and to the Hall of Fame

of the US Academy of Underwater Photographers. He also accumulated a string of international photographic awards until photography gradually gave way to 16mm. filming and then to underwater video.

In 1976 Walt and Jean returned to Heron Island, where they stayed for five years as resident divemasters becoming well known and respected by many internationally renowned underwater cinematographers and diving medicine professionals.

Walt was the main underwater cameraman for three episodes of *Life on Earth*. He and Jean were David Attenborough's guides on his only sport dive on the island.

Later Walt and Jean filmed and directed *Where the Fish are Friendly*, which when it was released in the UK amassed an audience of almost 15 million, the highest ever recorded for a natural history film at the time.

Walt has worked as a cinematographer with some top names in film and TV where he has been involved in both underwater and surface productions as cameraman, director of photography, producer and director over the years. Productions have included: *Life On Earth, Mission Impossible, Reefwatch, The Turning Tide, The Living Planet, The Private Life of Plants, The Reef Builders, The Unknown World, 20,000 Leagues Beneath the Sea* and many more.

In addition to the films, Walt wrote and co-authored a number of books all illustrated with his own photography. His most recent being the highly regarded *Coral Reefs: Natures Wonders*. He and Jean visited the Sudanese Red Sea, the Bahamas, Florida, Curacao, the Cooke Islands, Tahiti, Fiji and many other South Sea islands.

During the summers 1980 and 81 he returned to Scottish roots to make *The Basking Shark* film. With scenes from Norway and Ireland's Aran islands the film's location was mainly the Firth of Clyde and Loch Fyne. The documentary described the history of the Basking Shark fishery and explained how little was known of this incredible creature. It showed scientific research of the time and most importantly showed the devastating extent of the fishery in the 1980s.

The film was a spur to conservationists and their subsequent actions led to classification of the Basking Shark as an endangered species and legislative protection. The film has rare footage of these giants swimming and feeding in Kilbrannan Sound.

During more recent visits to Scotland Walt produced two films, Loch Fyne and The Slate Islands. His latest production was *The Bomber Reef,* which has already won several awards at film festivals around the world.

Perhaps this will not be Walt's last film because at the time of his death he was very actively working on at least two other Scottish productions – *Inverary at War* and *Kilmartin – the Stones of History*. Both concepts featured underwater sequences. Maybe someone will complete these projects for him.

Walt and Jean have had what most of us would consider the perfect balance of diving, travel and international fame, although Walt would be the first to point out such rewards did not come easily. However, they always felt it important that they put something back into the sport which has given them so much.

One example of this was the presentation in 1972 of the Walt and Jean Deas' trophy for the best underwater photographs shot in Scottish waters.

Walt and Jean have contributed greatly to the sport of diving for more than 50 years. They have brought enjoyment and appreciation of the underwater world to thousands of divers and non-divers worldwide through their books, films and photographs. Their love of diving and the marine environment has been contagious and inspiring to those who have been touched by their enthusiasm.

Walt was a warm, hospitable, gregarious and generous man who liked nothing better than to sit with a glass of wine talking with diver friends about the last or the next underwater filming project. He will be greatly missed by all who had the pleasure of knowing him, none more so than Jean to whom we extend our gratitude for his life's work and deepest sympathy in her loss.

–Jack Morrison & Crawford Grier.

Tributes to Walt Deas from Ron and Valerie Taylor, Bob Hastead, Neville Coleman and others can be found in Barry Andrewartha's Dive Log Australia, July 2008, www.divetheblue.net.

1955. Ullapool, Scotland. Bill Hall, Alec Black and Walt Deas. Kneeling: David Dye. Photo courtesy Jeff Maynard, *Classic Diver* magazine.

The Society's annual raffle for an authentic DESCO USN Mark V helmet was drawn in Las Vegas on October 25, 2008. The tickets were drawn by Advisory Board member Rodney Fox in the Society booth at the DEMA show. Our congratulations to Terry Flynn and all the other winners.

DESCO USN Mark V helmet - Tery Flynn, MO
Limited Edition copy of *Deep Diving & Submarine Operations*, by Sir Robert H. Davis - Landon St. Peter, ME
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1924 USN DIVING MANUAL. Reply to: Pete Berdzar, 3313 E. 5TH Street, NATIONAL CITY, CA, 91950. Phone: 1-619-470-7286.

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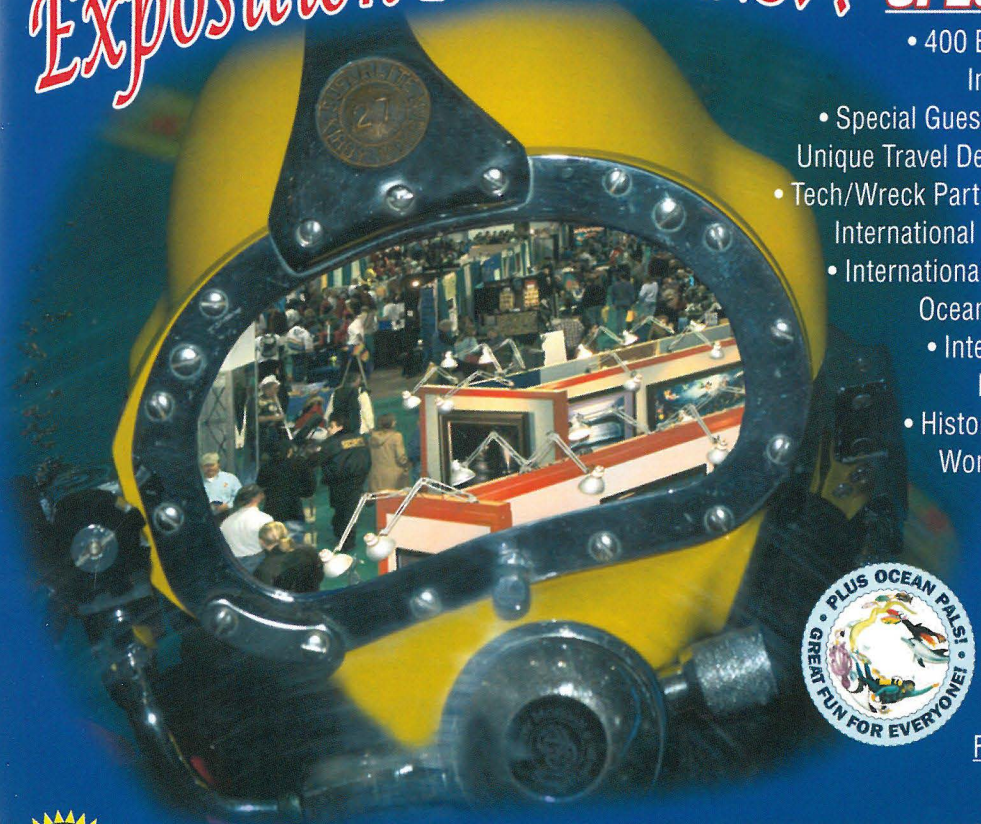

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