The Mississippi River Find
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By Don Creekmore

The pursuit of diving history and the artifacts that are connected to it are a never-ending journey into the future. There is much that is not known and that will remain a challenge for future generations to discover. As the information technology revolution continues to expand the search has fortunately become much easier than before. In pursuit of his business affairs, HDS member Don Creekmore received a traditional telephone call at his office that would, in his words, "forever enhance my knowledge of historic commercial diving in North American rivers and lakes." The call was the first step for Don a journey that uncovered the history of a family of divers stretching from the World War I era through to the 1990s. By agreement with the family, Don has not divulged their family name. The equipment the family had used through the 20th century was still in working condition and was stored in a garage. For Don, it was an historical find of a lifetime.

24 Klingert Revisited: Special Report for HDS USA
By M. Sc. Karina Kowalska

During the past year members of HDS Poland embarked on a project aiming at rediscovering Karl Heinrich Klingert, a talented inventor who lived at the turn of XVIII century in the town of Wroclaw, once known as Breslau when it was under Prussian occupation. For many divers Klingert’s name associates with a drawing of a diver who made a successful diving attempt in 1797 in river Odra, in a strange shaped suit and with a wood-chuck in his hand. Klingert, among the others, invented a novel type of diving gear, including an open helmet, a container with compressed air and an underwater lamp. HDS Poland received letters supporting our project from various Historical Diving Societies, and promised to keep them posted regarding their research. The promise became particularly relevant and valuable when their research uncovered new information about Klingert related to specific countries. Having already prepared an article which discusses Klingert’s connection to the United Kingdom, which will be published in the UK’s Historical Diving Times, HDS Poland are now pleased to share what we they discovered about Klingert’s connection to the United States.

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ON THE COVER
The cover photo shows a 1950 photograph of a mid-American father-and-son diving team with an assortment of their company diving equipment, plus a couple of vintage automobiles. The photograph is courtesy of Don Creekmore, whose article on the family is our cover story in this issue.
EDITORIAL

Farewell to First Ladies

One of the sadder parts of our work at the Society and the Journal is saying farewell to the pioneers whose contributions established the post World War II science, sport, and underwater imagery, of diving. The majority of these pioneering roles were filled by men, as it was generally a “Man’s World” enterprise as a new world order was established from the devastations of war.

There were however, several females who were to become the pioneers of the new underwater world, and in this issue we pay a farewell tribute to two of them who started their diving careers before 1950: Lotte Hass and Dr. Eugenie Clark.

These ladies were both the first to do many things in their respective fields of diving, and are remembered for leading the way for the many female divers who followed them. The fact that several of us at HDSUSA got to meet, and in some cases, work, with them makes their passing even sadder.

Our main article in this issue is “The Mississippi River Find,” an all-American historical adventure centered around the rivers and lakes of mid-America. At a time where it is often difficult to find new material on the nation’s earlier divers and their operations, member Don Creekmore uncovers the story of a family of professional divers from the late 1930’s through to 1990s.

Further afield the Society maintains links with numerous fellow international HDS groups, and we are pleased to be able to publish a special report on the early European diver Karl Heinrich Klingert, by our friend Karina Kowalska of HDS Poland. The report notes that Klingert’s efforts were appreciated by Americans, and also poses the question of which American diving suit was exhibited at the 1901 Industrial Exposition in Wroclaw.

Our regular columnists again provide a broad array of historical information. Sid Macken sees with both eyes in his Submarine Lens column, and Ed LaRochelle records some of the milestones of diving that occurred in decades ending in the year 4.

We continue our series of United States Navy diving history in this Year of the Military Diver with a 1944 article on diver training on the USS Normandie. This connects to the career of the late Leonard Greenstone, from whose files we publish an interesting photo of a gathering of senior USN diving personnel in 1970.

Society Chairman Dan Orr recounts adventures on the 2014 HDSGWS expedition with Zale Parry, and our usual assortment of books, patents, scuba equipment, camera housings and helmets round out this issue.

I wish you all safe diving, and hope to see you at one of the numerous 2015 dive shows, or, hopefully, on a dive boat somewhere during the year.

— Leslie Leaney, Executive Editor
In the News

Hans Hass Cover Photo Issue 74
Our good friend HDS Germany Chairman Franz Rothbrust contacted us regarding the cover photo for his article on the development of the Hans Hass Rolleimarin system in issue 74. Franz informs us that research by HDS Germany member Michael Kranzler indicates that the photo is from 1951, not 1950, as was stated in the caption, and includes corroborating details as follows:

I cannot remember a single picture from the 1950 Red Sea expedition, which shows this construction of camera-housing, neither a photo in a magazine, nor a scene from the movies “Under the Red Sea” and “Red Sea Adventure.” Photographs of this self-designed version of the housing being used under water did not appear until Hass had finished his trip to Australia, as referenced in The Illustrated, London, August 22, 1953, page 33.

Indeed Hass wrote in his book! Photographed Under the Seven Seas, that he had already invented the Rolleimarin during his second Red Sea expedition. However I believe very likely meant that this was the predecessor, and not the later Rolleimarin. I find it remarkable that Hass was clever enough at that time to attach the camera to the cover of his first Rolleiflex-housing. The prototype PR 229, nicely designed by Franke & Heidecke, would hardly allow this.

Moreover, I have never seen a photo which shows Hans Hass during his second Red Sea expedition without his characteristic beard. The German illustrated magazine Constanze, issue 7, page 23, 1955, published a photo which shows exactly, not only to Hass’ bare chin, but also that early photo equipment, and the same surroundings. The text states this portrait was taken during an excursion to French Riviera in 1951, which was the time that Hass was testing his UW Rolleiflex before he left on the Great Barrier Reef trip.

However, these details are only minor given the importance of the historical information published in the article.

-Michael Kranzler

California Wreck Divers Receive HDS Icorn Heritage Award
The 2014 HDS Nick Icorn Diving Heritage Award was presented to the California Wreck Divers at their annual banquet in El Segundo, California in March. The award was presented to the group’s president, Steve Lawson, by HDS co-founder Leslie Leaney. Nick Icorn was a longtime member of both of these non-profit diving organizations, as are many of the members shown here in the photo, which was taken by Eric Frasco.

Adci Western Chapter Meeting
The Adci Western Chapter meeting will be held at the Santa Barbara Maritime Museum, California, on October 23, 2015. The HDS and Maritime Museum will be working with Adci on the program, which will include items from Kirby Morgan Diving Systems that celebrate the company’s 50th anniversary. Further information will be available shortly.

HDS Germany Publishes Tauchhistorie Volume 2
HDS Germany recently published its second publication on diving history. Edited by Wolfgang Freihen and sponsored by Drager, Scubapro, and L&W Compressors, the 76-page publication continues the very high standards set by Volume 1. Articles in the issue are as follows: The Power of an Idea, by Michael Jung, the obituary on our honorary member Hans Hass, Agais 1942, by Michael Müller, an article about the very first oxygen rebreather Hass used in Greece in 1942, Diving with the Shark Whisperer, by Wolfgang Freihen, which records on how our view on sharks has changed, from the biest (Jaws) to an endangered species; The End of the Man-Eating Monster, by Gerhard Wegner, is the story of Sharkproject: Panzertauchgeräte, by Jan de Groot, is about the constructions of Neufeldt & Kühnke; The Sorima-Story, by Jan de Groot, is an article about the salvage company; It does not work without divers, by Dieter Harfst, is a report about oil barrier constructions set out in the sea by divers. The History of Diving Computers, by Wolfgang Freihen; The compressor manufacturer Lenhardt & Wagner, by Bernhard Schuster and David Apfelthaler; Who is Franz Xavier Ostermeier? by Wolfgang Freihen, is a portrait of Ostermeier who founded the Marin-Solar company. Light Magic with Marin-Solar Strobes, by Wolfgang Freihen, is a report about Marin-Solar strobos in practical use under water; The Reconstruction of a Rolleimarin Transport Box, by Franz Rothbrust, is the story of how we reconstructed a transport box Franke & Heidecke (Rolle) had made to send their first pre production sample to Australia in January 1952; Report on 7th International Historical Divers Meeting, by Franz Rothbrust: Book reviews by Wolfgang Freihen and Michael Jung.

Sea Salt II: More Salt
Filmmaker, storyteller and diving industry pioneer Stan Waterman has been exploring the world’s oceans and documenting his adventures on film since the early 1950s. With a diving career that spans over 65 years, Waterman published his first memoir, Sea Salt: Memories and Essays, in 2005. In his second book, Sea Salt II: More Salt, Waterman recalls dozens of stories of his diving adventures and travels. The book includes a special guest essay section with stories contributed by diving luminaries including Dr. Eugenie Clark, Howard Hall, Marty Snyderman and Zale Perry.

The softcover edition of Sea Salt II: More Salt is available at select dive retailers and on Amazon.com for $29.95. A limited collector’s edition of signed and numbered hardcover books will also be available exclusively from the author for $50 each. For ordering instructions e-mail stan@tellurian.com.

Handelman Photo Credit
In the rush to get the articles on Lad Handelman completed for issues 80 and 81, the team never included a photographers credit for the image shown here, which was used in both issues. The image is credited to Bob Evans/La Mer Bleu Productions, and team involved in producing the articles on Lad apologize for the omission.
Mark V Monument Committee Launches Scholarship Fundraiser

The recent Year of the Military Diver celebration was a fun week of celebration, reunions, and sea stories. Everyone had a great time. In order to raise the funding required to maintain their scholarship endowment, the Mark V Monument committee is raffling off statues with serial numbers 281-300. Each donation of $50 receives one serialized ticket. A donation of $150 will get you four tickets. As soon as all 500 tickets are sold, they will draw the lucky ticket.

The recipient of the drawn ticket will receive:
- Statue in the original shipping box,
- Certificate of Authenticity in the original mailing envelope,
- Matching serial commemorative coin in blue velvet presentation box,
- A piece of the mold that JAKE was poured in,
- A piece of the patriotic veil that covered JAKE for the unveiling,
- A piece of the granite JAKE is mounted on.

As a reminder, the last statue sold during the silent auction at the Mark V Monument Banquet sold for $4,200. Visit markvmonument.org/mvm/store2/ and contribute to the scholarship endowment with a donation, and you might be the lucky winner.
As noted in an earlier issue of the Journal, the late Leonard Greenstone left artifacts and files from his diving career to the Society. Included in these were the Leonard Greenstone Award, which has been resurrected by the HDS by a committee chaired by Dan Orr, who is a prior recipient of the award and also HDS Chairman.

Leonard was involved in several areas of commercial, recreational, and also military diving, having gone through the U.S. Navy School on Pier 88 in New York during World War II. A 1944 article on that program is published elsewhere in this issue.

In looking through his files we came across the 1970 photo shown here, which connects with Leonard’s U.S. Navy career in this, the Year of the Military Diver. Navy diving historians will doubtless recognize many of the names of the divers assembled for this photo, which was taken on the occasion of Captain Willard F. Searle Jr. receiving The Legion of Merit, 45 years ago. At the time, Leonard was a successful civilian businessman and is shown in the front row on the right.
THE MISSISSIPPI RIVER FIND
For several years I have been active in the field of acquiring authentic diving helmets and have encountered many interesting characters, many of whom are members of the Historical Diving Society USA. In the course of my business I talk to people every week about their diving helmets and related items. In almost every case the individual or company has a single helmet they wish to sell or purchase. In some cases the dreaded reproduction Mark V helmet is the subject of the call, but we have also been very fortunate over the last few years to find some amazing helmets.

In the fall of 2014 I received an early Saturday morning telephone message at my office from an elderly gentleman who indicated that he was the last living member of a family owned diving and salvage company. His message did not indicate anything else, only that he would like to talk to someone about the company. What I did not know at that time was that the return phone call would forever enhance my knowledge of historic commercial diving in North American rivers and lakes!

It was several hours before I had a chance to return his call, but when I did I was greeted by a warm female voice that said she would get her husband Jack on the phone. After a short pause, Jack came to the phone and I explained to him who I was and that I was returning his call. The story he began to tell me was amazing!

Jack explained to me that his father Carl first dove at the age of 16 in 1916. He made a crude helmet out of an old cast iron water heater and used a tire pump for the air supply. These underwater adventures took place in the Crystal and Medicine lakes in Minnesota, and during the 1920s Carl made dives on the Pacific coastline in Oregon. As the Great Depression set in, Carl did whatever he could to put food on the family table. Then in 1937, after two decades of amateur diving adventures, an opportunity presented itself and Carl finally got his chance at diving professionally.

Carl had become a journeyman electrician by trade and in 1937 he was employed on the construction of the interceptive sewer tunnel between Minneapolis and St. Paul, Minnesota. One day during the construction Carl noticed that the divers were working especially slowly on multiple joints under a bridge. Believing he could do the work in much less time, Carl asked the foreman to give him the diving job, telling his boss he could do the work much faster. Apparently he presented his case very well as the next day the
company put him down on the job and he completed the work in half the time! From that day on Carl would dive professionally while also operating an electrical business, and would purchase used and surplus diving commercial diving equipment as it became available.

Carl had two sons, Jack and Carl Jr., and in early 1940 Carl Jr. started tending his father’s lines in 32 feet of water at a job on the Northern States Power Company dam in St. Croix Falls, Wisconsin. While Carl was working on the job he felt sick and was experiencing a slight case of the bends after lunch. That’s when Carl Jr. received his baptism of fire and went in and finished the job, becoming a partner in the company. His younger brother Jack, who I am speaking with, also got his big chance late in 1940 at age 15. His brother Carl Jr. was away in the Navy by now and his dad needed some help with a job in Lake Minnetonka in Minnesota. That’s when Jack officially joined the family business. He would also join the Navy and serve on a submarine, but never dove. After his military service he came back home to join both family companies working as an electrician and diver.

From the 1950s into the 1980s the family would work on many jobs in the mid-western United States, primarily on the Mississippi and Missouri Rivers and lakes in the northern United States. The family tackled every kind of job, including salvage, dam work, tunnels, pipe and cable laying, all of which provided a constant source of income. The family even raised explosives to blow up Lock and Dam A which sank near Wabasha, Minnesota. There were also jobs involving people who had drowned, as it was not uncommon for cars to fall through the ice in Minnesota during the winter. Jack, his dad and brother would have to go down and retrieve the body and the car. Jack told me in a matter-of-fact manner that everyone they retrieved out of a car was in the very same position and had the same expression on their face – a part of the job they didn’t enjoy but that had to be done.

Probably the largest job Jack told me about was using over 10,000 pounds of explosives to blow up Lock and Dam A at the Cumberland River in the middle of Tennessee. The job was huge and involved working closely with the DuPont Company. They had to place 800 separate charges of 60% Special Gelatin Hi-Velocity water-resistant dynamite bombs and 3,000 pounds of Nitramon primers. This incredible amount of explosives had to be detonated at the same time, making a huge explosion. Jack told me that after the explosion there was concrete and steel everywhere, but there were also thousands upon thousands of dead fish. Local authorities allowed people to race into the area after the explosion to gather as many fish as they could.

Flash back to the present and I was soaking up this wealth of knowledge and memories as Jack spoke. It was like listening to an audio book about diving adventures over the phone! Jack then pauses and tells me that he has plenty more stories to tell, which I was beyond delighted to listen to. He also tells me that I should simply come and visit him. He said his family had kept a scrapbook documenting all of their diving jobs. Many of their diving jobs typically had a newspaper reporter present to report on the story and take a few photographs. After the story had run, in many cases the newspaper would give the family the original photos for their records, many of which he said they kept.

By this time I had decided it would be a rewarding experience to visit Jack and talk to him further about his time as a diver and to look over the articles and photos. He told me he would love to have my wife and I visit, and that while we were there he would show us some related items as well.

After our conversation my wife Jenny and I decided to make a point of visiting Jack and his family. Times were set and we arrived at his house in the morning. Jack and his wife immediately invited us in and started to show us multiple scrapbooks and newspaper articles about the family of divers. We were simply awed by the amount of photos and the details of each job Jack was sharing with Jenny and I. We decided to get comfortable and take notes of some of the companies’ more memorable jobs.

One of the first stories and supporting newspaper articles he told me about was a murder case they were called upon to help with. Two teenagers had been murdered in 1948 in Eau Claire, Wisconsin. Both victims had been shot with a .22 caliber rifle, which the suspect had apparently thrown into a lake. Jack and his family were called to dive the lake and start searching for the weapon. Jack told me the bottom of the lake was pure mud and nothing could be
seen. After many hours of searching, Jack finally found the rifle and brought it to the shore. The newspaper article has a wonderful photo of numerous men at the shore while two men use what appears to be a Schrader two cylinder hand pump. Jack is also shown standing in the water with the rifle, equipped with deepwater gear and possibly a Schrader commercial helmet. By finding the rifle, and with the aid of ballistic tests, the murderer was sentenced to prison!

Another great article from the early 1950s featured Jack’s brother making a dive in the Mississippi River on a dam and lock. Jack said a lot of their work occurred in winter when it was bitterly cold. This article even mentioned just how much they put on to fight the cold under water: “Three suits of woolen underwear, two sweaters, a sheepskin-lined vest, three pairs of woolen socks, sheepskin-lined slippers and a pair of knit gloves.” All under the diving suit! The end of the article also expands on the cold condition of diving: “Down for two hours, felt the cold in an hour and half. A leak in one glove added to this discomfort.”

Jack told me that it was common to lose feeling in his hands and feet. The metal bands along with the tight rubber cuffs on the suits would cut off circulation, adding to the discomfort as well. He explained to me how bar soap was used to help get everything on good and tight. He found the original tin container holding the bar soap. He opened it and sure enough a very old bar of used soap was in the container. Today, Jack attributes the loss of feeling in his fingers to the extreme cold of the underwater work he did as a younger man. My wife Jenny asked Jack if he ever dove while he was sick or didn’t feel well. Jack was quick with his answer. He stated that if they had a job to do, it was going to be done. Yes, he had dove while being sick. He said he has coughed and coughed from the discomfort as well. He explained to me how bar soap was used to help get everything on good and tight. He found the original tin container holding the bar soap. He opened it and sure enough a very old bar of used soap was in the container.

Diver Plows Through Pond Mud

In Hunt For Murder Weapon

Newspaper photo and headline from November 8, 1948.
1947: Jack at Cedar Lake in Minnesota.
Great Depression. None of it had come easily and for many years profits from diving jobs went into purchasing more equipment for the business. And what Jack told me next was literally unbelievable: he told me he still had all the equipment, which was in ready to use condition, and would I like to see it?

Jack explained to me that by the 1990s, both he and his brother were just getting too old to do the work anymore. All of the original equipment was stored away properly and ready for use at any time though. It had been a few decades since any of the tools had been looked at. After reviewing photos and newspaper articles for many hours I couldn’t wait to see things that were frozen in time in the photos! As Jack opened one of the garages the equipment immediately started to look familiar. As a matter of fact, everything shown in the photos was still in wonderful functional and original condition! The amazing photo of the family standing in front of their tools of the trade, all those items were neatly stowed and ready for their next job. The following photos show some of the very items that can be seen in the family photo.

As Jack showed me all of the equipment, it was obvious everything was taken well care of, and maintained as professional tools should be. Almost each and every piece had a story, like the photos and articles. As the day progressed and an almost overwhelming amount of photos and equipment were viewed, it came time to talk business. After consulting with the family, a deal was made to purchase all of the equipment.

The following day it took five men almost an entire day to move all the equipment into our truck! As many readers may know, moving just one hand crank air pump is difficult – but moving four late 19th Century and early 20th Century air pumps was a big job by itself! Along with the air pumps were amazing diving helmets, used and un-used new old stock equipment, boxes of parts and pieces, anything and everything to operate a diving business in the mid-20th Century.

Jack and his family kept everything related to diving in great condition. Of course some of the suits had been patched and some of the diving shoes were completely worn. However, the items were not thrown away. Jack informed us that nothing was ever thrown away because it could be repaired or used for shallow water jobs. It was a real treat to see how items were repaired on the fly by Carl, Carl Jr. and himself. They even stitched the diving bags back together when they got torn or ripped during a job. Surplus WWII army ammo packs were even used to hold extra lead weights.

We decided to name the collection the Mississippi River Find. This name was chosen due to the fact that many of the jobs all the equipment was used on were in the Mississippi River. Jack told me that river gave him and his family plenty of scares but also brought them plenty of work. Stories about the fast moving current of the Mississippi River swepting them off their feet while the mud made it impossible to see will always stay with me. He was telling my wife and I that the divers would be tethered to the shore or docks with ropes because the current was so strong. He couldn’t see anything from the fast moving mud and sediment. Even with the weight belt and extra weights, he just kept getting pulled sideways. Almost into a horizontal position. It was so hard to finish the job, but he told me that he did it from experience and by touch. Just another amazing story!

Some of the highlights of the equipment were two Morse diving pumps, both from the 19th Century. One of the pumps was researched by Morse via its serial number. The pump originally had been purchased by the US Navy in 1898 and
notes were made regarding its possible use in the salvage of the USS Maine.

After further research a photo of the exploded Maine was found. In the background of the wreck are men operating a very similar air pump. Could it be the same one?

Other pumps were made by Schrader and Alfred Hale. The helmets included two early Schrader’s, two Alfred Hales and two Mark V’s, one dating to 1918. There were lots of deep and shallow water canvas diving suits, airline, communication line, World War II dive radios, underwater lights, underwater welding equipment, boots, gloves, fittings and other spare parts. It was interesting to find new old stock parts and equipment that were sold as World War II surplus.

It was the first time Jenny and I saw in person the old oak communication boxes. Of course we were curious as to how the communications worked. He showed us how the communication cable connected to the helmet.

Jack explained it was important to keep the communication and air hoses tied together, so that he wouldn’t get tangled underwater. Then he explained to us how the earphones and cap would be placed on your head before the helmet went on. Of course everything was connected and he would be able to speak with his father or brother up on shore.

My wife asked Jack if they ever joked or spoke about things while diving. He said there was very little said, it was usually very serious and they wanted to get the work completed, so they could go home. We then asked if he ever dove for the fun of it. He just looked at us and paused for a moment. He said that he would only dive if he was getting paid. He didn’t see it as a leisure or fun activity. It was work, and certainly hard work at that.

Speaking about hard work, while loading items into the truck my wife spotted some dirty burlap bags that said SUMAC. These bags would have been extremely heavy when they were full of SUMAC.

Jack explained to us that this chemical would be mixed with water. He said when the water was mixed with the chemical, it looked like white squishy snowballs. Whoever was above water would mix the SUMAC and form it into the balls and would then drop them into the water. The diver would see these baseball-size SUMAC balls coming down to him. The SUMAC would then be shoved into cracks and crevices. He said if a dam cracked in winter they would dive down and patch it with the SUMAC. It was a sealant that could be used underwater and would harden fairly quickly. There is a wonderful illustration of the bags with what appears to be a Morse commercial helmet.

While all of the helmets and pumps are fasci-
nating, it came back to meeting Jack and having the photos of the actual equipment in use. Being able to view the detailed photos, handle the actual equipment and know the stories behind those items is what really made the Mississippi River Find special.

It was difficult to separate and sell items from the find, especially those with memorable stories associated with them. In the end some of the special items were kept by us to remember Jack and his family, but most were sold to collectors around the world to appreciate and enjoy.

Jack was stunned that people actually collected what he referred to as old tools, but he was also quite proud his family’s legacy would live on with so many people into the future.

Hopefully this article and photos will further enhance the appreciation and knowledge of all the hard working commercial and military divers around the world of the past, present and future.

1950 newspaper article about Jack and family working on Lock and Dam #1 on the upper Mississippi River between Minneapolis and Saint Paul, Minnesota, during winter.

THE AUTHOR

Don Creekmore is an HDSUSA member and, along with his wife, Jenny, owner of Nation’s Attic Inc. in Wichita, Kansas, USA. Nation’s Attic Inc. is celebrating its 10th year in business specializing in the restoration of antique coin operated machines and the sale of antique diving helmets and related equipment. Both Don and Jenny enjoy traveling the world in search of elusive diving helmets for their customers and for their own collection.
The Diving Equipment Marketing Association (DEMA) along with the Historical Diving Society developed displays for recognizing and remembering the people, inventions, and discoveries associated with the undersea world. The November 2014 DEMA show held in Las Vegas, Nevada, and the HDS celebrated decades ending with a 4 with a wonderful center stage display. Here are just some of the more notable events that were displayed at the show.

1774. The first real step toward the development of a surface-supported diving technique occurred when the French scientist Freminet devised a system in which air was pumped from the surface with a bellows, allowing a constant flow of air to pass through a hose to the diver in the water. This system is considered by many to be the first true helmet-hose diving apparatus. Freminet has been credited with diving in 1774 with this device to a depth of 50 feet (15 meters), where he remained for a period of one hour.

1844. Schrader was founded in 1844 by German immigrant August Schrader. The company’s humble roots began in a small machine shop in Manhattan, New York. A mechanic by trade and an innovator by nature, Schrader saved enough money to purchase needed machinery and open his own shop, catapulting the young company into more than 50 years of successes in the dive equipment business. Initially Schrader developed supply fittings and valves for rubber products like air pillows and life preservers but his inventive nature and strong interest in diving eventually led him to design and manufacture improved diving helmets and air pumps.

1844. Henri Milne Edwards, using Paulin’s improved helmet, became the first recorded scientific diver and marine biologist to describe living sub-tidal communities. His figure appears as Professor Aronnax in the novel Twenty Thousand Leagues Under the Sea written by Jules Verne.

1864. Benoit Rouquayrol and Auguste Denayrouze patented the appareil plongeur (diving apparatus), the Rouquyrol-Denayrouze. A reservoir on the wearer’s back contained a supply of compressed air which was fed by the demand valve through a mouthpiece to the diver. The apparatus is also invaluable when used with a surface hand pump to maintain pressure in the reservoir, which can only contain about a ten-minute supply of air at shallow depths.

1914. The first production of the Submarine Film Corporation – a

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#1 The booth at DEMA in 2014.
#2 1844 - Schrader Company was founded by German immigrant August Schrader.
#3 1864 - Benoit Rouquyrol and Auguste Denayrouze patented their diving apparatus.
#4 1874 – Book Wonders of the Great Deep, by P.H. Gosse.
#5 1914 - John E. Williamson and brother George use the Photosphere in 15 to 20 feet of water for the documentary “THIRTY LEAGUES UNDER THE SEA,” and later the famous 1916 silent movie of Jules Verne’s “TWENTY THOUSAND LEAGUES UNDER THE SEA.”
one-hour documentary ingeniously titled “Thirty Leagues Under the Sea” – was made in the Spring using the Williamson Photosphere. It was years earlier, in 1912, when John Ernest Williamson (J.E.) had the epiphany that the tube his father had invented could be put to use to film underwater. J.E. and his brother, George, took the new Photosphere to the Bahamas where light penetrates up to 150.’ This made it possible to create this first film and made possible the shooting of the first undersea fiction movie, the 1916 film version of Jules Verne’s “Twenty Thousand Leagues under the Sea.” Both films caused sensations in London, Chicago, and New York. Subsequently Williamson divided his energies between fictional features and documentary films.

1924. Professor Elihu Thompson, an electronics engineer and inventor, speculated that nitrogen narcosis could be avoided if the nitrogen in the breathing mix were diluted with a gas other than nitrogen. Thompson had previously established a record as an innovator with seven hundred patents including electric welding, the centrifugal cream separator, and street arc lights. His business had earlier merged with Thomas Edison’s company to form General Electric. He suggested that helium would be a suitable gas for deep diving without narcosis. Since at the time, the price of helium was over $2500 per cubic foot, the suggestion was viewed as an economic impossibility. About this time C.J. Cooke applied for a patent on the use of helium as a breathing gas mix. Additionally a series of experimental dives was begun on the U.S.S. Falcon, which included at least one dive to 150 feet on a heliox mix. Thompson convinced the Bureau of Mines, which controlled the supply of helium, and the US Navy, to begin examining the potential for deep diving using helium and oxygen as a breathing gas mix. In 1924 the Navy joined with the Bureau of Mines in the experimental use of helium-oxygen mixtures.

1934. William Beebe and Otis Barton descend to 3,038 feet in bathysphere off Nonsuch Island in Bermuda, making it a record descent. The Bathysphere (Greek words βαθύς (bathus), “deep” and σφαῖρα (sphaira), “sphere”) was a unique spherical deep-sea submersible which was unpowered and lowered into the ocean on a cable, and was used to conduct a series of dives off the coast of Bermuda from 1930 to 1934. The Bathysphere was designed in 1928 and 1929 by the American engineer Otis Barton, to be used by the naturalist William Beebe for studying undersea wildlife. Beebe and Barton conducted dives in the Bathysphere together, marking the first time that a marine biologist observed deep-sea animals in their native environment. Their dives set several consecutive world records for the deepest dive ever performed by a human. The record set by the deepest of these, to a depth of 3,028 feet on August 15, 1934.

1944. Jack Browne and DESCO were major contributors to the Navy war effort. DESCO/Navy collaborative efforts led to the development of the Browne Mask, a lightweight...
dive suit, and Buie Diving Helmet. The US Office of Strategic Services asked Jack and DESCO to build them compact Oxygen rebreathers for covert operations, and DESCO came up with the Browne “B” lung 1944.

1944 In early 1944, the USA government, trying to stop men from being drowned in sunken army tanks during beach landings, asks the company Mine Safety Appliances (MSA) for a suitable small escape breathing set. MSA provided a small open-circuit breathing set with a small (5 to 7 liters) air cylinder, a circular demand regulator with a two-lever system similar to Cousteau’s design (connected to the cylinder by a standard oxygen valve connection), and one corrugated wide breathing tube connected to a mouthpiece. This set was stated to be made from “off-the-shelf” items, which shows that MSA already had that regulator design also. The regulator looks like the result of development and not a prototype.

1954 - SCUBA IN THE USA IS BOOMING

1954 The MSA regulator, designed for military use finds a use in the private sector. Units could be purchased from army surplus stores and used with surplus O2 cylinders for SCUBA diving.

1954 The creation of the first basic scuba manual “Underwater Safety” was written by Bev Morgan. Morgan modeled the manual after the Los Angeles County Lifeguard training manual. During this time the first public classes for skin and scuba diving were taking place in L.A. County. The classes filled up quickly and the County realized they would need more instructors to keep up with the interest that was forming. With that in mind the first Underwater Instructor Certification Course (UICC) was conducted at the Natalorium in Lynwood, California in the Spring of 1955.

1954 The “DIVAIR” regulator was introduced by inventors Bill Arpin and Paul Arnold who together founded one of America’s first production double-hose regulators under the company name of L.G. Arpin Company of West Caldwell, New Jersey. In the Spring Arpin and Arnold contracted with Diving Corporation of America (DCA) of Miami, Florida, to be their distributor. DCA was one of the oldest and largest water sports stores with national contacts. Later that same year L.G. Arpin signed on with Healthways from Los Angeles, California, an internationally recognized water sports distributing company.

1954 On September 1953, representatives of AirResearch, Northhill Company, delivered two pre-production models of the Northhill Air-Lung to the Navy’s Experimental Diving Unit (NEDU) for evaluation and tests. Results proved that it was suitable for use as a shallow water swimming and diving unit to a depth of 150 feet. All 1954 production regulators went to fill government contracts. 1955 would be the first year the Air-Lung would be marketed to the sport diving community.

1954 Scott Aviation and the HYDRO-PAK were first introduced to the Navy’s Experimental Diving Unit during the Korean War. The Navy continued to use the Hydro-Pak system well after the War. In 1953 Scott Aviation began granting dealerships to the US private sector and in 1954 the Hydro-Pak system would see large growth in sales.

#11 1954 – Popular Science June issue, features “how to build a beginners diving outfit”.
#12 1954 – Walt Disney production of Jules Verne’s “20,000 Leagues Under the Sea”, a motion picture movie becomes a sensation.
#13 1954 – “Kingdom of the Sea” television series airs first episode.
#14 1954 – DIVAIR scuba regulator introduced and distributed by Diving Corp. of America (DCA)
1954. In the early 1950s Dacor Corporation founder, Sam Davison Jr. began working on a new regulator design. The result of his vision was a double-diaphragm, two-stage, two-hose regulator where the air chamber and exhaust/water chamber each had their own diaphragm. This increased the safety of the unit by preventing sea water from entering and contaminating the inner workings of the regulator. Prototypes and early model R-1 regulators were experimented with during the later part of 1954 and into 1955, production of the unit began shortly thereafter and sales began in May of 1955. Skin Diver magazine announced Dacor’s regulator in the New Products section February 1956.

1954. DESCO introduced the model D for sport diving. The famed “Browne mask” included an incorporated demand valve assembly and was offered with a single or double tank set. DESCO also attempted to impress the sport diving industry with two models of rebreathers but due to diving limits and dangers of improper training, selling the units proved difficult.

1954. Zale Parry broke the women’s deep dive record by diving to 209 feet on August 22nd in Avalon Bay, Catalina, California. Later that same year, she became the third female instructor to graduate from the L.A. County UICC program.

1954. The television series, Kingdom of the Sea, air’s their first episode and was hosted by John Craig and Bob Stevenson and included professional diver Zale Parry. This was the first television series devoted entirely to underwater adventure and was shown in 70 countries for several years.

1954. Jean Clarke-Samazan broke the world record deep dove on September 12th by diving to 350’ off the shores of Catalina Island with the assistance of an experienced expert team that included Zale Parry, Parry Bivens and Sam Lecocq. Samazan descended using triple tanks filled with a mixture of Helium and Oxygen. The record was previously held by Frederic Dumas, member of Captain Cousteau’s Underwater Research Team.

1954. The FNRS-3 broke deep descent record previously held by William Beebe and Otis Barton in their Bathysphere by descending to 13,000 feet on February 15th. Auguste Piccard created the first bathyscaphe, the FNRS-2 beginning in 1937. Delayed by WWII the deep-diving submarine was finished in 1948 and named after the Belgian Fonds National de la Recherche Scientifique. The FNRS-2 set world diving records previously held by bathyspheres as no unwieldy cable was required for diving. The FNRS-2 was damaged during sea trials in 1948 and was eventually sold to the French Navy. The French rebuilt and re-baptised her FNRS-3. Substantially rebuilt and greatly improved, the vessel carried out a series of descents under excellent conditions including the record 13,000 feet on February 15th 1954.

1954: FenJohn became a full-service diver supply company, specializing in underwater photography camera

#15 1954 – Northill “AIR-LUNG” has first production of regulators go to US Navy contract.
#16 1954 – Scott Aviation introduces the “HYDRO-PAK” to the sport diving public.
#17 1954 – DESCO introduces the “DOLPHIN” mask, tank and pack diving system.
#18 1954 – AKG introduces the “LEICA underwater camera housing”.
#19 1954 – Franke & Heidecke introduce the “ROLLEIMARIN” underwater camera housing.

First Quarter 2015, Volume 23, Number 82
The catalogue features the Bantam motion picture camera housing. FenJohn advertised the Goggler for a 2¼ x 2¼ still camera in The Skin Diver magazine May issue 1954.

1954. E. Leitz Inc. had been searching for an underwater housing for their Leica camera and they found it in the AKG housing. The AKG was developed by the renowned underwater explorer, photographer and writer Hans Hass and was made by Akustrische Und Kino-Gerate, Vienna. The AKG, known in the USA as the Hass Leica underwater housing, accepted either the 1f, 2f, or 3f Leica models. During that same year Franke & Heidecke and Hans Hass introduced the Rolleimarin housing for the Rolleiflex camera, and became the standard medium format system for professional and advanced amateur underwater photographers. The system was very popular from its introduction in 1954 and continued well into the 1970s. Many are still in use today.

1964 - Good Year for Underwater Research & Development

1964. The ALVIN dives to 35 feet on August 4th. The dream of building a manned deep ocean research submersible first started to move toward reality on February 29, 1956. Allyn Vine of Woods Hole Oceanographic Institution (WHOI) attended a symposium in Washington where participants drafted a resolution for the US to develop a national program for manned undersea vehicles. From this beginning the community eventually obtained the Trieste bathyscaphe, but it was quite large and not very maneuverable and it was determined that a better craft was needed. Meanwhile, the Woods Hole operational team had begun to form, calling themselves the Deep Submergence Group. They started using the name Alvin for their sub in honor of Vine and in May of 1964 Litton Systems delivered ALVIN to Woods Hole where it was commissioned on June 5th. ALVIN made a total of 77 shallow tethered dives in or near Woods Hole to maximum depths of 70 feet, with the first free dive of the submersible taking place on Aug. 4, 1964 to 35 feet.

1964. The US Navy launches Sealab I for a different kind of live-aboard diving experience. Sealab was lowered off the coast of Bermuda in 1964 to a depth of 192 feet of seawater below surface. It was constructed from two converted floats and held in place with axels from railroad cars. The experiment involved four divers: LCDR, Robert Thompson; MC, Gunners Mate First Class, Lester Anderson; Chief Quartermaster, Robert A. Barth and Chief Hospital Corpsman, Sanders Manning. They were to stay submerged for three weeks but the mission was halted after 11 days due to an approaching tropical storm.

1974. The AGA Divator 324 System was introduced to the USA by Skin Diver magazine in June. The system had been used in a wide range of services in Sweden (such as fire fighting, hazardous environments and industrial use) as well as a submersible SCUBA unit used by the Swedish Navy since the 1960s. The system was well received by dealers, but slow sales and lack of training for repair facilities stalled sales. The full facemask boomed in popularity with the commercial industry and eventually the design was copied by several companies. Today you see the design in use for special interest and technical diving.

1984. Nikon introduces the Nikonos V. A huge success in popularity and design to any of the previous Nikon models, even more than the Nikonos III, which up to this point was the preferred model.

1984. The MarineLab, originally called the MEDUSA (Midshipmen Engineered and Designed Underwater Studies Apparatus) was completed in 1980 but the habitat was never placed in operation by the Naval Academy. In 1984 Dr. Monney arranged to have the habitat given to Marine Resources Development Foundation and it was renamed MARINELAB. A suitable location was found within John Pennekamp Coral Reef State Park and an agreement was reached with the then Florida Department of Natural Resources. The habitat and support van were transported to Key Largo and put into place in 1984. Twenty-one 24-hour missions were conducted in the summer of 1984 involving approximately 80 aquanauts. In 1985 the MarinLab habitat, also called the “Classroom in the Sea,” was moved to a permanent site at the Foundation’s headquarters in Key Largo, Florida.

#20 1964 – The deep ocean research submersible "ALVIN" makes it's first test dive free from tether on August 4th, 1964.
#21 1964 – The documentary film "WORLD WITHOUT SUN" shown in movie theaters all over the US and Europe.
#22 2014 – DEMA show historical diving displays.
#23 2014 – DEMA show display of 1954 choices for diving apparatuses.
#24 2014 – DEMA show display of 1954 diver accessories.
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Klingert Revisited

A special report for HDS USA

By M.Sc. Karina Kowalska
Curator and Director of Museum of Diving
Warsaw, Poland

In Poland during the past year we embarked on a project aiming at rediscovering Karl Heinrich Klingert, a talented inventor who lived at the turn of XVIII century in the town of Wrocław, once known as Breslau when it was under Prussian occupation. For many divers Klingert’s name associates with a drawing of a diver who made a successful diving attempt in 1797 in river Odra, in a strange shaped suit and with a wood-chuck in his hand. Klingert, among the others, invented a novel type of diving gear, including an open helmet, a container with compressed air and an underwater lamp.

We received letters supporting our project from various Historical Diving Societies. These letters might be useful in our attempt to obtain external grants, which would allow us to produce an animated film about Klingert and to publish a volume on the subject.

We promised our HDS friends we’d keep them posted regarding our research. This promise becomes particularly relevant and valuable when our research uncovers new information about Klingert related to their countries. Having already prepared an article which discusses Klingert’s connection to the United Kingdom, which will be published in the UK’s Historical Diving Times, I am now pleased to share what we have discovered about Klingert’s connection to the United States.

Not many people know that in 1800/1801 the then future President of the United States, Mr. John Quincy Adams, undertook a trip to Europe visiting Silesia and Wrocław (Breslau) in his capacity as “The Minister plenipotentiary from the United States to the court in Berlin.” Adams wrote to his brother a detailed account of his travels in letters which were published, without his permission, in London in 1804 under the title “Letters on Silesia written during a tour through that country in the years 1800, 1801.” (Wrocław was the main city in Silesia, at that time a part of Poland under Prussian occupancy).
His itinerary did not originally include Wrocław.
He wrote, “Before we left Berlin to come upon this tour, we were advised not to pass through Breslau at all” on the grounds that there was supposed to be “nothing that deserved the attention of travelers but, when we found ourselves in the course of our excursion within a few miles of it, we thought, after making so long a tour round the whole province, it would be shewing the capital too great a mark of contempt to neglect it altogether and concluded to give it a few days of our time upon return.” During his visit Adams made interesting observations: “Breslau contains upwards of sixty thousand inhabitants, of whom about one third are Catholics, and nine tenths of the other two thirds Lutherans. Yet, from the vast number of churches and cloisters which present themselves to the stranger’s eye in every quarter of the town, a person without further information would take it for a place entirely Catholic!” Then follows a detailed description of churches visited, but also of libraries belonging to these churches, holding in the highest esteem a public library in the church of St. Elizabeth. Here Adams is really amazed. The library is well provided and has a very interesting collection of books. Something catches the eye of the future president so much that two pages of his next letter are devoted to it. “It is a manuscript, a copy of Froissart’s, in four large folio volumes, written upon parchment, and adorned with a great number of coloured drawing (dated 1468).” He also notices Ovid’s “Art of love” – perfectly legible as he says – “a few valuable pictures, particularly one portrait by Rembrandt, and one of Luther, by Lucas Cranach, collection of medals, marbles, marine shells, of minerals.” Thanks to Adams we learn that the library is open twice a week for the use of the public – “The only drawback that like most other public libraries in Europe it is crowded into too small a room.” Adams then goes to St. Mary Magdalene (a Lutheran church with a school that H.K. Klingert graduated from, and in which he ran a scientific workshop throughout his life). Adams mentions meeting Mr. Manso – “a librarian, a poet of distinguished talents and learning” – who showed him around the library of this church. What Adams forgot to mention was that Mr. Manso was the head of the school in which Klingert was employed at the time of Adam’s visit. Then Adams, in great detail, writes about the University, which was founded in Breslau in 1702. For us, what was particularly interesting was his description of an astronomical observatory at the top of the building. “The philosophical and astronomical apparatus is small; the only instruments we saw were Newtonian telescopes, caustic mirrors, a micrometer for measuring the distance of the stars, a quadrant with a meridian line, an air pump, and a couple of electrical machines.”

Let us for a moment move from Adam’s reflections on Breslau to H.K. Klingert, a versatile and talented citizen of this town. One could speculate that Mr. Klingert might have met the distinguished American figure when he was being shown around by Mr. Manso. But we do not have to speculate much to say that Adams saw instruments made by Klingert. Klingert, known for his many inventions, made his living by making appliances for various schools in Wrocław. For his own school he made models for the science laboratory, and for the Art Academy he made models of building and architectural elements. We also know that he made some instruments for Breslau University astronomical observatory.

We found out from the letters exchanged between various well known astronomers of the XIX century that in the Breslau observatory there were the following instruments made by Klingert: A quadrant with a 1 foot radius, an azimuth circle with 7 inches diameter and a transit instrument, with an aperture of 2 inches and a focal length of 6 feet.

Klingert donated most of these to the observatory in 1791, prior to Adams’s visit to Breslau. Adams also mentions seeing an air pump in this observatory. Again, we know that Klingert made a replica of Denis Papin’s pump named Antlia PNEUMATICA, calling his own pump Hydro-Pneumatica. Adams’s letter is the first source that allows us to speculate that Klingert’s pump might have landed in the observatory.

In closing on Adam’s letters and observations it is worth mentioning that the advice given to him in Berlin – not to visit Breslau – was rather malicious, and came from the fact that there was rivalry between the towns of Berlin and Breslau. Breslau, because of its past (it used to be Polish), was always downgraded, and as the chronicles say – drained of funds by the Berlin court.

There is another connection
Letters on SILESIA by John Quincy Adams.

So let us read what is written about “Diving apparatus of the New York Submarine Company.”

“There were exhibited at the Exposition of 1867 two descriptions of diving apparatus, either of them very superior to the forms heretofore in use, and each having merits peculiar to itself. One of these was exhibited by the New York Submarine Company, a corporate association organized for the purpose of undertaking submarine work of any description, such as the construction of submarine foundations, the raising of sunken vessels, the buoying of vessels over bars or sand-banks, and the examination and repairs of ships’ bottoms, or any existing permanent works covered by water.

The (diver’s) armor consists, for moderate depths of a strong helmet of metal, cushioned in the interior, and having a plate – glass window in front, and a water – proof dress entirely enveloping the person, which is secured to the helmet very much in the way employed by Klingert!

This dress is sufficiently weighted to sink the diver in the water, and to enable him to stand firmly when it is necessary to rest upon the bottom. In order to provide for respiration, an air reservoir is fastened upon his back in the manner of knapsack, into which sufficient amount of air has been compressed to serve him for several hours. The air is conducted into the interior of the dress by means of a pipe provided with a cut-off valve under the diver’s control. A cock on the top of the helmet permits discharge from time to time of the air which has become foul by breathing.”

Most interesting was a new addition to this (very much like) Klingert like dress – of two buoys secured beneath the diver’s arms. They were designed to raise him in the water at his pleasure. They were watertight India-rubber sacks inflated when necessary from the reservoir at the back. Some historians feel this is the “first” buoyancy compensator.

The description discusses also other equipment of The New York Submarine Company, such as a submarine lamp (again bearing similarities to Klingert’s invention), but it does not provide the name of the inventor.

The accounts of the 1867 Paris Exposition were also published by a British team of experts, and by the French organizers. It is here, in the French report titled “Les Merveilles de la science ou description populaire des inventions modernes” we find a drawing of this “American diving suit (scaphandre américain).” The text however suggests this time that this American dress reminds one of “that of M. Cabirol.”

But the drawing speaks for itself. The suit very much resembles Klingert’s suit, and the name of the inventor is T. Cato McKeen, who patented this suit in 1867. It means that during the Paris exhibition of 1867 a brand new American diving suit design was shown.

There is no doubt about it that McKeen was very much influenced by Klingert. For example, in Klingert’s suit to be used for deep diving, “the breeches must be furnished with iron ribs in the inside fastened by means of hoops to the machine. A harness for the limb made entirely of iron plate, would best serve the purpose.”

In the American suit, as seen in the drawing and according to the accompanying description, “For depths sufficiently great to make the compression of the folds of the dress against the person an inconvenience, there is provided what is called an inside protector, formed of a series of ribs or rings surrounding the person and the lower extremities, which prevents collapse.”

But the most amazing text found in the American report of 1870 is a very positive evaluation of Klingert’s diving system. It
comes as a surprise, since not only is it published 60 years after it was invented, but also at the time when Augustus Siebe systems and Denayrouze inventions were widely in operation.

I feel obliged to Klingert to quote this opinion – which of course came too late for Klingert to see it – but gives him some justice 250 years later (even if some statements from this report do not correspond to scientific truth).

"Mr. Klingert provide an air reservoir, to be sunk at the same time with the diver, and designed to furnish him with air under a compression corresponding with his depth. He gave to this reservoir a cylindrical form and a capacity of fifty-eight cubic feet, which he considered to be sufficient supply to last one man two hours. The cylinder was so ballasted as to float upright when filled with air of ordinary density, exposing only about one foot of its height above the water. But it was provided with a movable bottom to the form of a piston, which could be controlled by a rack and pinion worked by crank. By operating the crank so as to drive in the piston, the buoyancy of the cylinder would be controlled by a rack and pinion worked by crank. By operating the crank so as to drive in the piston, the buoyancy of the cylinder would be correspondingly diminished, and the whole apparatus would sink. The breathing tube of the diver was to be connected with this reservoir, and as it rested on the bottom, he could increase or diminish the density of the contained air at pleasure, by turning the crank. The air, after inhalation, could be exhaled into the reservoir again, or be permitted to escape through a properly arranged valve in the armor. The first mode would provide against variation of pressure, although attended with a gradual vitiation of the purity of the air. But as it is experimentally proved that the same air may be safely breathed twice over, and as ordinary man does not inhale more frequently than fifteen or twenty times a minute, not receive into his lungs more than twenty-five or thirty cubic inches of air at each inhalation, it is proven by an easy calculation that the fifty-eight cubic feet of Mr. Klingert’s reservoir would suffice for the support of a diver much longer than he claimed, even if no portion of it were allowed to escape after being breathed.”

During his lifetime Klingert had very few positive reviews of his inventions, and because of it he considered himself a failure. It is nice to see that Americans thought differently, even so long after his death, which occurred in 1828.

Another American diving suit surfaced in a document signed by a certain Fritz Valentin. This time it was during the Industrial Exposition held in Wrocław in 1901, in which a place for a tent was reserved in which he was to show “an American diving suit.” Which suit it was it remains a mystery.
My grandparents lived in a small logging town in Oregon at the eastern edge of the Coast Range Mountains. The only thing this has to do with underwater photography is that it was in their living room that I was introduced to the ocean’s wonders through a Sawyer View-Master stereo viewer. Sitting on their couch and flicking the lever on the side of the viewer, I could rotate the View Master reel and see photos of fish, sharks, and coral that seemed to pop out of the frame at me.

For a six year old, it was wondrous, and probably the seed for my lifelong interest in both the underwater world and photography. Both sets of my grandparents had an earlier version of this sort of device, the stereoscope with its stereo pair photos on large cards.

These devices carried me away to worlds strange, distant, and past.

That was, ahem, a while ago. Over the years, my interests, and that of the general public, drifted to other forms of photography. Stereo (or 3D) photography
was pushed to the periphery of photo technology.

In recent years, a resurgence of interest in stereo photography has taken place, particularly in video production and film making.

Several major motion pictures, including James Cameron’s *Ghosts of the Abyss*, have been filmed in 3D, and there will be more to come. Almost every major manufacturer of video cameras now offers a 3D system in some form. Some offer purpose built cameras; others provide accessory lenses.

Still others have software which syncs imagery from two video cameras together to produce 3D video. This new technology was quickly picked up by underwater photographers, and housing manufacturers are hard on the heels of the camera makers in providing housings for the new cameras.

New? Is 3D really new, and is it new to underwater photography?

Hardly.

The process of stereo photography has been around for a long time. Although debate rages on, Sir Charles Wheatstone is widely credited with inventing stereo photography and the stereoscope (viewer) in 1838. In standard photography, contrast, focus, and framing are tools used by the photographer to provide a sense of depth to an image. A stereo image is composed of two images captured by two lenses and then viewed, one image by each of the viewer’s eyes, to form the stereo image in the mind.

By the 1860s, two styles of stereoscopes were popular, one designed by none other than American poet and author Oliver Wendell Holmes, Sr. From the 1890s through the 1930s almost every fashionable home had a stereoscope and a collection of stereo cards. Stereo cameras were available to the public as early as

(Above) The Rebikoff underwater housing for the Jules Richard F40 Vérascope camera, also pictured. Both camera and housing were made in France. From published photos, this housing model DR F40, #10 in a series, is the most sophisticated that Mr. Rebikoff made for the Vérascope. Mark Blum photo.

(Left) A photo of two Lion Fish from the View-Master reel. Author’s collection.

(Right) Three versions of stereo lenses were available for the Nikonos camera.
Early UW Stereo for military and scientific applications

World War II saw developments in many fields of technology. Underwater photography was no exception. Driven by the need to identify underwater ordnance and assess below-waterline damage to ships, the US Navy pursued underwater photography on several fronts. On the east coast, the Navy obtained the support of scientists from Woods Hole Oceanographic Institute (WHOI). From 1941 through to the end of the war, WHOI scientists, Maurice Ewing, J. Lamar Worzel, and A. C. Vine, developed underwater cameras and lighting systems for mid to deep-water work.

On a cruise south of Nantucket Island in 1942, they tested two German 35mm Robot cameras mounted side by side in a housing to produce stereo photos. Although the test produced good quality stereo photos, the technique proved to be of little value for the mission of identifying wrecks and submerged ordnance and was not pursued further until after the war. Following WWII, however, stereo deep-water photography proved to be valuable in scientific studies of sea floor geology and marine life.
Use by recreational divers

Belgian inventor and diver Jean de Wouters was shooting stereo underwater photos on the inaugural voyage of Cousteau’s ship, Calypso, in 1948. In retrospect, it seems unfortunate that he did not pursue the underwater stereo camera design.

The idea was dropped in favor of the now famous Calypso camera. It was felt that an underwater stereo camera would not be commercially marketable. Perhaps not on a grand scale, but there was enough interest in underwater stereo photography that a small market did exist.

In the early 1950s, pioneer underwater photographer Dimitri Rebikoff designed and built housings for the French made Richard Vérascope stereo camera. Coupled with his Torpille electronic flash, these stereo cameras were used extensively in underwater exploration and marine life studies.

Of the stereo cameras available at the time, Rebikoff felt the Richard camera was best suited for enclosing in a housing due to its relatively simple operation and wide field of view.

Early camera housing manufacturers, such as Jordan Klein’s Mako brand, built housings for Realist and other stereo cameras. Stereo imagery also appeared in motion pictures and home entertainment. Remember the View-Master reels?

Stereo motion pictures have been around since 1897, produced by a variety of techniques. The projection systems required the viewer to wear special glasses to see the 3D image.

Theatrical releases usually required polarized glasses which allowed each eye to only see one of the stereo image pair. For home viewing the glasses had red and blue lenses which corresponded to red and blue images on the film. Viewed through these glasses, the projected image appeared to have depth, which was lacking in most films.

The 1950s saw the height of 3D motion pictures. It was during this period that 3D movies went underwater when The Creature From the Black Lagoon (1955) and Revenge of the Creature (1955) were released.

Due to issues within the film industry, production of 3D films soon began to decline in the 1960s, although September Storm, an underwater adventure film, was released during this period.

Stereo photography has seen several periods of ups and downs in popularity. Both topside and underwater, however, the technique still holds an important place in special photo applications such as military reconnaissance and scientific research.

Films by James Cameron and Imax 3D movies by Howard and Michelle Hall have signaled a recent resurgence within the motion picture industry.

Through the flux in popularity, a few diehard underwater photographers have carried on the practice of stereo photography and expanded its horizons. 


Pages from the 1956 Underwater Sports catalog showing the Mako line of camera housings. The housing for the Stereo Realist camera is lower right. Author’s collection.
In the late 1940s a small group of divers came together to discover a way to continue spearfishing throughout the winter. They put together what would become the first dry suit. And today, in the new millennium, Aquala is still here, expanding and developing dry suits from sport and commercial divers.

Proud Sponsor of the Historical Diving Society USA

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Celebrating the Year of the Military Diver

Daredevils of the Deep, from Popular Mechanics, February 1944

Following on from our lead article in the prior issue on the U.S. Navy Divers from 1898, we are pleased to re-publish this 1944 article centered on USN School at Pier 88 in New York. The primary curriculum was salvage diving and the in-water classroom for training was the USS Normandie, which had capsized at Pier 88. The article was published in February, and five months later Allied forces embarked upon D-Day. As sections of coastal territory were recaptured from German forces, teams of divers were brought in to start clearing harbors and waterways around Europe and North Africa. The same scenario played out across Asia and the Pacific as territory was recaptured from Japanese forces. The school prepared hundreds of divers, one of whom was Leonard Greenstone, for these coming tasks.
divers for ordinary salvage work, using Navy men principally for submarine rescues and submarine salvage. The sinkings at Pearl Harbor demanded the services of hundreds of under-water workers. The capsizing of the Normandie, or Lafayette, in New York City called for scores more. Thousands of salvage tasks multiplied around the world as our vessels slugged it out with enemy ships or the raging elements.

An enterprising Navy officer asked that 65 men and officers be assigned for training, obtaining school space on Pier 88, not far from where the Normandie was being refloated. Arguing that the trainees could not only learn diving on the Normandie, but could be of considerable help to the over-worked divers already on the job, he got not only his 65 men, but nearly 150 more volunteers.

They proved so valuable that the roster of the school was boosted past 500, and Pier 88 became one of the greatest diver training centers in the world.

The divers' services are priceless because they have been taught to think for themselves while under the water. No school could solve in advance the thousands of undersea salvage problems peculiar to this war which the graduates have met.

In distant seas these youths have learned that the tropic sun beating down on a diver's air tanks at the surface can virtually give a man 100 feet below heat prostration. They have found that arctic atmosphere, pumped into his helmet, will freeze shut his vital air valve even when the diver is working in comparatively

FEBRUARY, 1944

When student has undergone all the tests near to the pier he is taken for dive in swirling tides

Navy's diving school operates day and night. Left, seven student divers going to "night class"
and the body begins to squeeze into the helmet.

A typical example of what can happen occurred to a student diver on the Normandie job. Responding to his cries for help over his headpiece telephone other divers found him bouncing helplessly against the ceiling of a cabin, his suit bulging like a balloon—too much air.

They learn never to lose track of their lifelines while prowling on a derelict, never to go under anything that they can go around, never to panic, no matter how bad things look. One of them burned his air line through with his cutting torch, but he got to the top okay.

They have been bombed by the Japs while salvaging an American transport in the Aleutians. They have been spotted with searchlights and shelled by Germans in North Africa while cutting warm water, leaving six or eight minutes during which the air in his suit will keep him alive.

By experience, they have learned that a careless descent toward a deck of a sunken battleship can land a man smack down a funnel and into stygian maze, or into a deck hole caused by a bomb. The metal can they stumble over on a destroyer’s deck is likely to be a depth charge ready for action. The long round object they bump into on a submerged cruiser may be a torpedo ready to go off on contact.

In deep dives they have learned the fine points of manipulating air valves both by the chin inside of the helmet and by the hand outside. The air not only supplies life-giving oxygen, but it offsets the pressure which grows as the diver goes deeper. When the air is adjusted correctly for the depth at which the diver is working, he hardly feels his bulky suit. Too much air pressure will pop him to the surface, likely to suffer serious attack of the bends, or divers’ cramps. Too little pressure

First actual underwater test is in water-filled tank, where diver can be watched through port.

First Quarter 2015, Volume 23, Number 82 The Journal of Diving History

POPULAR MECHANICS
boom cables across harbor mouths. They have braved a mine field in the Atlantic to unbolt a destroyer's deck guns for salvaging. They have slogged through sunken enemy warships searching for code books and important papers. They have brought up range finders and other expensive equipment off cruisers lost in battle. They have plugged up holes in sunken drydocks in Arctic cold and shored up tankers cracked in two in the tropics.

And the background training for all this they have obtained at the informal school at Pier 88, where much of the equipment was built by the students themselves and many of the training methods were also developed on the scene.

Men considered for training are between 20 and 30, and closer to 20, since older men cannot stand the pull and haul of the currents and the weight of the diving gear. They will be muscular, without an ounce of excess fat. Fatty tissues have scanty blood supply and can not quickly rid themselves of nitrogen which accumulates during under-water work. They will be of quiet disposition, not phlegmatic, but steady of nerve, because the strange depths of the sea are no place for a man who is inclined to be very excitable — or very dumb, either. In one of the classrooms they exhibit a diving suit slashed down the front as a reminder that its wearer lost his head, and nearly lost his life, when he became snagged underneath a platform and accidentally cut off his air in his struggle to free himself.

Even when hand-picked, every third man fails to complete his course. Many are washed out in a hurry, because the first
thing a man does in this diving school is dive.

If he can’t stand the confinement in the suit, if fear freezes his heart when he discovers himself far down in the muddy depths of the Hudson River, if he can’t work in total darkness where his hands become his eyes—he simply won’t do.

Even if he gets by on the diving test, he has to prove that he can stand far greater depths than the 40 feet down to the river bed alongside Pier 88. His ability to take high pressure is proved in a steel testing chamber which simulates any degree of air pressure. Men with sinus trouble, or impairment of the lungs and upper respiratory tract are likely to experience tell-tale pains which warn they will never stand the gaff of deep sea work. The candidate also undergoes rigid medical examination before he is allowed to begin work in the classrooms.

Crammed with theory and fully acquainted with his equipment, the diver is put in a suit and introduced to his gas torch with oxygen-hydrogen flame, and the new electric arc torches for under-sea burning of metals.

In one of three tanks, 10 feet high and 7 feet wide, filled with water and with a glass-covered hole through which he is watched, he does his first under-water cutting job with two or three members of his crew pumping air through his lines as they will later on at sea. After he has learned to cut metal and weld it while under water, he leaves the tanks and goes to work on a typical shoring or bulkhead job.

One problem consists of fitting tongue-and-groove timbers into their proper spot and bolting them firmly into place.

In another, the location of a sunken cylinder, submerged in the river, is indicated to the student and he is told to dive, examine it thoroughly with his hands, return topside and then draw an accurate sketch of this object—

which might obstruct traffic in a harbor or river under American attack.

He learns to tie rope knots and splice wire and cable, and to rig and operate lines and slings to remove guns, oil equipment and salvage cargo of all kinds from sunken ships.

By the time he has absorbed these things he is getting to be a diver and one day he becomes the most expensively dressed man in the navy—his diving ensemble costing about $1,500, more than enough to tailor an admiral.

But, who knows? An occasion may come when success of a naval operation will depend less on the admiral pacing his deck than on such a diver, groping in the mud below.
When I was first offered this helmet from a man here in the north of Europe I liked it a lot because of its age and its condition. Siebe Gorman & Co. ‘Patent stamped’ helmets do not show up every day and it seemed to be in an untouched condition with still a lot of tinning on. The photos he sent me also showed texts in white wax pencil on both the bonnet and the breastplate, which seemed to be in German.

The photos he had sent were very small and I could not read the first word, but the second could be ‘Platz,’ meaning ‘space’ ‘place’ or ‘square’ in German. I asked him about it and he had no idea what the texts could refer to. I agreed with the seller to purchase his helmet, unaware of what I had bought until I had it in my hands. The helmet appeared to be much smaller than what I had expected it to be. The white wax pencil text written on both the bonnet and the breastplate was not a German address, and it simply said ‘Small Plate,’ referring to the size of the breastplate.

The shape of the breastplate looked very much like a ‘modern’ Siebe, Gorman & Co Ltd breastplate, as the older ‘Patent stamped’ breastplates were usually wider in shape. But the bolts and nuts on this breastplate were of a much older style. They are as small as on A. Siebe or early Siebe & Gorman helmets. The left front brail/strap is younger and has larger holes, and two larger bolts were built in the breastplate to keep this brail/strap in the right position. The copper of the breastplate clearly shows the company name stamped directly in the copper: ‘Siebe, Gorman & Co Patent.’ This company name would usually be found on a
helmet with a serial number in the 3,000 range. However, in this breastplate only the number ‘9’ is stamped on the inside at the back of the neck ring. At the same place in the bonnet neck ring there is a locking bolt, which passes through the ring, and there is no trace of any serial number. If this bonnet did have a serial number then it would have been a single digit number, because the rest of a larger number would have been visible on either side of the locking bolt hole. I think that the number was drilled away when the locking bolt was installed. The three original brails are also stamped with number 9. Since both the helmet and the breastplate are different in style from a standard Siebe, Gorman & Co. helmet from that era, and both have the same ‘Small Plate’ markings in white wax pencil on them, I am convinced that it is a matching helmet, apart from the faceplate. The faceplate which came with the helmet was a much younger one and in very bad shape, so I found another faceplate for it with a higher serial number, but with its protective grill it looks great on the helmet.

When showing photos to some fellow collectors the reactions ranged from “Perhaps the helmet was for a midget,” (seriously)
to “It is almost certainly a “one-off” and as you say, most probably a genuine Siebe Gorman helmet.”

And in due course some more oddities were discovered. We knew that the helmet has a much smaller breastplate, but also the studs holding the weights seem to have been built onto it at a later date. They are smaller than standard SG weight studs and the mounting was done in a rather rough way (different from the rest of the helmet) But there are no traces (such as patched rivet holes) of full size studs it once could have had. So the helmet seems to have left the factory without studs at all. Maybe as its entire volume is smaller and it would have needed smaller weights? The helmet has a locking device at the back which is copied from Heinke, and there are no traces of a standard Siebe Gorman locking device. The side windows are placed more towards the front on the helmet and come very close to the faceplate. The exhaust valve assembly has also been positioned more towards the front on the side of the helmet.

This makes me wonder if this helmet was built for a customer who ordered it ‘as is,’ which could of course be the case. A customer could have been a very small person or it could have been built for a child. But then why does it have serial number 9? If it had been a ‘one of a kind’ or a unique project then I would rather expect it to carry number 1 or zero (0), or a standard serial number, or just no number at all. It is the number 9, which suggests that this helmet is part of a series of helmets which requested to be numbered apart from the chronological numbering as Siebe Gorman used on its helmets. If it is an official prototype helmet, then it may be one of the first helmets with a modern size breastplate, built around 1885.
SINCE 1937 DESCO PRODUCTS HAVE HAD THEIR DOWNS & UPS

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This is a real photo postcard, measuring 3½ X 5½ inches, showing a Merritt & Chapman diver posing in front of the company’s headquarters on the waterfront in New York. On the reverse is the usual printed postcard information, with the name Merritt & Chapman Derrick & Wrecking Co at the bottom. Written in pencil at the top of the reverse is the name “Hudson R. Newburgh, NY.”

The diver is wearing a three-light Schrader commercial helmet, along with all of his other equipment including canvas diving dress, weight belt, and shoes.

He is not wearing gloves and is holding onto the air hose while standing adjacent to a wheel air pump. The style of the real photo postcard and the type of equipment dates to between 1904 to about 1920.

Using internet search engines, I have been unable to find any information regarding a diver by the name of Hudson R. Newburgh in New York.

However, there is a city in New York state with the name Newburgh, which is on the Hudson River. I have no idea if the diver was named after the river, or if his family founded the city.
‘Skin Diving’ for Youth

By Peter Jackson

By the mid-1950s, “skin diving” – as it was popularly referred to in those days – was a well-established sport, which appealed to young and old alike. It is hardly surprising that images of young adventurers exploring underwater would feature on the covers of many boy’s annuals of the time. We have here a typical selection. I hope you like them.


Hemenger’s Diving Armor

By James Vorosmarti, MD

Arthur Hemenger of Algonac, MI was issued two patents for his designs of diving armor. The first was for Patent 437,779 on 7 October, 1890. The second was for Patent 496,686 on 2 May, 1893. The object of both was to protect the diver from the pressure of the water and allow him to move more freely.

The first design shows the dress to be made up of several sections of sheet brass shaped to roughly conform to the body sections to be covered. The chest area was covered by two pieces, R and A. These were to be joined together by a flange and bolts.

The helmet was to be “lap-joined” to piece R. There are no details of the helmet or what the “lap-join” entailed. The figure shows two helmet designs with no explanation for this seeming mistake.

The lower chest piece, C, was to be connected to section A by pivot, b. Similarly piece A was to be connected to the leg sections B, and so on down to the feet. All these sections were to be formed so that they nested together by overlapping each other and made like a ball and socket joint with the “ball” section a metal outline of the ball (not shown in the figure).

This design was to allow the diver to be able to bend at the waist, hips, and knees, but not the ankles. The overlap of the sections took up a great amount of surface area and there is no mention of any seals to prevent water leaking into the suit.

The sleeves of the suit (J) were to be made up of spiral wires and ended in cuffs (L). There is no information as to how the sleeves were to be connected to the body of the armor. The cuffs were apparently to be made of some rubberized material.

Air was supplied by hose L and exhausted by hose M. The entire assembly was to be covered by any flexible waterproof material.

In order to enter the suit the bolts on flange “f” were removed, the helmet and
upper chest piece was removed and the diver climbed into the suit after which the process of re-bolting the suit was to begin.

The second design was to “allow free universal movement, make it simpler to take apart, and construct it much cheaper, stronger, and more durable.” The figure shows that this design is an almost complete departure from the previous patent. The main section of the suit (1) covering the abdominal and hip areas is a circular metal shell of light metal. To this the legs were to be attached. These were to be constructed of spiral wire. These spirals were held together with four vertical straps of unspecified flexible material. To the upper edge of the main section was to be a waist section which was to be made of a series of overlapping bands of metal held together with canvas straps. Attached to the top of this section is the chest piece made up of two separable light metal sections held together with a flange and bolts. The top of the chest section was to be provided with a flange with threaded pins attached to it. The pins fit into a collar section which was secured to the flange by thumb screws. The helmet was to be mounted on this collar but it is not stated how this was to be done. The arms were to be made of spiral wiring. This entire assembly was also to be covered with a suitable rubber or other water-proof cloth.

I think that the reader by now has realized that neither of these designs would have met any of the objectives stated by the inventor, nor would they have made diving any easier. Neither of the designs provides any protection against pressure, as they are not complete armor. In the first dress the design of the sliding joints would not have stood up to the pressure, as they involve so much surface area and the sheet brass could probably be easily deformed. There is nothing to prevent water leakage into the joints. Hemenger probably realized this and included a covering of the entire suit from the neck down. The design of the second suit may have decreased the cost of the armor but did not make it any better for use. Since both designs required what appears to me to be a covering of waterproof material, why not just use a standard dress of the time? These designs would have provided no advantage over standard dress.

There is no evidence either of these dresses was made and used. There is almost nothing known of Hemenger. The following is taken from jwbeck@quicknet.nl, the only reference I was able to find for him. It was posted by Kathy LaCombe in April 1998. “My Great-great grandfather was Arthur Hemenger, who resided in Algonac, Mich. Arthur owned a salvage operation in Copper Harbor and apparently lived in Bell, Mich. for a while.

Arthur died during a salvage operation in Copper Harbor. I don’t know if he fell and drowned or if his barge went down with him on it. His body was recovered and he was buried in Algonac.” She goes on to request any further information that anyone might have on him. I have found no references to him in newspaper archives. The Algonac-Clay Township Historical Society has only the dates of his birth and death, which were 3 October 1834, in Marine City, and 29 June 1901.

800•WYLAND•0

Wyland is proud to sponsor the Historical Diving Society
This is a follow up article from the last Journal of Diving History, therefore I will not re-iterate all of those wonderful and exciting things that make these trips and Guadalupe Island special and instead focus on those things that made this particular trip and our guest host, Ms. Zale Parry, unique.

Suffice it to say that we spent a fascinating three days anchored offshore from Guadalupe Island as all of our guests spent time totally submerged in viewing the ocean’s apex predator from the four cages at depths from the surface down to approximately 30 feet. On one diving day, Zale was toasted by Martha Watkins Gilkes and Ed Stetson, trip organizer and recent NOGI inductee, underwater (in a cage) with champagne, and later in the lounge by the legendary Ernie Brooks.

As you know, these trips are very popular and always attract some exciting and accomplished members of the diving world. This trip was certainly no different. There was an especially large contingent of members of the Women Divers Hall of Fame on-board, including Bonnie Toth, Betty Orr, Martha Watkins Gilkes and, of course, Zale Parry. There were also Fellows from the Academy of Underwater Arts & Sciences, including Ernie Brooks,
Mike Gower, Ed Stetson, Dan Orr and, of no surprise, Zale Parry.

Each evening, we gathered in the lounge to share exciting stories of the day’s diving and Great White shark sightings. On one special evening, we gathered in the lounge for a special presentation by HDS Patron, Ernie Brooks. The legendary underwater photographer put together a special presentation of his exquisite black and white images he had created in Zale’s honor. Ernie’s eloquent narrative was truly moving and clearly showed Ernie’s affection for our beautiful planet and for Zale. We were all moved as he talked about his long friendship and admiration for Zale and her work. Following Ernie’s special presentation, we held a live auction for two magazines (one vintage, one more recent) featuring Zale Parry on the cover. The auction was to benefit the HDS. I acted as auctioneer, as the bids were fast and furious. The winning bids were from Bonnie Toth and Greg Soucy. Zale thanked everyone for their support for the HDS and gladly signed the featured magazines.

Each of these trips are, indeed, a unique opportunity to spend some quality time not only with legendary figures in the diving world such as the “Princess of the Diving World,” Zale Parry, but it also gives each participant an opportunity to share experiences with a fantastic array of fellow guests who represent a true cross section of the diving world. On this particular trip, we not only had an opportunity to spend time

(Above left) HDS Advisory Board members Zale Parry and Ernie Brooks.

(Above right) Zale does Guadalupe cool.

(Right) Women Divers Hall of Fame members Bonnie Toth, Zale Parry, Martha Watkins Gilkes, and Betty Orr.

Proud Sponsor of the Historical Diving Society and The Journal of Diving History
with Zale, but also with her daughter Margaret Bivens.

These trips support the mission and efforts of the Historical Diving Society. Besides the camaraderie, guests share a seemingly never-ending series of sea stories and tales of their experiences on other trips aboard the Nautilus Explorer.

You don’t need to take my word for how tremendous these HDS trips are because most trips include a large contingent of return guests. There were also many discussions of the future trips aboard the new and larger vessel, Belle Amie (nautilusexplorer.com/newsletters/2014-june-nautilus-belle-amie).

Besides fantastic and possibly once-in-a-lifetime diving experiences, you will have an opportunity to celebrate the history of our sport and share the experiences with some of the true legends of the sea and our sport! Join us on our HDS Great White Shark Adventure in 2015, hosted by renowned underwater photographic legend, Chuck Nicklin. Contact Ed Stetson at ed@stetsondiving.com.

All photos courtesy Dan Orr ©2014.
go face-to-face with a
great white shark
in our new 40’
submersible cage

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HELMET AUCTIONS

By Leslie Leaney

A review of recent internet auction results. While every effort is made to accurately describe the lots, vendors’ opinions of what the items are, and what their condition is, are not consistent. These results are published in good faith for the interest of members, and the HDS and JoDH are not responsible for any errors in descriptions, listings, or realized prices.

Gill Brothers, Melbourne, Australia, Deepwater Diving Pump

This listing was well photographed and showed a deep-water pump in excellent condition. Located in New South Wales, Australia, the listing read: This is an antique or vintage diving pump. As can be seen on the photos it was made by Gill Bros. Melbourne. It is very heavy, when I last moved house it took 4 men to lift it, by each hanging onto one of the 4 handles - 2 at the front and 2 at the back, as can be seen on the photos. I have tried to take photos of all aspects of the pump. The toolbox photos show the tools and toolbox that came with it, and a spare something, maybe a spare bearing. The wooden part of the pump is 21 inches wide, x 17 inches deep x 39 inches high. The wheels are 32 inches in diameter, so this increases the overall depth, width and height of the pump. As can be seen it is in very good order; I cannot imagine one being in better condition. When this was purchased it was in its original packaging, so has never been used. It has been part of my lounge room furniture for a long time. I understand that this type of pump was used on the deck of a ship/boat and there were pipes/tubes to take the air down to the divers helmet. It may be 3 cylinder - please see photos. This was in fact a three-cylinder water-cooled pump, but the consensus among knowledgeable HDS members is that the pump is a Heinke. It is most likely that Gill Brothers were the importing agents for Heinke, or a form of maritime retail outlet, and attached their plaque to the pump. Other non-manufacturing companies have added plaques, or stamped their company name, into imported diving equipment, so this is not totally unheard of. Perhaps HDS members in Australia can offer more information on this if they have it. The pump appeared to be missing the two crank handles required to turn the wheels. The opening bid was an extremely optimistic AU$25,000, which converted to US$19,117.50, and no bids were received.
Homemade Shallow Water Helmet
A sheet-copper, homemade shallow water helmet with the view port based on the Miller Dunn style 2 Divinhood design. The helmet was located in St. Petersburg, Florida and listed as being 25 inches in height. The breastplate finishing was a little crude and there were no fittings that weights could be attached to. An unusually tall helmet that gained 45 bids and sold for $1,500.

Mike Carson Divetec Mark 3 Diving Helmet
An uncommon swim gear helmet that had come from the Coastal School of Deep Sea Diving’s dive locker during the time it was closing. The helmet was from the collection of HDS co-founder Skip Dunham. Information on the helmet from David Dekker’s Dive Scrap and Iain Macquarie’s Diving Heritage web sites were included in the description. The helmet appeared to be in very good condition and 29 bids took it to $2,870.

USN DESCO Mark V, SN# 3040, Dated 10-5-45
A well-used, authentic Mark V that came with T wrench, shoulder cushion, wooden stand, commercial diving dress in good condition, air control valve, whip, leather boots, weight belt, chaffing pants, additional dress in poor condition, 50 foot of air hose, and a few other items. The listing was very detailed as to the condition of the items. Also stated: The suit was made for the Navy in November 1945 for use in the many areas of clean-up after the finish of WW2 (August, 1945) just two months earlier. Needless to say, it was a very busy time for US Navy divers and for this suit. It could have been in use at Pearl Harbor, Guam, Guadalcanal, the Solomon’s, or off the shores of France. After nearly 20 years of service in the US Navy, this suit was sold to the Canadian Navy for salvage work first and then for training purposes. In the early 1970’s the Canadian Navy sold off their remaining Mark V suits and this one was purchased by Seneca College in Toronto for use in it’s new Underwater Skills program. Hundreds of commercial diver students used this suit, myself included in 1978. In 1984, Seneca College sold off their Mark V suits. I was contacted by a good friend and commercial diver to see if I wanted one. Imagine the thrill of finding my own suit still for sale. All the suits were numbered and the helmets matched to the suits so it was easy to know that it was the one I used. I have owned it since then and used it on maybe 6 occasions for pool demonstrations. Otherwise it sat on display in one of my dive stores. Located in Canada, the lot sold for $8,100.
SCUBA AUCTIONS

By Ed LaRochelle

REGULATORS

Drager O2 rebreather "LT. Lund II," circa mid 1950’s. Used by the US Navy UDT and Seal teams, before and during the early start of the Vietnam war period. Came with original tools and carry case. SOLD for $1,200.

Drager PA 61 two stage with single hose for delivery and exhaust, circa 1960’s. All original in very good condition. SOLD for $431.50.

Demone MK I, serial number J-433 circa 1960/63. Demone (DEMON with an E). First introduced in 1960 and had limited success despite a strong advertising campaign. Demone offered two models, the MK I and the MK II. Now they are a very desirable regulator to collectors. This one is the MK I, all original in like-new condition. SOLD for $1,501.

Demone MK II serial number D-184 circa 1960/63. All original in very nice condition. SOLD for $1,445.

LaSpirotechnique Narguile (hookah) CG-45 regulator, circa 1948/49. Complete and in very nice condition for its age. Hookah harness in fair condition. SOLD for $1,551.

WATCHES

Depollier waterproof watch with Elgin movement, circa 1918-1919. Depollier also used Waltham movements during WWI. Though not designed specifically for underwater use, each was tested to depths of 20-plus feet before packaging. Sought after by dive watch and WWI trench watch collectors. This particular watch was not working and missing the 14K gold disc on back of case. Still it received lots of bids and SOLD for $2,030.
US Divers “Aqua Lung chronomatic” watch, circa 1962. Difficult to find since the Aqua Lung chrono for US Divers was made available only in 1962. Condition was advertised as running well and keeping time.
SOLD for $1,150.

US Divers “Enicar Aqua Lung 1000” watch, circa 1966 and 67. For 2 years only Enicar would custom label a watch Aqua Lung and US Divers cataloged it as the SUPER DIVE watch. Now a very hard watch to locate this Super Diver demanded a Super price. SOLD for $1,200.

Elgin canteen watch WWII, circa 1944 - 1950s. Used by the Frogmen of WWII and UDT teams in Korea. Excellent condition, working and showing no signs of wear. Vintage Canteen watches are heavily sought-after for dive watch collectors, UDT collectors, and WWII watch collectors.
SOLD for $2,300.
CAMERA AUCTIONS
By Sid Macken

(Left) Calypso 35mm camera with Som Berthiot 35mm lens. Sold $1,240.


Seahawk housing for Contax camera, included two back covers - one plain and one containing Rolleimarlin flash adapter. Sold $700.

Homemade metal housing for Bell and Howell 16mm camera. Sold $539.
CAMERA AUCTIONS

Seahawk housing and Argus C3 camera. Sold $660.

Siluro camera by Nemrod with original box, literature, flash unit, and lens cap. Sold $250.

Aqua-Cam with flash attachment. Sold $149.

Plexiglass housing with Italian made Closter Sport 35mm camera. Sold $105.

Underwater Photographic Systems plexiglass housing. Sold $200.

(Right) Soviet housing for Ekran movie camera. Sold $200.
New Raffle Prize and Fun at UI

The HDS started off the year by announcing our raffle, with the grand prize a unique Mark V Centennial diving helmet to be built by Morse. Unfortunately, and beyond the control of the HDS, Morse developed internal problems, which led to the closure of the business. Despite the best attempts by Morse to arrange to have our helmet completed, that project came to a halt and the 1915 Centennial Mark V helmet will not be built.

This has forced the HDS to substitute a standard Mark V built by DESCO (our traditional raffle grand prize) to replace the Morse Centennial helmet.

New tickets have been printed reflecting this new grand prize. All raffle tickets purchased prior to this change will remain in the raffle and eligible to be drawn. If, however, you purchased your ticket specifically in hope of winning the Centennial helmet and do not wish to remain in the raffle pool, please contact the HDS for a refund via email at hds@hds.org or by mail at PO Box 366, Amity, OR 97101. Please accept our apologies for any inconvenience this may have caused, but, again, it is beyond our control.

Recent Shows

The show season kicked off in New Orleans with Underwater Intervention, the commercial dive industry’s signature trade show hosted by the Association of Diving Contractors International and the MTS ROV Committee.

The HDS booth was staffed by Ed Uditis, Dan Orr, and Sid Macken. Our corner booth put us in a great position to catch foot traffic and sales were brisk, along with new memberships. We were able to introduce the 2015 Helmets in History Challenge Coin series to an eager crowd. Up in the Chicago area, Greg Platt and
his volunteers manned our annual booth at Our World Underwater, and volunteer Pat Willoughby staffed an HDS display at the Ohio Scuba Fest in Dayton Ohio.

Our grateful thanks go out to the Directors and volunteers who work the booths at these shows. We are always well-received at these events and the booth staff always provides a positive public impression for the Society.

New Products

The 2015 Helmets in History Challenge Coin Series is now available for subscribers. The first coin for this year is the US Navy MK XII.

If you have subscribed to the 2013 and 2014 series, be sure to contact products@hds.org to reserve your serial-numbered set.

Those of you who remember the very popular “Diving in Deep Water” T-shirt from years past will be glad to hear that it has been reprised and is now available again. Printed in black on ash-colored shirts, the 1880s woodcut image retains its high level of detail and strong historic perspective.

Upcoming Events

The Navy held its Year Of The Military Diver celebration at the Naval Diving and Salvage Training Center (NDSTC) in May and HDS USA was there.

We delivered presentations at both Dive Lab (Kirby Morgan’s research and development center) and Museum of Man in the Sea, plus hosted a display at the NDSTC facility during their open house. Visit the HDS website and Facebook page for further information.

We are scheduled for booths and speaking engagements at the Scuba and H2O Adventure show in Seattle, Long Beach Scuba Show, and DEMA later in the year. If you are able to attend any of these events, be sure to stop by for a visit.

As always, a heartfelt thank you to our members and supporters.

Safe Diving.
First Quarter 2015

**USN Mark XII**

The USN Mark XII helmet was introduced into the Navy in the early 1980’s as the replacement for the USN Mark V helmet. The shell is made from fiberglass and it is a free-flow system helmet. It was manufactured solely by the Morse Diving Equipment Company of Boston, Mass.

**NEW COINS FOR 2015!**

The Helmets in History Challenge Coin series continues in 2015 commemorating the history of US Navy deep sea diving helmets. New coins will be released each quarter, each featuring a different helmet. Secure your set by subscribing now. Prices remain the same as previous coin sets.

**Introducing the HDS Founder’s Coin**

The Founder’s coin celebrates the establishment of the Historical Diving Society USA and reflects the origins of the two broad fields of our history, helmet diving and scuba diving. The Augustus Seibe helmet established modern surface-supplied helmet diving, and the Cousteau/Gagnan demand regulator led to the popularization of free-swimming scuba diving. This is a perfect coin to carry or give as a presentation piece.

2013 and 2014 still available in limited quantities as four-coin sets or individually

- Individual Coins - $15
- Four Coin Series - $60
- Walnut Presentation Box - $25
- Boxed Set - $75

Prices include US shipping. For international orders, email products@hds.org

www.hds.org • www.facebook.com/historicaldivingsociety
The Society is sad to report the passing of our Advisory Board member Lotte Hass, at the age of 86, at her home in Vienna, Austria.

Lotte Hass was an underwater photographer and model who, with her husband Hans, produced pioneering films of the sea depths during the 1950s.

Shot on early watertight cameras, the Hasses’ footage offered viewers a glimpse of an underwater world unparalleled in its intimacy – at considerable personal risk to Lotte, who dived using a lightweight rebreather and a fashionable swimsuit that afforded her little protection from aquatic predators. The bulky filming equipment posed a separate danger, and on one occasion she almost drowned when her oxygen supply ran out and the heavy lens required for color shots dragged her down.

In the pioneering male-dominated divers’ community, Lotte was a striking exception, and her good looks, combined with a fearless approach to sharks, manta rays and other perils, contributed in large part to the audience appeal. Diving To Adventure, the couple’s 1956 BBC series, was the first of its kind for British television, proving a great hit with critics and viewers alike.

The Daily Mail dubbed Lotte “one of the most beautiful women who has ever prowled under the sea with a spear;” her picture adorned the covers of international magazines, and she received offers from Hollywood. She rejected the prospect of a long-term acting career, however, preferring to remain with Hass on his expeditions, and later retired from the public eye – though not before securing her place in diving history, as the first woman to explore the coral reefs of the Red Sea.

Born Charlotte Hildegard Baierl on November 6, 1928, in the Brigittenau district of Vienna, Lotte was 19 years old when she applied for a position as Hans Hass’s secretary. Hans, nine years her senior, had just released his first feature-length film, Men among Sharks, and was
planning a new expedition to the Red Sea. “Hans Hass was my idol, our idol,” she said, “the idol of my class, of my friends, of all young people. We had all devoured his book Among Coral Reefs and Sharks with great excitement.” As a great admirer of his work, Lotte was eager to be part of the expedition, but faced considerable opposition from Hass and his fellow team members, who felt that having a woman on board would distract them from the seriousness of their task.

However, Lotte was determined, and secretly took lessons from an Olympic trainer. “Every morning before going to the office I trained for half an hour in an indoor swimming-pool,” she recalled of her secret regime. Having taught herself how to dive, she then resolved to experiment with underwater photography. “While Hass was on a lecture tour in the South Tirol, I went on a private expedition... I made my way to the Alte Donau [a tributary of the Danube] ... Carrying the underwater camera (belonging to Hass) I slipped down into the jungle below the surface.” Two weeks later a photograph of her appeared on the front cover of the Wiener Illustrierte magazine, together with her article and underwater photos. “Not bad these pictures,” Hass remarked, “If you were a man, I could make use of you. Pity.”

But persistence paid off, and thanks to a request from Hass’s film company for a female lead for the next film she won over his objections. As she noted in her diary “Port Sudan, 4th April [1950]: From today I am a man...”

For Lotte, the expedition presented a steep learning curve. They made their camp among scorpions in the desert ruins of Suakim in northeastern Sudan, and out on the sea Hass could be heedless in his determination to achieve the best possible shots. On her second dive Lotte found herself separated from the rest of the crew and eye-to-eye with a shark; a few days later Hass drove a school of barracuda towards her. Eventually she plucked up the courage to approach him: “Do you think there are any giant octopuses? I wish there were!” Hass replied. “Unfortunately the only ones I’ve ever seen came from American film studios and they’re made of rubber.”

Newly divorced from his first wife, Hans proposed to Lotte in Cairo at the end of the expedition. Their finished film, Under the Red Sea, won the top award in its class at the 1951 Venice Film Festival, and critics were much impressed by the novelty of a female diver. Reviewing Under the Red Sea, in The New
York Times in 1952, Bosley Crowther waxed voluble on her aqueous presence. “It seems to be the full, athletic figure of the young lady, Lotte Baierl, on which the submarine cameras are focused with most consistent regularity,” he wrote. He added, in effusive understatement, “This is not in the least disconcerting.”

Hans was already known within his sphere as a pioneer in diving technology and undersea photography; now audiences and critics became captivated by the photogenic couple, who brought a touch of glamour to the hitherto rugged and emotionally distant world of the adventurer.

The couple’s new-found commercial success allowed Hass to purchase a 170-foot hull, the Xarifa, and Lotte accompanied him on expeditions to the Caribbean and Galapagos islands, where they shot Under the Caribbean (1953). The first German film produced in Technicolor, it won an award from the Underwater Photographic Society for outstanding cinematography, and Time magazine devoted a double-page spread to an image of Lotte holding on to the flukes of a sperm whale.

Later the couple dived off the Great Barrier Reef in Australia, taking 8,000 photographs along 200 miles of the coral barrier, and trawled the Aegean to shoot Diving to Adventure, producing 26 half-hour films. The Undersea World of Adventure, a six-part series shot in the Caribbean, Indian Ocean, and the Red Sea, followed in 1958. Lotte was offered roles by Hollywood but turned them down, preferring to continue her work with her husband. But after the birth of their daughter Meta in 1958 she retired from public life to spend time with the family. She made a brief return to the screen as an actress in 1976, with a supporting role in an episode of the long-running German detective series Derrick.

Lotte tells her story in the book Girl on the Ocean Floor (1972) which was made into a television documentary in 2011, directed by Ben Verbong.

Mary Tetly, chief executive of the British Sub-Aqua Club, told The Independent: “Lotte Hass was widely regarded as the ‘First Lady of diving’ and her contribution to opening up the world of scuba for women cannot be overstated. A true diving pioneer, Lotte was one of the first female underwater photographers. And it was through her tenacity and skill that she also showed how women could dive and take part in challenging expeditions just as well as men. Lotte, along with her husband Hans, were inspirational divers and together they played a significant role in bringing scuba diving in to the mainstream and making it the popular sport it is today. She will quite rightly be remembered as the diver who opened the floodgates for women divers today.”

Lotte Hass was inducted into the International Scuba Diving Hall of Fame in 2000 and into the Women Divers Hall of Fame in the same year. Hans Hass predeceased her in 2013, and she is survived by their daughter, Meta.
Eugenie Clark, a world authority on sharks who defied society’s expectations about both women’s roles in science and the much-feared underwater creatures she studied, died February 25, 2015, at her home in Sarasota, Florida. She was 92.

Dr. Clark, an ichthyologist and oceanographer, divided much of her career between the University of Maryland and the Mote Marine Laboratory in Sarasota. The cause of death was non-smoking lung cancer, said her son Nikolas Konstantinou.

An unabashed adventurer and prolific researcher, Dr. Clark traveled the globe to study reef fish, sharks and mollusks. She made 71 dives in submersibles, a practice that is still done by a relatively small number of explorers, plunging at one point to 12,000 feet.

Dr. Clark, whose mother and stepfather were Japanese, grew up immersed in a family and culture that valued the sea and all of its life forms. Her career preceded Rachel Carson’s book “The Sea Around Us” and oceanographer Jacques-Yves Cousteau’s book and documentary “The Silent World,” which in the 1950s helped generate broad interest in undersea research.

As a leading champion of marine life and conservation, Dr. Clark criticized the 1975 fright-movie “Jaws” and other popular depictions of sharks that gave them “a bad rap.” For decades she had traveled with the creatures underwater, studied them in captivity and saw them as a way to understand the globe’s vast seas.

The first time Dr. Clark encountered a massive, pregnant whale shark, off Baja California in 1980, she grabbed on to a fold of skin under the animal’s dorsal fin and rode it for an extended period of time, holding on to her air tank as it slid off her back.

“It was incredible,” Dr. Clark said in a 2008 interview, recalling how she lost
One of Dr. Clark’s most significant academic contributions came in the late 1950s, when she proved sharks could be trained to pick a target based on visual clues and could learn tasks as quickly as mammals. She eventually published her findings in the journal Science.

“It was the first demonstration of sharks’ intelligence,” said Robert Hueter, director of Mote’s Center for Shark Research, in an interview. “Before, people thought these were primitive, dimwitted animals, and she showed they were capable and had an important role in the marine environment.”

Dr. Clark documented “sleeping sharks” in underwater caves in Mexico and Japan, a finding that challenged the conventional wisdom that all sharks had to move constantly in order to get the oxygen they needed to survive, and proved that the Moses sole, which lives in the Red Sea, produces a natural shark repellent.

She received awards throughout her lifetime, including the Explorers Club Medal and high honors from the American Society of Oceanographers and the National Geographic Society. She wrote more than 175 articles for the academic and popular press, said Mote spokeswoman Hayley Rutger; an article on triggerfish came out just last month.

Eugenie Clark was born in New York City on May 4, 1922 to an American father and Japanese mother. She was 2 when her father died and her mother, Yumico, had to work on weekends to help support the family. When Eugenie was a little older, her mother would sometimes drop her off on Saturday mornings at an aquarium in Lower Manhattan. She was fascinated and persuaded her mother to buy her a 15-gallon tank one Christmas. She eventually amassed a collection of fish.

“I knew more about produce from the sea than any of my schoolmates, and my reports in school, from kindergarten on, amused and shocked my classmates and teachers,” she recalled in a 1994 article in the journal Environmental Biology of Fishes. “I told them how we ate with chopsticks, had rice and seaweed for breakfast, raw fish, octopus, and sea urchin eggs for supper, and cakes made
IN MEMORIAM

She graduated in 1942 from Hunter College with a zoology degree. After working as a research assistant at the Scripps Institution of Oceanography in California, among other jobs, she completed her doctorate in zoology in 1950 at New York University, with a focus on sperm competition in poeciliid fishes.

In New York City, Dr. Clark befriended members of the Vanderbilt family who admired her first book, “Lady With a Spear” (1953), and who invited her to visit their southwest Florida estate. In 1955 she moved with her second husband, surgeon Ilias Konstantinou, and their two young daughters “to start a marine laboratory in a little wooden building, 20 x 40 ft., in Placida,” she wrote in her 1969 book, “The Lady and the Sharks.” Dr. Clark served as the lab’s founding director until 1967, the year it was renamed to honor major benefactor William R. Mote.

Konstantinou and Dr. Clark had four children together — Hera, Aya, Themistokles and Nikolas — all of whom survive and all of whom learned to scuba dive. She is also survived by a grandson. Her first marriage, to Jideo Umaki, ended in divorce, as did her marriages to Konstantinou, author Chandler Brossard and National Institutes of Health scientist Igor Klatzo. Her fifth husband, Henry Yoshinobu Kon, whom she married in 1997, died in 2000.

In 1968 Dr. Clark joined the zoology faculty at the University of Maryland and taught there full time until 1992. At that point she became professor emeritus and continued teaching for several years before rejoining Mote — now based on City Island in Sarasota — in 2000. Along with underwater explorer Sylvia Earle, Dr. Clark inspired dozens of young women and men to enter the field of marine biology. Until a few months ago, she came in to Mote most days, Hueter said, regularly hosting young scientists in her office.

Stanford University marine science professor Barbara Block, one of the world’s foremost shark trackers, described her in an e-mail as “one of my early mentors,” including on making powerful acoustic tags to study six-gill sharks off the coast of Bermuda. Working with the Woods Hole Oceanographic Institution’s Frank Carey, the team developed a pressure-resistant acoustic tag that could track sharks nearly 5,000 feet below the water’s surface.

“She was a life force very much at the top of her academic game — shark biologist, explorer, diver, academic, professor and leader,” Block wrote. “We called her the shark lady.”

Dr. Clark personally lobbied world leaders such as former Egyptian president Anwar Sadat to set aside marine protected areas, her son Nikolas recalled. In that instance, she approached Sadat’s son at a Red Sea fishing tournament he was leading, and within weeks the encounter led to the establishment of Egypt’s first marine park.

She appeared in dozens of documentaries and television specials and wrote for National Geographic and other publications, often about the need to protect shark species and their surroundings.

Dr. Clark took her last ocean dive in 2014 in the Solomon Islands, in the Pacific. During a 2008 interview at Mote, when she was describing how deep she had recently gone, she quickly admonished a reporter to keep that figure secret.

“Don’t mention how deep I went,” she said. “I’m not supposed to do that anymore.” And with that, Dr. Clark threw back her head and started to laugh.

The Diving History Library

Classic diving literature and reference volumes available at hds.org

HARD HAT DIVERS WEAR DRESSES
BY BOB KIRBY

The legendary Bob Kirby's autobiography covers his development of Kirby Morgan dive equipment and his work in commercial, military and Hollywood diving. Contains numerous unique photos from Kirby's career including some of his helmets. As the story of one of diving's few living legends, it will stand as a personal record of one man's unique journey through an industry at its prime. Self published by Kirby, with warts and all. Limited to only 1,000 copies. Perfect bound volume, 262 pages, b&w photos, $40.00, plus $12.50 domestic p&p.

SEALAB: AMERICA'S FORGOTTEN QUEST TO LIVE AND WORK ON THE OCEAN FLOOR
BY BEN HELLWARTH

An extensive and detailed record of the triumphs and tragedies of the SEALAB program, based upon Hellsworth's painstaking research. Hellsworth, a veteran journalist, interviewed many surviving participants from the SEALAB experiments and conducted extensive documentary research to write the first comprehensive account of one of the most important and least known experiments in US history. His compelling narrative covers the story from its scrappy origins in Dr. Bond's Navy laboratory, through harrowing close calls, historic triumphs, and the mysterious tragedy that brought about the end of SEALAB. Hardbound in dust jacket, 2012, 388 pages b&w photos, index, 19 pages of reference notes. $28 plus $7.50 domestic p&p.

BETWEEN THE DEVIL AND THE DEEP
BY MURRAY BLACK

As one of the early pioneers of commercial oilfield diving, Murray Black was an industry leader with an abundance of natural bravery. After graduating from E.R. Cross' Sparling School of Deep Sea Diving, Black progressed through the colorful ranks of the abalone diving and eventually founder DIVCON. History was made with DIVCON, with surface bounce dives past 500 feet as Black consistently pushed the envelope. The book also contains details of Blacks post-diving career with friends like John Wayne and other characters. nd, 189 pages with b&w photos. $25, plus $5 domestic p&p.

Also Available from HDS USA

DEEP DIVING AND SUBMARINE OPERATIONS
BY SIR ROBERT H. DAVIS

Referred to during last century as "The Bible of Diving," the first edition of this book appeared in 1909, as was gradually revised and expanded through the 20th century. This ninth edition celebrates the 175th Anniversary of Siebe Gorman. Part One is essentially a diving manual and covers all aspects of diving technology, physics, physiology. Part Two contains accounts of notable diving operations and a history of all forms of diving apparatus. Two-volume set in a reflex blue presentation slip case. Probably the most famous diving book ever printed. "The best book on diving I have ever read," says Bev Morgan. Reviewed in HDM #6. 712 pages, over 650 b&w photographs, line drawings and illustrations, index. $115 plus plus $18 domestic p&p ($60 international).

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Order these and more at www.hds.org - click on “The Store”
CA residents add 8.75% sales tax
The Historical Diving Society USA proudly presents the Stan Waterman film collection on DVD. Stan Waterman, one of America's best known and most beloved underwater cinematographers, has spent nearly sixty years filming on, under, and around the sea. From the late 1950s into the 1970s, Stan took his films on the lecture circuit across the United States.

Announcing the addition of Volumes 9 and 10 to the Stan Waterman Collection of Waterman films on DVD, adding 7 films to the collection!

Volume 1 $15
THE LAST OF THE RIGHT WHALES: Stan travels to Patagonia to search for and dive with Right Whales. These amazing, gentle creatures were hunted nearly to extinction because they were the “right” whale to bring large profits to early whalers. Stan also looks at the other creatures living along this lonely, desolate coastline.

THE WAR REEFS: In 1942, the small, South Pacific Island of Guadalcanal became the scene of a decisive, World War II, air-sea battle between the United States and Japan. It was a turning point in the war for the US and its allies, but a resounding defeat for the Japanese. The terrible cost of the battle can be found enumerated on the sea floor in what is now called Iron Bottom Sound for the scores of ships and aircraft that lie there. Stan and his companions visit the waters surrounding Guadalcanal, and as they explore Japan’s sunken fleet, they discover that the debris of war has, over time, been changed, softened by the sea, and is now the home of a fantastic array of marine animals.

THE SINA REEFS: The best of the Red Sea, aboard the live aboard dive boat, SUN BOAT. Stan and mixed group of divers from the US visit reefs along the Sina Peninsula, the Gulf of Elat, Ras Muhammad, and the Straits of Tiran. The beautiful colors of reef fish and corals endure in this film.

BELIZE - A DIVING HOLIDAY: An Aggressor Fleet trip, this time to the reefs of Belize. Day or night, the reefs are ablaze with color and the photographers on board take full advantage of the scene.

CORTEZ - THE HAMMERHEAD: Stan and Peter Benchley travel to the Espiritu Santo Seamount in the Sea of Cortez to film the massive schools of Hammerhead Sharks known to congregate there. Accompanied by shark researcher, Dr. Ted Rulison, Peter and Stan learn about the enigmatic Hammerheads and research in shark behavior.

STELLA MARIS: In another American Sportsmen episode, Stan films author Peter Benchley and Dr. Sylvia Earle as they dive with sharks at Stella Maris in the Caribbean. First dives include encounters with a large Manta Ray, and individual sharks, then the large school arrives and the dives get interesting.

Volume 2 $15
OFF THE WALL: Follow Peter Benchley and his family on a diving adventure that includes pirates, shipwrecks, and giant moray eels.

UNLIMITED AIR: Stan takes us back to the Caymans but this time we travel and dive with Our World Underwater scholarship winner Lisa Truitt.

Volume 3 $15
BEYOND JAWS: Includes clips from Stan’s earliest dives in 1958 through filming Great White Sharks in Australia with friends Peter Benchley and Rodney Fox. Sharks are the center of attention on these dives.

A QUICK TRIP TO THREE OCEANS: A medley of images from many of Stan’s adventures during the 1960s and 1970s. Stan takes us to the Caribbean, Bahamas, Cocos Island, Paua New Guinea, Yap and many other exotic locations.

Volume 4 $15
ROUGHING IT IN THE CORAL SEA: A tongue-in-cheek exposé of life aboard a multimillion dollar “hell ship”.

FINS TO THE RIGHT, FINS TO THE LEFT: Return to Cocos Island for a thorough dive. Together the films offer nearly an hour of Stan’s delightful images and eloquent narration.

Volume 5 $15
MORA WHEELS: This is the story of the Moray Wheels a Boston-based Scuba club for divers with disabilities. Produced in the 1970s, Stan follows two students as they undergo their initial dive training in the pool at M.I.T., then make check out dives at the New England Aquarium in Boston. The students face the challenges of diving in open water at Bonaire, Netherland Antilles.

GENESIS 1:27: “So God created man in his own image, in the image of God he created him; male and female he created them.” Stan’s underwater imagery set to a haunting musical score won a Gold Medal at the inaugural United Kingdom Film Festival.

A BITING KIND OF SHARK: Eighteen years after filming Blue Water, White Death, Stan returns to Dangerous Reef, South Australia, with famed Australian shark expert Rodney Fox to once again film the Great White Shark. They are accompanied by underwater photographers and scientists from Canada, Saudi Arabia, and the United States.

THE BEST OF CAYMANS: Stan visits the Cayman Islands aboard Wayne Hasson’s Aggressor Fleet liveaboard dive boats. Along on the trip are Stan’s good friend Peter Benchley and his family. They dive the wreck of the Ore Verde; visit Jew Fish, Barracuda, and Groupers; dive reefs, walls, and visit a shallow sand patch filled with sting rays.

Volume 6 $15
THE LAST OF THE RIGHT WHALES: Stan travels to Patagonia to search for and dive with Right Whales. These amazing, gentle creatures were hunted nearly to extinction because they were the “right” whale to bring large profits to early whalers. Stan also looks at the other creatures living along this lonely, desolate coastline.

THE WAR REEFS: In 1942, the small, South Pacific Island of Guadalcanal became the scene of a decisive, World War II, air-sea battle between the United States and Japan. It was a turning point in the war for the US and its allies, but a resounding defeat for the Japanese. The terrible cost of the battle can be found enumerated on the sea floor in what is now called Iron Bottom Sound for the scores of ships and aircraft that lie there. Stan and his companions visit the waters surrounding Guadalcanal, and as they explore Japan’s sunken fleet, they discover that the debris of war has, over time, been changed, softened by the sea, and is now the home of a fantastic array of marine animals.

THE SINA REEFS: The best of the Red Sea, aboard the live aboard dive boat, SUN BOAT. Stan and mixed group of divers from the US visit reefs along the Sina Peninsula, the Gulf of Elat, Ras Muhammad, and the Straits of Tiran. The beautiful colors of reef fish and corals endure in this film.

BELIZE - A DIVING HOLIDAY: An Aggressor Fleet trip, this time to the reefs of Belize. Day or night, the reefs are ablaze with color and the photographers on board take full advantage of the scene.

CORTEZ - THE HAMMERHEAD: Stan and Peter Benchley travel to the Espiritu Santo Seamount in the Sea of Cortez to film the massive schools of Hammerhead Sharks known to congregate there. Accompanied by shark researcher, Dr. Ted Rulison, Peter and Stan learn about the enigmatic Hammerheads and research in shark behavior.

STELLA MARIS: In another American Sportsmen episode, Stan films author Peter Benchley and Dr. Sylvia Earle as they dive with sharks at Stella Maris in the Caribbean. First dives include encounters with a large Manta Ray, and individual sharks, then the large school arrives and the dives get interesting.

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JACK’S WORLD: The Island is Virgin Gorda, in the British Virgin Islands. The subject is Jacki Kilbride. Her love of the sea and devotion to protecting and sharing it make Jacki’s World a very special place.

THERE’S AN EEL IN MY BC: Bonaire, diving mecca of the Caribbean, is the location for this adventure. Peter Hughes, Dee Scarr, Geri Murphy, and Paul Tzimoulis make appearances along with Stan in a comedic cameo.

A PEOPLE’S TRUST: The Bahama’s National Trust, dedicated to the preservation of the Bahama’s invaluable natural resources, brings education to Bahamian children and protects the Island’s environment through a series of parks.

COCOA DIVING PLUS: The Caribbean Island of Curacao, in the Netherlands Antilles, is as much a delight above water as it is below. Stan takes us on a tour of this beautiful island and shows us the attractions which make it a must-dive location.

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A SIXTiETH AT EIGHT: Underwater photography is all the rage, and Stan takes us to class on the Bahama Island of San Salvador at the Paul Tzimoulis Underwater Photography College. Look for appearances by Paul, Geri Murphy, Peter Benchley and his family. Includes a dolphin sequence filmed by Jack McKinney.

SCUBA: A lesson in diving history, with Stan as our professor, traces the advance of man’s efforts underwater from Leonardo da Vinci to Cousteau. Includes a visit to the Dacor Company and film sequences by da Vinci to Cousteau. Includes interviews with Dr. Ron and Valerie Taylor. Produced by Stan and Howard Hall as part of a World of Audobon television special.

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