By Kevin Hardy and Ian Koblick

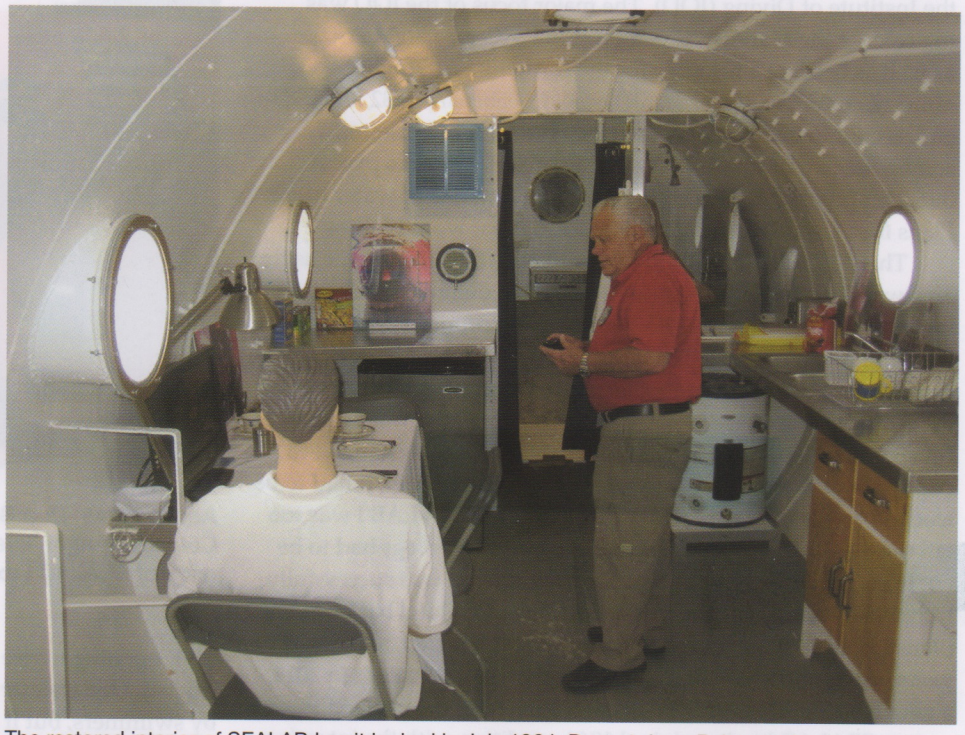
Introduction

On November 11, 2016, the Man-in-the-Sea Museum, in Panama City, Florida, hosted a well-planned event to christen the newly-refurbished USN manned undersea habitat SEALAB I as a walk-though exhibit. The museum, under the leadership of President Craig Cooper and Executive Director Heather Nowak, has made impressive strides in capturing and displaying the history of man in the sea. Here is a story of that day.

"SEALAB I: The Exhibit" Christening

By Heather Nowak
Executive Director, Man-in-the-Sea Museum

SEALAB I, America's first seafloor saturation home away from home, beautifully restored and open for tours.



The restored interior of SEALAB I as it looked in July 1964. Docent Jerry Pelton looks at the dining table where a manikin of an aquanaut is seated.

SEALAB I was the pioneering experiment to determine the capability of men to live and work for extended periods under great pressure at considerable depth. In SEALAB I, conducted off the coast of Bermuda in July 1964, four Navy Divers— Chief Quartermaster Robert "Bob" Barth, Chief Hospital Corpsman Sanders "Tiger" Manning, Gunner's Mate Lester "Andy" Anderson and LCDR, then Lt, Robert Thompson —lived and worked comfortably and safely for 11 days at a depth of 193 feet. The habitat, the brainchild of CAPT. George F. Bond, MC, USN, was built in 1964 at the Mine Defense Laboratory, now NSA Panama City.

SEALAB I is nine feet in diameter and 40 feet long, and was fabricated from two large surplus anti-submarine net floats. The internal equipment of the undersea house provided most of the normal accouterments of terrestrial living, plus immediate access to the adjacent ocean floor via an open entrance trunk. Surface support was provided from a Navy Lighter (*YFNB-12*) barge anchored above the habitat, where a multipurpose umbilical ran to SEALAB I, providing power, communications, video and emergency gas and water supplies. It was also supported by the USN research platform, *Argus Island*, a Texas Tower structure similar to offshore oil drilling platforms, and a key reason the Bermuda site was selected for the first habitat deployment.

SEALAB I was the U.S. Navy's first ocean floor habitat and answered the question of whether men could live and do meaningful work on the ocean floor. While it had its share of technical difficulties, "SEALAB I was a major success," wrote author Ian Koblick in his text, *Living and Working in the Sea*. "Never before had humans worked and lived in the sea at so great a depth for so long." (For a fuller accounting of SEALAB I, see "SEALAB at 50," by Ben Hellwarth, *The Journal of Diving History*, Second Quarter 2014, Volume 22, Number 79).

Following the successful SEALAB I experiment, the crew of the Navy's newly designated "Man-in-the-Sea Program" set their sights on a brand new, much more sophisticated habitat, that would be used for the SEALAB II experiment in 1965 and SEALAB III experiment in 1969. The planned experiments would conduct further research that started with the SEALAB I experiment. In the meantime, SEALAB I came back to the Mine Defence Laboratory in Panama City. Senior Engineer Bill Culpepper, who also engineered SEALAB II, found a great use for the SEALAB I habitat. It went through several modifications, including a new conning tower (so larger equipment could be lowered into the habitat rather than going through the smaller hatch in the underside) and a black and white paint scheme. SEALAB I would become a major component of the STEP (Submerged Test Engineering Platform) Program. It was lowered to its new home about two miles off the coast of Panama City in the Gulf of Mexico next to the Navy's Stage II Research Platform. During its time in the STEP Program, SEALAB I became an underwater laboratory for a series of equipment and procedures testing to be used in the forthcoming SEALAB III experiment and future Man-in-the-Sea projects. After the STEP program, SEALAB remained an underwater laboratory for the Scientist-in-the Sea Program developed by CAPT. Bond who was still very active in sea-dwelling practices and theories. CAPT. Bond led a partnership between the Navy, NOAA and the Florida University System offering a multi-disciplined, full-time, summer-long, graduate credit program that exposed students to the underwater life-support and data collecting technology available at that time.

The program was very successful. However, in 1974, SEALAB I was sealed and abandoned by the Navy on the ocean floor for almost a decade.

In 1981, SEALAB I received a new lease on life when the Navy's Experimental Diving Unit (NEDU) and Diving & Salvage Training Centre (NDSTC), joined forces to raise the now historic habitat. During its time on the bottom, SEALAB had become an artificial reef. It took divers several weeks to clean and patch the habitat for its eventual ascent to the surface in June 1981. After it was raised, the habitat was towed to Alligator Bayou (ironically the same bayou SEALAB was tested before its Bermudan mission) to be further cleaned, scraped and basic repairs made.

Prior to the recovery, CAPT. Bond led a group of divers, many associated in the Man-in-the-Sea Program, in starting

the Institute of Diving (IOD). The major focus of the IOD was to preserve the Man-in-the-Sea Program's history and heritage as well as become a resource for the furtherance of diving—military, commercial and recreational. In February 1982, the IOD's efforts culminated in a new International Diving Museum. The somewhat patched and newly painted SEALAB I was placed outside of that first museum, marking its first out-of-water home. Plans for a complete restoration of the habitat would follow.

This new location would not be SEALAB I's final home as the area was changing and plans were made to demolish the building housing the museum. The IOD was offered property for a new museum on Panama City Beach Parkway (formerly Back Beach Road or W. Hwy 98), and the museum, along with SEALAB I, moved in 1987 to its current location. The museum was renamed Museum of Man-in-the-Sea. In 2010, the name was changed to its current Man-in-the-Sea Museum. To move the habitat, it had to be trucked across the Hathaway Bridge. Because SEALAB I was too tall for the bridge's vertical clearance, the vessel's legs had to be cut from the body. Now in two parts the habitat was successfully transferred to the new property and the legs welded back on. The plans for a complete restoration were never realized, and for 33 years, the historic habitat became weathered and rusted. In 2014, a new Board of Directors for the museum were determined to restore SEALAB I to its original 1964 condition with the intention of making it a walk-in exhibit.

The interior of SEALAB I is seen prior to restoration. Note the corroded high-pressure bottles below the flooring.

Restoration of SEALAB I commenced in October 2014, three months after a subdued recognition of its 50th anniversary. The lion's share of the restoration work fell on the untiring shoulders of Jim McCarthy and Craig Cooper. While others made important contributions, it is thanks to these two stalwart volunteers that the project was carried to completion, and are deserving of our community's immense gratitude. Restoration of the interior of the habitat was largely the work of Jim McCarthy.

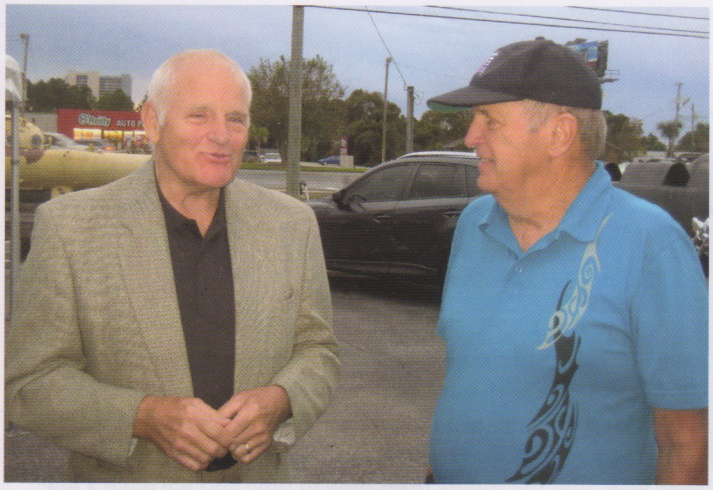
First tasks were gutting the interior of the rainwater-filled derelict, drilling drain holes, and removing major corrosion throughout the bilge prior to sandblasting. The habitat had a

Aquanaut #1, Bob Barth, left, (sitting), and habitat designer Bill Culpepper, right, later broke bottles of champagne on opposite ends of SEALAB I to christen the completed exhibit.

3′x4′ opening where the "conning tower" from the STEP Program existed. Underwater habitats have bottom entry hatches accessed by swimmers, but if SEALAB I was to become a walk-in exhibit, another means of entry was needed. Many years earlier, in 1982, a 3′x7′ access opening was cut in the starboard side aft of the bunk area in the bow to fit a standard house front door. Those earlier restoration plans were not carried through, however, and the breech in the hull played a big part in the rain-filled and corroded interior, specifically the bilge. In the current work, an exterior porch and stairs were added to facilitate access for walk-in guests. A dustless wet sandblaster was hired to take the interior to bare metal, and after additional extensive work in the heavily corroded bilge, the interior was acid treated and painted with a two-part epoxy. Work continued inside with construction of a new deck (floor), as attachments to close the two major hull openings were designed and fabricated. The top opening was closed in with a ventilating fan-equipped cover. The exterior was then wet blasted to bare metal and finished with an epoxy base coat and marine polyurethane topcoat, returning the habitat to its original international orange. The legs and lower entry hatch that had been cut from the hull for the bridge crossing in 1987 were welded or mechanically bolted back together, and the major focus turned to the interior. Using original Navy photos from 1964, the interior was reconstructed as close to possible to the historic first saturation dive off Bermuda.

The newly restored SEALAB I was officially christened "SEALAB I: The Exhibit" on November 11th Original SEALAB I aquanaut Bob Barth, who was also on SEALAB II and III, and original engineer, Bill Culpepper were on hand to do the christening honors.

In attendance were other notable participants, or the families of participants, of the Man-in-the-Sea Program including George Bond, Jr., George Dowling (SL II/SL III); Larry Hallenger (SL III); Jack Schmitt (SL III) Mary Lou Cannon (wife of SL II/SL III Aquanaut Berry Cannon), Jeanne Cannon Walding and David Cannon (siblings of SL II/SL III Aquanaut Berry Cannon); the



George Bond, Jr., (left) and SEALAB III Aquanaut Larry Hallenger share a story about Papa Topside.

daughters and family of Wilber Eaton (SL I and aquanaut on SL II & III); and the daughters and family of Lester Anderson (SL I aquanaut). From NDSTC, Commander Cameron Chen; CMCs Joseph Howard and Steve Muholland. From NEDU, Executive Director Scott Lister. From CEODD, Commanding Officer Capt. Jim Turner.

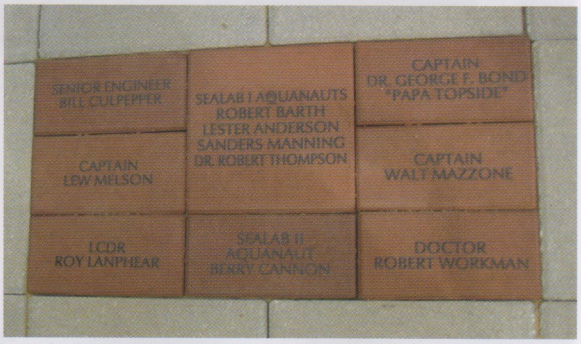
Now that SEALAB I is restored and open to the public, the Man-in-the-Sea Museum is devoted to not only tell about the history and preservation of SEALAB I, but the whole story about the Man-in-the-Sea Program and its enduring legacy. The central portion of the museum is now a designated exhibit titled "The History of Saturation Diving." It houses photos and artifacts starting with Project Genesis and continuing through present day underwater habitat Aquarius. The museum houses and displays personal items (blueprints, photos, journals, letters, etc.) from the archives of Dr. George Bond, Walter Mazzone, Bob Barth, Bill Culpepper, Berry Cannon, Larry Hallenger, Joe Berkich and Scott Carpenter, to name a few. The museum continues to seek items associated with the SEALAB experiments and the Man-in-the-Sea Program in general.

In addition to expanding the museum's exhibits and archives, many outreach and partnership programs are being established. The museum is preparing to launch "SEALAB for Kids," a program created by Kevin Hardy (Scripps Institution of Oceanography, La Jolla, CA) and Robert Richards (Stockbridge High School, Stockbridge, MI) which builds a miniature functioning in-class underwater habitat and underwater terrarium. The educational outreach program will use the habitat as a platform to capture the interest of future generations of undersea explorers and sea-dwellers. In addition to partnering with schools, the program will establish video links between many classrooms, SEALAB I, and the Jules Undersea Lodge, in Key Largo, Florida.

The museum also looks to continue the blossoming partnerships with NDSTC and NEDU, and now houses class flags from NDSTC with the hopes of allowing future graduating classes to hold "flag raising" ceremonies. The museum hopes to encourage the next generation of military divers to consider the Man-in-the-Sea Museum as their museum home. Other partnerships include working with the Marine Science Center in Crystal River, Florida, the History of Diving Museum in Islamorada, Florida, and the Naval Undersea Museum in Key Port, Washington. These are only a few things being planned at the museum.

In 2017, the Man-in-the-Sea Museum will begin raising funds for an open structure to cover and reduce exterior maintenance of SEALAB I. Paver stones, engraved with a name, are one element of the fund raising. Like SEALAB I itself, the Man-in-the-Sea Museum has come a long way and is now in shape to endure for many years to come. Join as a member to support our mission, and be sure to come and visit us! http://www.maninthesea.org

Heather Nowak, Executive Director of the Man-in-the-Sea Museum, picks out Berry Cannon in a photo of Team I SEALAB III. Mary Lou Cannon brought the photo as a gift to the museum.



Paver stones are one way to support the ongoing work of restoring historic undersea adaptive technologies at the Man-in-the-Sea Museum.

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FEATURE

Today the modern dive store, where you can purchase equipment and get professional advice, is a standard part of America's diving industry. In the commercial industry there is a network of stores carrying Kirby Morgan and DESCO helmets, and in the recreational industry a larger network of stores carrying products from manufacturers such as Oceanic. It was not always this way.

In this article, Everett Edmund recounts how his dive store helped supply, and support, the post-World War II commercial industry and assist in launching the recreational diving industry. In 1946 Everett Edmund and his partner Pat Madison stated M&E Marine, (later MAR VEL) probably America's first store that catered solely to the diving industry. They got their start by taking a chance on buying War Surplus Lots of military diving equipment and gradually sold it into a growing market of commercial divers, underwater treasure hunters and others. Some of the quantities they purchased were mammoth, (a total of 8,004 USN Mark V helmets for example), and took decades to sell. - I recall they still had WWII Guided Radios available in the 1990's when the HDSUSA was formed, and we published a photo of Tom Maddox of MAR VEL with them.

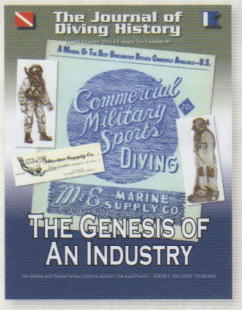
M&E also played a founding role in the launching of recreational scuba diving. About a year prior to the arrival of the Aqua-Lung in America they had sold-out of the DESCO Browne Lung oxygen rebreathers that they had purchased as War Surplus. In 1947 they carried all the essential equipment for spearfishing. That, and their rebreather sales, connected them to as-yet undiscovered market that was waiting for the Aqua – Lung. This included Commander Doug Fane and his UDT squads.

During this critical post WWII period, M&E built up a large client base to which they mailed their ever-expanding catalogs. They were almost certainly the premier diving supply store in the USA, but were not the only one. In 1949 in Wilmington, California, retired USN Master Diver E.R. Cross opened Divers Supply as an adjunct to his commercial diving training program at The Sparling School of Deep Sea Diving. The catalog stated "Specializing in Everything for Underwater." Cross sold Divers Supply around 1955, but Everett and Pat Madison continued to develop M&E and in 1960 changed its name to MAR VEL.

This is part of their story and the story of part of the foundations of two modern diving industries.

COLUMNS

THIS ISSUE



ON THE COVER

The cover shows scans from early M&E printed marketing material from 1947 1950 period, and a catalog cover from circa 1954. During this formative post WWII-period most of the M&E advertising text was done with a type writer and images were often cut and pasted out of USN manuals.

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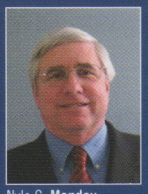
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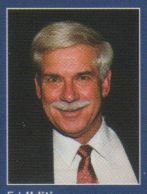
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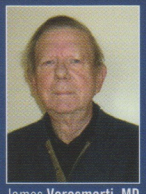
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The Genesis of an Industry

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