SEALAB 1: The Golden Anniversary of Saturation Diving

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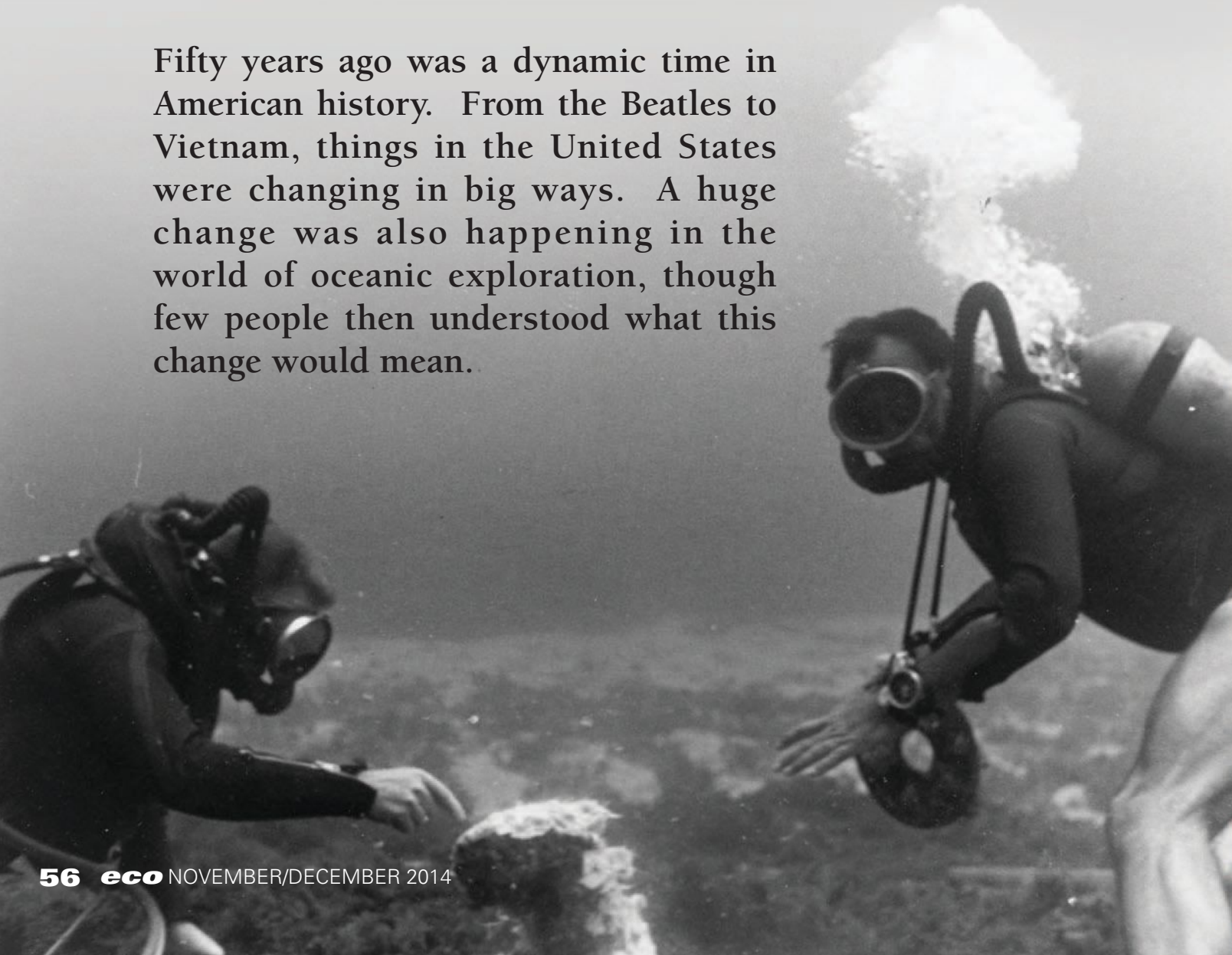
Fifty years ago was a dynamic time in American history. From the Beatles to Vietnam, things in the United States were changing in big ways. A huge change was also happening in the world of oceanic exploration, though few people then understood what this change would mean.



On July 20, 1964, the mission began on SeaLab 1 — this was the very beginning of saturation diving.

When SeaLab 1 was first put to full use off the coast of Bermuda in 1964, Navy scientists believed that divers could safely live and work under the sea for long periods of time by breathing gases that replaced gases necessary for breathing, such as nitrogen, with helium and other mixes, which allowed divers' blood to become saturated with this exotic mixture. Saturation diving was born.

Once a diver's blood gas becomes fully saturated at depth, the decompression period would be the same whether the diver had been at depth for a day, a week, or even longer. Thus, the diver could have multiple excursions at depth without the risk of multiple decompression sessions.

Before SeaLab, divers were extremely limited in their "down time" and the depth to which they could safely dive. With standard compressed air in their tanks, it was easy to get too much nitrogen in the system, which can cause narcosis — a state akin to drunkenness that can cause divers to lose proper judgment and eventually lose consciousness entirely. Narcosis can be quite deadly.

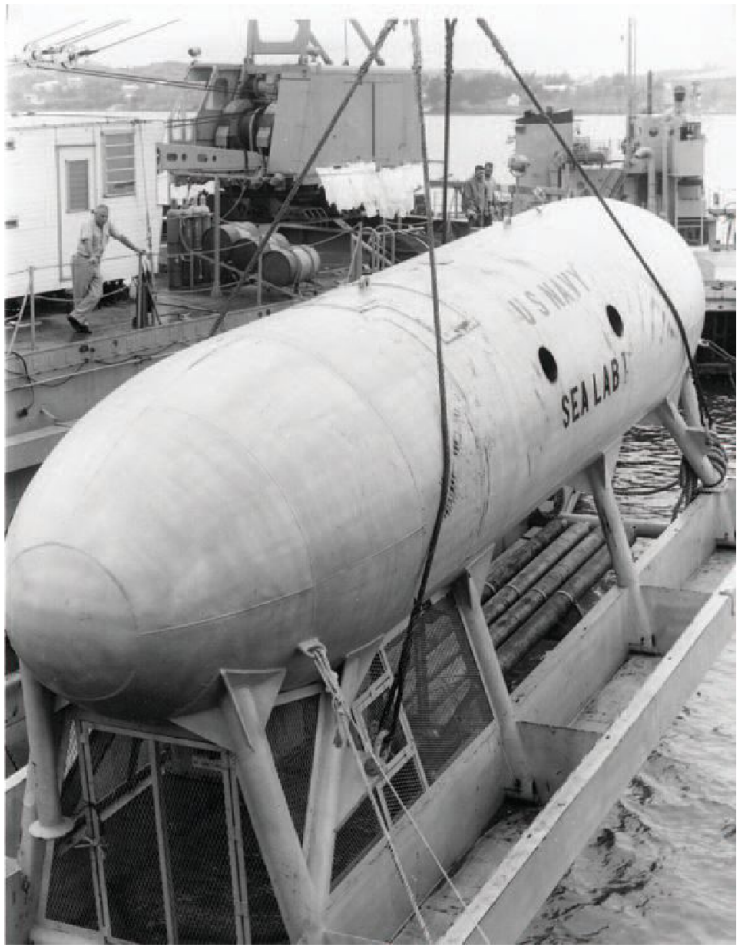
Basically, SeaLab1 was built as a real-world test to see if saturation diving could be managed safely and effectively with human divers. The doctors and scientists had every reason to believe it would work, but there were very real risks in the SeaLab 1 experiment and testing those risks would take true courage.

SeaLab 1 was a very simple craft by today's standards. It was basically an orange cylinder with legs. It had a couple of small windows and a hatch at the bottom that allowed divers to exit and re-enter the structure. Inside were basic living quarters, dive equipment, and monitoring equipment to test the health and performance of the "Aquanauts." The floor hatch was a vitally important detail that made Sealab very different from a submarine in that the inhabitants lived at ambient pressure at depth. A submarine maintains internal pressures entirely independent of the ocean around them.

Sealab II in February 1966. Photo credit: U.S. Navy.

While many Americans can name famous astronauts who went into space, very few know the names of the aquanauts who helped open the ocean to extensive exploration. The aquanauts in the SeaLab 1 were Lieutenant Commander Robert Thompson, MC; Gunners Mate First Class Lester Anderson; Chief Quartermaster Robert A. Barth; and Chief Hospital Corpsman Sanders Manning. These brave men faced challenges and risks every bit as daunting, but perhaps less spectacular, as any astronaut. Luckily, they were led by Captain George F. Bond, aka "Poppa Topside," who had developed many of the theories on saturation diving that made the whole experiment possible.

SeaLab 1 was originally scheduled to be down for 3 weeks. It housed four aquanauts who performed physical and biological experiments with ultrasonic beacons, current meters, and an anti-shark cage. The mission was performed off the coast of Bermuda at a depth of 192 ft. Railroad car axles were used as ballast to help sink the vessel. The mission ended early after 11 days due to safety concerns. A large tropical storm was headed in their direction and threatened the safety of the aquanauts and the support crew on the surface.



SEALAB I was a 40' x 9' cylinder without windows. Photo credit: U.S. Navy.

Aquanauts aboard SEALAB I at a depth of 192 ft below sea surface. Photo credit: Barth, Qumc, U.S. Navy.

The SeaLab 1 mission was followed a year later by SeaLab 2, and then 4 years after that by SeaLab 3, the final mission. The original SeaLab is currently on display at Museum of Man in the Sea located in Panama City Beach, Florida.

The next time you hear about some momentous event that happened during that dynamic year of 1964, spare a moment to think of the unsung heroes that opened the oceans to today's explorers. Consider the advancements in modern research, offshore industry, and scientific discovery that were only made possible by the invention of saturation diving. Perhaps even raise a glass to salute the crew of the SeaLab 1. Happy 50th Anniversary, SeaLab!