

Book Reviews

Sealab: America's Forgotten Quest to Live and Work on the Ocean Floor

Ben Hellwarth. New York: Simon & Schuster, 2012. 400 pp. Illus. Notes. Bibliog. Appendices. \$28.

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The U.S. Navy's Sealab Program operations from 1964 to 1970 pioneered experimental deep-diving science and technologies. The program's results were eventually utilized well beyond the Navy's interests. This work helped push back the limits of divers' ability to safely work on the seafloor for long periods of time. Sealab's "fingerprints" can be found on all present-day deep-diving operations.

Author Ben Hellwarth put a great deal of scholarship into this book, as evidenced by his extensive notes. The book combines the work of a diligent investigative reporter with that of a feature writer who loves a good sea story.

The Navy's Genesis Program in the late 1950s was one of the first to test experimental breathing-gas mixtures to extend diver bottom times. The program director was Navy Commander George Bond, a doctor and submarine medical officer. He would spend more than a decade on this work and became known as the "father of saturation diving."

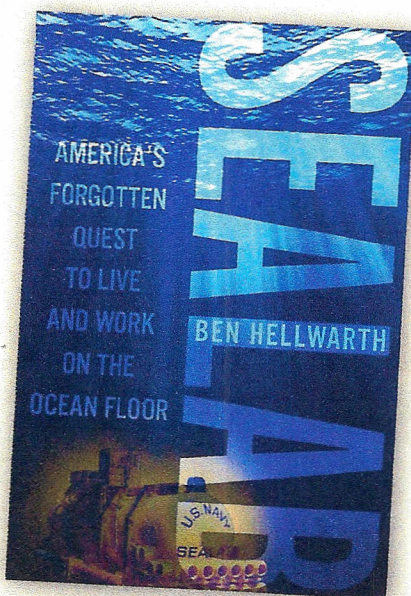
Tests showed that with a change of the gas components in the breathing mixture, animals could live and function at greater depths for prolonged periods. By 1964 human volunteers had made a dive in an onshore test facility to work at 200 feet for 12 days. Practical saturation diving had been born.

After six years of Genesis, the next step was to move into the ocean. This began with Sealab I, a small habitat anchored to the ocean floor. Inside, it provided lodging for its dive team, who would remain under full depth pressure for a prolonged time. The divers would live in the dry and then could easily suit up to go outside for work tasks. In this way, lengthy decompression time for returning to the surface was done only once at the end of the divers' bottom time.

The Sealab I mission took place off Bermuda in 1964. The four-man team was at a water depth of 192 feet. Unfortunately the experiment lasted only

11 days, due to an approaching hurricane. Despite its short duration, this mission proved that functioning divers could be put at depth for long periods. It was the beginning of man in the sea.

In 1965 a newly built habitat, Sealab II, was installed on the seafloor off La Jolla, California, at 205 feet. This time there were three nine-man teams of divers, and each team spent 15 days in the habitat. The exception was astronaut/hydronaut Commander Scott Carpenter,



who spent 30 days in the seafloor house.

The last mission in the series was Sealab III in 1969. For this the upgraded Sealab II habitat was located near the previous La Jolla site. However, the water depth for this mission was 600 feet. Regrettably, before the mission could be started, there was a fatal accident. This led to delays and the ultimate cancellation of the entire program in 1970.

The Navy was then officially out of the man-in-the-sea business. But was it really? In fact, the Sealab III project was also used as a cover for a highly classified black-operations intelligence program against the Soviet Union. The long-duration saturation-diving techniques developed by Sealab were used to deploy dive teams from submerged submarines.

The ability to work for relatively long periods on the seafloor made it possible to do object recovery and tap seafloor

communications cables. This program was highly successful and was terminated only years later, when Navy Chief Warrant Officer John A. Walker informed the Soviets about it. Arrested in 1985, he is serving a life sentence in a federal prison.

While the Sealab Program is his main story line, Hellwarth surrounds it with an account of contemporary developments in the United States and abroad. The work of well-known pioneers such as Ed Link, Jacques Cousteau, and Henri Delauze is discussed. The developing offshore oil and gas industry in the 1970s adopted and perfected this work, with some dives approaching 1,000 feet. Carefully prepared experiments on land actually got divers down to more than 2,000 feet in the 1980s.

Ben Hellwarth has produced a fascinating history of man in the sea. It is a book well worth reading, whether you are an aficionado of undersea operations or a casual reader who likes a great sea story.

Captain Walsh, Ph.D. and author of the *Proceedings* magazine column "Oceans," was a submarine commander and designated as U.S. Navy Submersible Pilot no. 1. Since 1958 he has been continuously involved with undersea systems design, construction, and operations. He has served as technical adviser for several films, including *Raise the Titanic* and *The Hunt for Red October*.