

# Exploring the Greatest Depths

## How Navy Capt. Don Walsh Made History

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### **Becoming a Submariner**

Don Walsh was born in November 1931 in Berkeley, California, just across the bay from San Francisco. As a young person, Walsh enjoyed watching battleships and cruisers move through San Francisco Bay. In 1948, after high school graduation, Walsh enlisted in the U.S. Navy, initially serving as an air-crewman. He then attended the U.S. Naval Academy, graduating in 1954 with an engineering degree. Post-Naval Academy, Walsh worked as a submarine officer. According to an article Walsh penned for *Scientific American* in 2014, it was while he was serving as a lieutenant on the staff of Submarine Flotilla 1 in San Diego that he volunteered to work on a secret project, and that decision changed his life.

### **'I Just Thought It'd Be Fun'**

While Walsh was working as a submarine lieutenant, the Office of Naval Research had acquired a deep-sea exploration vehicle called a bathyscaphe (meaning "deep ship" in ancient Greek). The bathyscaphe concept was originally developed in the 1930s and 1940s by Auguste Piccard, a Swiss physicist and inventor. After contracting for the use of Piccard's second-generation bathyscaphe, the TRIESTE, for a couple dozen exploratory dives, the ONR decided to buy the vessel, and they had big plans for it. Walsh wrote in his *Scientific American* article that during a briefing he attended, chief scientist Andy Rechnitzer requested two submarine-qualified officers and a handful of support personnel to "maintain and operate TRIESTE." In a 2012 interview with *IEEE Spectrum*, a magazine of the Institute of Electrical and Electronics Engineers, Walsh described that moment in 1958 when he was tapped for an unknown TRIESTE-related mission. "They put out a call for volunteers. I put my hand up," he said. "They picked me. It wasn't a terribly arduous competition. There [were] only two people that volunteered, because even as lieutenants, most of them realized that if this wasn't something the Navy was doing already, how could it be career-enhancing? Stick with the tried and true. I just thought it'd be fun."

### **Project Nekton**

Walsh became the TRIESTE officer in charge after his colleague — presumably, the second volunteer for the secret mission — became ill and was put on light duty. Starting in 1959, Walsh and others at the Navy Electronics Laboratory in San Diego were busy making modifications to the TRIESTE to prepare it for a groundbreaking task: diving to the Challenger Deep.

"It was not until I joined NEL that I learned what a few insiders had in mind for the bathyscaphe. This was to dive it into the deepest known place in the world," Walsh wrote in *Scientific American*. He added: "When Andy [Rechnitzer] had briefed the commodore he had left this one out!"

The deep-dive program now had a name — Project Nekton. "Nekton" is a broad term for aquatic organisms that are free-swimming, such as fish, sharks and turtles, and soon, TRIESTE would join the oceans' nektonic creatures in the deep, transporting humans to a place no one had ever been.

After TRIESTE was modified to withstand the rigors of the deep sea and tested multiple times, and after Project Nekton was approved for its true mission, it was time to make the descent. Around 8:00 a.m. on Jan. 23, 1960, Walsh and Swiss engineer Jacques Piccard — Auguste Piccard's son, who had been hired as a consultant by NEL — boarded the vessel and bolted the entrance door shut.

Bathyscaphe Trieste entering the water in April 1959. The observation gondola that Walsh and Piccard occupied during the dive can be seen center bottom. National Archives Photo



Bathyscaphe Trieste entering the water in April 1959. The Observation gondola that Walsh and Piccard occupied during the dive can be seen center bottom. National Archives Photo

### **The Famous Descent**

Early in their dive, Walsh and Piccard were slowed down by some thermoclines, the layers of water between the warm ocean surface and the frigid water of the deep sea. With some careful maneuvering, however, they were able to break through to the colder water and continue their descent. At 4,000 feet down, some water droplets began to form on a couple of hull penetrators, but thankfully, the situation didn't escalate to the point of concern. At 31,000 feet, a curved acrylic window cracked with a "muted bang" Walsh recalled in *Scientific American*, fortunately in the unoccupied entrance tube. Finally, after more than four hours of descent, the TRIESTE and its intrepid occupants reached the very bottom of the Challenger Deep. Upon landing, Walsh and Piccard shook hands.

In his *Scientific American* piece, Walsh reports that the TRIESTE's depth gauge read 37,800 feet when the vessel touched down on the seafloor, more than 7 miles deep. For reference, Earth's highest point, the top of Mount Everest, is just over 29,000 feet above sea level. Upon touchdown, the TRIESTE created a cloud of sediment that prevented Walsh and Piccard from seeing much of anything for the 20 minutes they spent at the bottom of the world. Besides spotting a whitish flatfish that appeared to be about a foot long, Walsh said in his 2012 IEEE interview that peering out of the TRIESTE's porthole was like "looking into a bowl of milk." Walsh, Piccard and the TRIESTE made a successful ascent back to the surface and, in the following days, Walsh enjoyed some pomp and circumstance, even meeting President Dwight D. Eisenhower in the White House.



Trailblazers: Walsh (foreground) and explorer Jacques Piccard in their boundary-pushing bathyscaphe Trieste. DVIDS

## **Project Nekton II**

Walsh and Piccard left the Challenger Deep thinking they — or at least someone — would be back within the next couple of years. However, no one returned for five decades. When the next human descended to this depth, it was film director James Cameron, who accomplished the feat aboard the Deepsea Challenger in March 2012. Walsh was an adviser on Cameron's team.

After the record-breaking descent in 1960, Walsh initially returned to Guam for Project Nekton II. However, this time, he and his team wouldn't be able to repeat the original dive, because the Navy had reduced the TRIESTE's depth limit to 20,000 feet, citing safety as the reason for the change.

Walsh helped develop a design for a new bathyscaphe, the TRIESTE II, but, as Walsh wrote in Scientific American, he never had the opportunity to dive in it. His extraordinary career was far from over, though. Walsh continued his education in the late 1960s, earning a Master of Science and a doctorate in oceanography from Texas A&M University and then a Master of Arts in political science from San Diego State University. He also commanded the USS BASHAW (AGSS-241) in 1968.

## **An Impactful 'Retirement'**

Walsh got married in 1962, had two children, and retired from the Navy in 1975 as a captain. After his service in the Navy, Walsh became a professor of ocean engineering at the University of Southern California, where he founded the Institute for Marine and Coastal Studies. He also founded International Maritime Incorporated, a consulting company, in 1976. He published academic papers, wrote articles and columns, gave lectures, and made media appearances for decades.

Walsh filled governance roles in dozens of marine related organizations and served on committees such as the National Advisory Committee on Oceans and Atmosphere and the Naval Research Advisory Committee, among many others. He was elected to the National Academy of Engineering in 2001 for "contributions to the development and advancement of deep-sea engineering systems," according to his election citation.

In retirement, Walsh continued to pursue his passion for exploration in the ocean and beyond. Walsh dove not only to the Titanic wreckage, but also to the BISMARCK battleship, nearly 16,000 feet underwater, in the early 2000s. He also spent considerable time exploring on land, including both geographic poles.

## **Don Walsh's Legacy**

In 2019, Walsh served as an adviser for the next manned descent to the Challenger Deep. Victor Vescovo successfully reached the trench floor aboard the SDV Limiting Factor, becoming just the fourth person in history to make the dive. The following year, in 2020, Vescovo made the trek again, this time with Kelly Walsh, Don Walsh's son. Don and Kelly became the first (and currently only) father-son duo to have accomplished this extraordinary feat.

Don Walsh continued to make an impact in ocean science until his peaceful death at home in November 2023 at age 92. He wrote on numerous topics and advocated for manned ocean exploration. However, it's worth noting that Walsh opposed the OceanGate operation that culminated in the submersible Titan's implosion in June 2023, killing five passengers who were enroute to the Titanic wreckage.

In both his Navy career and his accomplished retirement, Walsh was a pioneer and a change-maker. He pushed the boundaries of what humans could accomplish on Earth, particularly in the ocean. His legacy as a volunteer-turned-deep-sea-explorer will live on indefinitely.



Retired Capt. Don Walsh, Ph.D., who commanded the U.S. Navy's bathyscaphe Trieste, discusses the dive to the deepest place on Earth, the Challenger Deep located at the southern end of the Mariana Trench, during a ceremony held at the National Museum of the United States Navy (NMUSN). US Navy Photo

Submitted by AG1 Steven Smith, USN (Ret.)