

John P. Craven, a former Navy scientist whose innovations in ocean technology and exploration led to some of the nation's most celebrated feats of espionage, died on Feb. 12 in Hawaii. He was 90.

The cause was complications of Parkinson's disease, his family said.

From 1959 to 1969, as chief scientist of the Special Projects Office, Dr. Craven led the Navy's drive to expand its presence into the crushing depths of the sea. Among other things, he turned submarines into spy machines that could reach down miles to inspect and retrieve lost enemy matériel, including nuclear arms.

Dr. Craven liked to regale friends and journalists with as much of his personal history in the Navy as the nation's secrecy laws would allow, resulting in books and articles that sought to illuminate his Cold War exploits.

"There's a hell of a lot of stuff that went on," he said in an interview in 1993 on the front porch of his home overlooking Honolulu. After all, he added philosophically, "the whole object of life is to adapt."

John Piña Craven was born on Oct. 30, 1924, in New York, coming from a long line of naval officers on his father's side and a family that reached back to Moorish pirates on his mother's. He graduated from Brooklyn Technical High School and joined the Navy during World War II, serving in Hawaii and earning two battle stars before he was sent to Cornell University for officer training.

After the war, under the G.I. Bill, he studied at the California Institute of Technology and the University of Iowa, where he met his future wife, Dorothy Drakesmith, and received a doctorate in mechanics and hydraulics. Years later he received a law degree from George Washington University and became an expert on seabed legalities.

Dr. Craven's naval career began in 1951, when, as a civilian, he investigated how to improve ships and submarines. He was promoted quickly after correctly predicting and helping to fix a structural problem with the Navy's first nuclear-powered submarine, the Nautilus.

Dr. Craven was project manager for developing the Polaris, the world's first intercontinental ballistic missile that could be fired from a submerged submarine. It underwent test firing in 1960 and was in service for decades.

The Navy was eager to restore the nation's confidence in its deep-sea abilities after the new attack submarine Thresher sank in 1963 during a test dive east of Boston because of a mechanical failure, taking 129 lives. Officials gave Dr. Craven and his special-projects team leeway to devise a wide range of undersea gear for search, rescue, salvage and gathering intelligence from the sunless depths.

In 1965, he selected the nuclear submarine Halibut for conversion into an innovative spy sub, filling the vessel with electronic, sonic, photographic and video gadgets. Hovering beneath the waves, invisible to adversaries, the sub could lower a long cable heavy with lights, cameras and other gear for deep reconnaissance, recovery and manipulation. It was a technological first that begot a new kind of espionage.

Among the targets were ships, planes and spacecraft lost at sea, as well as functioning equipment, like undersea cables and listening devices. To build support for his top-secret endeavors, Dr. Craven met with senior Pentagon officials, showing them classified photographs of Soviet warheads buried in muck on the seabed.

In March 1968, a rich new target materialized when a Soviet missile submarine bearing code books, encryption gear and nuclear arms sank in the central Pacific. By all accounts, Dr. Craven and the spy sub located the wreckage more than three miles beneath the sea's surface.

That May, the nuclear-powered attack submarine Scorpion vanished in the Atlantic with 99 men on board. Dr. Craven scrutinized recordings from undersea microphones, found evidence of explosions, and drew on his knowledge of math and statistics to pinpoint the spot where the submarine was most likely to have sunk. Search teams discovered the Scorpion's wreckage at a depth of nearly two miles.

The undersea fleet that Dr. Craven helped devise included the Navy's NR-1, a nuclear submarine with crablike claws; the Deep Submergence Rescue Vehicle, a cylindrical craft designed to evacuate up to 24 people at a time from a crippled submarine; and the bathyscaph Trieste, a vessel his team improved, which investigated the sunken Scorpion.

Dr. Craven twice received the Distinguished Civilian Service Award, once from the Navy and once from the Department of Defense.

After Richard M. Nixon won the presidential election in 1968, Dr. Craven, convinced that the new administration would have no room for an outspoken Democrat, left the Navy and took a teaching post at the Massachusetts Institute of Technology. In 1970, lured to Hawaii by its governor, he was named dean of marine programs at the University of Hawaii and the state's marine affairs coordinator.

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