

this might be the most obvious and useful perspective for this subject, there are certain aspects where most North American readers and naval historians would have preferred a more in-depth analysis. In particular, the rivalry among the main branches of the US military that was an important element of the US Army coming up with the idea for Camp Century is more or less completely missing, as well as the role of American nuclear submarines capable of launching ICBMs with nuclear warheads.

Nevertheless, this book must be credited with unearthing the amazing history of Camp Century and providing, for the first time, a more or less complete account of its history.

It is a must-read for any historian with a serious interest in the Cold War in the Arctic, for historians interested in the complex but little researched US-Greenland relations, but it should also be recommended to anybody who is interested in the design history of Arctic/Antarctic research stations and the wider complex of the development of various launch platforms for nuclear weapons during the Cold War, including submarines. I would consider it recommended reading for any younger colleagues who have not experienced the era of the Cold War themselves, as it easily illustrates the mindset of the time. This was a period of enormous technological achievements and “an everything is possible” mentality that produced not only an under-the-ice station like Camp Century, but also nuclear submarines capable of operating under the Arctic Sea ice. Even phantasmagorical military projects, normally seen only in a James Bond movie, no longer feel like science fiction after reading about Project Iceworm. This large-scale missile base in the Greenlandic ice-cap that was (fortunately) never realized, but for which Camp Century was a first experimental platform, would have dwarfed

anything Dr. Evil could have dreamt up.

While the authors have without any doubt produced an important, well researched scholarly book of high analytic quality, recommended to various groups of academic readers for its contribution to a number of historic sub-disciplines, it might also appeal to anyone who enjoyed Stanley Kubrick’s 1964 movie *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb*. While it obviously lacks the film’s drama, *Camp Century* clearly shows that some of Kubrick’s characters were not that far from the historic reality of the Cold War.

On a more positive, contemporary note, this book should also be a mandatory read for anyone interested in the early history of using the world’s ice sheets as global climate archives. It is proof that a concept that began with one set of intentions can sometimes turn into a very different project, one that helps us understand the world in which we all live, regardless of which side of the former Iron Curtain we inhabit.

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Norman Polmar and Lee J. Mathers. *Opening The Great Depths: The Bathyscaph Trieste and Pioneers of Undersea Exploration*. Annapolis, MD: U.S. Naval Institute Press, www.usnip.org, 2021. 295 pp., abbreviations, illustrations, appendices, lists, notes, bibliography, general index, ship index. US \$26.97, cloth; ISBN: 9781682475911.

On 4 October 1957, the Soviet Union launched the world’s first artificial satellite into orbit and the international space race was on. Meanwhile, a race to explore *inner* space was happening. In 1958, the US nuclear submarine *Nautilus* – the world’s first nuclear submarine – voyaged nearly 1,000 miles under

the Arctic ice to the North Pole. On 23 January 1960, less than three years after the first *Sputnik* launch, Lieutenant Don Walsh of the US Navy, and Swiss citizen, Jacques Piccard, piloted a first-of-its-kind deep submersible vehicle to the Pacific Ocean floor. On the Mariana Trench, at a depth of 35,814 feet, they spent twenty minutes looking through the Plexiglass view port, observing a shrimp, a fleet of medusae, and what Piccard identified as a flat fish, or sole. Visually confirming life at these depths and pressures was an important finding, as was the design and operation of Piccard's deep submersible.

*Opening The Great Depths* is the account of the Bathyscaph *Trieste* and its subsequent use and development by the US Navy. Piccard's design, that of a "sea balloon," did not require a cable to raise and lower it. Piccard's son, Jacques, was instrumental in getting the necessary funding, and ultimately in getting the US Navy to buy the bathyscaph – and his services. But, as the authors relate, the relationship between the Navy and Piccard was not always smooth.

The Navy operated three separate deep-sea, self-propelled bathyscaphs, each named *Trieste*, over several decades. The first *Trieste* had been designed by Piccard's father, Auguste, a Swiss scientist and explorer who had also set high altitude records for manned flight in his balloon, studying gamma radiation in the stratosphere. Piccard called his diving device a bathyscaph, meaning "deep vessel," distinguishing it from the tethered *bathyspheres* developed by Americans William Beebe and Otis Baron. Piccard named his bathyscaph *Trieste*, in honour of the Italian seaport where it was conceived and constructed, largely with money from the FNR (Luxembourg National Research Fund). Auguste's son, Jacques, working closely with his father, took

charge of negotiations. In Europe's post-war economy, the United States was the most likely buyer, having the ability to implement and further advance the technology. Individuals in the Office of Naval Research took notice of Piccard's invention and recognized its potential for applied research, recovery operations, and intelligence. "We got it for a steal. I think we paid about \$1 million for it, but that also bought the new sphere; it bought Piccard's services and the *Trieste*. All of this was about one million and it got the Navy started in the deep-submersion business," according to Arthur E. Maxwell, head of the Office of Naval Research oceanography section (51).

Curiosity about the depths of the ocean has long fascinated terrestrials. Jules Verne's novel, *Twenty Thousand Leagues Under the Sea*, was first published in serialized installments in March 1869 through June 1870 and remains a science fiction classic. Two centuries earlier, in 1620, Dutch engineer and inventor Cornelis Drebbel built a navigable submarine while working for the English Royal Navy. American inventor, Robert Fulton, living in France, developed the first *Nautilus* submarine, in 1800. None of these early manned subs could dive very deep, or stay underwater for long periods.

In 1949, American Otis Barton took his bathysphere, the Benthoscope, to 4,488 feet off the coast of California. But only Piccard's design proved capable of taking humans to the hadal depths of the ocean – below 20,000 feet. During the Cold War era, this capability became more important than just ribbon chasing and record breaking. The Office of Naval Research recognized the potential to retrieve satellites, re-entry vehicles, submarines, and nuclear warheads resting on the ocean floor. A bathyscaph such as *Trieste* proved to be important to US Navy and Air Force research, op-

erations, and intelligence.

While the authors do justice to Auguste and Jacques Piccard's seminal roles in the design and construction of the first bathyscaph, the book's emphasis is on the further development and use of *Trieste* after it was purchased by the US and under the control of the Naval Electronics Laboratory in San Diego. In the years following its acquisition, *Trieste* and the two vessels developed from it, all carrying the same name, made over 300 dives to carry out the objectives of various programs and operations, some only recently declassified. A number of these dives are described in the book, with interesting details about obstacles and challenges the mariners faced, and how they dealt with them.

The authors mention many officers, personnel, scientists, and civilians involved. The writing is not heavily technical or jargoned; a list of abbreviations and a list of US Navy Ship/Submarine/Submersible designations are helpful. Overall, I found the work to be an objective biography of a particular series of specialized vessels – and of their involvement in exploration, intelligence, and military operations.

Perhaps the book's biggest strength is in showing how the success of the program depended on the knowledge, skill, resourcefulness, and courage of many individuals, and on the support ships and their officers and crew. A foreword by Dr. Don Walsh, the officer-in-charge of the bathyscaph *Trieste* on the 1960 record-setting dive, adds valuable historical perspective.

The *Trieste* Program, costly to maintain, was retired in 1983. In a brief postscript, the authors bring the readers forward to 2019, summarizing the continued use of submersibles, mostly unmanned, for military defense, commercial, and scientific agendas. Presumably, there are classified projects that have evolved from *Trieste's* experiences, in

progress. In the civilian sector, American adventurer Victor Vescovo, using private funding, is setting new records at the helm of his own deep submersible. On his personal quest, Vescovo pays homage to the engineering and operations pioneered by the people behind the three bathyscaphs *Trieste*. At this writing, Fabian Cousteau, Jacques Cousteau's grandson, is building *Proteus*, a nonprofit marine laboratory billed as an international *inner* space station, just 60 feet beneath the waves, off the coast of Florida.

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Stephen Roskill. *The Secret Capture: U-110 and the Enigma Story*. Barnsley, S. Yorks: Seaforth Publishing, www.pen-and-sword.co.uk, 2020. (Originally published 1959.) 176 pp., illustrations, maps, index. UK £10.99, paper; ISBN 978-1-52678-178-9. (E-book available.)

Capturing an enemy's intelligence tools has been an aim of military forces since the beginning of warfare. In the Second World War, the German military's prime tool for transmitting and receiving messages was the Enigma machine – a device which slightly resembled a typewriter but had plugs for settings and wheels containing letters and numbers inside. The Germans had codebooks to advise the recipient of an encrypted message of the proper settings of the plugs and wheels. Poland had photographed the wiring and wheels of an early Enigma machine in 1929 and learned more about Enigma in 1931. The information gathered then was shared with the French. Over the next few years, the Polish military intercepted many German messages. During summer, 1939, before the German invasion of Poland on 1 September of that year, the Poles