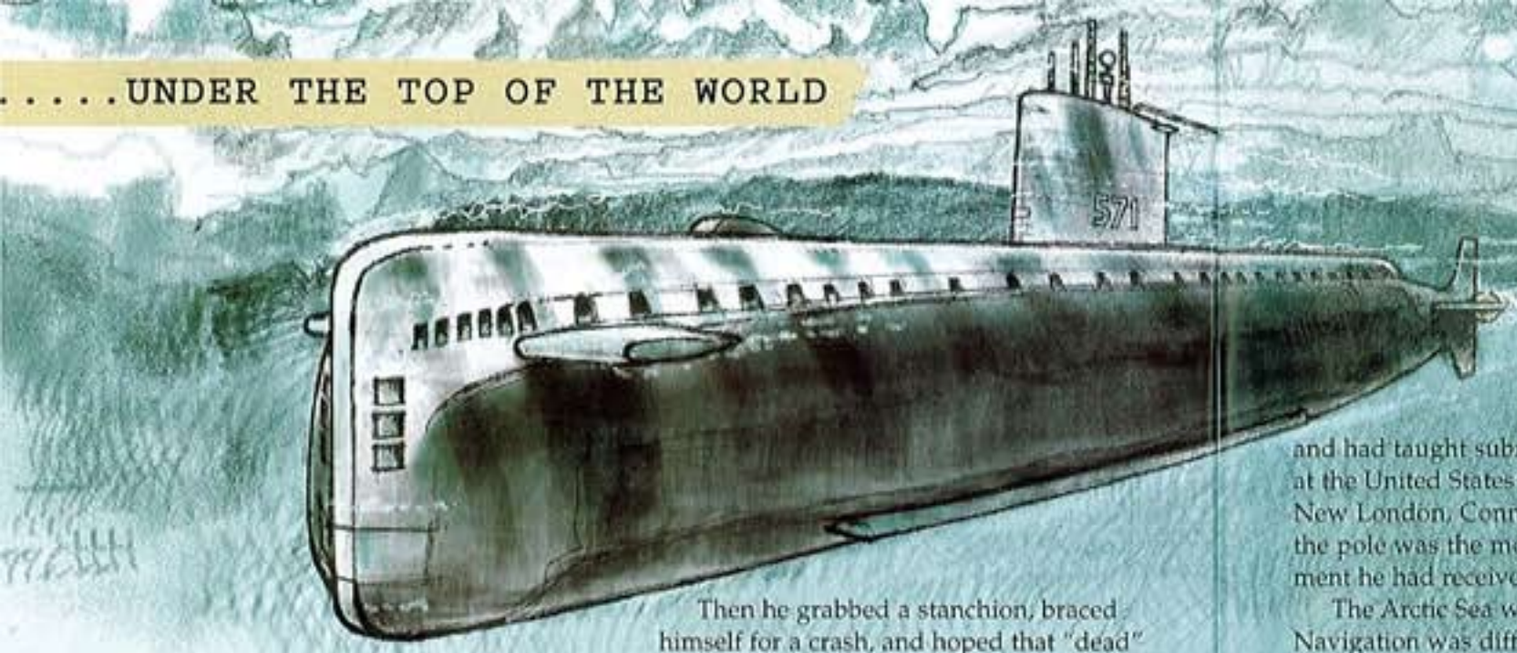
# .....UNDER THE TOP OF THE WORLD




by Tracey E. Fern

*Illustrated by Jan Adkins*



"INCREASE DEPTH TO 140 feet!" Commander William R. Anderson ordered. It was 17 June 1958, and the *Nautilus*, the United States Navy's first nuclear-powered submarine, was inching slowly through the uncharted Chukchi Sea, deep under pack ice near the North Pole. Anderson hoped that the *Nautilus* would soon become the first submarine to reach the pole. But the *Nautilus* had failed in its first attempt, and things were not going well now, either.

SPITZBERGEN REFERS TO A GROUP OF ISLANDS IN THE ARCTIC OCEAN. SKIPPERS ARE CAPTAINS.

Anderson stared at the sonar as the sub crept under a massive, mile-long ice floe. Overhead, jagged ridges of ice hung only five feet over the antenna. Below, the ocean floor was so close that it was nearly scraping the propellers. Suddenly, an even thicker floe loomed ahead.

"Slack speed!" Anderson ordered. "Dead slow!"

Then he grabbed a stanchion, braced himself for a crash, and hoped that "dead" was just a figure of speech.

The *Nautilus* wasn't the first submarine that had tried to reach the pole. Explorer Sir Hubert Wilkins had tried in August 1931. His battery-powered sub, also named *Nautilus*, was battered by ice and sprung a leak before it even got to the edge of the pack ice. Despite her perilous condition, the *Nautilus* and her passengers had made it to safety in Spitzbergen. Eventually the sub was purposely sunk.

Anderson's *Nautilus* was far better suited for polar exploration. It could cruise at high speeds for thousands of miles without surfacing. It was outfitted with the latest sonar and periscopes. And Anderson was one of the most experienced skippers in the Navy.

Anderson had served on subs during World War II, had commanded a diesel sub, and had taught submarine combat tactics at the United States Submarine School in New London, Connecticut. But crossing the pole was the most dangerous assignment he had received yet.

The Arctic Sea was uncharted territory. Navigation was difficult since magnetic compasses were not reliable so close to the pole. And pack ice made it nearly impossible to surface in case of an emergency. To make matters worse, the Cold War was raging, and the *Nautilus* would be traveling close to Soviet waters. Anderson would have to move silently and carefully to avoid sparking an international incident.

Anderson spent weeks preparing for his first attempt to reach the pole. He installed five inverted Fathometers, nicknamed "the ice machine," to chart the bottom of the ice and measure its thickness. He installed a new gyrocompass that was more stable at high latitudes. And he loaded the sub with cold-weather gear—just in case the crew had to abandon ship and could make it to the surface.

Then Anderson, his navigator, Lieutenant Bill Lalor, and Dr. Waldo Lyon, an ice expert with the United States Naval Electronics Laboratory, flew north for an aerial reconnaissance of the pack ice.


They skimmed low over the ice, trying to plot a route under the floes, blocks, and chunks. It was a hopeless task. The ice was constantly shifting, and no one knew what was under it. Finally Anderson decided that he and the *Nautilus* were as ready as they would ever be.

The *Nautilus* left New London on 19 August 1957. Thirteen days later it slipped under the pack ice between Greenland and Spitzbergen and set a course due north.

For the first few hours, things went smoothly. The ice machine showed that there were areas of open ocean overhead —or so Anderson thought. So he decided to practice surfacing.

Anderson kept one eye on the ice machine and one on the number two periscope. Finally he spotted a large polynya and slowly inched up the sub. Suddenly, a shudder swept through the sub. Seconds later the periscope went black.

A POLYNYA IS AN AREA OF OPEN SEA SURROUNDED BY ICE.

SONAR IS A DEVICE THAT USES SOUND TO LOCATE OBJECTS UNDERWATER.

A STANCHION IS AN UPRIGHT POST OR SUPPORT. SAY IT: STAN-SHUN.

THE COLD WAR WAS A PERIOD OF TENSION AND RIVALRY BETWEEN THE COMMUNIST SOVIET UNION AND THE DEMOCRATIC COUNTRIES OF EUROPE AND THE AMERICAS. INVERTED MEANS UPSIDE DOWN!

FATHOMETERS MEASURE DEPTH BY SENDING OUT SOUNDS AND MEASURING THE TIME THEY TAKE TO BOUNCE BACK. A GYROCOMPASS POINTS TO TRUE, OR GEOGRAPHIC NORTH, NOT MAGNETIC NORTH, WHICH IS A SPOT A FEW HUNDRED MILES SOUTH OF TRUE NORTH.