THE BEGINNING OF THE US NAVY'S NUCLEAR PROPULSION PROGRAM

FOR THE COST OF A LAPTOP TODAY THE NAVY'S NUCLEAR PROPULSION PROGRAM BEGAN 77 YEARS AGO IN 1939

REMEMBERING THE LAUNCH OF THE USS NAUTILUS NUCLEAR SUBMARINE IN 1955

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USS Nautilus (SSN-571) in Long Island Sound, off New London, Conn. during her shakedown cruise in May 1955
61 Years Ago… USS Nautilus and the U.S. Navy Get Underway on Nuclear Power

KEEL LAYED: June 14, 1952
LAUNCH: January 21, 1954
COMMISIONED: September 30, 1954
DECOMMISIONED DATE: March 3, 1980

For the cost of a laptop today, the Navy's nuclear propulsion program began 75 years ago.

It could only have been a Navy physicist who upon observing the energy created by the splitting of uranium atoms, would also wonder if that could be used for propulsion at sea. It was in 1939 when Naval Research Laboratory (NRL) scientists met to determine if a "fission chamber" could generate steam to operate a turbine to propel a submarine. Dr. Ross Gunn, head of the Mechanics and Electricity Division, asked for $1,500 to pay for initial research. The funds were approved, and so began the Navy's nuclear fission program.

THE" MANHATTAN PROJECT" CREATES A TEMPORARY HOLD ON THE PROGRAM

The research took a back seat in 1942 when members of NRL's nuclear program assisted with the Manhattan Project that would unleash the power of nuclear fission in the form of the atom bombs that would end World War II.

Captain Hyman Rickover

After the war, work on a nuclear propulsion system resumed in 1946 when then-Capt. Hyman G. Rickover, an engineering officer, joined the post-war Manhattan Project's power reactor program at Oak Ridge, Tenn. He had a reputation as an "acerbic" personality, but also the determination to bulldoze through bureaucracy. He berated a team of scientists at the Atomic Energy Commission's General Advisory Committee in Sept. 1946 after they determined it would be 20 years before there could be a demonstration of atomic power for practical uses.

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A Jan. 9, 1947 report to Chief of Naval Operations Chester W. Nimitz stated submarines capable of operating submerged for unlimited periods could be possible by the mid-1950s, "provided nuclear power is made available for submarine propulsion."

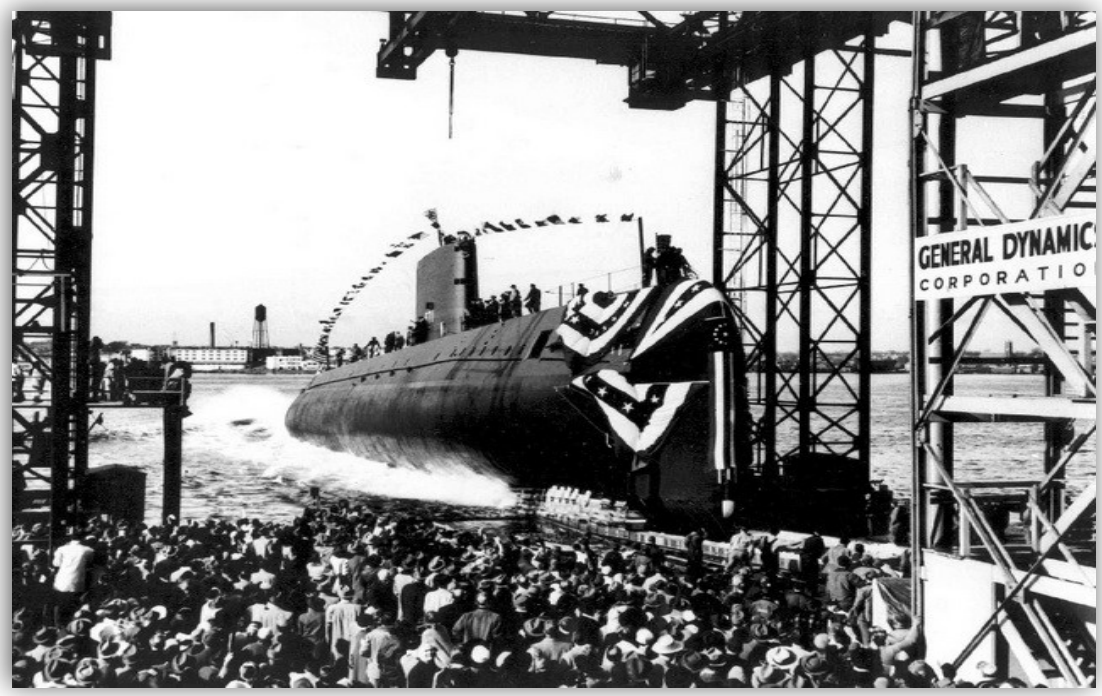
The report was approved by Nimitz the following day. Rickover oversaw design of a nuclear-propelled submarine, and Congress approved it in the Fiscal Year 1952 shipbuilding program. President Harry S. Truman would sign the keel for the future USS Nautilus on June 14, 1952. Rickover had been involved for a mere six years.

On 14 June 1952, the keel of USS NAUTILUS (SSN-571) was laid at General Dynamics Electric Boat in Groton, Connecticut. It was authenticated by President Harry S. Truman, whose chalked initials were welded into the metal. The letters are still visible today, deep within the bowels of the boat.

The one of the biggest decisions with Nautilus was not that she would be powered by nuclear energy, but whether to make her an experimental, unarmed test vehicle or a fully operational warship.

The business end of Nautilus featured six torpedo tubes and carried 26 torpedoes. She was also outfitted with auxiliary diesel generators and a battery to "bring home" the boat if needed.

On Jan. 21, 1954, the massive 319-foot submarine with a 28-foot beam was launched with a crack of a champagne bottle wielded by First Lady Mamie Eisenhower. Nautilus was built for both comfort and speed. Accommodations included 2 and 3-berth staterooms for the 12 officers, a single room for the captain, and a wardroom. For the more than 90 enlisted men, each had their own rack, a mess that could seat 36 of the crew, or up to 50 for movies and lectures. A juke-box was hooked to the boat's hi-fi system, along with an ice cream machine and soda dispenser. Better yet, the Nuclear-powered system would provide unlimited water and air-conditioning



Launching the USS Nuclear Powered Submarine "Nautilus on January 21, 1954

Nautilus was christened into the fleet 60 years ago today, Sept. 30, 1954, at a pier side ceremony at the Electric Boat Shipyard in Connecticut. At 11 a.m. Jan. 17, 1955, Nautilus moved from the pier, and shortly afterward, Nautilus' commanding officer, Cmdr. Eugene P. Wilkinson, ordered the following signal sent: "UNDERWAY ON NUCLEAR POWER."

Nautilus would achieve a number of firsts during sea trials, including the fastest submerged transit undertaken by a submarine: 90 hours from New London, Conn., to San Juan, Puerto Rico at an average speed of 16 knots (the previous record for that speed had been for a single hour). In exercises and war games with the fleet, Nautilus was nearly invincible. She could easily maneuver to either close on an enemy or escape one, all while remaining submerged. And she could outrun many of the Navy's destroyers and all of the anti-submarine homing torpedoes at that time.

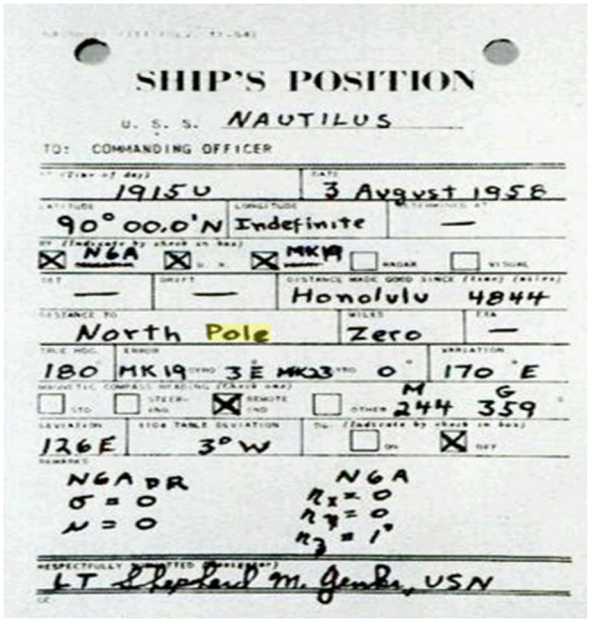
Refueled four times during her 25 years in commission. *Nautilus would sail more than a half-million nautical miles, most of them submerged. In 1958, Nautilus completed a secret mission requested by President Dwight D. Eisenhower to prove American technology had not taken a backseat to the Soviet space program.*

*In a mission called **Operation Sunshine**, the nuclear powered submarine passed under the North Pole on Aug. 3, 1958 – the first watercraft to reach the geographic "top" of the world – during a trip from Pearl Harbor to England and under the Soviet's collective noses through the Bering Strait. . From the North Pole, she continued on and after 96 hours and 1830 miles under the ice, she surfaced northeast of Greenland, having completed the first successful voyage across the North Pole.*

Commander William R Anderson, Commanding Officer. USS Nautilus

Commander William R. Anderson, USN, Commanding Officer of USS Nautilus (SSN-571), far right, on the bridge during a period of low visibility as the submarine prepares to pass under the North Pole, August 1958. National Archives photograph, USN 1037145

UNDER THE NORTH POLE



SHIP'S POSITION

U. S. S. NAUTILUS

TO: COMMANDING OFFICER

1915U | 3 August 1958

90° 00.0'N | Indefinite | —

☒ NGA ☒ ☒ MK19 ☐ RADAR ☐ VISUAL

— | — | Honolulu 4844

North Pole | Zero | —

180 | MK 19 SYNO 3E MK23 SYNO 0° | 170° E

☐ GYRO ☐ STEER-ING ☒ REMOTE IND ☐ OTHER | M 244 G 359

126E | 3°W | ☐ ON ☒ OFF

NGA DR
σ = 0
ν = 0

NGA
R_x = 0
R_y = 0
R_z = 1°

LT Shepherd M. Gembe, USN

Navigator's report: Nautilus, 90°N, 19:15U, 3 August 1958, zero to North Pole.

Nautilus and her crew earned the Presidential Unit Citation (PUC), the first-ever awarded in peace time. Her commanding officer, Capt. William R. Anderson, was whisked away from Nautilus when she resurfaced near Iceland, brought to a White House ceremony, where Eisenhower would announce the success of Operation Sunshine. The president then presented Anderson with a Legion of Merit to go with his crew's PUC.

Nautilus' first deployment was with the Sixth Fleet in the Mediterranean Sea, departing from New London Oct. 24, 1960. Upon her return, she operated in the Atlantic, participating in NATO exercises and in Oct. 1962, the naval quarantine of Cuba during the Cuban Missile Crisis.

During an exercise in 1966 she collided with the aircraft carrier USS Essex on 10 November, while diving shallow.

For the next 13 years, she would be involved in a variety of developmental testing programs while continuing to serve alongside many of the more modern nuclear-powered submarines. Decommissioned and stricken from the Navy rolls in 1980, Nautilus' future was assured when the Secretary of the Interior designated the submarine as a National Historic Landmark May 20, 1982.

The retired Nautilus heads home on 8 May 2002, after preservation by the Electric Boat Division.

Toward the end of its service, the hull and superstructure of Nautilus vibrated sufficiently that sonar became ineffective at more than 4 knots (7.4 km/h; 4.6 mph) speed. Since noise generation is extremely undesirable in submarines, this made the vessel vulnerable to detection. Lessons learned from this problem were applied to later nuclear submarines.

After a career spanning 25 years and almost 500,000 miles steamed, the *Nautilus* was decommissioned on March 3, 1980. Designated a National Historic Landmark in 1982, the world's first nuclear submarine went on exhibit in 1986 as the Historic Ship *Nautilus* at the Submarine Force Museum in Groton, Connecticut.

After a historic ship conversion, *Nautilus* opened to the public April 11, 1986, to continue her service as an example of the Navy's pioneering role in harnessing nuclear power, as the first in a fleet of nuclear-powered ships, and as steward of the American submarine force's reputation for and history of operational excellence.

NAUTILUS HISTORY & SPECIFICATIONS

Nautilus was designated a National Historic Landmark by the United States Secretary of the Interior on 20 May 1982

She was named as the official state ship of Connecticut in 1983. Following an extensive conversion at Mare Island Naval Shipyard, Nautilus was towed back to Groton, Connecticut arriving on 6 July 1985. On 11 April 1986, Nautilus opened to the public as part of the Submarine Force Library and Museum.

Nautilus heads home after a 5 month preservation procedure in 2002

Nautilus now serves as a museum of submarine history operated by the Naval History & Heritage Command. The ship underwent a five-month preservation program in 2002 at the Electric Boat division of General Dynamics, at a cost of approximately $4.7 million ($6.18 million in present-day terms. Nautilus attracts some 250,000 visitors annually to her present berth near Naval Submarine Base New London.

Nautilus celebrated the 50th anniversary of her commissioning on 30 September 2004 with a ceremony that included a speech from Vice Admiral Eugene P Wilkinson, the first Commanding Officer of Nautilus, and a designation of the ship as an American Nuclear Society National Nuclear Landmark.

Visitors may tour the forward two compartments, with guidance from an automated system. Despite similar alterations to exhibit the engineering spaces, tours aft of the control room are not permitted due to safety and security concerns.

Number of Dives: 2,507
Nautical Miles Steamed: 513,550
Complement: 13 Officers, 92 Enlisted
Length: 320 ft.
Beam: 28 ft.
Draft: 26 ft
Power: 13,400 Horsepower
Propulsion: Nuclear Reactor with 2 propellers
Speed: 26 MPH
Armament: 6 21" Torpedo tubes

THE USS NAUTILUS (SSN 571) ON DISPLAY IN GROTON, CONN.

VIDEO'S YOU MIGHT WANT TO WATCH

TYPE AND PASTE THE BLUE LINKS BELOW INTO YOU BROWSER

THE WORLDS FIRST NUCLEAR SUBMARINE
https://www.youtube.com/watch?v=FeVwEtmwOqg

USS NAUTILIS CROSSES THE NORTH POLE UNDERWATER
https://www.youtube.com/watch?v=4tGGdDB2IP0