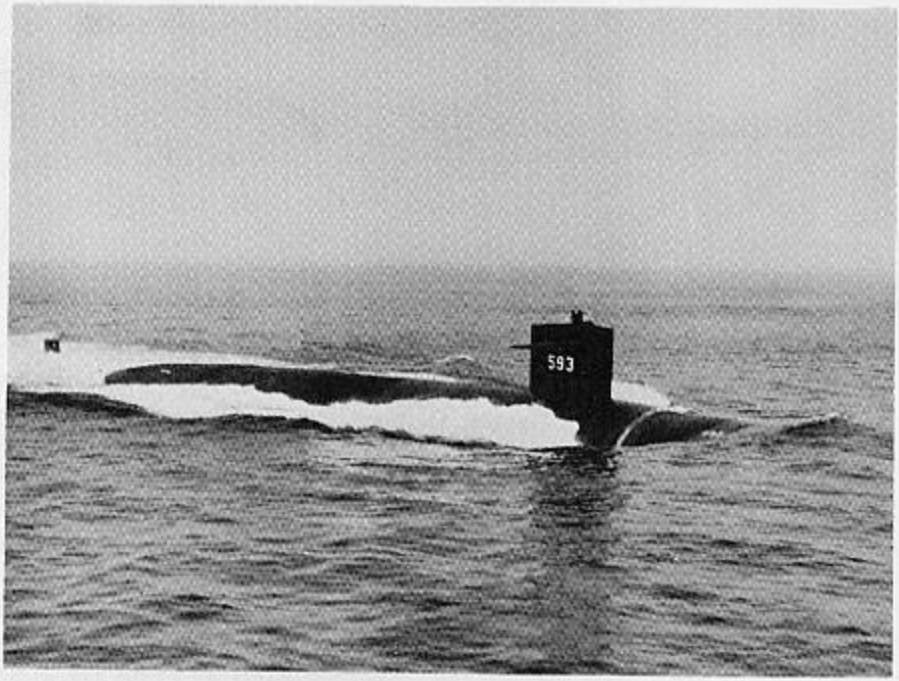
SS(N)593

USS THRESHER SS(N) 593



"Silent Strength"

USS THRESHER (SS(N)593), is the lead ship of the world's most advanced class of nuclear submarines. THRESHER, which is similar in construction to other recent submarines, has a Westinghouse S5W reactor plant, a single propellor driven by a geared turbine and an ALBACORE teardrop-shaped hull. However, with her "built in" silent quality, she is one of the most effective anti-submarine weapons in the Navy arsenal. She has the ability to operate deeper as well as more silently than her predecessors, thus making detection extremely difficult. The advanced sonar aboard is one of the most comprehensive detection systems ever devised for underwater craft. She is equipped to fire the Navy's newest submarine weapons.

THRESHER was sponsored by Mrs. Frederick B. Warder who christened the ship in a unique bow first launching on July 9, 1960, at Portsmouth Naval Shipyard.

SS 200

The SS (N) 593 is the second United States submarine to bear the name THRESHER. The first THRESHER -SS 200- was built by Electric Boat Company in Groton, Connecticut. She was commissioned August 27, 1940 with Lieutenant Commander W. L. Anderson, USN as her first Commanding Officer. On December 7, 1941 THRESHER was returning from a practice war patrol which, from the moment of the attack on Pearl Harbor, became her first actual war patrol. THRESHER was awarded the Navy Unit Citation for her extraordinary accomplishments on her thirteenth war patrol. On this patrol, under the Command of Commander Duncan C. McMillan, she made contact with four Japanese merchant vessels and two Japanese destroyers in the confined waters of the Luzon Strait area. As a result of her relentless attacks, the entire convoy was destroyed. In the course of her fifteen war patrols she sank 17 enemy vessels totaling 66,172 tons and damaged twelve additional ships which amounted to about 80,000 tons temporarily put out of commission. On July 12, 1946 THRESHER was decommissioned at Portsmouth Naval Shipyard and December 23, 1947 was stricken from the U. S. Naval vessels listing after a distinguished career.

Thresher Shark

USS THRESHER.SS(N)593 is named for a shark of the family Alopias. Known scientifically as ALOPIAS VULPINUS (Bonnaterre), the Thresher is easy to recognize because its tail is longer than the combined length of its head and body, and the first dorsal fin does not extend backward to the pelvic fin. The Thresher derives its name from the supposed habit of using its tail to beat the water in a compact school of fish, stunning some of the fish and eating the injured ones. Harmless to man, the maximum length of the Thresher shark is more than 20 feet.

The Captain

Commander Dean L. Axene, son of Mr. and Mrs. Oscar F. Axene, was born August 1, 1923 in Kansas City, Missouri. He graduated from Upper Arlington High School in Columbus, Ohio and entered the U. S. Naval Academy the following month. After graduation in June 1944, he attended the U. S. Naval Submarine School from September to December 1944.

Upon completion of this school he was ordered to USS PARCHE (SS 384) and made two successful war patrols in Japanese Empire waters. The Bronze Star Medal with the Combat "V" was awarded him for his second patrol. Following the war he took part in Operation Crossroads at Bikini Atoll.

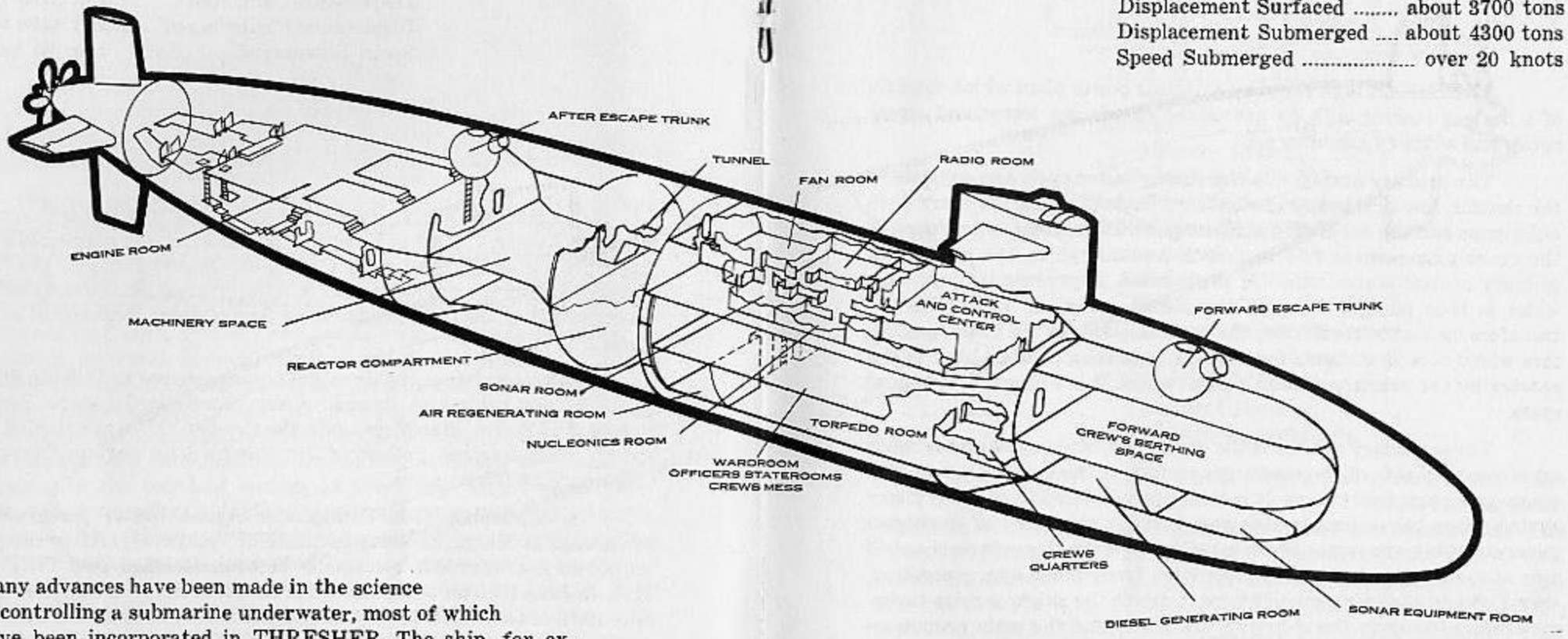
In September 1946 Commander Axene began postgraduate instruction at Massachussetts Institute of Technology. After completing a two year course in electronics he commissioned USS TIRU (SS 416). In June 1950 he was detached from TIRU and was assigned staff duty until ordered to USS SEA ROBIN (SS 407) as Executive Officer.

Commander Axene's next position was Prospective Executive Officer of USS NAUTILUS (SS(N) 571). He commissioned NAUTILUS and served aboard until August 1955 when he was detached to assume command of USS CROAKER (SSK 246). He commanded CROAKER until February 1957 when he was ordered to submarine school as Director, Nuclear Department. In April 1959 he was ordered to duty with the Naval Reactors Branch, U. S. Atomic Energy Commission, Washington, D. C. and on June 1, 1960 he reported to Portsmouth Naval Shipyard, Portsmouth, N. H. as Prospective Commanding Officer, USS THRESHER (SS(N) 593).

Commander Axene married the former Sally Haas of Columbus, Ohio. He has two children, a son, Eric and a daughter, Kristen.

Keel Laid	May 28, 1958	Length	over 275 feet
Launched	July 9, 1960	Width	over 30 feet
Commissioned	August 3, 1961		

Displacement Surfaced ..... about 3700 tons
Displacement Submerged .... about 4300 tons
Speed Submerged ..... over 20 knots

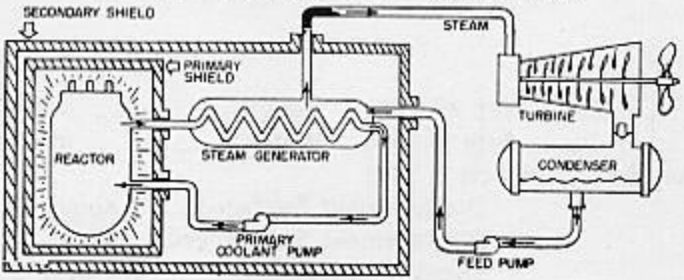


Many advances have been made in the science of controlling a submarine underwater, most of which have been incorporated in THRESHER. The ship, for example, can be controlled both on course and in depth by a single man. An automatic feature is also included in the control system which keeps the ship at the ordered depth.

Living conditions aboard THRESHER have been designed for about 85 men to live comfortably while totally submerged for periods of time greater than 30 days. The ship is equipped with an air conditioning system, carbon dioxide scrubbers, carbon monoxide-hydrogen burners, electrostatic precipitaters and oxygen storage flasks to maintain the ship's atmosphere heathful for extended periods of submergence. Because of its importance to the normal functioning of both men and equipment, the atmosphere is monitored continuously while submerged.

THRESHER is outfitted with the latest sonar equipment which has greatly increased detection abilities. To increase this advantage further and to minimize the chance of detection by unfriendly ships many design features have been incorporated in THRESHER to increase her quietness. Another significant advancement of this ship is the ability to cruise the ocean at greater depths than all previous submarines. THRESHER is also equipped with the latest fire control equipment which has semi-automatic loading and firing capabilities for the most recently designed submarine weapons.

THE POWER PLANT



THRESHER is powered by a nuclear power plant which consists of a nuclear reactor with its associated circulating water and steam cycles and auxilary machinery.

The primary system is a circulating water cycle and consists of the reactor, identical port and starboard loops of piping, primary coolant pumps and the tubes of the steam generators. Heat is produced in the reactor by nuclear fission and is transferred to the circulating primary coolant water which is pressurized to prevent boiling. This water is then pumped through the steam generator tubes where it transfers its heat to the shell or the secondary side of the steam generators where it boils water to form steam. It is then pumped back to the reactor by the primary coolant pumps where it is heated for the next cycle.

The secondary system is the steam producing cycle and is made up of the shell side of the steam generators, turbines, condensers, and steam generator feed pumps. It is completely isolated from the primary system since the primary water goes through the tubes of the steam generator while the water which is boiling to make steam is on the shell side of the steam generator. Steam rises from the steam generators, then flows to the engineroom where it drives the ship's service turbogenerators to supply the ship with electricity and the main propulsion turbines which drive the propeller. After passing through the turbines, the steam is condensed and the water is fed back to the steam generators by the feed pumps. There is no step in the generation of this power which requires the presence of air or oxygen. This fact alone allows the ship to operate completely divorced from the earth's atmosphere for extended periods of time.

During the operation of the nuclear power plant high levels of radiation exist around the reactor and personnel are not permitted entrance into the reactor compartment until a few minutes after the reactor is shutdown. Heavy shielding is used to protect the crew so that the average crew member receives less radiation than he would receive from natural sources ashore.

THE COMMISSIONING CREW

OFFICERS

CDR Dean L. AXENE
Commanding Officer
LCDR Robert D. RAWLINS
Executive Officer
LCDR Raymond E. ENGLE
Engineer Officer
LT Arthur L. REHME
Medical Officer
LT Michael J. DI NOLA
Gunnery Officer
LT John S. LYMAN
Main Propulsion Assistant
LT William T. HUSSEY
Communications Officer
LT Kenneth L. HIGHFILL
Electrical Officer
LT John E. MC NISH
Damage Control Assistant
LTJG John SMARZ Jr.
Supply Officer

CHIEF PETTY OFFICERS

Robert E. JOHNSON ..... Chief Torpedoman's Mate Acting (SS)
(Chief-of-the-Boat)
Benjamin N. SHAFER ..... Master Chief Electrician's Mate (SS)
Jimmy N. BRATTIN ..... Senior Chief Electrician's Mate (SS)
Tilmon J. ARSENAULT ..... Chief Electrician's Mate Acting (SS)
Edmund G. BOLIN ..... Chief Yeoman Acting (SS)
Andrew J. GALLANT Jr. ..... Chief Hospitalman Acting (SS)
Joseph A. GREENE ..... Chief Electrician's Mate Acting (SS)
Edward A. JOHNSON ..... Chief Engineman Acting (SS)
Walter V. JOHNSON Chief Interior Communications Electrician (SS)
Henry A. JOYCE ..... Chief Electronics Technician Acting (SS)
Charles P. LEONARD ..... Chief Hospitalman Acting (SS)
Walter J. NOONIS ..... Chief Radioman Acting (SS)
Richard A. OLSEN ..... Chief Torpedoman's Mate Acting (SS)
Roscoe C. PENNINGTON ..... Chief Electrican's Mate Acting (SS)
Albert E. STOECKLE ..... Chief Machinist's Mate (SS)
George H. WARNER ..... Chief Engineman Acting (SS)
Donald E. WISE ....Chief Machinist's Mate Acting (SS)

ENLISTED CREW

John J. ALAIMO, EM1(SS)
Ronald E. BAIN, EN3(SS)
Richard J. BARTSCH, RM1(SS)
Phillip P. BATSON, FT1(SS)
George BRACEY, SD3(SS)
Richard P. BRANN, EN2(SS)
Robert A. BROWN, CS3(SS)
Raymond J. BUTLER, FN(SS)
Robert E. BUTTERFIELD, EN3(SS)
Andres P. CAINAP, ET1
Richard J. CARKOSKI, EN2(SS)
Edward CHRISTIANSEN, SN
Louis M. COLANER III, IC2(SS)
Francis M. CUMMINGS, SOS2(SS)
Samuel J. DABRUZZI, ET2
Donald C. DAY, FN
Roy O. DENNY Jr., EM2(SS)
Howard L. DRAKE, EM2(SS)
Troy E. DYER, ET1(SS)
William J. FORBES, TM1(SS)
John J. FREDERICK, SO1(SS)
Larry W. FREEMAN, FTM3(SS)
Napoleon T. GARCIA, SD1(SS)
Robert W. GAYNOR, EN2(SS)
Robert W. GILLETTE, EN1(SS)
Ira J. GOLDMAN, ENFN
Charles W. GOOD, CS1(SS)
Ralph W. GOULD, EN1(SS)
Aaron J. GUNTER, SM1(SS)
David A. HARVEY, SN
Leonard H. HEWITT, EM1(SS)
Dennis R. HILL, ET2(SS)
Joseph H. HOAGUE, TM2(SS)
Ronald V. HOLLOWAY, SN
John F. HUDSON, EN2(SS)
Oliver H. JEWETT, ET1
Brawner G. JOHNSON, FT1(SS)
Keith A. JOHNSON, SN
Owen L. JOHNSON, ENFN
Thomas B. JOHNSON, ET1(SS)
George J. KIESECKER, EN3(SS)
Raymond C. KILDUFF, MM1(SS)
Norman G. LANOUETTE, QM1(SS)
Raymond G. LUBSEN, MM2(SS)
Edward F. MARTIN III, EN1(SS)
Julius F. MARULLO Jr., QM1(SS)
Lloyd D. MATHIS, RM2(SS)
Bruce E. MATHRE, SK2
Raymond C. MATTSON, TM1(SS)
Donald J. McCORD, EN2(SS)
Karl P. MC DONOUGH, TM2(SS)
Robert J. MILLER, ET2
Donald E. NAULT, CS2(SS)
John D. NORRIS, ET1(SS)
William T. OLSEN, EM1(SS)
Dan A. PHILPUT, EN3
Edward R. POLLINGER, SN
James D. RANKIN, YN3(SS)
John S. REGAN, MM2
John C. RIEMENSCHNEIDER, SK2
Robert C. ROBBINS Jr., EN1(SS)
Joseph R. ROBERT, IC2(SS)
Glenn A. ROUNTREE, QM2(SS)
James M. SCHIEWE, EM2(SS)
Frank SMITH, TN
David W. SPENCE, SO1(SS)
James D. SWEET, EN2(SS)
Paul R. TOBLER, ET1
Roger E. VAN PELT, IC2(SS)
Thomas W. VORMBROCK, CS1(SS)
Fernley R. WAGNER Jr., MM1(SS)
Joseph A. WALSKI, RM2(SS)
James E. WARD, SOS2(SS)
Karl F. WIETZEL, III, SO1(SS)