

*Welcome Aboard*

**USS  
PUFFER  
SSN 652**



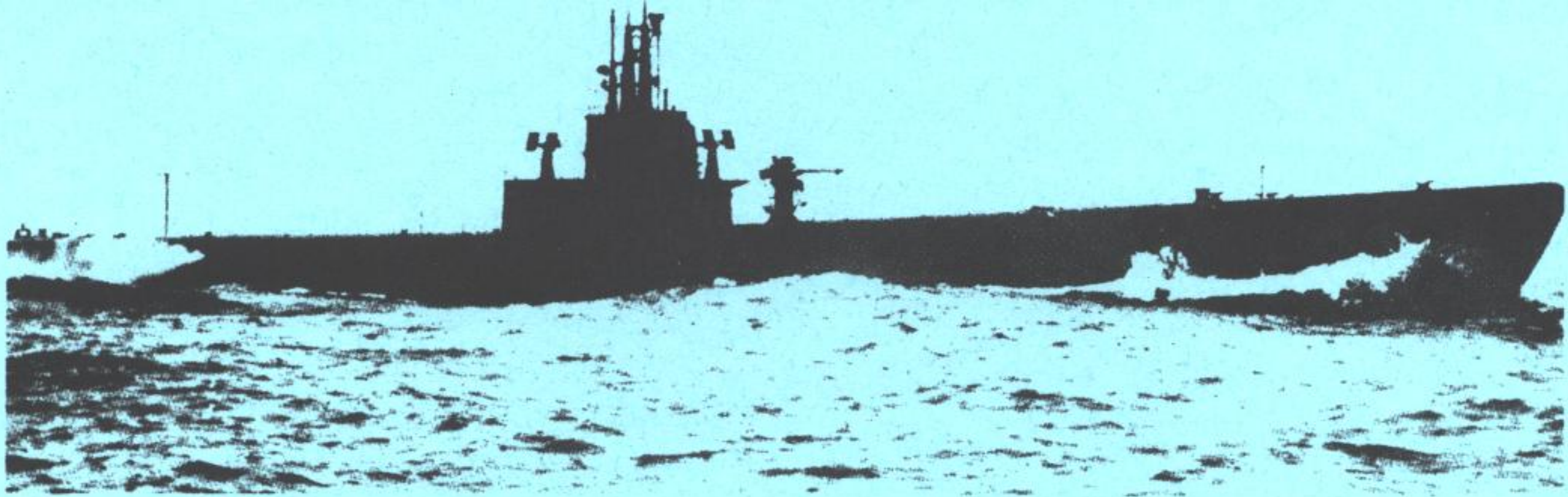
**USS  
PUFFER**

**SSN  
652**



**PRIDE IN  
PERFECTION**





## HERITAGE

USS PUFFER (SSN 652) is the second submarine of the United States Navy to bear the name PUFFER. The first PUFFER (SS 268) was a World War II fleet type submarine commissioned 27 April 1943. A distinguished fighting record from eight war patrols earned her nine battle stars. She is credited with sinking eight ships totaling over 36,000 tons.

After World War II, the first PUFFER served as a Naval Reserve training submarine in Seattle Washington until 1 July 1969.



# USS PUFFER SSN 652

The USS PUFFER (SSN 652) is one of several 637 class nuclear powered submarines attached to the Submarine Force, United States Pacific Fleet. She is currently homeported in San Diego, California and assigned to Submarine Squadron Three. In late 1988 PUFFER completed a regular overhaul at Puget Sound Naval Shipyard, Bremerton, Washington. During the overhaul, PUFFER was upgraded with the most technologically advanced equipment, thus improving her capabilities to perform her assigned missions. These important missions in support of the nation's defense occasionally require extended cruises to various corners of the world. The nuclear propulsion plant which is her main source of power and propulsion enables puffer to remain completely submerged for extended operational periods. As a result of her endurance and operational capabilities, PUFFER is not only a "ship" but also a "home" to the crew during our deployments away from homeport.

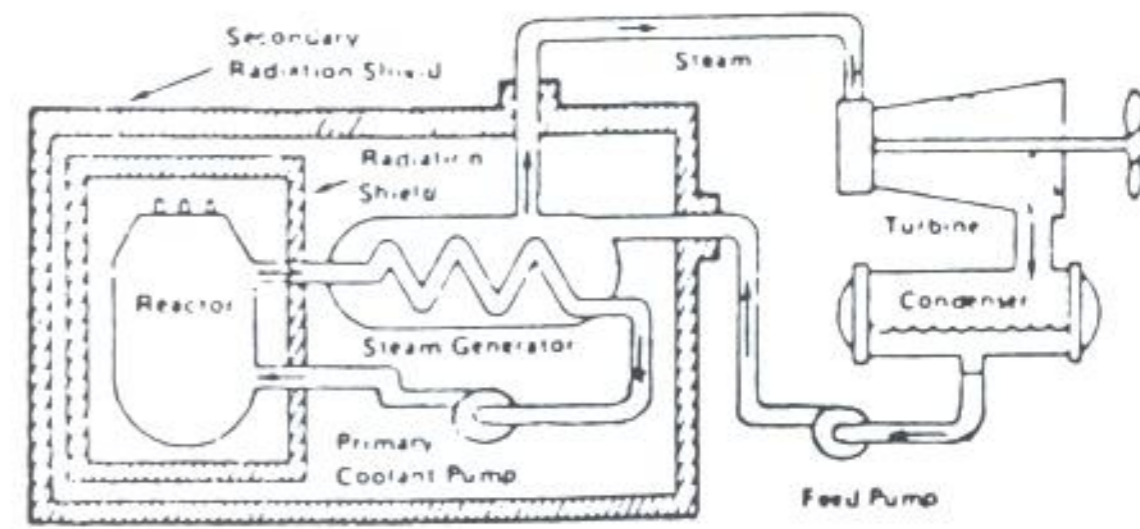
Commander Thomas G. Kyle, USN, is currently the Commanding Officer of USS PUFFER (SSN 652). Commander Kyle graduated from Stanford University in 1973. He was commissioned through the Naval Reserve Officer Training Candidate program. His awards include the Navy Commendation Medal with one gold star and the Navy Achievement Medal with one gold star. He also wears the SSBN Strategic Deterrent Patrol Insignia. Commander Kyle is married to the former Sharon Neuber of Saint Anthony, Idaho. They have two sons, Gregory and Adam.



CDR T. G. KYLE  
COMMANDING OFFICER



# The Nuclear Power Plant



The propulsion plant of a nuclear powered ship is based upon use of a nuclear reactor to provide heat. The heat comes from the fissioning of nuclear fuel contained within the reactor. Since the fissioning process also produces radiation, shields are placed around the reactor so that the crew is protected.

The nuclear propulsion plant in this ship uses a pressurized water reactor design which has two basic systems: the primary system and the secondary system. The primary system circulates ordinary water and consists of the reactor, piping loops, pumps and steam generators. The heat produced in the reactor is transferred to the water under high pressure so it does not boil. This water is pumped through the steam generators and back into the reactor for reheating.

In the steam generators, the heat from the water in the primary system is transferred to the secondary system to create steam. The secondary system is isolated from the primary system so that the water in the two systems does not intermix.

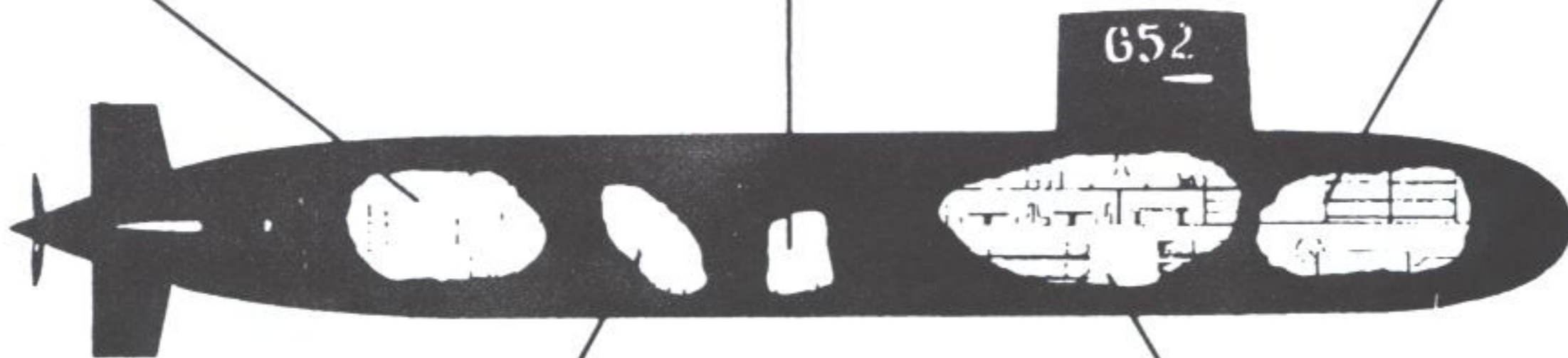
In the secondary system, the steam flows from the steam generators to drive the turbine generators, which supply the ship with electricity, and to the main propulsion turbines, which drive the propeller. After passing through the turbines, the steam is condensed into water which is fed back to the steam generators by the feed pumps. Thus, both the primary and secondary systems are closed systems where water is recirculated and reused.

There is no step in the generation of this power which requires the presence of air or oxygen. This allows the ship to operate completely independent from the earth's atmosphere for extended periods of time.

The Engine Room houses the propulsion plant control area, the main propulsion turbines and the electricity generating plant.

The Reactor Compartment houses the nuclear reactor and steam generating equipment.

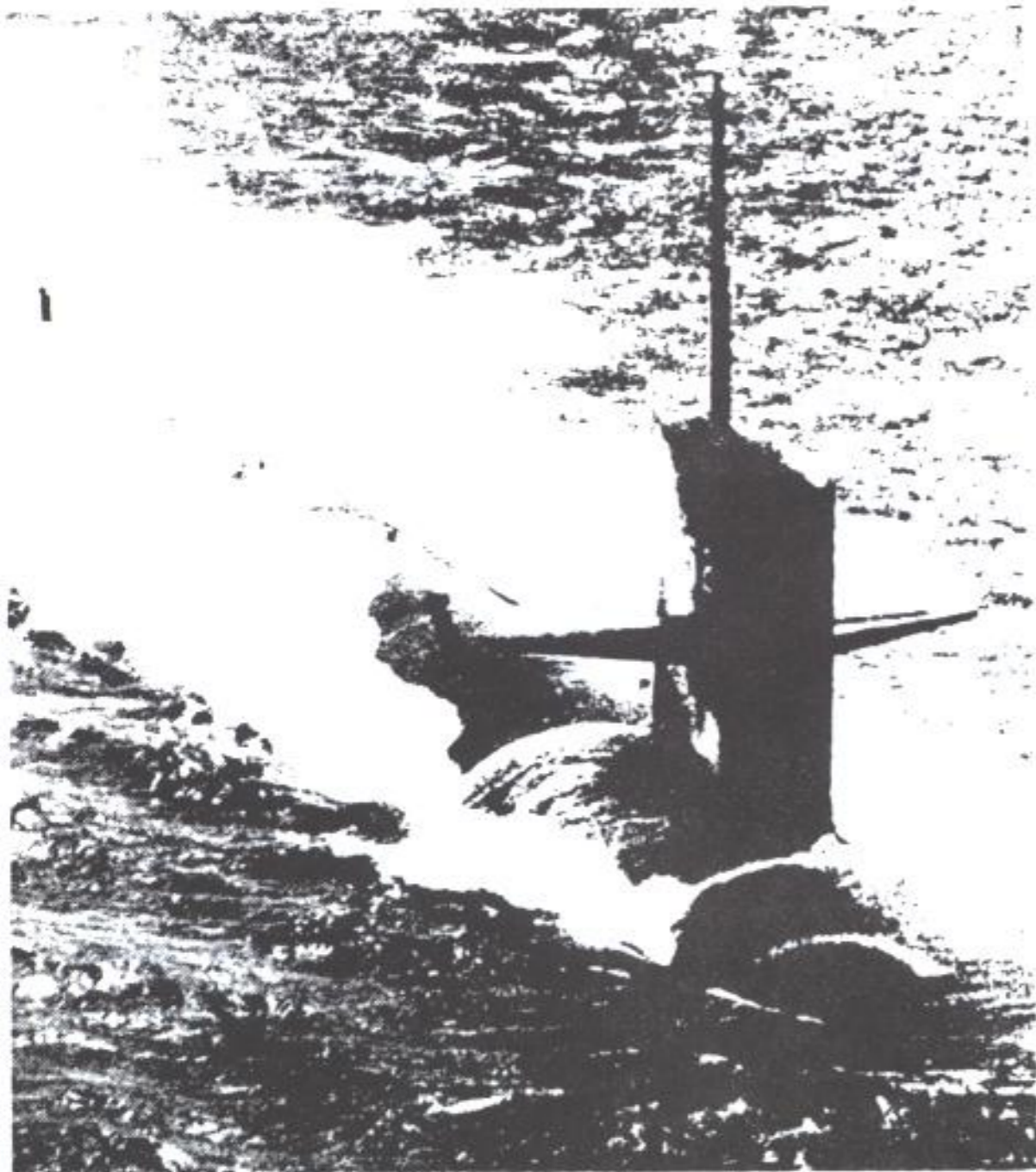
The Bow Compartment houses the emergency diesel generator and crew's living space.



The Auxiliary Machinery Room houses the atmosphere control equipment and auxiliary machinery

The Operations Compartment is divided into three levels:  
Upper: Ship's Control Center  
Middle: Officer's and Crew's dining and living spaces  
Lower: Torpedo Room and ship's battery





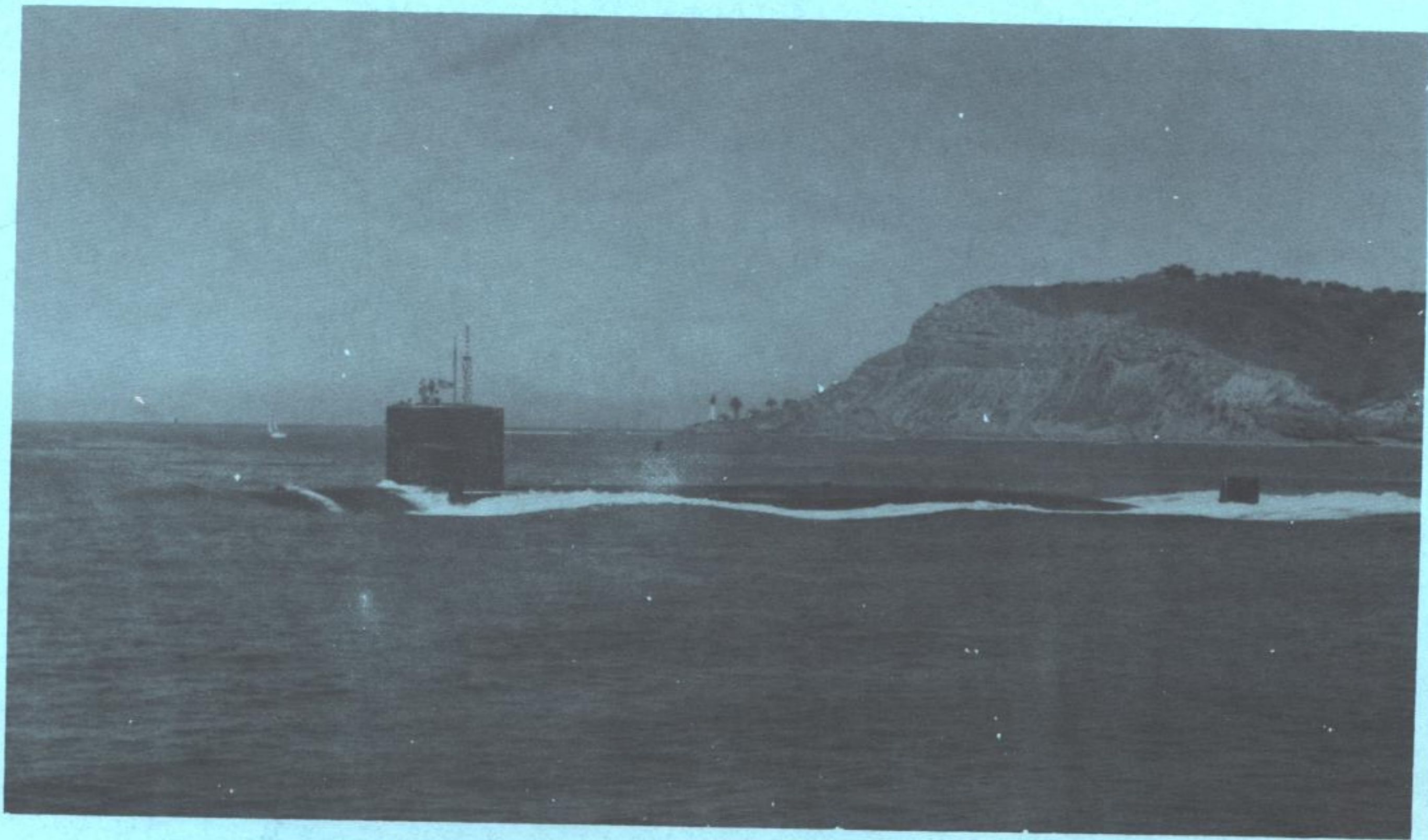
Keel Laid: ..... 18 February 1965  
Launched: ..... 30 March 1968  
Commissioned: ..... 9 August 1969  
Length: ..... 292 feet  
Test Depth: ..... In excess of 400 feet  
Maximum Speed: ..... In excess of 20 knots  
Displacement: ..... 4246 tons surfaced  
4790 tons submerged



## **USS Puffer (SSN 652)**

The new PUFFER is a high speed, deep diving, nuclear attack submarine of the STURGEON CLASS. With her sophisticated weapons, sonar, and nuclear propulsion systems, the distinguished PUFFER heritage promises to be extended should she be called upon to do so by her nation.



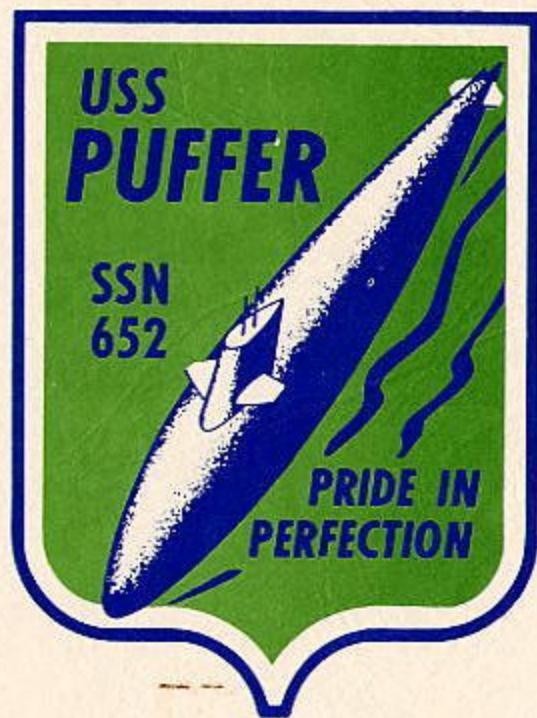


**Pride in Perfection**



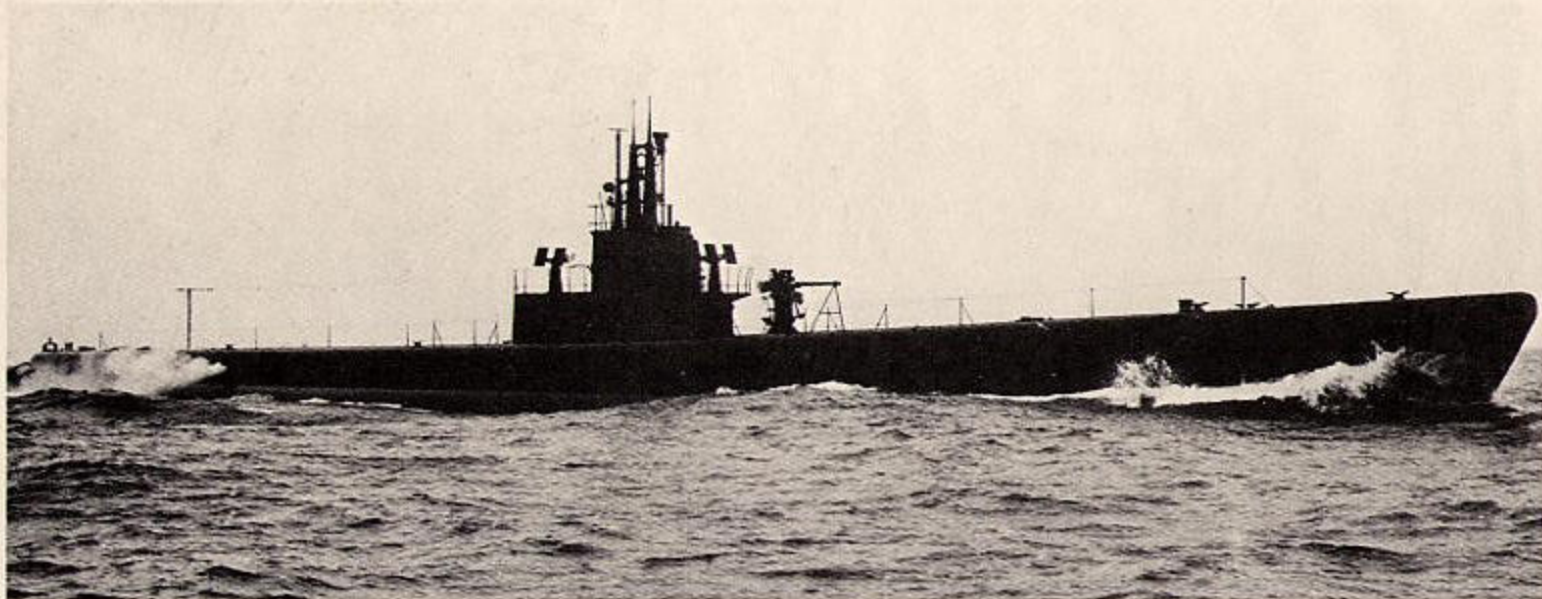
*Welcome Aboard*

**USS  
PUFFER  
SSN 652**





# USS Puffer (SS 268)



## HERITAGE

USS PUFFER (SSN 652) is the second submarine of the United States Navy to bear the name PUFFER. The first PUFFER (SS 268) was a World War II fleet type submarine commissioned 27 April 1943. A distinguished fighting record from eight war patrols earned her nine battle stars. She is credited with sinking eight ships totaling over 36,000 tons.

After World War II, the first PUFFER served as a Naval Reserve training submarine in Seattle Washington until 1 July 1969.



# Welcome Aboard . . . . .

## USS PUFFER

The USS PUFFER (SSN652) is one of several 637 class nuclear powered attack submarines attached to Submarine Squadron ONE and the Submarine Force, United States Pacific Fleet. Her home port is Pearl Harbor, Hawaii, however, important missions, in support of the nation's defense, occasionally require extended cruises to various corners of the world. The nuclear propulsion plant which is her main source of power and propulsion enables PUFFER to remain completely submerged for long periods of time.

As a result of endurance as well as operational capabilities, PUFFER is not only a "ship" but also "home" to all of us during our deployment away from home port. We, the crew, are proud of our ship and pleased to have the chance to show her to you whenever possible.

Ask any questions you desire. Please understand however, that national security restricts the answers we may give. We will attempt to respond to the best of our ability and will inform you if prohibited from answering due to these restrictions.

We are honored to have you aboard PUFFER and hope that you enjoy your visit.

D. R. MATHIOWETZ  
Commanding Officer



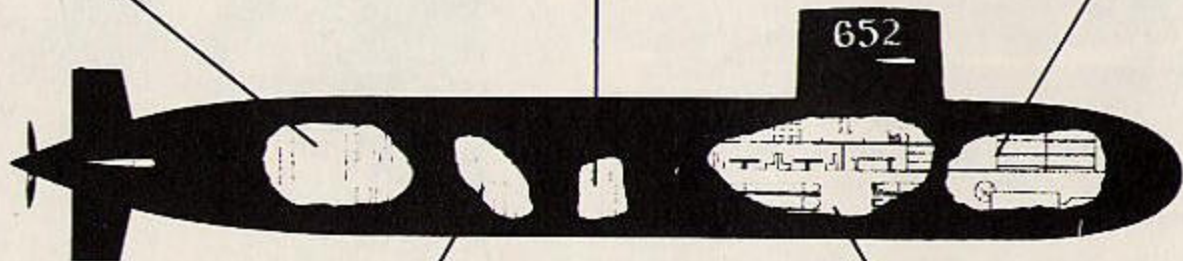


# Puffer Arrangement

The Engine Room houses the propulsion plant control area, the main propulsion turbines and the electricity generating plant.

The Reactor Compartment houses the nuclear reactor and steam generating equipment.

The Bow Compartment houses the emergency diesel generator and crew's living spaces.



The Auxiliary Machinery Room houses the atmosphere control equipment and auxiliary machinery.

The Operations Compartment is divided into three levels:

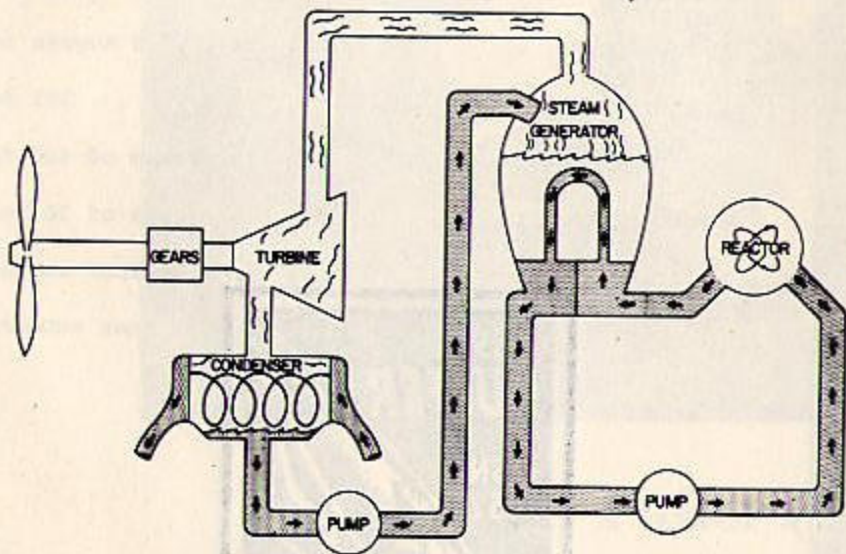
Upper: Ship's Control Center

Middle: Officer's and Crew's dining and living spaces

Lower: Torpedo Room and ship's battery

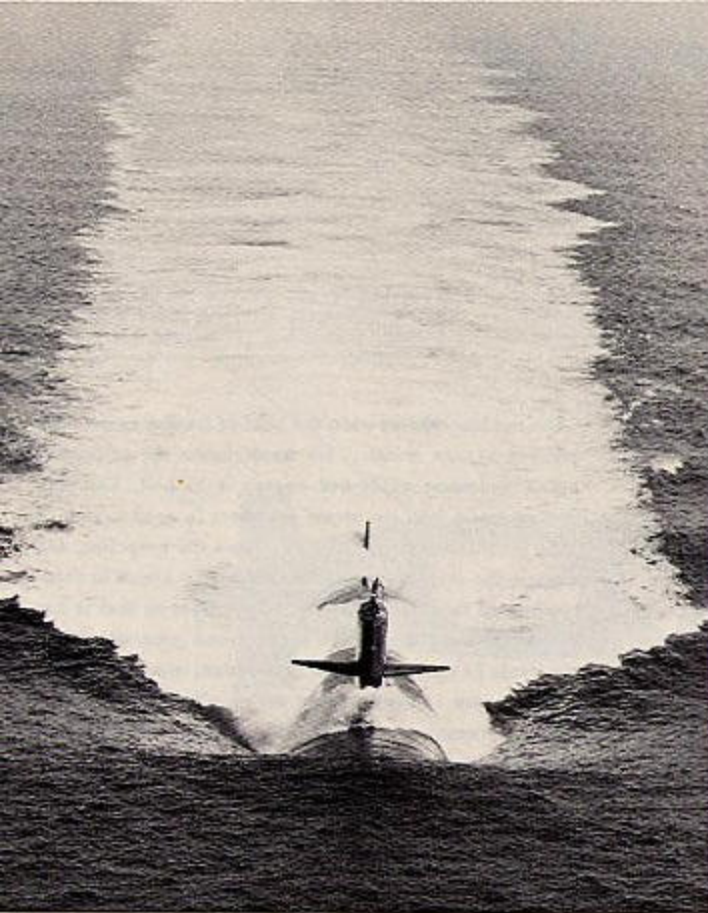


# The Nuclear Power Plant



The nuclear reactor uses the heat of fission to heat the primary system water. This water heats the secondary steam generator water and causes it to boil. The high energy steam from the steam generator is used to turn the main propulsion turbines, which turns the propellor, and causes the ship to move. The low energy steam is then condensed to water in the main condenser so that it can be reused and pumped back to the steam generator where the cycle is again repeated. In addition, some of the high energy steam is used to turn the ship's turbine generators to create electricity for lighting, ship control systems, and electronics systems.

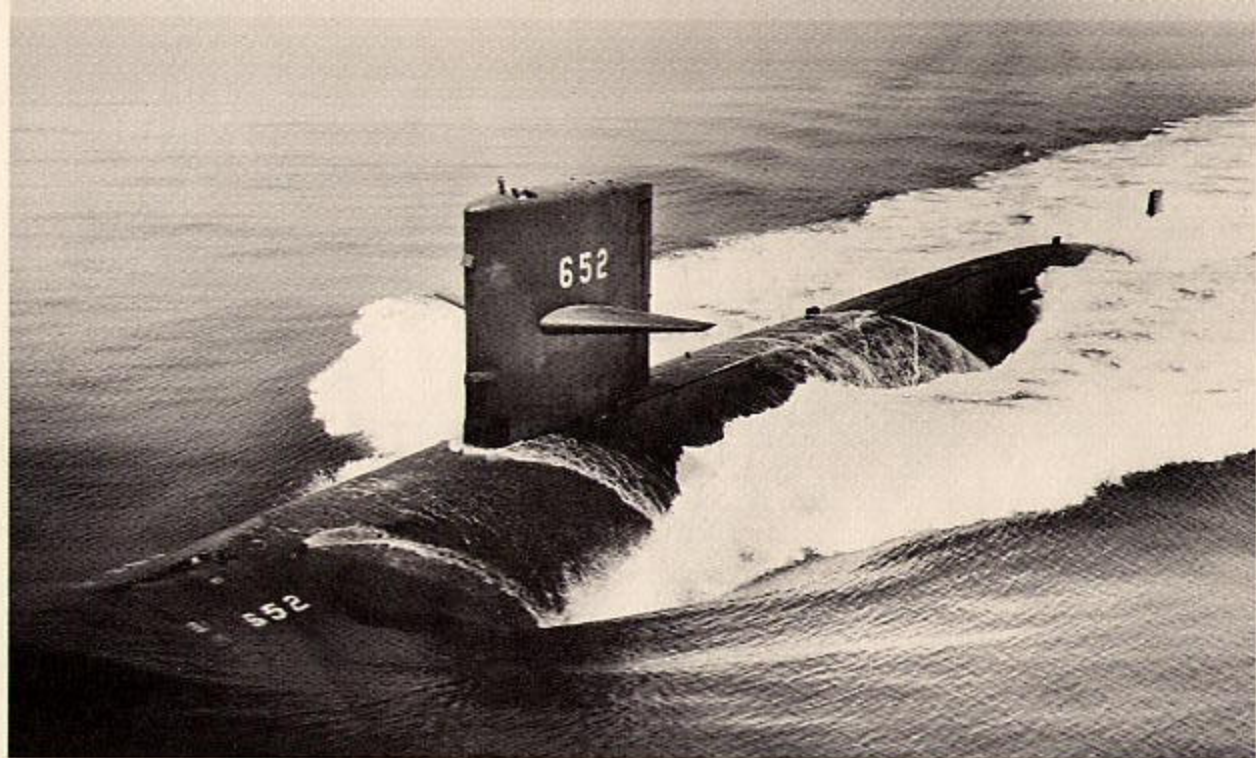




Keel Laid: . . . . . 18 February 1965  
Launched: . . . . . 30 March 1968  
Commissioned: . . . . . 9 August 1969  
Length: . . . . . 292 feet  
Test Depth: . . . . . In excess of 400 feet  
Maximum Speed . . . . . In excess of 20 knots  
Displacement: . . . . . 4246 tons surfaced  
4780 tons submerged







## USS Puffer (SSN 652)

The new PUFFER is a high speed, deep diving, nuclear attack submarine of the STURGEON CLASS. With her sophisticated weapons, sonar, and nuclear propulsion systems, the distinguished PUFFER heritage promises to be extended should she be called upon to do so by her nation.



**Pride in Perfection**