

Commanding Officer  
USS BARB (SSN 596)  
FPO San Francisco, CA 96661



**WELCOME**

**ABOARD**



## WELCOME

The Commanding Officer, Officers, and Men of the Nuclear Powered Attack Submarine BARB welcome you aboard. You have come to visit a most unusual ship, for she is built not only to sail beneath the oceans of the world, but to remain beneath the surface for periods of time limited only by the amount of provisions she can carry. USS BARB is a true submersible.

## THE SHIP'S MISSION

The mission of the USS BARB is to seek out and destroy other submarines. She is of the nuclear powered attack submarine type and her nuclear propulsion capability combined with advanced electronics and weapons systems make her one of the most effective anti-submarine weapons system available.



# THE SUBMARINE SERVICE

The first submarine authorized for the U.S. Navy was approved by Congress in 1893 but was never accepted by the Navy. Finally, in April of 1900, the USS HOLLAND (SS-1) was commissioned and the submarine service was started. The USS HOLLAND was 54 feet long, displaced 74 tons, carried one officer, five enlisted men and cost \$150,000.

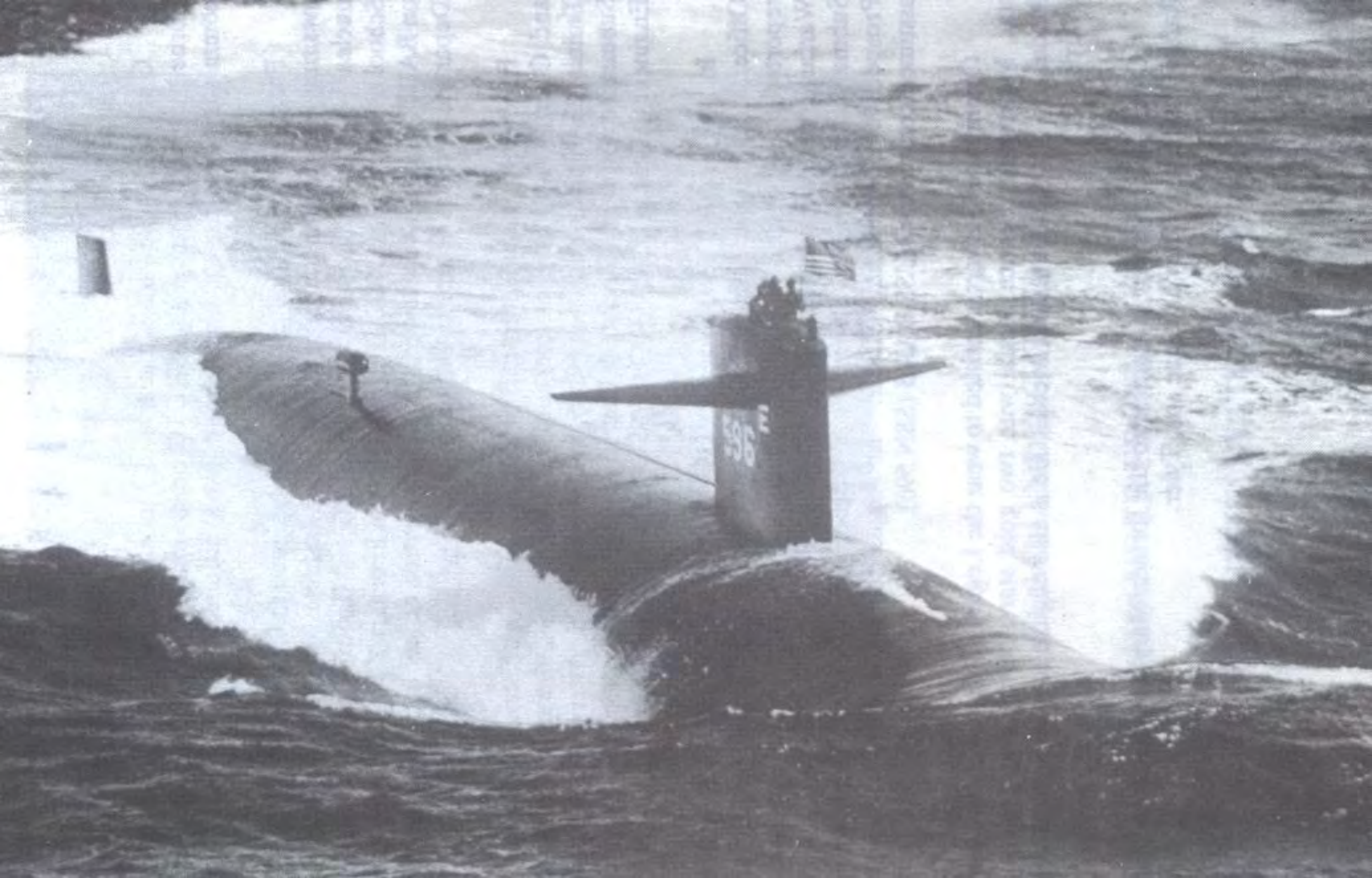
Progress came quickly and by 1911 the U.S. Navy had 20 submarines, the largest in the 400 tons class. In 1917 the USS SKIPJACK (SS-24) was able to cross the Atlantic; hulls were now welded instead of riveted and propulsion was by diesel engine and battery instead of hazardous gasoline engine.

During World War I the leading class of submarine was the L-class; 167 feet long, displacing 548 tons, carrying two officers and 26 enlisted men. Although 20 American submarines reached the war zone, none played a major role during World War I.

In 1941, the U.S. Navy entered World War II with 111 submarines, mostly of the "O", "R", and "S" class, short range vessels developed during and after World War I but considered unsatisfactory for fleet service. The peak wartime submarine strength rose to 247 ship, mainly of the "Gato" class which culminated years of extensive experiment and development work. This class was 312 feet long, displaced 1500 tons and carried 7 officers and 70 enlisted men. During World War II, the U.S. Submarine service accounted for almost 60% of all Japanese shipping losses; some 5,500,000 tons of shipping, including 1750 merchant and 200 warships.

Following World War II, two phases of submarine development occurred. The first one was the adaptation of the German Snorkel allowing submerged operation on diesel engines, improved high capacity batteries and hull streamlining. The second most significant was the advent of nuclear propulsion plants which allowed, for the first time, development of the true submersible able to cruise the oceans or circumnavigate the globe without ever surfacing. Today the Navy has over a hundred of these vessels, either of the Fleet Ballistic Missile (SSBN) type or of the Attack Submarine (SSN) type.







## BARB'S HISTORY HIGHLIGHTS

On 9 November 1959, the keel for the USS BARB (SSN 596) was laid at Ingalls Shipyard in Pascagoula, Mississippi. Mrs. E. B. Fluckey, the wife of Rear Admiral Eugene Fluckey, a Congressional Medal of Honor winner as Commanding Officer USS BARB (SS 220), christened USS BARB (SSN 596) on 22 February 1962. On 24 August 1963, USS BARB (SSN 596) was commissioned.

After sea-trials in the Gulf of Mexico, USS BARB transited through the Panama Canal to join the Pacific Fleet.

Upon leaving Post-Shakedown Availability at Mare Island Naval Shipyard, USS BARB steamed for her new homeport of Pearl Harbor, Hawaii and became the COMSUBPAC flagship on 1 December 1964.

In the Spring of 1966, while conducting an advanced training mission USS BARB earned a Navy Unit Commendation. While deployed to the Western Pacific in the Summer of 1972, USS BARB surfaced in the midst of Typhoon Rita to search for a downed B-52 crew 300 miles west of Guam. At considerable risk to both ship and crew, four airmen were recovered, earning USS BARB a Meritorious Unit Commendation.

On 8 November 1975, USS BARB was greeted by both the civilian and military communities to her present homeport in San Diego, California.

USS BARB made her first successful launch of a Tomahawk missile from a submerged submarine in February 1978.

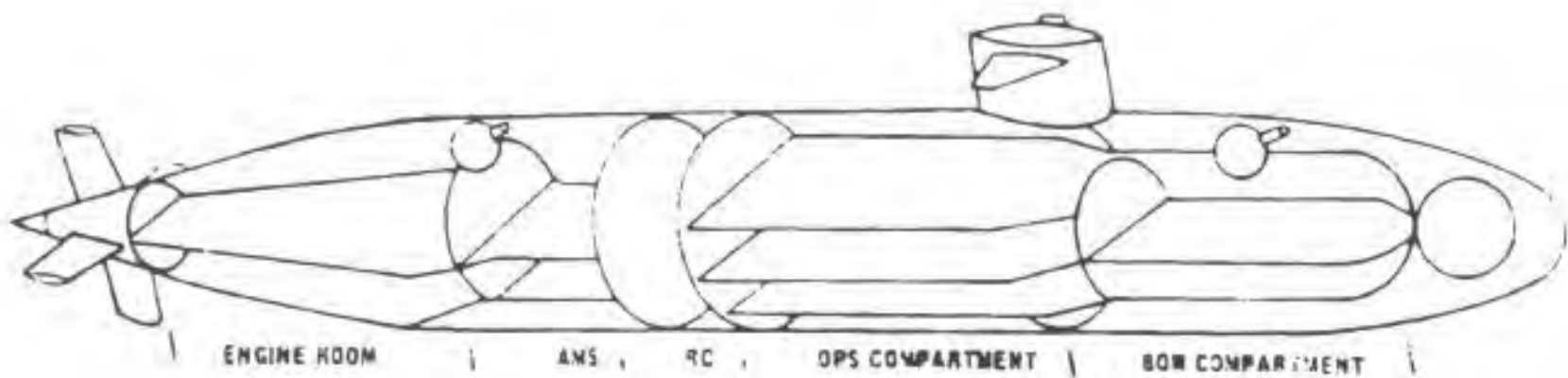
USS BARB completed a deployment to the Western Pacific in 1978 and 1979, participating in a priority one CNO research project in 1980 testing a wide aperture array and rapid localization sonar and fire control system, and she was an outstanding performer in RIMPAC 80, a multi nation exercise. These accomplishments resulted in her receiving the Submarine Squadron THREE Battle Efficiency and Engineering "E" awards in 1980.

USS BARB was overhauled at Mare Island Naval Shipyard from July 1980 to December 1982 where the newest Digital Combat Systems were installed making her one of the most modern ASW platforms.

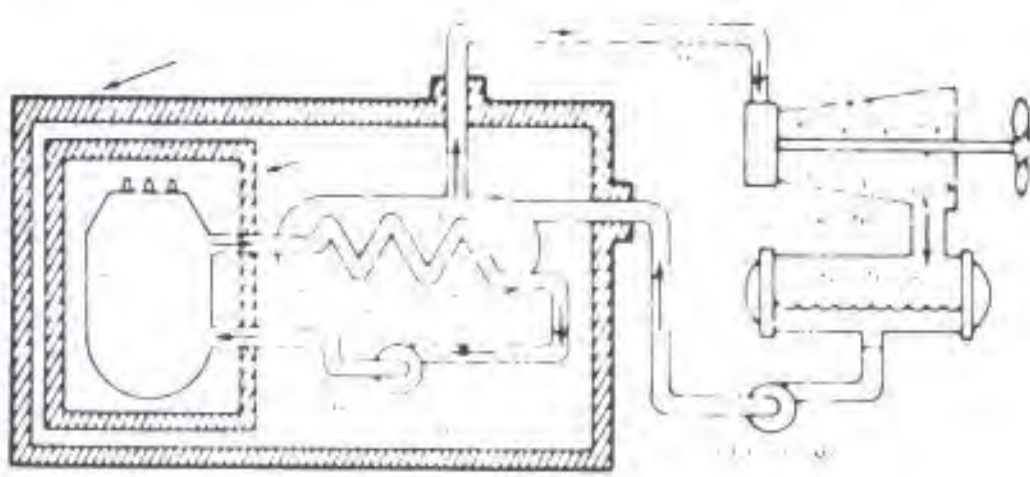
USS BARB completed deployments to the Western Pacific in 1985 and 1987 and was awarded the Submarine Squadron THREE Anti-Submarine Warfare "A" in 1986 and Engineering "E" in 1987.

# SHIP'S CHARACTERISTICS

Length Overall .....279 Feet  
Maximum Beam..... 31' 7"  
Surface Displacement .....3700 Tons  
Submerged Displacement.....4300 Tons  
Maximum Depth.....In excess of 400 Feet  
Maximum Speed ..... In excess of 20 Knots  
Armament.....Four 21 inch Torpedo Tubes  
Power Source ..... S5W Nuclear Reactor  
Ship's Complement.....15 Officers/115 Enlisted Men







## THE POWER PLANT

BARB is powered by a nuclear power plant which consists of a nuclear reactor with its associated circulating water, steam cycles and auxiliary 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 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 and then flows to the engine room, where it drives the ship service turbogenerators, which 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 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.

# GENERAL INFORMATION FOR ALL VISITORS

**WARNING SIGNS:** Please observe all warning signs. Consult a member of the ship's force for assistance in any matter.

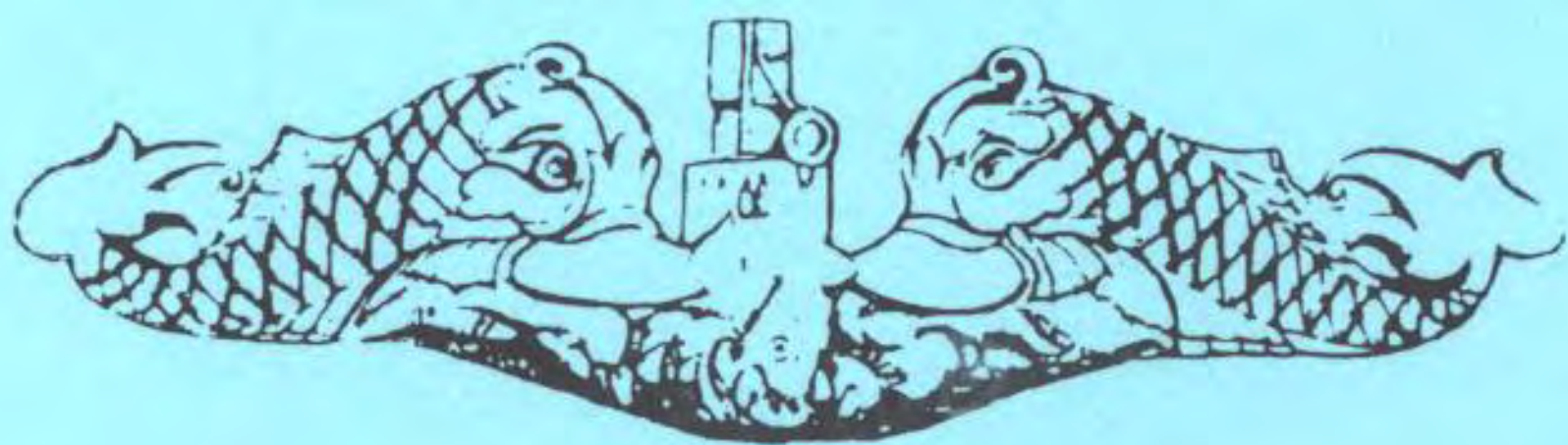
**OPERATION OF SHIP'S EQUIPMENT:** Do not operate any equipment or switches, turn any valves or enter any restricted area without prior approval from ship's force. Observe posted precautions and procedures.

**EMERGENCIES:** Should any emergency situation arise alarms will be sounded and the word will be passed over the Ship's General Announcing System. You are requested to **STAND FAST BUT CLEAR** of all passageways and operating spaces. Do not obstruct ladders, hatches or the watertight door. Please follow the instructions of the man in charge of the scene without hesitation.

**SECURITY:** Certain aspects of the ship's operating characteristics and certain areas of the ship are classified. The Radioroom, Sonar Room and Engineering spaces are classified areas.

**INJURY OR ILLNESS:** You are required to report any injury, no matter how minor, to the hospital corpsman.





*INSIGNIA OF THE U. S. NAVY'S SUBMARINE SERVICE IS A SUBMARINE FLANKED BY TWO DOLPHINS. DOLPHINS, TRADITIONAL ATTENDANTS TO POSEIDON, GREEK GOD OF THE SEA AND PATRON DEITY OF SAILORS, ARE SYMBOLIC OF A CALM SEA.*



*Welcome  
Aboard*

**USS BARB (SSN-596)**



**FLAGSHIP, SUBMARINE FORCE  
U. S. PACIFIC FLEET**



# USS BARB (SSN-596)

Keel Laying ..... 9 November 1959

Launching ..... 22 February 1962

Commissioning ..... 24 August 1963

Sponsor ..... Mrs. E. B. Fluckey

Builder ..... Ingalls Shipbuilding Corporation  
Pascagoula, Mississippi





## THE SUBMARINE

BARB is one of the Navy's newest advanced underseas weapons systems, the PERMIT Class nuclear powered attack submarine. The ship is driven by a single propeller powered through a geared turbine by a Westinghouse S5W reactor plant. Her design embodies the most advanced propulsion, weapons and sonar systems available. She is capable of cruising the ocean depths at greater than 400 feet and at speeds in excess of 20 knots.

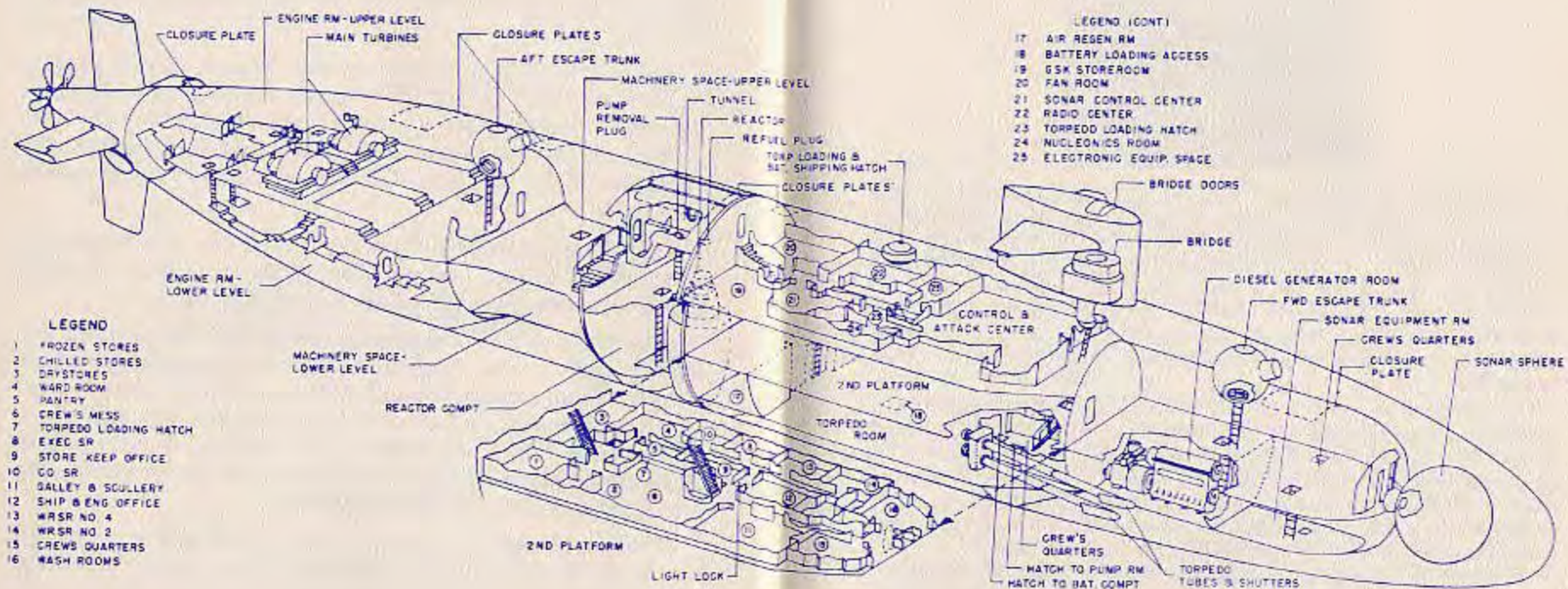
Being primarily an anti-submarine weapon, BARB is engineered to run more quietly than any previous class of submarine. Her sophisticated sonar systems, coupled with the capability of firing the Navy's newest submarine weapons, make her eminently qualified in her task of seeking out and destroying enemy submarines.

BARB's one hundred officers and men live in a completely air conditioned and controlled atmosphere capable of being totally submerged for periods in excess of 30 days.

The ship's sleek, cigar-shaped underwater hull contains five major compartments. Surrounding three of these compartments are ballast tanks which provide the ship the ability to submerge. These large tanks are flooded to submerge the ship and blown dry to bring her to the surface. In addition, interior ballast tanks are flooded with variable amounts of water to provide the proper trim or attitude when submerged.

The act of changing depths while submerged is controlled largely by the diving planes. One set of planes extend from the sail or fairwater while the other, known as the stern planes, extend from the aftermost part of the hull, just forward of the propeller. The planes are controlled from within the ship from a control station similar to the stick and wheel arrangement of an aircraft.

Although the many equipments and systems installed in BARB are necessarily complex and varied, each man is required to become intimately familiar and proficient in each of them before becoming qualified to wear the coveted Dolphins.



**LEGEND**

- 1 FROZEN STORES
- 2 CHILLED STORES
- 3 DRYSTORES
- 4 WARD ROOM
- 5 PANTRY
- 6 CREW'S MESS
- 7 TORPEDO LOADING HATCH
- 8 EXEC SR
- 9 STORE KEEP OFFICE
- 10 CO SR
- 11 GALLEY & SCULLERY
- 12 SHIP & ENG OFFICE
- 13 WRSR NO 4
- 14 WRSR NO 2
- 15 CREW'S QUARTERS
- 16 WASH ROOMS

**LEGEND (CONT)**

- 17 AIR REGEN RM
- 18 BATTERY LOADING ACCESS
- 19 GSK STOREROOM
- 20 FAN ROOM
- 21 SONAR CONTROL CENTER
- 22 RADIO CENTER
- 23 TORPEDO LOADING HATCH
- 24 NUCLEONICS ROOM
- 25 ELECTRONIC EQUIP. SPACE

CLOSURE PLATE  
 ENGINE RM-UPPER LEVEL  
 MAIN TURBINES  
 CLOSURE PLATES  
 AFT ESCAPE TRUNK  
 MACHINERY SPACE-UPPER LEVEL  
 PUMP REMOVAL PLUG  
 TUNNEL  
 REACTOR  
 REFUEL PLUG  
 TORP LOADING & SHIP. HATCH  
 CLOSURE PLATES  
 BRIDGE DOORS  
 BRIDGE  
 CONTROL & ATTACK CENTER  
 DIESEL GENERATOR ROOM  
 FWD ESCAPE TRUNK  
 SONAR EQUIPMENT RM  
 CREW'S QUARTERS  
 CLOSURE PLATE  
 SONAR SPHERE  
 ENGINE RM-LOWER LEVEL  
 MACHINERY SPACE-LOWER LEVEL  
 REACTOR COMP  
 2ND PLATFORM  
 TORPEDO ROOM  
 2ND PLATFORM  
 LIGHT LOCK  
 CREW'S QUARTERS  
 HATCH TO PUMP RM  
 HATCH TO BAT. COMPT  
 TORPEDO TUBES & SHUTTERS



## COMMANDING OFFICER

USS BARB (SSN596)



Commander Bernard M. Kauderer, USN graduated from the U. S. Naval Academy in 1953. Prior to entering Submarine School, he served as Navigator in USS THE SULLIVANS (DD537), and as Executive Officer in USS HUMMINGBIRD (MSC192). Following graduation from Submarine School, he served in USS RATON (SSR270). He then attended Nuclear Power School, New London, Connecticut and received operational nuclear training at the Nuclear Power Training Unit, Idaho Falls, Idaho.

Commander Kauderer served as Assistant Engineer in the precommissioning crew of USS ROBERT E. LEE (SSBN601), completing two Polaris Patrols in that ship. He then served as Engineer Officer in USS SKIPJACK (SSN585), and as Executive Officer of the precommissioning crew of USS U. S. GRANT (SSBN631), again completing two Polaris Patrols. He assumed command of USS BARB (SSN596) on 21 May 1966.

Commander Kauderer is the son of Mrs. Anne M. Kauderer of Philadelphia, Pennsylvania. He is married to the former Myra F. Weissman of Bellerose, New York. They have three children, Todd, Heidi and Robin.



COMMANDER, SUBMARINE FORCE  
U. S. PACIFIC FLEET



Rear Admiral John H. Maurer, USN, graduated from the U.S. Naval Academy in 1935. He served in the battleship USS COLORADO (BB45) prior to attending Submarine School. Following graduation he served in USS PICKEREL (SS 177), USS TARPON (SS 175), and then as Executive Officer of USS HARDER (SS 257).

He assumed command of USS ATULE (SS 403) at her commissioning in June 1944, and participated in operations at Leyte, Iwo Jima, Okinawa, Gunto and in the Third Fleet operations against Japan.

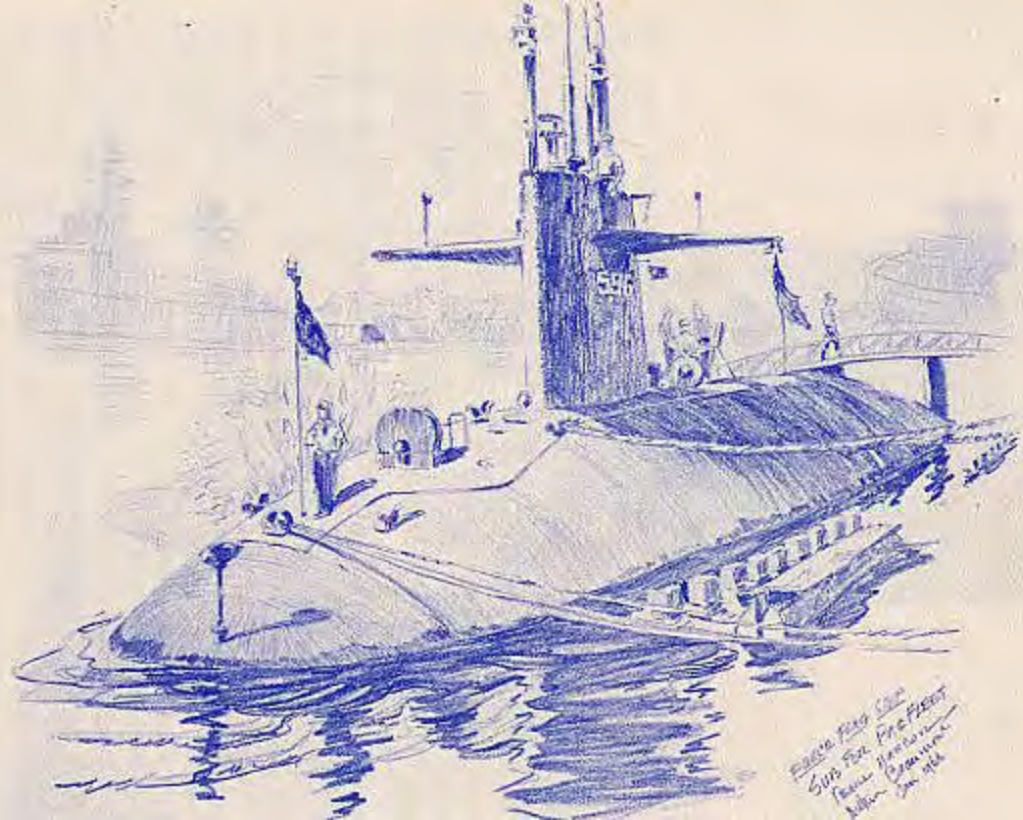
After placing ATULE out of commission, he had duty in the office of Naval Research, thence to Sandia Base, Albuquerque, New Mexico and on the staffs of Commander Submarine Squadron ONE and Commander Submarine Force, U. S. Pacific Fleet.

He then commanded Submarine Division ELEVEN with additional duty as Commander Submarine Element, Western Pacific, Naval Forces Far East during Korean hostilities. Following this, he returned to Washington, D. C. for duty in the Bureau of Ordnance.

Admiral Maurer attended the National War College after which he commanded Submarine Squadron SEVEN. He then reported to the Staff of Commander Submarine Force, U. S. Pacific Fleet and later served as his Chief of Staff. In October 1958, he served as Commanding Officer, USS HASSAYAMPA (AO 145), followed by command of USS SAINT PAUL (CA 73), flagship of Commander SEVENTH FLEET. He was promoted to Flag Rank in December 1962. In July 1964, Admiral Maurer was assigned as Commander Middle East Force, and on 11 June 1966 took command of the U. S. Submarine Force, Pacific.

Rear Admiral Maurer is married to the former Billie Margaret BYRD of Norfolk, Virginia. They have a daughter and two sons, one of whom is a qualified submarine officer.





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SUN FOR PRO FLEET  
FLEET  
ALBANY