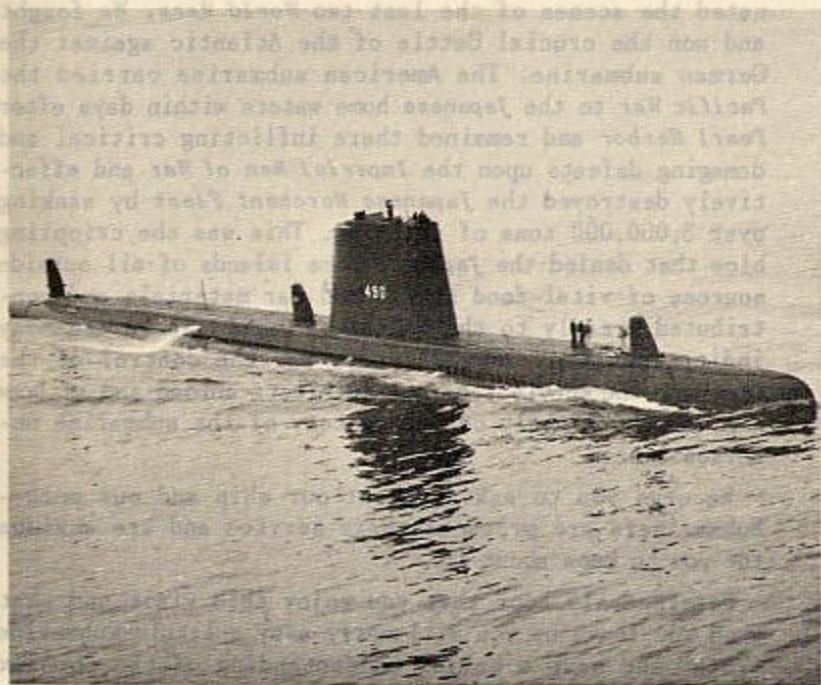


Welcome Aboard



USS VOLADOR (SS490)

Welcome Aboard . . .

The officers and crew welcome the opportunity to show you the *USS VOLADOR (SS490)*. We of the "*Silent Service*" believe it is important for you to become better acquainted with submarines, for it was the submarine that dominated the scenes of the last two *World Wars*. We fought and won the crucial Battle of the Atlantic against the German submarine. The American submarine carried the *Pacific War* to the *Japanese* home waters within days after *Pearl Harbor* and remained there inflicting critical and damaging defeats upon the *Imperial Men of War* and effectively destroyed the *Japanese Merchant Fleet* by sinking over 3,000,000 tons of shipping. This was the crippling blow that denied the *Japanese* home islands of all outside sources of vital food stuffs and war materials and contributed greatly to the defeat of Japan. There are many indications that in any future war the control of the seas and the survival of our interests abroad and at home will depend largely on our mastery of the submarine undersea lanes.

We urge you to ask us about our ship and our work--Submariners are proud of their service and are anxious for you to know about it.

We sincerely hope that you enjoy this visit and that when you leave us you will carry away a little submarine "lore" and have a better understanding of the complex mechanisms and systems that make a submarine unique in the *Realm of the Sea*.

THE OFFICERS AND CREW

SHIPS HISTORY

V-J Day, at the end of World War II, found the USS VOLADOR on the building ways of U.S. Naval Shipyard, Portsmouth, New Hampshire about one third completed. Construction was not resumed until August 1947 and then with a new, modern submarine concept in design brought about by lessons learned from the German Navy's famous Type XXI Submarine with the snorkel equipment.

Upon commissioning on 1 October 1948, and after completing builder's trials in January 1949, the VOLADOR entered the fleet as one of the first GUPPY snorkel attack-type submarines. GUPPY stands for 'Greater Underwater Propulsion Power', incorporating a new type of high capacity batteries which provide higher submerged speeds and sustained periods of underwater cruising.

Immediately assigned to the Pacific Fleet, she departed the East Coast and proceeded via the Panama Canal to San Diego to become Flagship of Submarine Flotilla ONE. While enroute Pearl Harbor in June 1950, on a routine reserve training cruise, the Korean situation erupted, delaying her return to San Diego for several months. During this cruise the VOLADOR rescued two Navy fliers and a war correspondent after their helicopter crashed off the coast of Korea.

Completing overhaul in March 1953, the VOLADOR continued to operate from San Diego, with training cruises in Alaskan waters and various U.S. and Canadian fleet exercises in the Eastern Pacific. She completed extended Western Pacific cruises in 1955, 1958, and 1960, participating in ASW fleet operations and visiting various ports in the Far East.

In April 1962, the ship entered the San Francisco Bay Naval Shipyard for deactivation and conversion to a GUPPY III as part of the FRAM Program. One year later, after receiving vast amounts of new electronic, fire control, and sonar equipment, VOLADOR rejoined the Pacific Submarine Force as one of the most modern conventional submarines in the world.

Following the year long overhaul period the ship completed extended deployments to the Western Pacific in 1963 and 1966. During these deployments the ship participated in various fleet exercises and operations, and visited the interesting ports of the Far East. In addition during the 1966 deployment the ship qualified for the Vietnam Service Medal.

In July 1967, after less than a year in home water VOLADOR departed on what was to become an unprecedented deployment. During this trip the ship had the rare opportunity to visit Pago Pago in the American Samoas and Auckland, New Zealand.

Nine months later and with many more miles behind her, VOLADOR returned to San Diego, having completed the longest peacetime deployment of any U.S. Submarine. During 1967 the ship qualified for the Vietnam Service Medal and the Armed Forces Expeditionary Medal (Korea).

In July 1968 the ship entered the San Francisco Bay Naval Shipyard again for overhaul.

In January 1969 VOLADOR was again underway, ready to extend the Sea Power of the U.S. Navy to any ocean of the world as a fast, modern, diesel-electric submarine.

SUBMARINE STRUCTURE

The main hull, or "pressure hull" of the submarine is basically a cylinder closed at both ends and built to withstand the great pressures found at deep depths. Atop the pressure hull is another small cylinder of equal strength called the "Conning Tower". It is within these two cylinders that all the machinery, weapons, working, and living spaces are located. Around the pressure hull is a second hull. It is between these two hulls that the ship's ballast and fuel tanks are located. On top of this outer hull is a built up walking deck which is free flooding (hence, all the holes) and around the Conning Tower is a streamlined covering, the "Sail". It is only these portions of the submarine that can be seen while it is on the surface which tends to make it appear smaller than it actually is. The main pressure hull is almost completely below the water.

FORWARD BATTERY COMPARTMENT

The largest part of this compartment is "Officers Country" consisting of the "Wardroom" where officers eat, work, and relax, the pantry and three staterooms. In this compartment is the ship's office the Captains stateroom and a berthing compartment for the leading Chief Petty Officers. Underneath the entire compartment is a battery room filled with batteries each weighing many hundred of pounds, hence the name "Forward Battery"

FORWARD TORPEDO ROOM

In this, the business end of the ship, the major items of interest are six torpedo tubes, their associated fire control equipment and the escape trunk. Reload torpedoes are stowed in the racks which can be positioned directly behind the tubes. In addition this is a berthing compartment for twelve men.

CONTROL ROOM

In this room you will see practically all of the controls for diving the submarine, controlling it while submerged, and surfacing it. The ship's main gyro is located in the center of the room. The "Hull Opening Indicator Board" is located just over the hydraulic manifold. It indicates whether openings in the hull are shut (green) or open (red), and is sometimes referred to as the 'christmas tree'. We must have a "Green Board" before we dive.

The Captain or the Executive Officer whose station is in the "Conning Tower" directs the movement of the ship by issuing orders to the "Diving Officer" in the control room. Because of security classifications, the conning tower cannot be open to general visitors. This also applies to the Sonar, Electronics and the Radio Room located in the Control Room area.

AFTER BATTERY COMPARTMENT

This compartment is actually divided into three rooms. First is the Crews Mess and "Galley" where over seventy men are fed, their food prepared, and the perishable food stored. We try to prepare "Home Cooked" menus with plenty of thick steaks and dairy products to make up for the lack of proper exercise and sunshine one misses in submarines. Meals are served family style and the crew is fed effectively in about three sittings. Officers enjoy the same food as the crew because of the single galley. Next is the "Crew's Berthing Space" where twenty eight men sleep and live. Below this compartment is the after battery well which is identical to the one forward. The third room is the Crew's washroom and "Head".

FORWARD AND AFTER ENGINE ROOMS

These rooms contain four main diesel engines. Attached to each engine is a large electrical generator which can produce electrical power for either propelling the ship or for charging batteries. In the forward end of the forward engine room you will see the two distilling plants which make fresh water from sea water for drinking, washing and for the batteries. Also located in these rooms in the "lower flats" are the air compressors, and air conditioning machinery.

MANEUVERING ROOM

The electrical power from the engine room is brought into the big switch boxes or "Cubicle" that occupies the forward half of this compartment. The two electrician mates on watch can, by pulling various levers, direct the electricity into the batteries or the main motors, or from the batteries to the main motors. They also control the direction and speed of the main motors to which are attached two propellers. The motors and associated machinery are located in the lower part of this compartment. The diesel engines are also controlled remotely from this room.

AFTER TORPEDO ROOM

This room is smaller but otherwise identical to the forward torpedo room. A total of twenty three men sleep and live here.

A FEW FACTS ABOUT THE VOLADOR

Principal Dimensions: Length 321 feet. Beam: 27 feet.

Accommodations: Officers 10 Crew 73.

Armament: Ten torpedo tubes, six forward and four aft.

Propulsion Plant: Two direct current electric motors on each shaft receiving power from either a combination of one to four diesel-generator sets (surface or snorkel operation) or from the ship's batteries (submerged operation).

How We Submerge:

The pressure hull is surrounded by tanks, some of which are "Ballast Tanks" which are empty or dry on the surface. To submerge, openings in the top of these tanks called Vents are opened, water enters the tank through flood ports in the bottom, and as they fill, they give the ship negative buoyancy and we start going down.

How We Operate Submerged:

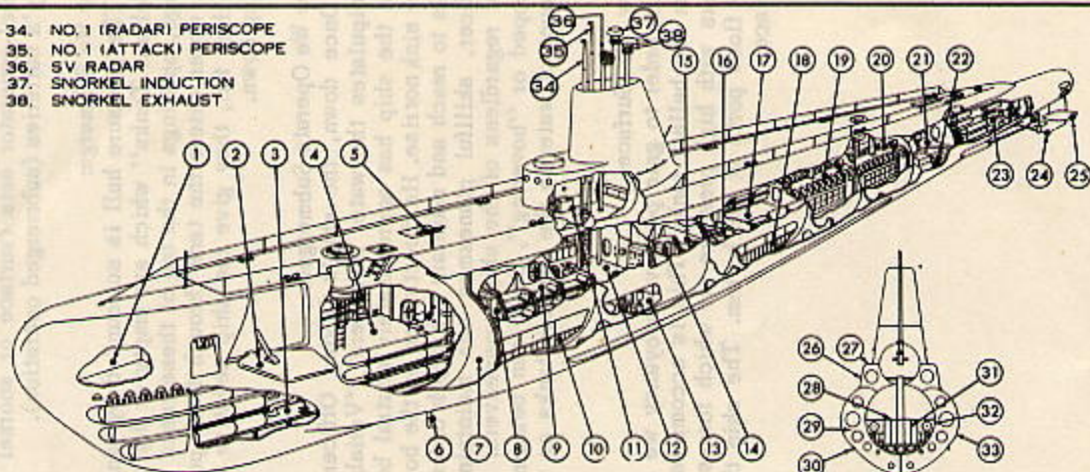
Once down, the ship's Diving Officer in the Control Room manipulates the water in several "Variable Ballast Tanks" so that the ship has approximately neutral buoyancy i.e., will neither sink nor rise. He directs men on the bow and stern plane controls to reach and maintain the depth ordered by the Commanding Officer, skillful planesmen can maintain depth to within one foot regardless of the ship's maneuvers. Even when completely stopped or "hovering", depth can be maintained by adjusting the amount of water in the variable tanks as the situation demand.

How We Surface:

In order to gain positive buoyancy we must remove the water from the ballast tanks. This is accomplished by "blowing" the tanks with high pressure air which forces the water out through the flood ports at the bottom. The ship then "pops" up on the surface.

STANDARD SUBMARINE COMPARTMENTATION

- 34. NO. 1 (RADAR) PERISCOPE
- 35. NO. 1 (ATTACK) PERISCOPE
- 36. SV RADAR
- 37. SNORKEL INDUCTION
- 38. SNORKEL EXHAUST



CROSS SECTION

- | | | |
|----------------------------|---|--|
| 1. BOW BUOYANCY TANK | 13. PUMP ROOM | 23. AFTER TORPEDO ROOM
(FOUR TORPEDO TUBES) |
| 2. BOW PLANE | 14. RADIO ROOM | 24. RUDDER |
| 3. SIX TORPEDO TUBES | 15. GALLEY | 25. STERN PLANE |
| 4. FORWARD TORPEDO ROOM | 16. CREW'S MESS | 26. SUPERSTRUCTURE |
| 5. JT SOUND HEAD | 17. CREW'S QUARTERS | 27. MAIN DECK |
| 6. PITOMETER LOG | 18. AFTER BATTERY | 28. PLATFORM DECK |
| 7. MAIN BALLAST TANK NO. 1 | 19. FORWARD ENGINE ROOM
(NO. 1 AND NO. 2 MAIN ENGINES) | 29. BALLAST TANKS |
| 8. PANTRY | 20. AFTER ENGINE ROOM
(NO. 3 AND NO. 4 MAIN ENGINES) | 30. BILGE KEELS |
| 9. OFFICERS' QUARTERS | 21. MANEUVERING ROOM | 31. BATTERIES |
| 10. FORWARD BATTERY | 22. MOTOR ROOM (4 MAIN MOTORS) | 32. INNER HULL |
| 11. CONNING TOWER | | 33. OUTER HULL |
| 12. CONTROL ROOM | | |

COMMANDING OFFICER'S BIOGRAPHY

Commander Robert B. GIBSON, Jr. graduated from the University of Pittsburgh in 1953 with a Bachelor of Science degree. He subsequently attended Officer Candidate School in Newport, R.I., and was commissioned in June 1954.

After completing salvage and diving school, he reported to the USS LIPAN (ATF-85), operating in the Pacific, where he served as Executive Officer until May of 1957. He reported to the USS HORACE A. BASS (APD-124) in June of 1957 and served as Operations and Communications Officer until December 1957. He attended Submarine School from January to June 1958, and upon being graduated was ordered to duty in USS CUSK (SS-348), serving as Supply Officer, Weapons Officer, Engineer Officer and Navigator during his tour of duty.

From February 1962 until March 1964 he was Officer in Charge of the Reserve Training Submarine USS COD (SS-224) in Cleveland, Ohio. In April of 1964 he returned to the USS CUSK (SS-348) as Executive Officer. In January 1966 he reported to Commander Submarine Force, U.S. Pacific Fleet as Commander Submarine Force, U.S. Pacific Fleet Representative to the Enlisted Personnel Distribution Officer, U.S. Pacific Fleet.

Commander GIBSON assumed command of USS VOLADOR (SS-490) on 1 May 1968.

Commander GIBSON is married to the former Mary Anne MATTINGLY of Louisville, Kentucky.

Commander and Mrs. GIBSON and their son Robert Byron reside at 513 "H" Avenue, Coronado, California.

