

WELCOME ABOARD





USS FLYING FISH (SSN-673)



UNITED STATES SHIP FLYING FISH

Welcome to the FLYING FISH,

As Commanding Officer, it is my great pleasure to extend for myself and for the officers and crew of FLYING FISH, a hearty welcome aboard. We hope your stay will be a pleasant one.

In this brochure, you will find information about FLYING FISH and her heritage in the U.S. Navy.

Submarines are designed and built with little more room to spare. Please be careful as you tour the ship. Your safety is my utmost concern. All members of the ship's company are standing by to assist you in any way possible.

Again, we wish you a pleasant visit.

Joseph T. Lario
JOSEPH T. LARIO
Commander, United States Navy

Commander Joseph T. Lario is a native of Pennsauken, New Jersey. Born in 1945, he is the youngest of four children of Joe and Edith Lario. He attended Camden Catholic High School and Villanova University. In 1968 he received his commission through the NROTC Program and earned a Bachelor of Engineering Degree (Electrical Engineering).

Having completed a first class cruise and patrol on the USS SIMON BOLIVAR, Commander Lario applied and was selected for the Naval Nuclear Propulsion Program. Following courses of instruction in Bainbridge, Maryland and West Milton, New York, he reported to the USS JAMES MONROE in Pearl Harbor in November 1969. After five patrols, he was assigned to Submarine Officer Advanced Course.

In January 1973, Commander Lario reported to USS GLENARD P. LIPSCOMB for new construction duty. Following qualification as Engineer and the commissioning of LIPSCOMB, he served on board for an additional two years as Operations Officer and Navigator.

Commander Lario reported to Naval Submarine School in 1977 as the Tactical Team Training Division Director. During this two year tour of duty, he completed his qualification for command.

In 1979, Commander Lario completed Mid-Career Intelligence Officer Course and reported as Executive Officer, USS TINOSA where he served for three years. After Prospective Commanding Officer Training, Commander Lario reported in March 1983 to the USS FLYING FISH.

Commander Lario is entitled to wear the Navy Commendation Medal and the Navy Achievement Medal.

Commander Lario and his wife Ethel and their five children, Robert, Denice, Caroline, Suzanne and Catherine, reside in Virginia Beach, Virginia.



Commander
JOSEPH T. LARIO
United States Navy

HISTORY

The first USS FLYING FISH, a schooner, served with the U.S. Exploring Expedition of 1838-1842. Under the famous explorer, Lieutenant Charles Wilkes, she took part in the first scientific expedition ever fitted out by the United States. In four years, FLYING FISH visited and surveyed vast areas of the Pacific Ocean as well as the Antarctic. Much of this work would bear fruit a century later, when the United States was called upon to wage a global war across many of the islands first explored by FLYING FISH's hard working crew.

As the first FLYING FISH distinguished herself in peace, so did the second FLYING FISH (SS-229) in war. In 12 Pacific war patrols, this gallant submarine sailed the same waters traveled by her predecessor to carry the war to the enemy. In the waters off Turk, the Palaus, the Philippines, Taiwan and the Japanese home island, her fighting instinct was true and her aim unerring. From the Battle of Midway to the final weeks of the war, the aggressive competence of FLYING FISH's submarineers carried a heavy share of our fight for final victory.

The present FLYING FISH (SSN-673), was launched on May 17, 1969 and commissioned on April 29, 1970 at the U.S. Submarine Base New London, Connecticut. FLYING FISH is a Sturgeon Class SSN, 289 feet long and displaces 4,700 tons. Having completed numerous independent submarine operations, major deployments and exercises, she enjoys an outstanding reputation as a front line performer for the U.S. Atlantic Fleet.

In the tradition of the first FLYING FISH, SSN-673 has explored the icy waters under the North Pole.

We welcome you to this super-ship of the Submarine Force. We encourage your questions and are proud to demonstrate one of the United States' first line of defense.

The information on the following pages will answer some of your questions but feel free to check with me or any of my officers or crew for any information you may seek.

FLYING FISH has received the following awards during her time in service:

Meritorious Unit Commendation	1971, 1980
Navy Unit Commendation	1972, 1973, 1977
Marjorie Sterrett Battleship Award	1976
Battle Efficiency "E" Award	1972, 1973, 1979, 1980
Fire Control "E" Award	1971, 1972, 1973
ASW and Operations "E" Award	1975, 1976
Engineering "E" Award	1977, 1979, 1981, 1982
Damage Control "E" Award	1979
Communications "E" Award	1979, 1983

COMMANDING OFFICERS

CDR D.C. SHELTON	APR 70—FEB 73
CDR J.D. WILLIAMS	FEB 73—MAY 76
CDR T.A. MEINICKE	MAY 76—JUL 80
CDR S.J. LOUCKS	JUL 80—APR 83
CDR J.T. LARIO	APR 83—

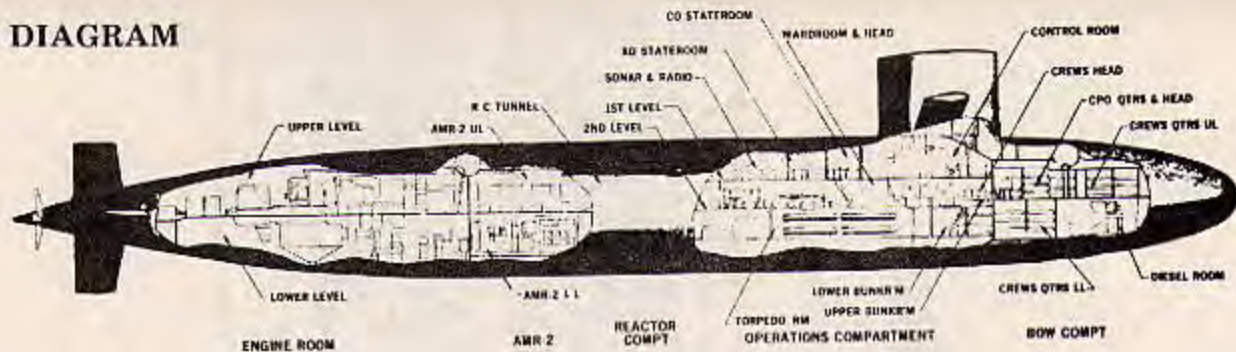
USS FLYING FISH (SSN-673)

VITAL STATISTICS

Built by
General Dynamics Corporation
Electric Boat Division

Keel Laid	30 June 1967
Launched	17 May 1969
Sponsored by	Mrs. John W. Harvey
Length	292 Feet
Beam	32 Feet
Displacement Surfaced	4250 Tons
Speed	Over 20 Knots
Diving Depth	Over 400 Feet
Assignment	Submarine Squadron SIX, Norfolk, Virginia

SHIP'S DIAGRAM



COMPARTMENTATION

ENGINEERING—These spaces provide room for the pressurized—water type nuclear reactor, the steam turbine-generators which produce electrical power, and the propulsion turbines which drive the ship. The propulsion turbines are accompanied by reduction gears which transmit the power to the shaft, ultimately turning the screw to give motion to the ship. The engineering spaces are filled with complex electrical and fluid systems which support the main and auxiliary components of the propulsion plant.

OPERATIONS—This area between the bow compartment and engineering spaces, provides space for navigational equipment, ship control, and various habitability areas. The radio room, sonar room, officers' staterooms, wardroom, and ship's offices are also located here. The lower level of the operations compartment is primarily occupied by the torpedo room.

BOW COMPARTMENT—This portion of the ship is primarily a habitability space and includes most of the crew's berthing. Quarters for the chief petty officers are found here, and a small machinery space houses the auxiliary diesel generator.

HOW SUBMARINES ARE NAMED

United States submarines are named according to their primary functions. Ballistic missile submarines, of which there are 41, were originally named for prominent men. However, the new TRIDENT Ballistic Missile Submarines are being named for States of the Union. Most nuclear and diesel attack submarines are named for saltwater fish and mammals with four latter submarines named for prominent men who have contributed to our nation's greatness. The latest LOS ANGELES (SSN-688) class attack submarines are being named after cities in the United States.

USS FLYING FISH, an attack submarine, takes her name from a group of fish named for their ability to leave the water and glide through the air. This is accomplished by use of large forefins which may have a spread of up to 20 inches. The Flying Fish uses its unique ability to escape from enemies. Flying fish are found in both fresh and salt water.



DOLPHINS

Dolphins, the insignia of the United States Navy Submarine Service, identify the wearer as "qualified in submarines". The officer's insignia is a bronze gold-plated pin, while the enlisted insignia is a silver pin.

The submarine insignia adopted in March 1924, is a bow view of a submarine proceeding on the surface with bow planes rigged for diving, flanked by dolphins in horizontal position with their heads resting on the upper edge of the bow planes. The dolphins on this insignia are symbolic of a calm sea and are the traditional attendants of Poseidon, Greek god of the sea.

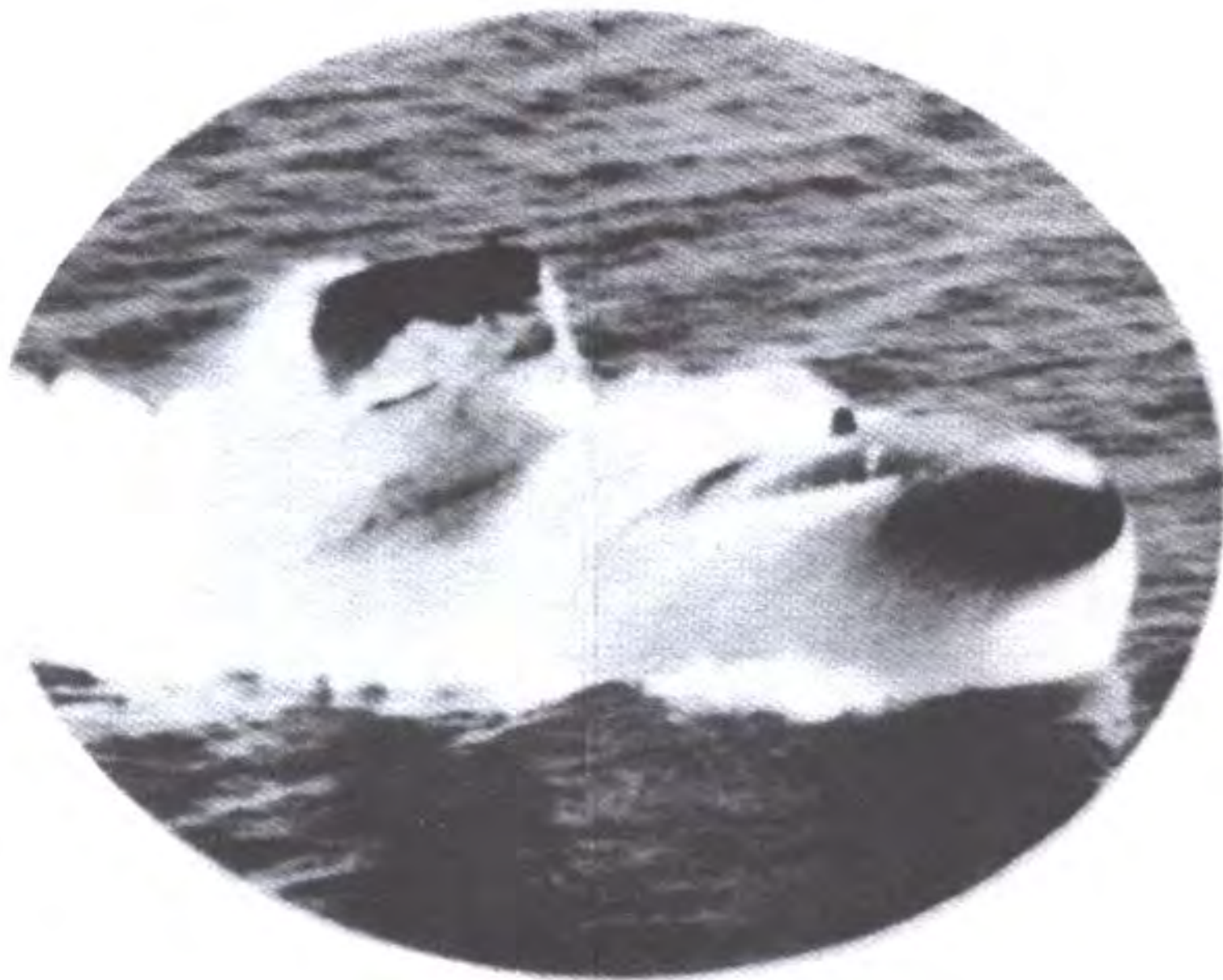
In more recent time, dolphins for specialist officers in the Submarine Force have been developed. These include the Engineering Duty Officer dolphins, Medical Officer dolphins, and Supply Corps dolphins. Regardless of the color of the pin or the insignia at the center, dolphins are worn with pride by members of the Submarine Force.





WELCOME ABOARD





UNITED STATES SHIP FLYING FISH

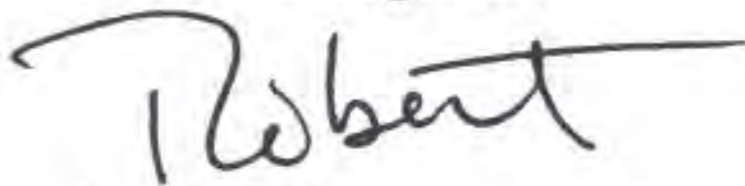
Welcome Aboard,

The crew and officers of USS FLYING FISH take great pride in extending the hospitality of the United States Navy's Submarine Force. We are delighted to have you aboard and hope that your stay with us will be pleasant. We are proud of our very fine ship and are always pleased to show her off. The entire crew stands ready to help you in any way--you only have to ask.

As a warship, FLYING FISH is neither spacious nor designed for large numbers of people. She is tightly packed with electronic, electrical, and mechanical equipment that enable her to carry out her mission: to preserve peace. Sharing our compact quarters is part of the submarine experience we live every day.

If you are a first-time visitor to submarines, we hope to make your stay informative and enjoyable. If you're a fellow submariner or an old friend of the Submarine Force, we invite you to see the best.

Warmest regards,

A handwritten signature in black ink, appearing to read "W. Robert Deal, Jr.", with a stylized, cursive script.

Wiley Robert Deal, Jr.
Commander, United States Navy
Commanding Officer



The Heritage of USS FLYING FISH (SSN 673)

USS FLYING FISH (SSN 673) is the second submarine to bear the name of a group of fresh and salt water fish with the unique ability to leave the water and glide for long distances through the air. These fish “fly” on large fins that may have a spread of over twenty inches.

Launched at the U.S. Navy Yard, Portsmouth, New Hampshire, on 8 July 1941 and commissioned on 10 December 1941, USS FLYING FISH (SS 229) was the first submarine to enter active service after the start of hostilities with Japan. The main battery of six torpedo tubes forward and four tubes aft fired steam and electric torpedoes. Two periscopes plus radar and sonar systems were the ship's main sensors. Berthing on board was provided for eight officers, five chief petty officers, and the captain. The crew's space contained messing facilities for the entire crew and berthing for forty-five men. Fifteen more men bunked in the Torpedo Room. Four Fairbanks-Morse diesel engines powered four Elliott generators that provided electrical power for the ship and the electric motors that turned two propeller shafts.

Arriving in the Pacific Ocean at Balboa, Canal Zone, on 16 April 1942, FLYING FISH headed west and departed Pearl Harbor on her first war patrol on 17 May 1942. During the war, she made twelve patrols and completed 1,263 dives. In the waters off Truk, the Paulaus, the Philippines, Taiwan, and the Japanese home islands, her fighting instinct was true and her aim was unerring. Post-war records confirmed that over twenty enemy ships were sunk or damaged. This placed Flying Fish twenty-first on the list of most successful submarines. From the Battle of Midway to the final weeks of the war, the aggressive competence of FLYING FISH's crew carried a heavy share of the fight for final victory.

USS FLYING FISH (SSN 673) Vital Statistics

Built by
General Dynamics Corporation
Electric Boat Division
Groton, Connecticut

Keel Laid	30 June 1967
Launched	17 May 1969
Commissioned	29 April 1970
Ship's Sponsor	Mrs. John W. Harvey
Length	292 Feet
Beam	32 Feet
Displacement Surfaced	4250 Tons
Diving Depth	Greater than 400 Feet
Speed	Greater than 20 Knots
Assignment	Submarine Squadron 6, Norfolk, Virginia

USS FLYING FISH (SSN 673) AWARDS

Navy Unit Commendation	1972, 1973, 1977
Meritorious Unit Commendation	1971, 1980, 1991
Arctic Service Ribbon	1991, 1993
Marjorie Sterrett Battleship Award	1976
Battle Efficiency "E" Award	1972, 1973, 1979, 1980, 1990, 1993
Fire Control "E" Award	1971, 1972, 1973
ASW and Operations "A" Award	1975, 1976, 1991
Engineering "E" Award	1977, 1979, 1981, 1982, 1984, 1992
Damage Control "DC" Award	1979, 1989
Communications "C" Award	1979, 1983
Deck Seamanship "D" Award	1992
COMSUBLANT TOPTORP	1991



Commander Wiley Robert Deal, Jr.
United States Navy
Commanding Officer
USS FLYING FISH (SSN 673)

Commander
Wiley Robert Deal, Jr.
United States Navy

Commander Deal was born in Tuscaloosa, Alabama, on June 27, 1954. On July 6, 1972, after graduating from Brunswick High School, Brunswick, Georgia, he entered the United States Naval Academy. While a Midshipman, Commander Deal completed the Army's Basic Parachutist Training at Fort Benning, Georgia, and was subsequently designated a Naval Parachutist. He received a Bachelor of Science degree in Systems Engineering and was commissioned an Ensign on June 2, 1976.

In April 1978, after completing nuclear power and initial submarine training, Commander Deal reported aboard USS QUEENFISH (SSN 651) in Pearl Harbor, Hawaii. He served as Damage Control Assistant and Weapons Officer during a tour that included two western Pacific deployments. From May 1981 until June 1983, Commander Deal served on the staff of the Flag Officer Submarines, Northwood, England, as an exchange officer in the Personnel Exchange Program. While attached to the Royal Navy, he served as Submarine Special Plans Officer and Submarine Flotilla Watch Officer during a tour that included the Falkland Islands conflict.

Commander Deal reported to USS FINBACK (SSN 670) in December 1983 and served as Navigator, Operations Officer, and Combat Systems Officer during one Arctic and three Atlantic deployments. From January 1987 until January 1989, he served as Special Operations Officer for the Commander Submarine Force, U.S. Atlantic Fleet.

In March 1989, Commander Deal reported as Executive Officer of the combined crews of USS WOODROW WILSON (SSBN 624) during the final year of a refueling overhaul. Upon crew split in April 1990, he continued as Executive Officer of the Gold Crew until October 1990 when the crews were consolidated and the ship designated as an attack submarine. He served as Executive Officer of USS SAND LANCE (SSN 660) from November 1990 until January 1992. SAND LANCE participated in UNITAS XXXII and conducted operations with United States and South American military forces during a five-month circumnavigation of South America.

In January 1992, Commander Deal reported aboard USS L.Y. SPEAR (AS 36) as Executive Officer. He was designated a Surface Warfare Officer in November 1992. Commander Deal assumed command of USS FLYING FISH (SSN 673) on 24 November 1993.

Commander Deal's personal awards include the Meritorious Service Medal (two awards), the Navy Commendation Medal (four awards), and the Navy Achievement Medal (three awards).

Commander Deal is married to Captain Carolyn F. Deal, United States Navy, who serves as Chief, Nations Assistance, for the Commander in Chief, U.S. Atlantic Command, Norfolk, Virginia. Captain and Commander Deal reside in Norfolk.

GENERAL INFORMATION

Caution. Do not attempt to operate any equipment, twist knobs, flip switches, or turn any valves. There are members of the crew on watch in every compartment to help you. Please observe all warning signs.

Emergencies. If an emergency is announced, **STAND WHERE YOU ARE BUT STAND CLEAR** of all passageways and operating areas so that the crew may quickly respond to the casualty. Do not obstruct ladders, hatches, or watertight doors. The crew member in charge of the compartment will explain the situation when he can. Please follow his instructions without hesitation. If you are requested to clear an area, please do so expeditiously and quietly. The next page of this booklet shows the proper wearing of an Emergency Air Breathing (EAB) mask. Please practice donning a mask so you will be familiar with its operation.

Medical Facilities. Consult the Hospital Corpsman for any illness or injury that occurs during your stay on board. If you are susceptible to motion sickness, I recommend that you obtain medication from the Corpsman **before** getting underway. However, medication for this purpose will be available throughout the cruise.

Security. Most features of the ship are of a classified nature. In addition, the Sonar Control Room, Radio Room, Nucleonics Laboratory, and all of the engineering spaces aft of the Operations Compartment are security areas. Only authorized personnel are permitted in these spaces. Information concerning speed, depth, weapons, fire control, sonar, electronic countermeasures, and the propulsion plant is classified.

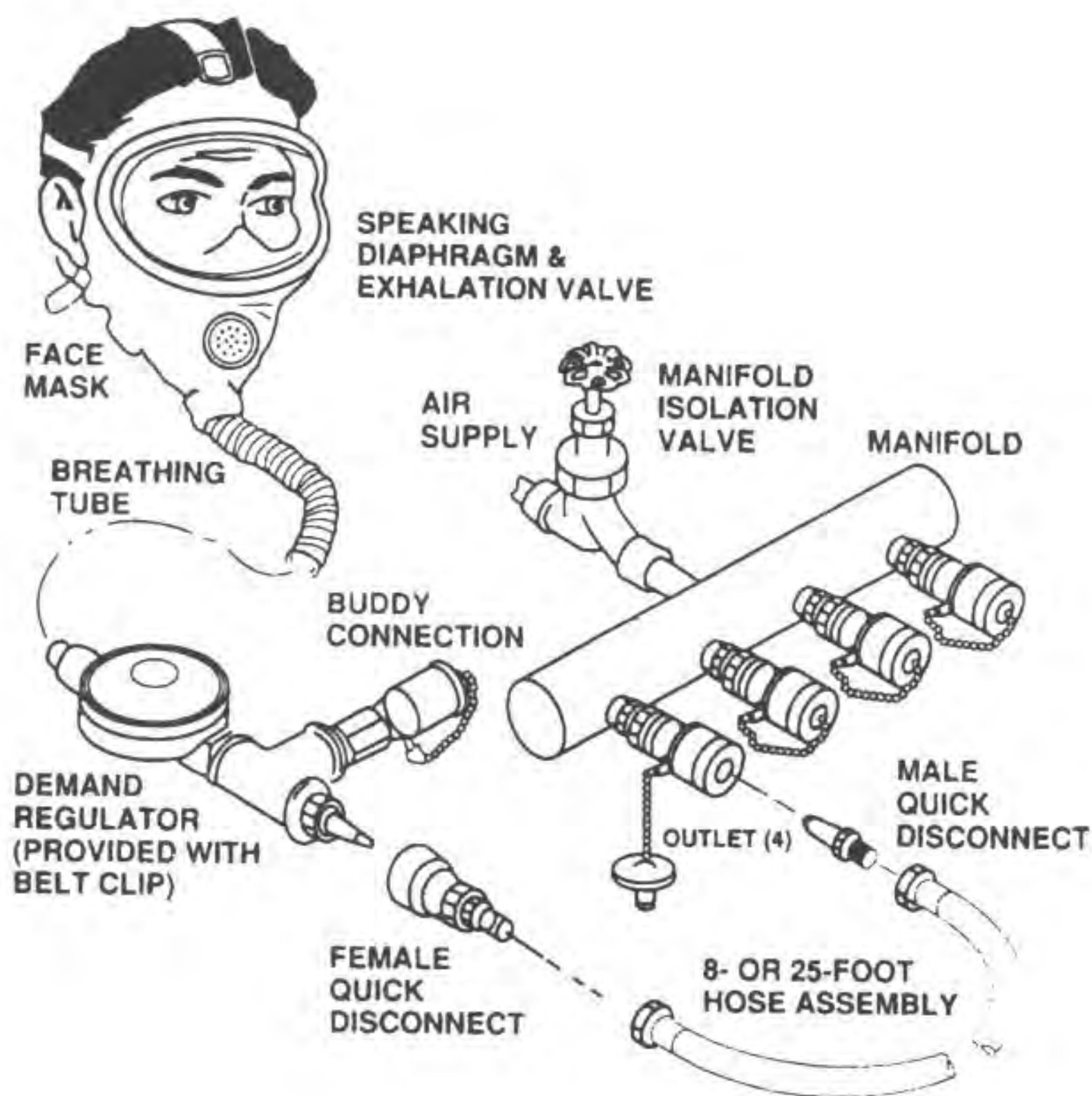
Berthing. You will be assigned a place to sleep when you arrive. If possible, lockers for additional stowage space will also be assigned. Please use only your assigned bunk. This helps us find you if you are needed while sleeping.

Heads. Heads are located throughout the ship. Please remember that they are cleaned by crew members who consider the ship their home. Before using a head for the first time, please ask a crew member to explain the proper flushing procedure. Please do not discard any solid object, no matter how small, into a water closet.

Showers. Showers may be taken anytime at your convenience. But, because the number of shower facilities is very limited, please take a "submarine" shower. Turn on the water and get wet, turn it off while soaping up, then turn it on to rinse off. The ship's water-making capacity, while large, does have limits.

Meals. Messing arrangements will be established before your arrival and you will be assigned a specific area and time to eat. All meals must be served in shifts, so please be on time and don't linger over coffee after finishing. Beverages, such as coffee, tea, and soft drinks, may be consumed on watchstations from cups that fit in the installed cup holders. Soft drink cans are not authorized in operating spaces. The consumption of food is restricted to the Crew's Mess and Wardroom.

EMERGENCY AIR BREATHING MASK INSTRUCTIONS



Take the mask out of its stowage bag. Connect the air supply hose to a fitting on an EAB manifold and hook the demand regulator on your belt. Place the EAB mask over your face and pull the straps over your head. Tighten the side straps first, then tighten the top strap. Pull the flash hood back from over the front of the EAB mask and pull it down to cover the exposed portion of your head. Remove the EAB mask by reversing the procedure.

HOW NUCLEAR POWER OPERATES OUR SUBMARINE

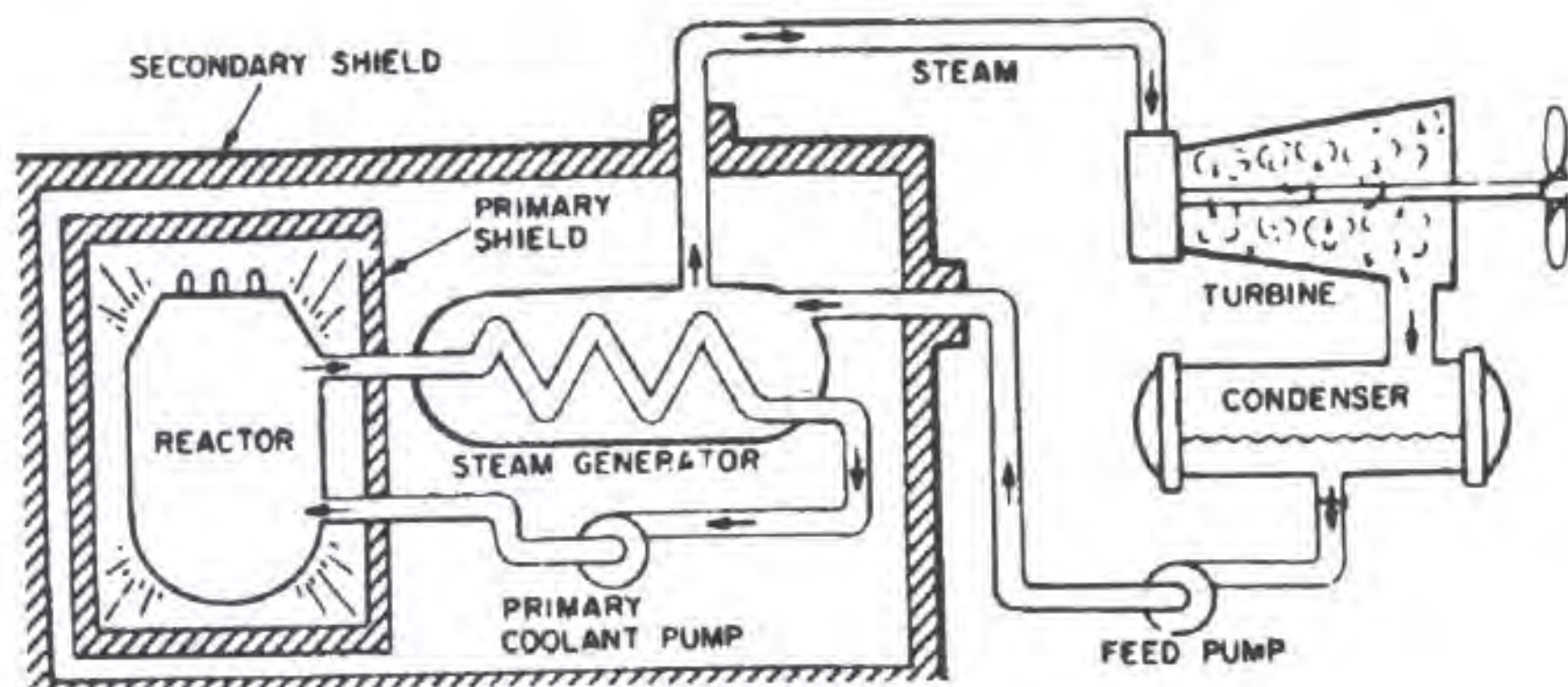
The propulsion plant of a nuclear powered ship is based upon the use of a nuclear reactor to provide heat. The heat comes from the fissioning of nuclear fuel contained within the reactor. Since the fissioning process also produces radiation, shields are placed around the reactor so that the crew is protected.

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.

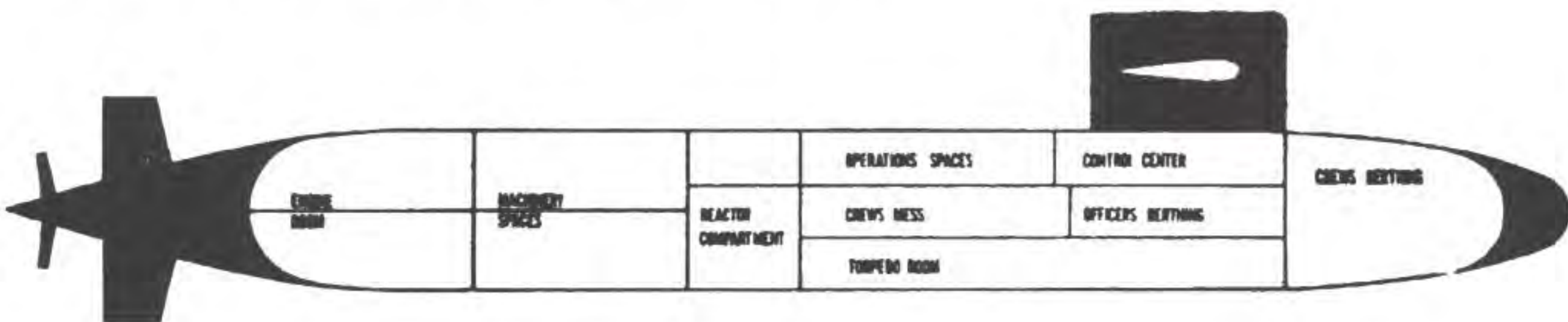
In the steam generators, the heat from the water in the primary system is transferred to the secondary system to create steam. The secondary system is isolated from the primary system so that the water in the two systems does not intermix.

In the secondary system, the steam flows from the steam generators to drive the turbine generators, which supply this 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.

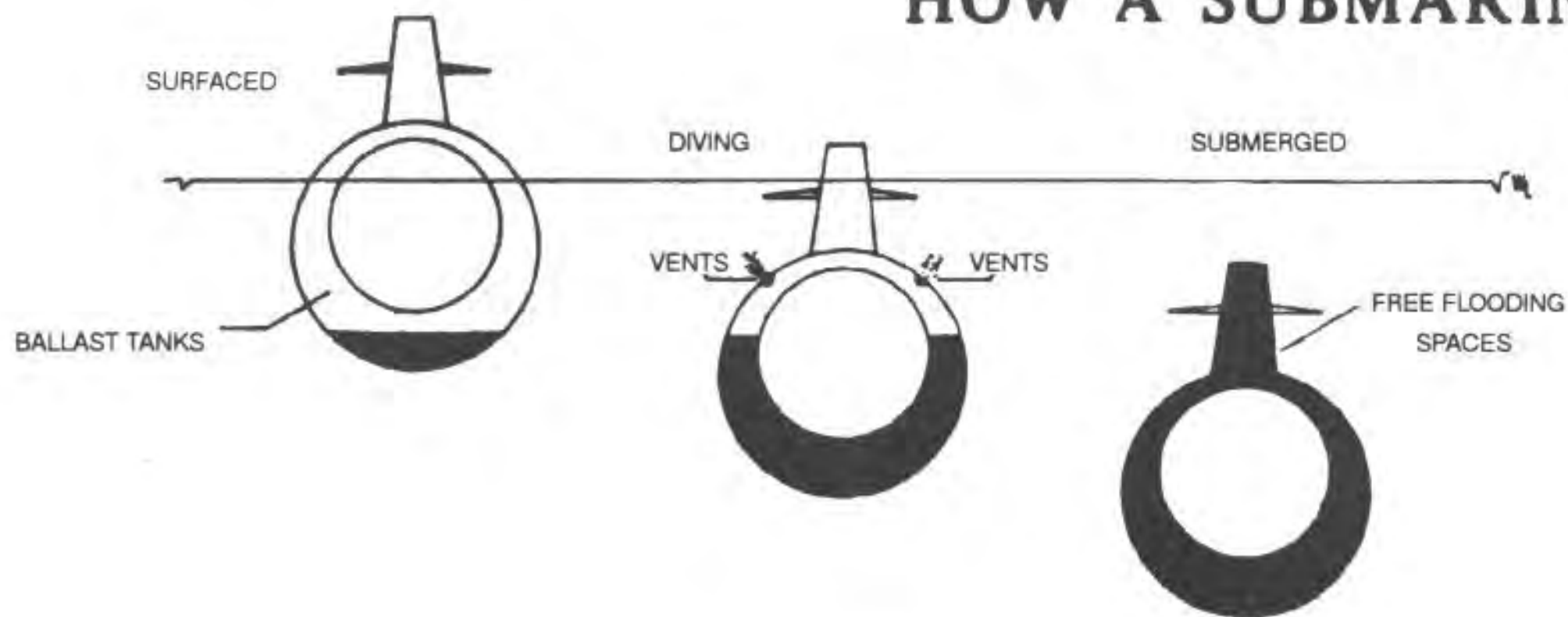
There is no step in the generation of this power which requires the presence of air or oxygen. This allows the ship to operate completely independent from the earth's atmosphere for extended periods of time.



SUBMARINE COMPARTMENTS



HOW A SUBMARINE DIVES





DOLPHINS

Dolphins, the insignia of the United States Navy Submarine Service, identify the wearer as "qualified in submarines." The officer insignia is a gold-plated bronze pin and the enlisted insignia is a silver pin.

Adopted in March 1924, the submarine insignia is a bow view of a submarine on the surface with bow planes rigged for diving. The submarine is flanked by dolphins in a horizontal position with their heads resting on the upper edge of the bow planes. The dolphins on the insignia are symbolic of a calm sea and are the traditional attendants of Poseidon, Greek god of the sea.

In more recent times, dolphins for specialist officers in the Submarine Force have been developed. These include Submarine Engineering Duty, Submarine Supply Corps, and Submarine Medical insignia. Each specialty insignia has its own unique center design.

Whatever the color of the pin or the design at the center, dolphins are worn with pride by members of the Submarine Force.



Submarine Engineering Duty



Submarine Medical



Submarine Supply Corps

The logo is a shield-shaped emblem with a rope border. At the top, the text "SSN 673" is displayed. Below it is a detailed illustration of a fish, likely a flying fish, shown in profile with its wings spread. A dark, curved banner across the middle contains the text "USS FLYING FISH" in white, bold, sans-serif capital letters. At the bottom of the shield is a drawing of a submarine with a complex antenna or sensor array on its conning tower.

SSN 673

**USS
FLYING FISH**