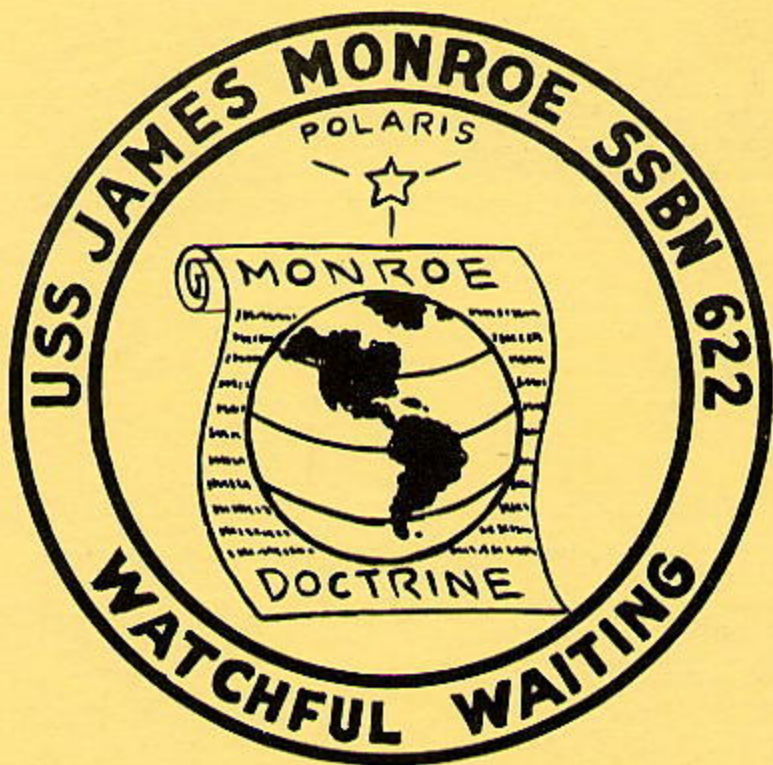


WELCOME



ABOARD

welcome

aboard

The officers and men of USS JAMES MONROE (SSBN622) join me in extending a hearty welcome aboard! We are happy that we may offer to you an invitation to visit our ship, and we hope that your stay with us will be memorable.

JAMES MONROE, is named for the fifth president of the United States and the author of the "Monroe Doctrine", which guaranteed the integrity of the American colonies against further colonization by European powers. In addition, this great Virginian served in the War for Independence, served in both the House of Representatives and the U. S. Senate, was elected Governor of Virginia, and then was Secretary of State and War prior to the Presidency. During his time in the diplomatic service, he was instrumental in negotiations for the Louisiana Purchase.

After President James Monroe had set forth the principles in the "Monroe Doctrine", he adopted a policy of "Watchful Waiting". Considering the task and missions assigned the USS JAMES MONROE, the officers and crew have adopted these words as the ship's motto.

We in JAMES MONROE sincerely hope that your visit will be interesting, informative and comfortable.

A. D. JONES, III
COMMANDER, U.S. NAVY
COMMANDING OFFICER (GOLD)

W. D. WOODMAN
COMMANDER, U.S. NAVY
COMMANDING OFFICER (BLUE)

welcome aboard

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S.M. MCCRORY
Commanding Officer GOLD



F.T. COUGHLIN
Commanding Officer BLUE

GENERAL COMMENTS

please observe all warning signs

Members of the ship's crew will be stationed on watch in all compartments. See them for assistance in any matter. DO NOT attempt to operate any equipment, twist any knobs, flip any switches, or turn any valves.

emergencies

In the event of emergencies an alarm will be sounded. These may be indicated by the sounding of a siren, jump or sweep tones, or gongs. You are requested to STAND FAST, but clear of all passageways and watertight doors so that the ship's personnel may be free to proceed to the scene. The man in charge of the compartment will explain what is going on when he is able to do so. If you are requested to clear an area, do so expeditiously.

radiation safety & personnel monitoring

Radiation levels on board nuclear powered submarines are very low and it is anticipated that you will not receive any recordable exposure during a cruise. Nuclear trained personnel and those other crew members who normally work in radiation areas will be wearing Thermoluminescent Dosimeters (TLD's). Should you be required to enter a radiation area while on board JAMES MONROE, you will be issued a white TLD. The white TLD will signify that you do not normally work in radiation areas and that your allowed radiation exposure is more limited than that of a radiation worker.

radiation warning signs & markers

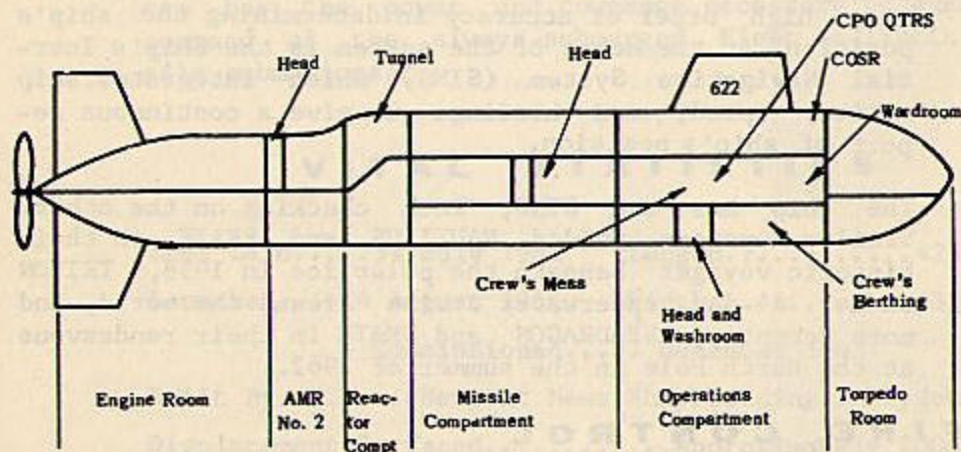
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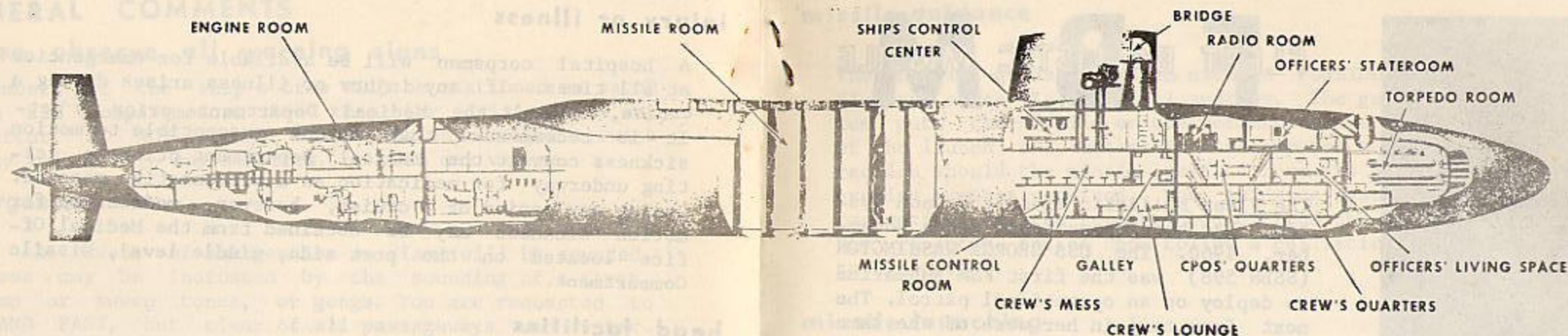
injury or illness

A hospital corpsman will be available for emergencies at all times. If any injury or illness arises during a cruise, consult the Medical Department prior to getting underway for medication as a preventative measure. It is recommended that anyone susceptible to motion sickness consult the Medical Department prior to getting underway for medication as a preventative measure. During any period of a cruise, however, medication for motion sickness may be obtained from the Medical Office located on the port side, middle level, Missile Compartment.

head facilities

The heads are located as shown in the cutaway diagram of the ship. Please remember that they are maintained by the crew who consider the ship their home. Before using the head for the first time, please consult a member of the ship's force for the proper flushing procedure.





NAVIGATION SYSTEM

Two positions must be known for a successful missile launching --- the targets and the launchers. This places great importance on navigation since the position of the launcher is the position of the ship and is continuously changing. Several navigational methods complement each other in the FBM submarine to provide a very high order of accuracy in determining the ship's position. At the heart of the system is the Ship's Inertial Navigation System (SINS) which integrates ship motion, speed, and headings to give a continuous report of ship's position.

The ship has two SINS, each checking on the other. Similar systems guided NAUTILUS and SKATE on their historic voyages beneath the polar ice in 1958, TRITON on her 84-day underwater cruise around the world, and more recently, SEADRAGON and SKATE in their rendezvous at the North Pole in the summer of 1962.

FIRE CONTROL

The fire control system feeds a wealth of coordinated information to the missile guidance system. Ship's location, local vertical, true north heading, target location and trajectory to be flown are continuously supplied until the very instant of firing.

COMMUNICATIONS

Radio communications with submerged submarines have been possible for a number of years. The systems used have been devised with special care to protect the locations of the submarines and leave the advantage of concealment unimpaired. Recent tests have again demonstrated that the Navy's worldwide communication system has the power and coverage necessary to exercise command of the always-submerged Fleet Ballistic missile submarines.

VITAL STATISTICS

Keel Laid.....	31 July 1961	Length.....	425 Feet
Launched.....	4 August 1962	Width.....	33 Feet
Commissioned....7 December 1963			
Built By.....	Newport News Shipbuilding & Drydock Co.		
Displacement Surfaced.....	Approximately 7000 Tons		
Displacement Submerged.....	Approximately 8200 Tons		
Speed Submerged.....	Greater Than 20 Knots		
Diving Depth.....	Greater Than 400 Feet		

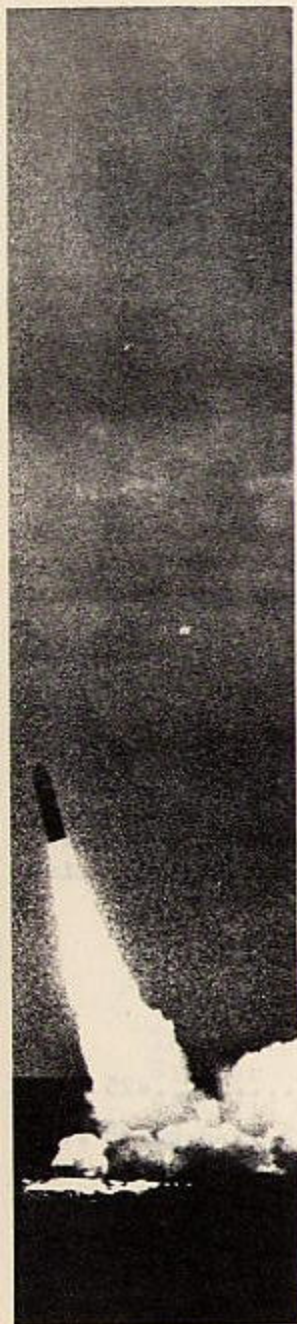
F B M FLEET BALLISTIC MISSILE

The Fleet Ballistic Missile Weapon System, has been operational since November, 1960. The USS GEORGE WASHINGTON (SSBN 598) was the first FBM submarine to deploy on an operational patrol. The next four to join her were of the same class and carried the 1,200 nautical mile Polaris A-1 missile. The later construction submarines carried the 1,500 nautical mile A-2 and the 2,500 nautical mile A-3 missile. 31 Polaris submarines have since been converted to carry the POSEIDON C-3 missile.

the missile

POSEIDON, in greek mythology the God of the Sea, is a two-stage Ballistic Missile powered by solid fuel rocket motors.

The 3,000 nautical mile range operational missile is designated the POSEIDON C-3. It is about 34 feet long, about six feet in diameter, and weighs about 64,000 pounds. Each motor exerts thrust through a single nozzle in the motor's base. Subsequent missile models have reflected design changes in improved propellants and flight ranges.



missile guidance

The inertial guidance system used in POSEIDON is a refinement of earlier inertial systems. The guidance system puts the missile on the correct course at the time of the launch and automatically computes a course correction should the missile deviate from its path. At the precise instant required, the guidance system triggers separation of the re-entry bodies from the missile and the re-entry bodies then follow a ballistic trajectory to the target.

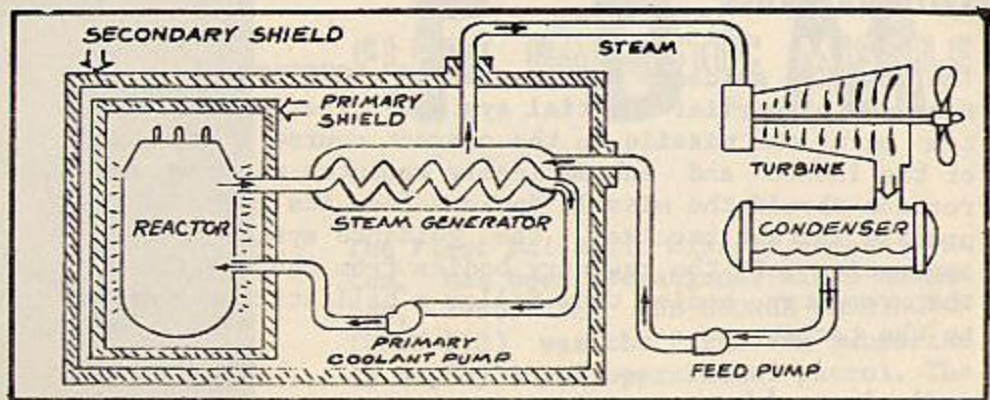
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With almost unlimited cruising range and with endurance limited only by the crew, the Fleet Ballistic Missile Submarine is capable of extended submerged operations in the international waters of the world which comprises about 70 percent of the earth's surface. Free of the need to surface or extend a snorkel above the surface to continually operate, FBM nuclear submarines remain hidden by the ocean and their locations unknown to any potential enemy. The POSEIDON missile, powered by solid fuel propellants, is ready to launch within minutes of receiving the command without the need for a long countdown. Mobil, hidden, ready for instant action (or carefully considered delayed actions), the Fleet Ballistic Missile system provides the United States with a powerful deterrent to those who might start a global war.

THE POWER PLANT



JAMES MONROE is powered by a nuclear power plant which consists of a nuclear reactor with its associated circulating water and 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 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 turbo-generators 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 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.

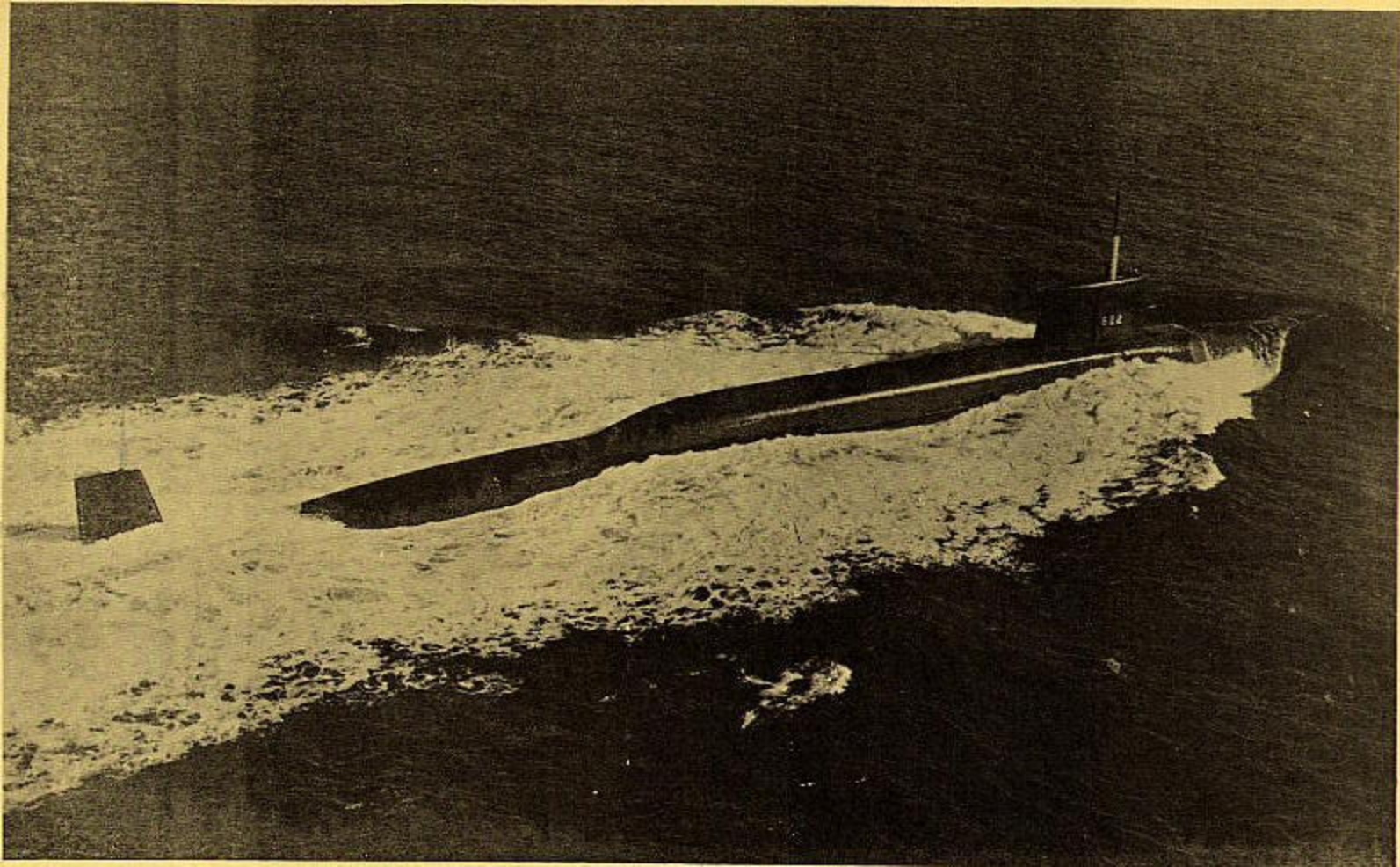
USS JAMES MONROE (SSBN 622) is the fifteenth Fleet Ballistic Missile (FBM) submarine to join the active fleet. It was the first of the Lafayette class FBM submarines to be built at Newport News Shipbuilding and Drydock Company. The keel was officially laid on 31 July 1961; the ship was launched on 4 August 1962. USS JAMES MONROE (SSBN 622) was commissioned on 7 December 1963 at Newport News, Virginia.

In June 1964 JAMES MONROE departed on her first deterrent patrol manned by the Blue crew. USS JAMES MONROE (SSBN 622) carried Polaris A-2 missiles and operated from the deployed tender site at Rota, Spain as a unit of Submarine Squadron SIXTEEN until 1 June 1965 when she was transferred to Submarine Squadron FOURTEEN, based at Holy Loch, Scotland. MONROE's homeport was Charleston, South Carolina.

USS JAMES MONROE (SSBN 622) returned to the Charleston Naval Shipyard in January 1968 for her first shipyard overhaul after sixteen successful POLARIS deterrent patrols. The overhaul was completed in early 1969. Shakedown cruises at Cape Kennedy saw both crews fire the A-3 missile to which the JAMES MONROE had been converted in the shipyard.

USS JAMES MONROE (SSBN 622) reported to the Pacific Fleet in January 1970. While the off-crew and both families were located in Oahu, Hawaii, the ship was homeported with Submarine Squadron FIFTEEN based at Guam, Marianas Islands. In late 1974 after nineteen successful patrols in the Pacific Ocean, JAMES MONROE headed back to her first home at Newport News for an extensive overhaul and conversion to the Navy's advanced strategic weapons system, the C-3 POSEIDON missile.

USS JAMES MONROE (SSBN 622) completed her second overhaul in late 1976. After completing shakedown cruises (for both the Blue and Gold crews) including firing of C-3 missiles at Cape Kennedy, Florida, JAMES MONROE departed Charleston, South Carolina for deterrent patrol in early 1978. Homeport for off-crews and families is Charleston, South Carolina. JAMES MONROE operated from the deployed tender site at Holy Loch, Scotland, as a unit of Submarine Squadron FOURTEEN. In December of 1978 JAMES MONROE was transferred to Submarine Squadron SIXTEEN with deployed tender sites at Rota, Spain, and Kings Bay, Georgia. The USS JAMES MONROE returned to Squadron FOURTEEN and Holy Loch, Scotland in October of 1979.







WELCOME ABOARD

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JAMES MONROE

James Monroe, fifth President of the United States was the last of the Virginia dynasty of presidents. Born in Westmoreland County, Virginia, he attended the College of William and Mary and fought with distinction in the Continental Army, where he was wounded at Trenton. After the war he practiced law in Fredricksburg, Virginia.

In 1790 he was elected to the United States Senate where he ardently pursued Jeffersonian policies. As Minister to France from 1794-1796, he displayed strong sympathies for the French cause. Later, President Jefferson again sent him to France where, together with Minister Robert Livingston, he helped negotiate the Louisiana Purchase. President Madison appointed him Secretary of State in 1811 and for some months during the War of 1812, he served as Secretary of War.

Elected President in 1816 and again in 1820, his greatest contribution as President was in the realm of foreign affairs where he proclaimed the fundamental policy that bears his name. He enunciated the Monroe Doctrine primarily in response to the threat that the more conservative governments in Europe might try to aid Spain in winning back her former colonies, the newly established Latin American Republics. In his annual message to Congress in December 1823, he stated:

“the American Continent by the free...condition which they have assumed and maintained are henceforth not to be considered as subjects for future colonization by any European power.”

Some thirty years later, this basic tenant became known as the Monroe Doctrine and assured his place in history as a great American statesman.

After President James Monroe had set forth the principles in the “Monroe Doctrine”, he adopted a policy of “Watchful Waiting”. Considering the task and missions assigned the USS JAMES MONROE, the officers and crew have adopted these words as the ship’s motto

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COMMANDER ROBERT A. GOODWIN
UNITED STATES NAVY

COMMANDER ROBERT A. GOODWIN, USN

Commander Robert A. Goodwin graduated from Vanderbilt University in 1970. Upon completion of Submarine School and Nuclear Propulsion Training at Mare Island, California and Arco, Idaho, Commander Goodwin reported to USS SKATE (SSN-578) in 1972. Following completion of the Submarine Officer's Advanced Course in 1974, he was assigned to the new construction crew of USS PHILADELPHIA (SSN-690) as Weapons Officer.

Commander Goodwin served as Engineer Officer of USS NATHANAEL GREENE (SSBN-636) and as Executive Officer of USS LEWIS AND CLARK (SSBN-644). In 1984 he was ordered to duty in the Strategic Submarine Division in the Office of the Deputy Chief of Naval Operations for Submarine Warfare.

Commander Goodwin has been awarded the Navy Commendation Medal and Meritorious Service Medal.

Commander Goodwin is married to the former Carol Ann Keithley of Maryville, Tennessee. They presently reside in Summerville, South Carolina.

GENERAL COMMENTS

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Members of the ship's crew will be stationed on watch in all compartments. See them for assistance in any matter. DO NOT attempt to operate any equipment, twist any knobs, flip any switches, or turn any valves.

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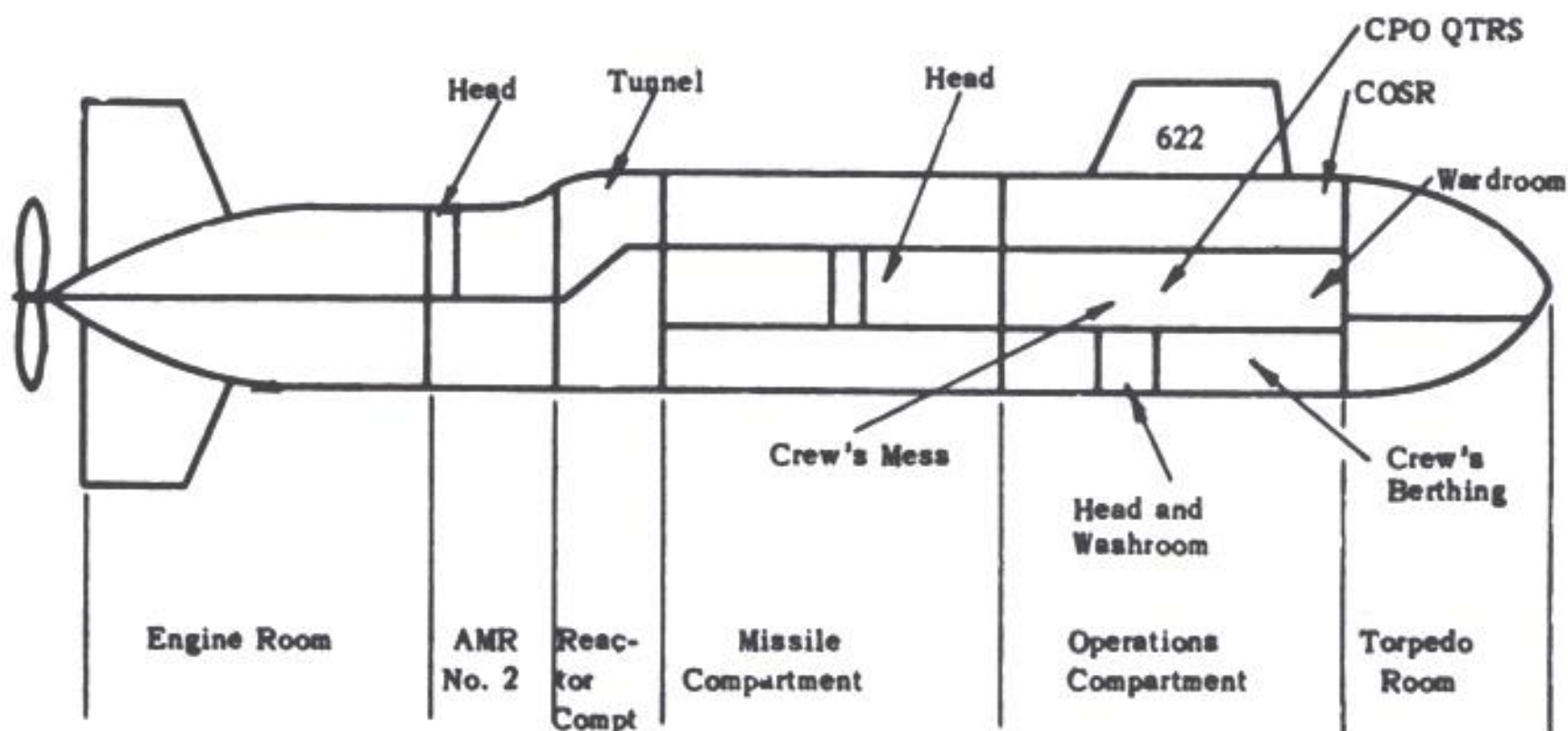
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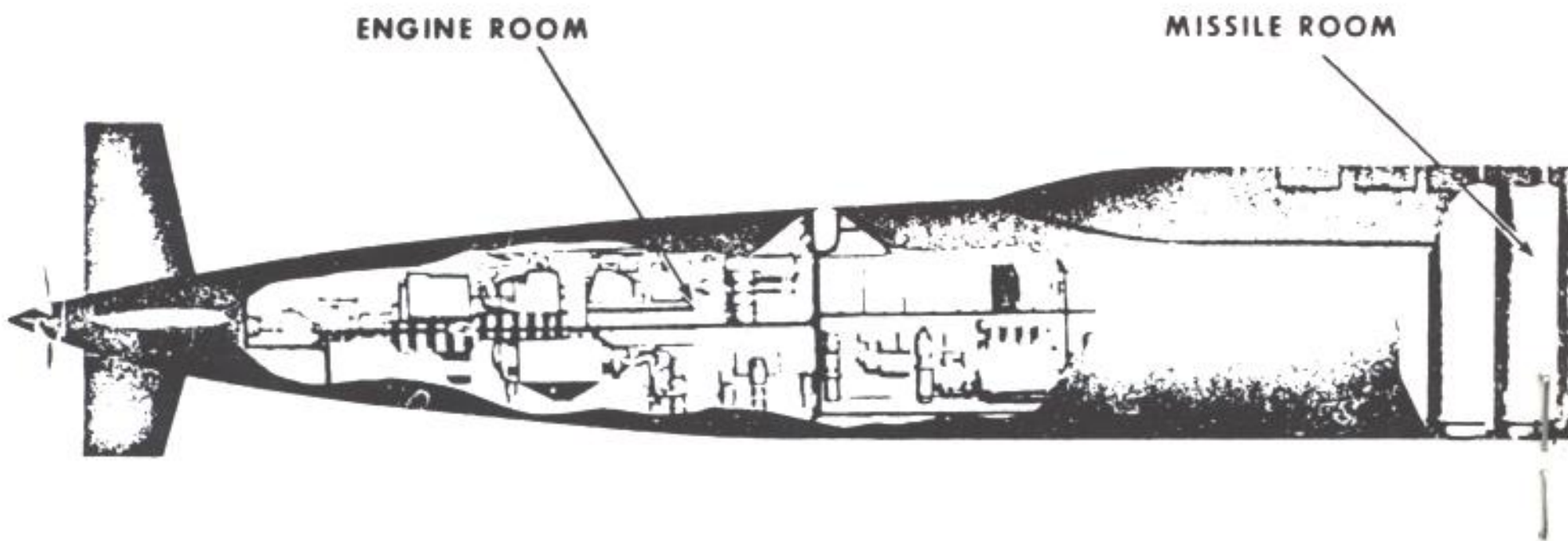
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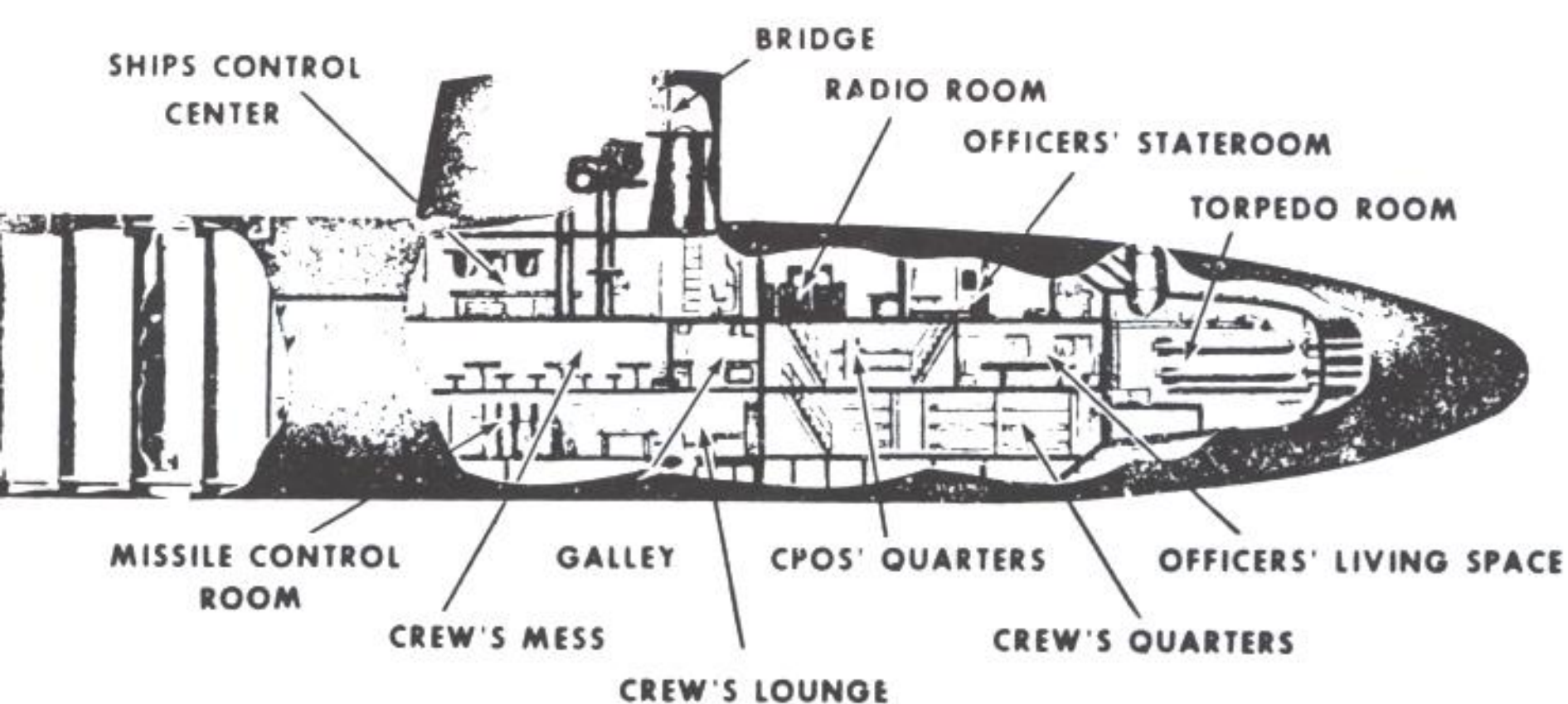


COMMUNICATIONS

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NAVIGATION SYSTEM

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FBM

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The missile

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Missile guidance

The inertial guidance system used in earlier inertial systems. The guidance system corrects course at the time of the launch and a correction should the missile deviate from the required, the guidance system triggers signals from the missile and the re-entry bodies to the target.

Missile launching

POSEIDON missiles are launched by a system which impulses the missile from its launch tube through the water to the surface. At that point the missile is launched on its way. The system takes advantage of the solid fuel propellants used in the POSEIDON missile for safety for the submarine and its crew. The gas generator and is independent of the other systems. The missile are accessible for inspection and maintenance in the launch tubes and while the submarine is submerged.

Missile concept

With almost unlimited cruising range and control by the crew, the Fleet Ballistic Missile Submarine can operate in submerged operations in the international waters of the world. It can cruise about 70 percent of the earth's surface or extend a snorkel above the surface. Nuclear submarines remain hidden by their camouflage, unknown to any potential enemy. The POSEIDON missile, with its solid fuel propellants, is ready to launch on command without the need for a long command sequence for instant action (or carefully considered action). The Fleet Ballistic Missile system provides the United States with a deterrent to those who might start a global war.

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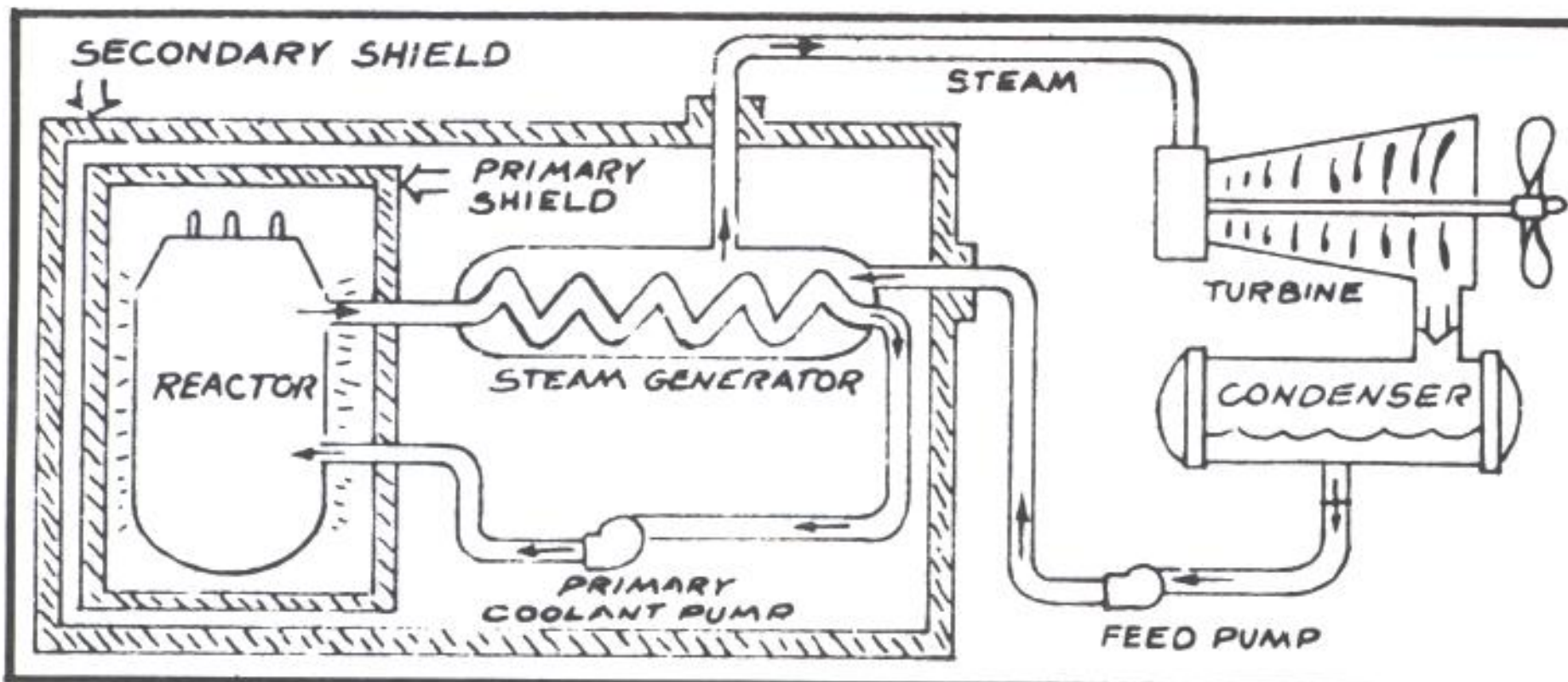
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THE POWER PLANT



JAMES MONROE is powered by a nuclear power plant which consists of a nuclear reactor with its associated circulating water and 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 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.

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HISTORY

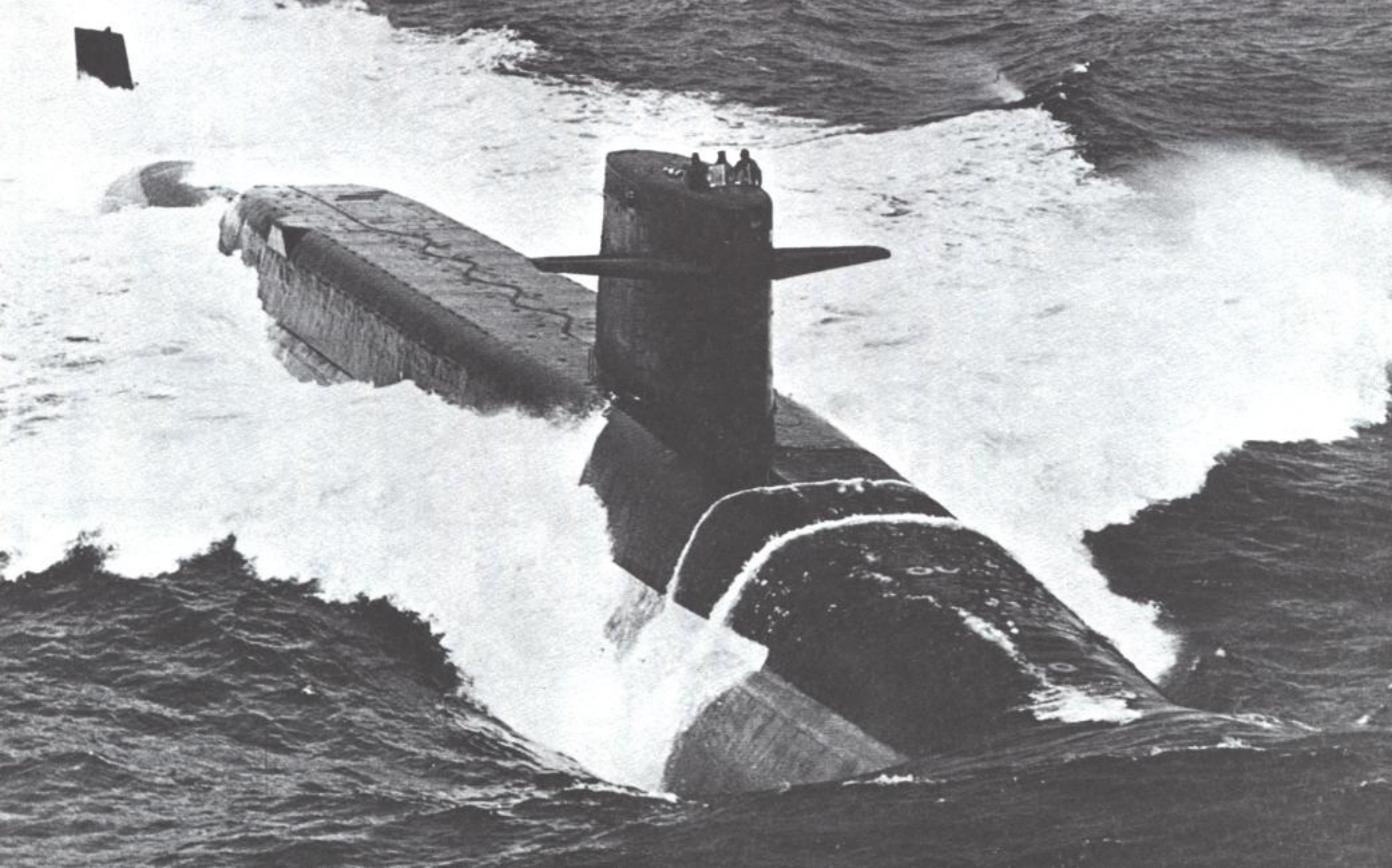
USS JAMES MONROE (SSBN-622) is the fifteenth Fleet Ballistic Missile (FBM) submarine to join the active fleet. It was the first of the Lafayette class FBM submarines to be built at Newport News Shipbuilding and Drydock Company. The keel was officially laid on 21 July 1961; the ship was launched on 4 August 1962. USS JAMES MONROE (SSBN-622) was commissioned on 7 December 1963, at Newport News, Virginia.

In June 1964, JAMES MONROE departed on her first deterrent patrol manned by the Blue crew. The ship carried Polaris A-2 missiles and operated from the deployed tender site in Rota, Spain as a unit of Submarine Squadron SIXTEEN until 1 June 1965, when she was transferred to Submarine Squadron FOURTEEN, based at Holy Loch, Scotland. MONROE's homeport was Charleston, South Carolina.

JAMES MONROE reported to the Pacific Fleet in January 1970. While the off-crews and families of both crews were located in Oahu, Hawaii, the ship operated from the Submarine Squadron FIFTEEN deployed site at Guam, Marianas Islands. In late 1974, after nineteen successful patrols in the Pacific Ocean, JAMES MONROE headed back to her first home at Newport News for an extensive overhaul and conversion to the Navy's advanced strategic weapons system, the C-3 POSEIDON missile.

JAMES MONROE completed her second overhaul in late 1976. After completing shakedown cruises (for both the Blue and Gold crews) including firing of C-3 missiles while at Cape Kennedy, Florida, JAMES MONROE departed her homeport of Charleston, South Carolina for deterrent patrol in early 1978. JAMES MONROE operated from the deployed tender site at Holy Loch, Scotland, as a unit of Submarine Squadron FOURTEEN. In December 1978, JAMES MONROE was transferred to Submarine Squadron SIXTEEN with deployed tender sites at Rota, Spain, and Kings Bay, Georgia. JAMES MONROE returned to Squadron FOURTEEN and Holy Loch, Scotland in October 1979.

JAMES MONROE received the Battle Efficiency "E" from Squadron FOURTEEN in 1981, and was subsequently recognized as the Outstanding Fleet Ballistic Missile Submarine of 1981 by the Navy League. JAMES MONROE again received the Battle Efficiency "E" from Squadron FOURTEEN in 1982 and 1983. The ship has been awarded the Meritorious Unit Commendation by the Secretary of the Navy for its performance from 1981 through 1983.



GENERAL COMMENTS

please observe all warning signs

Members of the ship's crew will be stationed on watch in all compartments. See them for assistance in any matter. DO NOT attempt to operate any equipment, twist any knobs, flip any switches, or turn any valves.

emergencies

In the event of emergencies an alarm will be sounded. These may be indicated by the sounding of a siren, jump or sweep tones, or gongs. You are requested to STAND FAST, but clear of all passageways and watertight doors so that the ship's personnel may be free to proceed to the scene. The man in charge of the compartment will explain what is going on when he is able to do so. If you are requested to clear an area, do so expeditiously.

radiation safety & personnel monitoring

Radiation levels on board nuclear powered submarines are very low and it is anticipated that you will not receive any recordable exposure during a cruise. Nuclear trained personnel and those other crew members who normally work in radiation areas will be wearing Thermoluminescent Dosimeters (TLD's). Should you be required to enter a radiation area while on board JAMES MONROE, you will be issued a white TLD. The white TLD will signify that you do not normally work in radiation areas and that your allowed radiation exposure is more limited than that of a radiation worker.

radiation warning signs & markers

All radiation warning signs and markers are to be carefully observed during the cruise. A radiation warning is marked by a yellow and magenta sign, rope, tape, or ribbon. Observe periods of nominal occupancy where indicated. If you possess the proper authorization, you may be permitted in areas marked "RADIATION AREA". No unnecessary loitering is allowed. Entrance into areas marked "HIGH RADIATION" area or "RADIOACTIVE CONTAMINATION" is prohibited unless approved by the Commanding Officer and supervised by a trained radiation monitor from the ship's force.

missile guidance

The inertial guidance system used in POSEIDON is a refinement of earlier inertial systems. The guidance system puts the missile on the correct course at the time of the launch and automatically computes a course correction should the missile deviate from its path. At the precise instant required, the guidance system triggers separation of the re-entry bodies from the missile and the re-entry bodies then follow a ballistic trajectory to the target.

missile launching

POSEIDON missiles are launched by gas generator ejection system which impulses the missile from its launch tube and propels it through the water to the surface. At that point the rocket motor ignites and sends the missile on its way. The system takes advantage of the reliability of solid fuel propellants used in the POSEIDON missile. The result is increased safety for the submarine and its crew. Each launch tube has its own gas generator and is independent of the other 15 tubes. Vital parts of each missile are accessible for inspection and maintenance even when loaded in the launch tubes and while the submarine is under way.

missile concept

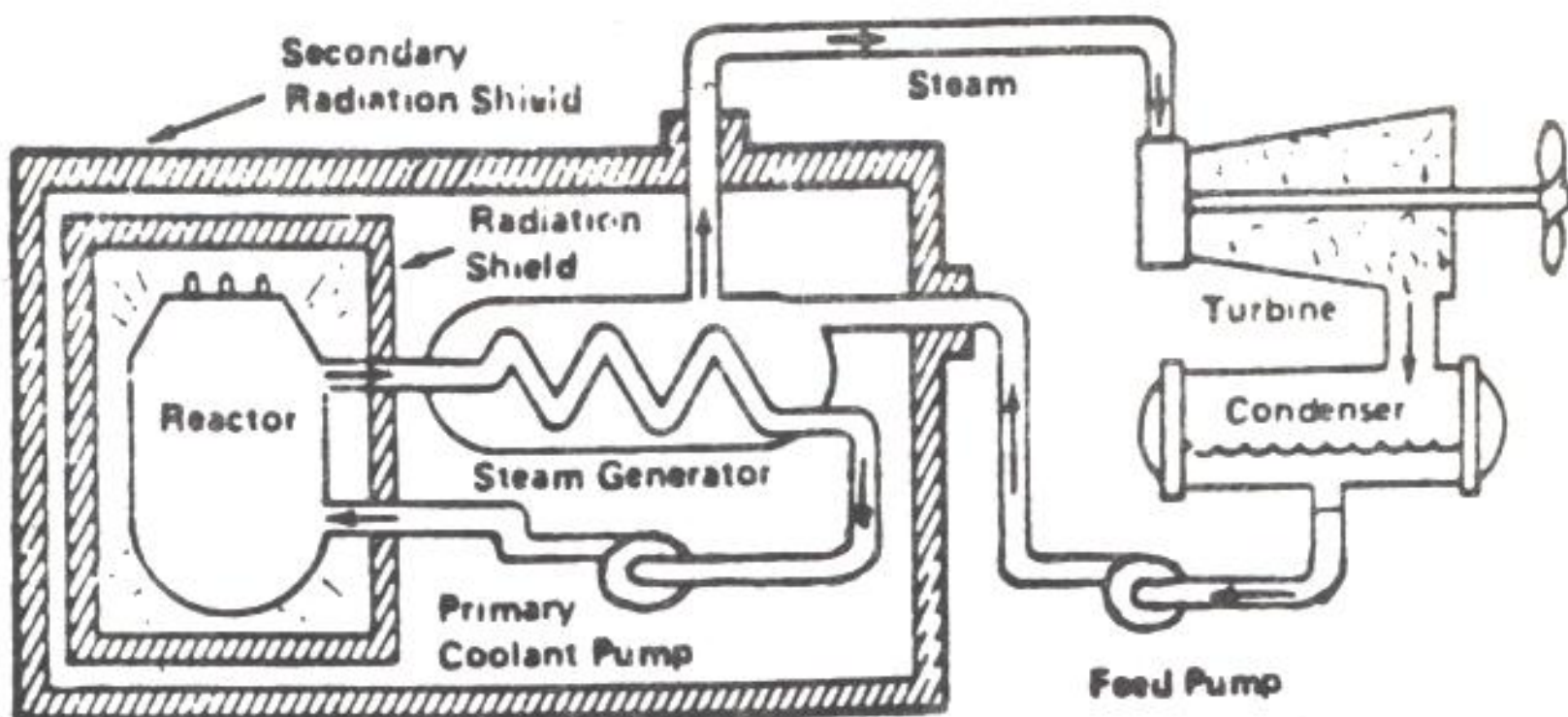
With almost unlimited cruising range and with endurance limited only by the crew, the Fleet Ballistic Missile Submarine is capable of extended submerged operations in the international waters of the world which comprises about 70 percent of the earth's surface. Free of the need to surface or extend a snorkel above the surface to continually operate, FBM nuclear submarines remain hidden by the ocean and their locations unknown to any potential enemy. The POSEIDON missile, powered by solid fuel propellants, is ready to launch within minutes of receiving the command without the need for a long countdown. Mobil, hidden, ready for instant action (or carefully considered delayed actions), the Fleet Ballistic Missile system provides the United States with a powerful deterrent to those who might start a global war.

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. THE SECONDARY WATER IS PUMPED THROUGH THE STEAM GENERATORS AND BACK INTO THE REACTOR FOR REHEATING.

IN THE SECONDARY GENERATORS, THE HEAT FROM THE WATER IN THE PRIMARY SYSTEM IS TRANSFERRED TO THE SECONDARY 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.