

WELCOME ABOARD



**USS JOHN C. CALHOUN
SSBN 630**



WELCOME ABOARD

The officers and crew of JOHN C. CALHOUN take exceptional pride in extending to you the hospitality of the Submarine Force of the United States Navy. It is our sincere desire to make your stay with us as pleasant and rewarding as possible. Every member of the crew stands ready to assist you in any way, so please ask.

As a warship and front runner of our nation's strategic deterrent force, JOHN C. CALHOUN is neither spacious nor designed for large numbers of people. We ask that you bear with us in this respect since we share your inconvenience.

SHIP'S MISSION

USS JOHN C. CALHOUN (SSBN 630) is a nuclear powered fleet ballistic missile submarine of the Lafayette class. Her primary mission is to remain undetected and able to launch her solid-propellant Trident-I strategic missiles within minutes of receiving the command. Her torpedo tubes provide a strong defensive capability and survivability during missile launches and fulfillment of her secondary mission to interdict and destroy enemy submarines and warships thereafter.

Freedom to remain submerged indefinitely, stealth, awesome firepower, constant training, and a never-ending vigil enable USS JOHN C. CALHOUN and her sister FBM's to provide the United States with a powerful, credible deterrent to attack and a firm persuasion for peace.

JOHN C. CALHOUN, THE MAN

Calhoun was named for the fiery, controversial South Carolina statesman and orator, John C. Calhoun who earned a place among the most influential of American Political Theorists with his bold and articulate defense of the Constitutional Rights of States and minority economic groups against the increasing pressure of big government and unrestrained financial capital. Calhoun was born of Scots-Irish parents in South Carolina in 1782. From 1808 to 1809 he served in the South Carolina Legislature and then moved on to the National House of Representatives in 1811. Calhoun served as Secretary of War under President Monroe and his political career reached its zenith in 1824 when he was elected to his first of two successive terms as Vice-President.

During his second term as Vice-President he took a courageous but politically disadvantageous stand against President Andrew Jackson over protective tariffs. Calhoun subsequently resigned his post and returned to Congress where he remained for the next seventeen years except for a brief interlude as Secretary of State from 1844 to 1845.

His death on March 31, 1850 marked the end of a career that will remain a model of political courage.

JOHN C. CALHOUN, THE SHIP

The USS JOHN C. CALHOUN (SSBN 630) is the twenty-third Fleet Ballistic Missile Submarine in the original fleet of forty-one. The ship was sponsored by the great granddaughter of John C. Calhoun. She was launched on June 22, 1963 and commissioned on September 15, 1964. The ship recently celebrated 26 years in commission.

The USS JOHN C. CALHOUN departed on her first Deterrent Patrol on March 22, 1965. While assigned to Submarine Squadron SIXTEEN and EIGHTEEN, she completed seventeen patrols carrying the Polaris missile.

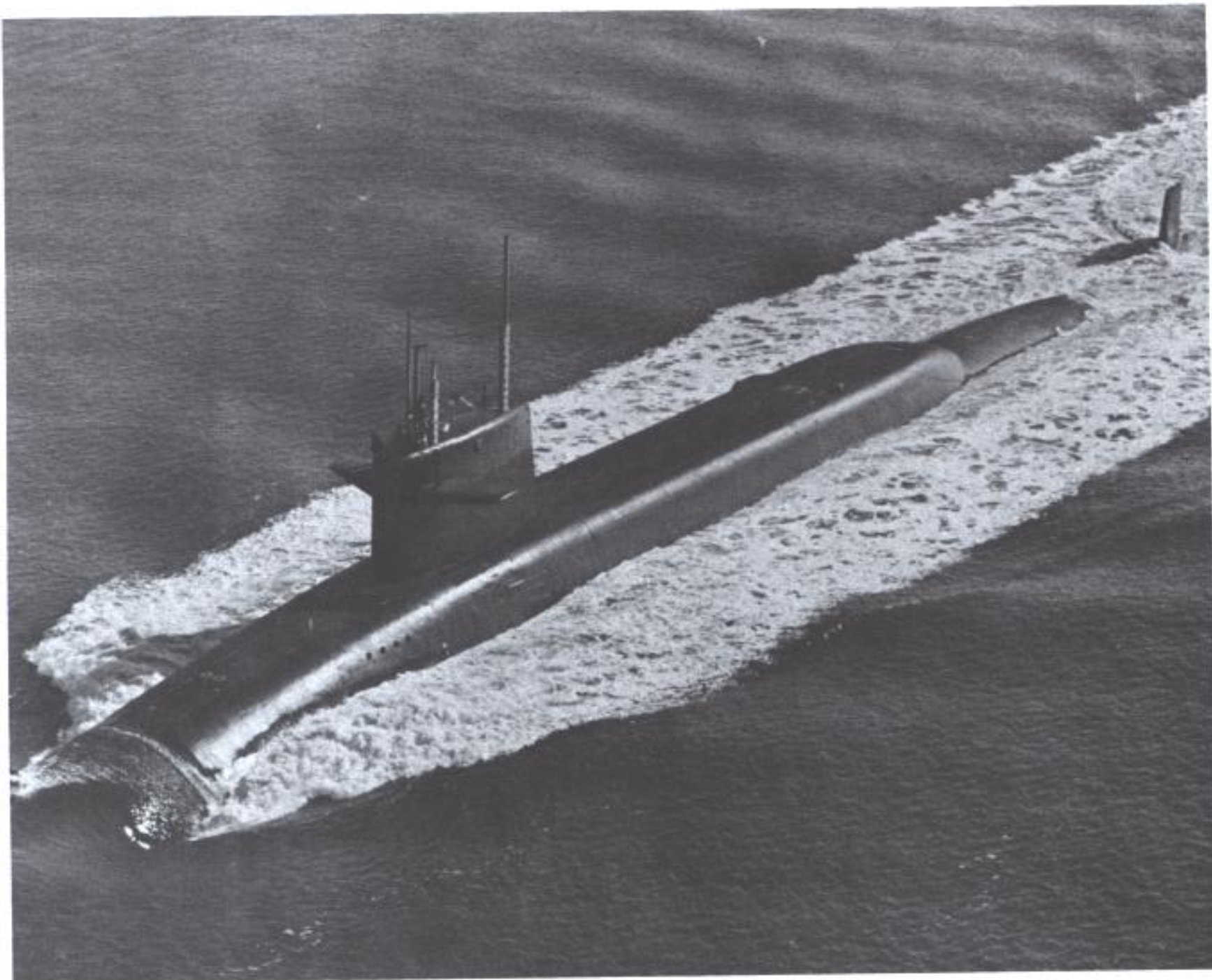
In August 1969, CALHOUN entered the Mare Island Naval Shipyard for overhaul and was modified to carry the Poseidon missile. The ship returned to the fleet joining Submarine Squadron FOURTEEN in 1971 and completed twenty more Strategic Deterrent Patrols.

The CALHOUN entered Portsmouth Naval Shipyard for overhaul in 1977 and rejoined the United States Strategic Deterrent Forces in the summer of 1979 as a unit of Submarine Squadron SIXTEEN in Kings Bay, Georgia. In 1980, CALHOUN was modified to carry the Trident missile and has now completed over seventy Strategic Deterrent Patrols.

In 1983, USS JOHN C. CALHOUN was distinguished by selection as the outstanding Fleet Ballistic Missile Submarine in the U.S. Atlantic Fleet and winner of the Submarine Squadron SIXTEEN Battle Efficiency "E".

In January 1985, USS JOHN C. CALHOUN was presented the MERITORIOUS UNIT COMMENDATION by the Secretary of the Navy for meritorious service in the execution of its primary mission from 1 October 1982 to 13 May 1984.

In 1988, USS JOHN C. CALHOUN was distinguished by selection as the outstanding Fleet Ballistic Missile Submarine in the U.S. Atlantic Fleet and winner of the Submarine Squadron SIXTEEN Battle Efficiency "E", ASW and Operations White "A" and the Communications Green "C".



STATISTICS

Length overall.....	425 Feet
Surface displacement.....	7300 Tons
Submerged displacement.....	8000 Tons
Main battery.....	16 Missile tubes 4 Torpedo tubes
Complement (each crew).....	14 Officers, 135 Enlisted
Cruising range.....	UNLIMITED
Submerged endurance.....	UNLIMITED
Propulsion plant.....	Nuclear Power
Speed.....	Greater than 20 knots
Depth.....	Greater than 400 feet

NAVIGATION

The navigation system employed aboard the JOHN C. CALHOUN consists of the very latest in electronic technology. The high accuracy required by the ship's missile system is accomplished through the use of ship's inertial navigation system (SINS). The (SINS) consists of platform, gyros and velocity meters. The gyros keep the platform stable to enable the velocity meters to sense motion. Through the use of computers in the inertial system, the ship's position is constantly up-dated with the sensed motion for an accurate position.

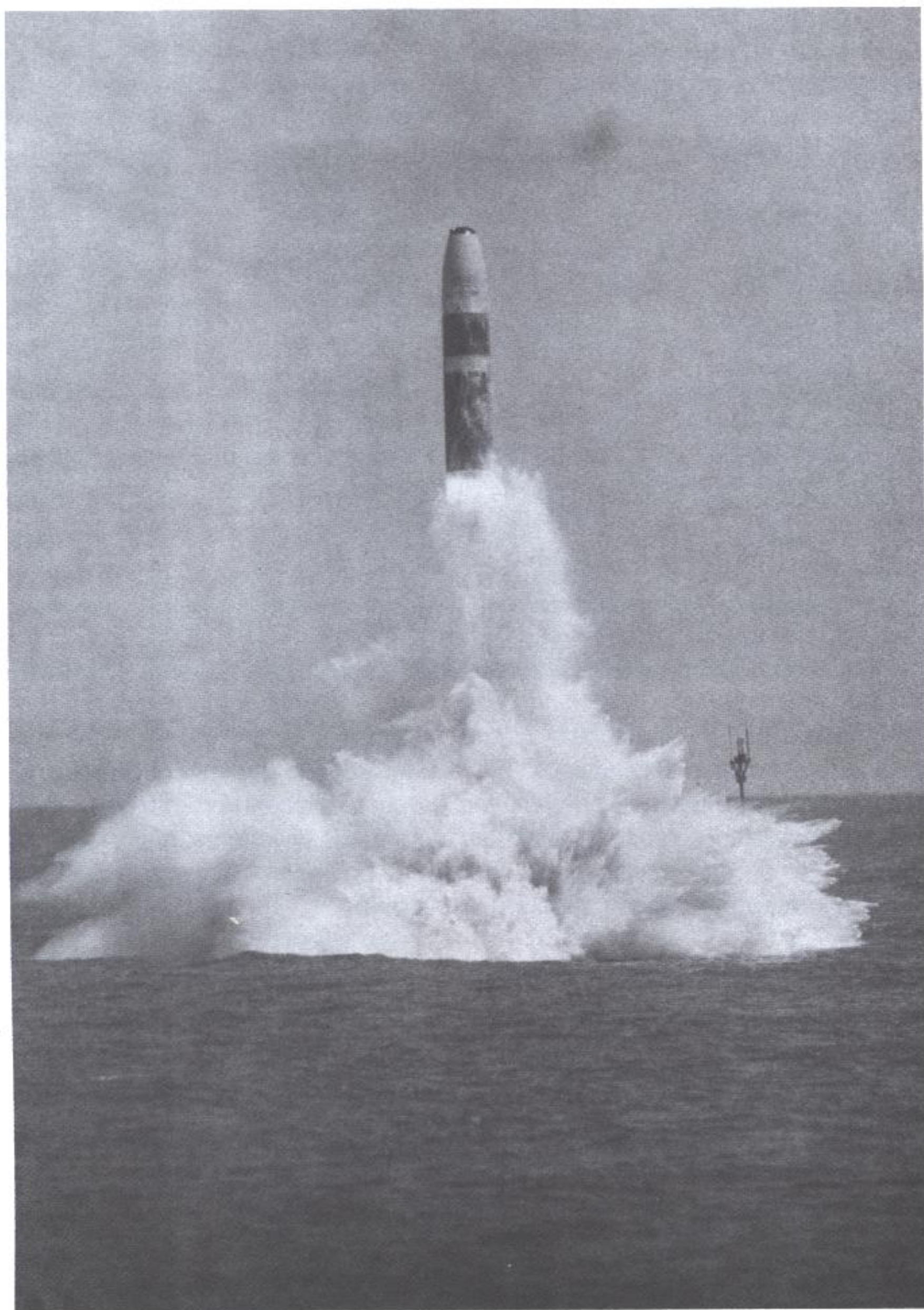
Due to inherent errors of the inertial system, outside position information is required periodically. This outside fix information is received by the use of Loran tracking system and the Navy satellite tracking system. The electrically suspended Gyro monitor also supplies a reference for the ship's Inertial Navigation System.

The inertial system, the Loran system and the satellite tracking system are all under the control of the central navigation computer. The central navigation computer has the basic function of control and monitoring of the navigation center. This enables fewer personnel to be involved at any one time to run the navigational system, and the control of the navigation system to be at one central point.

LIFE SUPPORT

In addition to the many facilities provided to ensure the habitability of the ship, there is an ample air conditioning system for the benefit of the personnel and machines. Special atmosphere control equipment is provided to maintain standard atmospheric conditions. Electrolytic oxygen generators permit the submarine to manufacture an unlimited supply of oxygen from the sea water. Other specialized equipment provides for removal of irritants, elimination of carbon dioxide and maintenance and power balance of other atmospheric elements during prolonged submerged periods.





THE WEAPONS SYSTEM

JOHN C. CALHOUN's primary mission is to serve as a launch platform for the Navy's TRIDENT I Weapons System. With unlimited range and endurance limited only to the crew, the FBM submarine is capable of extended operations in all parts of the world. Free of the need to surface, the FBM nuclear submarine remains hidden by the ocean and ready to launch within minutes of receiving the command. Mobile, hidden, ready for instant action, the Fleet Ballistic Missile system provides the United States with its strongest deterrent to those who might consider global war.

The ship's crew is trained and ready to monitor all onboard missiles and can accomplish at-sea repairs if necessary. The missiles are launched by a gas ejection system which forces the missile from its launch tube and propels it up through the water to the surface. At that point the rocket ignites and sends it on its way. The missile's inertial guidance system puts the missile on correct course and automatically computes a new correct course should the missile deviate from its path. At the precise instant required, the guidance system shuts off the rocket motors and triggers separation of the reentry trajectory to the target.

As a secondary mission, JOHN C. CALHOUN is assigned the task to seeking out and destroying enemy submarines. A sophisticated sonar and fire control system provides the information and guidance to the torpedoes fired from the tube nest located in the submarine's bow.

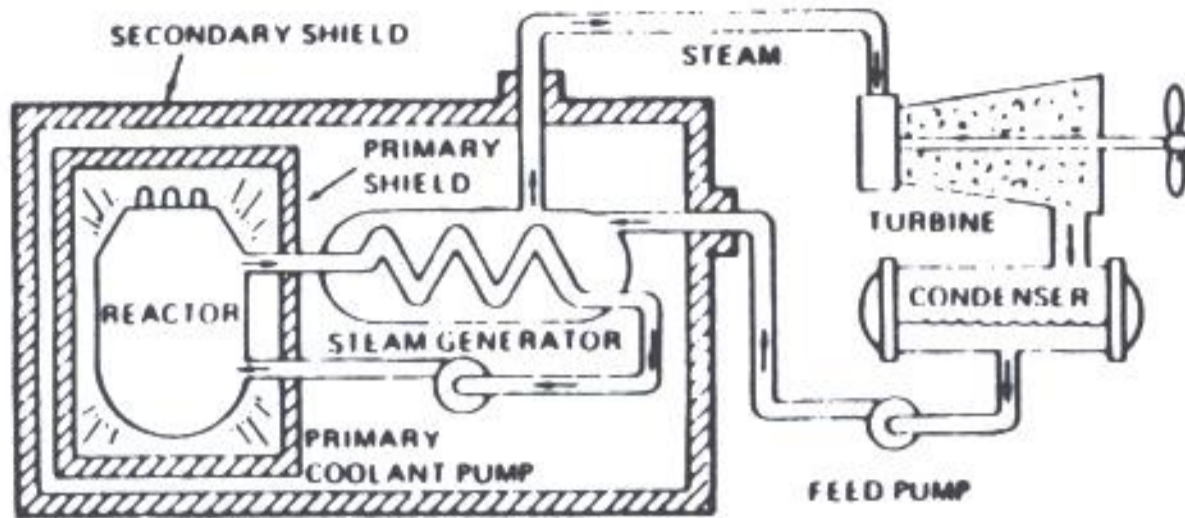
Using these two weapons systems, JOHN C. CALHOUN may be employed in both strategic and tactical situations.

TRIDENT ONE, C-4

Toward maximizing the effectiveness of the Navy's Fleet Ballistic Missile (FBM) weapon system as a deterrent to the outbreak of nuclear war, the Navy's Strategic System Project Office developed the Trident I C-4 Missile.

Using experience gained in the Polaris and Poseidon Fleet Ballistic Missile Weapons Systems, melded with the latest technology, the Trident-I Strategic Weapon System provided a "State of the Art" sea-based strategic deterrent force. The range of the Trident I Missile is significantly increased over that of its predecessors. This enables JOHN C. CALHOUN to patrol in a much greater area of the world's oceans while still remaining within range of its strategic target, thereby making detection by potential adversaries even more inconceivable.

HOW NUCLEAR POWER OPERATES A SUBMARINE



The power plant of a nuclear submarine is based upon a nuclear reactor which provides heat for the generation of steam. This, in turn, drives the main propulsion turbines and the ship's turbo-generators for electric power.

The primary system is a circulating water cycle and consists of the reactor, loops of piping, primary coolant pumps and steam generators. Heat produced in the reactor by nuclear fission is transferred to the circulating primary coolant water which is pressurized to prevent boiling. This water is then pumped through the steam generator and back into the reactor by the primary coolant pumps for reheating in the next cycle.

In the steam generator, the heat of the pressurized water is transferred to a secondary system where water is boiled to make steam. This secondary system is isolated from the primary system.

From the steam generators, steam flows to the engine room where it drives the 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 independent 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 to enter the reactor compartment. Heavy shielding protects the crew so that the crew member receives less radiation on submerged patrol than he would receive from natural sources ashore.

FIRE CONTROL

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

LAUNCHER

The launcher subsystem is designed to perform three functions in supporting the TRIDENT I missile. It houses the delicate missile in a comfortable environment of controlled humidity, temperature and smooth riding. Since the missile is a dynamic machine it must be serviced and the launcher subsystem provides a means for the Missile Technicians to cross the pressure hull boundary of the submarine to perform maintenance on the missile. Last, and most important, the launcher subsystem can eject the missile from the submarine in a matter of minutes after receipt of the command to launch.

BLUE AND GOLD CREW

One of the unique features of the FBM submarine program is that each of the submarines has two complete and interchangeable crews, called "Blue" and "Gold". While one crew takes the submarine on its regular cycle of two-month patrols, the other crew is back at its home port. There the crew members relax with friends and family for about a month after their two month deployment in the submarine, and then undergo intensive refresher training in preparation for their next patrol. The following chart shows how the crews are interchanged in a constant cycle:

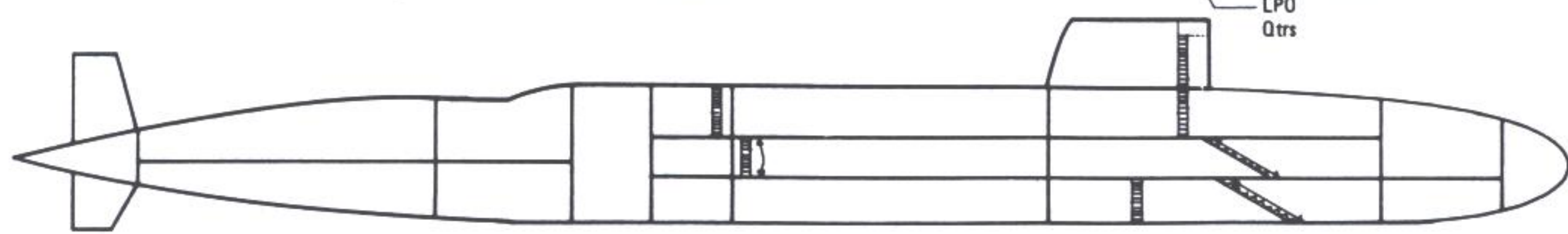
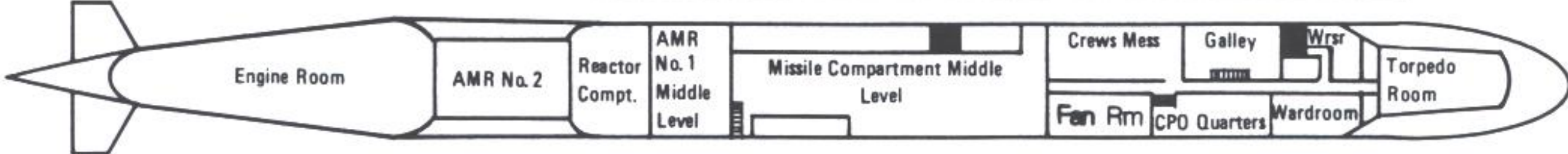
	2 Months	1 Month	2 Months	1 Month
GOLD CREW	Patrol	Leave	Refresher Training	Submarine Upkeep
BLUE CREW	Refresher Training	Submarine Upkeep	Patrol	Leave

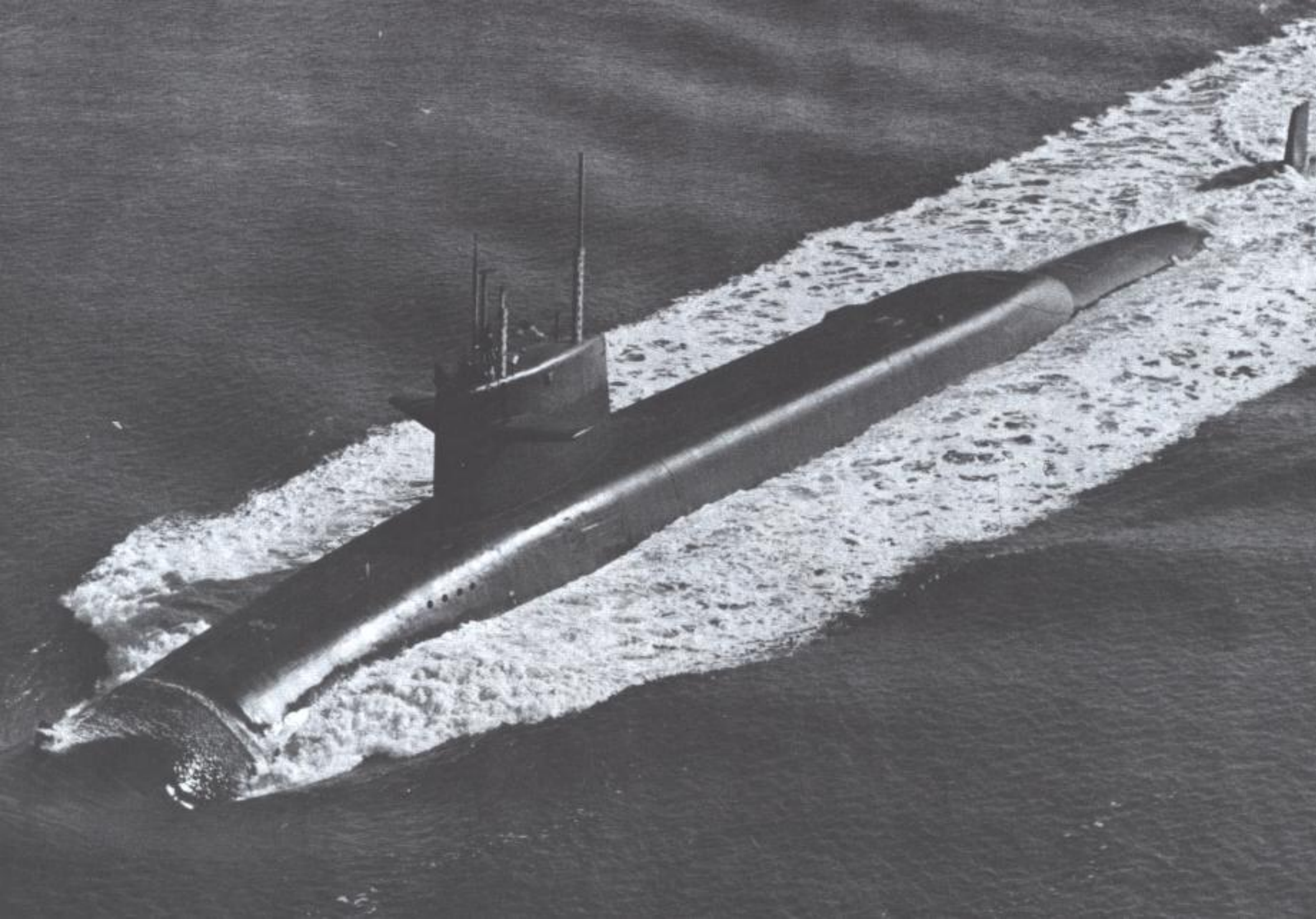
This two-crew system accomplishes several objectives. Most important, it enables the submarine to remain at its forward operating site without having to return to the homeport to provide the crew a rest period. This means that the submarine can be kept on patrol for two-thirds of its operational lifetime, obviating the need for additional submarines, while at the same time providing for necessary crew rest.

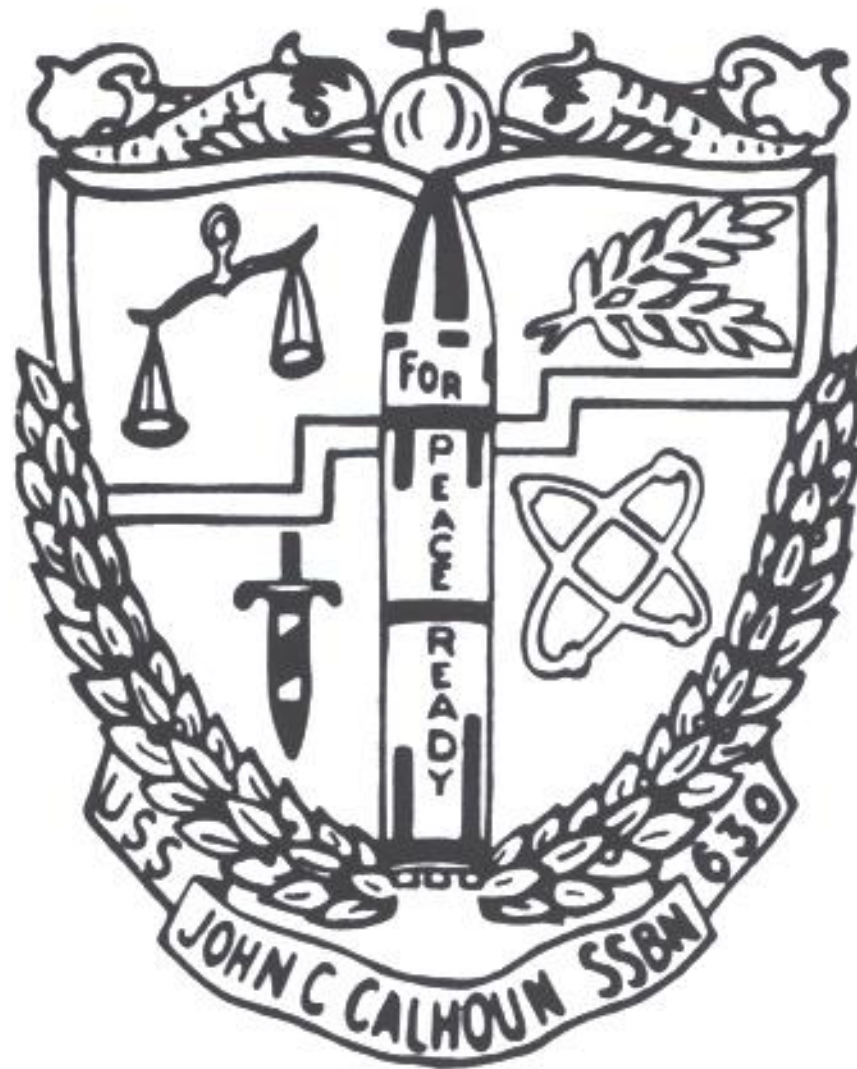
Second, it provides a regular program of refresher training for the off-ship crew. The crews must be ready at all times to launch missiles while on patrol if ordered to do so. Their equipment knowledge and reactions must be honed to a razor-sharp edge at all times. Refresher training on equipment exactly like that found on their ship keeps them sharp during their off-patrol period.

Finally, there are refinements and improvements constantly being made to the weapon system's various equipment. This often requires changes in circuits, and alteration of equipment operating methods and procedures. These changes, which must be well understood by the submarine's crews, are thoroughly studied during refresher training.

CO's &
XO's
Strms







THE INSIGNIA

The missile which occupies the focal point of the insignia carries the ship's motto, "For Peace Ready" and by virtue of its axial position serves to emphasize the ship's deterrent role. The missile is flanked by the four elements that make up this role: the atom is a symbol of power that permits a submerged deterrent force; the sheathed sword represents the state of readiness of this force; the olive branches are the traditional symbol of the purpose of this force; and the scales of justice are a reminder of the values of the society the force defends. The insignia is framed on the bottom by an olive wreath, a symbol of excellence in peaceful competition, and on the top by dolphins flanking the bow of a submarine, the traditional symbol of excellence worn by American submariners.



SUBMARINE DOLPHINS

Submarine Dolphins are proudly worn by individuals who have completed an arduous one to two year qualification period. Individuals qualified in submarines have a basic knowledge of all systems on board. Submarine Dolphins are a mark of distinction and have been worn by submarine sailors since 20 March 1924. The design 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.



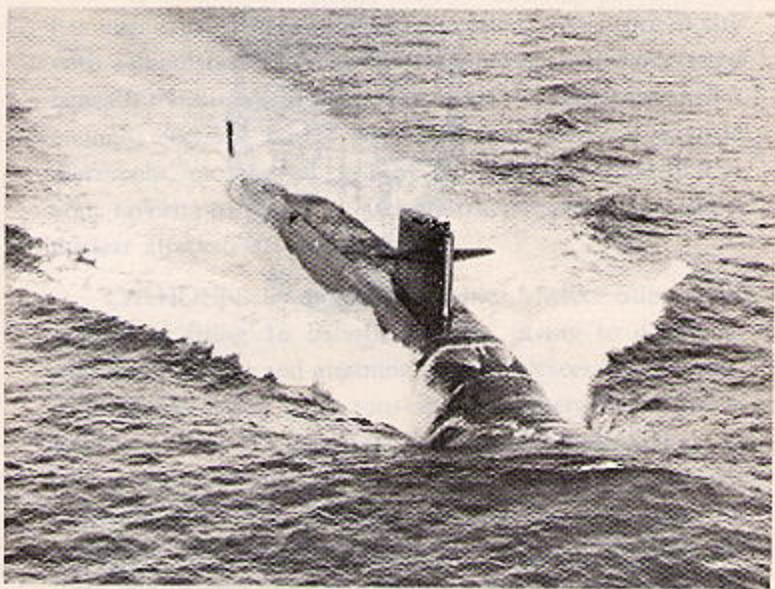
DETERRENT PATROL PIN

An FBM submarine breastpin is awarded to personnel in the ship's companies of the silent service missile fleet. The device is known as the FBM Patrol Pin, although its official designation is SSBN Deterrent Patrol Insignia. Design of the SSBN pin shows a silver Lafayette class submarine with superimposed Polaris missile and electron rings which signify the armament and nuclear powered characteristics of the FBM Deterrent Force. A scroll beneath the submarine will hold stars, one bronze star for each "successful" patrol after the first or a silver star for five "successful" patrols.



Welcome Aboard

Welcome aboard. You are now able to make use of the
services provided by the ship.



USS John C. Calhoun
SSBN 630



THE SHIP'S INSIGNIA

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Welcome aboard. You are now standing inside one of the most sophisticated complexes of systems that any civilization has ever created. Imagine a tiny, isolated, self-sufficient city with a population of about 140 that moves about undetected beneath the surface of the ocean. Inside this little steel shell is enough electrical power to supply the needs of a small metropolis, more clean, healthy air than you could find in your favorite park, and enough destructive power to make a nuclear attack irrational.

CALHOUN is a Fleet Ballistic Missile Submarine, capable of firing 16 ballistic missiles, diving to depths in excess of 400 feet and attaining speeds in excess of 20 knots. The ship displaces 8,250 tons when submerged and has a total length of 425 feet. The ship has a complement of 13 officers and 130 men and is manned by two separate crews, the Blue and Gold. One crew will take the ship on patrol while the other crew trains. Upon completion of patrol the roles will be reversed thus allowing the ship to perform its mission to the maximum extent possible. Its mission is to provide a strong enough deterrent to prevent a nuclear holocaust and to permit continued, rational diplomatic dialogue. We hope that your visit will prove to be interesting and informative.

THE SHIP'S HISTORY

The USS JOHN C. CALHOUN (SSBN630) is the twenty-third Fleet Ballistic Missile Submarine in the original fleet of forty-one. Sponsored by the great granddaughter of John C. Calhoun, the ship was launched on June 22, 1963 and commissioned on September 15, 1964.

The USS JOHN C. CALHOUN departed on her first deterrent patrol on March 22, 1965. While assigned to Submarine Squadrons SIXTEEN and EIGHTEEN, the ship completed seventeen deterrent patrols carrying the Polaris missile.

In August 1969 CALHOUN entered the Mare Island Naval Shipyard for overhaul and was modified to carry the Poseidon missile. The ship returned to the fleet joining Submarine Squadron FOURTEEN in 1971 and completed twenty more strategic deterrent patrols.

The USS JOHN C. CALHOUN entered Portsmouth Naval Shipyard for overhaul in 1977 and rejoined the United States's strategic deterrent forces in the summer of 1979 as a unit of Submarine Squadron SIXTEEN in Kings Bay, Georgia. In 1980, the CALHOUN was modified to carry the Trident missile and has now completed over fifty strategic deterrent patrols.

In January 1983, USS JOHN C. CALHOUN conducted a goodwill visit to Agadir, Morocco. During this visit Governor Moutii of Agadir and the Honorable Joseph Verner Reed, U.S. Ambassador to the Kingdom of Morocco were received aboard the ship.

In 1983, the USS JOHN C CALHOUN was distinguished by being the recipient of the following awards:

- Winner of the Submarine Squadron SIXTEEN Battle Efficiency "E" and the ASW/Operations "A"

- Winner of the U.S. Atlantic Fleet Ballistic Missile Submarine Outstanding Performance Award. This award is presented annually to that SSBN which demonstrated the best performance in carrying out its primary mission among Fleet Ballistic Missile Submarine in the Atlantic Fleet.

- Arleigh Burke Trophy nominee for the Atlantic Fleet Submarine Force. This trophy is awarded annually by the Commander in Chief U.S. Atlantic Fleet to the surface ship, submarine, or air squadron that has demonstrated the most improvement in battle efficiency.

- Golden Anchor Award runnerup for FBM's in the U.S. Atlantic Fleet. This award is presented annually by the Commander in Chief U.S. Atlantic Fleet in recognition for excellence in personnel retention and career programs.

JOHN C. CALHOUN

CALHOUN was named for the fiery, controversial South Carolina statesman and orator, John C. Calhoun, who earned himself a place among the most influential of American political theorists with his bold and articulate defense of the constitutional rights of states and minority economic groups.

Calhoun was born of Scots-Irish parents in up-country South Carolina in 1782. He was largely self-educated until he enrolled at Yale University. His graduation with honors in 1804 was followed by law school and a period of law practice. From 1808 to 1809 he served in the South Carolina legislature and then moved on to the national House of Representatives in 1811. Calhoun served as Secretary of War under President Monroe and his political career reached its zenith in 1824 when he was elected to his first of two successive terms as Vice-President.

During his second term as Vice-President he took a courageous but politically disadvantageous stand against President Andrew Jackson over protective tariffs. Calhoun subsequently resigned his post and returned to Congress where he remained for the next seventeen years except for a brief interlude as Secretary of State from 1844 to 1845.

During the remaining years of his life Calhoun remained an indefatigable proponent of government by consent. The writings that he produced during this period demonstrated a penetrating and prophetic understanding of the American political system, which he called "the great American experiment in diversity." His death on March 31, 1850 marked the end of a career that will remain a model of political courage.



COMMANDER GERALD J. CORCORAN, USN

Commander Corcoran was appointed to the U.S. Naval Academy from Whittier, California and graduated in June 1967. Following graduation, he completed nuclear power training in Vallejo, California and Idaho Falls, Idaho.

After graduation from Submarine School in February 1969, Commander Corcoran reported to USS HADDOCK (SSN 621) which was homeported in San Diego California. During his two years aboard, he served as an Engineering Division Officer and qualified in Submarines.

In November 1970, Commander Corcoran was ordered to the Precommissioning Unit of USS DRUM (SSN 677) which was under construction at Mare Island Naval Shipyard in Vallejo, California. While attached to DRUM, he served as an Engineering Division Officer and Weapons Officer.

After qualification as Engineer Officer, in February 1973 Commander Corcoran reported for duty as Engineer Officer aboard USS SNOOK (SSN 572), homeported in San Diego, California. Shortly after he reported, SNOOK commenced a two-year refueling overhaul at Mare Island Naval Shipyard.

In early 1977, Commander Corcoran completed Poseidon Navigation School and reported to USS FRANCIS SCOTT KEY (SSBN 657) (Gold) in Charleston, South Carolina for duty as Navigator and Operations Officer. During this tour, KEY became the first submarine to be equipped with the TRIDENT missile and conducted the initial submerged launch of this new missile.

Following his tour on KEY, Commander Corcoran returned to San Diego, California for a three year tour as Executive Officer aboard USS HADDO (SSN 604). In November 1982, he began training as a Prospective Commanding Officer enroute to command of USS JOHN C. CALHOUN (SSBN 630) (Blue).

Commander Corcoran's wife Karen, and their two sons, Scott and Kevin, currently reside in San Diego, California and will move to Charleston in December 1983.

Command at Sea

THE PRESTIGE, PRIVILEGE AND BURDEN OF COMMAND

by Joseph Conrad

Only a seaman realizes to what extent an entire ship reflects the personality and ability of one individual, her Commanding Officer. To a landsman, this is not understandable, and sometimes it is even difficult to comprehend -- but it is so.

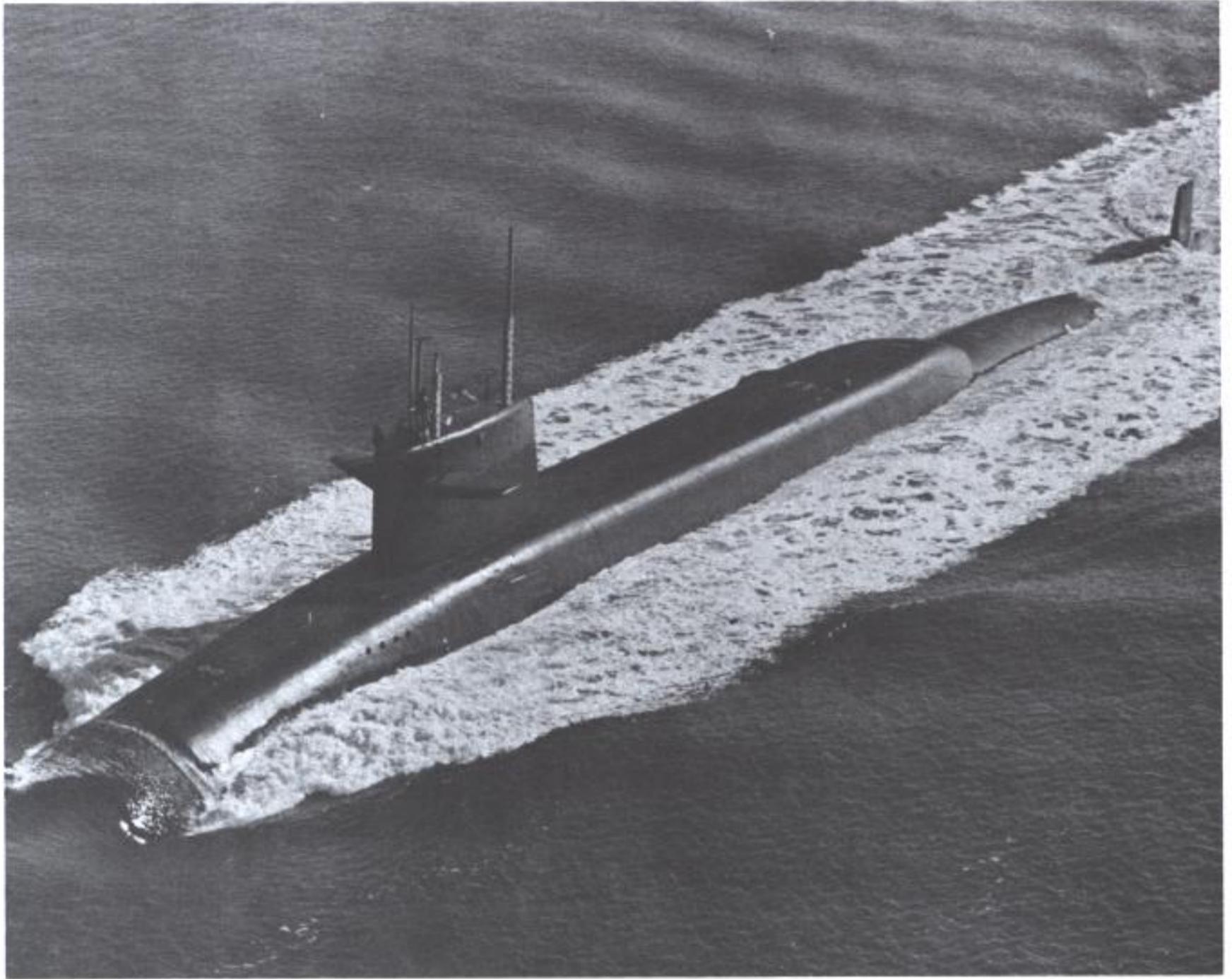
A ship at sea is a distant world into herself and in consideration of the protracted and distant operations of the fleet units, the Navy must place great power, responsibility, and trust in the hands of those leaders chosen for command.

In each ship, there is one man who, in the hour of emergency or peril at sea, can turn to no other man. There is one who alone is ultimately responsible for the safe navigation, engineering performance, accurate gunfiring and moral of his ship. He is the Commanding Officer. He is the ship.

This is the most difficult and demanding assignment in the Navy. There is not an instant during his tour as Commanding Officer that he can escape the grasp of command responsibility. His privileges in view of his obligations are almost ludicrously small; nevertheless command is the spur which has given the Navy its great leaders.

It is a duty which most richly deserves the highest time honored title of the seafaring world -- "CAPTAIN".





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