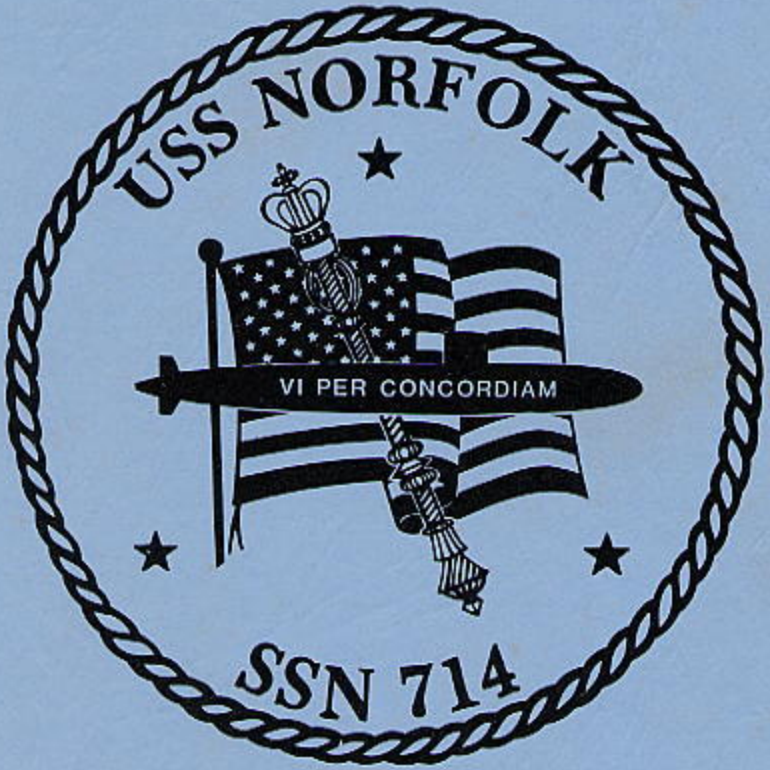
WELCOME ABOARD



The officers and crew of the

USS NORFOLK

take great pleasure in

extending their

most hearty welcome!

While aboard. we hope that

you find your

visit interesting and

enjoyable.

Commander Joseph J. Krol, Jr. was born in Washington, Pennsylvania in 1944 and entered the naval Academy in 1963 following one year at Bullis Prep School in Silver Springs, Maryland. He graduated and was commissioned in 1967, having earned a Bachelor of Science Degree.

Commander Krol then entered the Naval Nuclear Propulsion Program, for which he completed courses of instruction in Bainbridge, Maryland and Windsor, Connecticut. Following Nuclear Propulsion Training he attended Naval Submarine School in Groton, Connecticut. In February, 1969 Commander Krol reported to the USS NATHANAEL GREENE (SSBN 636). After three years as a nuclear division officer Commander Krol reported to the USS ANDREW JACKSON (SSBN 619) as Navigator and Operations Officer.

In October 1976 Commander Krol reported to the Strategic Systems Project Office in Washington, D.C. where served until July, 1979 as the Navigation Branch Head in the Fleet Readiness and Training Branch (SP-205). In July 1979 Commander Krol reported to the pre-commissioning unit of the USS PHOENIX (SSN 702) where he served as Executive Officer until August 1982. Commander Krol completed Prosepctive Commanding Officer Training in April 1983.

Commander Krol is entitled to wear the following personal award: The Navy Commendation Medal with Gold Star in lieu of a Second Award and the Navy Achievement Medal, the Navy Unit Commendation Ribbon, and the National Defense Medal.

Commander Krol and his wife Carolyn reside in Yorktown, Virginia.

Launched: 31 October 1981
Commissioned: 21 May 1983
Beam: 33 feet
Submerged Displacement: 6900 tons
Maximum Speed: in Excess of 20 kts
Fire Control System: MK-117 FCS

Keel Laid: 1 August 1979
Deliverd: May 1983
Length: 360 feet
Surfaced Displacement: 6200 tons
Maximum Depth: in excess of 400 feet
Armament: 4 21" torpedo tubes

Weapons: MK-48 torpedoes, Harpoon, Tomahawk Cruise Missiles
Propulsion: Twin steam turbines powered by one pressurized water reactor.

SUBMARINE OPERATIONS

NORFOLK is designed to seek and track surface and submerged ships. This requires the ship to stay submerged for long periods of time. To accomplish this the ship has many life support systems which allow NORFOLK to stay at sea for as long as there is food aboard. The ship can produce 10,000 gallons of fresh water per day from salt water, 3,000 cubic feet of oxygen per day from water, and serveral thousand kilowatts of electrical power. Also, the ship processes thousands of cubic feet of air per day to remove carbon dioxide, carbon monoxide, hydrogen, and hydrocarbons making the air we breathe cleaner than the air found outside.

NAVIGATION SYSTEM

The Navigation System on board NORFOLK is the most sophisticated in the world today. Using a combination of computer technology and interial devices the Navigation System is capable of pinpointing the NORFOLK's position anywhere in the world.

WEAPONS

Incorporated in the NORFOLK's arsenal are the following weapons:

-MK-48 torpedo
-Harpoon missile
-Tomahawk cruise missile

Choice of which weapon and the launching of the weapon is accomplished by a highly sophisticated computer controlled sonar and fire control system. Launching of these weapons can be done at a distance thereby minimizing the danger to the ship.

COMMUNICATIONS

Radio communications with submerged submarines has 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 unimparied. Recent tests have again demonstrated that the Navy's world wide communications system have the power and coverage necessary to exercise command of the submerged Fast Attack submarines.

SUPPLY

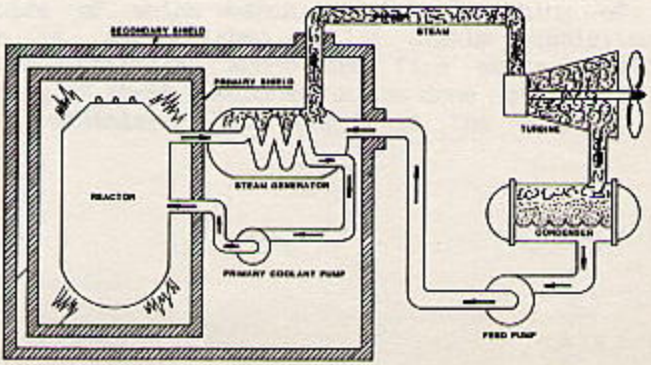
To support the intricate system in NORFOLK the Supply Department maintains a variety of spare parts which number over 15,000 line items. The Supply Department also stores and prepares the variety and quality of food and baked goods normally found in a good hotel.

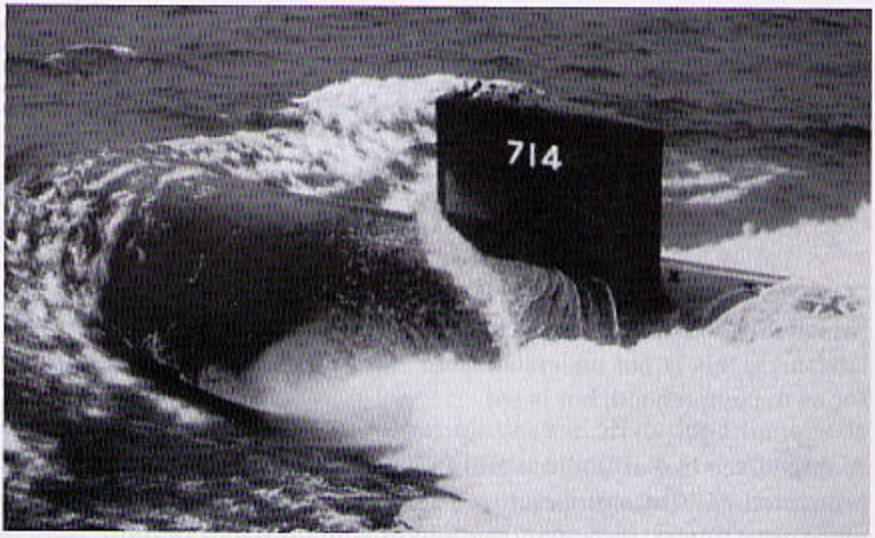
TRAINING

Due to the numerous, highly complex electronic and mechanical systems a majority of the crew receive up to a year of intensive, formal classroom training prior to being assigned. Training of the crew continues on board through the use of formal lectures and drills. In addition, classroom, trainers are utilized to maintain crew proficiency in the Weapons and Ship Control Systems whenever in port. The major goal of this training is to build teamwork and establish proficiency in the operation of equipment.

USS NORFOLK is powered by a nuclear power plant consisting of a nuclear reactor which provides heat for the generation of steam to drive the main propulsion turbines, for propulsion, and the ship's service turbo-generators for electric power. The primary system is a circulating water cycle and consists of the reactor, associated 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 of the secondary side of the steam generators and boils water to form steam. It is then pumped back to the reactor by the primary coolant pumps and reheated for the next cycle. The secondary steam 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 engine room 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 exists around the reactor and personnel are not permitted entrance into the reactor compartment until after the reactor is shut down. 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.





The USS NORFOLK (SSN 714) is the United States Navy's 133rd nuclear powered submarine and the 89th of the attack submarine fleet. She is the 24th of the Los Angeles nuclear powered fast attack submarine class to be delivered to the Navy.

NORFOLK began her waterborne career on 31 October 1981 when she was launched at Newport News, Virginia. NORFOLK was christened by Mrs. Jane Dalton Weinberger, the wife of Caspar W. Weinberger, the Secretary of Defense. NORFOLK was commissioned on 21 May 1983 by the Secretary of Defense Casper Weinberger in her namesake homeport of Norfolk.

NORFOLK brings to the fleet virtually unlimited endurance in her nuclear propulsion plant, the most advanced sonar and fire control systems on board submarines today and an impressive underwater weapons launch system capable of firing MK-48 ADCAP torpedoes and Tomahawk cruise missiles.

The NORFOLK is capable of sustained high-speed operations in direct support of the carrier task forces of the United States Navy as well as independent operations of critical importance to national security.

NORFOLK'S crew of 15 officers and 127 enlisted men have received extensive training and experience in the complex ship control systems and employment of the sophisticated sensors and weapons systems onboard.

Official Emblem

One of the many tradition associated with men of war throughout time has been the use of a unique emblem to identify the ship. During the initial phases of new construction, the NORFOLK held a competition to select the official emblem. Over 90 entries were submitted by ship's company and the young men and women of the Norfolk city school system. In August of 1982, the official emblem was selected and approved. The winning entry was submitted by John Pollock, a senior at Maury High School in Norfolk and was unveiled at a ceremony during the City of Norfolk's Tricentennial Celebration.

"VI PER CONCORDIAM"
"STRENGTH THROUGH UNITY"