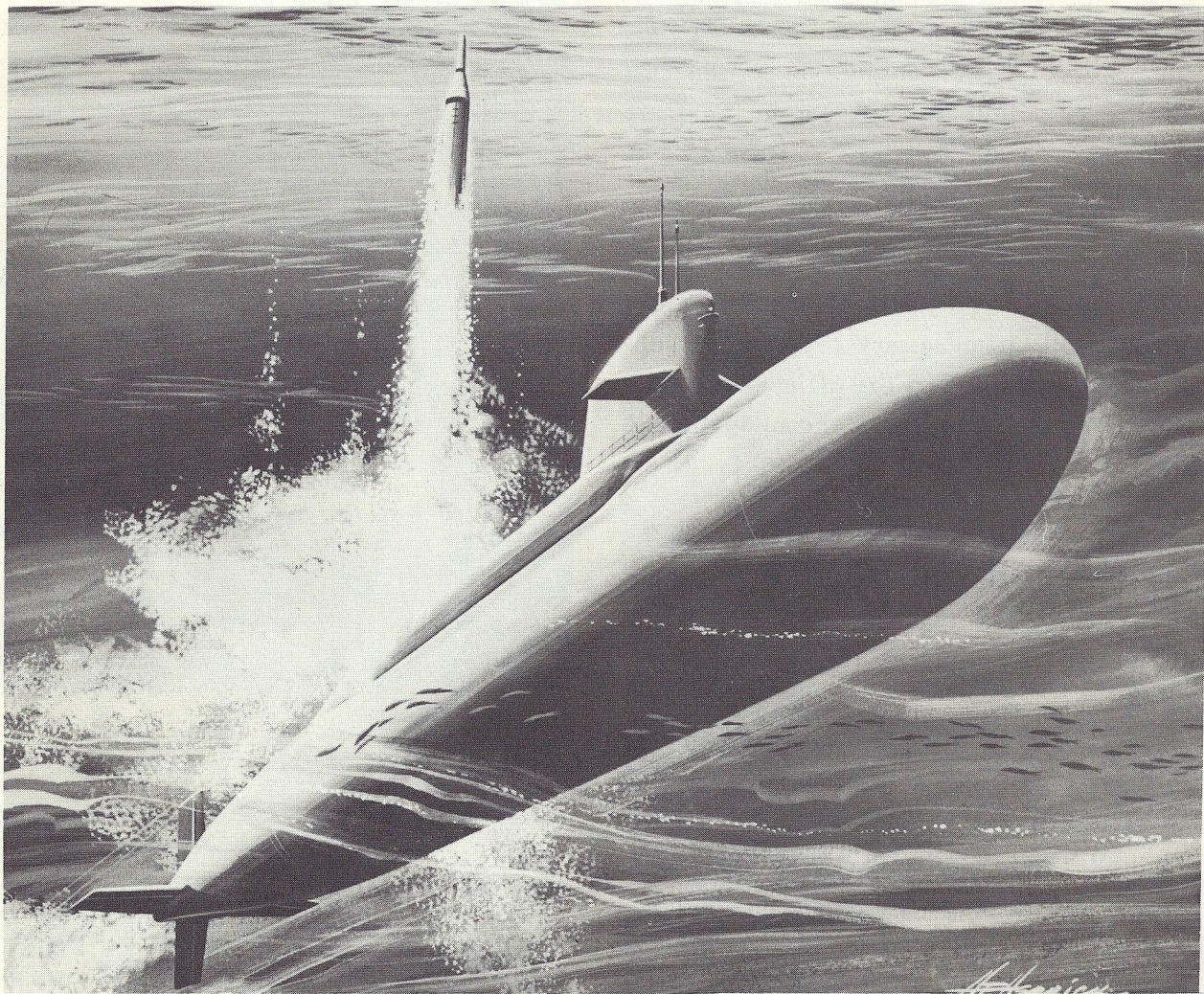


POLARIS



THE U.S. NAVY'S FLEET BALLISTIC MISSILE WEAPON SYSTEM

The U. S. Navy's Polaris fleet ballistic missile (FBM) weapon system has been an important part of the nation's deterrent force since the USS GEORGE WASHINGTON (SSBN 598) deployed with 16, ready-to-fire missiles on November 15, 1960.

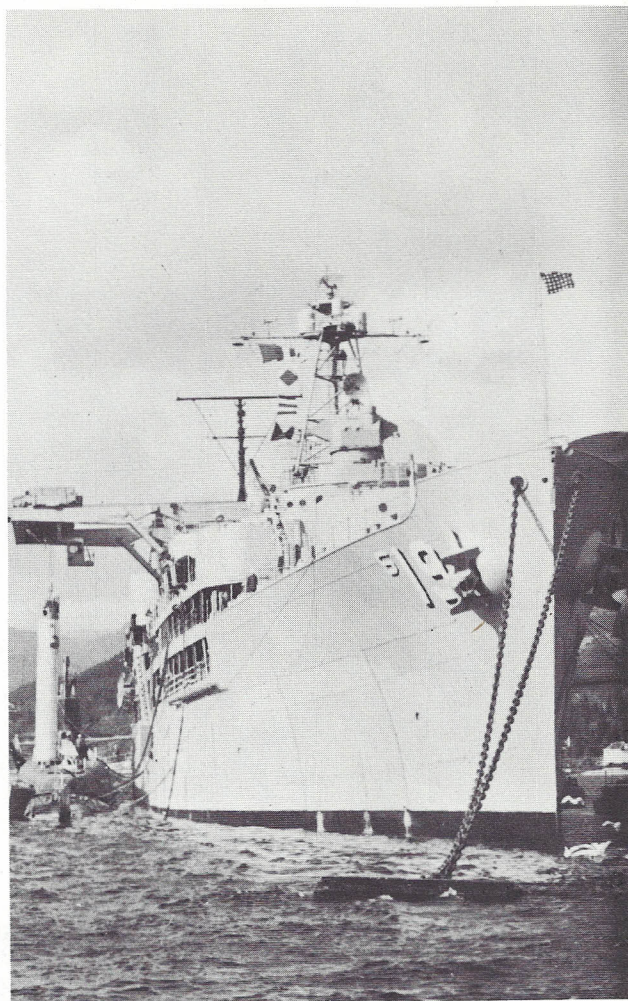
Now, over half the planned 41 FBM submarines have been commissioned and the entire force will be operational in the fleet in 1967.

The FBM weapon system includes Polaris missiles, the nuclear powered submarines which carry them on patrol, the sea and shore support facilities necessary to keep the submarines on station, and the officers and men who operate the submarines and maintain the vigil.

Since WASHINGTON first launched a Polaris missile July 20, 1960, many improvements have been made in both missile and submarine.

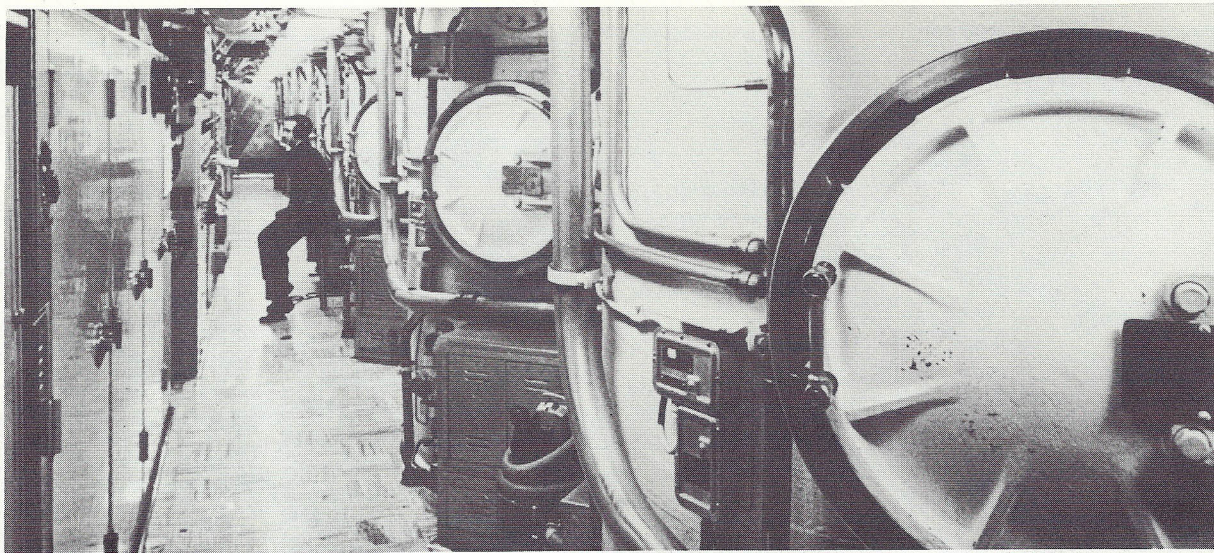
There are currently three generations of the Polaris missile. Polaris A-1 has a 1,380 statute mile range, Polaris A-2 can reach out 1,725 miles and Polaris A-3 covers 2,880 miles. The A-3 can hit any land target in the world from a submerged submarine operating in international waters.

All three versions of Polaris are two-stage ballistic missiles powered by solid fuel rocket

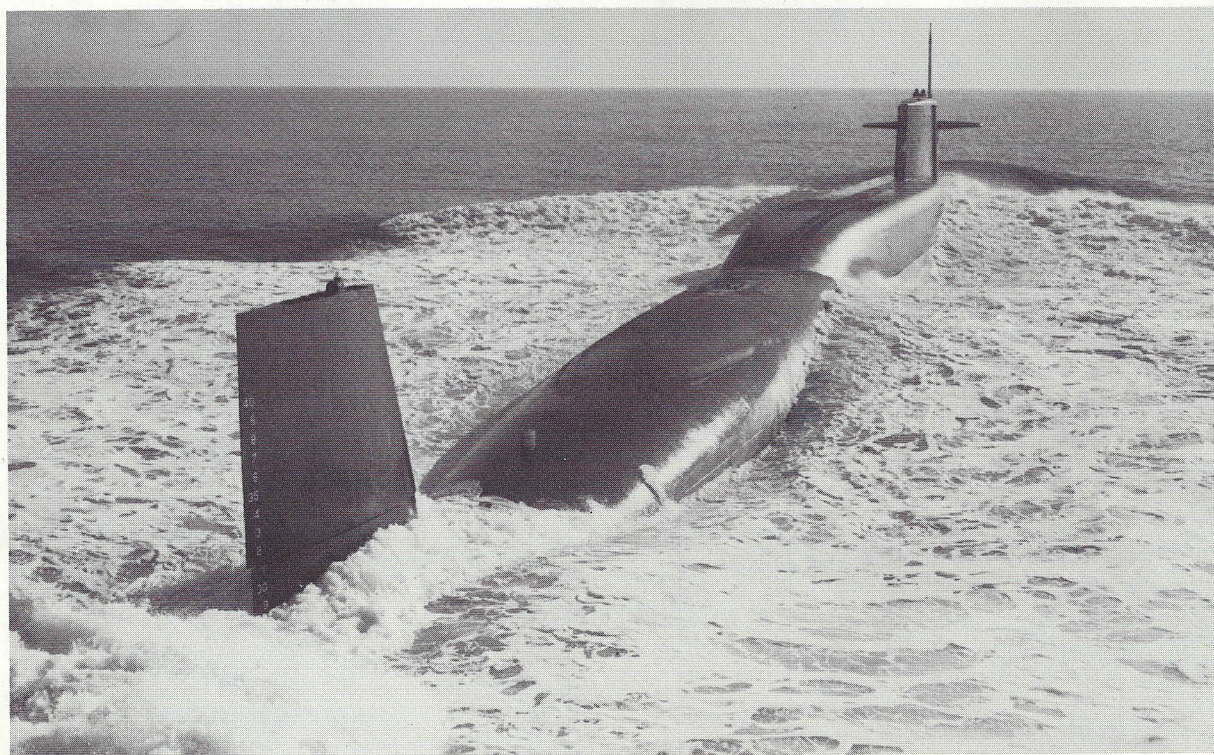


Missile Loading From Submarine Tender

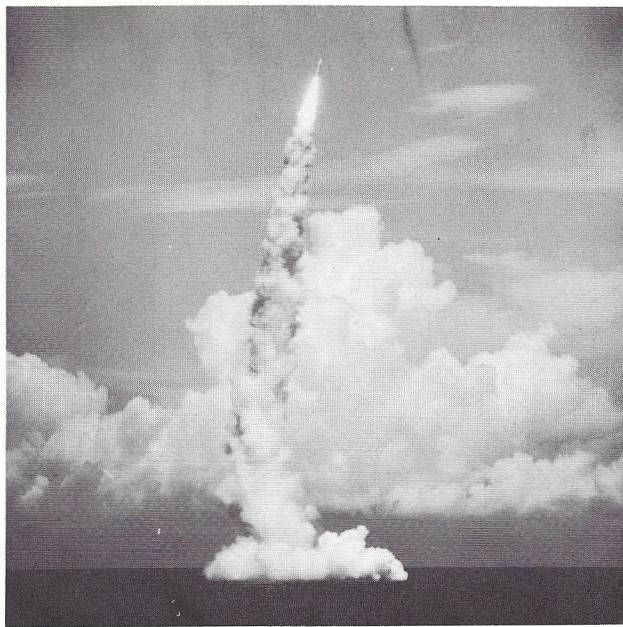
motors and guided by self-contained inertial guidance systems independent of external commands or control. Polaris A-1 and A-2 have the familiar bottle shape configuration but the A-3 has a more conventional bullet-like appearance.



Missile Compartment—Called "Sherwood Forest"



Polaris Submarine on the Surface



Polaris A-2 Missile

There are three classes of FBM submarines. The first five submarines to deploy were GEORGE WASHINGTON class. They carried Polaris A-1 missiles on their first patrols and got longer range missile capability at their first overhaul. WASHINGTON class submarines are 380 feet long with a beam of 33 feet and displacement of about 5,900 tons.

ETHAN ALLEN class submarines are 410 feet long and displace 6,900 tons. There are five of these. They have deployed with Polaris A-2 missiles.

The remaining 31 submarines are LAFAYETTE class and are 425 feet in length and displace some 7,320 tons. The first eight of these deployed with A-2 missiles and the rest will load out with A-3s.

All three classes are driven by steam turbines powered by water-cooled nuclear reactors. Each submarine carries 16 Polaris missiles.

Missiles are launched by either air or gas eject systems which force the missile from its launching tube and propels it through the water to the surface where the rocket motor ignites and sends the missile on its way.

Getting information from the highly precise Ships Inertial Navigation System (SINS), the fire control system feeds coordinated information to the missile guidance system as to ship location, local vertical, true north, target location and trajectory to be flown. Corrections are supplied until the instant of fire. The fire control mechanism can prepare missiles for launch at a better than one a minute rate.

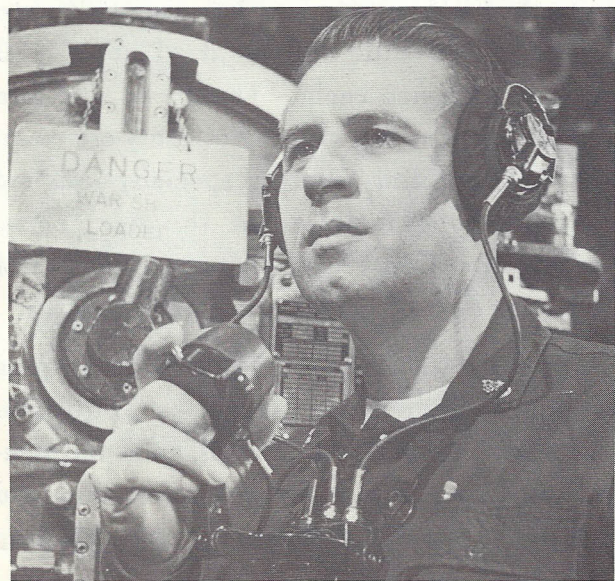
Each FBM submarine has two complete crews, called Blue and Gold, of about 130 officers and men each. The crews alternate on the long patrols with the off-duty crew employed in training ashore at specially designed team training facilities in the homeports. Average pre-commissioning training for FBM personnel is about eight to twelve months.

Support facilities of the FBM weapon system include missile test sites, shipyards, submarine tenders, cargo ships, an experimental test firing ship, a navigation test ship, and missile assembly, checkout and loading facilities.



Fire Control Console

On Watch in Torpedo Room



Polaris A-3 Missile



Returning From Patrol