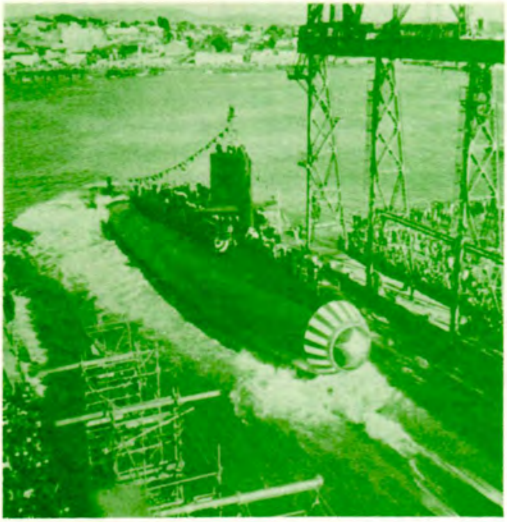
U S S SCAMP

S S (N) 588



LAUNCHING

UNDERWAY TRIALS

SHIP'S HISTORY

SCAMP, sister ship of the U. S. S. SKIPJACK (SSN 585), is the fifth of a new generation of fighting ships. She combines the same hydrodynamically shaped hull with an efficient nuclear power plant which gives this class submarine the highest submerged speeds yet attained.

Authorized by Congress as a part of the Navy's fiscal year 1957 shipbuilding program, her keel was laid at the Mare Island Naval Shipyard, Vallejo, California on January 23, 1959. Twenty-two months later Mrs. John C. Hollingsworth, SCAMP'S sponsor, broke the traditional bottle of champagne over the bow and the SCAMP slid down the ways into the Napa River.

SCAMP commenced her sea trials on April 9, 1961, and on their completion was acknowledged to be one of the world's fastest submarines. She was commissioned on June 5, 1961 and joined the Submarine Force, U. S. Pacific Fleet, with CDR Walter N. DIETZEN, JR., U. S. Navy, as her first Commanding Officer. Immediately, she started work with units of the Pacific Fleet. SCAMP'S hull form and the nuclear power plant will be used for almost all new submarines, including the potent Polaris Missile submarines.

The nuclear propulsion plant in SCAMP is the result of a decade of developmental research by the Naval Reactors Branch of the Atomic Energy Commission and the Westinghouse Electric Corp., who also provided the reactor plant for the first nuclear submarine NAUTILUS. SCAMP'S plant is as powerful as NAUTILUS', and equally reliable, but by skillful engineering progress it has been possible to greatly reduce the size and complexity of the plant and to use a single, maximum-efficiency propeller instead of the usual multiple propellers of the other ships.

The present SCAMP is the second ship of the United States Navy to bear this distinguished name. The first SCAMP was launched in 1942 at Portsmouth Navy Yard, Portsmouth, New Hampshire. She completed a total of 7 War Patrols, sinking 5 enemy vessels totalling 34,000 tons including the 2180 ton Japanese Submarine I-24. She received 7 Battle-stars for her operations. She was on her 8th war patrol when the last reports were received from her. Available records indicate she was depth charged by a coastal defense vessel to the South of Tokyo Bay on 11 November 1944. Commanding Officer on the 8th war patrol was LCDR John C. Hollingsworth whose widow was the sponsor of the new SCAMP (SSN 588).

COMBAT POTENTIAL

True submarines like SCAMP are fitted with the most modern anti-submarine fire control and sonar equipment, and are the most effective single weapons system available to combat other submarines. Other nuclear submarines are being fitted to fire ballistic missiles. Both these classes of submarines can remain fully submerged on station almost indefinitely. They will be invisible and virtually undetectable and indestructible. They present an almost unchallengeable deterrent force-in-being to any potential aggressor.

ENGINEERING PLANT DESCRIPTION

PRIMARY SYSTEM

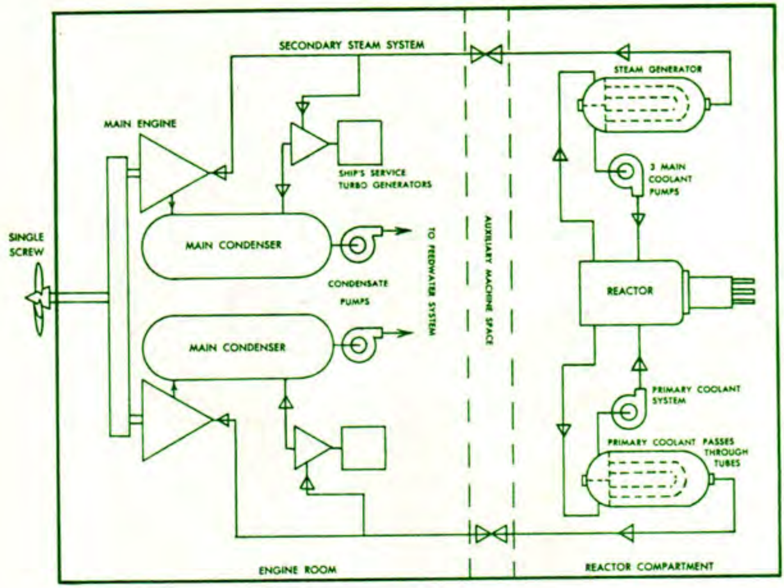
The reactor compartment equipment includes one reactor, and two primary loops.

The reactor gives up heat to the primary coolant water, which then is forced through the steam generator tubes where it gives up heat to form steam on the shell or secondary side of the boiler. The primary coolant is then pumped back into the reactor where it is heated again.

The primary coolant water is kept pressurized to insure that boiling will not take place in the reactor.

SECONDARY SYSTEM

The secondary system is the steam system. It is completely isolated from the primary system since the primary water goes through the tubes of the steam generator while the secondary water, which is boiling to make steam, is on the shell side.



Steam rises to the top of the steam generator where the water carry-over is separated from the steam. The dry saturated steam then flows back to the engine room where it drives ship's service turbo generator sets (SSTG), and the main propulsion turbines.

Provision is made for declutching the propulsion turbines and reduction gear from the propeller shaft so that the ship can be driven through the water by the electric motor mounted integrally on the propeller shaft. The electric motor can receive power from the battery, from small diesel engines or from AC-DC motor generator sets.

RELIABILITY

The SCAMP'S S5W Reactor Power Plant has one reactor and a single propeller. Between these two vital components almost every electrical and mechanical system is installed in duplicate on the port and starboard sides of the ship. In addition, every control feature of the power plant and of the ship has at least one backup method of operation in addition to normal operation. The single propeller is made to the same standards of strength as are ice breaker propellers while the shock resisting and strength characteristics built into the reactor virtually rule out physical damage to the reactor.

RADIATION

When the reactor is in operation, the lower level of the reactor compartment is kept isolated and personnel cannot enter this space. Within a few minutes after shut-down the lower level reactor compartment can be entered to perform maintenance work.

The shield of the SCAMP reactor reduces the radiation to a level such that, during a cruise lasting the life of the reactor, the average crew member will receive less radiation than he would during a lifetime from x-rays and cosmic rays and natural radioactivity in the sea, air, drinking water and ground. In one year of operation the average crew member will receive less than the Bureau of Standards allowable radiation dosage for one week.

STARTUP

A typical schedule for startup from a cold condition follows:

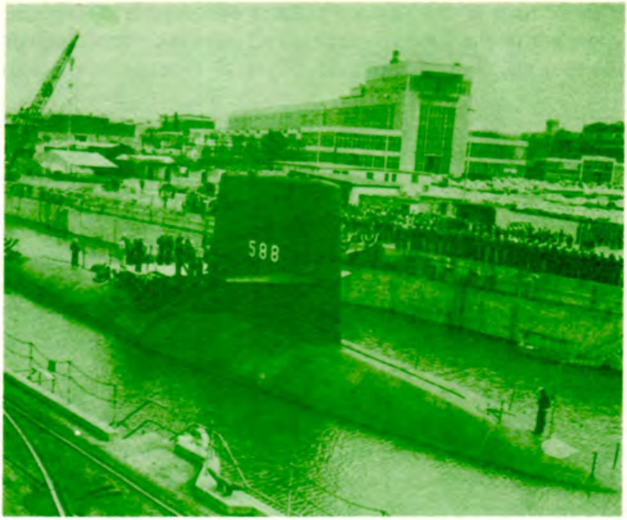
Four hours before underway--Start a pre-critical checkoff, which is a thorough check of all reactor control equipment. The in-port watches in the engine room and reactor compartment check systems lined up for operation.

Two hours before underway time--Engineering duty section stations the watch. Commence pulling rods.

One and one-half hours before underway time--Reactor startup completed--warming up primary loop and steam lines.

Thirty minutes before underway--Warm up turbines. Put turbo generator sets in operation.

Fifteen minutes before underway time--Ready to answer bells.



COMMISSIONING

A UNIT OF THE FLEET

KEEL LAID:	Jan. 23, 1959
LAUNCHED:	Oct. 8, 1960
MAIDEN VOYAGE:	Apr. 9, 1961
COMMISSIONED:	June 5, 1961
BUILDER:	Mare Island Naval Shipyard