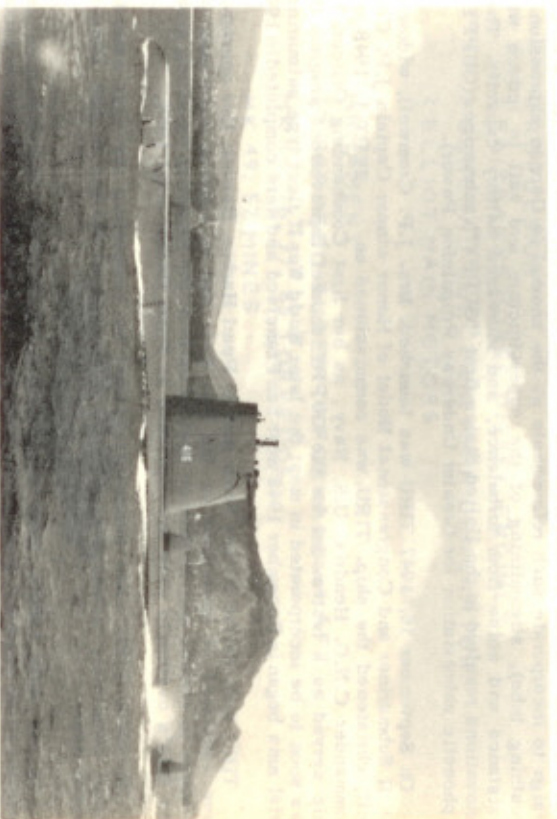


Welcome Aboard



U.S.S. TIRU (SS416)



USS TIRU's HISTORY

TIRU was authorized for construction as a GATO class fleet submarine, and her keel was laid on April 17, 1944 at the Mare Island Naval Shipyard in Vallejo, California. TIRU was still on the building ways at the end of World War II when construction was temporarily halted.

Utilizing knowledge gained from wartime operations and ideas obtained from captured German submarines and records, the Navy altered TIRU's original design to incorporate such refinements as the snorkel (a German expression for breathing tube), streamlining of the superstructure and sail to reduce water resistance and noise from turbulence, and increased battery capacity. These innovations resulted in the United States first "GUPPY" submarine. (GUPPY is a phonetic abbreviation for Greater Underway Propulsion Power).

On September 16, 1947 TIRU was launched. Mrs. J.P. Cromwell, widow of WW II Submariner and Congressional Medal of Honor winner Captain J.P. Cromwell, christened the ship. TIRU was commissioned on SEPT 1, 1948 with Commander C.N.G. Hendrix, U.S. Navy, as her first Commanding Officer. The ship served as a test model for the GUPPY snorkel improvement program that was soon to be incorporated in most the later World War II fleet type submarines. Trial runs began in December 1948 near San Francisco and were completed in 1949.

TIRU then sailed for her home port in Pearl Harbor, Hawaii. Her operations have consisted of operations in the Far East and in training exercises with services to various anti-submarine warfare units in the Hawaiian operating areas. The ship's overhauls were accomplished at Pearl Harbor until 1968.

In 1950, TIRU made submarine history by completing the first extended cruise completely submerged, snorkeling from Pearl Harbor to San Diego in twelve days.

In the early 1960's TIRU completed a FRAM (Fleet Rehabilitation and Modernization) overhaul. During this period she was lengthened 12 feet to accommodate more sophisticated electronic equipment. This led to conversion to a GUPPY III type submarine, another first for TIRU, and gave the ship the most modern sonar and fire control and electronic equipment than available in the Navy.

In October 1966, TIRU departed for the Western Pacific on her eleventh Far Eastern deployment. On this cruise she crossed the Equator at the International dateline, her second time in the southern hemisphere, enroute to Brisbane, Australia, to participate in that nation's annual Coral Sea Festival. Completing the deployment in mid 1967 the ship returned to Pearl Harbor and operated locally in Hawaiian waters. During December 1968 TIRU commenced overhaul at San Francisco. In June 1969 TIRU changed her home port to San Diego.

TIRU has twice been awarded the "E" for combat readiness and battle efficiency. Though completed too late for service in World War II, TIRU has participated in operations associated with both the Korean and Viet Nam conflicts.

In Sept 1970 TIRU again changed homeports as well as fleets arriving in Charleston, S.C. on the second of September. From Feb. 1971 to June 1971 TIRU completed a highly successful Mediterranean deployment. TIRU operated locally until March 1972 when she commenced an overhaul at Charleston Naval Shipyard.

Upon completion of the overhaul in September 1972, TIRU resumed local operations in the Caribbean.

- SHIP'S CHARACTERISTICS -

LENGTH OVERALL	318 FT. 10 1/4 IN.
BEAM	27 FT. 3 1/2 IN.
SURFACE DISPLACEMENT	1976.7 TONS
MAXIMUM DRAFT	17 FT. 2 1/2 IN.
COMPLEMENT	8 OFFICERS
	74 ENLISTED

PROPULSION
3 FAIRBANKS MORSE DIESEL ENGINES
3 GENERAL ELECTRIC MAIN GENERATORS
2 ELLIOT MAIN MOTORS

ARMAMENT
10 TORPEDO TUBES - 6 FORWARD, 4 AFT
MK 14, 16, 37, 45 TORPEDOS
MK 49, 57 MINES



-WARDROOM OFFICERS-

LCDR D. G. CLEVELAND	COMMANDING OFFICER
LCDR J. E. TRAVER	EXECUTIVE OFFICER
LT M. C. PETERSON	NAVIGATOR/OPERATIONS
LTJG L. B. MC COMB	SONAR/EMO
LTJG J. O'SULLIVAN	ENGINEERING OFFICER
LTJG S. A. SMITH	WEAPONS OFFICER
LTJG C. S. STEINERT	COMMUNICATIONS
LTJG G. C. GRIMES	SUPPLY OFFICER
ENS J. WAGNER	ASSISTANT ENGINEER



LCDR D. G. CLEVELAND, USN
COMMANDING OFFICER



LCDR J. E. TRAVER, USN
EXECUTIVE OFFICER

WELCOME ABOARD

It is with great pleasure that the officers and men welcome you aboard USS TIRU (SS416), the first modernized GUPPY III type submarine. It is hoped that you will enjoy your visit aboard this ship which is an integral part of our National Defense Team.

TIRU joins over 100 sister submarines in forming one of the first lines of this nation's defense upon which our country may call in the event of a national emergency. Loaded and trained for immediate deployment, this ship can get underway in less than 24 hours and remain at sea for over six weeks.

Comprising only a small number of the Navy's ships and men, the Submarine Service boasts an "Esprit De Corps" rivaled by no other service. The officers and men who man our submarines are hand-picked volunteers. They are joined together by a common bond, symbolized by the "Dolphins," the insignia of a submariner.

With regard to your hosts, the crew of TIRU, it may be well to point out that each of them has been carefully screened with regard to temperament and ability. Submarining is a demanding task, requiring physical stamina, a tremendous amount of work and ability to adapt to unusual and arduous conditions. Each man must, in addition to being an expert in his own specialty, become completely familiar, in detail, with all facets of TIRU's operation, capability, and construction. To the new unqualified man, this comes after many months of study and training.

We hope that you have profited by your visit and leave with a better understanding of your Navy's Submarine Service, which is on the alert day and night not only guarding America's shores and her interests abroad, but the free world as well.

D. G. CLEVELAND
COMMANDING OFFICER

SUBMARINE FORCE HISTORY

The United States Submarine Force was founded in 1900 when the Navy accepted the HOLLAND, which the inventor had built privately. From 1900 to 1914 progress was steady. These boats carried only a handful of men and were not designed for cruising. These early craft were so small that they were referred to as "boats" rather than ships. They carried "boat" flags and were never skippered by anyone higher than a LTJG. Today, the latest submarines of several thousand tons displacement are still referred to affectionately as "boats".

World War I saw the submarine emerge as a major factor in conflict. The Germans found themselves in possession of the war's most effective weapon, a weapon able to inflict economic strangulation. England had to import food to live. Had the rate of sinkings attained by subs in the spring of 1917 been continued, England, in a matter of weeks, would have found its situation desperate.

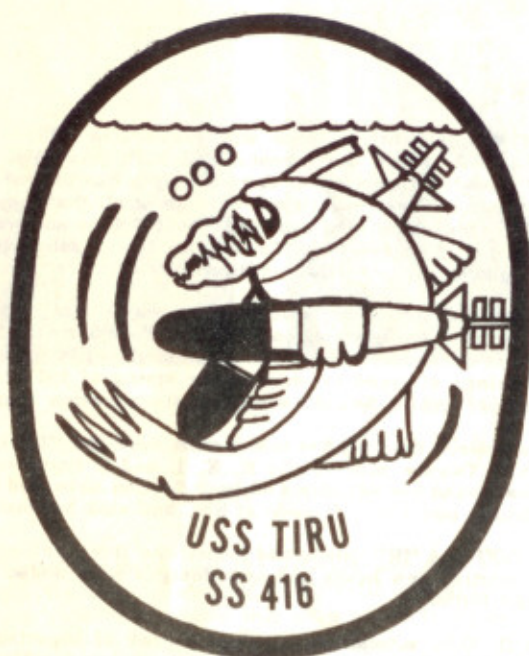
When America entered the war, her latest subs were the "L" boats, a far cry from the HOLLAND. Twenty subs of the E, K, L and O types reached the war zone. One "L" boat found herself attacked by 2 German subs and had the unique experience of watching one fire a torpedo at her, and sink her mate!

By 1919 the "O" and "R" boats had joined the fleet, followed by the "S" boats. During the thirties new boats and new designs were added to the growing American submarine force.

In World War II, U.S. submarines reached a peak of importance and effectiveness. When Pearl Harbor came, the sub force was ready. What the "silent service" accomplished is a long story but it can be summarized in one sentence. Japan's ability to wage maritime war depended not only on her Navy but on her Merchant Marine, and the U.S. submarines alone sank 55% of the total Japanese tonnage sunk in the war.

Nuclear power was the long awaited propulsion source for the submarine. It was to turn the submersible surface ship into a true submarine, capable of almost indefinite submerged operation. After World War II had been won, the Navy was able to "turn to" in earnest to develop a nuclear power plant. Naturally the first use was in the submarine - the historic NAUTILUS.

The latest, and perhaps most spectacular, advancement came with the Polaris Fleet Ballistic Missile firing submarines. These subs can launch the Polaris solid-fuel missiles from beneath the surface and strike targets up to 2,500 miles away. "Invulnerable" is the only way to describe the F.B.M. force. These submarines give our nation an invulnerable deterrent force immune to sneak attack and always ready, if need be, to loose nuclear destruction on an aggressor. Today's submarine force has come a long way since the HOLLAND.



PAST COMMANDING OFFICERS

Commander C.N.G. Hendrix	1 September 1948
Commander L.P. Gray, III	15 August 1950
Commander H.J. Cappello	28 June 1952
Commander E.B. Johnson	27 June 1954
Commander R.R. MacDonald	28 July 1956
Lieutenant Commander W.R. Cobean Jr.	30 August 1958
Commander A.H. Thomas Jr.	3 September 1959
Commander O.S. Hallett	21 August 1961
Lieutenant Commander W.V. Surman Jr.	9 February 1963
Commander E.L. DeWispelaere	10 February 1965
Commander J.D. Shilling	9 January 1967
Lieutenant Commander T.G. Warburton	10 September 1968
Lieutenant Commander W.M. Mickle	4 September 1970