

NATIONAL REGISTER ELIGIBILITY ASSESSMENT

VESSEL: USS *Sperry* (AS-12)



USS *Sperry* underway date unknown . U.S. Navy photograph.

Vessel History

The Mare Island Navy Shipyard in Vallejo, California (renamed Mare Island Naval Shipyard after 1945), laid the keel of the submarine tender *Sperry* (AS-12) on February 1, 1941 and launched the ship on December 17, 1941, just 10 days after the Japanese attack on Pearl Harbor. *Sperry* was named after the famed engineer and inventor, Elmer A. Sperry. Sperry's daughter, Mrs. Helen Sperry Lea, sponsored the ship at its launching ceremony. Captain Robert H. Smith took command of *Sperry* when the U.S. Navy commissioned the vessel on May 1, 1942.

After completing its trials and training, *Sperry* sailed for Oahu, Territory of Hawaii, on August 2, 1942. While in Oahu, it repaired eight submarines over the course of three months before leaving on its next assignment. In October, *Sperry* headed for Australia arriving there on October 26, 1942. It took a circuitous route around the Solomon Islands to Noumea, New Caledonia where it spent three days on a layover.

It arrived in Brisbane, Australia on November 13 and spent the next two months there repairing eight submarines. It sailed out on January 17, 1943 and returned to Pearl Harbor, arriving there on January 31. *Sperry* remained in Pearl Harbor for the next four months and conducted repairs on 20 submarines before setting sail on June 8, 1943 for Midway Island with a small contingent of ships.

Sperry arrived at Midway on June 12 and spent the following five months restoring submarines there. Over the course of its stay, it remained very active and refurbished 140 submarines for duty. *Sperry* returned to Pearl Harbor in mid-November and continued repairing submarines there before shipping out once again.

Sperry set sail for Majuro Atoll and remained there from March 15 until September 19, 1945. It conducted 21 repairs on various submarines while in port. Its major accomplishment at Majuro was the construction of a permanent convalescent base for submarine crews, code named Myrna. With new orders, *Sperry* departed the island and steamed for Oahu arriving on September 24. *Sperry's* orders changed and it left Oahu on October 8 and headed towards Guam. It left in a small convoy of 11 ships that sailed to Eniwetok. From there, *Sperry* left with the *Corbesier* (DE-438) and arrived in Guam on October 20. While moored in Guam, *Sperry* refurbished 40 submarines over the course of four months. In addition to its normal duties, *Sperry* once again built another submarine base for crews operating in the forward areas, code named Camp Dealey.

It left Guam on February 13 under escort and returned to Pearl Harbor on February 22. *Sperry* remained in Pearl Harbor for a short time before the navy ordered it to Mare Island for a refit. *Sperry* arrived at the naval shipyard on March 7, 1945 and remained there until the yard completed its repairs on April 30. *Sperry* returned to Pearl Harbor on May 10 and began its normal duties again repairing four submarines. New orders came through and *Sperry* proceeded to Guam on June 30. From July 11, 1945 until January 11, 1946, *Sperry* remained in Guam carrying out its duties.

The Pacific War formally ended on August 15, 1945 while *Sperry* was moored in Apra Harbor. It traveled once while participating in an exercise supporting six submarines from the latter end of November through early December. During the exercise, the group traveled to Ulithi Atoll and Manus Island before returning to Guam on December 15. Following Guam, the navy ordered *Sperry* to the U.S. West coast for an overhaul and it departed on January 11, 1946.

On February 20, *Sperry* entered Long Beach Harbor and docked at Terminal Island for a comprehensive refit. The shipyard completed the overhaul in July 1947 and it sailed to its new homeport in San Diego, California. *Sperry* spent most of its time moored in San Diego performing missions in support of the Seventh Fleet. *Sperry* earned distinctions from 1948-1950 winning the popular battle efficiency "E" award and participated in the first public tests of launching submarine missiles at sea. *Sperry* remained active as the Korean War broke out in 1950. It overhauled and equipped numerous submarines participating in the conflict. The navy stationed *Sperry* in Pearl Harbor and the Benin Islands during the war from August 6 to October 9, 1952 before it returned to San Diego.

As the war subsided, *Sperry* remained in port to conduct repairs and supply the west coast submarines, but did participate in training cruises outside of San Diego over the next 10 years.

Over the next 20 years *Sperry* continued operating as a submarine tender out of San Diego, but following an upgrade its missions changed. In 1961 the U.S. Navy modernized *Sperry* through the second Fleet Rehabilitation and Modernization program (FRAM II), which allowed it to service nuclear ballistic missile submarines and attack submarines. It carried on in that capacity and operated out of San Diego until September 30, 1982 when the navy decommissioned and removed it from the Naval Vessel Register. The *Sperry* entered the Maritime Administration's Suisun Bay Reserve Fleet in Benicia, California on March 16, 1998, where it currently remains awaiting disposal.

Historic Context

A critical link that enables the U.S. Navy to project power around the globe is its auxiliary fleet. The auxiliary fleet has had different names through the years, but in essence, its role has remained the same: to repair and resupply the fleet.

The U.S. Navy first conceived the idea of a "fleet train" after reviewing and analyzing the Battle of Tsushima fought between the Japanese and Russians in 1905. The lessons derived from that naval engagement assisted the U.S. Navy in developing its war strategy against Japan. Due to the large expanse of the Pacific Ocean, the senior naval advisory group, the General Board, advocated the development of an auxiliary force. In the war plan, the auxiliary ships would operate in the forward areas at advanced bases to conduct repairs and replenish the fighting warships. The U.S. Navy included submarine tenders in the advanced base concept and opted to build the tenders over permanent submarine bases because they offered "flexibility and mobility." The unique design of the tenders allowed them to refurbish and supply submarines operating in forward areas. They also served as a mother ship, relieving crews and providing refuge from the confines of the submarine. The U.S. Navy successfully applied the advanced base plan during World War I, which became a model for future strategies.

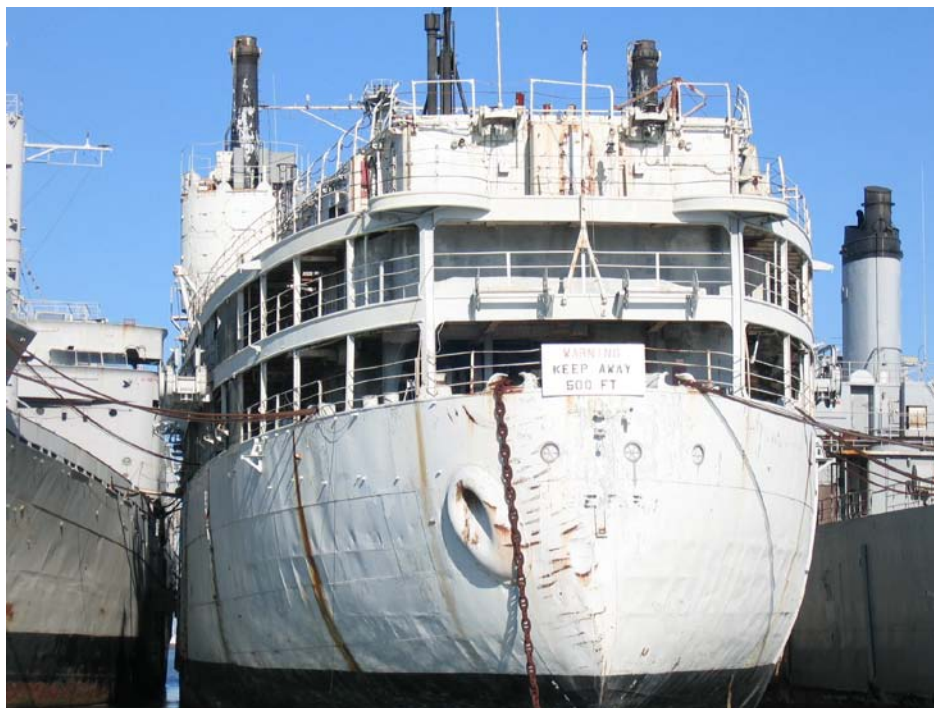
The navy implemented a Base Force following the war and included a large number of auxiliaries. The navy also developed a universal hull for a destroyer tender, repair ship, and submarine tender, but after the stock market crash and the economic downturn that resulted in the Great Depression, Congress withdrew the funding. The interwar years proved challenging for the U.S. Navy, but economic and treaty constraints encouraged the service to innovate. President Warren Harding's administration initiated the Washington Naval Conference in 1921 to limit naval construction among the world's leading powers: England; France; Italy; Japan; and the United States. In 1922, the five nations agreed to the treaty's provisions and signed the treaty. The Five Power Treaty or Washington Naval Treaty set in place a number of rules regarding naval construction, but centered on a preset ratio of capital ship tonnages for each nation. To appease Japan over its small ratio *vis-a-vis* the United States, Article XIX⁵ limited

American naval base construction. The fortification clause within the treaty had the biggest impact on U.S. naval planning in the Pacific and “contributed to innovation by forcing the navy to consider how to apply sea power at very long ranges in the absence of pre-existing bases.” The second problem facing the U.S. Navy was “how to build a navy ‘second to none’ when neither Congress nor the President allocated or authorized money for construction.” The U.S. Navy’s solution to its problems resulted in a “balanced” fleet utilizing a mobile basing strategy. The navy’s term for “balance” stood for a broad selection of vessels rather than quotas, but still focused on the battleship as the centerpiece of American naval strategy. Submarines figured prominently in the new war plans directed against Japan (Plan Orange) and were to be used as the “eyes” of the fleet. The navy included submarine tenders as well due to the intensive upkeep of the submarines.

The *Fulton* class was a direct outgrowth of this planning during the interwar years, since naval architects prepared construction plans years before the outbreak of hostilities. When the United States entered into World War II, one of the first priorities became the construction of ships. The global experience and ferocity of World War I taught the United States that World War II would be on a grander scale, in more places, involving more people, and requiring more equipment – “total” war.

During World War II, the U.S. Maritime Commission, the predecessor of the Maritime Administration, became a pivotal force in the development and construction of ships as the Shipping Board had been in World War I. Created in 1936, the Maritime Commission succeeded the Shipping Board, but followed the same directive, the promotion of U.S. shipping interests. When war came, the Maritime Commission was poised to help the country and set out by creating the “Emergency Program,” a massive ship construction plan utilizing new and existing shipyards across the United States. In addition to the private yards constructing naval ships, the Mare Island Navy Yard produced a significant number of ships.

The U.S. Navy founded the shipyard in 1853, which encompassed 956 acres 25 miles northeast of San Francisco, California. In 1854, the navy formally established Mare Island as its first base on the Pacific Coast with Commander David Farragut in command. The shipyard produced its first warship in 1859, began building a dry dock in 1872, completing it in 1891. During World War II, Mare Island built 32 destroyer escorts, over 300 landing craft, 33 small craft, 17 submarines, and 4 submarine tenders. Over the course of operations, Mare Island constructed 512 ships and refurbished hundreds of vessels. The shipyard remained in operation until its closing in 1996 through the Base Realignment and Closure (BRAC) assessment.



Top: Stern view of *Sperry*, April 28, 1945, near Mare Island Navy Yard. U.S. Navy photograph.

Bottom: Stern view of *Sperry* at the Suisun Bay Reserve Fleet in Benicia, California, February 2009. Maritime Administration photograph.

Description/Principal Characteristics of Vessel

Type: Submarine tender

Class: Fulton

Builder: Mare Island Navy Yard; Vallejo, California

Year: 1941

Sister Ships:

Location: Suisun Bay Reserve Fleet, Benicia, California

Length: 530.7"

Beam: 73.4"

Draft (design): 25.6"

Displacement: 9,250

Speed: 15 knots

The U.S. Navy received Congressional funding for the *Fulton* class in the 1938 and Mare Island Navy Yard began construction on *Fulton* in July 1939 (*Sperry* followed in February 1941). The design of the *Fulton* class submarine tenders began in the late 1930s through the U.S. Navy's Bureau of Construction and Repair. The navy followed the production techniques of the Maritime Commission by designing auxiliary ships with a universal hull, which later became destroyer tenders, repair ships, and submarine tenders. It was 530'7" in length overall, 73'4" amidships, and had a limiting draft at 25'6". Its numerous tanks in the inner bottom, bow, and stern carried diesel oil and water that served as ballast. The ship held 26,600 barrels of fuel that allowed it a cruising radius of 15,000 nautical miles. As the ship consumed fuel, pumps within the machinery space transferred seawater into the empty tanks to maintain the correct stability and trim.

To achieve the designed speed of 15 knots, naval architects determined that the ship would need two power plants rated at 11,800-shaft horsepower (shp) to turn two screws. Designers divided the machinery spaces in two, one forward of the auxiliary machine room and one aft. Inside each machinery space were four General Motor diesel generators (16-248) supplying power to a General Motors electric motor.

As a repair ship, *Sperry* carried six generators in the machine spaces to supply power to the ship and submarines moored alongside. Inside the forward machine space, naval architects placed two 500-kilowatt diesel generators along the port side. In the auxiliary machine space, there were two 250-kilowatt diesel generators along starboard side supplying auxiliary power to the submarines. Opposite the submarine generators, there was an 850-kilowatt motor generator used for converting AC power to DC power. The aft machinery room contained two diesel generators: a 500-kilowatt generator on the port side and a 250-kilowatt generator on the starboard side. An emergency ship's generator was on the second deck across the passageway from the barbershop.

Naval architects devoted a majority of space on board *Sperry* to the manufacture, refurbishment, and storage of submarine equipment. The hold level contained a number of spaces dedicated to the storage of torpedoes and their equipment. Void spaces in the hull protected the equipment from mines or torpedoes, as they were filled with ballast water or fuel oil.

The third deck included a number of repair shops and storage areas for electrical equipment, metals, and torpedoes. The second deck had a large machine shop for fabricating machine parts, a metals department, and a welding area. The machine shop space and main tool issue room were in the forward section of the ship on the same level. Naval architects allocated a large portion on the main deck to pipe fabrication that included metal and rubber, as well as a foundry for the blacksmiths along with a small welding room. On the main deck amidships, engineers placed a number of spaces for the repair of electrical equipment, mechanical instruments, and optics. The upper deck had spaces devoted to carpentry and the accompanying equipment needed to fabricate the wood. Just aft of the carpenter and pattern shop was a small gyrocompass repair shop. At the stern, there was a calibration lab, communications and sonar repair area, and a radar shop. In the aft end of the superstructure, naval architects placed a technical repair library and printing shop. In the same area, there was a machine shop and fluid repair facility for governors, valves, and hydraulics.

Above the superstructure was a small cryptographic repair shop. *Sperry* carried two cranes and two derricks that were able to hoist and position equipment and stores for loading and offloading. Naval architects placed two heavy duty, dual-purpose electric cranes (20-ton) on the stern section of the ship to move and position deck equipment and to lift and lower materials, machines, and supplies through two removable hatches on the superstructure deck. Two smaller (five-ton) derricks were aft of the bridge and assisted in moving and positioning supplies and torpedoes through a removable trunk in the deck. The crew operated the derricks with the assistance of two double-drum winches off the port and starboard side.

Berthing space for the crew (1,307 people – 107 officers and 1,200 enlisted) occupied a sizeable amount of space. Naval architects placed senior officers in the superstructure along with two staff members in private spaces. The remaining officers lived on the upper deck within the forward area in private spaces. Berthing for the Chief Petty Officers (CPO) was in the bow area on the main deck in bunks stacked three or four high. The enlisted crew's berthing was in two areas of the ship: a third occupied the stern area on the upper deck and the remaining crew lived in the stern and forward areas on the second deck in bunks stacked four or five high.

Food service could be found in three areas of the ship and food storage provided ample supplies for long deployments. Food preparation for the enlisted crew took place in the forward area on the second deck. There were two messes forward and aft of the galley. Naval architects allocated spaces for a bakery, butcher shop, and vegetable preparation room. Mess attendants served the crew cafeteria style from two steam tables, one serving each mess. The

CPO mess was aft of their berthing quarters and it contained a small pantry. The officer's galley was aft of the CPO mess and was simple, but included all the equipment necessary to prepare their food and a dumbwaiter transported it up to a modest pantry. The wardroom was forward of the pantry and included sizeable space for the officers to eat and relax. Naval architects placed the food reefers and dry stores on the second platform, first platform, and third deck in the forward area near the bow.

Designers placed a service elevator beside the food storage spaces that allowed crewmembers to transport supplies through the ship. Good hygiene and morale was an important aspect of shipboard life. Designers incorporated sufficient space for showers, heads, and washrooms around the ship and near the crew's living quarters. There was a permanent dentist, a medical doctor, and offices on board amidships on the upper deck. A barbershop was also aboard on the port side, forward of the crew's berthing on the second deck. Laundry facilities were on the same deck in the stern of the ship. There was a Ship's Service Store to purchase personal items, a post office, and a chaplain's office. The crew also had access to a library and a career counselor for future positions.

During World War II, designers placed defensive armament on the ship for protection and life saving features. On the bow were two 5"/38 single mount guns and two more were on the stern section. The 5"/38s were dual-purpose and could target aircraft or ships through the Mark 51 gun director. On the superstructure were four twin-mount 40-millimeter anti-aircraft guns. Naval architects placed ammunition trunks on the hold level under the position of the 5"/38s and hoists lifted the powder and shells upward to the gunners. In the event of a sinking, there were multiple lifeboats and rafts: motor whaleboats on the stern section and rafts off the sides on the main deck. After the war, the navy removed its defensive armament.

Statement of Significance

The U.S. Navy designed *Sperry* and began construction of its hull in 1940. It remains notable for being the second in a class of seven specially designed submarine tenders. It served in the U.S. Navy from 1941 until its decommissioning in 1982. Its role as a submarine tender remained the same throughout its career, but its mission changed in 1961 from repairing and replenishing diesel-powered submarines to performing similar tasks on nuclear-powered ballistic missile submarines (SSBN) and attack submarines (SSN), following an upgrade through the second Fleet Rehabilitation and Modernization program (FRAM II).

Integrity of Characteristics/Features

Sperry was originally constructed in 1941 and was modified during its long 41-year Navy career. After WWII, the navy removed its defensive armament and in 1961 *Sperry* was modernized, thus allowing it to service nuclear ballistic missile submarines and attack submarines. *Sperry* has been sitting at the Maritime Administration's Suisun Bay Reserve for more than 12 years and its physical integrity is fair to poor.

National Register Eligibility Statement

Sperry's unique attributes and long service career (41 years) is a testament to the significance and value of the submarine tender. The vessel had a very active career and served the U.S Navy well during World War II and the Korean War. However, nothing of significance has been found in *Sperry's* history, design, or association with persons of significance to our history that would qualify the vessel for listing on the National Register of Historic Places.

Date: October 1, 2010

Determination: NOT ELIGIBLE

Sources

Draft of "Historic American Engineering Record, USS *Sperry*," by Brian Clayton, HAER No. CA-342, Washington, DC: National Park Service, Winter 2009.

Internet Sites

Maritime Administration's Property Management and Archive Record System Website:
<https://pmars.marad.dot.gov/detail.asp?Ship=4620>