

NATIONAL REGISTER ELIGIBILITY ASSESSMENT VESSEL: SS *Ohio*, ex-*Seatrain Ohio*



Seatrain Puerto Rico, the first in a line of seven converted T2 tankers and sistership of the *Ohio*, underway circa late 1960s. Victory Ships and Tankers, L.A. Sawyer and W.H. Mitchell

Vessel History

The *Seatrain Ohio* was built in 1967 as a combination railway car/container-carrying vessel for Seatrain Lines, Inc. of New York. It was constructed by recombining modified sections from three WWII T2 class tankers.¹ The ship spent its active career on charter to the U.S. Military Sea Transportation Service (MSTS),² which later became the Military Sealift Command (MSC).

Engineer Graham M. Brush founded Seatrain Lines in 1928 to ferry railway cars loaded with goods between New Orleans, Louisiana and Havana, Cuba. The vessels were fitted with tracks and other special equipment so that railcars could move directly from the docks into the ships' holds. The first vessel he adapted to carry railcars was a cargo ship. This vessel, the *Seatrain New Orleans*, carried loaded freight cars from New Orleans to Cuba for the first time in January of 1929. There were many advantages to this new service. It cut down on the amount of time

¹ The T2 tanker, or T2, was an oil tanker constructed and produced in large quantities in the U.S. during World War II. The largest "navy oilers" at the time, nearly 500 of them, were built between 1940 and the end of 1945.

² MSTS was a post-World War II combination of four predecessor government agencies that handled similar sealift functions. These included the Navy's Naval Transportation Service and Fleet Support Service, the Army Transport Service, and the War Shipping Administration of the United States Maritime Commission. In 1970, MSTS was renamed the Military Sealift Command.

spent in port loading and unloading cargo, therefore saving valuable time and money. It also decreased the chance of goods being tampered with or stolen because they had been packed at their point of origin and placed directly into the railcars. Probably the most important advantage was that the Seatrain ships did not need shore-side facilities such as warehouses, or covered docks required by traditional cargo ships. The trains would literally roll off the ship and go directly onto nearby railroad tracks.

In 1932 the service was extended to New York and a series of specially-designed ships was built. The *Seatrain New York* and the *Seatrain Havana* were built at the Sun Shipyard in Chester, PA. These vessels were larger than the *Seatrain New Orleans*, measuring approximately 400-feet long with holds designed to accommodate strings of railway cars on tracks placed across four decks. The cars were loaded through openings in the upper deck using shore-based cranes. In 1940, two more vessels were added to the Seatrain line; the *Seatrain New Jersey* and the *Seatrain Texas*. These vessels operated between New York, Havana, and Texas City, Texas.

The four Seatrain ships provided valuable service transporting military supplies and vehicles during World War II. The *Seatrain Texas* carried cargo, which included 250 Sherman tanks that were used in the pivotal battle of El Alamein in 1942. This battle later led to the German surrender of North Africa the following year.

In 1951, the last ships built for the company from the keel up were completed. More than a decade later, in 1965, Hudson Waterways Corporation acquired Seatrain Lines. The following year, Hudson acquired seven T2 tankers from the Maritime Administration through the Ship Exchange Act.³ The intention was to modernize the fleet by converting these vessels to combination railway car/container carriers.

The *Seatrain Puerto Rico* was the first conversion completed and the name ship of the series. The *Seatrain Ohio* was the last of the seven to be completed. The seven ships were intended for commercial service but by the time the conversions started the Vietnam War had escalated to the point where it was apparent that they would be chartered to MSTTS. The *Seatrain Ohio* was delivered to MSTTS on August 29, 1967.

The conversion costs were between \$1.8-1.9 million per ship. MSTTS chartered the ships for service in the Vietnam War under the terms of a \$150 million contract. The *Seatrain Ohio* was primarily used to transport military supplies, vehicles, and helicopters. Some space was also adapted for troop transport. When the ship had to anchor off the Vietnamese coast, its cargo was transferred to and from shore by helicopters using the ship's spar deck as a landing pad. Some cargo included damaged airplanes and helicopters loaded in November of 1968 for return to the U.S. On one westbound voyage in 1968, the *Seatrain Ohio* carried jeeps, trucks, armored personnel carriers, and two replacement barrels for the 16-inch main gun batteries from the battleship USS *New Jersey* (BB-62), which was being used for in-shore bombardment. In

³The 1965 amendments to Section 510 (i) of the Merchant Marine Act of 1936 provided the Maritime Administration with the authority to trade and exchange vessels with private U.S.-flag shipping companies.

February of 1972, with the war winding down, the *Seatrain Ohio* transported an entire helicopter reconnaissance squadron from Vũng Tàu, Vietnam to Hawaii complete with aircraft, supplies, and personnel.

The ship's use in the Vietnam War was virtually the extent of its active service. Hudson Waterways began adding pure container ships to its fleet in 1967 and phasing out transporting rail cars. On January 7, 1973, an engine room fire broke out while the ship was underway, causing some damage and injuring several crewmen. The vessel was repaired in Norfolk, Virginia and in November of 1973, it was placed at the Maritime Administration's National Defense Ready Reserve Fleet anchorage in the James River off Fort Eustis, Virginia. Subsequent to the move, the *Seatrain Ohio* was renamed *Ohio*.

Between September 29, 1978, and December 14, 1979, and February 16, 1982 and July 14, 1982, it was removed from the Reserve Fleet anchorage for Ready Reserve Force⁴ activation exercises. *Ohio* was transferred from the James River Fleet to the Reserve Fleet anchorage at Beaumont, Texas in early November of 1986. Its status was downgraded to "warehouse use" in February of 1990.

T2 Tanker Conversions

Like the Liberty and Victory ships built by the Maritime Commission during and at the end of WWII, the T2 tankers were employed in commercial service in large numbers long after the war ended. The tankers proved especially well suited to the postwar commercial petroleum trade, as well as for continued postwar naval service. Beginning in the mid-1950s, a number of T2s were "jumboized" to increase their cargo capacity. Others were converted into a variety of other vessel types, including bulk carriers, container ships, and military auxiliaries. The mid-1960s Vessel Exchange Act provided for the transfer of surplus T2s for use in domestic trades, provided that the ships were converted to carry cargoes other than petroleum products. Many such ships were acquired and converted. Among the more unusual conversions were the seven vessels converted for Seatrain Lines into combination container, rail, and vehicle carriers. These seven conversions were complex affairs, in which the vessels were basically cut into three sections (forebody, midbody, and aft machinery section), and then joined in various combinations to create new ships of about 560-feet in length, approximately 26 feet longer than their original construction.

Sections from four of the T2s (*Mission San Diego*, *Mission San Jose*, *Mission San Juan*, and *Tomahawk*) were cut apart and recombined to form three combination vessels; the *Seatrain Washington*, *Seatrain Ohio*, and *Seatrain Maine*. All three were eventually acquired by the Maritime Administration, and subsequently selected for upgrade into the agency's Ready Reserve Fleet subset of the National Defense Reserve Fleet. The agency renamed the vessels by dropping the "Seatrain" prefix. The *Maine* and *Washington* eventually entered the RRF in 1979/80; however, neither the *Ohio* nor a fourth sister ship, the *Puerto Rico* (formerly the *Seatrain*

⁴ The Ready Reserve Fleet was renamed Ready Reserve Force in 1982.

Puerto Rico, which entered the fleet in 1974), completed the upgrade process. These failures were due to deteriorated structure, which was deemed beyond economic repair. The *Maine* and *Washington* were test activated and employed on exercises in the mid-1980s; however, neither vessel was successfully employed during Desert Shield/Storm in 1990-1991. Both vessels were downgraded from the program in 1991 and were subsequently scrapped.

Description/Principal Characteristics of Vessel

Type: Single Screw "Mission" Class T2 Tanker (T2-SE-A2) Converted to General Cargo, Container, Vehicular and Railroad Car Carrier.

Official Number: 244610

Builder: Maryland Shipbuilding and Dry Dock Company, Baltimore, MD

Year: 1967

Sister Ships: *Seatrain Puerto Rico; Seatrain Carolina; Seatrain Florida; Seatrain Maryland; Seatrain Maine; Seatrain Washington*

Location: Beaumont Reserve Fleet

Length: 559.11'

Beam: 68'

Draft (maximum loaded): 27'

Depth to (molded to main deck): 39.3'

Displacement: 21,240 long tons

Deadweight: 12,249 long tons

Gross Tonnage (GRT): 8024.73

Net Tonnage (NRT): 4733.17

Speed: 16 knots

The SS *Ohio*, formerly *Seatrain Ohio*, is the last in a series of seven combination general cargo, container, vehicular, and railroad car carriers that were converted using obsolete T2 tankers in the late 1960s. Each of the seven new vessels was created from three modified and recombined segments taken from two or more original ships. The process of cutting an existing ship into sections and then welding several sections back together was similar to the "jumboization" process used to lengthen ships by inserting new hull sections. Jumboization had become reasonably common by the late 1960s, and was most often employed to increase the cargo carrying capacity of older tankers to keep up with the evolutionary increases in size of new construction vessels. It was also commonly used to convert general cargo (break-bulk) vessels to full or partial containerships.

In order to avoid major structural rework of the hull shape, the hulls of the existing T2s had to be cut at areas where the hull form was of constant shape – an area known as parallel midbody. Tankers typically had parallel midbody that extended for as much as 1/3 or more of the ship's total length; unlike other ship types whose hull sections were constantly changing, and often had only short lengths of parallel midbody. In ships with short parallel midbody, jumboization normally took the form of cutting the ship in half, and inserting a new hull section. A not uncommon alternative method for jumboizing ships with engine rooms located in the after 1/3 of the ship was to cut away the entire forward 2/3 of the ship and replace it with a new hull. This was attractive from a cost standpoint because the retained machinery value was often more than 60-70% of the cost of a new ship. Several T2s were converted in this manner.

The relatively long parallel midbody of a T2 (approx 35% of 540' = 189'), allowed the hull to be cut into three sections. The after section contained the propulsion machinery and the original two-deck superstructure containing the engineer's quarters, galley and mess decks. The forward section typically also included the original forward deckhouse that contained deck officer quarters and the navigating bridge. This deckhouse was removed from the hull section and placed on top of the aft superstructure; creating a new deckhouse well aft as had become common by the late 1960s. The remaining center portion of the hull contained petroleum cargo and seawater ballast tanks, along with the associated piping necessary to load, discharge, and transfer liquids between and among the tanks. Depending on where the actual hull cuts were made, both the forward and after hull sections also contained cargo and seawater ballast tanks.

Most of the structural modifications that were made to the converted ships took place inside the cargo tanks. To minimize the total conversion time, the shipyard typically cut several vessels at once, and then proceeded to make the necessary modifications to each section concurrently. Because the modifications to each section took a different amount of time to complete, hull sections from different vessels were recombined as they became ready. The seven *Seatrain Puerto Rico* class ships were thus combined from two or three different ships.

The after section of the *Seatrain Ohio* was 118-feet long and contained the machinery from the tanker *Mission San Jose*, launched by the Marinship Corporation shipyard in Sausalito, California on October 7, 1943. The *Mission San Jose* served with MSTS from 1949 until 1957. Its forward deckhouse was placed on top of the retained aft deckhouse to create the tall single superstructure at the stern, and the original stack was replaced with a tall tapered funnel (to bring funnel gases above and away from the navigating bridge). The *Ohio's* forward section came from the former *Mission San Diego*, launched by the Marinship Corporation on March 14, 1944. The *Mission San Diego* served with MSTS from 1949 until 1954. A 120-foot long section from the USS *Tomahawk* was used for the remaining center portion of the new vessel. The *Tomahawk*, launched by Marinship on October, 10, 1943, served with MSTS from 1949 until 1961.

The original cargo tanks were heavily modified as part of the conversion. Bulkheads that separated the original liquid cargo tanks were removed to create a 328.5-foot long unobstructed cargo hold. A continuous tween deck was added over the entire length. Railway tracks were placed into the new tween deck, and also the original tank top (lowermost deck) and the main deck. The lower hold had a 15-foot overhead clearance. A single cargo hatch was fitted amidships, to provide access to the interior cargo hold decks. Raised spar decks were installed above the main deck; one forward of the hatch opening and one aft. Two cranes (each with a 50-ton lift capacity) were mounted on the spar decks. The reconditioned original T2 turbo-electric power plants produced 10,000 horsepower for a speed of 16 knots. Conversion of the *Seatrain Ohio* took place at the Maryland Shipbuilding and Drydock Company yard in Baltimore, Maryland. Two of its sisterships were also converted there, while the remaining four were converted at the Newport News Shipbuilding and Drydock Company yard in Newport News, Virginia. The ships were designed to carry 72 railway cars in lower hold and tween deck and 150 containers on the main deck.



The SS *Ohio* sits at anchor at the Beaumont Reserve Fleet in June 2008. The vessel has been used by the fleet as a warehouse for nearly 20 years. Maritime Administration photograph.

Statement of Significance

Seatrain, Inc. first began operating vessels of this type between the U.S. and Cuba in 1929.

The SS *Ohio*, formerly *Seatrain Ohio*, is the last in a series of seven combination general cargo, container, vehicular, and railroad car carriers that were converted using obsolete T2 tankers in the 1960s. The vessel spent most its active life (approximately four years) supporting military operations in Vietnam.

Although the Seatrain concept was eventually abandoned, it can be argued that the Seatrains influenced the design of today's container ship. In many ways the ideas were very much alike; Malcolm McClean, who developed the modern shipping container, envisioned moving containers directly from ships onto trucks, while Seatrain moved railcars – both ideas were intended to avoid costly and time-consuming freight transshipment.

Integrity of Characteristics/Features

The *Ohio* is essentially unaltered from its 1967 form. Although the conversion resulted in a substantially different profile from the ship's T2 tanker origins, it did retain many of the original WWII features including main propulsion machinery, equipment, superstructure elements, and hull form. Modern navigation and communications equipment, auxiliary machinery, new cargo gear, and upgraded habitability features were added to the ship during

the conversion. Consequently, the current historic integrity of the *Ohio* includes a mix of features from both eras.

The vessel's upgrade to RRF status and condition was cancelled over 25 years ago because of its poor structural condition. Its material condition has not improved since that time. By the end of the 1980s the *Ohio's* cargo holds were adapted for use as a floating warehouse and office space to support fleet maintenance operations at the Beaumont Reserve Fleet. It remained in use in this capacity until about 2007. During this period the vessel has not been drydocked or painted; the cargo gear has not been used; nor have the superstructure or engine room. The vessel is in poor and rapidly deteriorating condition.

National Register Eligibility Statement

Although the three T2 tanker sections are more than 50-years-old, the *Ohio*, as it exists today, is less than 50-years-old. It did support military operations in Vietnam; however nothing extraordinary was uncovered that would support eligibility based on Criteria Consideration G and Criteria A for its Vietnam service. While it can be argued that the Seatrains influenced the design of the now ubiquitous container ship, the seven vessels of the class were created in the late 1960s, so it would be the earliest Seatrains, built prior to the first container ship that could have been an important influencing factor. The first container ship sailed 11 years before the Seatrains of 1967. Therefore the vessel does not meet the requirements necessary for listing.

Date: November 19, 2009

Determination: Not eligible

Sources

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<https://pmars.marad.dot.gov/detail.asp?Ship=3674>