

NATIONAL REGISTER ELIGIBILITY ASSESSMENT

VESSEL: SS *Solon Turman*



Solon Turman at the Suisun Bay Reserve Fleet, Benicia, CA. in February 2009. Maritime Administration photograph.

Vessel History

The *Solon Turman* was built in 1961 at the Bethlehem Shipbuilding shipyard in Sparrows Point, Maryland for Lykes Brothers Steamship Company, better known as Lykes Lines. Lykes Lines named nearly all of their vessels after family members. Solon Turman (1861-1911), was the son-in-law of Dr. Howell Tyson Lykes who founded the company. Turman's wife Matilda, or Tillie Lykes, had several vessels named for her over the years. Their son, Solon B. Turman (1900-1990), served as President and Director of Lykes Brothers Steamship Co., Inc., Vice Chairman of Lykes Brothers, Inc., and Chairman of Gulf and South American Steamship Co. The first *Solon Turman* sank after a German U-boat (*U-159*) fired a torpedo into its side on June 13, 1942.

Between 1960 and 1968, Lykes completed a fleet construction program that numbered 36 vessels of two principal designs intended to replace obsolescent WWII-era ships. The program was the largest such replacement program completed by any domestic shipping company. During this period *Solon Turman* was one of 21 sister ships constructed by Lykes for operation in its worldwide trade. The 21 ships were built to three design classifications: nine ships to C3-S-37a¹; four ships to 37b; and eight ships to 37c. An additional five ships of a slightly modified design (C3-S-37d) were built for the Lykes subsidiary Gulf & South American Line. These 26 ships represent the second-largest common commercial ship design constructed in the United

¹ This is the Maritime Administration's design classification. "C" signifies ship type, in this case cargo ship, "3" signifies the vessel's length, in this case between 450-500 feet, the "S" signifies the machinery type, number of propellers, and under 12 passengers, and "37a" signifies the chronological design number and alteration, in other words version a of design 37.

States after World War II. They were awarded to the following three shipyards: Ingalls Shipbuilding, Pascagoula, Mississippi; Bethlehem Shipbuilding, Sparrows Point, Maryland; and Avondale Shipyards, New Orleans, Louisiana, under seven distinct contract groups. The *Solon Turman* was among the nine ships of the C3-S-37a design variant. In 1972 all nine ships of the C3-S-37a design were converted, lengthened, and redesignated as C5-S-37e (the four 37b class ships underwent the same conversion and lengthening, and were redesignated C5-S-37f).

The *Solon Turman* is a fairly typical general cargo (break-bulk) ship, similar to the approximately 100 or more subsidized break-bulk vessels constructed in the United States during the 1960s. Domestic break-bulk construction continued to about 1967; however this vessel type was soon eclipsed by the rapid development of containerization. Ships constructed early in the decade were generally of the modified Mariner-type² a derivative of the highly successful 35-ship series of standard cargo vessels first constructed in 1952 under a government "build and charter" program to replace aging pre WWII-era construction. Later in the decade, break-bulk designs evolved from the standardized Mariner-format into more specialized types designed for specific trade routes. All of these vessels were constructed under the several Federal ship subsidy programs and were generally intended for operation in specific trades along predetermined essential trade routes.

Pure break-bulk shipping slowly became obsolescent on the prominent trade routes as container shipping rapidly developed in the 1970s. Because most of the break-bulk ships were relatively young and represented significant capital expenditures on the part of their owners, many of the ships were adapted (at least partially) for alternative services. In the most extreme cases, break-bulk ships were transformed into pure container ships. In other cases, the transformation was less extreme.

Between 1984 and 1985 all 13 ships of the similar C3-S-37c/37d classes were transferred to the Maritime Administration under the provisions of the Ship Exchange Program. All of these ships were then upgraded into the Maritime Administration's (MARAD) Ready Reserve Force (RRF) component of the National Defense Reserve Fleet (NDRF). Three of the C5-S-37e/37f class converted vessels, the *Shirley Lykes*, *Brinton Lykes* and *Solon Turman* were also acquired by MARAD (between 1988-89). These three larger ships were designated for upgrade when acquired, but the upgrades were never accomplished. They were held in the NDRF as militarily-useful retention assets until about 2000 when their status changed to non-retention.

Little specific information is available regarding the history or employment of the *Solon Turman*. The vessel is not known to be associated with any historically significant events or persons, and is not of exceptional significance.

² The Mariners were the first new standardized class of cargo ships built in the U.S. after WWII.

Description / Characteristics of Vessel Type

Type: Combination break-bulk cargo/container ship.
MARAD Classification: C5-S-37e
Official Registry number: 285889
Hull Number: MA-71
Builder: Bethlehem Steel Shipyard, Sparrows Point, MD
Length: 592'
Beam: 69'
Draft: 30.094'
Depth: 27'
Dead weight tonnage: 19367
Gross tonnage: 11891
Net tonnage: 7780
Propulsion system: Single shaft steam turbine
Speed: 17.4 knots

The *Solon Turman* is one of nine combination break-bulk container vessels classified as C5-S-37e under the MARAD design classification scheme. The nine ships were originally constructed as pure break-bulk ships under the design classification C3-S-37a. In 1971 they were converted and lengthened to the C5 design. A table of Principal Characteristics for both the 37a and 37e designs is included as Appendix A.

Between 1971 and 1973, the first 13 of the C3 ships (37a and 37b classes) were lengthened and converted to partial self-sustaining container ships by Todd Shipyards, Galveston, Texas. The nine 37a class ships were redesignated C5-S-37e after conversion (including the *Solon Turman*) and the four 37bs became the C5-S-37f class. The conversion was accomplished by inserting a new 100-foot-long midbody between the original cargo hold number three, and the engine room. This new cargo hold was configured to carry containers below deck in cellular guides. An additional set of cargo handling booms was provided. The retained forward and after sections of the original ship was essentially untouched, other than for the addition of a ship-control bow thruster. A sketch depicting the before and after Inboard Profiles of the SS *Shirley Lykes* is included as Appendix B. While the *Shirley Lykes* was a C5-S-37d, modifications made to that ship and the *Solon Turman* were essentially identical.

Statement of Significance

The *Solon Turman* is an excellent example of a shipping company trying to remain competitive in an evolving market, which soon produced much more efficient methods in which to ship cargo. *Solon Turman* is representative of the general trends in break-bulk shipping over its final decades of significance. However, it is not of exceptional significance, either in design, or service history.

Integrity of Characteristics/Features

Solon Turman is in poor condition and has been at the fleet for 21 years. The vessel represents an obsolete type, which has little utility in modern shipping markets. Within a decade of the first construction, ships of this type could no longer economically compete in the evolving international market.

National Register Eligibility Statement

The vessel is not yet 50-years-old and does not possess the exceptional importance necessary for such properties to be eligible for listing on the National Register of Historic Places. The vessel does not possess the significant historical or technological characteristics, or integrity of design and materials necessary for listing.

Determination: NOT ELIGIBLE

January 13, 2010

Sources

De la Pedraja, René. *The Rise & Decline of U.S. Merchant Shipping in the Twentieth Century*. New York: Twayne Publishers, 1992.

----- *A Historical Dictionary of the U.S. Merchant Marine & Shipping Industry*. Westport, CT: Greenwood Press, 1994.

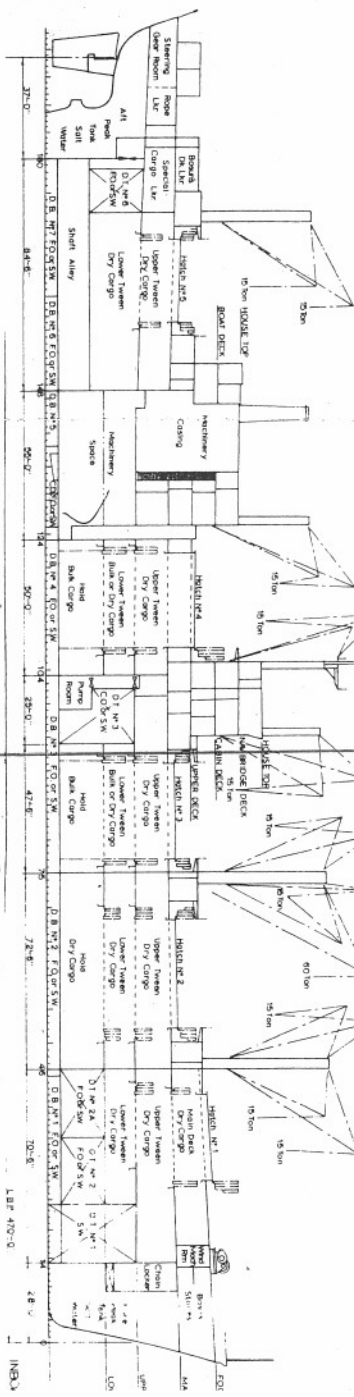
“Historic Assessment of Non-Retention Vessels in the National Defense Reserve Fleet; SS *Shirley Lykes*.” Maritime Administration, Washington, D.C., Office of Ship Operations, November 2004.

“The Evaluation of Selected Obsolete Break-Bulk Cargo Vessels in the Maritime Administration Reserve Fleets”. Prime, Inc., Washington, D.C., November 14, 2006.

		ENGLISH UNITS	METRIC UNITS
D	LENGTH-Over All	494.67 Ft	150.78 m
I	LENGTH-Between Perpendiculars	470.00 Ft	143.26 m
M	BEAM-Maximum	69.00 Ft	21.03 m
E	DEPTH-At Side	41.58 Ft	12.67 m
N	DEPTH-At Centerline	43.08 Ft	13.13 m
S	MAST HEIGHT-Above Baseline	126.50 Ft	38.56 m
I	DRAFT-Maximum	30.08 Ft	9.17 m
O	DRAFT-Design	29.50 Ft	8.99 m
N	DRAFT-Light Ship	11.92 Ft	3.63 m
S	PROPELLER-Number of Blades	4	4
	PROPELLER-Diameter	21.00 Ft	6.40 m
	DISPLACEMENT-Maximum	17,210 LT	17,484 mt
	DISPLACEMENT-Design	16,860 LT	17,128 mt
	TOTAL DEADWEIGHT-Maximum	11,340 LT	11,520 mt
W	TOTAL DEADWEIGHT-Design	10,990 LT	11,165 mt
E	CARGO DEADWEIGHT-Maximum	9,040 LT	9,184 mt
I	CARGO DEADWEIGHT-Design	8,690 LT	8,828 mt
G	LIGHT SHIP	5,870 LT	5,963 mt
H	STEEL	3,490 LT	3,545 mt
T	OUTFIT	1,600 LT	1,625 mt
S	MACHINERY	780 LT	792 mt
	FIXED BALLAST	0 LT	0 mt
	SALT WATER BALLAST	4,770 LT	4,846 mt
	FUEL	2,830 LT	2,875 mt
	GROSS REGISTERED TONNAGE-U.S.	9,890	9,890
	NET REGISTERED TONNAGE-U.S.	5,920	5,920
C	DRY CARGO (BALE)	545,400 Cu Ft	15,446 Cu m
A	REEFER CARGO	17,300 Cu Ft	490 Cu m
P	LIQUID CARGO	44,000 Cu Ft	1,246 Cu m
A	FUEL	107,400 Cu Ft	3,042 Cu m
C	CONTAINERS-Above Deck	0 TEU	0 TEU
I	CONTAINERS-Below Deck	0 TEU	0 TEU
T	CONTAINERS-Reefer Outlets	0 TEU	0 TEU
I	RO/RO AREA-Above Deck	0 Sq Ft	0 Sq m
E	RO/RO AREA-Below Deck	0 Sq Ft	0 Sq m
S	RO/RO AREA-Portable	0 Sq Ft	0 Sq m
	ACCOMMODATIONS-Crew	53	53
	ACCOMMODATIONS-Other	12	12
P	POWER-Maximum	11,000 SHP	8,203 Kw
E	POWER-Normal	10,000 SHP	7,457 Kw
R	PROPELLER REVS-Maximum	96 RPM	96 RPM
F	PROPELLER REVS-Normal	93 RPM	93 RPM
O	SPEED-Trial	18.75 Knots	18.75 Knots
R	SPEED-Service	17.75 Knots	17.75 Knots
M	FUEL CONSUMPTION(AT SEA)-Maximum	65 LT/Day	66 mt\Day
A	FUEL CONSUMPTION(AT SEA)-Normal	59 LT/Day	60 mt\Day
N	FUEL CONSUMPTION(IN PORT)-Active	LT/Day	0 mt\Day
C	FUEL CONSUMPTION(IN PORT)-Idle	5 LT/Day	5 mt\Day
E	RANGE	18,400 N.Mi.	18,400 N.Mi.
	ENDURANCE	43 Days	43 Days

C3-S-37f
CONTAINER/BREAKBULK
58

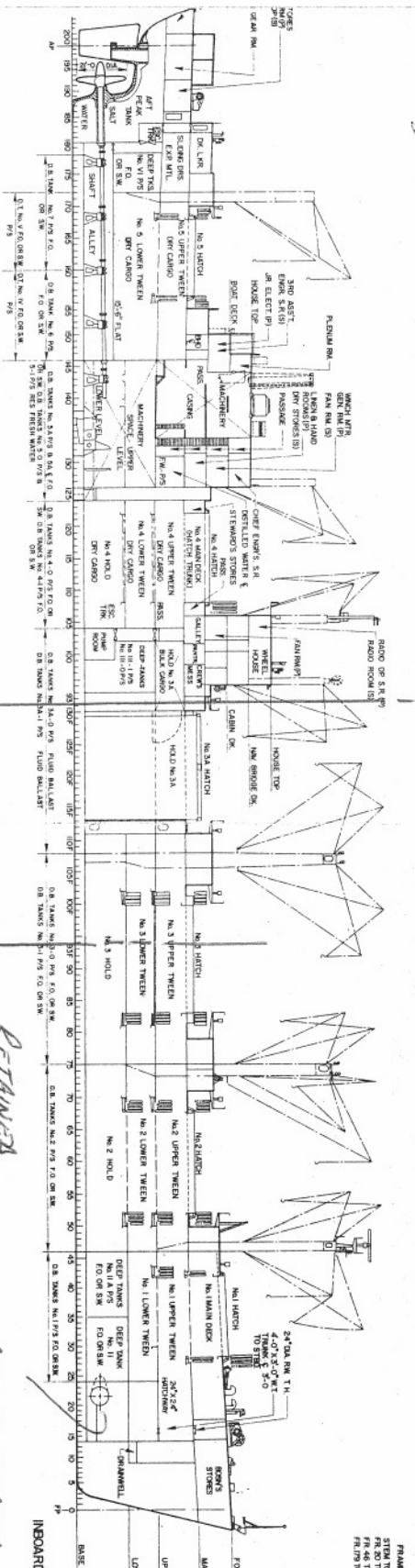
	ENGLISH UNITS	METRIC UNITS
D	LENGTH-Over All	592.50 Ft 180.59 m
I	LENGTH-Between Perpendiculars	567.50 Ft 172.97 m
M	BEAM-Maximum	69.00 Ft 21.03 m
E	DEPTH-At Side	41.58 Ft 12.67 m
N	DEPTH-At Centerline	43.08 Ft 13.13 m
S	MAST HEIGHT-Above Baseline	120.33 Ft 36.68 m
I	DRAFT-Maximum	30.08 Ft 9.17 m
O	DRAFT-Design	29.58 Ft 9.02 m
N	DRAFT-Light Ship	11.75 Ft 3.58 m
S	PROPELLER-Number of Blades	4 4
	PROPELLER-Diameter	21.00 Ft 6.40 m
	DISPLACEMENT-Maximum	22,890 LT 23,254 mt
	DISPLACEMENT-Design	22,470 LT 22,827 mt
	TOTAL DEADWEIGHT-Maximum	14,170 LT 14,395 mt
W	TOTAL DEADWEIGHT-Design	13,750 LT 13,969 mt
E	CARGO DEADWEIGHT-Maximum	11,840 LT 12,028 mt
I	CARGO DEADWEIGHT-Design	10,820 LT 10,992 mt
G	LIGHT SHIP	8,720 LT 8,859 mt
H	STEEL	4,610 LT 4,683 mt
T	OUTFIT	1,930 LT 1,961 mt
S	MACHINERY	780 LT 792 mt
	FIXED BALLAST	1,400 LT 1,422 mt
	SALT WATER BALLAST	2,870 LT 2,916 mt
	FUEL	2,890 LT 2,936 mt
	GROSS REGISTERED TONNAGE-U.S.	11,890 11,890
	NET REGISTERED TONNAGE-U.S.	7,780 7,780
C	DRY CARGO (BALE)	770,800 Cu Ft 21,829 Cu m
A	REEFER CARGO	17,300 Cu Ft 490 Cu m
P	LIQUID CARGO	44,000 Cu Ft 1,246 Cu m
A	FUEL	109,800 Cu Ft 3,110 Cu m
C	CONTAINERS-Above Deck	0 TEU 0 TEU
I	CONTAINERS-Below Deck	0 TEU 0 TEU
T	CONTAINERS-Reefer Outlets	0 TEU 0 TEU
I	RO/RO AREA-Above Deck	0 Sq Ft 0 Sq m
E	RO/RO AREA-Below Deck	0 Sq Ft 0 Sq m
S	RO/RO AREA-Portable	0 Sq Ft 0 Sq m
	ACCOMMODATIONS-Crew	53 53
	ACCOMMODATIONS-Other	12 12
P	POWER-Maximum	11,000 SHP 8,203 Kw
E	POWER-Normal	10,000 SHP 7,457 Kw
R	PROPELLER REVS-Maximum	96 RPM 96 RPM
F	PROPELLER REVS-Normal	93 RPM 93 RPM
O	SPEED-Trial	17.50 Knots 17.50 Knots
R	SPEED-Service	16.50 Knots 16.50 Knots
M	FUEL CONSUMPTION(AT SEA)-Maximum	66 LT/Day 67 mt/Day
A	FUEL CONSUMPTION(AT SEA)-Normal	60 LT/Day 61 mt/Day
N	FUEL CONSUMPTION(IN PORT)-Active	LT/Day 0 mt/Day
C	FUEL CONSUMPTION(IN PORT)-Idle	5 LT/Day 5 mt/Day
E	RANGE	17,200 N.Mi. 17,200 N.Mi.
	ENDURANCE	43 Days 43 Days



AFT SECTION

HULL SECTION

AS BUILT
CS-S-376



RETAINED
AFT SECTION

RETAINED
HULL SECTION

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CS-S-376

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NEW
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FRAME SECTION
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