

7. DESCRIPTION

SUMMARY PARAGRAPH

The 1944 Victory ship RED OAK VICTORY was built in Richmond, California, at Kaiser Shipyard #1 and launched on November 9, 1944. The ship's World War II, US Maritime Commission designation of VC2-S-AP2 indicates she is a "V" for "Victory", "C2" for medium capacity cargo carrier, "S" for "steam", and "AP2" for the 6,000 shaft horsepower type of Victory. Now moored at Terminal One at the Port of Richmond, she is currently undergoing rehabilitation.

The RED OAK VICTORY possesses all seven of the National Register's aspects of integrity. It will be home-berthed in an appropriate waterfront setting, within view of where it was built in Richmond, California, retaining its integrity of location, setting and association. Regarding integrity of design, modifications to the interior and exterior space have been minimal, consisting mainly of removal of wartime guns, conversion of crew quarters from metal pipe bunks of six per room to wooden berths of two per room, and addition of radar and radio equipment over 22 years' post-war service as a merchant ship. From 1968 to 1998 the RED OAK VICTORY was preserved in the "mothball" fleet at Suisun Bay, thus its integrity of material is exceptionally high. The rehabilitation efforts primarily involve surface improvements and cleaning and overhauling of equipment, which also retains integrity of workmanship. The excellent condition of the RED OAK VICTORY insures that the vessel conveys a superb sense of the past and will provide an invaluable site for interpreting the period of significance.

Plans are to restore the RED OAK VICTORY to fully operational condition, reflecting the period of significance, 1944 - 1946. The ship will be a primary center of interpretation for the "Rosie the Riveter/WWII Home Front National Historic Park." As such, it will feature fully restored elements from the period of significance as well as museum space and event facilities for public use where the public can experience as well as see this historic artifact.

RED OAK VICTORY AS BUILT

The RED OAK VICTORY was built in the Permanente Metals Corporation Shipyard #1, one of four shipyards in Richmond, California, built and operated by Kaiser Corporation during WWII. Most Victory ships served under the US Maritime Commission as merchant cargo ships. The RED OAK VICTORY, however, was one of ten "Boulder Class" Victory ships that were built specifically to serve as Navy ammunition carriers during the war. It was launched on November 9, 1944 and commissioned as the USS RED OAK VICTORY, AK235, on December 5, 1944.

RED OAK VICTORY, official number 249410, is a welded steel, full-scantling, screw-propelled, steam-powered vessel 455 feet, 3 inches long overall with a 62-foot beam, a 38-foot depth of hold, and 28-foot draft. The ship is registered at 7,612 tons gross and 4,555 tons net, and displaces 15,200 tons. Designed with a straight, raked stem with a paravane skeg fitted on the forefoot, and a cruiser stern, the ship's lines were radically different from her Liberty predecessors, with a semi-V-shaped bow, and a parallel, 70-foot midbody section.

Transversely framed on 36-inch centers, the ship has a double bottom that carried fuel oil, salt water ballast, and reserve feed water. RED OAK VICTORY has two complete decks, a

forecastle deck that extends over the number one hold, and a first platform deck in two of her holds. The ship is subdivided by seven full watertight bulkheads that extend to the main deck with the sole exception of the fore peak bulkhead, which extends to the forecastle deck. The VC2-S-AP2 ships were arranged to carry general cargo in five holds, three forward and two abaft the midship machinery space. Hold No. 1 has a 22-foot, 4-inch by 25-foot hatch; Hold No. 2 has a 22-foot, 4-inch by 24-foot hatch; Hold No. 3 has a 22-foot, 4-inch by 36-foot hatch; Hold No. 4 has a 22-foot, 4-inch by 36-foot hatch; and Hold No. 5 has a 22-foot, 4-inch by 24-foot hatch. The flush main deck is also interrupted by the forecastle deck, the midship house, and a small poop deck house.

RED OAK VICTORY has three masts, each with a masthouse. The ship is cargo rigged to serve every hatchway. The 100-foot, 8-inch high foremast, located at the forecastle bulkhead, serves Hold No. 1. The 109-foot, 4-inch mainmast, located at frame 52 and supported by standing rigging, serves Holds No. 2 and 3. Kingposts at the forward end of the midships house also serve Hold No. 3, while kingposts at the after end of the superstructure serve Hold No. 4. The 104-foot, 11-inch mizzenmast, at frame 122 and supported by standing rigging, serves Holds No. 4 and 5. Cargo was discharged from the five hatchways by means of 14 five-ton booms, the latter two located to serve hatchways fore and aft of the super-structure. The masts and kingposts support 14 five-ton booms equipped with single-part topping lifts. The ship also carries two large heavy-lift booms, rated at 30-ton and 50-ton lifting capacity, on the main- and mizzenmasts. The booms serve Holds No. 3 and 4.

RED OAK VICTORY has 12 electric motor-driven cargo winches, clustered in two groups of four around the main- and mizzenmasts and with two located forward and two aft of the superstructure. Ten single-drum, single-speed winches serve the five-ton booms; four single-drum, two-speed winches serve the 30- and 50-ton booms. Each winch is driven by a 50 horsepower, watertight, enclosed motor. The winches have control equipment, resistors and brake arranged on a common bedplate under waterproof enclosures. The single-speed winches have a capacity of 7,450 pounds at 220 feet per minute. The 2-speed winches have a capacity of 7,450 pounds at 220 feet per minute in high gear and 19,000 pounds at 85 feet per minute in low gear. All winches are operated through pedestal controllers conveniently located near the hatchways. The one-speed, double reduction herringbone gear winches have 18- by 20-inch drums and were manufactured by Pacific Iron & Steel Works at Hoisting Machinery, Tacoma, Washington. The winches are driven by 50-hp, 230-volt, 180-amp, 600-rpm motors manufactured by General Electric Co., Schenectady, NY. The double-speed, reduction herringbone gear winches with 20- by 20-inch drums are also manufactured by Pacific Iron & Steel with motors by General Electric.

RED OAK VICTORY has an electric-motor-driven, horizontal-shaft type anchor windlass on the forecastle deck. Manufactured by the Hesse-Ersted Iron Works of Portland, OR, the windlass is capable of raising two anchors simultaneously from a 30-fathom depth of water at a chain speed of 30 feet per minute. The windlass motor, a General Electric compound wound type, is rated at 60-hp, 230-volts, 226-amps, and 600-rpm. Warping heads on the wildcat shaft of the windlass provide the facilities for handling mooring lines.

The RED OAK VICTORY's ground tackle includes two 9,500 lb. cast-steel best bowers, stowed in the hawsepipes, and one 3,420 lb. stream anchor stowed on the main deck aft. The anchors were manufactured by Baldt. The anchor chain is 300 fathoms of 2 1/8-inch diameter stud-link

cast steel chain, manufactured by Baldt, in two lengths; other lines include a 90-fathom, 1 1/2-inch diameter wire rope stream line; a 130-fathom, 1 3/4-inch diameter wire rope topline; two 73-fathom 1-inch diameter wire rope hawsers; two 73-fathom wire rope warps; and two 73-fathom lengths of 8-inch sisal rope. All of the wire ropes are mounted on reels located on the weather deck.

Other deck machinery includes an electric warping capstan on the main deck aft, with its machinery below. The smooth-barrel, reversible, vertical-motor driven capstan was manufactured by Sellers. It produces a line pull of 20,000 lbs. at a rope speed of 30 feet per minute. The capstan motor is a 35 hp, 230-volt, 138-amp, 600-rpm Westinghouse. RED OAK VICTORY has four 24-foot steel lifeboats, two motor-propelled, with a combined capacity of 124 persons, stowed in gravity-type davits manufactured by the Welin Davit & Boat Corp. of Perth Amboy, New Jersey. An electrical winch, also manufactured by Welin, is provided for each davit, driven by motors manufactured by General Electric. In addition to the lifeboats, four 20-person life rafts, mounted on skids fore and aft of the midships house, and two 15-person life floats, mounted aft on the deckhouse, are available for lifesaving.

RED OAK VICTORY was armed with six single 20mm Oerlikon guns, a 3-inch/50-caliber gun forward, and a 5-inch/3-caliber gun aft. These weapons were removed after World War II. The ship retains the mounts for each weapon, including the circular steel splinter shields for the bow and stern guns. Original weapons have been located to replace those removed. The majority of the space in the poop deckhouse was for the ship's 28-member Armed Guard, which manned the guns. Their quarters and mess were at the main deck level, while below, accessible by trunk, is the magazine, with shell hoist.

Accommodations are provided for 62 officers and crew in the midships house. In an article in the April, 1944, issue of *Marine Engineering and Shipping Review*, Victory ship accommodations were described:

The captain's stateroom and office are on the cabin deck, starboard side. The quarters for deck officers, engineers and radio operators are on the cabin and boat decks. The quarters for the crew are on the main deck. The officers' mess and pantry are located at the after end of the deckhouse on the starboard side of the boat deck. The crew's mess and pantry are located on the deck below the officers' mess. The galley is located at the after end of the deckhouse on the main deck. The hospital is on the portside on the main deck. The quarters for both the officers and crew are comfortably and conveniently arranged. Built-in berths are provided for the officers' staterooms and pipe berths for the hospital and crew's quarters.

The galley is equipped with oil-burning ranges manufactured by the Washington Stove Works of Everett, Washington, two steam-jacketed kettles, a Hobart mixer, manufactured by that Troy, New York, company, a vegetable peeler manufactured by the Anstice Co. of Rochester, New York, and a refrigerator manufactured by Bailey. There are also refrigerators in the officers' pantry and aft pantry. Steward's stores, dry stores, and refrigerated stores are located on the second deck, amidships.

The RED OAK VICTORY retains all of her wartime issue equipment, including: the radio equipment the high frequency, low frequency, emergency frequency transmitters, high receiver, low receiver, alarm signal keyer, auto alarm, and crystal receiver, all manufactured by Federal

Tel. & Radio Corp. of Newark, New Jersey, and the radio receiver and radio direction finder in the chart room. The gyrocompass, bearing stands, and repeater compasses, all manufactured by the Dodge Division of the Chrysler Corporation of Detroit are aboard.

The bridge is completely outfitted and conforms to the standard 1944 description of a Victory, with magnetic compass in a compensating binnacle, engine room telegraphs, bells, fog horn, rudder angle indicator, echo depth sounder, and clinometer. Telephones for shipboard communication, manufactured by Hose McCann remain in working condition. The ship's wartime issue Maytag washers, in working condition, and the machine shop in the engineering spaces, with a lathe, drill press, and grinder and all spare parts, complete the fully functional, operational appearance of RED OAK VICTORY.

Ventilation below decks is naturally supplied through four 36-inch cowls, two 24-inch cowls, and two 18-inch cowls, with each kingpost also serving as an exhaust trunk from the holds with 30-inch diameter Breidert exhaust heads installed at the top of each kingpost. Two 20,000 axial flow supply fans with ducts lead to several terminals in the machinery spaces, with a single 12,000 axial flow fan with ducts leading from the heated space.

The original main propulsion unit is housed midship, with a cross-compound, double-reduction geared, impulse-reaction type marine steam turbine unit rated at 6000 shaft horsepower, manufactured by Westinghouse, driving a single screw at a speed of 100 rpm. The shafting, forged steel and 16 inches in diameter, runs aft to the manganese bronze, four blade, right hand screw. Manufactured by Dorance on August 31, 1944, the 18-foot, 3-inch diameter screw weighs 29,765 lbs., has a pitch of 17' 6" and drives RED OAK VICTORY at a maximum speed of 15 knots.

Steam is provided by two sectional-header, single-pass design boilers manufactured by Babcock & Wilcox. Rated at 525 psi, with an operating pressure of 465 psi, the boilers produce 27,500 pounds of steam per hour at 750 degrees, with a furnace volume of 450 cubic feet. The boilers are 12 sections wide and are 39-feet, 6-inches athwartship by 11-feet, 8-inches fore and aft, and 21-feet, 3-inches overall height to the top of the economizers. Fitted with interdeck superheaters and economizers, each boiler is fired with water-cooled side walls and refractory in the front and rear walls and floors.

Electrical power is provided by an inboard and outboard turbo-generators, the turbines manufactured by the Joshua Hendy Iron Works of San Francisco, California, and the generators manufactured by the Allis-Chalmers Company, Milwaukee, Wisconsin. The three-wire marine direct current generators produce 300-kilowatts, with 120 and 2140 volts and 1250 amps and 1200-rpm. The ship also has emergency diesel generators in the engine room and in the emergency diesel room. The steering gear, a slide electro-hydraulic, double-ram type, was manufactured by the Baldwin Locomotive Company, and is located aft.

RED OAK VICTORY'S PRESENT APPEARANCE

RED OAK VICTORY retains a high degree of integrity and is readily recognizable as a World War Victory ship. Rehabilitation is now in progress with all volunteer labor under the direction of an executive committee, which coordinates operations aboard ship.

The original radio equipment was not replaced, and is still functioning today under the auspices of the Red Oak Victory Amateur Radio Club. Additional portable "entertainment" radios as well as TV sets, were installed in the 1950s and '60s, and will be removed from the areas restored to interpret the 1944-46 era of significance. Radar equipment was installed on the bridge in the 1950s and '60s, and can be clearly identified as not original to WWII. Otherwise, the major bridge equipment as described in the National Register nomination is intact. Other equipment, including the major propelling machinery, steam generation plant, combustion equipment, pumps, ventilation systems, generators, steering gear, winches and booms, telephones, are original to the *Red Oak Victory* and are being restored to fully operational condition.

Visual verification of the Name Plate Data (from the November 1944 document prepared by the Inspection Office of Shipyard #1) was performed aboard the *Red Oak Victory* in July 2001. Although in some cases name plates are missing, obscured or located in hard-to-reach areas, it was possible to verify the manufacturer and serial numbers of the following equipment as original to the *SS Red Oak Victory*.

- High Pressure Turbine, Westinghouse, Serial No. 4A2771
- Low Pressure & Astern Turbine, Westinghouse, Serial No. 4A1770
- Fuel Oil Pumping and Heating Set, Peabody, Ser. No. 1116-23
- Port Fuel Oil Service Pumps, Franklin Machine & Foundry, Ser. No. 1188313
- Fuel Oil Transfer Pumps, Stearns Roger, Ser. No. 1138555
- Turbo Generators:
 - Inboard Turbine, Joshua Hendy Iron Works, Ser. No. 3H151
 - Inboard and Outboard Transformers, Serial Nos. 1831704 and 1831702
 - Inboard Generator, Allis-Chalmers, Ser. No. 103DK-3-34
- Main Generator & Distribution Switchboard, General Electric, Ser. No. 66
- Galley Range, Washington Stove Works, Ser. No 2-30-91
- Galley Mixer, Hobart, Ser. No. 8-08518
- Revolution Counter at Main Gauge Board, Bendix, Ser. No. 23160
- Hold #3 Starboard Winch Motor, Ser. No. 1978738
- Galley Fan Controller, G.E., Cat. No. 498807H
- Galley Fan, Haley Blower, CFM 4700-40
- Radio System, Federal Tel. & Radio Corp. (McKay), Unit #FT-106, Ser. No. 440687
(all components of this system identified as original by serial number)
- Master Gyrocompass, Dodge, Ser. No. 1412955
 - Carbon Pile Regulator, Safety Car Heating and Lighting, Ser. No. 144131
 - Motor, Holtzer Cabot, Ser. No. 1312677
 - Six Repeaters, their Stands and Pelorus Stands check out by serial number
 - Repeater Panels, Dodge, Ser. Nos. C-23967, C-23973, C-23974
 - Current Failure Alarm, Dodge, Ser. No. C-18055
- Fathometer (Echo Depth Recorder), National Simplex Bludworth Model ES-103
- Life Boat Davits, Welin Boat & Davit, Ser. Nos. M-387-L, M-385-R, M-387-R, M-385-L

The gray exterior paint is peeling after years of mothballing, and removing old paint, cleaning, preparing and repainting surfaces is a major activity of volunteers. The anchor windlass, still fully functional, was cleaned of old paint, acid treated and primed. The exposed area of the after (gunner's) house has been primed and finish-painted, and many holes in the decking compound

have been filled. All of the original winches and other cargo apparatus are being restored to working condition. Winches at cargo hatches #3 and #4 along with their related booms and rigging are now fully operational.

Following the period of significance, the ship was leased by the government for commercial use. As such, the original guns were removed and disposed of. To restore this vessel to an exterior appearance consistent with the period of significance, appropriate weapons have been obtained and will be mounted in original locations.

Interior work includes cleaning and painting of the operational galley. The main exhaust fan to the galley has been overhauled and reinstalled. Restoration of the Captain's stateroom and office, and refinishing of the hailing boards has been completed. The metal pole bunks, six or seven to a room, of the wartime crew quarters were replaced after 1946 with two or three wooden berths per room. Quarters in the after deckhouse for the Navy gunners aboard the RED OAK VICTORY during WWII were removed after the war and are now used for storage. The telemotor for the wheelhouse has been rebuilt, and a new base prepared for the wheel. In the Engine Room two air compressors have been restored to full function and a DC welding machine, salvaged from the Reserve Fleet, has been installed.

A "shipyard/dry dock" package identifying engine and deck department needs has been developed which includes removing sea chest plates, painting the ship's exterior and getting the engines operating. All work is to meet the Coast Guard and American Bureau of Shipping standards. Funds are being sought for this phase of work which cannot be completed by volunteer effort alone. Salvaging visits to the Suisun Bay Reserve Fleet continue, acquiring equipment from the remaining victory ships for installation on the RED OAK VICTORY.

As a major interpretive site for the Rosie the Riveter/WWII Home Front National Historic Park, the RED OAK VICTORY will be developed into a maritime museum focusing on the wartime contributions of the residents and workers of Richmond, providing a unique perspective on their history-making achievements. It will be used as a site for local events and offer educational programs and family recreation opportunities and for ceremonies honoring the merchant marines, military personnel and civilians, who served in WWII.