NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Lightship WAL-604, "Columbia"
other names/site number Columbia, WLV-604

2. Location

street & number 1792 Marine Drive ☐ not for publication
city, town Astoria ☐ vicinity
state Oregon code 07 county Clatsop code 041 zip code

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
☒ private	☐ building(s)		buildings
☐ public-local	☐ district		sites
☐ public-State	☐ site	1	structures
☐ public-Federal	☒ structure		objects
	☐ object		Total

Name of related multiple property listing:
N/A

Number of contributing resources previously listed in the National Register 0

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ☐ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of certifying official — Date

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

☐ entered in the National Register.
☐ See continuation sheet.
☐ determined eligible for the National Register. ☐ See continuation sheet.
☐ determined not eligible for the National Register.
☐ removed from the National Register.
☐ other, (explain:) _____

Signature of the Keeper — Date of Action

6. Function or Use

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
Government-Aid to Navigation	Museum

7. Description

Architectural Classification (enter categories from instructions)	Materials (enter categories from instructions)
N/A	foundation N/A walls N/A roof N/A other N/A

Describe present and historic physical appearance.

The 1950 lightship WAL-604, known by her U.S. Coast Guard designation of "Columbia," is a floating historic museum vessel moored on the Columbia River on the waterfront of Astoria, Oregon. Owned and operated by the Columbia River Maritime Museum, "Columbia" has been kept in excellent operational condition since her decommissioning in 1979 and is maintained as a exhibit open to the public.

WAL-604 AS BUILT AND MODIFIED

As built in 1950, the lightship designated WAL-, later WLV-604 is a welded steel-hulled vessel 128 feet in length with a 30.0-foot beam, and an 11.0-foot draft. The vessel displaces 617 tons. [1] Built to the characteristic lines of a 20th-century American lightship, WAL-604's welded hull was constructed to be strong and seaworthy, with transverse watertight bulkheads carried to the weather deck level. As a typical lightship hull, WAL-604 shared many characteristics with her contemporary and earlier steel sisters:

> The American vessel generally...has her lighting elements divided into two, and two lamps are arranged, one each at the top of a pole mast. Cones, cages, and other day marks are arranged on the masts above or below the lanterns....There is usually a bar keel, big rise of floor, and large tumble home, the outline of midship section being somewhat reminiscent of that of an icebreaker. The sheer is severe, rising rapidly both to the bow and to the stern. The bow is a strong forging and sharply raked, containing the hawse pipe for the mushroom mooring anchor. There is also the hawse pipe for the standby anchor. The stern is

[X] See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:
☐ nationally ☐ statewide ☐ locally

Applicable National Register Criteria ☐A ☐B ☐C ☐D NHL 1,4

Criteria Considerations (Exceptions) ☐A ☐B ☐C ☐D ☐E ☐F ☐G

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
Government	1950-1975	1950
Humanitarian	1950-1975	1950
Architecture (Naval)	1950-1975	1950

NHL XIV-B: Transportation: Ships, Boats, Lighthouses and Other Structures

Cultural Affiliation
N/A

Significant Person
N/A

Architect/Builder
Rice Brothers, East Boothbay, Maine

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

The 1950 lightship WAL-604 is one of a small number of only 22 surviving American lightships in the United States; she is one of six surviving U.S. Coast Guard-built lightships. Of these, only two possess a high degree of integrity and are in excellent condition -- WAL-605 (the subject of a separate nomination) and WAL-604. Built in 1950, these are the best representatives of the last American lightships, and were a distinct departure in their construction from earlier lightships.

Associated with the nationally significant station off the Columbia River Bar, WAL-604 was the fourth lightship assigned to that station; she was not assigned anywhere else during her career. When retired in 1979, she was the last Columbia lightship as well as the last lightship on the Pacific Coast of the United States. As such, WAL-604's service was nationally important as a representative of the end of more than a century and a half of American lightship operation and as an excellent example of the type of vessel built at the end of lightship operation.

The preceding statement of significance is based on the more detailed discussion which follows.

☒ See continuation sheet

9. Major Bibliographical References

PLEASE SEE FOOTNOTES IN TEXT.

☐ See continuation sheet

Previous documentation on file (NPS):

☐ preliminary determination of individual listing (36 CFR 67) has been requested
☐ previously listed in the National Register
☐ previously determined eligible by the National Register
☐ designated a National Historic Landmark
☐ recorded by Historic American Buildings Survey # _____
☐ recorded by Historic American Engineering Record # _____

Primary location of additional data:

☐ State historic preservation office
☐ Other State agency
☐ Federal agency
☐ Local government
☐ University
☒ Other

Specify repository:
Columbia River Maritime Museum

10. Geographical Data

Acreage of property .1

UTM References

	Zone	Easting	Northing
A	10	436490	5115315
B			
C			
D			

☐ See continuation sheet

Verbal Boundary Description

All that area encompassed within the extreme length, beam, and depth of the vessel.

☐ See continuation sheet

Boundary Justification

The boundary encompasses the entire area of the vessel as she floats at her berth.

☐ See continuation sheet

11. Form Prepared By

name/title James P. Delgado, Maritime Historian
organization National Park Service (418) date June 30, 1989
street & number P.O. Box 37127 telephone (202) 343-9528
city or town Washington state D.C. zip code 20013-7127

> of stereotypical single knuckle type and contains the rudder, sternpost of usual construction, and the propelling wheel....The ships generally have two complete decks and a third part deck forward and aft of the machinery space. Side doors in the hull give access to the second deck and tend to follow ...characteristic side loading.... [2]

WAL-604 is painted in the colors used on American lightships after 1945. Her hull is bright red, with buff or spar-colored masts and superstructure, and the name of her station, "Columbia," is painted in bold white block letters on the hull.

The design of WAL-604 reflected improvements made in lightship design by the United States Coast Guard. Among those improvements, as embodied in WLV-604, were an all-welded hull, transverse bulkheads, modern interior accommodations, and an alternating current electrical system. WAL-604 was a dry, roomy vessel with the ability to stay on station in the roughest seas.

The principal features of the vessel above decks were the steel deckhouse, a breakwater on the foredeck, and the two steel masts that mounted the lights. The foremast, 66.1 feet tall as measured from the keel, mounted the Duplex 500mm lens lantern of the ship; each light was rated at 15,000-candlepower. A Coast Guard high intensity light (known as a "black box") was added around 1964. This light used 24 locomotive headlights in groups of six mounted on each face of a four-sided revolving lamp housing. This optic was rated at 600,000-candlepower. The signal was a white flash every 10 seconds, visible for 13 miles. WAL-604 additionally carried twin F2T diaphone fog signals and a hand-operated bell. The signal for the foghorn was a 3-second blast every 30 seconds, audible to up to 5 miles. The lightship's other navigation aid was a radio beacon synchronized with the fog signal. [3]

WAL-604 was built with a 550-shp Atlas-Imperial eight cylinder direct reversing diesel engine that drove the lightship's single 7-foot diameter screw. The generators provided power for the lightship's alternating current power system. An electric windlass operated WAL-604's Hyde Windlass, which raised the

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7,000-lb. mushroom anchor. The anchor cable, a heavy forging weighing 200 lbs. per fathom, is made with 1-5/8-inch steel links and is 120 fathoms in length, with eight shots of 15 fathoms each. [4]

Below the weather deck, quarters for WAL-604's crew reflect the roomy but utilitarian accommodations of a Coast Guard vessel of the 1950s, 60s, and 70s. The accommodations include quarters for 16 enlisted men forward, and staterooms for three officers aft. Described as a "state of the art" lightship, WLV-604 reflects more comfortable living arrangements than those aboard the wooden and steel-hulled lightships of the late 19th and early 20th century. The lightship's arrangements include a library, hobby shop, and recreation room. [5]

WAL-604'S PRESENT APPEARANCE

Since her retirement in 1979, WAL-604 has undergone no alteration and retains an excellent level of integrity. The lightship is essentially the same as when launched, operated, and decommissioned. The vessel is in excellent condition; the hull is sound and the vessel was recently drydocked. The engines are in operational condition and the vessel is capable of navigating under her own power. The interior arrangements of all cabins, offices, galley, and pilothouse remain unaltered. The vessel is open to the public and has the appearance of being an active duty lightship temporarily moored to the dock.

NOTES

1
James P. Delgado, ed. Evaluative Inventory of Large Preserved Historic Vessels in the United States (Washington, D.C.: National Park Service, 1987), entry for Columbia. Also see Willard Flint, Lightships of the United States Government (Washington, D.C.: U.S. Coast Guard, 1989), unpaginated, entry for WAL-604.

2
A.C. Hardy, American Ship Types: A Review of the Work, Characteristics, and Construction of Ship Types Peculiar to the Waters of the North American Continent (New York: D. Van Nostrand Co., Inc., 1927) pp. 254-256.

SEE CONTINUATION SHEET

3
Flint, Op.cit.

4
Ibid. Also see fact sheet for Columbia, WLV-604, manuscript, Columbia River Maritime Museum, Astoria, Oregon.

5
Flint, Lightships, Also, see J.A. Sweet and V.L. Cady, "History of the Columbia River Lightship Service," Compass Point Northwest, Thirteenth Coast Guard District, Seattle, Washington, October, 1987, p. 7

THE DEVELOPMENT OF THE AMERICAN LIGHTSHIP

While the first American lighthouse dates to the colonial era, the use of lightships is a more recent and 19th century phenomenon in the United States, though employed earlier in Europe. Moored on treacherous reefs, or marking the narrow approaches to a channel or harbor entrance too far offshore for a shoreside lighthouse's lens to reach, lightships were fewer in number than the hundreds of lighthouses -- 179 lightships were built between 1820 and the 1950s, and in 1909, the heyday of the United States Lighthouse Establishment, there were 51 lightships (46 on the eastern seaboard and 5 on the Pacific Coast) on station in the United States.

Among the more famous and significant lightship stations were "Ambrose," marking the southern entrance into New York harbor along the New Jersey coast; "Nantucket," marking not only the entrance to Boston harbor but also the American end of the transatlantic route; "Diamond Shoals" off the Outer Banks of North Carolina, which marked a dangerous spot along the coastal ocean highway by way of the Gulf Stream; and "San Francisco" on the bar 3 miles out from the Golden Gate.

The first lightship was a small wooden schooner moored on Chesapeake Bay. From this pioneer, the lightship type developed through the 19th century from sail to steam, from wood to iron to steel hulls, and to more powerful optics. Usually sequentially numbered as they entered service under the United States Lighthouse Board, the United States Lighthouse Service, and later the U.S. Coast Guard, lightships, like lighthouses remained constant in their location, with new vessels replacing the old. Thus there were more than one "Nantucket," "Ambrose," "Columbia," "Diamond Shoals," and "San Francisco," as well as others, on the various stations through the years. [1]

By the end of the 19th century, hard-learned lessons resulted in a standardization of lightship form and design. Heavily constructed steel hulls moored with massive mushroom anchors and huge strongly forged huge, built to ride out storms and rough seas, with decks designed to let the water run off and a dual mast system enabling a light to always be kept lit defined the

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basic "modern" characteristics for lightships in the United States. Technological advances--the introduction of electrical lighting, welded hulls, and the switch from steam to diesel to diesel-electric engines -- brought modifications to the lightship without necessarily changing the basic form. While older lightships were modified to accept the technological changes, new classes of ships were built to embody the "new" technology. Thus the first class of lightships built in the 20th century with riveted steel hulls and massive steam engines -- numbers 78 through 84 -- were replaced at some stations by welded steel lightships such as the Pacific Coast's No. 100 with diesel-electric propulsion, diaphone air horns, 1,000-watt electric lights in 375-mm lenses, and a reduced tonnage (with the installation of a less heavy diesel- electric system) meaning less resistance to the sea and hence less battering. [2]

Between 1946 and 1952, a new (and the last) class of six lightships, built under the auspices of the United States Coast Guard, which had absorbed the U.S. Lighthouse Establishment in 1939, were introduced and built. The first lightships with all-welded hulls, they were also the first and only lightships to employ an alternating current electrical system. Reflecting the improvement in diesel technology, they were high-speed direct diesel propelled. Their internal arrangements were roomy and modern, offering more amenities of life for their crews. While these vessels closely resembled in external appearance the earlier lightships of the early 20th century and the 1930s, a number of which were still in commission, they were different vessels.

Technology finally brought an end to manned lightships at the same time manned lighthouses were being considered for automation. Large navigational buoys 40 feet in diameter and 42 feet high, painted lightship red and equipped with automatic lights, fog signals, and radio beacons began to replace lightships in 1967. In 1983, the last lightship had been retired, ending a 150-year lightship tradition in the United States.

CONSTRUCTION AND CAREER OF WAL-604

The first lightship on the Pacific coast of North America was a Canadian vessel moored at the mouth of the Fraser River, near

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Vancouver, British Columbia, in 1866. The first American lightship on the Pacific Coast was not built until 1892. Constructed at the Union Iron Works in San Francisco, the 123-foot No. 50 was sent north to the mouth of the Columbia River on Oregon's coast. In all, only five lightship stations were designated on the west coast by the United States, because of the predominantly high, rocky coastline and deep water running up close to shore. These conditions were conducive to the construction of lighthouses to guide mariners, though a few locations required lightships. Next to the rugged Columbia River Bar, which made access to the important lumber and grain ports of Oregon difficult, the most dangerous, heavily navigated site requiring a lightship was the San Francisco Bar. [3] In fact, the importance of the Columbia River and its dangerous bar had resulted in the selection of Cape Disappointment at the river's mouth as the site for the first U.S. lighthouse on the Pacific Coast. The discovery of gold in California shifted priorities, and as a result, Alcatraz Island on San Francisco claimed the honor. Nonetheless, interest in aids to navigation on the Columbia River Bar continued, and in the 1850s Cape Disappointment was lighted.

The first lightship station on the Pacific Coast of the U.S., as stated earlier, was No. 50, moored to mark the correct approach to the hazardous Columbia River Bar. The station, located southwesterly of Cape Disappointment nearly five miles offshore, was marked between 1892 and 1979 by five separate lightships, No. 50 (1892-1897; 1898-1899; 1901-1905; and 1906-1909); No. 67 (1897-1898 and 1905-1906); No. 88 (1909-1939); No. 93 (1939-1951); and WAL-604 (1951-1979). The interchange between No. 50 and No. 67 occurred when No. 50 was damaged and taken off station for extensive repairs on three separate occasions. Lightships marking this station were dragged off station six times by severe weather, most notably in 1899, when No. 50 drifted ashore and was aground for 15 months. The significance of the station was considerable; the lightship was not, like many others, withdrawn from station during the Second World War. [4] Yet none of the early lightships assigned to the station survive, only WAL-604.

The importance of the station was again reflected by the assignment of a modern Coast Guard-built lightship in 1951.

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Contracted for $500,000, WAL-604 (later redesignated WLV-604) was laid down in 1949, at the Rice Brothers' yard at East Boothbay Harbor, Maine. Launched on April 18, 1950, the lightship was commissioned on December 19, 1950, and delivered to Seattle, Washington, in March 1951. The lightship, painted red and designated "Columbia," then departed for her station. WLV-604 served only at Columbia during her career. The 16 crewmembers served 28-day shifts, taking 14 days off in rotation so that two-thirds of the crew were aboard at any given time. [5] The routine of service was largely uneventful; rescues in 1952 and 1960, being blown off station in 1962, and being sideswiped by a hit and run vessel in 1964 were the only events of note in WAL-604's history. The lightship was decommissioned on December 12, 1979. The first lightship station on the Pacific Coast of the U.S. was also the last, again underscoring the importance of the Columbia River Bar station. [6] A Lighted Horn Buoy, marked "CR," took the lightship's place and remains in service. In 1980, the vessel was sold as surplus property to the State of Oregon and then sold to the Columbia River Maritime Museum. It has since served as an excellently maintained public exhibit at the museum on the waterfront of Astoria, Oregon.

NOTES

1
See George R. Putnam, Lighthouses and Lightships of the United States (New York: The Houghton-Mifflin Co., 1917)

2
A.C. Hardy, American Ship Types: A Review of the Work, Characteristics, and Construction of Ship Types Peculiar to the Waters of the North American Continent (New York: D. Van Nostrand Co., Inc., 1927) pp. 254-257, passim.

3
Ralph C. Shanks, Jr. and Janetta Thompson Shanks, Lighthouses and Lifeboats on the Redwood Coast (San Anselmo, California: Costano Books, 1978) pp. 133-135.

SEE CONTINUATION SHEET

4
Willard Flint, Lightships of the United States Government (Washington, D.C.: U.S. Coast Guard, 1989), unpaginated, entry for Columbia River Bar station. Manuscript courtesy of Also see Jim Gibbs, Lighthouses of the Pacific (West Chester, Pennsylvania: Schiffer Publishing, Ltd., 1986), pp. 127-128, and William A. Baker, "U.S. Light Vessel No. 50, Columbia River," The American Neptune, 9 (4), October 1949.

5
Flint, Lightships. Also see "Lightship Columbia (WLV-604) Fact Sheet," Manuscript, Columbia River Maritime Museum, Astoria, Oregon.

6
Flint, Lightships, and Gibbs, op cit p. 127.