

**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 No. 103, "Relief," "Grays Reef," "North Manitou Shoal" "Huron"
other names/site number Huron

2. Location

street & number Pine Grove Park, banks of the St. Clair River not for publication
city, town Port Huron vicinity
state Michigan code 26 county St. Clair code 147 zip code

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
<input type="checkbox"/> private	<input type="checkbox"/> building(s)	Contributing	Noncontributing
<input checked="" type="checkbox"/> public-local	<input type="checkbox"/> district	_____	_____ buildings
<input type="checkbox"/> public-State	<input type="checkbox"/> site	_____	_____ sites
<input type="checkbox"/> public-Federal	<input checked="" type="checkbox"/> structure	<u>1</u>	_____ structures
	<input type="checkbox"/> object	_____	_____ objects
		_____	_____ Total

Name of related multiple property listing: N/A Number of contributing resources previously listed in the National Register 1

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)

Government-Aid to Navigation

Current Functions (enter categories from instructions)

Museum

7. Description

Architectural Classification

(enter categories from instructions)

N/A

Materials (enter categories from instructions)

foundation N/A

walls N/A

N/A

roof N/A

other N/A

Describe present and historic physical appearance.

Lightship No. 103, formerly "Relief," "Grays Reef," "North Manitou" and "Lake Huron," now known by her last U.S. Coast Guard designation of "Huron" (WLV 526), is a dry-berthed historic museum vessel displayed on the shoreline of the St. Clair River at Pine Grove Park at Port Huron, Michigan, since August 1972. Owned by the City of Port Huron and managed by the Port Huron Housing Commission, No. 103 is an outdoor exhibit without public access to the interior. Future plans call for opening the lightship to the public.

NO. 103 AS BUILT AND MODIFIED DURING HER CAREER

As built between 1918 and 1920, the lightship designated No. 103 is a riveted steel-hulled vessel 96.5 feet in length with a 24-foot beam, 11.9-foot depth of hold, and a 9.6-foot draft. The vessel displaces 310 tons. [1] Built to the characteristic lines of a 20th century American lightship, No. 103's double-riveted hull was constructed to be strong and seaworthy, with three watertight bulkheads, watertight flats fore and aft, and a continuous steel main deck. As a lightship, No. 103 shared many characteristics with her contemporary steel sisters:

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 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]

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)

Government
Humanitarian
Architecture (Naval)

Period of Significance

1920-1970
1920-1970
1920-1948

Significant Dates

1920, 1970
1920, 1936

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

Cultural Affiliation
N/A

Significant Person

N/A

Architect/Builder

Consolidated Shipbuilding Corporation,
Morris Heights, New Jersey

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

Lightship No. 103, also known by her last official designation of "Huron," is one of a small number of preserved historic American lightships. Essential partners with lighthouses as aids to navigation along the coast of the United States, lightships date to 1820 when the first vessel to serve as an aid to navigation was commissioned. Lightships left in the United States date from 1904 to 1952, when the last was built and launched. The period between 1918-1920 saw the construction of several of these vessels, of which No. 103 is the only example. The smallest surviving lightship and sole representative of the 96-foot class, No. 103 was designed and built specifically for Great Lakes service. No. 103 is the only surviving Great Lakes lightship. As the sole survivor of the type and the only representative of all of the lightships built for the treacherous fresh waters of the lakes, one of the nation's primary centers of maritime activity and an internationally used, nationally significant waterway, Lightship No. 103, "Huron," built originally as "Relief" for Lake Michigan stations, also served stations on Lake Superior and Lake Huron before retirement, and was the last lightship on the Great Lakes.

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

9. Major Bibliographical References

PLEASE SEE FOOTNOTES IN TEXT.

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 # _____

See continuation sheet

Primary location of additional data:

- State historic preservation office
- Other State agency
- Federal agency
- Local government
- University
- Other

Specify repository:

US Coast Guard Historian's Office

10. Geographical Data

Acreage of property .1

UTM References

A

1	7
---	---

3	83	6	9	0
---	----	---	---	---

4	7	6	0	4	0	0
---	---	---	---	---	---	---

Zone Easting Northing

B

--	--

--	--	--	--	--

--	--	--	--	--	--	--

Zone Easting Northing

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 rests in her dry 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

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation SheetSection number 7 Page 2

Despite many similarities, though, No. 103's hull was designed and built for the particular wave conditions of the Great Lakes; below the waterline she is perceptibly sharper than her ocean-going sisters and shorter to match the lakes' shorter wave periods. The hull of 103 is painted black, the color used by the Coast Guard solely on this lightship after 1936. Her hull is black with a black mainmast, buff or spar colored mizzenmast, white pilothouse, bulwarks, stack, and trunks, and light orange deck furniture and topping on the stack. The name of her station is painted in bold white block letters on the hull.

The design of No. 103 reflected improvements made in lightship design by the United States Lighthouse Establishment (USLHE). Among those improvements, as embodied in No. 103, were the placement of the hawse pipe in the bow as opposed to immediately abaft the stem, the installation of bilge keels to reduce rolling, a reduced metacentric height, an increased bow height and sheer, and most importantly a shift from wood to metal hulls and unpowered to powered vessels. An improved version of the first generation "modern" lightships, No. 103 was a drier, roomier vessel with greater ability to stay on station in the roughest seas. [3] The ship was moored on station with a 2.5-ton mushroom anchor attached with 180 feet of 1-5/8-inch chain. She additionally carries, in a starboard hawsepipe, a standard admiralty pattern anchor, a feature she alone possesses of all surviving lightships in the United States.

The principal feature of the vessel above decks was the tubular steel lantern mast that mounted the light. The mast stands 52.6 feet above the waterline. As built, the illuminating apparatus was a 300mm acetylene lens lantern that was electrified in 1927, reconverted to acetylene in 1934, and then re-electrified in the late 1930s when the apparatus was changed to a duplex electric 375mm lens with a 20,000-candlepower lantern. A wooden jigger mast at the stern carried a boom, leg-of-mutton sail, and a range light. When built the lightship was equipped with a 10-inch steam whistle. In 1934 the whistle was replaced by a steam typhon, in turn replaced in 1935 by a steam diaphragm horn. After 1948, when 103 was repowered, a F2T air diaphone fog signal was installed. [4] The lightship additionally carries a hand-operated bell at the bow; mounted in a steel gallows, the bronze bell is inscribed "USLHS." A steel pilothouse is located forward

SEE CONTINUATION SHEET

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation SheetSection number 7 Page 3

of the mast; aft of it are steel skylights set into trunks. Ventilators, a boat hoist, stack, davits, scuttles, and miscellaneous fittings also occupy the deck.

No. 103 was built with a single 175-h.p. vertical compound reciprocating marine steam engine, in turn powered by twin coal-fired Scotch boilers. The engine drove a single right-handed, four-bladed propeller. The lightship was repowered in 1948. The boilers and original engine were replaced by an electric motor driven by twin GM 671, marine Diesel engines that developed 360-h.p. at 300 revolutions per minute, which drove the single screw. No. 103's maximum speed was 9 knots. [5]

At the time of her launch, No. 103's hold was subdivided into four compartments; 1) a forward watertight trimming tank; 2) a general storage hold with a galley coal bunker, chain locker, and storerooms; 3) the machinery space, with boiler flat and coal bunkers; and 4) the after trimming tank with illuminating oil storage space above. The main deck, which housed the living spaces, was arranged with a breakwater bulkhead forward, the windlass compartment, lamp room, crew's quarters and heads, galley and mess, boiler and engineroom casing, and cook's room, with rudder quadrant aft. The lightship retains all these compartments. The coal bunkers were converted to fuel oil tanks (capacity 7,238 gallons), the side hatches for loading coal were welded shut in 1948. The conversion of the ship's power system to Diesel-electric also introduced an electric motor to the formerly steam-driven windlass. No. 103 underwent normal repair and maintenance throughout her career. The only modifications were the installation of a radiobeacon in 1934, the change in lanterns and horns, and the changes necessary to repower the ship in 1948.

PRESENT APPEARANCE AND CONDITION OF NO. 103

The lightship rests inside a dry berth at the river's edge. The berth consists of pilings and concrete that forms a basin filled with gravel that rises to the former waterline. A gangway suspended from the mainmast and attached to the port bulwark provides access to the deck. The single deckhouse is forward and includes the pilothouse and incorporates the mainmast. Aft of the house is the stack and the engineroom trunk. The ship's

SEE CONTINUATION SHEET

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation SheetSection number 7 Page 4

single screw, detached from the shaft, is mounted on deck at the after end of the trunk. Another trunk aft with a skylight opens to the wardroom. Below decks each compartment retains the equipment in the lightship when retired in 1970, including the lockers marked with the crew's names. The radio beacon equipment, windlass, galley, ship's wheel, binnacle, and navigational equipment remain aboard, belying the lightship's dry-berthed location. The interior bulkheads and overheads are lined with thick cork insulation, another indicator of her Great Lakes service on freezing waters. Painted and maintained in good condition, the lightship retains integrity of materials, workmanship, feeling, association, and location.

NOTES

1

"Light Vessel No. 103," Lighthouse Service Bulletin, Vol. II, No. 37 (January 3, 1921) p. 161.

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.

3

Ralph C. Shanks, Jr. and Janetta Thompson Shanks, Lighthouses and Lifeboats of the Redwood Coast (San Anselmo, California: Costano Books, 1978) p. 143.

4

Willard Flint, Lightships of the United States Government (Washington, D.C.: U.S. Coast Guard, 1989), unpaginated, entry for Lightship No. 103.

5

Ibid.

**United States Department of the Interior
National Park Service****National Register of Historic Places
Continuation Sheet**Section number 8 Page 2

THE DEVELOPMENT OF THE AMERICAN LIGHTSHIP

While the first American lighthouse dates to the colonial era, the use of lightships is a more recent 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 where lighthouses could not be built or placed in areas too far offshore for a shoreside lighthouse's lens to reach, lightships were fewer in number than the hundreds of existing lighthouses -- in all, 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 five on the Pacific Coast) on station in the United States.

The more famous and significant lightship stations on the coasts included "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; "Chesapeake," marking the entrance into Chesapeake Bay, "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 three miles out from the Golden Gate. There were other stations, including the system of lightships that linked the trade route across the Great Lakes, that were also of national importance.

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 numbered sequentially as they entered service under the United States Lighthouse Board, and later the United States Lighthouse Service, lightships like lighthouses remained at a constant location, with new vessels replacing the old. Thus there were more than one "Nantucket," "Ambrose," "Chesapeake," "Diamond Shoals," and "San Francisco," as well as others, on the various stations through the years. [1]

SEE CONTINUATION SHEET

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation SheetSection number 8 Page 3

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 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

SEE CONTINUATION SHEET

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation SheetSection number 8 Page 4

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 NO. 103

The development of maritime trade on the Great Lakes, the size of the inland seas, and the unforgiving weather and sailing conditions combined to make aids to navigation a necessity. Lightships were vital partners for Great Lakes shipping, particularly where shoals and reefs far from land could not be safely marked by lighthouses. By the turn of the century there were some 18 U.S. Government operated lightships on the Lakes; additional lightships were operated by the Lake Carriers Association along with an unknown number of other privately operated lightships. [3]

Lightship No. 103 was ordered by the United States Light House Establishment from the Consolidated Shipbuilding Corporation of Morris Heights, New Jersey, in 1918. The vessel, designed and built for general service on the Great Lakes, was launched on May 1, 1920, when she was 74 percent complete. [4] On December 3-4, 1920, the lightship being nearly complete, No. 103 underwent trials and was conditionally accepted by the U.S. Lighthouse Service. [5] The ship's total cost was \$147,428. In the spring of 1921 the lightship was ready for duty. In the company of Lightship No. 99, built at East Boothbay, Maine, No. 103 was towed by the lighthouse tender Hibiscus to the mouth of the St. Lawrence River. Steaming on their own power down the St. Lawrence to Ogdensburg, New York, the two lightships were again taken in tow, this time by the tender Crocus through Lake Ontario, through the Welland Canal, across Lake Erie, and up the Detroit River, arriving at Detroit on June 4. Leaving No. 99 there, No. 103 proceeded under her own power by way of Lake St. Clair, Lake Huron, through the Straits of Mackinac, and across Lake Michigan to Milwaukee, Wisconsin, headquarters of the 12th Lighthouse District, to which the ship was assigned as the relief lightship, on June 9, 1921. [6]

SEE CONTINUATION SHEET

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation SheetSection number 8 Page 5

From 1921 to 1923 No. 103 served as relief lightship for the 12th District. In 1924 she was reassigned to Grays Reef on Lake Michigan for two years. In 1927 the vessel once again became "Relief," serving until 1934. [7] The only major occurrence of note was on May 27, 1929, when during a heavy electric storm, "relief lightship No. 103, stationed temporarily at Grays Reef...was struck by lightning. No one was hurt, and there was no damage done except to the pilot-house compass. Streaks of fire went through the entire ship." [8] In 1934-1935 No. 103 served at North Manitou Shoal on lake Michigan before being reassigned in 1935 as relief lightship for the 11th District, headquartered at Detroit. Then, in 1936, the 11th District reassigned No. 103 to Lake Huron, a station she would retain for 34 years until retirement. [9]

The Lake Huron station, one of, if not the most significant lightship stations on the Great Lakes, was at the south end of the lake off the entrance to the St. Clair River, marking the Corsica Shoals, also known as Northwest Shoal. All Great Lakes shipping that runs from the ocean to Lake Superior must pass this station as vessels entering Lake Erie through the Welland Canal then steam up the Detroit River to Lake St. Clair, then up the St. Clair River to Lake Huron. The shoals marked by the station are six miles north of Port Huron and were the scene of numerous freighter groundings in the late 19th century. This led to the establishment of the station in 1893. The station guided mariners into the 11-foot dredged channel through the shoals. In 1893, the year of the station's establishment, an article on the growth of commerce on the lakes stressed the overwhelming statistics of the "wonderful stream of commerce traversing the river between Lake Huron and Lake Erie:"

Frequent countings by the marine reporters on the river at Port Huron indicate in round numbers 80,000 passages during the navigation season -- usually about 240 days....At this rate we should see passing a single point thirteen or fourteen vessels per hour, during the whole season, each with an average cargo

SEE CONTINUATION SHEET

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 8 Page 6

of 856 tons. At no other place in the world can such a stream of commerce be seen. Yet it is so little known abroad that in the Lloyd's (London) comprehensive tables of foreign and colonial shipbuilding for 1892 the great lakes is completely ignored. [10]

The first lightship assigned to the station was No. 61, which served until 1920. She was followed in 1921 by No. 96, which remained there until relieved by No. 103 at the end of 1935. [11] No. 103 was painted black upon arrival at the Lake Huron station owing to her placement on black-buoy side of the entrance to the Lake Huron cut (channel) through the shoals. She thus became the only U.S. lightship to bear this unusual color scheme, all others being red. No. 103 served on station during early April to late December of each year, the period between the winter storms and drifting ice that made navigation all but impossible.

No. 103 was one of a handful U.S. lightships not withdrawn from station during World War II. In 1948-1949, the lightship was modernized by the American Shipbuilding Co. at Toledo, Ohio. The engines were replaced with a Diesel-electric plant, and 103 also received a new sound signal, radio beacon, and radar. Returned to station in 1949, the lightship became the last on the Great Lakes in November 1952 with the retirement of the lightship on the "Gros Cap Reef" station at Whitefish Bay on Lake Superior. Plans for retiring No. 103 surfaced in April 1970, when it was noted that the "cost of maintaining it are not justified when modern, less expensive aids to navigation will do the job as well...." [12] On August 20, 1970, the anchor was raised for the last time as No. 103 departed the station, "signifying the end of the lightship era on the Great Lakes." [13] A lighted buoy replaced the lightship. Decommissioned at Detroit on August 25, the lightship was transferred to the City of Port Huron on June 5, 1971. Moved to Pine Grove Park on August 29, 1972, the lightship was dedicated as a historical monument and exhibit on October 4, 1974. From 1973 to 1977 the local Naval reserve used the lightship for training purposes and maintained the ship. Now used by the Naval Sea Cadets Corps, the lightship may someday be opened to the public for tours.

SEE CONTINUATION SHEET

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 8 Page 7

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

Edward J. Dowling, "Lightships of the Lakes," Telescope, October 1961, p. 208.

4

"Light Vessel No. 103," Lighthouse Service Bulletin, Vol. II, No. 29 (May 1, 1920) p. 125.

5

"Light Vessel No. 103," Lighthouse Service Bulletin, Vol. II, No. 37 (January 3, 1921), p. 161.

6

"Hibiscus and Crocus Tow New Light Vessels to Station," Lighthouse Service Bulletin, Vol. II, No. 43 (July 1, 1921) p. 187.

7

Willard Flint, Lightships of the United States Government (Washington, D.C.: United States Coast Guard, 1989), unpaginated, entry for Lightship No. 103.

8

"Lightship Struck by Lightning," Lighthouse Service Bulletin, Vol. III, No. 67 (July 1, 1929), p. 298.

9

Flint, Lightships.

SEE CONTINUATION SHEET

United States Department of the Interior
National Park Service

**National Register of Historic Places
Continuation Sheet**

Section number 8 Page 8

10
H.C. Pearson, "The Growth of Commerce on the Lakes," Engineering Magazine, vol. V, No. 6 (September 1893) p. 755.

11
Flint, Lightships, entry for Lake Huron (MI) Station.

12
Lake Carriers' Association The Bulletin, Vol. LIX, No. 1 (April-May 1970), n.p.

13
Port Huron (MI) Times Herald, August 20, 1970.