



U.S. Coast Guard Historian's Office

Preserving Our History For Future Generations

Newport News Middle Ground Light Station's National Register of Historic Places Nomination

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1. Name of Property

=====

historic name: Newport News Middle Ground Light Station

other names/site number:

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2. Location

=====

street & number: N/A not for publication: N/A

city or town: near Newport News vicinity X

state: Virginia code: VA county: Newport News code: 700

zip code: N/A

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3. State/Federal Agency Certification

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As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this nomination and 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 the National Register Criteria. I



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recommend that this property be considered significant statewide. (___ See continuation sheet for additional comments.)

Captain, U. S. Coast Guard,

Chief, Office of Civil Engineering 2/22/02

Signature of certifying official Date

Department of Transportation, U.S. Coast Guard

State or Federal agency and bureau

In my opinion, the property ___ meets ___ does not meet the National Register criteria. (___ See continuation sheet for additional comments.)

Signature of commenting or other official Date

State or Federal agency and bureau

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4. National Park Service Certification

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I, hereby certify that this property is:

___ entered in the National Register _____

___ See continuation sheet.

___ determined eligible for the _____

National Register

___ See continuation sheet.



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___ determined not eligible for the _____

National Register

___ removed from the National Register _____

___ other (explain): _____

Signature of Keeper Date of Action

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5. Classification

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Ownership of Property (Check as many boxes as apply)

___ private

___ public-local

___ public-State

X public-Federal

Category of Property (Check only one box)

___ building(s)

___ district

___ site

X structure

___ object

Number of Resources within Property



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Contributing Noncontributing

_____ buildings

_____ sites

1 _____ structures

_____ objects

1 0 Total

Number of contributing resources previously listed in the National Register 0

Name of related multiple property listing: Light Stations in the United States

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6. Function or Use

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Historic Functions (Enter categories from instructions)

Cat: transportation Sub: water-related

Current Functions (Enter categories from instructions)

Cat: transportation Sub: water-related

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7. Description

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Architectural Classification (Enter categories from instructions): No Style

Materials (Enter categories from instructions):

foundation: wood caisson with cast iron cylinder



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roof: metal

walls: metal

other:

Narrative Description (Describe the historic and current condition of the property.)¹

Description Summary

The Newport News Middle Ground Lighthouse, completed and lit in 1891, rests on a wooden caisson, which supports a round 25-foot-diameter and 56-feet-in-height cast-iron foundation cylinder. The integral tower/dwelling is a cast-iron, three-story conical-shaped superstructure, 29 feet in height and 21 feet in diameter at the base. The structure is painted red. Upon this superstructure, is mounted a one-story circular watch room, also painted red, surmounted by an octagonal lantern, painted black. The lighthouse is located in about 15 feet of water, on the west end of Newport News Middle Ground, Hampton Roads, and Newport News, Virginia. Owned and managed by the U.S. Coast Guard in District 5, access to the station is via boat.

General Description

Newport News Middle Ground Lighthouse was constructed using caisson foundation. The base of a cast-iron cylinder was fitted with a wooden caisson; this assemblage was then towed to the required location and sunk. As additional tiers of cast-iron plates were attached, the cylinder filled with concrete causing it to sink into the bottom and form a stable foundation. In the upper portion of the cylinder, a lower level or cellar, lined with brick masonry, was constructed. These masonry walls supported the cast-iron integral dwelling/tower, which takes the form of a truncated cone. The diameter of the tower is 21 feet at the base and the caisson diameter is 25 feet, providing space for a gallery cantilevered beyond the cylinder and supported by cast iron brackets. The 3-story dwelling/tower is surmounted with a round watch room and an octagonal-shaped lantern. A middle gallery surrounds the watch room, and an upper gallery surrounds the lantern. The entire structure has a slight tilt toward the east. Newport News Middle Ground Lighthouse is similar in design to Hooper Island Lighthouse, Maryland, both built in the Chesapeake Bay.

The cylinder, dwelling/tower, and watch room are painted red, and the lantern is painted black. The structure retains the roof over the lower gallery, an original feature once common to many caisson-type lighthouses, but removed in most cases (Thimble Shoal



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also retains this lower gallery roof). Lighthouses of this general appearance are commonly referred to as "spark plugs."

Foundation

The wood caisson is sunk approximately 34 feet into the bottom. On this caisson is bolted the 56-foot-tall cast-iron-plate cylinder, of which, only the upper approximate 15 feet is visible above the high waterline. Fastened brackets along the upper tier of plates support the cantilevered lower gallery deck. The gallery deck consists of cast-iron diamond-pattern plates. A pipe rail surrounds the lower gallery. The rails are attached to 3 1/4-inch-diameter decorative cast-iron columns, which also support the gallery roof gooseneck support beams. The columns are spaced approximately on 7-foot centers. Presently, there are two round gallery rails equally spaced above one another. Originally there were three pipe rails; the lowest rail is now missing. The original (or at least early) diameter of the rail is 1 7/8-inch, but more recent replacement rail consists of 2 3/4-inch-diameter pipe. A thin wedge of concrete covers the joint between where the tower rises from the gallery deck. This was presumably added to stop water penetration along this seam. Two davits, landing platforms, and ladders were once located on the north and south side of the gallery deck, but only the ladder on the south side remains.

Cellar

Access to the lower level is via an 11-step cast-iron staircase located just to the left of the entrance foyer on the first level. The staircase wraps along the interior masonry lining and is constructed of diamond pattern tread and stringer sections that are bolted together to achieve the required height. A pipe handrail is located on the inner side of the staircase. Located in the center of the lower level is an 11-inch-diameter hollow iron support column, which also provided the free fall for the counterweight of the mechanical fog bell-striking device located in the watch room. The column's primary function was to carry the floor loads of the superstructure. The top of the column supports pie-shaped radial iron plates that have been bolted together at integral flanges that are turned upward. Some of the piping from the gutter system that filled water into the cistern and piping for getting water up to the kitchen is still in place.

There are three window alcoves and three storage rooms. The wooden doors to the storage rooms have been removed. The coal storage room still has part of the coal-loading vent intact in the ceiling. The outer walls and floors are concrete. The partition walls are made from 7 1/4-inch-wide beaded horizontal boards.

Dwelling/Tower, Exterior



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The conical superstructure is constructed of cast-iron plates. The tower consists of cast-iron plates bolted together at the integral flanges, which are turned inward. The plates measure 4 feet by 94 inches. Cantilevered brackets attached to the top of the dwelling/tower support the watch-level gallery deck, which is cantilevered outward. Directly below the sill of the second-floor windows, there is a small lip bolted to the iron plates that support the gallery roof. Below the iron lip are goose necked radial roof beams on 2-foot centers attached to the superstructure and balustrade columns. Rather plain cast-iron pediments surround all the five window openings on the structure. There are three window openings on the first level, north, east and west; and two openings on the second level, east and west. The first level window pediments measure 36 by 71 inches and the window openings 25 1/2 by 57 1/2 inches. The pediments on the first level are arched at the top; the pediments on the second level are square. The windows on the second level were originally two-over-two wood sash. All the windows including the jambs, sills, and sashes have been removed and covered with metal on the exterior. The third level has five porthole-type windows, also covered. The entrance door at the first level is located on the south side, which like the windows has a cast-iron pediment with a diamond pattern threshold. The original four-panel wood door has been replaced with a flat metal door fitted into a wood jamb.

Dwelling/Tower, Interior

Immediately inside the entrance foyer, the stairwell to the upper levels is located off to the right and the living quarters straight ahead (to the left the stairwell continues to the cellar). The flooring at this first level is covered with tile. The inside of the exterior wall is lined with brick and partition walls with sheet metal. A brick flue runs up through all three levels for heating purposes. The wall of the stairway is lined with sheet metal on the inner side and brick on the outer side. The 11 steps plus a landing to the second level have diamond pattern iron treads and risers that are bolted to the iron plate wall and are pocketed into the masonry lining.

At the second level, the window lentils and sills have been removed. The floors are wood and the ceilings are sheet metal. The stairwell is covered with wood paneling with closets made under and over the stairwell. All the doors are missing.

There are 11 steps to the third level. The walls are sheet metal, and the floors and ceilings are wood. Fenestration at this level has five round porthole-type windows. The original window frames have been removed, and the openings have been covered with clear acrylic. The masonry openings in the lining are square and have wood trim. The openings are approximately 132 inches in diameter. The ceiling at this level consists of beaded boards nailed against sleepers anchored between the flanges of the deck plates above.



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There are 9 steps from the third level to a square trap door at the watch room. The interior iron deck has a diamond plate surface. The central iron column support located from the cellar to the third level does not continue to the watch room. The fog bell was originally located here. The walls and ceilings of the room are lined with 3-inch beaded tongue-and-groove paneling. All the trim is intact. There is a double metal door to the watch room gallery deck; they appear to be original. The gallery rail has three rails supported by 1 5/8-inch-diameter balustrades topped by 2 3/4-inch-diameter finial balls. All three rails are made from 2- by 1/2-inch flat bar stock. Balusters between the middle and lower rail are 5/8-inch diameters.

The exterior deck plates at the watch level are also diamond plate. The watch deck cantilevers over the edge of the tower. Decorative iron brackets support the cantilevered deck. The watch room is constructed of flanged iron plates similar to the tower. A wooden block for the bell striker is still intact on the watch room floor. The position of the 8-step iron ladder to the lantern room appears to have been extended to make the angle less acute.

Lantern

The hatchway to the octagonal-shaped lantern is fitted with an iron trap door. The lantern level deck plates are diamond pattern. An iron pedestal, which is not original, is present but no lens is located within the lantern. There are four ventilator openings in the parapet wall, but the interior brass regulator covers are missing. The lantern panes have been replaced with Lexan. Curtain hooks are present on the inside of the lantern.

Access to the lantern gallery is via a double iron door, which appears to be original. The gallery rail consists of only a 1 3/4 - by 1/2-inch flat bar rail supported by eight 1-inch-diameter posts located on 5-foot centers. The exterior of the lantern is painted black. The cast-iron roof of the lantern is round and the underside of the roof is lined with sheet metal. A vent at the peak of the ceiling allows for air movement through the roof top ventilator ball.

Lens

The original lens was a fourth-order Fresnel, which showed a fixed white light varied by a white flash every 20 seconds that was visible for 12 miles in clear weather. In 1954, the characteristic of the light was changed to a flashing white light. The next light was a 375mm lens with a characteristic of an isophase white at 6-second intervals. Currently the lens/optic is a VRB-25 Vega rotating beacon. The lens is attached to a pole located on the lantern deck.

Fog Signal



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The original fog signal was a bell, which was struck a double blow every 15 seconds by a Stevens machine. In 1954, the signal was changed to one blow every 15 seconds. The fog signal ran continuously from September to June 1.

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8. Statement of Significance

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Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

A Property is associated with events that have made a significant contribution to the broad patterns of our history.

B Property is associated with the lives of persons significant in our past.

C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)

A owned by a religious institution or used for religious purposes

B removed from its original location

C a birthplace or a grave

D a cemetery

E a reconstructed building, object, or structure

F a commemorative property

G less than 50 years of age or achieved significance within the past 50 years



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Areas of Significance (Enter categories from instructions):

Maritime History

Transportation

Architecture

Period of Significance: 1891-1954

Significant Dates: 1891,1954

Significant Person (Complete if Criterion B is marked above): N/A

Cultural Affiliation: N/A

Known Design Source: none

Architect/Builder: U.S. Lighthouse Board

Narrative Statement of Significance (Explain the significance of the property.)

The Newport News Middle Ground Light is significant for its association with federal governmental efforts to provide an integrated system of navigational aids and to provide for safe maritime transportation in the Chesapeake Bay, a major transportation corridor for commercial traffic from the early 19th through 20th centuries. The Newport News Middle Ground Lighthouse embodies a distinctive design and method of construction that was typical of caisson lighthouse construction on the Chesapeake Bay during the last quarter of the 19th century and first quarter of the 20th century. Newport News Middle Ground Lighthouse is the oldest caisson lighthouse in Virginia waters. The property has previously been determined eligible by the Virginia State Historic Preservation Officer.²

History

Justification for a lighthouse at Newport News Middle Ground was stated by the Lighthouse Board as follows: "Vessels leaving the docks at Newport News drawing 24 feet of water invariably pass to the southward of the Middle Ground, and because of the several changes of course masters now hesitate to leave their berths for sea on very dark or foggy nights. To obviate the necessity for thus losing much valuable time a light-house and fog-signal should be established on the Middle Ground, near Newport News, or in the vicinity of Newport News at such a point as may be selected by the Board."³



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In 1887, the Lighthouse Board requested an appropriation from Congress for \$50,000 for a lighthouse to mark the Middle Ground shoal in Hampton Roads. Because of the 17-foot depth of water, winter ice, and heavy traffic, a caisson type lighthouse was recommended. On May 14, 1888, Congress authorized a lighthouse to be built and appropriated \$50,000 in funds for its construction on October 2. Modifications, such as reducing the riprap by a third, were made to the specifications to reduce costs. A request to the contractor to thus lower his bid resulted in a \$4,000 reduction. The cost of the metal work was \$17,830, and the negotiated cost to erect the structure was \$26,000. The lighthouse was completed, and the light was first exhibited on April 15, 1891. The light characteristic was a "fixed white of the fourth order, varied by a white flash every twenty seconds." About 1,000 tons of riprap stone was placed around the structure to protect it from "undermining action of the currents."⁴

The lighthouse was automated in 1954; the light characteristic changed to a flashing white and the fog signal from a double blow to a single blow every 15 seconds. With automation, the aid to navigation was downgraded to a "second-class tall nun buoy."⁵ A ship collided with the lighthouse in 1979 and caused some decking from the lower gallery to be knocked out. In 1982, an inspection team found serious problems at the light, including missing windows, water leakage, peeling paint, and lantern door jammed open allowing bird infestation. The station was solarized in 1986/87; \$14,400 was spent sandblasting and painting, replacing railings, and providing new access ladders.⁶

In 1994, an inspection team found the lighthouse in "fair overall condition with some noticeable structural defects." One of the brackets for the lower gallery cantilevered deck was missing, and about 30 percent of the gallery railing was missing. The lantern door was once again found jammed open allowing birds to infest the interior.⁷

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9. Major Bibliographical References

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(Cite the books, articles, and other sources used in preparing this form.)

Clifford, Candace. *1994 Inventory of Historic Light Stations*. Department of Interior, National Park Service, History Division, Washington, D.C., 1994.

de Gast, Robert. *The Lighthouses of the Chesapeake*. The Johns Hopkins University Press, Baltimore and London, 1973.



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Holland, F. Ross, Jr. *Maryland Lighthouses of the Chesapeake Bay*. Maryland Historical Trust Press and Friends of St. Clement's Island Museum, Inc., 1997.

Turbyville, Linda. *Bay Beacons: Lighthouses of the Chesapeake Bay*. Eastwind Publishing: Annapolis, Maryland, 1995.

U.S. Lighthouse Board. *Annual Reports, 1867-1902*. Department of Commerce and Labor, 1867-1902.

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

Name of repository: National Archives; National Maritime Initiative, National Park Service; U.S. Coast Guard Headquarters, Historian's Office, Washington, D.C.

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10. Geographical Data

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Acreage of the Property: Less than one acre

USGS Quadrangle: Newport News South, VA

UTM References: Zone Easting Northing

18 376068 4089472

Verbal Boundary Description:

The boundary is coterminous with the outer circumference of the structure at its widest diameter.

Boundary Justification:

The boundary completely encompasses the light structure.

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11. Form Prepared By

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name/title: Ralph E. Eshelman, Maritime Historian; Edited and revised by Jennifer Perunko, NCSHPO Consultant, National Maritime Initiative, National Park Service

organization: U.S. Lighthouse Society (under a cooperative partnership with the National Park Service National Maritime Initiative)

date: September 8, 1997

street & number: National Park Service (NRHE-2280), 1849 C St., NW,

city or town: Washington state: DC zip code: 20240

telephone: 410-326-4877 or 202-354-2243

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Property Owner

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(Complete this item at the request of the SHPO or FPO.)

name: U.S. Coast Guard, Fifth District

street & number: 431 Crawford Street

city or town: Portsmouth state: VA zip code: 23705-5004

telephone: (757) 398-6351

Notes:

1 The following description and associated photographs were reviewed in August 2002 by a US Coast Guard Aid to Navigation team responsible for the property. A document verifying that the description and associated photographs reflect the current condition of the property is on file with the Office of Civil Engineering, US Coast Guard Headquarters, Washington, DC.

2 Letter dated Sept. 24, 1993 from James Christian Hill, Commonwealth of Virginia Department of Historic Resources in National Maritime Initiative inventory file for Newport News Middle Ground Light.

3 Lighthouse Board Annual Report, 1887, 1888, 1889, 1890, and 1891 (Government Printing Office: Washington, D.C.).

4 Ibid.

5 Candace Clifford, 1994 *Inventory of Historic Light Stations* (National Park Service, History Division, Washington, D.C., 1994), p. 319; and Turbyville, Linda, *Bay Beacons: Lighthouses of the Chesapeake Bay* (Eastwind: Annapolis, Maryland, 1995), p. 116.

6 Turbyville, pp. 116-117.

7 Turbyville, p. 117.



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NPS Form 10-900 USDI/NPS NRHP Registration Form (Rev. 8-86) OMB No. 1024-0018