Thimble Shoal Light Station's National Register of Historic Places Nomination

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1. Name of Property

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historic name: Thimble Shoal Light Station

other names/site number:

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2. Location

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street & number: N/A not for publication: N/A

city or town: Hampton City vicinity X

state: Virginia code: VA county: Hampton City code: 650

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

recommend that this property be considered significant locally. (__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.

____ 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

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 of 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

roof: metal

walls: metal

other:

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

Description Summary

Thimble Shoal Light Station consists of a wooden caisson supporting a round 42-foot-diameter cement-filled cast-iron foundation cylinder which is surmounted by a cast-iron integral tower/dwelling, a three-story conical-shaped superstructure painted red upon which is mounted a one-story cylindrical, helical-bar lantern painted black. The structure retains the roof over the lower gallery, a feature once common to many caisson-type lighthouses but removed in most cases (Newport News Middle Grounds Lighthouse also retains this lower gallery roof). The Thimble Shoal Lighthouse is located in approximately 11 feet of water, on the shallowest part of Thimble Shoal, on the north side of the channel of Hampton Roads, off the Horseshoe, Chesapeake Bay, near Hampton City, Virginia. Access to the light station is via boat.

General Description

Foundation

The cast-iron cylinder is 42 feet in diameter at the base, tapers to 30 feet in diameter at the top of the third course of cast iron plates, and is 31 feet, 6 inches high. The cylinder is attached to a wooden caisson sunk 12 feet, 9 inches into the bottom. The plates forming the cylinder are bolted together into horizontal bands or courses with the flanges of the plates turned inward to give the exterior a uniform smooth surface. The upper or top band flares outward like a trumpet providing support and additional deck space for the lower gallery deck. The cylinder is filled with concrete except where the cellar and cistern is formed. There is a series of porthole-type openings in the upper plate tier to provide light into the cellar area. The cellar contained two water cisterns, an engine room, coal and wood room, oil vault, provision room, and water-closet. There are two large hinged cargo doors in the upper cylinder above the water level to allow loading to and from the cellar. Each door has four tightening dogs on the inside. The cylinder is painted red on the exterior.

Tower/Dwelling

The conical tower/dwelling is three stories tall. The tower is made from cast-iron plates bolted together on interior flanges to give the exterior a smooth uniform appearance. The numbers used for assembling the plates are visible on the inside of the tower. The lower gallery deck is made of diamond-patterned iron plates which overlay the cylinder fill. The deck is 38 feet, 6 inches in diameter and 18 feet, 9 inches above mean high water. The gallery balustrade surrounds the perimeter of the gallery deck. The balustrade is made of 4-inch-diameter decorative cast-iron columns which support a one-story gallery roof attached to the tower/dwelling exterior. Two chains fastened to the column supports replace the original (or earlier) pipe rails consisting of three rails with balusters between the middle and lower rail. A pair of boat davits and landing platforms and ladders were located on the northeast and southwest side of the structure but these have been removed except for the ladder on the southwest side. The gallery roof is in poor condition with one roof plate missing near the door. An I-beam has been mounted from the gallery roof beams and tower wall to ease bringing in and out equipment from the entrance door (a trap door to the cellar is located in the entrance foyer).

The cellar is accessed via 22 cast-iron diamond pattern steps located in the stairwell. Two of the storage rooms retain their original wood door and all hardware. The doors have arched tops set in cast iron frames. The floor, walls, and roof are concrete.

Fenestration consists of 27-inch-diameter port holes, five on the first level, and six on the second and third level. The windows are aligned one above the other. All the windows are covered with sheet metal. The entrance door on the first level makes up the sixth opening on that level. The foyer was patched with cement in 1996.

The original door is missing and is replaced by a flat metal door. The door opening is surrounded by a cast-iron pediment. There are two cast-iron steps located on the gallery deck which lead up to the entrance door. The tower/dwelling supports the lantern. The first level contains the main entrance hall (foyer), kitchen, living room, closets and pantry; the second floor contains two bedrooms, a storeroom, and closets; the third floor contains a bedroom and watch room, both with closets. All levels of the dwelling were accessed by an enclosed central stair cylinder with four flights of stairs running from the cellar to the lantern. A central hollow metal column in located in the center of the stairwell. The weights for the bell striking mechanism where hung here. There are 15 steps from the first level to the second and third level and 13 steps to the lantern. A 1-inch-diameter handrail runs along the outer wall of the stairwell. All the interior doors are missing except for a four-panel wooden closet door on the first floor which retains its original hinges but is missing the door knob.

The second level is accessed off the stairwell via a metal door with two lights. A pantry is located directly ahead of the door and a bedroom to either side. All the doors are missing. The hinged windows on the portholes on the first, second, and third levels are intact though the glass is broken in one. The outer walls of the first, second, and third levels are sheet metal and the roof and partition walls cement. The floors are covered with tile. The ceilings are made from I-beams in-filled with concrete.

Lantern

The lantern is a fourth-order cylindrical-shaped lantern with helical-bar windows, 7 feet in diameter. The lantern is made of cast iron with a steel lining and brass strips. There are four ventilation holes in the parapet wall but the ventilation covers are missing. The iron deck has a diamond pattern and the roof is cast iron with sheet-zinc lining and topped with a cast-iron ventilator ball. The lightning conductor is bronze with a platinum tip. The lantern door is original and is made of cast iron with steel lining and brass hinges. The toggle handle is extant but does not work. The upper gallery deck is surrounded by a circular balustrade rail. The present rail originally consisted of a top, middle, and bottom rail, but only the lower two rails remain between which 3/4 -inch balusters run. There is evidence of cut off balustrades from an earlier rail. The present fog horn and duplicate backup acrylic lenses are mounted on the lantern deck.

Lens

The illuminating apparatus originally consisted of a fourth-order fixed lens. It was made by Barbier, Benard and Turenne of Paris, France. The lens consists of six panels revolving on ball bearings, driven by a standard fourth-order clockwork showing a characteristic of fixed white for one second, and eclipse for one second. The occultations were produced by blanketing the alternate panels with spherical mirrors which served to intensify the light in the opposite panel. The focal plane was 55 feet, 3 inches above mean high water and visible in clear weather 13 miles. The illuminant was a 35mm, type B, double tank, incandescent oil-vapor lamp. This system was replaced by a 190mm acrylic lens; later a RL 355 optic was installed. The present lens/optic is a VRB-25 Vega rotating beacon. The present metal pedestal for the lens is not the traditional cast-iron type; it is not known whether it is original.

Fog Signal

The original fog signal consisted of a third-class reed horn blown by compressed air. The characteristic was a two second blast followed at four second intervals. There was one vertical mushroom trumpet located above the roof of the lantern. A fog bell made in Baltimore in 1900 was used as a backup.

Previously Existing Resources:

The partial remains of the screwpile foundation from the 1871 lighthouse are located within 50 feet of the caisson lighthouse just off the southeast side.

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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)

X 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.

X 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.

Areas of Significance (Enter categories from instructions):

Maritime History

Transportation

Architecture

Period of Significance: 1914-1952

Significant Dates: 1914

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 Thimble Shoal Light Station 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 station embodies a distinctive design and method of construction that was typical of the few lighthouses constructed on the Chesapeake Bay during the first half of the 20th century. Of the eleven pneumatic caisson lighthouses built in the United States, seven were built in the Chesapeake Bay; three in the Virginia portion of Chesapeake Bay (Wolf Trap Lighthouse, 1894, Smith Point Lighthouse, 1897, and Thimble Shoal Lighthouse, 1914) and four in the Maryland portion of Chesapeake Bay (Solomons Lump Lighthouse, 1895, Hooper Island Lighthouse, 1902, Point No Point Lighthouse, 1905, and Baltimore Lighthouse, 1908).2

History

Thimble Shoals Lighthouse was one of the most accident-prone lighthouses ever built in the United States. A screwpile lighthouse was first exhibited on this shoal in 1871, replacing a lightship. In 1880, fire destroyed the lighthouse. The site was considered so important that another was erected on the site in 55 days - a record time for completing a lighthouse. In 1891, an unknown steamer ran into the lighthouse, damaging it

considerably. Later, a coal barge inflicted severe damage, and in 1909, the schooner Malcolm Baxter, Jr., under tow, rammed the lighthouse and set it on fire, completely destroying the structure. In 1914 the present caisson lighthouse was built on the site.3

A screwpile lighthouse was built in 1871 as part of an effort to replace light vessels with screwpile lighthouses.4

The want of a good screw-pile Light-house on the Horseshoe Bar, a shoal extending out from the main-land at Fortress Monroe, about five or six miles in a direction east by north from that place, has long been felt. This large bar is a source of danger to all vessels coming into Hampton Roads. The shoalest point of the bar has on it eleven feet of water at mean low tide, at a point called "The Thimble," about two and a half miles east of the main-land. South of Horseshoe Bar, and only a little more than half a mile from it, is another long bar, running in a direction almost parallel to it, called Willoughby's Spit. Between these two bars there is ample water for the largest vessel afloat. A light-vessel has been used to mark the channel between these bars and guide them clear of the dangers on either side. It is believed, however, that the same end may be attained at much less annual expense by the erection of an iron screw-pile Light-house on "The Thimble" of Horseshoe Bar, under the general law on the subject and out of the general appropriation, as a substitute for the light-vessel...5

The light on the Thimble Shoal screwpile lighthouse was first exhibited on October 15, 1872. A fourth-order Fresnel flashed red at intervals of 30 seconds. The station also had two fog signal bells. The light vessel was withdrawn.6

After the screwpile structure was completely destroyed by fire, following the partial demolition of the station by collision with the schooner Malcolm Baxter, Jr., in tow of the tug John Twohy, Jr, Congress appropriated $68,000 on June 25, 1910, for the "reestablishment" the light and fog signal station. All bids for the work on rebuilding the lighthouse were in excess of the appropriations. An additional appropriation of $39,000 was made by Congress on August 26, 1912. A temporary structure was built on the old screwpile foundation to accommodate workmen's quarters and equipment during construction of the caisson lighthouse. The light and fog signal station was put in operation on December 1, 1914.7

The station was automated in 1964.8 In 1986-87 a solar electric generator was installed to power the light. This replaced a submarine power cable which was "disestablished" and 80-pound lead-acid battery packs.9 In 1988 a major refurbishment was completed. The lighthouse was painted its historically accurate brownish-red color. It had previously been painted red.10

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9. Major Bibliographical References

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Bradner, Lawrence H. The Plum Beach Light: The Birth, Life, and Death of a lighthouse, 1988.

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.

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

LaFay, Laura. "Decaying lighthouse gets new life," Virginia Pilot, September 21, 1988.

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

U.S. Lighthouse Board. Annual Reports, 1867-1915. Department of Commerce and Labor, 1867-1916.

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

X 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: East of Hampton, VA

UTM References: Zone Easting Northing

18 389688 4097193

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 August 2002 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 (2280), NRHE, 1849 C St., NW

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

telephone: 410-326-4877 or 202-343-9508

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Property Owner

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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 U.S. Lighthouse Service 1915 (Washington D.C., Government Printing Office 1916), p. 28; Lawrence H. Bradner, The Plum Beach Light: The Birth, Life, and Death of a lighthouse (1988), p. 169; Clifford p. 165 and 173 indicates Alpena Lighthouse and

Fourteen Foot Shoal Lighthouse are also pneumatic, but this is apparently incorrect. Bradner gives a date of 1902 for Point No Point Lighthouse while de Gast p. 63 and Clifford p. 130 give a date of 1905.

3 Taken largely from notes by F. Ross Holland, copy in lighthouse file, National Maritime Initiative, National Park Service, Washington, D.C.

4 Lighthouse Board Annual Report, 1870 (Government Printing Office: Washington, D.C., 1870.

5 Lighthouse Board Annual Report 1871.

6Lighthouse Board Annual Report 1873.

7 Lighthouse Board Annual Report 1911, 1912, 1915.

8 Candace Clifford, 1994 Inventory of Historic Light Stations (National Park Service, History Division, Washington, D.C., 1994), p. 321.

9 Turbyville, Linda, Bay Beacons: Lighthouses of the Chesapeake Bay (Eastwind: Annapolis, Maryland, 1995), p. 107.

10 Laura LaFay, ADecaying lighthouse gets new life,@ Virginia Pilot (September 21, 1988), p. D1; Turbyville, p. 107; and Clifford, p. 321.

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