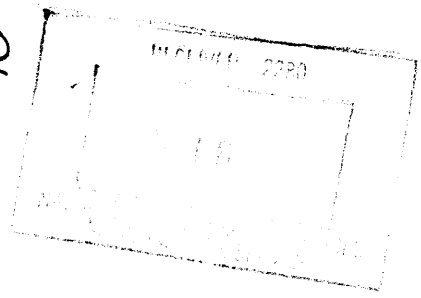
1. Name of Property

historic name: Craighill Channel Lower Range Front Light Station

other names/site number: BA-1551



2. Location

street & number: N/A not for publication: N/A

city or town: Baltimore vicinity X

state: Maryland code: MD county: Baltimore code: 005

zip code: n/a

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this nomination 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 meet the National Register Criteria. I recommend that this property be considered significant nationally. (___ See continuation sheet for additional comments.)

Acting
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 X meets ____ does not meet the National Register criteria. (___ See continuation sheet for additional comments.)

5-7-02
Signature of commenting or other official Date

State or Federal agency and bureau

4. 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): _____

for Beth L. Savage 12/2/02
Signature of Keeper Date of Action

5. Classification

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

6. Function or Use

Historic Functions (Enter categories from instructions)
Cat: Transportation Sub: Water-related

Current Functions (Enter categories from instructions)
Cat: Transportation Sub: Water-related

7. Description

Architectural Classification (Enter categories from instructions): No Style

Materials (Enter categories from instructions):
foundation: caisson
roof: metal
walls: metal
other: lantern: cast iron

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

Description Summary[2]

The foundation of the Craighill Channel Lower Range Front Light Station is a round 24-foot-diameter cement-filled cast-iron cylinder attached to a wooden caisson. The 25-foot-tall tower is a 12-story, cast-iron-plate, brick-lined structure, painted dark red/brown, surmounted by a 1-story cast-iron black lantern. The lighthouse is located in 5 to 7 feet of water[3] 1.3 miles southeast of Sparrows Point, marking the south entrance to Craighill Channel, northern Chesapeake Bay, western shore, near Sparrows Point, Baltimore County, Maryland. The lower range rear light is located 2.4 miles north of the range front light. The exterior is relatively intact but the interior is in poor condition. Owned and managed by the U.S. Coast Guard in District 5, access to the lighthouse is via boat.

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[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, D.C.

[2] Much of this narrative is derived from a section of a condition assessment report on Craighill Channel Lower Range Front Light Station prepared by the National Park Service's Historic Preservation Training Center in 1995/1996. This report is on file at the National Maritime Initiative office, National Register, History, and Education Programs, National Park Service, Washington, D.C.

[3] "Chesapeake Bay Lighthouses," Gredell & Associates: Structural Engineers (1991), p. 73 states water depth as 15 feet while "Chesapeake Bay Lighthouse Foundation Inspection," p. 3-1 states 5.7 to 7.1 feet. The later depths are probably the more accurate as this was an underwater inspection report.

General Description

Foundation

The iron caisson cylinder is 24 feet in diameter though the uppermost band of plates flare to 27 feet in diameter. The cylinder sits on a wooden caisson supported by piles. This is smaller than most caisson lighthouses which usually are 30 to 35 feet in diameter. The cast-iron plates forming the cylinder are fastened together with wrought-iron bolts in horizontal bands with the flanges turned inward to give the exterior a uniform surface. The construction plans called for cast-iron-plate sections of the cylinder located two feet above high tide to two feet below high tide to have a thickness of 2 inches while the other portions called for a thickness of 1 1/4 inches. The cylinder consists of two parts; the lower portion, for a height of 12 feet, being in the form of a frustum of a cone 30 feet in diameter at the base and 24 at the top; the upper portion of the cylinder is the same diameter as the top of the frustum of the cone to which it is joined. The uppermost band of plates flare outward increasing the diameter of the caisson. The cylinder is painted a dark red/brown color. Access to the station is via two iron rung ladders, one on the east and one on the west side affording boarding from either side depending on weather conditions. Only the east side is currently usable. The ladders lead upward through hatches through the hardwood decked upper flanged rim of the caisson. The folding hatch doors are missing. The wooden deck was replaced in 1995 with treated lumber.

Tower, Exterior

The tower consists of a cast-iron-plate cylinder 25 feet in height. This tower is similar to the Seven Foot Knoll tower and unlike the other Maryland caisson lighthouses which all have brick towers. Fenestration on the first level consists of eight window openings and two door openings. The windows were six-over-six double-hung wooden sash windows that are now covered with acrylic sheets fitted with louvered vents. Only the sashes on the southeast side remain. The main door, which faces north, originally had a wooden four-panel door and frame now replaced with a flush hollow steel storm door mounted in a steel frame. The window openings are decorated with raised cast-iron pediments and sills which were cast integral with the tower plates. At the top of the exterior walls is a decorative cornice with an integral gutter which originally collected rain water to a cistern. The main door has a decorative iron pediment with the date "1873" centered above it.

A gallery surrounding the first level of the tower is supported by brackets that cantilever from the caisson sides. The gallery deck is made of 2-inch timber planks. A cast-iron balustrade surrounds the outside of the gallery. It consists of 1 1/2-inch-diameter round posts attached to each cantilevered bracket, a flat bar top and bottom rail, and 1/2-inch-diameter round balusters spaced approximately six inches on center. The vertical posts are capped with round finales and the rails are curved to the diameter of the gallery deck. There were two pairs of boat davits, one set each on the northeast and southwest side, but the pair on the northeast side has been removed. The original board-and-batten privy sits over the side of the gallery deck and is supported by iron cantilever brackets from below. The original privy door is missing and the opening covered with plywood. The privy roof is a flat seam metal roof. In 1885 the tower was painted white and by

1961 was painted dark red/brown to match the caisson with the windows and door trim painted white.

Tower, Lower Level

The lower level is located in the upper portion of the caisson, accessed through a plywood hatchway and seven-step wood ship's ladder in the foyer of the first level. Here the caisson plates are lined on the inside with 3-feet-thick concrete. Below this level the caisson is solid concrete which also forms the floor. There are four 8-inch-diameter portholes mounted in recesses in the concrete lining. Two of these have been bulkheaded with steel plate and the other two contain glass or acrylic sheeting. A centrally located iron column supports two eight-inch-deep iron beams which support 3- by 12-inch timber floor frames for the first level. The floor frames are dapped so they can rest on the bottom flange of the iron beams. Tongue-and-groove wood flooring is nailed to the framing forming the ceiling of the lower level and the floor of the first level. Two 750-gallon water tanks, once connected to the gutter and downspout, supplied the lighthouse with water, but these and a 225-gallon fuel tank were removed in 1989. This space also served as an oil and general storage room.

Tower, First Level

The entrance inside the tower is located on the north side which leads into a small foyer. To the right of the foyer was the kitchen which has had a 5- by 8-foot shower and dressing room partitioned off of it. To the left of the foyer is a 9- by 12-foot sitting room which has been changed into the present kitchen. On the south side is a 12- by 21-foot living room which occupies nearly one-half the floor space. The original 1874 plan shows this area as two bedrooms separated by a partition wall. One keeper in 1955 said about the station, "It's so small, every time you sneeze, you have to swab the place."[4] Batteries were stored here when the station was automated until solar panels were installed. A spiral wooden staircase to the watch room and lantern is located off the foyer. The tongue-and-grove flooring has been covered with tile flooring. The tongue-and-groove beaded vertical wall paneling and ceiling has been covered with plywood in the kitchen. The four-panel wooden door that leads from the foyer to the kitchen may be original. The wall paneling in the large room is original while the ceiling is covered with plywood. The interior paneling is painted white with gray floors. Off the living room is a 50-inch-wide and 29-inch-deep extension onto the gallery deck where the range light is housed. It is ventilated to the outside on each side. The light is housed in a sheet metal box accessed by a metal door.

Tower, Second Level

The second level or watch room has a diameter of only 14 feet. It served as the watch room, housed the fog bell striking mechanisms, and provided a general storage room for the light station. At the top of the stairwell is a curved iron balustrade similar in appearance to the exterior gallery balustrade. Fenestration consists of four windows covered with vented acrylic

[4] de Gast, p. 105; Linda Turbyville, *Bay Beacons: Lighthouses of the Chesapeake Bay* (Eastwind Publishing: Annapolis, 1995), p. 22; and Lighthouse Board, *Annual Report, 1921*, p. 60.

sheeting. A small closet is located adjacent to the stairwell. A centrally located metal column supports the timber framing for the lantern; it is painted tan. The wooden floor is painted gray.

The lantern room is accessed by the continuation of the spiral stairway lined with vertical beaded wood paneling. The original wood raised four panel door with brass hardware to the stairwell is intact. The original builder's plan shows a fog bell operated by a Number 4 Gamewell striking apparatus was intended to be mounted on both the east and west side of the second story. Apparently only one fog bell was ever installed. In 1938 an air tank possibly related to a new fog bell striking system was located on this level as well as shelves for storage of lamps. The narrow slot in the wall for the striking hammer can still be seen. There are two closet doors which provide access to the storage areas under the eaves of the roof. The walls are covered with vertical beaded paneling and are painted white.

Lantern

Surmounting the tower is a 10-sided lantern which is painted black. Its cast-iron frame parapet walls are lined with wood board paneling and tongue-and-groove wood flooring. There are three ventilators in the parapet walls and a ventilator ball on the roof. The underside of the metal roof is lined with sheet metal. The lantern panes are 26 inches wide and 36 inches high. Access to the exterior lantern deck is through a 3/16-inch metal plate half-door. The deck is covered with a flat seam metal roof surrounded by a cast-iron balustrade similar to the lower gallery balustrade. The original glass panes were replaced with acrylic sheets which discolored and were replaced with glass.

The station is unusual in that it has two lights, the lower one for the range and the upper one a general aid to navigation. This is the only known extant light station in the Chesapeake Bay with a double light. The now defunct Brewerton Channel Front Range, a screwpile station, had two lights. The original 360° fixed fifth-order Fresnel lens, made by "Henry Leapute" of Paris, has been replaced by a 250mm acrylic lens, serial number 81115, mounted to the original pedestal. There is a small opaque sector created by the placement of a 6 7/8-inch wide metal sheet against the glass pane and a narrow red sector to the northeast. The light is operated by a solar panel located on the roof of the lantern. On the inside of each frame, along the top edge, is a pair of what appear to be hinges, the exact purpose for which is unknown. Curtain hooks are also present. A pipe rail runs along the opening to the stairwell. The lantern room walls are painted white and the floor gray.[5]

The gallery deck is covered with flat seam metal sheeting, painted black, as is the lantern. The gallery rail is three feet in height, with one 1-inch post and 1/2-inch diameter round balusters fixed to an upper and lower 1 1/2-inch wide flat iron bar rail. Each post is capped with a finial ball.

[5] Wilton Hartig oral communication with Ralph Eshelman, February 9, 1995.

8. Statement of Significance

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: 1873-1952

Significant Dates: 1873

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

Cultural Affiliation: N/A

Known Design Source: none

Architect/Builder:

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

The Craighill Channel Lower Range Front 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. The first caisson lighthouse built in the United States is believed to be the Duxbury Lighthouse, Massachusetts, in 1872. The following year the Craighill Channel Lower Front Range Lighthouse was built and is considered a greater feat of engineering as it was built in deeper water under more difficult conditions. The caisson type quickly became the preferred type of lighthouse to be built in climates where ice floe damage was a possibility. The front range light is unusual for having two lights and is the only known extant example in Chesapeake Bay. A red beacon light is fixed above the gallery deck which serves as the front light for the range and a light in the lantern serves as a general aid to navigation.

History

The Craighill Channel starts at the mouth of the Magothy River and extends to the southern end of Belvidere Shoal a distance of approximately five miles. This channel forms the first leg of the maintained channel to the Patapsco River and Baltimore Harbor. The channel was named after William Price Craighill, a major in the Army Corps of Engineers and a member of the Lighthouse Board, who supervised the surveys for the widening and deepening of the channel. The channel was dredged 169 feet wide and generally 21 feet deep, but the growing importance of Baltimore as a port persuaded Congress to appropriate $50,000 in 1870 to widen the channel to 500 feet and deepen it to 22 feet. Unlike the Brewerton Channel, which then intersected the Craighill Channel about a mile northeast of Seven Foot Knoll Lighthouse, Craighill had no lights to aid night navigation. The Lighthouse Board stated in 1871 that

> *this channel has the advantage of saving about five miles in distance to large vessels bound to Baltimore from the lower bay; avoids much, if not all, of the dangers usually experienced from the accumulation of ice in the lower part of the Brewerton Channel during the winter; is much easier navigated, or would be if range beacons were established.*[6]

Because of the location of the Craighill Channel and its connection with the Chesapeake Bay, shore range lighthouses would have required very powerful lights and an extremely high rear range light. Thus the range lighthouses were built in the water. Both range lighthouses were

[6] Lighthouse Board, *Annual Report, 1870*; and *1871*, pp. 30-31; de Gast, p. 105; and Holland, *Maryland Lighthouses of the Chesapeake Bay: An Illustrated History*, in press, Chapter 4, page 2.

originally designed to be screwpile foundation types but the severe ice conditions during the winter of 1872-1873 convinced the Lighthouse Board to build a small caisson structure for the front range and granite pier foundation for the rear range. Upon completion of this new pair of range lights it was thought that "the two expensive lights built on jetties at North Point" would become "unnecessary" and "might be dispensed with." Congress appropriated $45,000 on June 10, 1872 "for two range lights for Craighill Channel into Patapsco River from Chesapeake Bay, to take the place of the two lighthouses now at North Point."

Upon initiation of construction of the front range lighthouse in the summer of 1873 it was found there was no firm strata within 60 feet of the water surface. Additional costs in preparing the foundation led Congress to appropriate another $20,000 on March 3, 1873, and a final $45,000 on June 23, 1874, to complete the range lighthouses. To achieve a stable foundation, a ten-foot-deep portion of the mud layer was dredged away and wooden piles driven. A steam operated circular saw was used to cut the tops of the piles at a depth of 23 feet below low water. The saw was attached to a hollow wrought-iron shaft which was held in a vertical position in a frame. The saw was set at a determined depth by means of marks on the shaft and fixed marks on the temporary construction pier built around the site. Even with caution, the blind use of the saw under water did not permit an even cut and some piles stood higher than others. A diver was employed who "spiked" hardwood chocks onto the low piles to provide a relative uniform level surface.

A hardwood caisson crib, constructed at Havre de Grace, Maryland, was made of four layers of 12-inch timbers connected by barbed bolts. The first course of cast-iron cylinder plates were bolted to it and was towed to the site. As a result of difficulty in managing it in a gale wind, it was taken to a good harbor at Curtis Creek and two more courses of cast iron plate added. Then three feet of concrete was poured into the iron cylinder to give it better ballast. It now floated evenly and had a draft of 15 feet. In October 1873, the first attempt to place the caisson in position over the piles failed. Fifty tons of riprap used to sink the assembly had to be removed and the caisson re-floated. On the second try a 12-foot-square and about 22-feet-high structure capable of holding about 160 tons was built inside the caisson to hold gravel making it easier to remove and partially re-float again if the caisson was not properly positioned. The assembly was successfully repositioned on October 31, 1873, the gravel removed, the box removed, and the square void filled with concrete. A temporary fourth-order Fresnel lens was installed on November 20, 1873, on a temporary wood structure built on top of the caisson. The remaining iron work completing the tower was finished in March 1874 and 5,000 tons of stone rip rap was added around the structure to prevent scouring.[7]

Another 675 tons of riprap were placed around the cylinder in 1875. The station has never suffered ice damage despite it being located in a very exposed position; however the station was once abandoned and the light extinguished on February 11, 1936, because of dangerous ice conditions. It was not relit till February 24. In 1899 the station received "new model fifth-order lamps." A fog bell operated by gas was established at the station in 1923. The light was changed

[7] "Chesapeake Bay Lighthouses," Gredell & Associates: Structural Engineers, p. 73; "Chesapeake Bay Lighthouse Foundation Inspection," figure 4-2; Holland, *Maryland Lighthouses of the Chesapeake Bay: An Illustrated History*, in press, Chapter 4, pages 3-4; and Lighthouse Board, *Annual Report, 1871*, pp. 30-31; *1872*, p. 42; *1873*, pp. 45-46, and *1874*, pp. 45-46.

from oil to electric on November 26, 1929. The fog signal was changed to an air whistle on October 24, 1932. In 1938 the light was described as having a Reynolds flasher to produce the one-second flash with two-second eclipse. A spare fourth-order "wick lamp" was kept as a backup. Oil was stored in a 225-gallon tank kept in the cellar. The fog signal was a number 4 Typhone Horn with an eight-inch-diameter whistle, which gave a three-second blast every 27 seconds. A backup Gamewell weight-driven clock mechanism produced a double strike every 30 seconds. The weight had to be rewound every hour and a half. The fog bell was a standard 1000-pound bell.

Water was collected from the roof and stored in two steel 500-gallon tanks. The station had a 18-foot "motor boat" powered by a four horse-power one-cylinder Lathrop engine and a 16-foot "skiff" hung from davits. There was a keeper and an assistant until the station was automated on May 5, 1964.[8] In 1989 the exterior was sandblasted, primed, and "color coated," two water tanks and one fuel tank removed, electrical conduit removed from the interior, the porch decking was replaced, lose paint scraped on the interior, and glass windows replaced with Lexan, as needed; all at a cost of $27,612.88.

The front lighthouse of the lower range works in conjunction with the rear lighthouse, which with a height of 105 feet is one of the highest towers in the Chesapeake Bay. The light has a 250,000 candlepower intensity. Because of the rear range light's height, pilots can easily see it when coming from a direction outside the range.[9]

9. Major Bibliographical References

"Chesapeake Bay Lighthouses," Gredell & Associates: Structural Engineers, Wilmington, Delaware, 1991.

"Chesapeake Bay Lighthouse Foundation Inspection," Han-Padron Associates: Consulting Engineers, New York, New York, July 1992.

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: an Illustrated History.* Maryland Historical Trust, Crownsville, Maryland, in press.

U.S. Lighthouse Board. *Annual Reports*, 1870-1921. Department of Commerce and Labor, Washington, D.C., 1870-1921.

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[8] Lighthouse Board, *Annual Report, 1875*; *1899*; *1923*, p. 34; *1929*; *1932*; *1936*; and *1938*; and "Description of Craighill Front Range Light Station, March 31, 1938" copy in Craighill Light Front Range file, National Maritime Initiative office, National Park Service, Washington, D.C.

[9] de Gast, p. 105.

Previous documentation on file (NPS)
___ preliminary determination of individual listing (36 CFR 67) has been requested.
___ previously listed in the National Register
_X_ 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
_X_ State Historic Preservation Office
___ Other State agency
_X_ Federal agency
___ Local government
___ University
___ Other
Name of repository: National Archives; Library of Congress; National Maritime Initiative, National Park Service; U.S. Coast Guard Headquarter, Historian's Office, Washington, D.C.

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10. Geographical Data

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Acreage: Less than one acre

USGS Quadrangle: Sparrows Point, MD

UTM References:	Zone	Easting	Northing
	18	379600	4338410

Boundary Description:

The boundary is coterminous with the foundation of the structure.

Boundary Justification:

The boundary completely encompasses the light station.

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11. Form Prepared By

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name/title: Ralph E. Eshelman, Maritime Historian
(Originally prepared for the Maryland Historical Trust as part of a multiple property nomination for Maryland Lighthouses; reformatted in May 1998 by Candace Clifford, NCSHPO consultant to the National Maritime Initiative, as part of a multiple property documentation form for U.S. Coast Guard-owned light stations; edited and revised in August 2002 by Jennifer Perunko, NCSHPO Consultant, National Maritime Initiative, National Park Service)

organization: Eshelman & Associates

date: January 27, 1996

street & number: 12178 Preston Dr.

city or town: Lusby state: MD zip code: 20657

telephone: 410-326-4877

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Property Owner

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name: U.S. Coast Guard, Fifth Coast Guard District

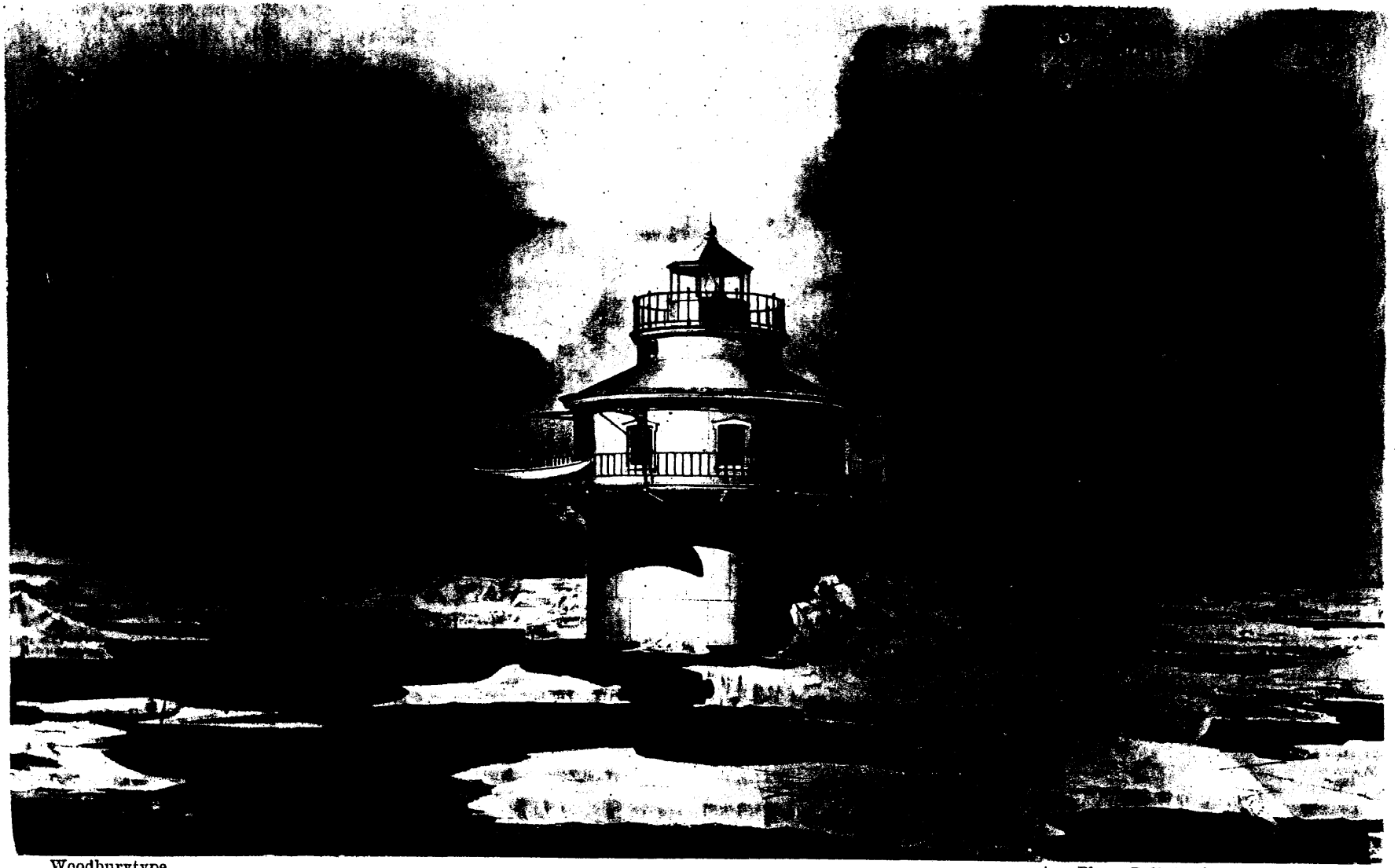
street & number: 431 Crawford Street

telephone: (757) 398-6351

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

U. S. LIGHT-HOUSE ESTABLISHMENT.

1873.



Woodburytype.

Am. Photo-Relief Printing Co., Philada.

CRAIGHILL'S CHANNEL RANGE OR LEADING LIGHTS.

CHESAPEAKE BAY.—THE LOW LIGHT.