

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

BLOCK ISLAND SOUTH EAST LIGHT

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United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

1. NAME OF PROPERTY

Historic Name: BLOCK ISLAND SOUTH EAST LIGHT

Other Name/Site Number: SOUTH EAST LIGHT, SOUTHEAST LIGHT

2. LOCATION

Street & Number: South East Light Road

Not for publication: N/A

City/Town: New Shoreham

Vicinity: N/A

State: RI

County: Washington

Code: 009

Zip Code: 02807

3. CLASSIFICATION

Ownership of Property

Private: X

Public-Local: ___

Public-State: ___

Public-Federal: ___

Category of Property

Building(s): ___

District: ___

Site: ___

Structure: X

Object: ___

Number of Resources within Property

Contributing

4

4

Noncontributing

2 buildings

___ sites

___ objects

2 Total

Number of Contributing Resources Previously Listed in the National Register: 1

Name of Related Multiple Property Listing: N/A

Designated a
NATIONAL HISTORIC LANDMARK on

SEP 25 1997

by the Secretary of the Interior

BLOCK ISLAND SOUTH EAST LIGHT

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4. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this x 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.

Signature of Certifying Official

Date

State or Federal Agency and Bureau

In my opinion, the property meets does not meet the National Register criteria.

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
- Determined eligible for the National Register
- Determined not eligible for the National Register
- Removed from the National Register
- Other (explain): _____

Signature of Keeper

Date of Action

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6. FUNCTION OR USE

Historic:	Transportation	Sub:	Water-related
Current:	Transportation Recreation and Culture	Sub:	Water-related Museum (Work in Progress)

7. DESCRIPTION

ARCHITECTURAL CLASSIFICATION: Late Victorian/gothic

MATERIALS:

Foundation: Stone/Granite; Brick
Walls: Brick; Stone/Granite; Metal/Iron
Roof: Asphalt; Metal/Copper
Other:

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Describe Present and Historic Physical Appearance.

Block Island sits approximately 12 miles south-southeast off the coast of Rhode Island, squarely astride the coastal sealanes. The Block Island South East Lighthouse has stood atop Mohegan Bluff, high above the Atlantic Ocean, since 1874. The lighthouse and keepers quarters were meant to be showpieces for the U.S. Lighthouse Bureau. They were among the most elaborate built during the 1870s. South East light has been the focus of an intense preservation campaign. Local and national efforts forged a complex partnership to move the structure away from eroding bluffs and restore it to operation, with long-term preservation in mind.

The Light Tower and Keepers House

The principal structure of the lighthouse station consists of a 5-story brick light tower and 2-1/2-story duplex residence with identical 1-1/2-story kitchen wings located at the rear. A short 1-1/2-story hyphen connects these two elements. Both the residence and tower are constructed of brick and have granite ashlar foundations and granite trim. Below ground the structure rests on a brick foundation. The tower lantern and gallery is of cast-iron and was cast by Paulding, Kemble & Company.

Following designs produced by the Light House Board in 1873, the residence and tower were built in 1874 by contractor T.H. Tynan of Staten Island, in the High Victorian Gothic style. The original lighthouse and attached keepers house structures retain a high level of integrity. To prevent it from slipping into the Atlantic as the bluff eroded away, the lighthouse was moved, during August 1993, approximately 250 feet back from the edge of Mohegan Bluffs. As the lighthouse remains within the historic boundaries of the station, the integrity of the light station's setting, feeling, and association has been maintained.

The Tower

The light tower is 67' high and is composed of an octagonal granite base, an octagonal pyramidal shaft, a circular cast-iron parapet surrounding an open octagonal gallery and a 16-sided lantern encircled by an open circular gallery. The whole is capped by a 16-sided pyramidal roof. Aside from the replacement of the original wrought-iron railings with galvanized steel railings in the two galleries, the replacement of the historic lens with an inappropriate substitute, and the replacement of the original iron-plate roof with copper, the tower structure is essentially unaltered.

The tower shaft consists of two brick shells connected by cross walls. The outer shell forms the hollow frustum of an octagonal pyramid while the inner one is the hollow frustum of a cone. At its base, the shaft has a 25-foot diameter, which decreases to a 15-foot diameter at the base of the lantern. The tower is entered through the connecting hyphen on the first floor and contains a circular iron stairway attached to the wall, with semi-circular landings on the second and third floors supported by wrought-iron beams and brick corbel tables. On the first and third floors, six narrow double-hung sash windows in cast-iron frames, set in segmental arched openings in the north, east, and south walls, light the interior of the tower. Originally,

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the first floor served as the oil room. Today the three cast-iron and brick shelves, on which the lightkeepers stored 100-gallon oil butts, are still in place.

The Tower Gallery, Parapet and Lantern

The tower shaft ends at the fourth-story level in the superstructure with its gallery, parapet and lantern. On the exterior eight iron brackets with ornamental spandrels and pendants spring from a cast-iron cornice with brick frieze. These support the octagonal gallery and surrounding parapet. The watchroom has a cast-iron floor and is open to the lens room above. The room contains a pedestal and platform supporting the Fresnel lens. The platform consists of a modern expanded steel grate installed when the second lens was removed from the tower.

On top of the parapet drum is the 11.5' diameter lantern, which is fitted with 10' high windows on all 16 sides, each consisting of 3 fixed panes of glass. The function of the lantern is to protect the lighting apparatus from the weather. Narrow cast-iron galleries encircle both the outer and inner circumferences of the lantern. Sixteen circular skylights, each containing fourteen hexagonal glass prisms, are set in the deck plates of the outer gallery and serve to light the watchroom and vestibule below.

Lastly, crowning the top of the light tower, is the roof, made of 16 copper plates and rafters. The original roof consisted of sixteen iron plates and rafters with an iron cove cornice. The Coast Guard replaced the original iron roof with copper before turning the station over to the Southeast Lighthouse Foundation. The roof rests on the posts of the lantern's iron frame and is topped by a ball ventilator and lightning rod. The rooftop ventilator aided other ventilators in the lantern floor to carry off accumulations of gasses from the lamp.¹

The Lens and Illuminant

In the center of the lantern, or lens, room is the fixed 1000-watt electric lamp, surrounded by the lenticular apparatus, which consists of 8 Fresnel lens panels, each composed of 3 sections set in brass frames. The height of the light's focal plane is 52'6" above ground and 204' above sea level. From 1929 until 1991 South East Light exhibited a fixed green light, the only first-order green light in New England, with a range in excess of 22 miles.

Originally, South East Light exhibited a fixed white light, and its illuminating apparatus consisted of a fixed six-panel Fresnel lens, manufactured by Barbier and Fenestre of Paris in 1873, lit by a four-wick Fink's Hydraulic Float lamp of 12,188 candlepower. As the landward side of the light did not require illumination, the traditional eight-paneled lens with five-wick lamp was not necessary. The lamp first burned lard oil, then was converted to kerosene in the 1880s, following the trend of other U.S. lighthouses. In 1889, the original lamp was replaced with a five-wick lamp. This was subsequently replaced in 1907 with a incandescent oil vapor

¹ The description of the present and historic appearance of South East Lighthouse is drawn extensively from Mary M. Thomas, NPS Form RI-27, Historic American Engineering Record, "Block Island Southeast Light" (1984) and Richard Greenwood, NPS Form 10-900, National Register of Historic Places Inventory - Nomination Form, "Block Island South East Light" (1984).

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(IOV) lamp, which increased the light's intensity to 45,690 candlepower, and electric light bulbs which increased the intensity even further.

In 1929 the original lens was moved to another location and the lens was changed from a fixed white light to a flashing green light. The change was needed in order to prevent confusion by mariners with other area lights on the approaches to New York, particularly Montauk Lighthouse, which also had a fixed white light. A revolving apparatus with a pedestal was added, which in combination with a new lens produced a flashing, as opposed to a fixed light. This lens flashed eight times per rotation, once every 3.7 seconds. The 1929 lens was a melding of various components. Three of the eight Fresnel panels were manufactured by Henry Lepaute of Paris, one in 1880, the remaining five by L. Sautter & Co., also of Paris, date unknown. To further differentiate the signal, the light was changed from white to emerald green, and the lamp was updated to 50,000 candlepower. Green light signals were rare because the color limits the extreme range of visibility for the light signal.²

The eight Fresnel bulls-eye lenses of the lens apparatus, each measuring 39-1/2" by 30-9/16", turned on a mercury float which allowed vibration-free, low-friction rotation. The mercury float was protected from evaporation by an oil bath and sheet metal cover. While offering many mechanical advantages, the mercury float presented a danger to anyone visiting the light if it was not regularly maintained. If the oil bath was allowed to evaporate for several years the mercury could be exposed to the atmosphere, giving off poisonous fumes. In 1990 this lens assembly was still in service, rotating on its mercury flotation system. For environmental and safety reasons the Coast Guard ordered the removal of the mercury bath in 1990 as part of a national campaign. The light was replaced by a modern revolving aircraft beacon on a steel tower several hundred feet behind the lighthouse. The aero-beacon flashed green every five seconds. The historic lens was retained in the tower in an inoperative condition.

Following the successful move of the lighthouse away from the bluff edge in 1993, the Coast Guard agreed to relight the tower in August 1994. Rather than modify the historic green 1929 revolving lens, the Coast Guard, claiming operational expediency, installed a complete first-order Fresnel lens taken from the Cape Lookout Lighthouse in North Carolina. The lens was restored by renewing the glazing compound that holds each prism in place. The cast iron lens pedestal and lantern room floor were replaced by a steel grate installed to accommodate the new lens. At the same time, the Coast Guard rebuilt the lantern room, which included replacement of the deteriorated cast iron roof with copper and installation of bulletproof glass windows to protect the lens.

The Cape Lookout lens does not match the original lens other than in its general size. The original 12-foot-high, 6-foot-diameter Southeast Light Fresnel lens of 1873-1929 had prisms on only 270 degrees of its circumference. Glass prism reflectors focused light rays out to sea from the landward side of the lens. The Cape Lookout lens has prisms facing 360 degrees. Six of the eight lens section are stamped with the maker's mark, L. Sautter & Co. In addition

² U.S. Department of Transportation, United States Coast Guard, *Light List, Vol. 1, Atlantic Coast* (Washington, D.C.: U.S. Government Printing Office, 1930-1994); *United States Coast Guard Aids to Navigation, 1945* (Washington, D.C.: United States Government Printing Office, 1946) p. 351.

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to the Cape Lookout Lens in the tower, the Southeast Lighthouse Foundation plans to exhibit the green 1929-1990 lens on-site as an educational device when the station opens to the public as a museum.

The new lens came from Cape Lookout Lighthouse, built in 1856 in Beaufort, North Carolina. It was last in place in North Carolina in 1980 and had been on display at the Coast Guard Support Center, Portsmouth, Virginia, after that time. The state of North Carolina has been engaged in discussions with the Coast Guard to return the Cape Lookout lens now installed in the Block Island Southeast light to its historic home. If the negotiations meet with success, then perhaps the green 1929 Block Island lens can be modified and returned to the tower, giving two preserved primary seacoast lighthouse towers their historically correct lenses and signals.

Keeper's Residence

The dwelling at South East Light is joined to the light tower by a perpendicular 1-1/2 story connecting wing at the center of its southeast facade. It consists of a 2-1/2 story main block and two 1-1/2 story rear kitchen wings. The main entrance is in the northeasterly side of the connector. There are two single-story porches, located on each side of the connecting wing. The porch posts on the southwesterly side have decorative beveled, bracketed posts, while the complementary porch on the other side exhibits 20th-century changes. A ramp leads up to the southeast porch and main entrance.

The fenestration on the facade consists of two 3/4-length 9-over-9 pane windows on the first story, with a 4-over-6 pane, centrally located wall dormer with segmental arched window head, on the second story level. Identical dormers fit in over the entry doors. On the gabled ends of the main block are two pairs of 6-over-6 pane windows on the first and second floors and one pair of 4-over-4 panes on the half-story level.

The kitchen wings to the northwest rear are connected to the main block by a single-story shingled framed passageway. Each wing is lit by a pair of 4-over-6 pane windows and a single 2-over-2 pane window in its outer wall and a single 6-over-6 pane window in its inner wall. The kitchen garrets are lit at the gable end by 2-over-2 pane windows that flank either side of the chimney block.

There have been very few changes to the residence. The original plan included two mirror-image apartments, the north one to be occupied by the keeper and the south one to be shared by the first and second assistant keepers. This floor plan remains virtually intact. One of the only changes to the plan occurred in 1938 when indoor bathrooms were installed, two on the second-floor level of the tower connector and another by the southwest entryway to the station. Other minor changes have been necessary because of storm damage or to add modern plumbing or electrical conveniences. However, none of the improvements has altered the outward appearance of the structure. On the outside, changes that have taken place include replacing the original shingle roof with a slate one (1886) and subsequently with an asbestos one (1923); the current roof is made of asphalt. In 1933 new higher chimney tops were added

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and, in the fall of 1993, following the requirements of the Americans with Disabilities Act, a ramp to aid the disabled was built along the easterly side of the building.

The light station was built in the Victorian Gothic style, which can be seen, for instance, in its steeply pitched roofs, the windows that extend into the roof line, the use of both brick and granite around the windows and in its overall massiveness. The use of chiseled granite adds a rugged quality to the structure and this, combined with the building's size and scale, gives a general air of strength to the lighthouse.

Other Structures of the Station

South East Light sits on the eastern edge of an approximately 10-acre plot of open land. Two other noncontributing buildings share the site today, a brick garage and a brick ranch house. A single-story gable-roofed structure, the garage was built in 1939. It sits south of the lighthouse and is now houses fog signal equipment. The ranch house is also a single-story structure, with attached garage, and is located west of the lighthouse. The Coast Guard built the house in 1962 to serve as a residence, which it still does as well as the headquarters of the Southeast Lighthouse Foundation. There are three historic stone walls that surround the property that are considered contributing structures to South East Light. The walls pre-date the light station and were most likely constructed in the late eighteenth or early nineteenth century when the site was first cleared for agricultural use.

In the past, various other structures existed at the light station. These functional buildings either supported the needs of the families that lived at the site or accommodated aids to navigation, equipment or supplies. Over time they were updated or replaced, reflecting common practice at a functioning light station. Most of the outbuildings were located in a cluster inland to the northwest of the original site of the light. These outbuildings included: sheds, barns, garages, an oil tank, and oil house, a cistern, two different era radio stations, a privy, and a powerhouse. Historic photographs show that the majority of these were frame buildings. Reflecting the change from horse to automobile transportation, U.S. Coast Guard correspondence from 1939 indicates that the barns were replaced with the surviving brick garage.³

The first structure to house an aid to navigation on the site was the fog signal building, built in 1873. This was replaced in 1908 with a one-story brick structure after the original burned to the ground. In 1987, when the structure was at risk of falling over the eroded cliffs, the Coast Guard destroyed it.

Other structures formerly on the site included a signal station, built in 1898 when the United States and Spain were at war, and a telegraph office, built in 1903. In 1909 station outbuildings included an oil tank and oil house, coal sheds, siren house, a barn for radio equipment and radio and weather signal towers. The hurricane of 1938 destroyed a barn and storehouse that served the site. A military radar station was erected in 1943 during the Second

³ Thomas, p. 36; Historic American Engineering Record, "Block Island Southeast Light - 1874, HABS/HAER Collection, Library of Congress, 1988, sheet 3 of 12.

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World War. As many of the remaining structures were no longer in use in 1962 the lightkeepers received permission to remove all but the garage, ranch house and fog signal building.

Today, due to many years of advances in technology, restricted budgets, and other reasons, many Coast Guard light stations have few remaining original buildings. Thus, South East Light is similar to many stations in its lack of historic outbuildings. Historically, most of the 10-acre site at the lighthouse has been kept as open land. Photographs show that for a period, circa 1900, the outbuildings were enclosed by a picket fence, outside of which grazed sheep. There are no longer any fences at the site.⁴

When South East Lighthouse was built in 1874, approximately 300 feet of lawn lay between the structure and the edge of Mohegan Bluffs. Since that time, however, almost 250 feet of soil has eroded from the bluffs. The erosion problem has been known for some time. Even before construction of the lighthouse occurred, Block Islanders warned of the inadvisability of the location because of the steady erosion of soil at the Island's southeastern corner. For approximately the last 30 years the Coast Guard has been carefully monitoring the situation. In 1983 the citizens of Block Island began laboring to save their landmark. Concern became so strong that the National Trust for Historic Preservation entered the lighthouse on its 1990 and 1991 lists of "America's Eleven Most Endangered Historic Places."

In order to prevent the inevitable loss of the lighthouse, South East Light was moved back from the edge of Mohegan Bluffs between August 10 and 28, 1993, when it was only about 55 feet from disaster. Under the supervision of the Army Corps of Engineers, Expert House Movers performed a three-legged move of the light tower and dwelling, for a total of 360 feet. Peter Friesen designed the plan and International Chimney Corporation assisted. The 2,000-ton structure was hydraulically lifted, with its above-ground foundation attached, and then hydraulically pushed along metal tracks on roll beams. The successful move did not alter the fabric of the structure, and the lighthouse now rests on a location that geotechnical studies have determined will be safe for more than a century.

Although a technological feat, South East Light's move was not unique among lighthouses. Throughout the history of the lighthouse system, lighthouses have been moved to avoid destruction from erosion or other threats.⁵ Highland or Cape Cod Light was moved last year. Several other important lighthouses, including Cape Hatteras light are slated to be moved in the next several years. As in each of these cases and in historic moves of lighthouses to prevent destruction, the relationship of South East Light to the sea and land has been maintained, the integrity of the lighthouse's relation to the seacoast has been preserved. The alternative to moving the structure would have resulted in the loss, in the very near future, of this historic structure.

⁴ Discussion of outbuildings and the land around the light station drawn extensively from the HAER Report and National Register Nomination for South East Lighthouse.

⁵ Francis Ross Holland, Jr., *Great American Lighthouses* (Washington, D.C.: Preservation Press, 1989), 67.

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Now that South East Lighthouse has been saved from destruction, interior restoration work will proceed, utilizing the original U.S. Light House Board plans as a guide. The Southeast Lighthouse Foundation plans to maintain a museum at the station that will feature the material culture of the U.S. Coast Guard and the maritime history of Block Island. There are also plans to use part of the space for a bed and breakfast, featuring historic rooms with appropriate furnishings. The lighthouse will continue to be a working aid to navigation and continue to guide vessels around the southeastern corner of Block Island.

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8. STATEMENT OF SIGNIFICANCE

Certifying official has considered the significance of this property in relation to other properties:

Nationally: X Statewide: ___ Locally: ___Applicable National
Register Criteria:A X B ___ C X D ___Criteria Considerations
(Exceptions):A ___ B X C ___ D ___ E ___ F ___ G ___

NHL Criteria:

1 and 4

NHL Criteria Exclusion 2

NHL Theme(s)

- I. Expressing Cultural Values
Architecture, Landscape Architecture and Urban Design
- V. Developing the American Economy

Areas of Significance:

ARCHITECTURE, MARITIME HISTORY, TRANSPORTATION

Period(s) of Significance: 1874 - 1929

Significant Dates:

1874, 1929

Significant Person(s):

N/A

Cultural Affiliation:

NONE

Architect/Builder:

U.S. Light House Board
Tynan, T. H., Contractor

NHL Comparative Categories:

- XIV. Transportation
B. Ships, Boats, Lighthouses, and Other Structures
- XVI. Architecture
E. Gothic Revival
3. Late Gothic Revival

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State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.

Block Island South East Lighthouse is outstanding as one of the finest lighthouses constructed by the U.S. Light House Board in the 19th century. The station has served as a primary aid to navigation since it was first lit and today is one of the last 12 lighthouses in the country still equipped with a lighted first-order Fresnel lens. South East Light also exemplifies a relatively brief era of architectural sophistication at the Light House Board. The picturesque quality of the steeply pitched Gothic roof and chiseled masonry of the lighthouse design provides one of the U.S.'s most powerful expressions of the romanticism inherent in the function and setting of the lighthouse. In the 19th-century history of maritime transportation and, in particular, the technology and architecture of lighthouses, South East Light is significant on the national level. It meets Criteria Exclusion 2 as a moved property that is essentially in the same historic setting and that derives its primary national significance from its architectural and historic importance.

The preceding statement of significance is based on the more complete study which follows.

Block Island and Navigation

Early in the history of New England, Block Island was recognized by mariners and others as an extremely dangerous location along the eastern seaboard. The island lies between Long Island and Rhode Island sounds in the center of the shipping lanes for vessels traveling from the south, or west from New York City. It was not until 1829, however, that a first effort was made to safeguard mariners from running aground on its shoals. During that year Congress appropriated funds for a light at the northern tip of Block Island. The North Light was built in 1829, but it provided little warning for ocean-going vessels passing by the Island's southern coast.

The need for a navigational aid on the south coast of Block Island grew considerably during the 19th century, due to a tremendous increase in maritime traffic along the eastern seaboard of the United States, in particular along the coast of the industrial Northeast. In 1860 a committee appointed by the General Court of Massachusetts to investigate the need for a canal through Cape Cod reported that 10,000 vessels passed around the Cape each year.¹ By the 1870s and 1880s, the average annual number of vessels recorded at the Cross Rip Light Vessel, situated in Nantucket Sound, was 13,000.² Virtually all of these recorded vessels passed closely by Block Island on the preferred route around the Cape between Martha's Vineyard and Nantucket. These numbers give an indication of the volume of traffic, but do not even reflect vessels that docked in Providence and at other Narragansett Bay ports north of Block Island. Every sort of vessel: steam and sail, warships, yachts, passenger ships and cargo carriers traveled past the island.

¹ Robert G. Albion, William A. Baker and Benjamin W. Larabee, *New England and the Sea* (Middletown, Conn.: Wesleyan University Press, 1972), 205.

² Albion, Baker and Larabee, 200.

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The increase in seacoast traffic during the mid-19th century was due to both changes in technology as well as industrialization and the expanding U.S. economy. The introduction of the steam engine in the early 19th century dramatically changed maritime transportation, although its impact was not fully realized until the second half of the 19th century. At first steam-powered engines were developed for passenger vessels, but increasingly were employed for commercial transport. In 1850, approximately fifteen percent of the commercial vessels serving U.S. ports were propelled by steam.³ During the latter half of the 19th century, ever greater numbers of individuals and goods were being transported by steamships, resulting in a larger number of vessels on the water.

Steam also contributed to the volume of cargo carried by sea. The growth of manufacturing in factories, especially in the Northeast, created a demand for raw materials, which frequently had to be imported from various parts of the country and abroad. Ships in turn carried the finished goods to markets elsewhere. In general, raw materials were transported north from the southern states and other ports to industrialized New England; this region in turn exported goods to the south. Boston and Providence became terminals for long-distance steamers that linked New England with southern ports and beyond to others on the Gulf of Mexico, the Pacific Coast and Europe.

Rhode Island's industrial economy expanded enormously during the second half of the 19th century. Providence emerged as the base of the state's industrial growth and became a central location for the receipt and transport of materials and goods. During the 1870s, the city was the largest coal receiving port in New England. Coal was a particularly vital commodity, as it was used to fuel steam-powered ships, railroads and factories and to heat the growing urban centers. Providence itself was the center of highly successful cotton, woolen and base metal industries. During the 1850s and 1860s, the cotton trade peaked and, from the Civil War period to 1890, the woolen industry boomed. The base metal industry was strong throughout the late 19th century. The raw cotton and wool and metals from southern states and other ports imported to support these industries were transported primarily by sea.

Passenger transport also contributed significantly to the high level of maritime traffic. More individuals were traveling along the New England coast because of steam-powered vessels, which were a more convenient way of traveling than via wind-driven vessels. Direct steamship routes were established between New York and Portland and New York and Boston. These in turn connected to local routes and other routes that crossed the globe.

The New England coast was especially crowded with passenger vessels during the summer months, because of the increase in recreational travel and the development of seaside vacation resorts. Especially after the Civil War and the rise in industrialization and urbanization, people took seasonal vacation from the cities. For health reasons as much as for pleasure, vacationers flocked to the New England coast, which was more accessible because of steam-powered trains and vessels. Along the southern coast of New England, Newport, Rhode

³ Harlan Hamilton, *Lights and Legends* (Stamford, Conn.: Wescott Cove Publishing Company, 1987), 15.

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Island became a popular resort as did the towns along the Cape Cod shore. Fisher's Island, Martha's Vineyard and Nantucket, which were accessible only by boat, also drew tourists.

Maritime Perils

The high volume of maritime traffic along the eastern seaboard produced a need for more aids to navigation to protect shipping. In addition, steam-powered vessels were traveling faster and many vessels were longer and deeper, putting mariners at greater risk than before. A series of spectacular disasters pointed to the danger. Passengers, shipowners and others connected to maritime activity ultimately demanded more effective aids to navigation.

The hazards of Block Island became more pronounced because of the crowded waters. In 1830 the passenger packet *Warrior* was cast ashore in a gale. Other wrecks followed along the seaboard. In 1856 the Collector of Customs at Newport petitioned Congress to build a lighthouse along the southern coast of the Island. Although money was appropriated, the funds were ultimately applied to moving and reconstructing the North Light. In 1858 the steamship *Palmetto*, one of the Boston and Philadelphia Steamship Company's fleet, sank off the southern shores of the Island. In the wake of this disaster, Nicholas Ball of Block Island mounted an extensive campaign to alleviate the Island's hazards by improving navigation around it. Ball's efforts ultimately led not only to the construction of South East Light, among other aids to navigation, but also to Block Island's emergence as a major steamship resort.

A merchant, hotel proprietor, land owner, entrepreneur and state Senator (1850s-1870s), Ball had grand plans for his home island. His first step was to begin organizing efforts, in 1867, to fund a breakwater and harbor for the east side of Block Island. This federally funded project was carried out between 1870 and 1876, although ships were able to dock beginning in 1874. With the Island accessible by steamship for the first time, Ball encouraged visitors by constructing the first of the Island's many large hotels, which accommodated 500, in 1873-74. Vacationers subsequently flocked to the Island, making it one of New England's most popular resorts.

Recognizing the need for maritime aids, Ball also started to garner support for construction of a second lighthouse on Block Island. In 1870, he met with Mr. Winslow, president of the steamship company that had lost the *Palmetto*, to gain the latter's backing. Ball then circulated, in January 1872, a petition among shipping firms and other interested businesses to lobby Congress for a lighthouse. He cast a wide net and approached parties from Maine, Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Pennsylvania. As stated in the petition, Block Island was "passed by hundreds of vessels daily" and these vessels were "exposed to as much danger as at almost any other place on the entire coast of the United States."⁴

⁴ Nicholas Ball, "Lighthouses ... Block Island, R.I." (Transcript, 1890, Rhode Island Historical Society), 4, as quoted in Richard Greenwood, NPS Form 10-900, National Register of Historic Places Inventory - Nomination Form, "Block Island South East Light" (1984), 8.2.

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Finally, the U.S. Light House Board responded to the public outcry for a lighthouse on the Island's southern coast and recommended funding to erect one. In the spring of 1872, Congress appropriated \$75,000 for the construction of a first-order light and fog signal.⁵ Under the direction of Col. I.C. Woodruff, the chief engineer, plans were drawn up in the engineering department of the Third Light-House District, in which Block Island was located. In July 1873 the final plans for the lighthouse were approved by the Light House Board. The building contract was let to private builder T.H. Tynan of Staten Island, and another contractor, Paulding, Kemble & Company, won the bid to supply the cast-iron superstructure. Bailey & Debevoise constructed the lantern, and the lens apparatus was manufactured in France by Barbier & Fenestre.

Construction on the lighthouse began in 1874. Although the date stone on the lighthouse reads 1873, a letter from that year sent to Colonel Woodruff from Engineer Secretary Major Elliot gives permission to the former to enter into a contract with Tynan. Presumably, building construction commenced after the contract was signed.⁶ On February 1, 1875, the light station, including a fog signal building, was in full operation. It has been in continuous operation as an aid to navigation since that time. Today, with a range in excess of 22 miles, the light remains one of the most powerful on the eastern seaboard; the Coast Guard still considers South East Light a vital navigational aid along the East Coast of the United States.

When South East Light was completed, it was considered one of the finest and best-equipped light stations in the country. Its first-order Fresnel lens and fog signal were technologically up-to-date, and in 1875 the light was the strongest on the New England coast. The light became part of a new generation of American lighthouses. South East Light was built during the heyday of the U.S. Light House Board, created in 1852, and epitomizes the Board's increased emphasis on technological sophistication over the course of the second half of the 19th century. It was a superb illustration of the considerable advances made by the Light House Board in the 22 years since it had been created.⁷

During the 58 years of its existence, the Light House Board succeeded in modernizing, professionalizing and standardizing the lighthouse system in the United States. One of its first acts was to adopt France's Fresnel pattern lenses combining refractive and reflective prisms.⁸ This type of lens was developed by Augustin-Jean Fresnel (1788-1827), who developed glass prism lighthouse lenses and bright illuminants for the French light system. The U.S. Lighthouse Board ordered Fresnel lenses for all U.S. lights, most of which were installed in existing lighthouses by 1859. Further, it helped develop the technology for fog signals as aids to navigation and installed them at major light stations.

⁵ In the meantime, Ball continued his efforts in regard to maritime aids. He is also responsible for the erecting, on Block Island, of two lifesaving stations, in 1872 and 1874, respectively, and a signal station, in 1880.

⁶ Mary M. Thomas, NPS Form RI-27, Historic American Engineering Record, "Block Island Southeast Light" (1984), 21-22.

⁷ For further information regarding the fog signal, see Thomas, 31-34.

⁸ For additional information regarding Fresnel lenses, see Thomas 7-12.

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In addition to improving and modernizing light station technology, the Board built up a corps of professional personnel. It also worked on creating a unified, organized national system of well-placed aids along U.S. waterways and the seaboard. It quickly adopted the French system of classification. First-order lenses were employed for the largest seacoast lights and were designated to give warning of approaches to land. The second- through sixth-order lenses were utilized to mark headlands and points in lakes, bays and rivers. To further differentiate lighthouses, lights were also designated as fixed, revolving or flashing and were colored red or white. Flashing lights were also set to flash at different intervals.

With its height and first-order lens, South East Light became an important link in the United States' system of primary seacoast lights. In the early 1870s, the primary lights in the Block Island area were, to the east, Gay Head Light on Martha's Vineyard and, to the west, Montauk Light, on the eastern end of Long Island. Over 120 other lighthouses around the United States coast were classified as primary aids, although less than fifty were equipped with first-order lenses.

In the 1870s, South East Light was sophisticated not only technologically, but also architecturally. Its high-style Victorian Gothic design is unusual among lighthouses, and its picturesque quality reflects, in both style and location, the prevailing public taste for picturesque and romantic images. Prior to the creation of the federal Board, lighthouse design in the United States was primarily functional with little stylistic elaboration. Designs were utilitarian and reflected geographic conditions more than current architectural styles. After the Light House Board was created, lighthouse plans were drawn up by an engineer under the direction of District Engineers, and a set of standard lighthouse designs was developed, many of which were employed repeatedly in various parts of the United States. These designs incorporated an increased attention to architectural style.

By the 1870s, the Board had reached a certain level of maturity in its designs. South East Light marks a high point of architectural sophistication for the Board. With its steeply sloping Gothic roofs and chiseled granite foundation and trim, it is a superb example of Victorian Gothic architecture. This inherently picturesque style of architecture was popular following the Civil War. The dramatic setting chosen for the lighthouse contributed to creating a highly romantic overall image at the southeast corner of Block Island.

That the Light House Board spent the time and money to build such a sophisticated structure might be explained for a couple of reasons. Block Island was becoming a popular summer resort in the 1870s, and the Board probably realized that the new lighthouse would be seen not merely by mariners but also by many vacationers. It could therefore serve as a highly visible representative of the Board and the U.S. government. President Grant's visit to South East Light in 1875 and his endorsement of the structure seems to affirm that the government felt it had a role to play in providing significant structures to the public.

South East Light was immediately popular, for Block Island visitors as well as for the island residents. Ulysses S. Grant's visit is representative of the attraction of the lighthouse. The romantic nature of the site drew many people, and the light station quickly became a tourist

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attraction and was soon listed in tourist guides as a major point of interest.⁹ The image of the massive angular structure poised near the edge of Mohegan Bluffs was reproduced repeatedly on souvenir items and in prints and photographs. The lighthouse continues to draw visitors, and its image appears regularly in magazines and newspapers as a symbol of New England.

As the erosion of the bluff on which the lighthouse perched continued it became clear that the structure would fall into the sea within the next few years. Starting in 1983 the Block Island Historical Society led efforts to protect the lighthouse from destruction. A complex partnership evolved to save the light including: the U.S. Army Corps of Engineers, the Coast Guard, the Block Island Historical Society, The National Trust for Historic Preservation and others. Three Acts of Congress allowed the Federal government to fund the majority of the work and transfer the light to a non-profit organization for long term care.

The Coast Guard transferred Block Island Southeast Light on July 27, 1992 from the USCG to the Southeast Lighthouse Foundation of New Shoreham, Rhode Island. The Southeast Lighthouse Foundation is dedicated to restoring, preserving and protecting the light; increasing community awareness, knowledge and interest in the light; and preserving the history and public enjoyment of the lighthouse.

Despite the success of its design, South East Light is one of only two lighthouses of similar style and design built by the Light House Board. The Cleveland Light Station (Ohio), built in 1871, matches South East Light in general plan and configuration. The only differences between the two are that the Cleveland lighthouse was constructed of stone rather than brick, with different trim, and the Block Island light tower was not built as high as the one in Ohio (undoubtedly because of the high elevation at Block Island). In 1892 Cleveland Light was discontinued. The structure was demolished in the early 20th century, leaving South East Light the only lighthouse of its particular Victorian Gothic design in the U.S.

Today South East Light is one of only 12 lighthouses in the United States with a functioning first-order Fresnel lens. Because of its ability to represent an important era in the construction of aids to navigation by the U.S. Lighthouse Board, during one of the most active periods in American maritime history, and because of its architectural quality, South East Light deserves recognition on the national level.

Period of Significance

The period of significance for the South East Lighthouse is defined as 1874 to 1929. The structure was built in 1874. Over the course of the late 19th and early 20th centuries, the illuminating system underwent various technological changes. In 1929 the light changed from a fixed white to flashing green light and received a new lens; soon after it was electrified. As a primary light, the lighthouse and its associated navigational aids served steadily as vital aids to navigation along the eastern seaboard; the station has continued to do so up until the present.

⁹ See for instance: "Ben Mush," *Block Island: A Hand-book with Map* (Norwich, Conn.: James Hall, 1877).

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Significant Dates

The significant dates include 1874 (the date of construction for the lighthouse) and 1929 (the date the original lens was replaced and the light characteristic changed).

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BLOCK ISLAND SOUTH EAST LIGHT

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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: # RI-27

Primary Location of Additional Data:

- State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local Government
- University
- Other (Specify Repository): _____

10. GEOGRAPHICAL DATA

Acreage of Property: Approximately 10 acres

UTM References:	Zone	Easting	Northing	Zone	Easting	Northing
	A 19	286000	4558570	B 19	286200	4558530
	C 19	286300	4558780	D 19	286270	4558900

Verbal Boundary Description:

The boundary of the South East Lighthouse is coterminous with the present boundary of the South East light station, as shown on the New Shoreham tax assessor's map, Plat 8, Lot 1.

Boundary Justification:

The proposed boundary for the South East Lighthouse is the same boundary that has existed since the construction of the lighthouse, and thus, represents the historic boundaries of the property. The open land of the reservation is bounded on three sides by stone walls and on the fourth side by the Mohegan Bluffs. It therefore provides essentially the same setting for the lighthouse that existed when the structure was built.

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II. FORM PREPARED BY

Name/Title: Andrea E. Reynolds, consultant

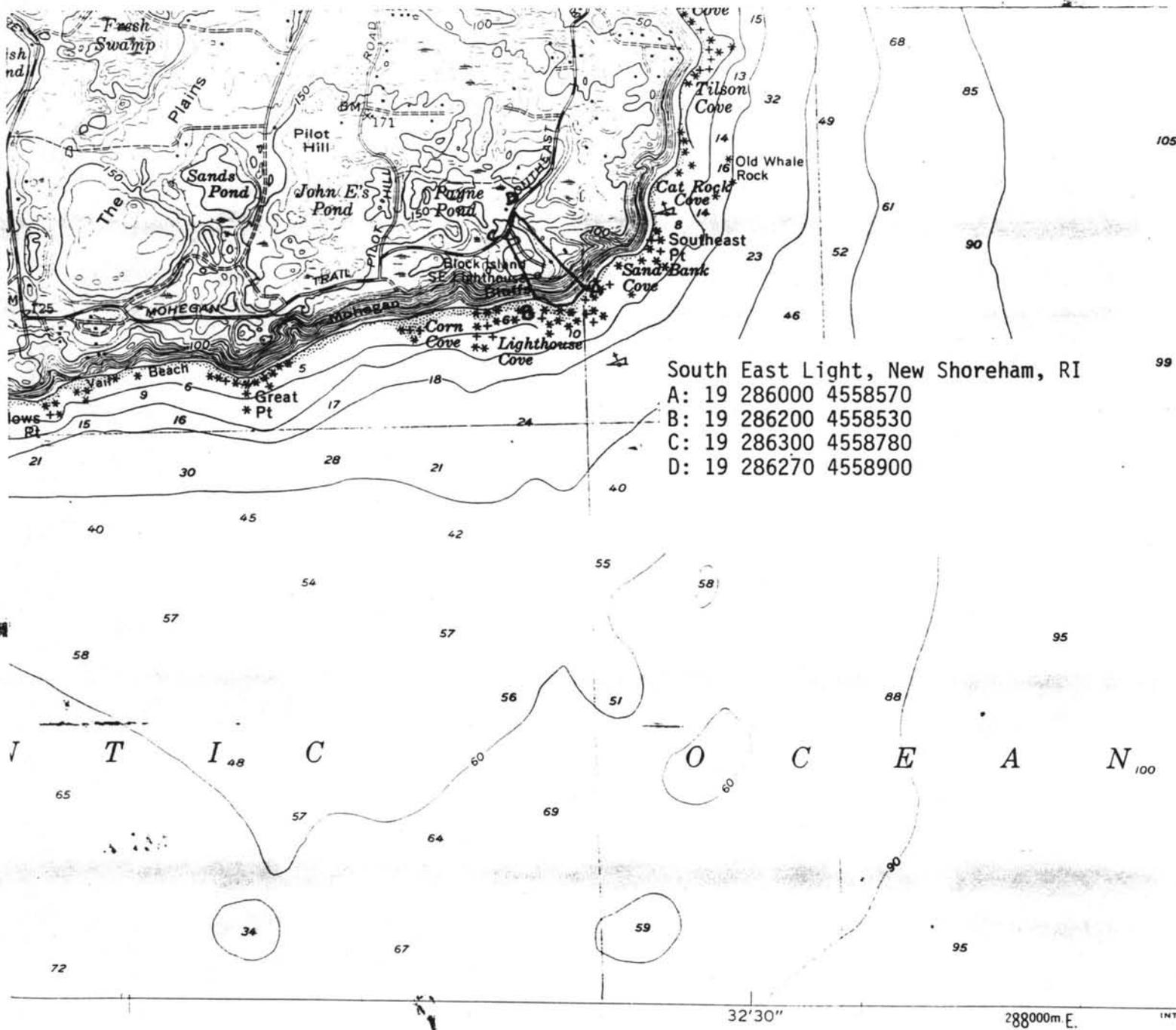
Org.: Southeast Lighthouse Foundation
P.O. Box 949
New Shoreham, Rhode Island 02807

Telephone: 401-466-5009

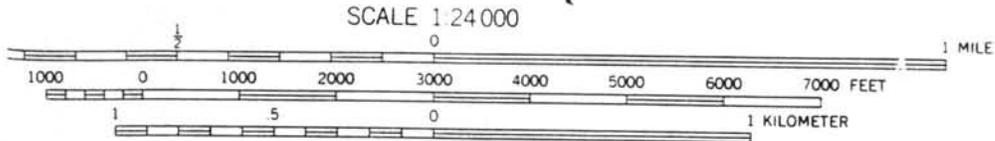
Date: February 14, 1995

Edited and augmented by:

Kevin J. Foster
Maritime Historian
National Maritime Initiative
National Park Service
P.O. Box 37127
Washington, DC 20013-7127
(202) 343-5969NATIONAL HISTORIC LANDMARKS SURVEY
December 5, 1997



South East Light, New Shoreham, RI
 A: 19 286000 4558570
 B: 19 286200 4558530
 C: 19 286300 4558780
 D: 19 286270 4558900



CONTOUR INTERVAL 10 FEET
 DATUM IS MEAN SEA LEVEL
 DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
 SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
 THE MEAN RANGE OF TIDE IS APPROXIMATELY 2.6 FEET IN GREAT SALT POND
 AND 2.9 FEET IN RHODE ISLAND SOUND



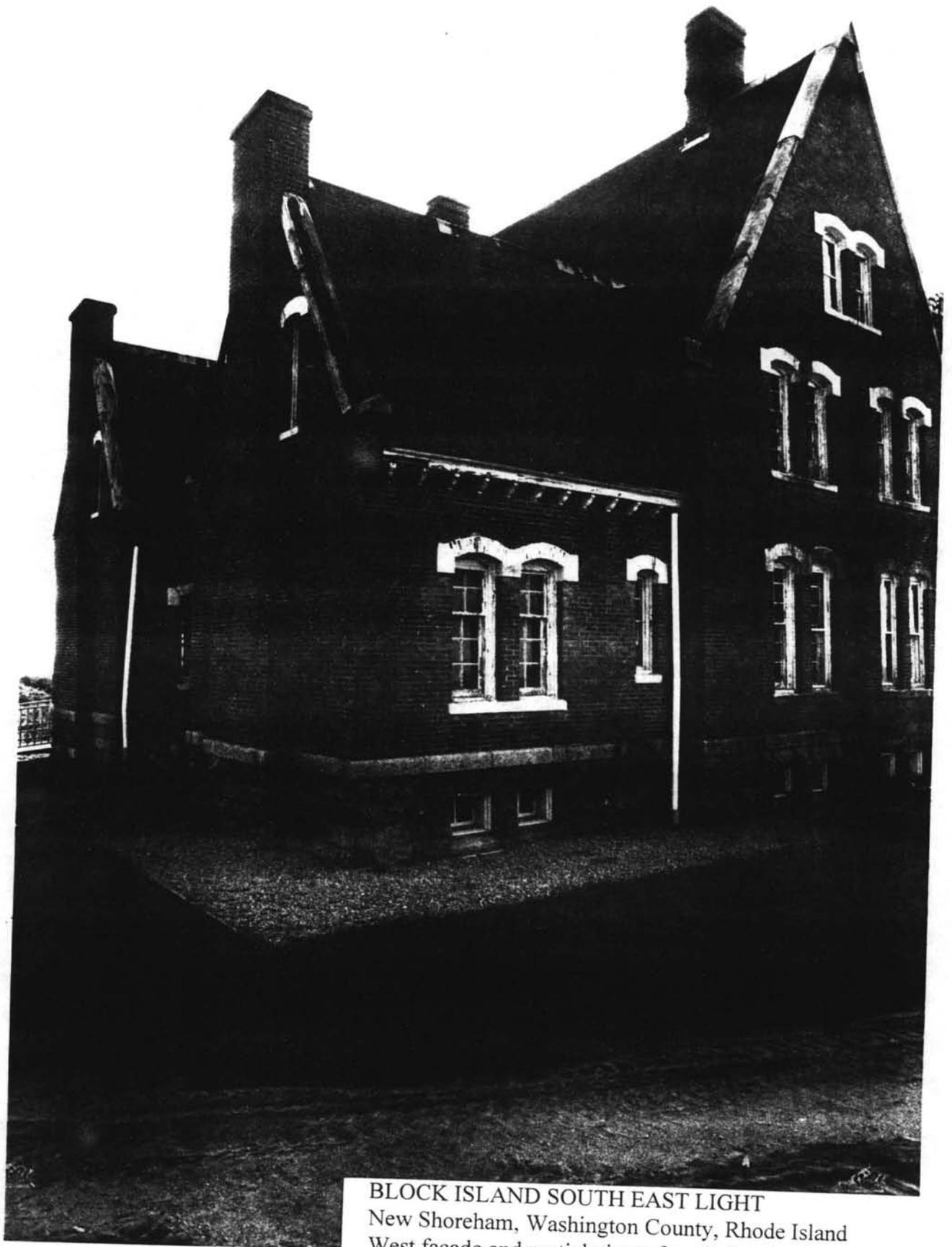
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON 25, D. C.
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, Washington County, Rhode Island
View of north and northeast aspects of exterior
Photo: Gerald Abbott, August 1994



BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, Washington County, Rhode Island
Northwest corner, northwest chamber
Photo: Gerald Abbott, August 1994



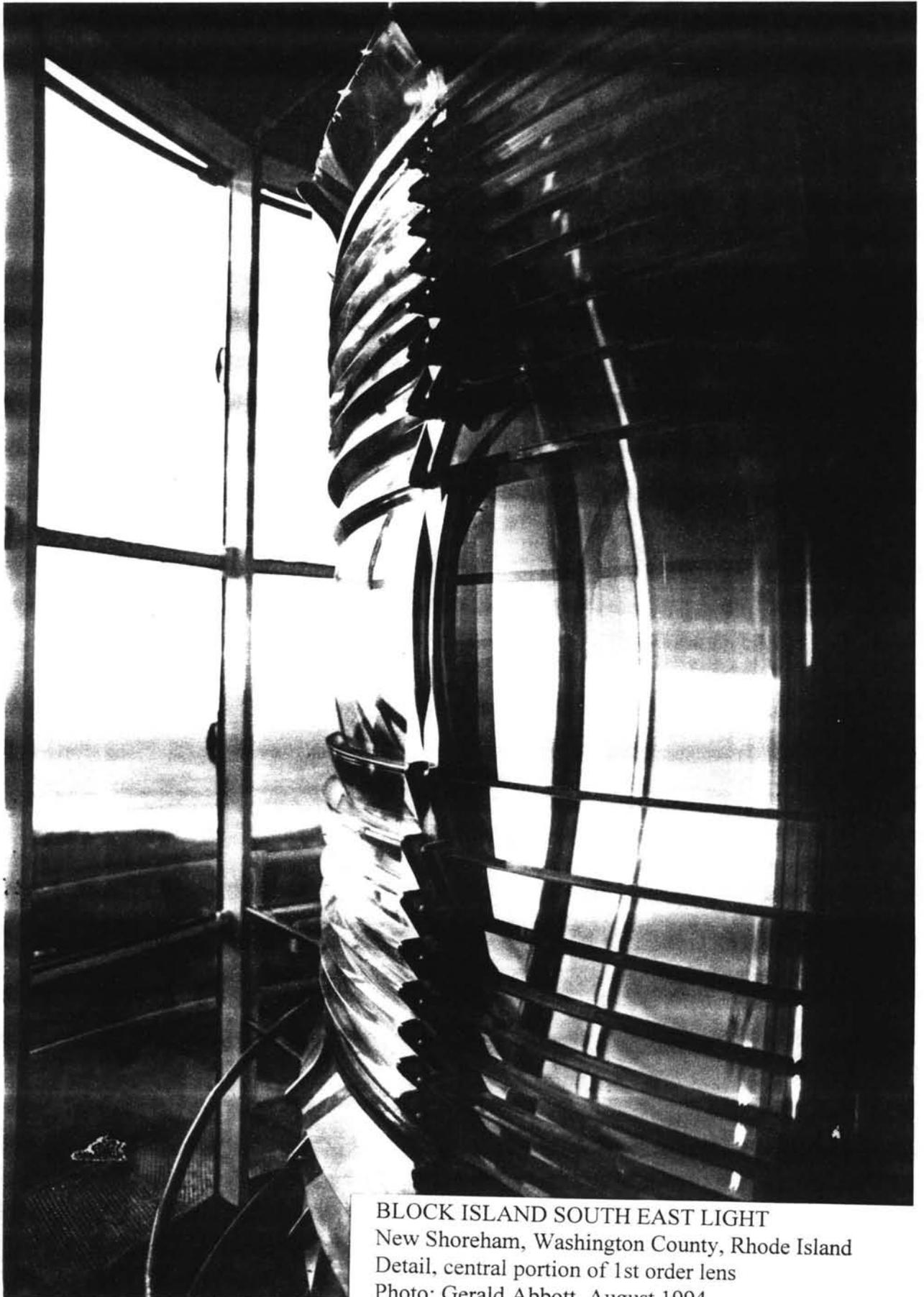
BLOCK ISLAND SOUTH EAST LIGHT

New Shoreham, Washington County, Rhode Island
West facade and partial view of north facade

Photo: Gerald Abbott, August 1994



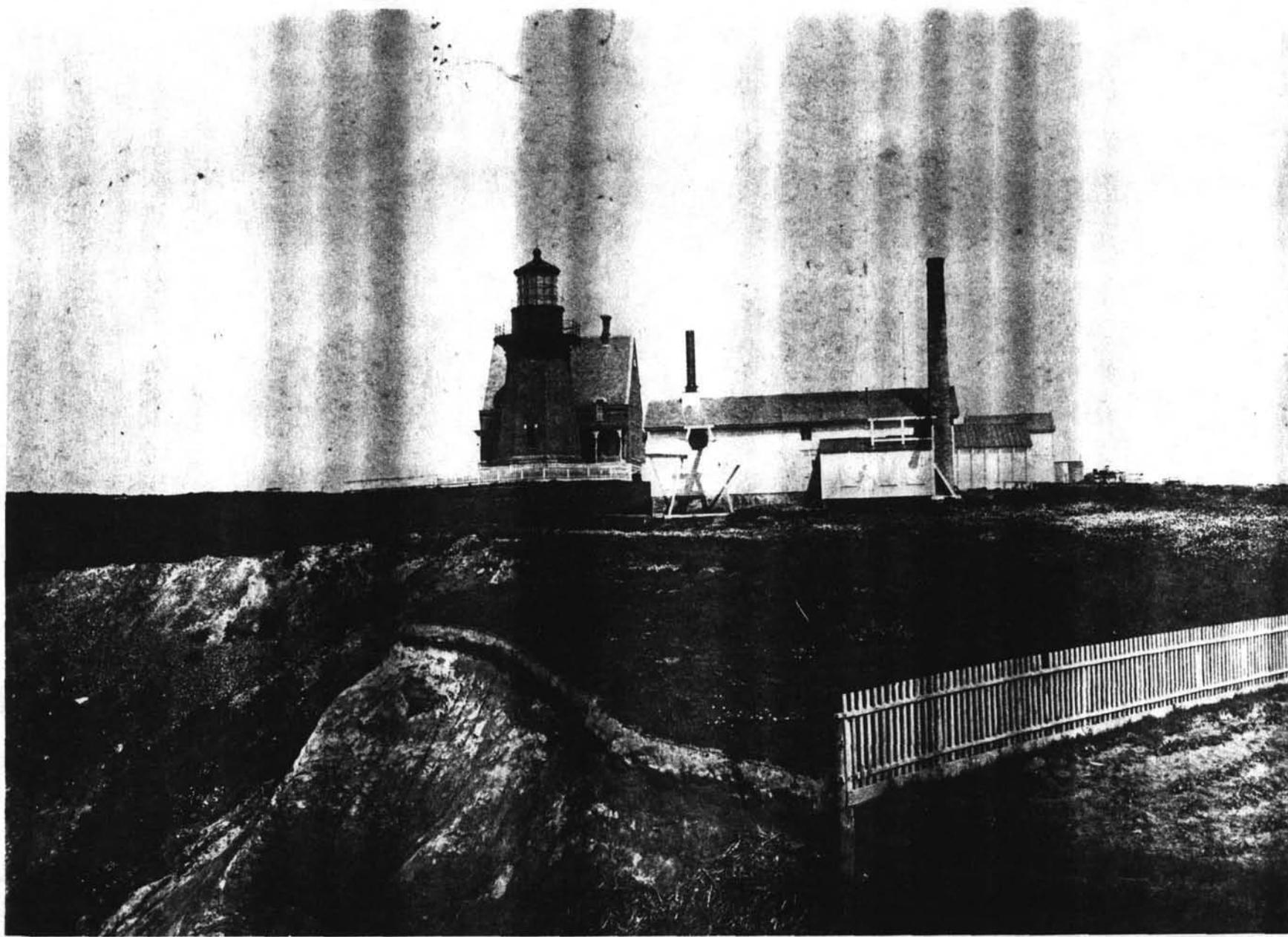
BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, Washington County, Rhode Island
Southwest corner of exterior (porch restoration incomplete)
Photo: Gerald Abbott, August 1994



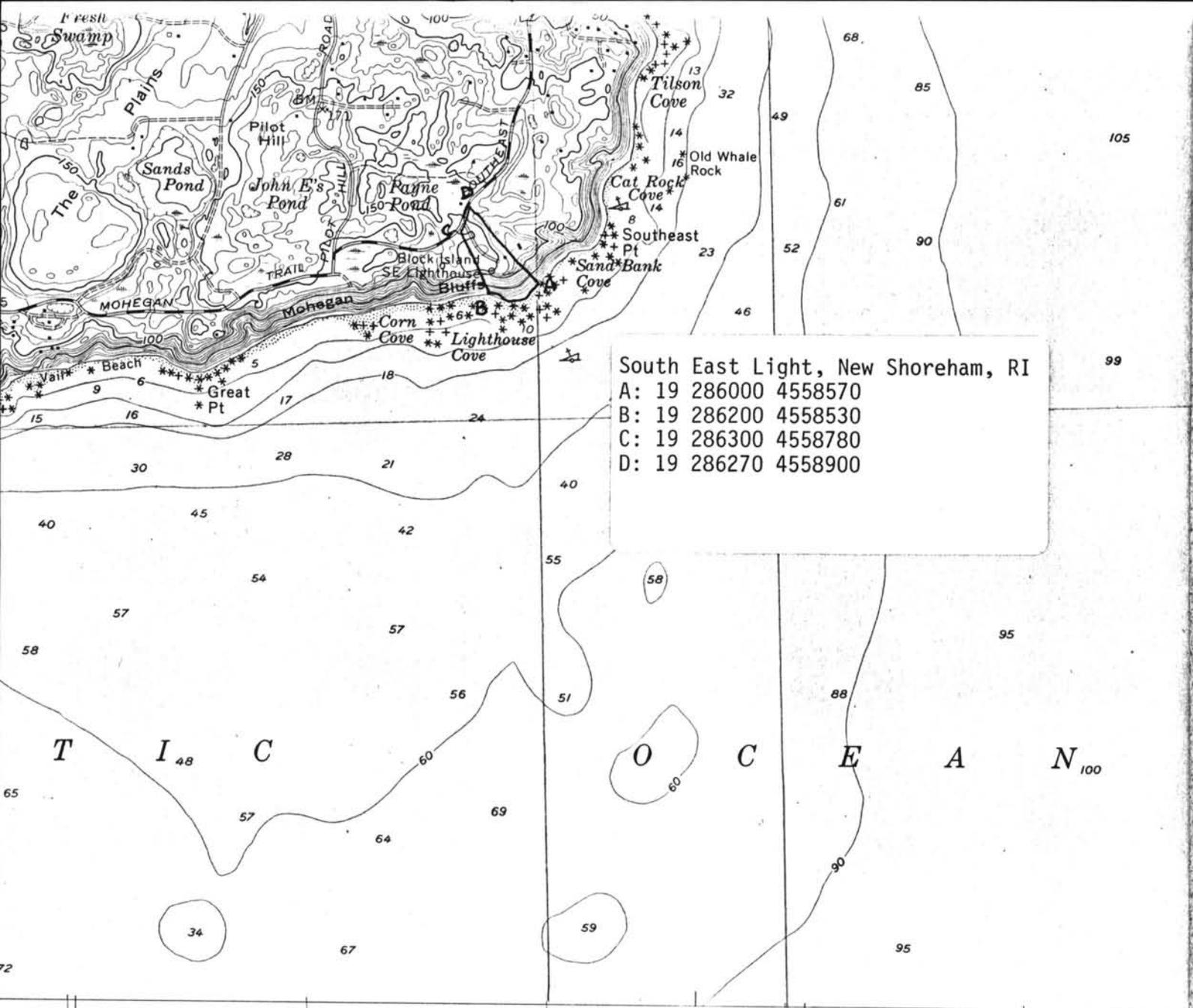
BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, Washington County, Rhode Island
Detail, central portion of 1st order lens
Photo: Gerald Abbott, August 1994



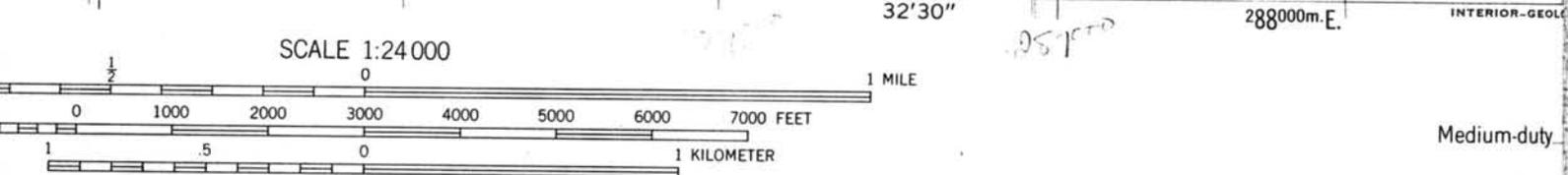
BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, Washington County, Rhode Island
South facade, Light Tower and cottage
Photo: Gerald Abbott, August 1994



BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, Washington County, Rhode Island
Looking from bluffs toward Light
Photo: Courtesy Rhode Island Historical Society, c. 1885-1895



South East Light, New Shoreham, RI
 A: 19 286000 4558570
 B: 19 286200 4558530
 C: 19 286300 4558780
 D: 19 286270 4558900



SCALE 1:24 000
 CONTOUR INTERVAL 10 FEET
 DATUM IS MEAN SEA LEVEL
 DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
 SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
 THE MEAN RANGE OF TIDE IS APPROXIMATELY 2.6 FEET IN GREAT SALT POND
 AND 2.9 FEET IN RHODE ISLAND SOUND



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON 25, D. C.
 FOR DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Medium-duty

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At the fourth story level, the brick shaft terminates in the capital-like iron superstructure of the of the parapet and the lantern. On the exterior, a cast-iron cornice with a brick frieze provides the molding from which spring eight large iron brackets with ornamental spandrels and pendants that support the octagonal gallery surrounding the parapet. Access to the gallery and to the watchroom inside the parapet is through a small vestibule at the top of the circular stairs. The vestibule originally served to protect the oil-fired lamp from drafts from below. The watchroom, which has a cast-iron floor and is open to the lens room above, contains the pedestal for the revolving lens as well as the electric apparatus and boards.

On top of the parapet drum is the 11.5' lantern, which is glazed on all 16 sides with 10' foot windows with three fixed panes each. The low walls beneath the windows are fitted at regular intervals with sliding slotted ventilator panels. Narrow cast-iron galleries encircle both the outer and the inner circumferences of the lantern; set in the deck plates of the outer gallery there are sixteen circular skylights each containing fourteen hexagonal glass prisms for lighting the watchroom and vestibule below. The outer gallery is reached by ladder from the gallery below; the inner gallery, by a short circular stair flight from the watchroom. In the center of the lantern or lens room is the fixed 1000-watt electric lamp which is surrounded by the revolving lenticular apparatus--eight Fresnel lenses, each measuring 39-1/2" by 30-9/16", set in a brass frame with a mogul base. The frame bears the imprint of the makers, MM. Henry-Lepaute of Paris, and the date, 1880. The lenticular apparatus, which is six feet in diameter, provides the focal length (the distance between the lens and the lamp) of a first-order light. It is not a full-height lens and it has none of the upper and lower reflectors found on some first-order lenses. The height of the lights's focal plane is 52'6" above ground and 201' above sea level, making it the highest light on the New England coast.

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The original illuminating apparatus consisted of a fixed six-panel Fresnel lens manufactured by Barbier and Fenestre of Paris in 1873 and a four-wick oil lamp which produced a 12,188-candlepower light. Lard oil was burned at first, but was replaced by kerosene in the 1880s. In 1906, an incandescent oil vapor lamp was installed, which increased the light's intensity to 45,690 candlepower. The light was converted to electricity and the mercury float for a rotating lenticular apparatus was installed in 1929. The present 8-panel lens was in place at this time. The lighthouse presently exhibits a 237,000-candlepower flashing green light, the only first-order green light in New England.

The roof, which rests on the sixteen posts of the lantern's cast-iron frame, is composed of sixteen iron plates and rafters. It has an iron cove cornice and is crowned with a ball ventilator. The spider frame of wrought-iron tie rods and iron collar which supported the original fixed lenticular apparatus is still suspended from the rafters.

The dwelling is a sturdy example of Victorian Gothic, distinguished by its steep cross-gable roofs (60 degree pitch) with their metal-sheathed copings and skew corbels, the granite cornice moldings and the paired double-hung sash windows with brick segmental arches with granite skewbacks.

The main block of the residence is oriented with its long axis running northeast-southwest and it is joined to the light tower by a perpendicular 1-1/2-story connecting wing at the center of its southeast facade. The main entrance is located in this connector, which is flanked on both sides by single-story, flat-roofed porches that originally sheltered the entranceways. The doorway in the southwesterly side of the entry has been replaced by a window. The original porch railings with their heavy turned balusters have been replaced by simple rectilinear railings, as have all but a few of the original turned posts.

On each side of the connector, the fenestration consists of two 3/4-length, 9-over-9 pane windows on the first story and, on the second story, a 4-over-6 pane window in a central dormer with a segmental-arched head and cheeks of granite. There are identical dormers over the entry doors. These dormers interrupt the cornice, which has a plain granite architrave, a brick frieze, and cornice proper with an ogee bedmold, drip, fascia, and ogee crown molding of granite.

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The gable ends of the main block are two bays wide, with two pairs of 6-over-6 pane windows on the first story, two pairs of 6-over-6 pane windows on the second story and one pair of 4-over-4 pane windows in the garret. Above the garret windows in the north gable there is an 1873 granite datestone. The brick and granite window arches and the granite sills on all the windows are painted white. Attached to each main gable end are three-story platform fire escapes and associated stair assemblies.

The kitchen wings, which are attached to the northwest flank of the main block and set back from the planes of the main gable walls, are connected along the rear of the main block by a single-story shingled frame passageway, below which is the shed-roofed cellar entry. Each kitchen wing is lit by one pair of 4-over-6 pane windows and a single 2-over-2 window in its outer wall and a single 6-over-6 pane window in its inner wall. The kitchen garrets are each lit by a pair of 2-over-2 pane windows that flank the exterior chimneys in the gable ends. The cellars under the kitchens and the main block are lit on either side by three pairs of square single-pane windows.

The two internal chimneys near the gable ends of the main block and the two external gable-end kitchen chimneys were rebuilt in 1978. The design of the main chimneys was simplified and the stone caps were removed; the kitchen chimneys were reduced ten feet in height.

The plan of the residence originally included two mirror-image apartments, the north one to be occupied by the keeper and the south one to be shared by the first and second assistant keepers. The keeper's apartment on the first floor contains a sitting and a dining room sharing back-to-back fireplaces, a stair hall on the inner side and the kitchen in the rear. On the second floor, there are two bedrooms and a garret. The south apartment contained the first assistant's bedroom, dining room, and kitchen on the first floor; on the second floor were the second keeper's bedroom and dining room and, in the rear garret, his kitchen. The main garret above both apartments is divided into three storage rooms. In the second story of the entry wing the former tool room, which can be reached from the second story landing in the light tower, is now a bathroom.

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In the north apartment, which is still the keeper's residence, there have been few changes, though modern utilities, including indoor plumbing, have been added. In the south apartment, the second story has remained in use as a residence, while the first floor plan has been altered somewhat to convert living quarters into offices. The interior finish of the residence was simple, with 8-inch skirting in the main rooms and a wainscoting of one-inch boards, three feet high, in the kitchens and the entry. It has been modified throughout the residence over time, by the addition of dropped ceilings, new floor coverings, and new hollow-core doors.

The South East Light sits on the eastern edge of a nearly rectangular 10-acre reservation of rolling open land enclosed by stone walls on the north, south, and east, and by a chain link fence along the bluffs on the west. Thirty yards northeast of the lighthouse is the former fog signal building, a rectangular 1-story brick building built in 1908 to replace the original frame structure. The building is three bays by two, with a gable roof and a brick flue. There are double doors flanked by two 6-over-6 double-hung sash windows in the west flank and a pair of similar windows in the north gable, all with segmental arched openings. The building, which is now empty, housed a succession of fog signals and steam boilers, air compressors, and engines that powered them. In accordance with the Light-House Board and Coast Guard regulations, fog signal stations were equipped with two sets of equipment in case of mechanical failure. The first signal used here was a Brown steam siren which had a trumpet seventeen feet long that protruded out of the east wall. The water for the boilers came by underground pipe from the small pond on the northern side of the reservation. The steam boilers were replaced by kerosene engines in 1906. In 1934, a more powerful Typhon diaphragm horn replaced the siren. The electronic fog signal now in use was installed on the main gallery of the light tower in 1974. No historic fog signal equipment remains on the site.

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There have been a number of outbuildings on the reservation from the outset, most of them in a cluster to the northwest of the light. In 1929, these buildings included a wagon shed, three henhouses, and a privy, as well as three coalhouses and a paintshop, all now gone. Presently, there are only two buildings other than the lighthouse and the fog signal building. One is a single-story gable-roofed brick garage, built in 1938, located 35 yards north of the light. Fifty yards west of the light is a single-story brick ranch house with an attached garage, which was built as a residence by the Coast Guard in 1961. The garage and the ranch house do not contribute to the historic significance of the site.

The rest of the reservation has traditionally been kept as open land. A historic photograph from c. 1900 shows the lighthouse and the nearby signal building and outbuildings enclosed by a picket fence, with sheep grazing on the outside of the fence. Sheep and other livestock were a traditional hazard for lighthouses, as their grazing tended to promote erosion. There are no longer any fences on the site, nor any sheep.

Portions of the face of Mohegan Bluff in the vicinity of the South East Light are unstable due to erosion. A 10-12' wide by 50-100' long section of the bluff has fallen away since October, 1982. In November, 1984, the face of the bluff was approximately eighty feet from the tower at its closest point. In addition, there is evidence of sink holes at the base of the light tower. The U. S. Coast Guard has been measuring and recording erosion in relation to the structures for approximately twenty years. The Coast Guard, the Block Island Historical Society, and the Rhode Island Historical Preservation Commission have begun to consider the severe erosion hazard as it relates to the light station. The Block Island Historical Society has received a grant from the National Trust for Historic Preservation to fund an engineering study to evaluate the erosion hazard and the feasibility of relocating the lighthouse. Further planning and decisions will be based on the recommendations of this study as well as other Coast Guard soil and erosion surveys.

9. Major Bibliographical References

See continuation sheet

Previous documentation on file (NPS):

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

Primary location of additional data:

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

Specify repository:

Rhode Island Historical
Preservation Commission

10. Geographical Data

Acreage of property c. 10 acres

UTM References

A 19 286000 4558570
Zone Easting Northing

C 19 286300 4558780
Zone Easting Northing

B 19 286200 4558530
Zone Easting Northing

D 19 286270 4558900
Zone Easting Northing

See continuation sheet

Verbal Boundary Description

The boundary of the South East Light is coterminus with the present boundary of the U.S. Coast Guard Reservation as shown on the New Shoreham Assessor's map.

See continuation sheet

Boundary Justification The proposed boundary for the South East Light is the same boundary which has existed for the U.S. Coast Guard Reservation since the construction of the lighthouse and, thus, represents the historical boundaries of the property. The open land of the reservation is bounded on three sides by stone walls and on the fourth side by the Mohegan Bluffs and, therefore, provides essentially the same visual setting for the lighthouse that existed when the property was constructed. See continuation sheet

11. Form Prepared By

name/title Richard E. Greenwood, Consultant

organization Block Island Historical Society date 1984

street & number P.O. Box 79 telephone 401-466-5584

city or town New Shoreham state R.I. zip code 02807

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

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

Areas of Significance (enter categories from instructions)

ARCHITECTURE
TRANSPORTATION

Period of Significance

1874-1929

Significant Dates

1874

1908

1929

Cultural Affiliation

NONE

Significant Person

N/A

Architect/Builder

U.S. Light House Board,
T.H. Tynan, contractor

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

South East Light is significant for its role in the history of transportation and for its ability to illustrate, in well preserved form, the architectural quality of its type and period. South East Light was the second lighthouse to be established on Block Island and the first on the south side of the island. First lit on February 1, 1875, the light and the fog signal have proven an invaluable aid to navigation in the hazardous waters surrounding Block Island. The light, which marks the first island landfall for ships approaching the New England coast from the south and southeast, stands on Mohegan Bluff, 201' above the water, making it the highest lighthouse in New England. The light tower and the attached Gothic Revival residence are well preserved examples of the pictureque buildings designed by the U. S. Light-House Board in the second half of the nineteenth century. The light itself is notable for its first-order rotating Fresnel lens which was manufactured in Paris in 1880. It is one of only a few of the once-standard lenses still in operation in the nation's lighthouses. The South East Light, which is still manned by a resident keeper, is located on a ten-acre Coast Guard reservation on South East Light Road in the town of New Shoreham, Rhode Island.

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Throughout its history Block Island has been reknowned as a hazard to shipping, the so-called "Stumbling Block" for vessels traveling between the Long Island and Rhode Island Sounds. The first attempt to reduce the danger posed by the island and the treacherous shoals around it came in 1829 when Congress allocated \$5500 for the erection of a lighthouse on the north end of the island. The North or Sandy Point Light was a major improvement and it has been maintained up to the present, though rebuilding and modernization were necessary in 1837, 1857, 1867, and 1970. However, the North Light provided scant aid for ships approaching the island from the south and southeast and the south end of the island continued to be the scene of marine disasters.

In 1856, in response to a petition from the Collector of Customs at Newport, Congress appropriated \$9000 for a second lighthouse on Block Island. In the following year the Rhode Island General Assembly responded by ceding the land for a lighthouse reservation in the southeast part of the island to the federal government. However, at the discretion of the U.S. Light-House Board, which had been formed in 1852 to administer the country's aids to navigation, the funds were spent on rebuilding the existing light and plans for a southern light languished.

It was not until 1872 that the efforts to establish a southern light were renewed. In that year, Nicholas Ball, Block Island merchant and hotel proprietor, put a petition for the light into circulation among shipping firms and other interested businesses. The petition stated, in part, that the island was "passed by hundreds of vessels daily" and those vessels were "exposed to as much danger as at almost any other place on the entire coast of the United States" (Ball, p.4). Upon the recommendation of the Light-House Board, Congress approved an appropriation for \$75,000 for a first-order light and fog signal in the spring of 1872.

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Plans for the lighthouse were drawn up in the engineering department of the Third Light-House District under the direction of the District's chief engineer, Col. I. C. Woodruff, and they were approved in July, 1873. The site on Mohegan Bluff posed none of the special construction problems that the engineers had to confront when building on more exposed or submarine locations. According to the preferences of the Light-House Board, the construction job was let on contract to a private builder, T. H. Tynan of Staten Island, who erected the building in 1874. Another contractor supplied the cast-iron superstructure of the tower, which was assembled on the site. The light itself was manufactured in France, a country that had long been in the forefront of lighthouse technology.

As a part of their initial efforts to modernize America's lighthouses in the 1850s, the U. S. Light-House Board chose to adopt the dioptric system of illumination used in French lighthouses. At the heart of the dioptric system was the refractive Fresnel lens, developed by Augustin Fresnel in 1822 and first employed in the United States in 1841 at the Navesink Light in New Jersey. The Fresnel lens is a "built-up annular lens comprised of a central spherical lens surrounded by rings of glass prisms, the central portions which refract and the outer portions both reflect and refract in the desired direction the light from a single lamp placed at the central focus" (Putnam, p. 192). The rings of prisms in the Fresnel lens serve to capture light that would otherwise pass above or below the lens and to direct it out to sea as part of the main horizontal beam. The intensity of the light concentrated by the Fresnel lens far exceeded that produced by the parabolic reflectors that had previously been used. The Fresnel lenses used in lighthouse were cylindrical, with a number of individual panels held in a brass frame. The magnitude of the light increased with the diameter of the cylinder; the lens of a first order light averaged six feet in diameter while a second order lens was five feet across. The lenses could be either fixed or rotating to provide a flashing light.

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The lamp that provided the light was also a French innovation. In 1782, Aime Argand developed a circular wick for an oil lamp, an idea that was subsequently improved upon by Fresnel. The circular wick allowed for increased air circulation around the flame and thereby improved combustion and reduced smoking. Fresnel expanded upon Argand's idea by devising concentric circular wicks which amplified the candlepower available from a single lamp. The number of wicks and their diameters varied as to the order of the light as well. The first order light installed at South East Light had four wicks, the largest of which was 8-1/2" and the smallest, 7/8". The oil for the lamp was delivered from a reservoir below by small pumps operated by clockwork. It was one of the lightkeeper's principal duties to wind the clockwork every three hours. The lamp at the South East Light consumed about a thousand gallons of oil each year.

French superiority in lighthouse technology extended into the manufacturing realm as well. Three firms, MM. Henry-Lepaute, MM. Sautter, Lemonniere et Cie., and MM. Barbier et Fenestre, were the principal manufacturers of lighthouse lenses and lamps in the world and they were the sole suppliers to the United States when the South East Light was erected (Elliot, p. 203).

An indispensable adjunct to the South East Light was its fog signal, which apparently was in operation in 1874. In contrast to the light mechanism, the fog signal was an American invention; the Brown steam siren was invented by a New York man and was first used in this country in 1867. The operation of the fog signal was major responsibility for the light keeper and his two assistants. Though not as fogbound as certain lighthouses in Maine and on the Pacific coast, the South East Light had to be supplemented by the fog siren 831 hours per year on average, making it one of the most active fog signal stations in the country. In August, 1875, T. Brown, inventor of the fog siren, and members of the Light-House Board used the South East Light fog signal and the light tower to conduct a series of investigations on the projection of sound.

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In full operation by February, 1875, the South East Light was one of a new generation of American lighthouses. With its first order light and its fog signal, it exemplified the considerable advances made by the Light-House Board in the first twenty years of its existence. President Grant made a point of visiting the new lighthouse while vacationing on Block Island, and he pronounced it a worthwhile expenditure of public funds. The increased involvement of the federal government in reducing maritime hazards was also reflected in the new vitality of the U. S. Lifesaving Service, which had established two stations on Block Island by 1872.

A third aid to navigation, a Coast Signal Service station which displayed signal flags and transmitted messages by semaphore, was maintained at South East Light in the 1890s. In 1899, the abandoned station was moved across the island to the Great Salt Pond breakwater. In the same year, telephone connections were established between Block Island lighthouses, lifesaving stations, and the U. S. Weather Bureau station.

Radio provided the next major advance in navigational aids at the South East Light. There was a radio station on the reservation by 1929 and two years later a radio beacon transmitting a directional signal was installed. The radio beacon presently in operation at the South East Light has a range of twenty miles. C. 1943, a radar station was built on the reservation as part of the nation's coastal defense network. The buildings associated with the station have all been removed.

In 1939, jurisdiction over the nation's lighthouses was transferred from the Bureau of Lighthouses, which had replaced the Light-House Board in 1910, to the U. S. Coast Guard, where it remains today. The Coast Guard has continued to modernize its lighthouse technology, adopting new features such as lighter acrylic lenses, more powerful quartz halogen lights and automated lights, which all tend to improve service and reduce maintenance costs. In view of these recent trends, the illuminating apparatus at South East Light is becoming increasingly outdated. However, the Coast Guard has agreed to defer the automation of the Light Station and the possible installation of a modern lens. This will permit completion of an engineering study that is intended to evaluate the feasibility of moving the building.

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Period of Significance: The period of significance for the South East Light is defined as 1874 to 1929. The lighthouse was constructed in 1874. The illuminating system underwent a variety of changes in the late 19th and early 20th centuries, as lighthouse technology improved; the light was electrified in 1929. Significant dates include 1874 (the date of construction for the lighthouse), 1908 (the date of construction for the fog signal building), and 1929 (the date of electrification).

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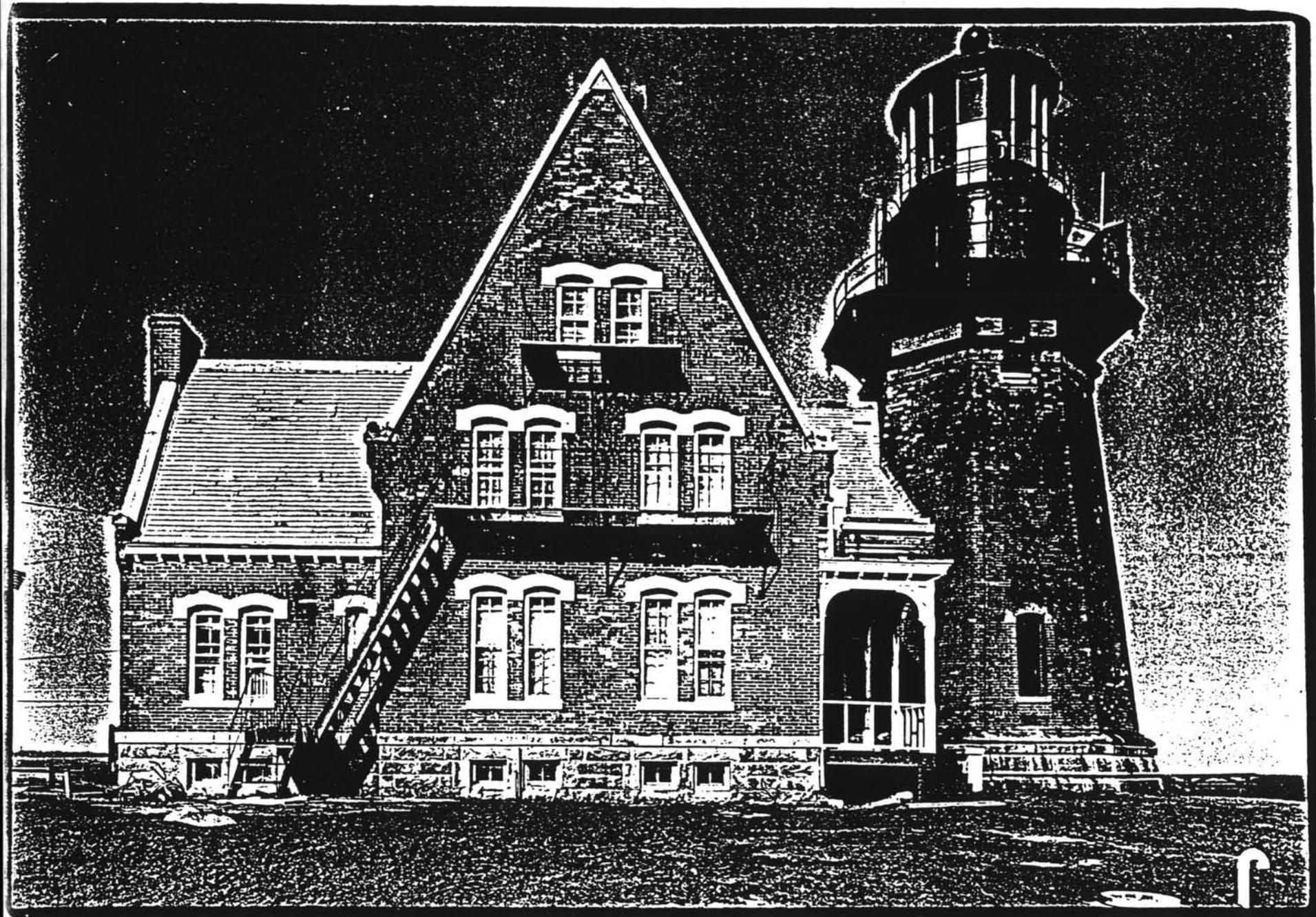


BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, RI

Photographer: Gerald Abbott
Date: March, 1985
Negative at: Dr. Gerald Abbott
61 East 66th Street
New York, NY 10021

View: South elevation.

Photo #21



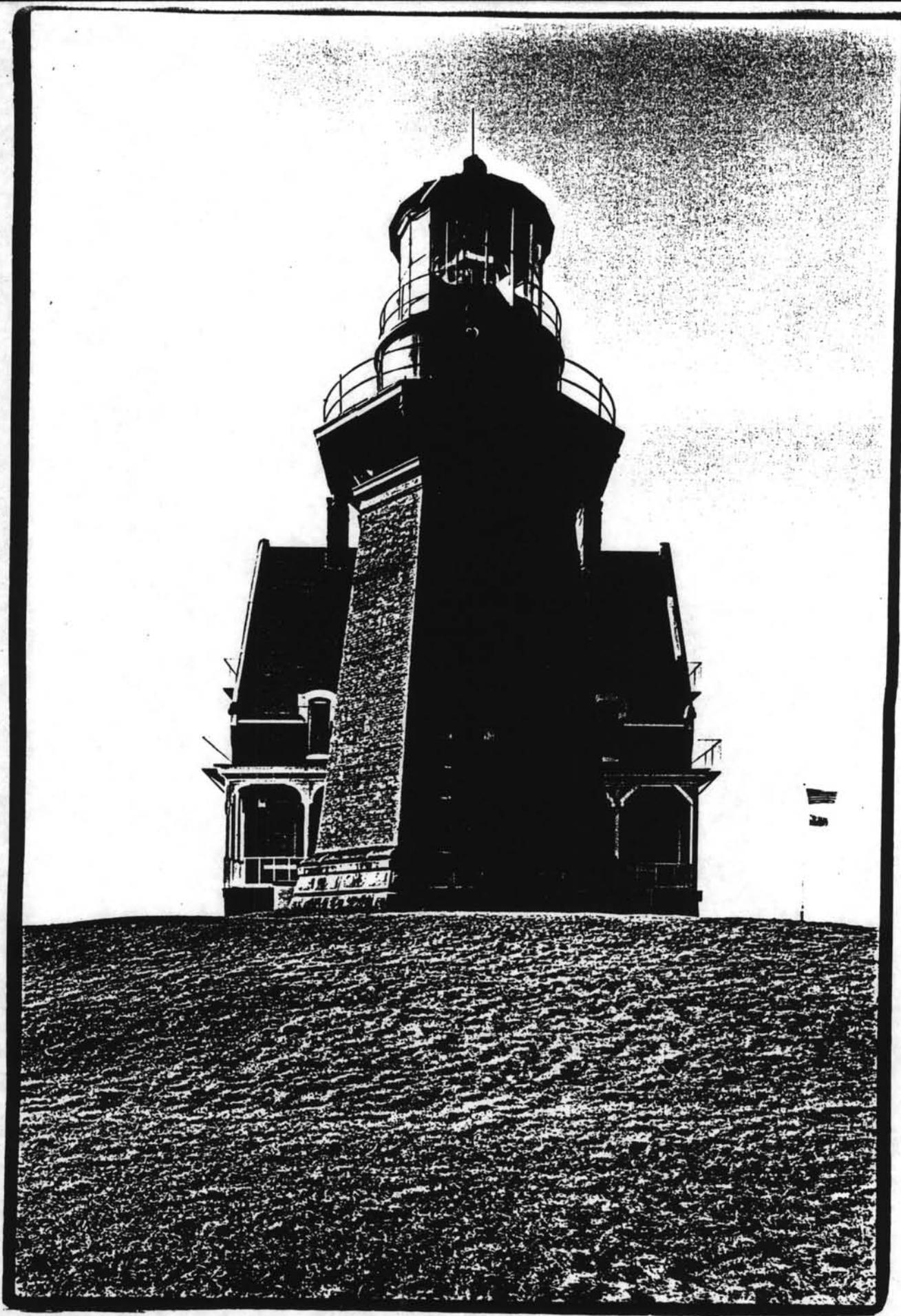
West Elevation

BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, RI

Photographer: Gerald Abbott
Date: March, 1985
Negative at: Dr. Gerald Abbott
61 East 66th Street
New York, NY 10021

View: West elevation.

Photo #32



BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, RI

Photographer: Gerald Abbott
Date: March, 1985
Negative at: Dr. Gerald Abbott
61 East 66th Street
New York, NY 10021

View: Lighthouse, from the northeast.

Photo #13

1892 25



THE LIGHTHOUSE AT BOSTON

BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, RI

Photographer: Gerald Abbott
Date: March, 1985
Negative at: Dr. Gerald Abbott
61 East 66th Street
New York, NY 10021

View: North elevation.

Photo #84



BLOCK ISLAND SOUTH EAST LIGHT
New Shoreham, RI

Photographer: Gerald Abbott
Date: March, 1985
Negative at: Dr. Gerald Abbott
61 East 66th Street
New York, NY 10021

View: Lens apparatus.

Photo #65