



## The Sandy Hook Lighthouse



Since the days of exploration and colonization, Sandy Hook and the nearby Navesink Highlands have been prominent landmarks for ships approaching Lower New York Harbor.

### An Unmarked Harbor

Englishman Thomas Pownall sailed into the harbor in 1755 and noted that:

“The first land you discover in coming from the Sea is the high land of the Nave-sinks... under the Navesinks stretching from their foot for about 4 miles to the right and northward of this high land [is] a neck of low sandy hills covered with cedars and holly, ending in a low sandy point... This was the first land of America that I saw... The Cedar point... was... called by the Dutch Sandy Hoek (Hook). After having... come from the sea [and] within the Hoek (Hook) & under the pleasant feel of still water, the eye is delighted with the view of a most noble bay.”

To enter the harbor, sailing ships navigated a narrow, curving channel around the tip of Sandy Hook. Pownall’s passage took place during good weather, but six years later a number of shipwrecks occurred on the treacherous, unseen sandbars and shoals surrounding Sandy Hook. Severe financial losses from these shipwrecks made forty-three New York merchants petition the Colonial Assembly of New York in 1761. The merchants requested that a lighthouse be erected on Sandy Hook to guide ships safely into the harbor. The New York Assembly supported this proposal and passed “An Act for raising a Sum not exceed Three Thousand Pounds by way of Lottery for building a Light House” on Sandy Hook.

### A Lighthouse is Built

A committee of prominent New York citizens was authorized to establish the lottery and purchase “a small quantity of land” at the tip of Sandy Hook to build a lighthouse. Negotiations with Robert and Esek Hartshorne, the owners of Sandy Hook, resulted in the purchase, on May 16, 1762, of four acres of “barren, sandy soil... for the moderate price of 750 pounds.”

The June 18, 1764 edition of the New York Mercury reported that: “On Monday Evening last [June 11, 1764], the NEW-YORK LIGHT HOUSE erected at Sandy Hook was lighted for the first Time. The House is of an Octagonal Figure, having eight equal Sides; the diameter at the Base, 29 Feet; and

at the Top of the Wall, 15 Feet. The Lanthorn (lantern house) is 7 Feet high; the Circumference 33 feet. The whole Construction of the Lanthorn is Iron; the Top covered with Copper. There are 48 Oil Blazes. The Building from the Surface is Nine Stories; the whole from Bottom to top, 103 feet.”

To pay for the operation and maintenance of the new lighthouse, the Colony of New York authorized a tonnage tax of three pence per ton on ships sailing into the harbor. This enabled the Port of New York to maintain the tower, pay a keeper’s salary, and make a small profit from any surplus tax money.

### Surviving a Revolution

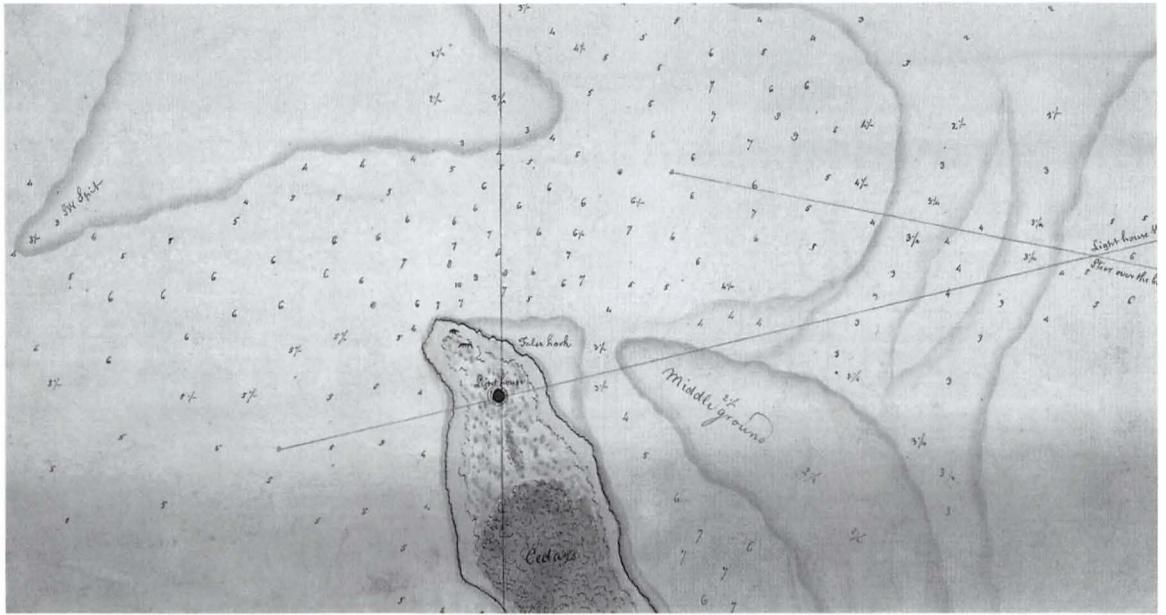
Early in the American Revolution, the expected arrival of the British fleet made the lighthouse a military target. A patriot raiding party removed 8 copper lamps and 4 casks of whale oil from the lighthouse in March, 1776. That June, a daring attack to destroy the tower was attempted by Lieutenant-Colonel Benjamin Tupper and his soldiers. Tupper “ordered the artillery to play, which continued an hour, but found the walls so firm I could make no Impression.” In the face of stiff resistance

from a British armed guard defending the lighthouse, and supported by a British frigate in Sandy Hook Bay, Tupper called off the attack and withdrew his command. In response to the raid, the British high command took steps to protect this key navigational aid by sending loyalists to fortify the lighthouse and guard it from attack. Supported by the British Army and Navy, the loyalists kept the “Lighthouse Fort” or “Refugees Tower” under British control for most of the Revolution.

The Sandy Hook Lighthouse and the Navesink Heights as they appeared in 1777, from an engraving by Joseph Frederick Wallet Des Barres  
(Library of Congress)



A 1770s map showing "Soundings of the bar of Sandy Hook at low water." Notice how close the lighthouse was to the tip of the Hook compared to today!  
(Library of Congress)



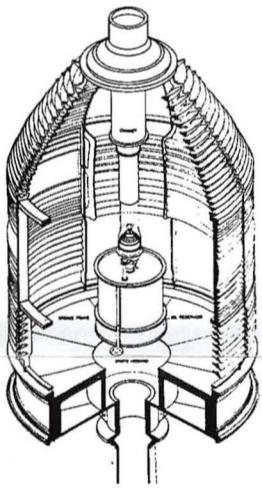
## More Navigational Aids

As commercial ship traffic in and out of the harbor increased tremendously after 1800, so did the need to better mark the sea approaches leading to the Port of New York. To improve navigation, the newly created federal "Lighthouse Establishment" decided to take full advantage of the Navesink Highlands by building two identical octagonal stone towers there in 1827-1828. High above the sea, these "twin lights" were visible before the Sandy Hook Lighthouse, located at sea level. Two lighthouses were built, so approaching ships would not confuse them with the Sandy Hook Lighthouse located over five miles to the north. The Twin Lights were further identified by fixed (non-blinking) and rotating (blinking) white lights, while the Sandy Hook light was a fixed white light.

In 1861-62, the twin lights were replaced with new brownstone towers connected to a brownstone keeper's dwelling. Today, the lights are preserved as Twin Lights State Historic Site.

Originally, the keeper was responsible for only the Sandy Hook Lighthouse. After 1817, when two additional beacons were erected on Sandy Hook, the keeper had quite a chore attending three lights with a total of 32 lamps and reflectors. Finally, in 1857, three assistants were assigned to work for the Sandy Hook keeper. The historic image of the old-time American lighthouse keeper is of a very dedicated and heroic individual who maintained a light at lonely and isolated locations, all night long, through all kinds of weather, year after year.

## Lighting Systems



Fresnel Lens  
(NPS Photo)

For many years, early American lighthouses burned whale oil as an illuminant in metal lamps and later, lamps with mirror-like reflectors. In 1822, Augustin Fresnel of France introduced a glass lens that revolutionized the lighting of lighthouses. The Fresnel lens resembled a giant old-fashioned beehive, inside of which was a single lamp. The lens' thick glass prisms bent the lamps light to the center of the lens, which greatly magnified the light into a powerful beam that could be seen for many miles at night. Fresnel made his lenses in six different sizes, or "orders." The 1st, 2nd, and 3rd order lenses were usually installed in seacoast lighthouses to warn ships that they were approaching land. The 4th, 5th, and 6th order lenses were used in harbor and sound lighthouses. A Fresnel lens was shipped to America in 1840, destined for the Sandy Hook Lighthouse, but it was slightly too large to fit inside the lens house. It and a second lens were transferred over to the Twin Lights thus making them the first Ameri-

can lighthouses to use Fresnel lenses. The Sandy Hook Lighthouse was refitted with its present 3rd order Fresnel lens in 1857 along with an iron lens house (lanthorn) to protect the lens.

In 1863, the Lighthouse Board reported that the lighthouse tower was "thoroughly renovated" The work included the addition of a red-brick interior lining to increase the thickness and add reinforcement to the original stone tower wall, and a new iron spiral staircase to replace an older wooden one. In the late 1870's, the Lighthouse Board introduced kerosene as an illuminant. In the 1890's the Board began experimenting with electricity, and by the 1930's, most of America's Lighthouses used this light source. In 1939, the U.S. Lighthouse Service was abolished, and its duties were transferred to the U.S. Coast Guard. The widespread use of electricity eventually led to the automation of lighthouses and the elimination of lighthouse keepers.

## A National Historic Landmark

The lighthouse has witnessed many changes over the years, but the greatest change has been to the Sandy Hook peninsula itself. In 1764, the lighthouse stood just 500 feet from the tip of Sandy Hook. Ocean currents continued to move sand up the coast, extending the tip further out into the harbor, so that by 1864, the lighthouse stood about 4,000 feet from the tip. The lighthouse now stands about one and one half miles from the northern end of Sandy Hook.

On June 11, 1964, the Sandy Hook Lighthouse was declared a National Historic Landmark on the 200th anniversary of its first lighting. This faithful

sentinel by the sea still continues its original function. The light is currently an automated 3rd order Fresnel lens, fixed white light, visible for nineteen miles on clear nights. The light is maintained by the United States Coast Guard and is kept on 24 hours a day.

Gateway National Recreation Area  
Sandy Hook Unit  
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