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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM
FOR FEDERAL PROPERTIES

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SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC Lighthouses of Massachusetts - Thematic Group Nomination

AND/OR COMMON same

2 LOCATION

STREET & NUMBER multiple locations (see individual forms)
__NOT FOR PUBLICATION

CITY, TOWN various n/a VICINITY OF
CONGRESSIONAL DISTRICT

STATE Massachusetts CODE 025 COUNTY see section 10 CODE

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
__DISTRICT	__PUBLIC	X OCCUPIED	__AGRICULTURE	X MUSEUM
__BUILDING(S)	__PRIVATE	X UNOCCUPIED	__COMMERCIAL	X PARK
__STRUCTURE	X BOTH	__WORK IN PROGRESS	__EDUCATIONAL	X PRIVATE RESIDENCE
__SITE	**PUBLIC ACQUISITION**	**ACCESSIBLE**	__ENTERTAINMENT	__RELIGIOUS
__OBJECT	n/a IN PROCESS	X YES: RESTRICTED	__GOVERNMENT	__SCIENTIFIC
X thematic group	__BEING CONSIDERED	__YES: UNRESTRICTED	__INDUSTRIAL	__TRANSPORTATION
		__NO	__MILITARY	X OTHER: active lighthouse

4 AGENCY

REGIONAL HEADQUARTERS: *(If applicable)* United States Coast Guard - First Coast Guard District

STREET & NUMBER 408 Atlantic Avenue

CITY, TOWN Boston n/a VICINITY OF STATE Massachusetts

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC. various

STREET & NUMBER

CITY, TOWN STATE

6 REPRESENTATION IN EXISTING SURVEYS

TITLE Historic Assets of the Commonwealth (also, see continuation sheet)

DATE 1980 __FEDERAL X STATE __COUNTY __LOCAL

DEPOSITORY FOR SURVEY RECORDS Massachusetts Historical Commission
80 Boylston Street, Suite 310

CITY, TOWN Boston STATE Massachusetts

National Park Service Survey :

	Number
#3 The Beacon, Eastham, Massachusetts	32-6837/E-241
#34Race Point Light Station, Provincetown, MA	01-8726/02-8730
#39Twin Sisters of Nauset, Eastham, MA	31-612/E-247

HABS/HAER Survey

#20Highland Light Station, Truro, MA	MA-750

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
X EXCELLENT	__ DETERIORATED	X UNALTERED	X ORIGINAL SITE
X GOOD	__ RUINS	X ALTERED	X MOVED DATE multiple (see below)
X FAIR	__ UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Lighthouses are located along the entire coast of Massachusetts, in the mainland counties of Essex, Suffolk, Norfolk, Plymouth, Bristol and Barnstable (North to South) and in the island counties of Dukes and Nantucket (southwest of Barnstable County.) The 42 lighthouses included in this thematic nomination date from the eighteenth, nineteenth and twentieth centuries; are constructed of wood, brick, stone and cast iron; stand on windswept promontories, sandy points, or rocky ledges; and are either self contained in their functions or act as the focus of a complex including such elements as keeper's house or houses, walkways and storage sheds. Despite these differences, most are similar in appearance, for their design has resulted from a superb adaptation to their singular function, coupled with a response to changes in technology and style. This description section will look first at the technology involved in constructing and lighting a light tower and then examine in detail the architectural features of light towers and their ancillary structures.

TECHNOLOGY OF THE LIGHTHOUSE

The primary purpose of a lighthouse is to provide a nocturnal navigational warning by elevating a light to a height which will allow visibility over the curvature of the earth. The light must be exactly positioned to mark navigational hazards such as a reef, rocky shore or sandbar on the approach to an important landfall, harbor or channel and must be supported within a structure that can survive the most severe conditions. Thus the construction of the light tower becomes as technologically complex as that of the light itself. The tower has to house the tremendous weights of a clockwork, an enclosed staircase and ladders to provide access to the light, a ventilation system to cool the lens room, a lamp room or space to heat the fuel oil, windows for light and, of course, the light itself. Additionally, the tower has to be secured on an often precarious site which has been predetermined by navigational necessity.

From the earliest times, light towers have assumed a pyramidal shape, that being a stable configuration for achieving height. The first recorded light tower was built in 300 B.C. at the commercial port of Alexandria, Egypt. Rising 450 feet, it was a stone pyramid which remained lit for 1000 years and continued to serve as a daymark for another 500 years. It was not until after 100 A.D., however, that light towers were built in abundance, partially due to the fact that cities feared marking their harbors to invaders. These lights continued to assume a pyramidal form, either cylindrical or polygonal, and were usually constructed of stone or wood. They were lit by wood fires, maintained by full time keepers and usually reflected prevailing architectural styles. By 1560, the Swedes were using coal as fuel to strengthen the illumination for navigators. Candles were popular in most lighthouses until well into the 1800s, and although they offered a poor light, they did not cover the lens room windows with soot as coal did.

While the advances in lighting took place on the continent, structural innovations occurred in Great Britain, one of the most important of which was construction of the Eddystone Light. The first 1692 structure was an elaborate composition with open arches and ornamental proturbances, all of which contributed to its early collapse in a violent storm. Henry Winstanley redesigned the light and doubled its base in 1699, but both he and the light were swept away in 1703. Finally, in 1759, the great engineer, John Smeaton, devised a method of affixing iron rods into bedrock successfully and redesigned the tower which remains today. The significance of the Eddystone Light lies in its construction and reveals the extent to which engineering and technology had progressed. Its impact can be partially measured in the increase of lighthouses on the British coast, which jumped from a mere 34 in 1600 to 175 in 1800.

It was not until much later that towers similar to the Eddystone Light were built along the Massachusetts shores on Minots Ledge (1843-57; #26) and the Graves (1903; #19) in Boston Harbor. Resembling this construction, caisson lighthouses were built at Borden Flats (1881: #5), Deer Island (1890), Butler Flats (1898: #8), Duxbury Pier (1871), and Cleveland Ledge (1941: #13). The latter were constructed on a partially submerged rock or the bed of a river and had a cement and steel cylinder shaped foundation upon which sections of steel were fastened together to form the tower. The Eddystone type, however, has holes bored into solid rock, iron bolts sunk and fastened into it, and the towers were made of large blocks of granite stone.

Minots Ledge Light (#26) proved to be one of the most difficult and challenging jobs because the rock was always covered at high tide and construction could only take place during the summer months when the sea was calm. The first tower was completed in 1849 and consisted of an iron lens room and keeper's quarters raised upon stilts above the ledge. Nine holes were cut into the rock five feet deep by ten inches in diameter. Eight legs, or stilts, and a central leg were then fixed into the holes. Unfortunately, this tower was destroyed by a storm in April, 1851, and a new tower was begun in 1855, and finished four years later. Built of large granite blocks that were each carefully carved and brought to the site by barge, it remains an active aid today and a remarkable technological achievement.

Illumination, meanwhile, had undergone enormous technological developments since the eighteenth century, with improvements in both the source of light and systems to reflect it. In 1781, Ami Argand, a Frenchman, invented a lamp that had a hollow circular wick which allowed air to pass through and around it. This resulted, for the first time, in a smokeless yet bright flame, and in itself was a revolutionary discovery for the lighthouse. Otherwise during this period, common bucket lamps were used which consisted of a shallow pan of oil with solid round wicks under a cover, but no chimney or smoke vent.

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In 1784, Borda of Dieppe invented the catoptric system: a small metal or glass revolving apparatus of five parabolic reflectors made of sheet copper (6 ounces of silver to 16 ounces of copper molded into a parabolic form). This was combined with the Argand lamp, whose flame was located in the center of 18" to 20" reflectors. It provided at least an adequate system of illumination by modern standards and used only half the oil of earlier lamps. The catoptric system was to be adapted by Fresnel in 1822 for his larger and brighter lenses.

The lamps used in the United States in the late eighteenth and early nineteenth centuries were far more primitive. Called "spider lamps," they consisted of a pan of oil with four wicks and were initially used in Boston Light (#6) in 1790. Although they gave off dangerous fumes that burned the keeper's eyes, they were the principal source of light in the U.S. lighthouses until 1812. Early reflector lamps had reached Massachusetts and were used in the twin lights of Newburyport Harbor in 1809 (#29). Their illumination was actually quite good, but their value was not recognized until much later.

The Argand lamp was first introduced to the United States in 1810 when an unemployed ship captain, Winslow Lewis, successfully convinced the federal government to officially recognize his patented adoption of the Argand reflector system for use in all the country's lighthouses. This was due in large part to his offer to install it in all forty-nine lighthouses for the incredibly low sum of $26,950, far underbidding other contractors. This action on the part of the government was unfortunately to greatly impede the technological progress of illumination in U.S. lighthouses. Lewis' lamp was not a significant improvement over the "spider lamp' and because the cost of refitting all the lighthouses again was too great, the Lewis lamp was to remain as the principal source of light in United States lighthouses long after the far superior Fresnel lens was invented.

Augustin Fresnel had completed the development of his lens by 1822 in France. This elaborate lens (which was to eventually alleviate the desperate situation in the United States lighthouses) was based on a simple idea of refraction and reflection. Fresnel formed "... a barrel of glass having the same profile as a vertical section through the axis of the lens. Such a lens allows the rays from a lamp in its center to spread freely in a horizontal plane, while it refracts them vertically, thus producing a powerful band of light equally around the horizon" (Ancient and Modern Light-Houses, Heap, p. 172). The object of the refracting and reflecting prism of glass in the lens was to bend the rays outward to sea. The upper rays fell downward and the lower rays upward to meet at a point and create an intense light that could be seen for miles. It was an enormous improvement over the earlier parabolic reflectors.

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The lenses were made of thick molded glass and were designed with mathematical accuracy dependent upon the position of each prism in relation to the center of the flame. The sections of glass, resembling a beehive when assembled, were held together with brass or bronze fittings and were available in several sizes. (The First Order was largest, Second Order next, Third Order and Fourth Order the smallest, including half sizes such as the Third and a Half Order lens.) The sizes were determined by the intensity of light required, and the lenses could revolve on a brass base or remain as a fixed light.

As an example of a Fresnel lens, the Second Order variety was about five feet in diameter and twelve feet high. Three wicks of one, two, and three inches diameter were fixed to a large lamp in the center of the lens. Each wick had a space between to allow air to flow through (based on the Argand principal), which promoted combustion, prevented smoking, and gave off a brilliant flame. About one foot below the wicks, the oil was retained in a pan from which it could then be pumped to the flame by four small diaphragm pumps. They in turn were operated by a large clockwork that had to be carefully monitored and wound every three hours or so. Thus the Fresnel lens required an experienced and knowledgeable keeper available constantly to maintain the light during the night and keep the lens covered from the sun during the day.

From the clockwork, a fifty-pound weight descended through a large pipe into the central tube of the tower. (No clockwork or weights are found in Massachusetts Lighthouses today, although the central pipe, or shaft, remains, and pulleys that held it in place are evident at some, such as Sankaty Head Light (#36) on Nantucket Island.)

The first Fresnel lens was imported from France and installed at the Navesink Light in 1841, yet by 1853 only five Fresnel lenses lit the U.S. coasts. Sankaty Head Light (#35) was one of the first five to have the lens installed. By 1859, however, most lighthouses had been refitted with Fresnel lens. So successful was this lens that little improvement could be made upon it, and several remain in operation today, though electrified and automated. Boston Light (#6), Nobska Light (#31), and continue to provide excellent, in situ examples of the Fresnel lens adaptation to modern standards. On Cape Cod, two such lenses were only recently removed from Race Point Light (#35) and Nauset Light (#27) and are currently exhibited in local visitors centers.

By 1870, two other illuminating methods, in addition to the Catoptric system, had been fully developed to reflect light rays in one direction by using silvered parabolic reflectors. The dioptric system refracted or bent rays back through a lens and the catadioptric was the combination of the two, that is, it refracted and reflected the rays. The latter, the basis of the Fresnel lens, was to remain far superior because it lost only 10% of the actual light

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light. A condensing panel, or lens, was also developed to further reflect and refract the light. It consisted of a rectangular panel of prisms that could be attached to one side of the Fresnel lens and magnify the light many more times. A good example of this can be found at the Hospital Point Light (#21), where the condensing panel is still in use.

Throughout the years there had been ongoing experimentation with fuel to light the lamps. Fish and sperm whale oil had been in use since the eighteenth century, cloza or rape seed oil was introduced in 1863, lard oils in 1868, and in 1880, kerosene was first used to light the Navesink Light. Shortly after, in 1886, electricity was installed at the Statue of Liberty by Thomas Edison and eventually came to the nation's lighthouses. Navesink was also the first lighthouse to have an electric power plant, in 1898. In addition to electricity, natural and coal gas were used at various times, though unsatisfactorily, in the nineteenth century.

During the nineteenth century, nine classes of light were active to help the navigator differentiate between lighthouses. They were either fixed, revolving white, revolving red and white, revolving red with two whites, revolving white with two reds, flashing, intermittent, double fixed lights, or double revolving lights. At first the color of the light was altered by simply fixing a transparent, colored material to a pane of glass in the lens room, as is still evident at the Nobska Light (#32) in Falmouth, but presently an automated light is simply fixed with a green or red plastic lens cover. The Light List published by the Coast Guard and their Notice to Mariners relates any and all changes in the class or color of each light.

Many Fresnel lenses have been dismantled in the past ten years because they are not compatible with the current twelve volt system. The electric voltage was slowly increased over they years, until by 1976 the 32 volt system had finally become obsolete. Acrylic or plastic lenses replaced the much larger and heavier Fresnel lenses in lighthouses such as Marblehead Light (#24), Annisquam Light (#1), Newburyport Harbor Light (#29), Borden Flats Light (#5), Long Point Light (#23), Long Island Head Light (#22), and Wood End Light (#43). The lampchangers, power supply, flasher and focus capability of these lenses were specifically designed for the 12 volt system and were less expensive and less difficult to maintain. Another factor was that these lenses did not require full or even part time keepers, and their automatic system could alert a Coast Guard station miles away if something was amiss. In 1976, the Coast Gurad approved the use of the 120 volt, 250 watt quartz halogen lamp, which has a lamplife average of more than one thousand hours, and has been installed and active in most lighthouses since.

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The most recent technological change to affect Massachusetts lighthouses has been conversion to solar power, and the two lights involved are both in Provincetown: Long Point (#23) and Wood end (#42). Despite the changes that have occurred, it should be noted that the state's historic lighthouses have remained functional in form and location.

ARCHITECTURE

The first light towers in America were constructed in the eighteenth century but numbered only twelve by 1790. Many of these were in Massachusetts, including the nation's two earliest. Massachusetts surviving eighteenth century lights are the Boston Light (1716, rebuilt 1783; #6), Brant Point Light in Nantucket (1746, rebuilt 1901; #7), Plymouth Light (1768, rebuilt 1843, #33), the twin Cape Ann Lights on Thatcher's Island off Rockport (1771, rebuilt 1861; #9),and the Newburyport Harbor Lights (1788, rebuilt 1898; #29). The Nantucket Light at Great Point (1784, rebuilt 1818) was recently destroyed in a storm (198) and is being reconstructed. Their numbers were greatly expanded at the end of the century by the new Federal government, so that they totaled 59 by 1820 and 297 by 1850 (G. R. Putnam: Lighthouses and Lightships of the United States; 1933; p.52).

These early (pre-mid-nineteenth century) towers were of moderate height (20-50 feet) and simple design, and although they were strategically placed, they were limited to fairly accessible and easily buildable sites. Their design was fairly standard and they were usually entered through a covered walkway which connected directly to the keeper's house. Inside the circular, octagonal, or square tower were storage closets and a central staircase, usually spiral, which led to each window and eventually to the lamp room. These staircases were originally wooden and often hand-molded, but were later replaced by a standard iron staircase that can be seen in most towers today. The lanterns were multi-sided cast iron elements, often solid in the bottom half, with a ventilator and lighting rod crowning the roof.

The towers were constructed of wood or stone (either cut or rubble) and rested on relatively shallow foundations. Where the foundation was to be in sand, a 12' X 12' timber grillage was placed in a pit just below water level and was supported on closely spaced piles; a rubble base was built on this, directly surmounted by the tower. In closely packed soils such as clay, a shallow excavation was made and a rubble foundation placed directly within it. On natural rock, loose stones were removed and the surface made as level as possible; if this could not be done, a foundation step was built out from the highest step.

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Wooden towers were constructed of thick, first quality timbers, with posts and girts of equal length. The top of the tower was domed over, extended outward and covered with copper flashing. The lantern was set on this base and balcony posts attached. The exterior was shingled or clapboarded and given three coats of paint. Complete specifications are given for the Cape Poge Light of 1801 (#10).

Stone towers were constructed with walls three feet thick at the base, tapering to two feet at the top, and generally had more substantial foundations than wooden towers. The top of the tower was domed over with brick with a square opening near the spring line. A flat roof was placed over this, usually 4" thick and projecting 6'-12' to form a shallow balcony (Gay Head; 1856; #18). An iron lantern would then be attached by sinking 3'-4' iron posts into the masonry. An excellent description of the construction of a masonry tower in 1811 followed by alterations in 1827 and the 1840s are preserved in the specifications for Scituate Light (#36).

Brick towers began to supplement those of wood and stone by the late eighteenth century, but it was not until the mid-nineteenth century that a major change took place in lighthouse construction. Experiments with cast iron began in the 1840s with the construction of skeletal towers such as the first Minot's Ledge Light (1843; #26), and by the 1870s, a cast iron drum tower which could be prefabricated in many sizes had been developed. This standardized and relatively cheap type was largely responsible for the huge increase in light towers after mid-century. Their numbers rose from a mere 59 in 1820 to 297 in 1850, to 661 in 1880, to 1,397 in 1900 (Putnam, G.R., p.52).

Cast iron towers are constructed of five foot wide, one inch thick concentric rings, the lower edge of which forms a flange fitting over the upper edge of the plate below. The topmost ring is shortened and serves as the fascia for the brackets supporting the balcony; this upper portion is usually painted black while the remainder of the tower is white. Entries are usually plain, while windows have heavy Italianate pediments. The towers, which are easily movable, are usually set on a concrete base, but when marking a water site are set on a caisson (see Technology section for more information).

The major components of lighthouse complexes are described below:

LIGHTHOUSE TOWERS

Each tower consists of three parts which are distinct in their form and function, and are arranged vertically. The bottom element is the shaft which forms the greatest part of the tower and varies in size according to the height needed for each light. The shaft typically contains stairs and clockworks. The middle element is the lamproom, which often appears to be a

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continuation of the shaft but is sometimes (especially in primary lights) distinguished by a secondary balcony. This was used for storage and as a workroom. The uppermost element is the lens room or lantern, which is distinguished by its large windows and balcony. As the name implies, it contains the light itself.

I. Tower Shaft:

Entrance is almost always through a single door, most of which are now cast iron to resist the elements and vandals. Cast iron towers have a molding projecting around a segmental arched opening within which the door hangs. A few of these doors, such as the one at West Chop (#40), are molded, and the one at Boston Light is embossed with the name of its maker, the "South Boston Lock Company."

The larger towers often have an attached gable roofed entry house or, if they are attached to a keeper's house, a covered walkway. These are of brick or wood, never iron, and protect the door area; in these cases the iron door mentioned above is replaced with a four panel wood door. Walls in these structures are frequently paneled with vertical tongue and groove wood sheathing or show studs. Floors are of brick, concrete, or wood and generally conform to that of the tower itself.

The arched entrance into the tower itself is faced with brick or stone in masonry towers. The bricks angle away from a V which opens outward to accommodate the difference in diameter of the inner and out walls. In iron structures, usually with an inner wall of brick, this arch is bridged with five to six 2" strips of wood, scored at 1" intervals. Joints are butted and finely finished. The depth is 11".

The inner walls of wooden structures are usually plastered over diagonal lapstrake, as at Wing's Neck (#41), the Beacon (#3), the Twin Sisters of Nauset (#39), and Newburyport Harbor Light (#29). Brick is normally used within iron towers, with vertical piers and large air spaces between to act as a vapor barrier for condensation. For this reason the door arch and lower window openings can measure 11" deep. The brick is sometimes laid in alternate strings, forming a decorative basketweave pattern. The brick walls were originally whitewashed but after many coats, tended to peel. For this reason, many interiors were painted in the 1940s but many are now being sandblasted, leaving the brick face exposed.

Windows in the earlier masonry towers are not uniform in their overall size or in the panes they contain. In general, however, they tend to be small, as native glass production was not advanced. In most towers, window dimensions diminished with height, and as the thickness of the wall

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diminished they were set closer to the surface until the frames of those at the top actually projected. Window frames including muntins and sills are of wood; some frames are of plain stock timber while others are fluted with corner blocks. Some towers were fitted with a second set of interior windows as storm protection. These are intact at Sankaty Head (#35), Hospital Point (#21), and Boston Light (#6). Windows in the pre-fabricated cast iron towers are predictably standard in size, measuring 45" X 24" and containing 2/2 sash. They are recessed at the lowest level on the average of about 8 1/2" and gradually become flush by the uppermost level.

Staircases are often the most elaborately detailed element within a lighthouse. In wooden towers they tend to be constructed of wood also, but are not always simple. An especially good example is found at Wing's Neck in Bourne (#41), where the rail is molded and there are reverse curves at landings and along stair runs. The stairs in cast iron towers are varied. On the South Shore, stairs tend to be constructed of sturdy iron pipe with one straight baluster per tread. The treads are 41" wide, and measure 9" X 14" at the ends; they are solid with a diamond pattern cast in. Nantucket Light (destroyed 1983) was the exception with a grand spiral. On the North Shore, stairs generally receive a much more elaborate treatment and combine natural wood with iron. The treads, risers and end blocks are cast in various scrolled patterns while the molded rails are wood, sometimes mahogany.

Square towers are constructed in a unique manner. They contain in turn a hollow central shaft which (houses the weights) and chains for the clockwork (which controls the lamp). The stair treads are solid iron, usually cast in a diamond pattern, which run between the brick outer wall and the interior shaft wall. They are generally three feet wide and runs are usually three or four steps to a three foot square landing, with an occasional window.

The most recent form of stairwell is a prefabricated trapezoidal tread stacked along a center point, creating a post off which the stairs are cantilevered. Boston Light (#6) has a later stair of this type. The ceilings of stairwells are either wood or cast iron, although some have recently been replaced with concrete or aluminum. Some early towers had holes cut in the ceiling to admit light to the tower, one of which exists at the Newburyport Front Range (#30). In all floors there is a small opening, either in the center or at the side near the wall which allows the chain mechanism of the light to pass, except in square towers as noted above.

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II Lamp Room:

Storage of materials and preparation and cleaning of lamps took place in this room. Forming a landing at the top of the staircase, the floor of the lamp room was usually the exposed material of the ceiling beneath, although it was sometimes covered with wood or composition material, as at Gay Head (#18). A prominent interior feature is a cupboard, normally floor to ceiling, which is constructed of vertical grooved wood sheathing and has a four panel molded door. In the South Shore iron towers, it is placed at the end of the inner staircase wall, over the stairs and has a trapezoidal shape. Sometimes smaller portable cupboards are present.

Another major feature was the stove which was required to heat the oil and to provide some comfort to the keeper as he trimmed the wicks and serviced the lamps. The stove was vented through a pipe which ran along the ceiling, through the wall and then turned upward at a 90 degree angle. At Highland (#20), Gay Head (#18), and Butler Flats (#8), a heavy cast iron pipe led through the upper balcony and above the dome.

A third feature is the ladder which provides access to the lens room above rather than a continuation of the staircase. In early towers such as Scituate (#36), a sturdy ladder of 4-6" X 1" wood is used; in other South Shore examples a seven step curving ladder is found. In more elaborate towers, a narrow (4 1/2" X 9" X 24") prefabricated cast iron step system with Italianate details and knob caps at the joints is used. The railing is always a simple, single rail with no balusters.

The ceiling of this room is either the unfinished underside of the lens room floor or is faced with wood. In the most elaborate examples, a sunburst of thin grooved sheathing, decreasing in size toward the middle, is formed. A circular opening to allow passage of the chain and weight mechanism often pierces the center of this ceiling.

The walls of this room either continue the treatment employed in the tower, or are sheathed in a vertical, beveled tongue and groove wood which is usually painted white. In towers with sash windows, light is admitted through a window identical to those below. In cast iron towers, four port holes are inserted at the external junction of the iron drum and the cornice belt. On the interior these brass rimmed windows are set in circular or hexagonal wood frames of three to four inch width.

Some of the primary lights, such as Gay Head (#18) and Highland (#20), have a balcony affixed at the lamp room level; this is in addition to the balcony which always surrounds the lens room above. In these instances, the access doors are iron, sometimes with a wooden outer door, but the

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details have all been found to be different. At Marblehead (#24), there is a single panel round arched door with its original wrought iron hardware still in place.

III. Lens Room or Lantern:

These are found in two types. In primary lights with high candle power, the walls are entirely glazed from floor to ceiling. To achieve this height, the panes are stacked in two or three rows and the muntins are cast iron or recent aluminum replacements. Secondary lights have cast iron bases with glazed upper sections, and are generally seven to ten sided. Many lights have had their original glass replaced with lexan. In cases where the light disturbs neighbors and is not needed in that arc, the glass is blocked out either with paint, plywood or cast iron. In some instances, as at Nobska (#31), a red translucent panel is attached to the frame to give a danger sector characteristic to that light.

The interior treatment of the lens room varies. The floor, like that of the lamp room, either reveals the basic construction material or is covered over. The trapezoidal trap door, through which access is gained, can continue the same materials, although wood was commonly used with an iron floor, attached by well-designed iron straps. Usually there is a brass grab bar above the top step, attached to the wall.

Where the lower portion of the wall is unglazed, it is either cast iron or sheathed in the common vertical tongue and groove siding. This is either painted or a finished natural wood.

Ventilators are an important feature of lens rooms and one which provides a good example of the type of technological detail which performs so well in Massachusetts lighthouses. Air vents, located in the lower half of the lens room walls, were designed to admit air to circulate inside the tower while preventing sand or water from being carried inside by the wind, thus damaging the sensitive lens. The small c. 8 1/2" round opening was covered with a device which could be adjusted for varying amounts of air. One common solution was the use of a brass shell with four or five openings in a star pattern which fit over an identical plate and could be rotated by a knob or lever inserted at right angles. Another form,commonly found twenty years ago but now present only in the privately owned Wing's Neck (#42), consists of a coffee-can like piece with a strap of metal over the end. The can fits snugly into the opening (the thickness of the wall) and has round perforations along the sides. To obtain air, the can is pulled out of its wall casing according to the number of holes desired.

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Lens room roofs are domed and of a standard segmental two layer construction. The segments of the inner layer spring from the top of the window frames either directly or after a short rise of four inches; one inch iron bands screw the segments in place. At the center is an opening for a roof ventilator suspended below which is a shallow saucer-like reflector which deflects smoke outward from entering on the lantern and either cracking the hot Fresnel prisms or extinguishing the flames of the lamps.

The exterior of the roof consists of another set of cast iron sections springing gracefully outward in a quarter segment and then in a straight line to the top; it is always painted black. In the center of every roof is a large ventilator ball with small round openings just above the base. Rising from this ball is a lightning rod grounded by a copper strap which follows the side of the tower directly down from the ball to the base, where it enters the ground and emerges a few feet away from the foundation through a ceramic drain pipe, filled with calcium or limestone. A surprising number of these copper straps remain. In the case of cast iron towers, the strap begins only a few inches above the foundation where it is bolted into the iron plates of the drum. Only at West Chop (#40) was an ancillary structure (oil house) grounded.

BUILDING COMPLEX

A lighthouse depends upon a number of specialized ancillary buildings and most towers were originally part of such a complex. These included the keeper's quarters, covered walkway, oil house, storage sheds, bell and foghorn, and in later years, radio beacon and garage. Earlier complexes also included a barn henhouse, wood shed and outhouse. Sometimes the lighthouse is combined with a lifesaving station which consists of a boathouse, launchway and housing for the crew; these structures were not considered during the survey on which this nomination is based, as they are not directly related to the function of the lighthouse itself.

I. Keeper's Dwelling:

After the tower, the most important element in a lighthouse complex is the keeper's dwelling. This is generally a single residence, although it is sometimes doubled as at Nobska (#31) to provide room for an assistant. Occasionally there is also a separate dwelling for the assistant keeper, depending upon the size and importance of the complex. The houses are generally L-shaped 1 1/2 story masonry or wood structures whose plans varied little from station to station. They were built with close attention to detail and awareness of architectural style. Most of those which remain were built in the Gothic Revival style with steep pitched gable roofs embellished with elaborate jig-saw vergeboards. Narrow chimneys were centered in the ridge near the junction of the cross gables.

continued

Porches fall into three types: the long front verandahs of double keeper's dwellings and the front and rear porches of standard L-plan houses. Of the latter, the front porch has a sloped roof resting on a single post; half posts were applied to the walls at the angle of the L where it was located. These posts rose from a plinth base and were chamfered. At the top, above a simple molding, an elaborate jig-saw bracket connects the post with the roof eave. The rear porch had the same pattern, which is surprising given its secondary location as part of the one story rear ell. This rear porch was always placed diagonally opposite the front porch. Floors and steps were wooden.

Front elevations had pairs of narrow (2 X 3) 6/6 windows at the first story and in the gable. They were framed by labels as at West Chop (#40) and had chamfered lintels. Single larger windows were used on the sides of the house. In the rear one-story ells, narrow, double 4/4 windows balanced the porch.

Many of these houses have undergone extensive exterior alterations, usually application of siding, changes in windows and removal of trim.

Interiors tend to be simple, reflecting the floor plan. Woodwork is typical of the period of construction, with simple pediment shaped lintels in 1840s houses and the secondary rooms of the 1870s period. Here fluted frames and corner blocks with patera are sued in the main rooms. Doors, as in the lighthouses, are four panel with moldings. China door knobs are common.

Stairways are of particular interest, with a split run up to a landing and window. Newel posts have heavy Italianate turnings, while balusters present a series of finely turned profiles in woods such as mahogany. Often, a graceful curve appears in the wall along the second landing which allows the double window in the adjacent living room to be centered on the facade.

In some locations, modern ranch type houses have been added to the site and are of no particular interest. All houses, however, are painted white and have red shingle (wood or composition) roofs.

III. Covered Walkway:

Icy gales and blinding rainstorms made passage from the keeper's house to the tower hazardous, especially since early lights required tending every 3-4 hours. Therefore, long narrow structures with exposed sheds and occasional windows were built to connect them. Many of these wooden, gable roof structures have disappeared, while those remaining have been reconstructed over the years. On Straightsmouth Island (#37), a long line of granite piers marks the foundation of the walkway; these were required because the tower was flooded several times each month.

continued

III. Oil House:

When flammable fuel for the lamps came into use, an oil house was added for each lighthouse complex. They are all identical, brick or stone, gable roofed, rectangular one story structures. Most had a small vertical louvre in the gable for ventilation. West Chop (#40) and Nauset (#27) have small cupolas; that at West Chop has its own lightning rod and copper grounding straps. Many have now been converted into paint storage houses, and the function may have been combined at some stations from the beginning, as the terms seem interchangeable in the original plans. Although small, these buildings were well constructed. In all, the entablature is wide and built up with moldings. A keystone-like treatment in brick or stone is found above each doorway, forming a decorative lintel. There are no windows. Flooring is usually masonry. The roofs were often of slate, although some today have wood or composite shingles. These were expensive, handsome structures.

IV Bell:

While bells are no longer used, they were uniformly the same size, with the date and maker embossed on the outside. They hung on a stand outside the tower, or, as at Eastern Point (#10), on some structure in the complex. They are now valued for their historic significance. For example, the West Chop bell is being removed to stand in front of the Menemsha Coast Guard Station, the Coast Guard headquarters on Martha's Vineyard.

V. Garage:

These buildings can be found at a number of sites and indicate the changes to which lighthouses have adapted. Many date from the 1920s and 1930s and are used for general storage as well as vehicles.

The only completely intact complex of house and outbuildings survives at Straightsmouth Light (#37) where all the carved vergeboard, porch trim, window hoods and windows are original. At West Chop (#40), the porch trim on both houses is in perfect condition.

Several keeper's houses in private hands are also in excellent condition, such as Wing's Neck (#41). Other private houses have been altered drastically. Coastguardsmen on duty as keepers have begun an excellent program of voluntary work on restoration and have stripped and refinished woodwork and metal components of their houses and lights. Still other sites, such as Race Point (#34), are intact but abandoned and neglected.

POTENTIAL FOR ARCHAEOLOGICAL INVESTIGATION

The archaeological potential of the lighthouse stations is unknown: it is expected that some lighthouse grounds have potential for both prehistoric and historic interest. The existence of prehistoric sites on lighthouse grounds would be a coincidence of locational factors (e.g. quality of soils, nearness to fresh water and other resources, as well as siting requirements of the lights), and is most likely to occur at stations such as Long Island Light or Tarpaulin Cove Light where the lights are established on areas rich in environmental features attractive to prehistoric populations. The historic archaeological potential of specific lighthouse sites relates to the history of the use of a particular landscape as a light. Especially important are those sites that have a long history of use, where archaeological investigation could contribute information on early technology and construction of lighthouses and complexes. Examples of lighthouse sites with this kind of archaeological potential are Nauset Beach Light (where foundation ruins form earlier sites are visible) and Eastern Point light station.

SURVEY METHODOLOGY

Jointly sponsored by the Massachusetts Historical Commission and the First Coast Guard District, the survey on which this nomination is based was conducted during the summer of 1981 by consultants Leslie L. Fox and Nancy L. Salzman. Its subject was the lighthouses of Massachusetts, and although functionally related structures such as boathouses and lifesaving stations were given some consideration, they were not examined in depth and therefore were not included in this nomination. The resources that were included are lighthouses and their direct support structures: keeper's houses, oil houses, walkways and garage/storage sheds.

The survey drew on previous surveys conducted by local historical commissions and two regional surveys conducted by Jack Clarke of the Cape Cod Planning and Development Commission and Victoria DeStefano of the Martha's Vineyard Commission. Coordination of the survey and technical editing were provided by the MHC staff.

The major sources consulted include the reference works cited in the bibliography and the extensive maintenance and property records in possession of the First Coast Guard District. This documentary research was supplemented by on site inspection of both interiors and exteriors, which included extensive photography and limited structural measurements as well as analysis of quality and condition. Detailed inventories of most complexes were made, although a few were excluded because they were inaccessible or nearly identical to others. Those lights which were totally inaccessible during this survey have not been included in this nomination although they should be considered at a later date. They are the Sandy Neck Light in Barnstable and the Point Gammon Light in Yarmouth; both of these are on Cape Cod and both are privately owned.

continued

The results of the survey were evaluated by the Massachusetts Historical Commission and the United States Coast Guard, First District. This nomination represents a consensus of opinion on eligibility by those two agencies. One crucial aspect of the completed nomination will be its use as a planning document by the two agencies.

The selection criteria were a refinement of the established criteria for the evaluation of National Register nominations. The resources included were found to best represent the lighthouse theme in terms of their historic associations and structural integrity.

A detailed breakdown of the criteria considerations follows:

CRITERIA

1. ARCHITECTURE AND TECHNOLOGY
   a) rare features
      1. unique form, detail or type
      2. last surviving feature - one of a kind
   b) best example of its type
   c) known individual architect
   d) technological features of importance
   e) intact or original form

2. SITE

   a) evolving site (has long, significant history)
   b) unique location; topography
   c) complete complex or station

3. LANDSCAPE

   a) structure has aesthetic value; attracts tourists and photographers
   b) dominates landscape; prominent to local residents and tourists alike

4. LOCAL

   a) local interest and/or effort evident (i.e., town logo; advertising symbol; commitment to project concerning lighthouse; or if park surrounding it was designated)
   b) in or adjacent to local historic district
   c) near important local historic site

continued

5. STATE AND FEDERAL

a) status: listed in the National Register, determined eligible for listing in the NR, part of a local historic district
b) Coast Guard commitments to specific lighthouses

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
__PREHISTORIC	__ARCHEOLOGY-PREHISTORIC	__COMMUNITY PLANNING	__LANDSCAPE ARCHITECTURE	__RELIGION
__1400-1499	__ARCHEOLOGY-HISTORIC	__CONSERVATION	__LAW	__SCIENCE
__1500-1599	__AGRICULTURE	__ECONOMICS	__LITERATURE	__SCULPTURE
_X_1600-1699	_X_ARCHITECTURE	__EDUCATION	__MILITARY	__SOCIAL/HUMANITARIAN
_X_1700-1799	__ART	X_ENGINEERING	__MUSIC	__THEATER
_X_1800-1899	__COMMERCE	__EXPLORATION/SETTLEMENT	__PHILOSOPHY	_X_TRANSPORTATION
_X_1900-	__COMMUNICATIONS	__INDUSTRY	__POLITICS/GOVERNMENT	_X_OTHER (SPECIFY) maritime history
		__INVENTION		

SPECIFIC DATES 1679-1940 BUILDER/ARCHITECT various

STATEMENT OF SIGNIFICANCE

The lighthouses of Massachusetts possess integrity of location, design, setting, materials and workmanship, as well as significant historical associations with their specific localities, the state and the nation. Along 750 miles of coastline, these lighthouses mark not only the irregular bottoms of the shores, but also the locations and importance of those harbors whose entrances they announce, and the navigational paths between them. Perhaps better than any other class of structure they represent the scenic qualities of the coast and reflect the state's maritime heritage. Many of the individual lighthouses and complexes are associated with specific persons and events and reflect important advances in technology and engineering. The lighthouses of Massachusetts meet criteria A, B, and C of the National Register of Historic Places.

From early Colonial times, much of Massachusetts' history and economy have been intertwined with the sea: inland farmers and manufacturers exported their respective goods; fishermen harvested the waters and shellfish flats; sailors and merchant shipowners traded the world over. These activities were complicated, however, by the hazardous character of the coast and by its dangerous storms and fogs. Thus, lighthouses and other navigational aids such as horns and bells became crucial in developing and maintaining a large scale maritime economy.

Early in its history, Massachusetts served as the first landfall from Europe as well as a focus of the colonial coastwide trade. Vessels between Boston and the Colonies to her south of her had to traverse Vineyard and Nantucket Sounds and then round the arm of Provincetown into Boston Harbor. There were few intermediary harbors of refuge and boats would often lie in the Sound for weeks waiting for a favorable westerly wind. During the seventeenth and early eighteenth centuries, fishermen and shipowners constructed crude wooden towers which burned pitch as signal lights to mark particularly dangerous spots. Given the volume of traffic around Boston and the treacherous nature of the waters, it is not surprising that the colony's first two formally authorized lighthouses were Boston Light (#6), erected on Little Brewster Island in 1716, and Brant Point Light (#7), erected on Nantucket Island in 1746. These two eighteenth century lights, along with Plymouth Light (1768; #33) the Cape Ann Twin Lights (1771; #9), Nantucket Light (1784; #27) and the Newburyport harbor Twin Lights (1788; #29) were maintained and operated by the municipalities in which they were located, and were authorized by the Massachusetts General Court. Engineers and architects were privately engaged by the various communities, and local men were hired as keepers.

The location of these first Massachusetts lighthouses was largely determined by the lucrative West Indies trade. This involved the exchange of New England staples such as fish, salt, lumber, and meat for West Indian molasses, which was distilled into rum in Newburyport. The Revolutionary War interrupted this trade but did not halt maritime traffic or lessen colonial dependence on the sea. Navigational aids remained necessities, and their operation was quickly taken over by the newly organized Federal government, which greatly expanded the system and began to mark less heavily populated areas.

On August 7, 1789, Congress passed an act that created a Lighthouse Establishment and placed responsibility for lighthouses under the Treasury Department, where it was to remain until the early twentieth century. The Secretary of the Treasury was to personally direct the details of lighthouse work, all costs were to be deducted from the Treasury, and the appointment, dismissal and payment of keepers were approved successively by Presidents Washington, Adams, and Jefferson. Supply and inspection of lighthouses were generally performed by contractors directly responsible to the Treasury Department, but in some cases the work was sublet.

Although responsibility for lighthouses remained within Treasury, the supervising official and official designation changed several times. Secretary of the Treasury Alexander Hamilton placed the Lighthouse Establishment under the Commissioner of Revenue in 1792, but in 1802 the new Secretary, Albert Gallatin, resumed direct control. From 1813 to 1820, lighthouses were placed back under the jurisdiction of the Commissioner of Revenue and then finally given to the fifth auditor of the Treasury, Stephen Pleasonton.

Secretary Pleasonton had no maritime background and therefore no true means of understanding the technological needs of the lighthouses then extant along the nation's coast. Due to his vast inexperience, Pleasonton relied heavily upon Winslow Lewis, who had patented his adaptation of the Argand lamp in 1812 and had successfully managed to install the lamps in most of the country's lighthouses (see Description-Technology of the Lighthouse). Unfortunately, Lewis was over zealous toward his lamp and failed to recommend the far superior Fresnel lens when it became available as a replacement.

At this time improvements and issuance of supplies had to be ordered personally by Pleasonton and although Congress made appropriations for more lighthouses and illuminating devices in 1827, little action was taken. This was largely because Pleasonton was noted for the fact that he annually returned to the Treasury funds that had been delegated to lighthouses. Although Pleasonton ran the lighthouses at half the cost of those in England, he did not recognize that the English had a first rate system with the most technologically advanced lights, while the . . . "Lighthouse Service of the United States was in the most inefficient condition" (Heap, D. D., <u>Ancient and Modern Lighthouses</u>, p. 203).

continued

To remedy the situation, Congress appropriated additional funds to construct new lighthouses and improve old ones, but placed restrictions on all proposed work, stating that the Board of Navy Commissioners had to first examine the projects. In 1837, the Lighthouse Establishment received $414,009.39; in 1839, $770,256.62; in 1843, $187,178.99 and in 1847, $514,891.58. Congress also acted to improve administration, and in 1838 the Atlantic Coast was divided into six and the Great Lakes into two lighthouse districts. Each district was then assigned to a naval officer with a vessel at his disposal, and he was instructed to inspect and report on the conditions of the lighthouses. The inspectors invariably found disorganization and disrepair prominent. They noted that many unpopulated but nevertheless unsafe shores had no navigational aids, which seemed to exist predominantly around commercial ports. Additionally, the keepers were criticized for often haphazardly maintaining the lights; in some cases, keepers had used abrasive cleaning powders on the reflectors, which had completely worn away the silver surface, or had allowed the lamps and reflectors to become misaligned or bent out of shape altogether.

Congress was not, for some reason, overly alarmed by these reports, and instead of acting to remedy the situation merely appointed a committee in 1842 to determine whether or not the Lighthouse Establishment should remain under the authority of the fifth auditor. It was decided the the Establishment should remain a responsibility of Pleasonton's, even though an organized administrative system had never been created. Put under pressure, Pleasonton did report a general classification dependent upon the number and size of reflectors in each lighthouse, and another classification system that recorded the height and number of panes in the lantern, thus giving at least the appearance of an organized lighthouse system.

The following year, the Treasury Department dispatched a civil engineer, J. W. P. Lewis, to inspect all lighthouses on the New England coast. It marked the first time an engineer was used in any capacity in association with the Lighthouse Establishment. J. W. P. Lewis was Winslow Lewis's nephew, but nevertheless he publicly attacked the condition of the lighthouses--their poor administration as well as their outmoded technology.

At this point, Pleasonton's thirty-two year hold on the Lighthouse Establishment began to crumble. The Secretary of the Treasury sent two naval officers abroad to gather information on technological advances in 1845, and in 1847 an item was added to the lighthouse appropriation bill to provide assistance to shipwrecked mariners, for the first time. In 1850, an Act of Congress called for a systematic coloring and numbering of all buoys, and the first screw-pile structure, the Brandy-wine Shoal Lighthouse, was built based on the model of the English Eddystone Light. Although ample room for criticism of Pleasonton exists, it should be remembered that the number of

continued

lighthouses increased dramatically during his tenure - from 59 in 1820 to 297 in 1850 (Putnam, p. 52).

An obvious effort was underway to improve the lighthouse system and introduce new methods of construction and illumination. But the most important development in the history of U.S. lighthouses was to come in October 1852, when the lighthouses were reorganized under a Lighthouse Board which was to administer the lighthouse system for fifty-eight years, until July 1910. Congress had finally taken action, and it authorized the Board to be composed of two Navy officers, two Army engineer officers and two civilians, headed by the Secretary of the Treasury as the acting chairman. The Lighthouse Board was empowered to thoroughly review all aspects of the lighthouse system, and it did so successfully. The Board divided the coast of the United States into twelve lighthouse districts, each of which was assigned an army or navy officer as an inspector. Its first inspection resulted in a 760 page report that detailed the successes and failures of the system and the results of the latest individual lighthouse inspections. A crucial aspect of this report was the recognition that the most effective lighthouses were equipped with Fresnel lenses. Although only five such lenses had yet been imported from France, none had been produced in the United States. Sankaty Head LIght (#35) on Nantucket Island was the only Massachusetts light included in this initial group of Fresnel-equipped lights.

During the next ten years there were various experiments with fuel, more Fresnel lenses were installed, the steam whistle and bell buoys were invented, and the first lighthouse on the Pacific Coast was built. Additionally, prefabricated cast iron lighthouses began to be produced, largely accounting for the increase in numbers of lights from 297 in 1850 to 661 in 1880 (Putnam, p. 52). Aids to navigation improved dramatically as a result of these technical improvements, and in addition administrative improvements were made. Instead of using civilians for keepers, army or navy officers were trained and then transferred from one lighthouse to another, adding a sense of professionalism to the job. Further, an annual Light List was issued by the Lighthouse Board, which greatly aided mariners in identifying and locating lighthouses. The average annual expenses of the board were increased to approximately two million dollars, comprised of the following categories: supplies, repairs, salaries, light-vessels, voyage, fog signals, inspection, lighting of rivers, and surveys.

By the early twentieth century the United States had a first-rate navigational warning system. Nineteen lighthouse districts had been created, each of which was headed by a civilian who was usually a career lighthouse service employee. Annual maintenance of the entire system reached almost five million dollars by 1916 for the upkeep of more than twelve thousand light stations and buoys, fifty-one lightships and the salaries of 1,783 keepers. Organizational

continued

changes were deemed necessary to administer this huge agency, so in 1903 the Lighthouse Board was transferred from the Treasury Department to the Department of Commerce and Labor, and in 1910, it was reorganized as the Bureau of Lighthouses.

George R. Putnam was selected by President Taft to administer the new Bureau and in his twenty-five years as Commissioner it grew at an impressive rate. By 1924, Putnam ran the largest lighthouse system in the world, with responsibility for more than 16,888 aids. The system employed more automatic equipment than any other country. The use of electrified and automated equipment allowed Putnam to double the number of navigational aids and still remain within his budget by decreasing the number of employees. The Bureau kept abreast of international advances by sending representative to such meetings as that of the League of Nations in Genoa, Italy, concerning voyage and the lighting of coasts, and the first International Lighthouse Conference in London. An Act of Congress in 1930 provided medical relief and retirement medical relief to all light keepers and vessel crewmen, and throughout the following years continuous technological achievements were made and installed as quickly as possible. Radio-marker beacons were outfitted for radio-telephone transmission, range lanterns using compound lenses and four-volt miniature lamps that developed 11,000 candlepower and operated on primary cells with photronic cell control were placed in service, and an arrangement of flashing light characteristics to indicate buoys was in operation in 1935. Notices to mariners were scheduled to be broadcast by radio-telephone in 1937, and in the same year commercial electric power lines reached even the most remote lighthouses.

"The total personnel for the Bureau as of June 30, 1939, was 5,355, consisting of 4,119 full time and 1,156 part time employees, the former including 1,170 light keepers and assistants; 56 light attendants; 1,995 officers and crews of lightships and tenders . . ." (Secretary of Commerce, Annual Report, 1939, pp. 123-124).

"The total number of aids to navigation maintained by the Bureau at the close of 1939 was 29,606, a net increase of 849 over the previous year" (Secretary of Commerce Annual Report, 1959, p.115).

George Putnam retired in 1934, and under the Presidential Reorganization Act of 1939, the Bureau of Lighthouses was terminated and its activities were incorporated into the U.S. Coast Guard, where they remain today. This move also transferred jurisdiction of lighthouses back to the Treasury Department.

During the past forty years, the Coast Guard has sold or given a number of its lighthouses to private citizens or the Department of the Interior in an effort to cut costs and still maintain those which are active. New methods of

continued

technology have led to more and more automation, better lights, and even closed circuit televisions that patrol the waters from the lighthouse towers. On Cape Cod, Long Point Light (#23) and Wood End LIght (#43) have been converted to solar power, and presently abandoned light stations may again by occupied by Coast Guard personnel.

Despite these many changes, the vast majority of historic Massachusetts lighthouse complexes remain extant and in good condition. Without question, the Coast Guard has continued the efficient and progressive service to mariners that was begun by the Lighthouse Board and realizes the vital necessity to maintain and restore existing lighthouses.

continued

9 MAJOR BIBLIOGRAPHICAL REFERENCES

see continuation sheet

10 GEOGRAPHICAL DATA

Base Maps Boston & Providence
Scale 1: 250,000

ACREAGE OF NOMINATED PROPERTY 146.84

UTM REFERENCES indicated on individual forms

A ZONE EASTING NORTHING B ZONE EASTING NORTHING
C D

VERBAL BOUNDARY DESCRIPTION

This thematic group is confined to the coastal portion of Massachusetts in the counties of Barnstable, Bristol, Dukes, Essex, Nantucket, Norfolk, Plymouth and Suffolk.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
Massachusetts	025	Barnstable	001
		Bristol	005
		Dukes	007
		Essex	009
		Nantucket	019
		Norfolk	021
		Plymouth	023
		Suffolk	025

11 FORM PREPARED BY

NAME / TITLE Sarah J. Zimmerman, Director, Preservation Planning, MHC, Candace Jenkins Anne Tait, MHC with Leslie Fox and Nancy Salzman and Lauren Boudreau, USCG

ORGANIZATION Massachusetts Historical Commission

DATE 1986

STREET & NUMBER 80 Boylston Street, Suite 310

TELEPHONE (617) 727-8470

CITY OR TOWN Boston

STATE Massachusetts 02116

12 CERTIFICATION OF NOMINATION

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES X NO____ NONE____

Valerie A Talmage 3/16/87

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

In compliance with Executive Order 11593, I hereby nominate this property to the National Register, certifying that the State Historic Preservation Officer has been allowed 90 days in which to present the nomination to the State Review Board and to evaluate its significance. The evaluated level of significance is X National X State X Local.

FEDERAL REPRESENTATIVE SIGNATURE [signature]

TITLE HISTORIC PRESERVATION OFFICER U.S. DEPT. OF TRANSPORTATION

DATE APRIL 30, 1987

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

See Continuation sheet for listings

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER

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continued

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

MAY 4 1987

Section number ___ Page 174

Multiple Resource Area
Thematic Group

Name Lighthouses of Massachusetts TR
State MASSACHUSETTS

Nomination/Type of Review — Date/Signature

Nomination/Type of Review		Signature	Date
Cover Substantive Review	Keeper	[signature]	6/15/8
< 50 1. Cleveland LEDGE Light Station Substantive Review	Keeper	[signature]	6/15/87
	Attest		
2. Highland Light Station (Cape Cod Light) Entered in the National Register	for Keeper	Delores Byers	6/15/8
	Attest		
3. Gay Head Light Entered in the National Register	for Keeper	Delores Byers	6/15/8
	Attest		
4. Edgartown Harbor Light Entered in the National Register	for Keeper	Delores Byers	6/15/8
	Attest		
5. Derby Wharf Light Station Entered in the National Register	for Keeper	Delores Byers	6/15/8
	Attest		
6. East Chop Light Entered in the National Register	for Keeper	Delores Byers	6/15/8
	Attest		
7. Eastern Point Light Station Entered in the National Register	for Keeper	Delores Byers	9/30/8
	Attest		
8. Long Island Head Light Entered in the National Register	for Keeper	Delores Byers	6/15/8
	Attest		
9. Long Point Light Station Entered in the National Register	for Keeper	Delores Byers	9/28/8
	Attest		
10. Marblehead Light Entered in the National Register	for Keeper	Delores Byers	6/15/8
	Attest		

NPS Form 10-900-a
(3-82)

OMB No. 1024-0018
Exp. 10-31-84

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

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Multiple Resource Area
Thematic Group

Name: Lighthouses of Massachusetts TR
State: MASSACHUSETTS

Nomination/Type of Review			Date/Signature
1. Minot's Ledge Light	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
2. Nauset Beach Light	Entered in the National Register	for Keeper	Delores Byers 6/15/
		Attest	
3. Ned Point Light	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
4. Newburyport Harbor Light	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
5. Newburyport Harbor Front Range Light	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
6. Nobska Point Light Station	Entered in the National Register	for Keeper	Delores Byers 6/15/
		Attest	
7. Race Point Light Station	Entered in the National Register	for Keeper	Delores Byers 6/15/
		Attest	
8. Sankaty Head Light	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
9. Scituate Light	Entered in the National Register	for Keeper	Delores Byers 6/15
		Attest	
10. Straightsmouth Island Light	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	

NPS Form 10-900-a
(3-82)

OMB No. 1024-0018
Exp. 10-31-84

United States Department of the Interior
National Park Service

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Multiple Resource Area
Thematic Group

Name Lighthouses of Massachusetts TR
State MASSACHUSETTS

Nomination/Type of Review			Date/Signature
21. Hospital Point Light Station	Entered in the National Register	for Keeper	Delores Byers 9/28/8
		Attest	
22. Graves Light Station	Entered in the National Register	for Keeper	Delores Byers 9/28/8
		Attest	
23. Annisquam Harbor Light Station	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
24. The Beacon	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
25. Bird Island Light	Entered in the National Register	for Keeper	Delores Byers 9/28/8
		Attest	
26. Borden Flats Light Station	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
27. Boston Light Station	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
28. Brant Point Light Station	Entered in the National Register	for Keeper	Delores Byers 9/28/8
		Attest	
29. Butler Flats Light Station	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
30. Cape Poge (Pogue) Light	Entered in the National Register	for Keeper	Delores Byers 9/28/8
		Attest	

NPS Form 10-900-a
(7-81)

United States Department of the Interior
National Park Service

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Multiple Resource Area
Thematic Group

Name Lighthouses of Massachusetts TR
State MASSACHUSETTS

Nomination/Type of Review			Date/Signature
31. Chatham Light Station	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
32. Clark's Point Light	Substantive Review	Keeper	[illegible]
		Attest	
33. Tarpaulin Cove Light	Entered in the National Register	for Keeper	Delores Byers 6/15/
		Attest	
34. Three Sisters of Nauset (Twin Lights)	Entered in the National Register	for Keeper	Delores Byers 6/15/8
		Attest	
35. West Chop Light	Entered in the National Register	for Keeper	Delores Byers 6/15/
		Attest	
36. Wing's Neck Light	Entered in the National Register	for Keeper	Delores Byers 6/15/
		Attest	
37. Wood End Light Lookout Station	Entered in the National Register	for Keeper	Delores Byers 6/15/
		Attest	
38. Newburyport Harbor Rear Range Light	Entered in the National Register	for Keeper	Delores Byers 6/15/
		Attest	
39. Ten Pound Island Light	Entered in the National Register	Keeper	Delores Byers 8/4/8
		Attest	
40.		Keeper	
		Attest	