

LOG

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- LV 73 (VINEYARD) Revisited
- Human Interest — Life on Crossover Island
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Portland Head lighthouse in 1989. Photo by District Inspector Peter Robinson.

On August 7, 1989 Portland Head Light became fully automated and amid ceremonies, the keeper's house was transferred from the United States Coast Guard to the town of Cape Elizabeth. The town, which owns the surrounding Fort Williams Park, selected the architectural firm of Van Dam and Renner and the graphic design firm of Woodworth Associates to restore the house and create a permanent museum installation. **Christiane Mathan** and **William D. Barry**, the writers of this essay, were chosen as the historical researchers for the project.

A lively, straightforward project seemed in the offing when we signed on to research and write the history of Portland Head Light. After all, Maine's earliest lighthouse has long been part of the American grain; known through the powerful paintings of Edward Hopper, through its image on postage stamps and through the steadfast symbol of a major insurance company. No coastal vacation to Maine seems complete without a snapshot of Portland Head Light and hundreds of articles and a half-dozen books have touched on its lore.

Now six months old, our part of the project has proven more lively, though far less straightforward than we had imagined. Working with the U.S. Lighthouse Society and such informed individuals as Ken Black of the Shore Village Museum or Captain Charles Dunbar of the Portland Pilots has been as valuable as it has been delightful. The project has proven less straightforward through our discovery that navigating the reefs and shoals of secondary sources can be factually dangerous.

Books including William B. Jordan Jr.'s excellent *History of Cape Elizabeth* (Portland, 1965); Peter Dow Batchelder's *Lighthouses of Casco Bay* (Portland, 1975) and Francis Ross Holland, Jr.'s extraordinary overview *American Lighthouses* (New York, 1988) were invaluable in determining an outline. However no single volume focused exclusively on the lighthouse at Portland Head and no previous researchers have had the opportunity to examine primary sources on both the local and national level. Because of this, incorrect or imprecise information has tended to be passed along through otherwise reliable sources. For example, nearly every published source claims a Fresnel lens at Portland Head Light in 1850. A study of the general history of the Lighthouse Service tells us that this could not have been. Annual Reports of the Lighthouse Board clearly indicate 1855 as the year the first Fresnel lens was installed at the lighthouse. Our research allowed visits to the National Archives, the United States Coast Guard Academy, the U.S. Light House Society Library, Mystic Seaport and many first-rate collections in Maine. These visits have uncovered primary documents and original artifacts previously not considered. With these tools we constructed a more complete skeleton on which to base a history.

Portland Head

By Christiane Mathan & William D. Barry

The name 'Portland Head' predates by more than a century the name of the port city 'Portland' which was known as 'Falmouth Neck' prior to 1786. The headland, located in the agricultural, fishing and shipbuilding town of Cape Elizabeth, served as a natural lookout position. By the 1790's Portland had become America's sixth largest port, with its merchants gaining a large slice of the Atlantic carrying trade. Still, at the outset of this commercial boom, there were no lighthouses in all of Maine. Local petitions for a light at the entrance to the harbor began as early as 1784 with leading merchants calling on the Massachusetts legislature to act. Sadly, it took a tragedy to spark activity.

On the evening of February 4, 1787, a nameless, 90-ton sloop was castaway on the island opposite Portland Head. The ship's master and a boy were drowned, causing the local press to demand action. "Does not this unhappy accident evince the necessity of having a lighthouse at the entrance of our harbor? It is supposed that the loss of the vessel was occasioned by the want of one." A new petition led to a small appropriation of \$750 a few weeks later.

Though work began on the tower, the initial project was marked by legislative torpor and work delays. Late in 1789 the surrounding towns again petitioned the state to complete the work. That the Bay State took the project seriously is confirmed by an order from Governor John Hancock, dated February 3, 1790, requiring the State Treasurer to pay for the completion of "a small building for the keeper." Congress had recently

passed an act making the Federal Government responsible for aids to navigation. On June 9th Massachusetts transferred its seven lighthouses, including the incomplete lighthouse at Portland Head, to the Federal Government.

Fueled by a Congressional appropriation of \$1,500, work on the tower began again, this time by the Portland masons John Nichols and Jonathan Bryant. The plan called for a 58-foot tower of rubble-stone set in lime, but an inspection team discovered that a neighboring headland would block the light rays to the south and thereby suggested the tower be raised twelve feet. This additional height reduced the diameter to less than six feet requiring a smaller lantern and lamp sys-

tem than had been originally planned. The first source of illumination in the lantern was probably spider lamps.

Just before sunset on January 10, 1791, Portland Head Light flickered into operation. Its keeper, Captain Joseph Greenleaf, received his appointment, signed by President Washington, just a few days before. Though others sought the job, Greenleaf apparently was chosen as a reward for his service in the Revolutionary War. There was no salary for this position but Greenleaf was given quarters and the right to fish and farm. This changed two years later when the Government paid him \$160 a year for his services. The first era of United States lighthouse history was underway.



One of the earliest known photographs of Portland Head (circa 1858) shows the tower and keeper's dwelling as originally constructed, and the 4th order lens and bell tower which were established in 1855. Photo courtesy Maine Historic Preservation Commission.

Early keepers, who were generally appointed by the Collector of Customs, could boast no special training. Little is known about the early keepers or events at the Portland Head Lighthouse. Reports from 1797 suggest that the tower was in need of urgent repairs. Subsequent inspections recorded dampness and physical deterioration.

In 1813 Winslow Lewis, a retired sea captain, was awarded the contract to remove 25-feet of stonework and to build a new timber deck sheathed in copper. A ten-foot, octagonal, iron lantern "glassed with the best double glass of the Boston Glass House Manufacture" was then placed on the 47-foot shell. One year earlier, Lewis had sold a patent for a new kind of illuminating apparatus to the government. He agreed to refit all 49 of the nation's lighthouses with his Argand lamp and parabolic reflector system. Since the aforementioned repairs at the Portland Head Lighthouse were made at Lewis' suggestion, we can surmise that he also installed his lamps and reflectors around this time. Lewis' system was an improvement on the old spider lamps and his association with the lighthouse service was to last for years.

Little changed at Portland Head except for the building of a new keepers dwelling in 1816. The contract was awarded to Henry Dyer II of Cape Elizabeth to erect a one story dwelling house of stone, the cost not to exceed \$1200. In 1820, the country's aids to navigation came under the control of Stephen Pleasonton, the Fifth Auditor of the Treasury. Dedicated, hardworking, but lacking maritime knowledge and obsessed with spending as little taxpayer money as possible, Pleasonton retarded the technological development of aids to navigation in America for decades. Prior to 1852 at least nine of the thirty-one Cape Elizabeth wrecks occurred at or near Portland Head. The growing number of wrecks might be partially explained by the increased number of vessels sailing through the harbor entrance. However, many mariners directed their blame at the lighthouse service who made few and futile attempts to decrease the danger. Critics

pointed to a number of problems, among them a poor and badly kept illumination system. Mariners who had traveled abroad were familiar with the superior Fresnel lens system which had become the standard in Europe. So too, American keepers remained untrained. Joshua Freeman, keeper at Portland Head Light from 1820 to 1840, seems to have contributed more to making the lighthouse a recreation spot than as a guardian to mariners. In July of 1825 the local press carried a letter which noted:

In these sissing hot days I know of no excursion so pleasant as a jaunt to the Light House. There our friend Freeman is always at home, and ready to serve you,

'With bak'd and broil'd and stew'd and toasted, And fried and boil'd and smoked and roasted.'

There you can angle in safety and comfort for the cunning Cunner while old ocean is rolling majestically at your feet, and when wearied and fatigued with this amusement, you will find amusement in tumbling huge rocks from the brinks of steep and rocky precipices which dame nature has kindly placed there for your accommodation. Are you fond of sea-bathing? No place better than Ship Cove, near the Light House. Are you fond of cool punch, London particular, old cognac, and a hundred of etceteras, no man is better provided with these articles than Captain Freeman. Do you prefer a glass of 'Julip,' call on my friend _____ (who bye the bye, is fond of travelling in a certain two wheeled vehicle of Freeman's.) and he will make you as nice a glass as was ever poured down the neck of an Alderman of twice his bulk.

In short, Messers Editors, of all the retreats from the heat, dust and confusion of this dull town, I know of none equal to a ride or sail to the Light House; and earnestly recommend it to all poor devils, who, like myself, are afflicted with dyspepsia, gout, or any of the diseases to which human flesh is heir.

Freeman's celebrity as a concessionaire attracted the likes of the young poet, Henry Wadsworth Longfellow, a Portland native. His 1849 poem, *The*

Lighthouse, incorporated elements of several lighthouses and includes the famous lines "A pillar of fire by night, of cloud by day."

At various times throughout the period the lighthouse service found itself under the gun. Frequent questions about Pleasonton's refusal to employ the Fresnel lens, led to numerous investigations but no real change. The lighthouse at Portland Head remained a study in still-life. In 1850, in an effort to justify the cost of new lamps and reflectors at Portland Head, Lewis proclaimed:

In the last few years the improvements I have made in the lighting apparatus renders it more expensive. Independent of the improvement of the light produced, I calculate those I now make will last twenty years without any expense in repairs.

The next year brought a national investigation of the lighthouse service and an end to Pleasonton's long reign. The report on Portland Head was devastating and typical. Note in particular the condition of Winslow Lewis' new reflectors:

Portland Head Light

John F. Watts, keeper, seaman. Had no previous instruction; had not received any printed or written instructions to guide him in keeping the light; employed a man two days to teach him how to keep the light. Thirteen 21-inch reflectors, put up in September, 1850. Has no trimming-scissors; common seamstress scissors furnished. Lamps and burners put up in September, 1850; reflectors scratched; polishing-powder bad; frame too light; reflectors improperly placed in the frame, especially with reference to the sashes of the lantern. They require to be raised and placed closer together; if not placed closer, several will continue to be useless, as they are towards the land. Lantern new last September; took off top of tower and built it up anew in consequence of leaks; lantern floor of pine under sheet-copper; plate-glass, 30 by 21; sashes vertical and horizontal; no closets or storerooms (as usual) for supplies; no paint or whitewash for two years; no curtains; lantern painted red inside; nine feet in diameter; good size for the apparatus; one pane of spare glass;

trims every night at midnight: oil always bad, and all of it; lights up after sunset; (common whale oil, not sperm.)

On the 20th of May showed the oil to the United States marshal, who said it was ridiculous to expect good lights from such oil. It looked like lard oil; has to warm it till late in the spring; winter oil no better than summer oil; supplies delivered only once a year; reports the oil when bad, but obliged to burn it; got twenty gallons from the collector; does not keep a journal; makes reports quarterly.

Received August 23, 1850

300 gallons summer.

156 gallons winter.

40 gallons on hand.

Total 496 gallons.

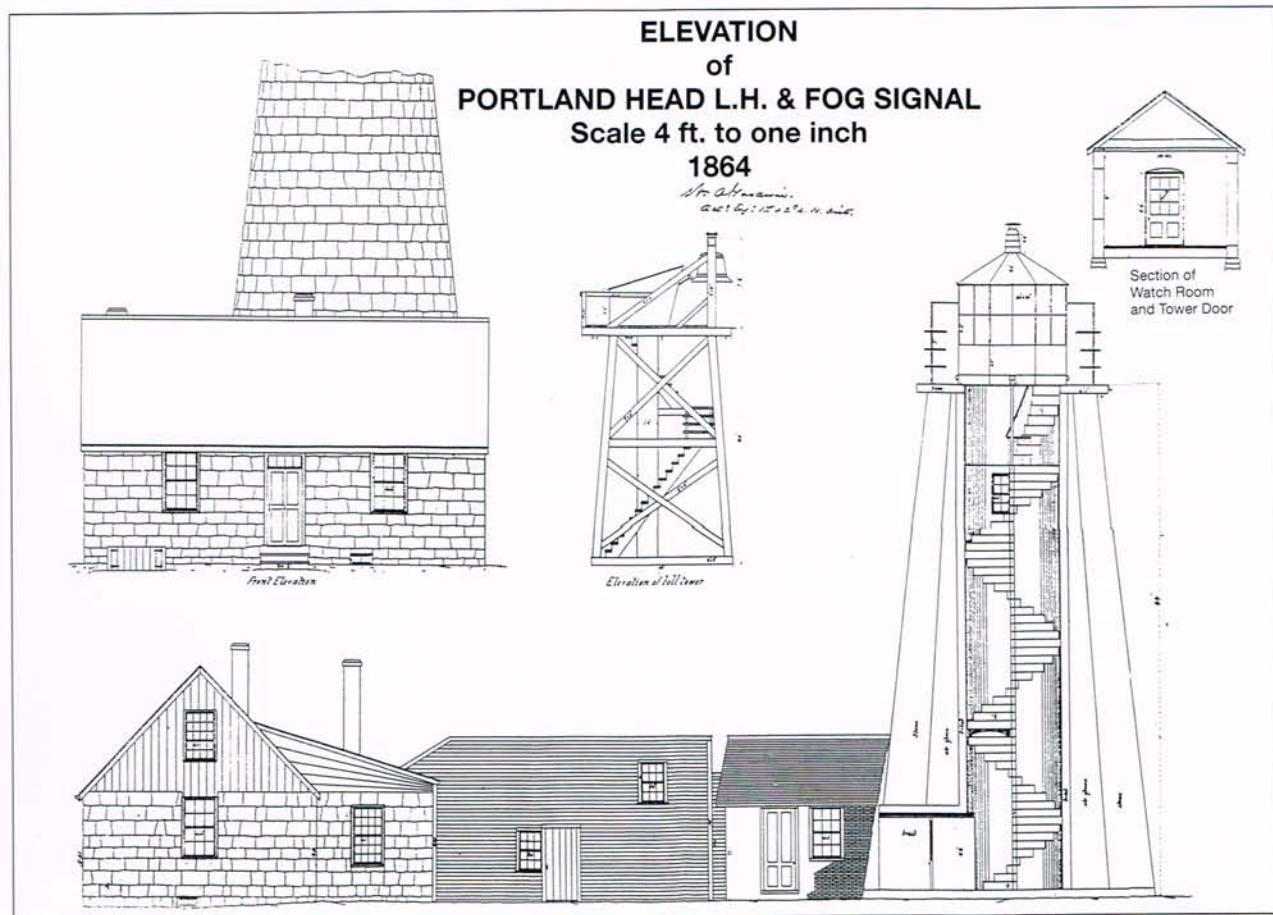
Has a fog-horn, and blows it for steamers, (private arrangement.) Dwelling-house in bad order; walls cracked; windows leak; no repairs since present keeper

too charge; no painting or whitewashing; has a well for water. Tower built of rough rubble masonry of trap rock, laid in lime mortar, pointed with cement; cracked and a good deal undermined by the rats, owing to holes being left of old beams when the new flooring was put in. All the wood-work of soft wood.

The extensive investigation led to the founding of the Lighthouse Board in 1852. The board was composed of army engineers, naval officers and a civilian scientist. Radical changes were to follow at Portland Head Light. Keeper Watts remained employed for a year and was followed rapidly by two other men. The next man, James Delano, was appointed in 1854 and proved adept for he stayed on until 1861. The year 1855 brought the installation of a 4th order Fresnel lens. The

tower was lined with brick walls and a cast iron staircase installed. A twenty-four foot wooden skeletal tower was built for a 1,500 lb. cast iron bell.

Portland Head Light passed into a new era of American Lighthouse keeping. Gone were the slovenly days of untrained keepers and poor equipment. Increasingly, the Lighthouse Board was turning each outpost into a well-run, professional operation. In December of 1864 the tower was raised twenty feet and a 2nd order Fresnel lens was mounted in the new lantern. This came as part of the changes called for after the captain of the 1,488-ton iron steamship *Bohemian* mistook a buoy for the pilot boat and ripped his vessel's hull on a ledge. In the panic, forty immigrants were drowned. The following excerpt is taken from a Portland newspaper from November 10, 1864: 'The Lighthouse





Joseph Strout – the patriarch of Portland Head's most famous family of keepers is shown here with his daughter Elizabeth. Photo courtesy of the Thomas Memorial Library, Cape Elizabeth, ME.

Board, we understand are determined that navigation into our excellent harbor shall be made perfectly safe and if present improvements are not sufficient, more will be added.' In 1869, the most famous family in the history of Portland Head moved into the keeper's quarters. Their patriarch, Captain Joshua Freeman Strout was a retired sea captain and a Cape Elizabeth native. His mother had served as housekeeper for the fourth keeper, his namesake Joshua Freeman. Captain Strout's wife Mary was appointed assistant keeper. Their son, Joseph Woodbury Strout succeeded his mother in 1877 as assistant keeper and in 1904 replaced his father as keeper. Joseph held this position until 1928.

The Strouts have come to stand for nearly everyone's romantic image of a lighthouse family. During their 60 year residence, Portland Head Light was swept by dramatic incidents and profound technological changes. Danger lurked close at hand and during his first year as keeper, Joshua was nearly thrown to his death when a huge wave destroyed the bell tower.

VESSEL WRECKED

One Result of Lowering the Portland Head Light

A Schooner Runs Ashore on Trundy's Reef

The fishing schooner C & B Morse, Capt. Pinkham, of Cape Porpoise, while entering this harbor Wednesday night, mistook a light on the Cape Elizabeth shore for Portland Head light, and the vessel ran ashore near Trundy's Reef, and will be a total loss. She carried a crew of five men, two of whom rowed in a dory to Bangs Island, and the other three landed near Cape Cottage. She was a market fisherman of about 14 tons, owned by the master.

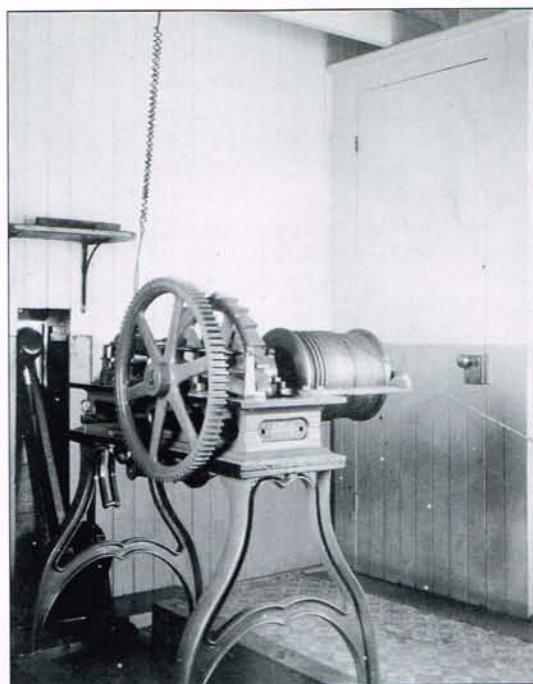
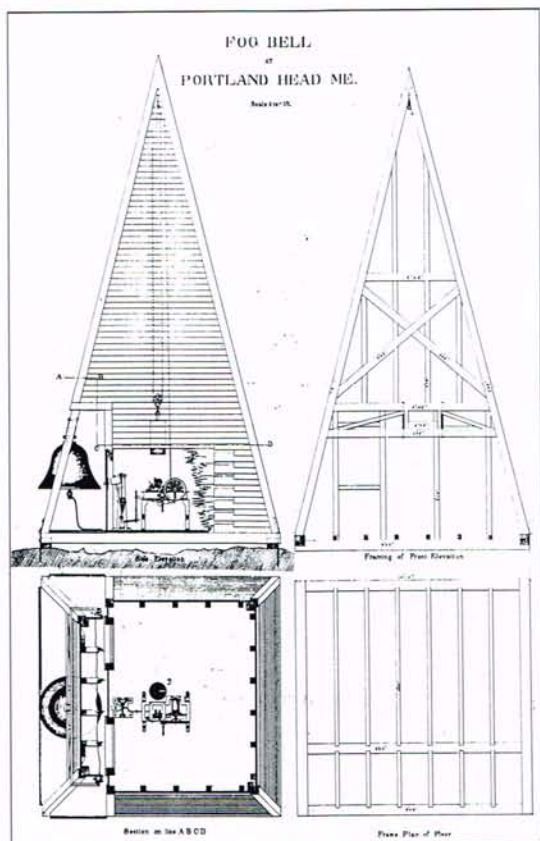
Since the light house board cut down the height of Portland Light, there have been numerous complaints from our sea faring men and vessel owners that there was danger of mistaking the light in houses on shore, so low down is the beacon, for the light set up for their guidance through the channel. The above accident is due to this piece of folly.

On Christmas Eve 1886 the Strouts rescued the crew of the three-masted bark *Annie C. Maguire* which had piled up on the rocks below the tower. In the following year, the schooner *D.W. Hammond* came ashore to the north of the lighthouse. Once again the family scrambled along the rocks to drag a frozen crew to safety. In the tradition of Joshua Freeman, the Strouts were warm to all visitors including the aged Longfellow, now a favorite poet of the Victorian Age.

In 1870 a pyramidal bell tower, housing a 2,000 lb. cast steel bell from Sheffield, England, was built to replace the tower lost in the gale of 1869. A Stevens Striking machine was installed to operate the bell. A Daboll trumpet from Monhegan Island was transferred to Portland Head and placed on a small engine house just two years later. The bell was relegated to standby status. Experiment and improvements to aids to navigation were now continual. However, the completion of Halfway Rock Light Station in 1871 robbed Portland Head of some of its importance, at least in the eyes of the Lighthouse Board who reclassified it as a harbor light. There is evidence that there may have been a 3rd order lens installed for a brief period of time. A verification of characteristics from engineer Charles Blunt on November 23, 1880 describes the Portland



The bark *Annie C. Maguire* on the rocks at Portland Head on Christmas Eve 1886. Photo courtesy of Schooners & Sails, Cumberland, ME.



Typical fog bell striking machine of the type that was installed at Portland Head. A descending weight powered the machine which caused a sledge hammer to strike the bell at timed intervals. USLHS photo.



In the latter part of 1884, this scaffolding was erected to raise the height of the tower 20 feet, the height which it had been just one year earlier. During the time when the tower was at the lower level, mariners complained that they could not distinguish the light from those on ship masts or shore lights. Photo courtesy of the Maine Historic Preservation Commission.



Above - This photograph, taken between 1887 and 1891, shows the brick fog signal house (at right) constructed to house the caloric engine transferred from the Boston station. The horn of the Daboll trumpet can be seen on the roof. The structure at far left is probably a barn. Photo courtesy of the Maine Historic Preservation Commission.



This 1890 photo shows the remains of the demolished keeper's house and piles of lumber which were used in the construction of the present elegant double dwelling. Photo courtesy of the Cape Elizabeth Historical Society.



In 1938 a three horn Diaphragm Chime Horn finally replaced the Daboll trumpet (seen at left). The center and largest horn, of the new system, pointed to the Halfway Rock lighthouse. The two smaller horns were directed to the Portland Lightship and the harbor. Note the old bell mounted at right. National Archives photo.

Head Lighthouse as having a fixed white 3rd order lens. Three years later the tower was reduced in height by twenty feet and a 4th order lens went into operation. Results of weakening the light soon became evident and forced a great outcry from the local mariners.

After a great deal of argument colored the pages of the press, it was decided to restore the tower to its former height and reinstate a 2nd order lens.

In 1891 the old keeper's house was replaced by the elegant two-family home designed by the architects, Royal Luther and Edward P. Arams. For the years to come, it housed both the keeper's and assistant keeper's families. In 1900 the tower itself was extensively repaired and repointed. Two four-horsepower Hornsby Akroyd oil engines replaced the 1887 caloric engines in the fog signal building. The station was also connected to the Portland Water system.

In 1910 the Bureau of Lighthouses replaced the old Lighthouse Board. Fort Williams on the grounds near the lighthouse saw an increase in activity and for some years to come reports of damage to the station from the firing of guns were frequent. After the retirement of Joseph Strout in 1928, John W. Cameron, aged seventy, became keeper. During his brief service electricity was brought to the station. The source of illumination in the tower, a vapor lamp burning kerosene, was replaced with a 500 watt Mazda lamp bulb. The light characteristic at Portland Head changed for the first time from a fixed light to an incandescent flash of two seconds followed by a two second eclipse. Ten years later the fog signal characteristic also changed when the Daboll trumpet was finally replaced by a three-horn diaphragm chime horn. Following in the footsteps of keepers Strout and Cameron were Frank O. Hilt and Robert Thayer

Sterling, last of the civilian keepers. In 1939, the Bureau of Lighthouses was absorbed by the United States Coast Guard. The merger of services occurred during the tenure of Captain Frank O. Hilt, a retired mariner who is well remembered for constructing a giant checkerboard near the base of the tower. His assistant became keeper in 1941 and retired in 1946. Sterling was the author of the much read *Lighthouses of the Maine Coast and the Men Who Kept Them*.

With the retirement of Sterling, a new era began as the U.S. Coast Guard began appointing relatively short term keepers from its own ranks. Fourteen different keepers were stationed at Portland Head Light in the years before 1989. In 1958 the 2nd order Fresnel lens was replaced by a DCB-36 Rotating Optic, as part of the growing trend toward automation. The present optic, a DCB-224 Rotating Beacon, and all other functions are now monitored from the Coast Guard Base in neighboring South Portland.

Automation has not brought an end to the drama that has always swirled with the sea around Portland Head. The newly refurbished light station remains as important an aid to navigation as it has been during its 200 years of service. Despite the use of highly accurate piloting systems aboard tankers and fishing boats alike, pilots, fisherman and yachtsmen assure us that their reliance on the lighthouse has not changed. The familiar white tower and its flash continues to assure the mariner that he has arrived home after the adventure or tedium of a voyage.

Chris Mathan is a graphic designer who has recently settled in Portland, Maine. Graduating from the Nova Scotia College of Art and Design in 1980, she has lived and worked in New York and London until 'hightailing it' to Maine where she has been a summer resident of Vinalhaven Island since childhood. She has worked on various exhibits and in 1983-84 was part of Rusty Russell Projections in the production of 'South Street Venture,' a multi-media presentation of the history of New York City's South Street Seaport.

William David Barry is a writer, historian and exhibition consultant based in Portland, Maine. A graduate of the University of Vermont (M.A., 74), he served six years as curator of research at the Portland Museum of Art. In that capacity he co-curated exhibitions including *The Revolutionary McLellans* and the marine exhibition *Sea & Sail*. He has authored or co-authored four books including *Tate House: Crown of the Maine Mast Trade* (with Frances Peabody).

Portland Head Light/Chronology

- 1787 Work begun on lighthouse at Portland Head.
- 1790 Congressional appropriation to resume construction. Small keeper house built (not adjoining).
- 1791 Jan 10 PHL in operation. Tower 72' from base to lantern deck. 16 whale oil lamps (Spider lamps).
- 1797- Various reports indicating
- 1811 'repairs urgently needed' — citing pointing, plastering and whitewashing the tower.
- 1813 Winslow Lewis awarded contract to make following changes to tower: removal of 25' of stonework; new timber deck sheathed in copper to be laid over tower. 10' octagonal iron lantern glassed with best double glass of Boston Glass House Manufacture. (These changes at Lewis' suggestion).
- * No records have been found indicating when PHL received its first set of Winslow Lewis' lamps and reflectors. It is assumed it would have to have been at or just prior to the aforementioned alterations.
- 1816 One story dwelling built to replace first keeper's house. 34' x 20', two rooms, cellar and porch in rear.
- 1821 'Apparatus' at PHL removed and complete new set of 15 15" reflectors with lamps installed.
- 1842 I.W.P. Lewis reports: 2nd class fixed light. 15 15" reflectors. Visibility: 12.62 miles. Tower 43'. 79' from center of light to high water mark.
- 1850 13 21" reflectors installed by Lewis. Promised to last 20 years.
- 1851 Top of tower removed. New lantern built.
- 1852 Lighthouse Board Report: Keeper — no instructions, no trimming scissors, reflectors scratched, polishing powder

- bad, frame too light, reflectors improperly placed in frame, no closets or storerooms for supplies, not painted or whitewashed for two years, no curtains, lantern painted red inside, oil (common whale oil) always bad, keeper lights up after sunset. Keeper has private arrangement to blow fog-horn for steamers. Dwelling house in bad order. Tower walls cracked (masonry) and a good deal undermined by rats.
- 1855 4th order fixed Fresnel lens installed. Tower lined with brick walls. Cast iron staircase installed. 24' wooden skeletal frame tower built south of tower for 1,500 lb. cast iron bell from Cape Elizabeth Lighthouse.
- 1865 Tower raised 20 feet (101' — light above high water). 2nd order Fresnel lens installed.
- 1867 Minor repairs to fog bell machinery, lantern ventilators and second order lamp fitted with valves and plungers.
- 1868 Minor repairs. Illuminating apparatus examined, watch-room call bell set. Tower whitewashed. Dwelling and interior iron-work painted.
- 1869 September gale destroyed fog bell tower.
- 1870 Pyramidal bell tower built. Ca. 2000 lb. bell from Vickers & Sons, Sheffield, England. Stevens Striking Machinery.
- 1872 Daboll trumpet from Monhegan Island brought to PHL. Small wooden engine house built, Daboll trumpet placed atop.
- 1874 Second class Daboll trumpet replaced Daboll trumpet.
- 1880 Ext. walls of fog signal building clapboarded and painted. Int. lined with brick and lathed and plastered. Permission sought to build wooden structure. (?)
- 1881 Int. woodwork of house paint-

- ed. Minor repairs to fog signal building and fog bell machinery.
- 1883 Tower lowered approx. 20'. 4th order lens installed. Minor repairs. Frame fuel house and picket fence built. Mineral oil lamps substituted for lamps using building lard oil. Minor repairs to fog signal.
- 1885 Tower raised 20'. 2nd order lens installed.
- 1887 Brick house 20 $\frac{1}{2}$ ' x 29 $\frac{1}{2}$ ' with coal bunkers built for caloric engine taken from Boston Light Station; located where Pyramidal bell tower had stood. Oil engine repaired.
- 1891 Old stone dwelling demolished. Framed double dwelling 42 $\frac{1}{2}$ ' x 42' built on same foundation. Brick oil house 8 $\frac{1}{2}$ ' x 8 $\frac{1}{2}$ ' built. Watch-room and dwellings connected by speaking tubes and minor repairs made to service-room. Both fog signal engines overhauled.
- 1899 Characteristic of fog signal changed. Blast 5 sec., Silent 5 sec. Auxiliary — bell struck by hand.
- 1900 Rubble tower extensively repointed. Many stones removed and replaced. 2 4-horsepower oil engines with air compressors installed replacing Caloric engine. Cooling tank built. PHL connected to Portland Water System.
- 1904 Suggestions from Commander U.S.N. to sheath dwelling to prevent damage from gunfire at Fort Williams. 1st class Daboll trumpet in duplicate.
- 1905 Severe damage to plaster in dwelling from guns fired at Fort. Rooms sheathed in paper and cloth.
- 1917 16 panes of glass (in tower) shattered due to gunfire concussion.
- 1928 May 10. Electricity installed at PHL. New lighting equipment

consisted of 500 watt Mazda lamp bulb; incandescent flash of 2 second, 2 second eclipse.

1931 New bell from Staten Island to replace English cast iron bell which developed crack.

1938 3 horn diaphragm chime replaces Daboll trumpet. Mounted on steel tower on N.E. side of whistle house. Largest of 3 horns points to Halfway Rock, smaller ones to lightship and harbor. Horn blasts 4 sec., silent 16 sec.

1958 2nd Order lens removed (sent to Boston). Replaced by airways type beacon. 4 prismatic lenses which rotate on a shaft, magnifying 2 1000 watt Mazda lamps.

1962 Monstrous waves cracked 3 walls of engine house and caused other damage.

1975 Storm battered engine house. Knocked out fog horn, extin-

guished beacon. Diesel fuel leaked from storage tanks. Fog signal destroyed and replaced by whistle from Halfway Rock.

1978 New engine house built. House resided in aluminum siding.

1988 From StructAlt No. 32 dated 1988: PHL contains DCB-36 rotating optic with 1000 watt lamps and a 3 mile sound both controlled by the light keeper. Sound signal emitter is located on east side of the sound signal building. There is an emergency sound signal which is controlled manually. There is a directional light which provides a white, red and green sector (obsolete and to be replaced) Standby power provided by 15 KW automatic start generator located in sound signal building. Tower in good condition.

Buildings require minor repairs — aluminum siding corroded. Light keeper controls sound signals at Spring Point Ledge Light, Ram Island Ledge Light and Cape Elizabeth Light via Motorola INTRAC radio link.

1991 Main optic is a DCB-224 which rotates at 7.5 RPM. Emergency light is a 190mm lantern with 2.03 amp lamps and CG-6P lamp-changer. Tricolor directional light is a Model 8601, Sector Navigation Light manufactured by Lumen Technology. Sound signal is a ELG-300/02 Emitter and CG-1000 Power Supply. Emergency sound signal is a FA-232. Both are controlled by a Videograph Model B Fog Detector.



Right - The power of the sea is all too evident in this old photo of a storm at Portland Head. Above - Cracks in the brick work can be seen on the right side of the fog signal building (structure at right). The bell stand that held the 1,200 lb. bell (in the foreground) was completely destroyed. Photo by Charles Merrill, courtesy of the Evening Express.

