



THE STORY OF PEMAQUID POINT LIGHTHOUSE

H. LIBBY

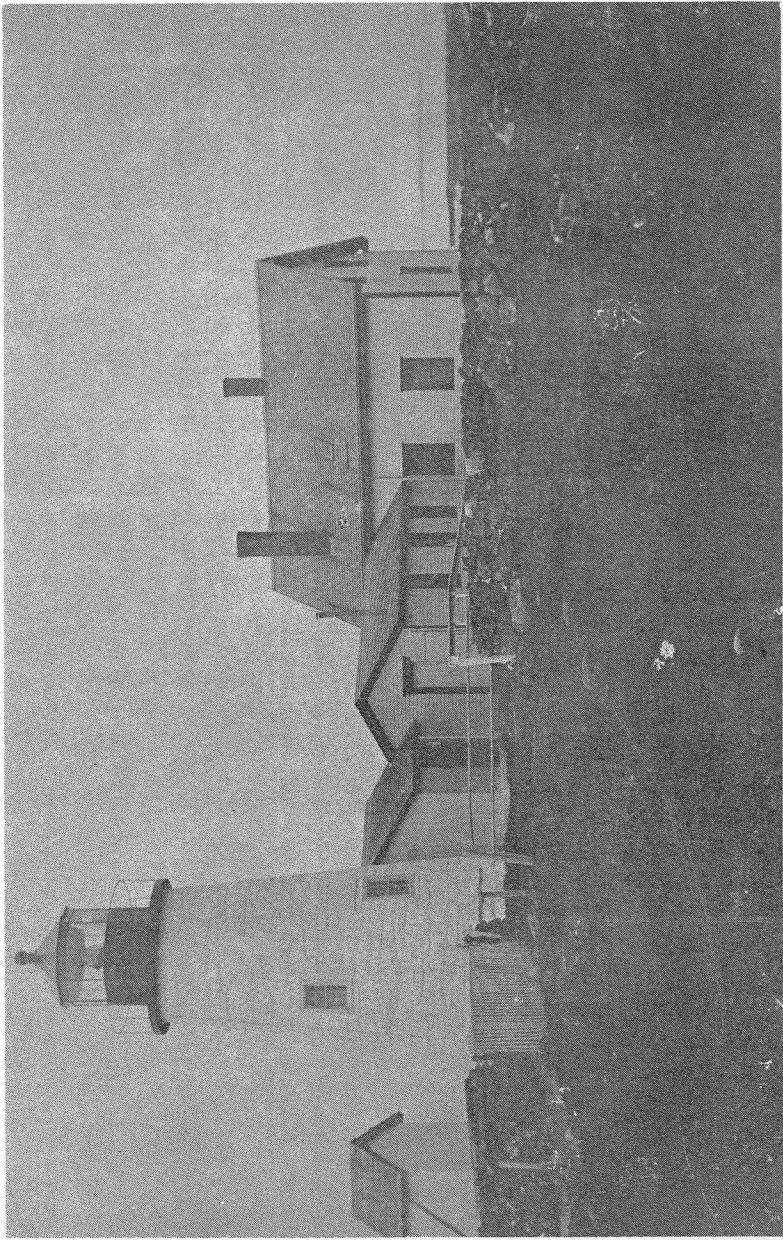
For
ALBERT

BRETON FISHERMEN'S PRAYER

Dear God, be good to me; The sea
is so wide and my boat is so small.
Amen.

CONTENTS

The Building of Pemaquid Point Lighthouse.....	1
The Building of the Keeper's House.....	4
Rebuilding of Pemaquid Point Lighthouse.....	4
Rebuilding of Keeper's House.....	7
The Oil House.....	7
The Fog-Bell House.....	7
Lighthouse Park.....	7
The Fisherman's Museum.....	8
Today's Keeper of the Light.....	8
The Rocks.....	9
How to Find Pemaquid Point.....	9
How to Identify a Light.....	10
Lighthouse Keepers of Pemaquid Point.....	12
History of Lighthouses.....	13
First Lighthouse in the New World.....	14
The Lighthouse Establishment.....	15
Early Lights.....	16
The Argard Lamp.....	17
The Fresnel Lens.....	19
The U.S.Coastguard.....	23
Order of Lights.....	24
Dates of Interest.....	26
Sources.....	27



PEMAQUID POINT LIGHTHOUSE - 1857

BUILDING A LIGHTHOUSE.....

In spite of Maine's harsh coast justifying navigational aids for fishing, the major industry of this state during the seventeenth and eighteenth century, it was not until 1826 that Congress appropriated \$4,000 to build a light station at Pemaquid Point, Maine having become the major source of timber for the new ships as well as the home of many a merchant mariner.

That same year Samuel and Sarah Martin sold to the Federal Government a few acres at Pemaquid Point for \$90. The following year Pemaquid Lighthouse was built.

Isaac Ilsley, Superintendent of Lighthouses in the State of Maine in 1827, contracted with Jeremiah Berry, Bricklayer of Thomaston, "to build, finish and complete a Lighthouse and Dwelling House at Pemaquid Point."

The tower was to be of suitable split, undressed stone; the form round, the foundation to be sunk as deep as may be necessary to make the whole fabric secure; all to be laid in good lime mortar. The base of the tower to be eighteen feet, and at the top, ten feet. The walls were to be three and one half feet thick, and to be uniformly graduated to two feet at the top, where an arch was to be turned, on which there was to be a disk of soap stone eleven and a half feet in diameter, five inches thick, fitted with a "scuttle" by which to enter the lantern, the glassed-in section that housed the light itself. There was to be a circular stair of hard pine, clear of sap, seasoned and planed, with an iron ladder at the top reaching to the "scuttle".

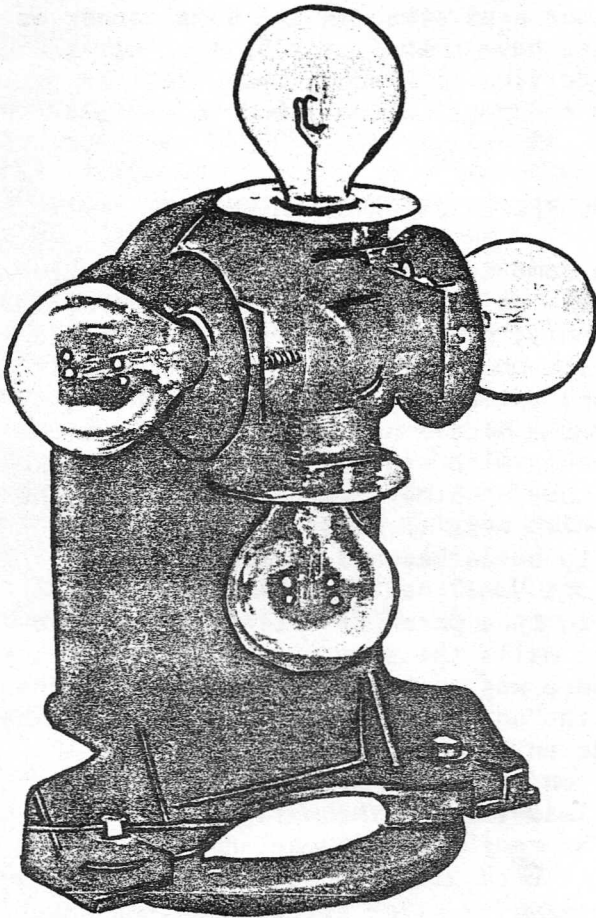
Dividing the west entrance to Muscongus Bay,

from the east, the entrance to John's Bay, Pemaquid Point has a Fourth-Order light*, its white light flashes every six seconds during the night with an equivalent fixed intensity of 9950 candlepower which has a nominal range of visibility of 14 nautical miles. A sun relay system turns the light off and on at dusk and dawn.

The tower stands thirty feet above ground; the octagon iron lantern housing the light, 48 feet above ground, the whole is 79 feet above mean sea level. There is an iron railing around the glassed-in lantern. Inside the Fresnel lens the 250 watt bulb is made especially for lighthouses and is fixed into a four-bulb lampchanger which turns automatically when a bulb burns out, and a fresh bulb takes the position of the burned-out one. A series of batteries at the foot of the tower are equipped with a trip mechanism worked by a mercury switch whenever there is a power failure; otherwise the light is connected to the regular electrical system of the area.

But the simple electric bulb and Fresnel lens is a far cry from the original lighting mechanism. On the same day that Mr. Ilsley contracted with Jeremiah Berry to build the tower, he also entered into a contract with Captain Winslow Lewis, of Boston to "fit up the Light House at Pemaquid Point with ten patent lamps and ten sixteen inch reflectors" for the cost of \$500. Other equipment included in the contract was "six double X tin butts, to hold ninety gallons each and

* The rather complicated specifications for the eight orders of lights are explained on page 24.



A WALLACE & TIERNAN LAMPCHANGER

painted three coats, and six wooden horses, two spare lamps, one lantern canister and iron trivet and double tin wick box and one double tin tube box, one oil carrier, one glazier's diamond, one torch, one hand lantern and lamp, two pairs scissors, two files, two tube cleaners, one stove funnel, one oil feeder and all other apparatus, in the same manner as Light-Houses have been fitted by said Lewis with the Addition of Black's apparatus for conducting the heat to the lamps to the oil therein."

AND FOR THE KEEPER AND HIS FAMILY.....

Within the same contract were instructions to build a dwelling house of stone, thirty-four feet by twenty, one storey, eight feet in the clear and the walls eighteen inches thick. Instructions called for two rooms, with a chimney in the middle and a fireplace in each room, together with closets and shelves "back of the chimney". Stairs were to lead into the chambers which were to be partitioned off, all rooms to be lathed and plastered with double floors "well nailed". Attached to the house was to be a porch or kitchen ten feet by twelve, the walls the same as the dwelling house. There was to be a chimney built in the kitchen with "an iron crane, trammel and hooks; on one side an oven of middling size with an iron door, on the other side a sink with a gutter to lead through the wall, out of the house." The roof of the house and kitchen was to be covered with good seasoned boards and shingles. The price agreed upon for the tower and the house: \$2,800.

THIS TIME, FRESH WATER.....

It is not certain what went wrong with the construction of the first stone tower, but

eight years after it was built, in 1835, when John Chandler had succeeded Isaac Hlsley as Superintendent of Lighthouses in Maine, a new contract was drawn up with a Joseph Berry, mason of Georgetown, to "rebuild, finish and complete the Tower at Pemaquid Point". The specifications and instructions were identical in almost every way, except for one or two curious directives. "The whole to be laid in the best lime mortar; the same to be used never to have been wet with salt water; the mortar to be mixed with fresh water."

Another addition to this contract was regarding the way in which the stones of the tower were to be laid. "It is hereby stipulated... that the walls of the Tower are to be built solid with Stone and Mortar, in a single wall, or where there is more than one thickness of stone, the walls are to be carried up solid and bound together, and not to be done by building two walls, and filling in, in the middle, and all the stones are to be so laid that the upper side of the stone will not incline downward on the inside, and thereby tend to convey the water through the wall." The price of this new tower, for which Joseph Berry was authorized to use "existing materials", was \$1,395.

"GOOD WORKMAN LIKE MANNER....."

A postscript at the foot of the contract, in the hand of Isaac Dunham, Pemaquid's first light-keeper, states: "This May Certify that Capt. Berry has compliated the Light House in a good workman like manner and according to the Contract in every way - and I will vent to say, a better tower and Lantern never was built in this State. Also the Lamps, reflectors and apparatus is according to Contract."

Paraguay Light House August 10th 1835

This May Birdy that "Capt. Brown" has purchased the Light House in a good manner like Mannors, and and according to Contracts in my way = and will rent to say, a better than and I am sure than built in this State = Also the lamps reflectors and apparatus is according to Contract

Chas. Dunham

over

A NEW HOUSE.....

The stone dwelling house must have suffered the same deterioration, for in 1857, thirty years after its construction, a new keeper's dwelling was built, this time of wood. Now housing the Fisherman's Museum, the dwelling looks much as it did when an early photograph was taken in 1857 showing a stone wall where there is now a white picket fence.

WHEN THE LIGHT CAN'T BE SEEN.....

On the south side of the tower is a small brick house built in 1897 for the hand-operated fog bell. This was replaced the following year by a new fog bell with duplicate Shipman oil-burning steam engines to ring it. There was yet another change the next year when the Shipman fog-signal engines were replaced by a Stevens striking machine, for which the wooden tower was built to house the weights. The light-keeper, at the onset of fog or poor visibility, would wind up the Stevens machine, the weights traveling to the top of the tower, and then for the next eight hours, the bell would be struck at regular intervals, the weights slowly descending, much as in a cuckoo clock.

TO HOUSE THE OIL.....

Further to the west the small brick house, built in 1896, once held the oil that fueled the lighthouse lamps. A tender would sail as close to the rocks as possible, sending a heavy line ashore, and transfer fuel.

LIGHTHOUSE PARK.....

The Lighthouse tower, the light-keepers former home, now the Fisherman's Museum is surrounded by Lighthouse Park, open to the public for a

small charge. It offers drinking water, picnic tables and toilet facilities as its amenities.

The tower itself is not accessible to the public, but the adjoining museum has an identical fourth-order Fresnel lens that can be examined at close range. A fourteen-foot chart of the entire coast of Maine is also on display, so that Pemaquid's location in relation to the rest of the state can be understood.

THE MUSEUM.....

The Fisherman's Museum, owned and operated by the townspeople of Bristol, offers the public many unusual displays of fishing techniques of the past and present. There is also a navigational room with old charts and navigation aids as well as a picture gallery with some fine half models of fish boats and many photographs of present day fishing methods as well as those at the turn of the century. The museum is open 7 days a week during the summer and by appointment during the winter. The museum depends entirely upon public donations.

TODAY'S KEEPER.....

Pemaquid Lighthouse is under the jurisdiction of the United States Coast Guard, and carries the identification number of 287. The responsibility of maintaining Pemaquid Lighthouse,

as well as all navigational aids in the area, falls to the Boothbay Harbor Coast Guard Station. Pemaquid is included in the First Coast Guard District, which extends from the Canadian border to the southern border of New Hampshire. There are twelve districts in all, encompassing all inland and coastal waters of the United States, its territories, and the Trust Territory of the Pacific.

THE ROCKS.....

The interesting and unusual backbone of rock that pushes out into the Atlantic under the Lighthouse tower, consists of granite, the gray, igneous rock formed by Volcanic activity and contains some quartz, feldspar and mica. Gneiss, a metamorphic rock, with its original structure changed by pressure or heat, can be found on both sides of the granite. The tilted layers could have once been sedimentary rocks before mountain-making movements compressed and squeezed them into their present shape.*

HOW TO FIND PEMAQUID POINT LIGHTHOUSE.....

Pemaquid Point Lighthouse is one of the most beautiful, most photographed and painted lighthouses on the eastern seaboard, standing on the spectacular out-cropping with a backdrop of dark spruce so familiar to the Maine scene.

Lying approximately halfway up the coast of Maine, Pemaquid Lighthouse is between Boothbay Harbor and Muscongus Bay. It can be reached by taking Route 130 from U.S. Route #1 at Damariscotta and by following it to its end at the foot of the lighthouse tower.

There are small restaurants and gift shops in the area. Just three miles from the lighthouse

* Catherine Robinson, Pemaquid Point. "Rocks of Pemaquid Point".

is the charming and unspoiled village of New Harbor, still an active fishing community, with its harbor filled by lobster and fishing boats. A visitor to the area can sit out on the deck of a harborside restaurant, eat freshly boiled lobsters, and watch the fleet return from the sea to unload their catch at the docks.

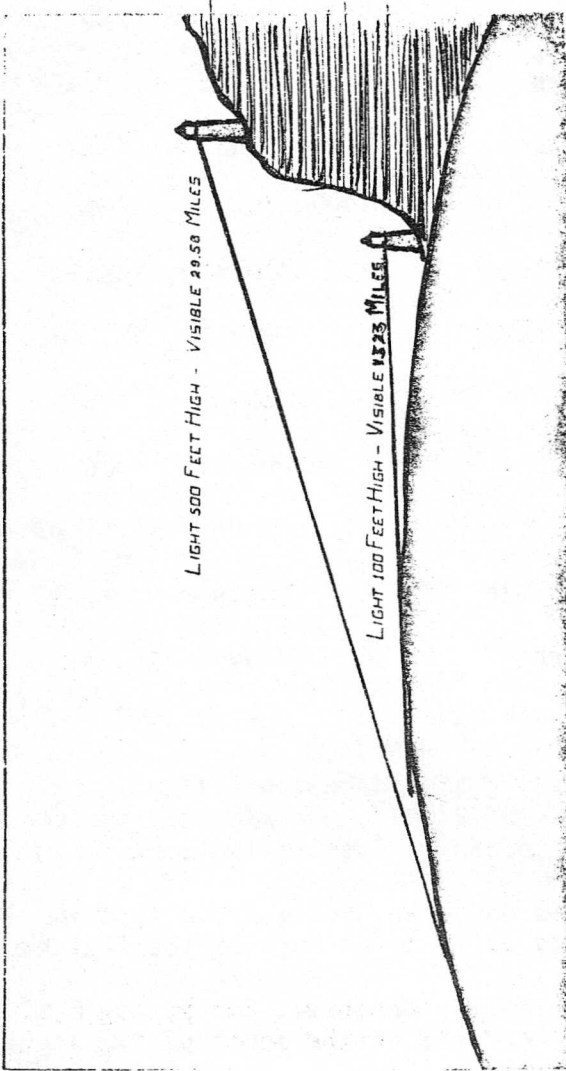
Standing at the end of the Pemaquid Peninsula, the plain white tower of the lighthouse is not so large as many of her sister lights; her beam flashes out across the ocean to answer the lights of four companions. Monhegan Light lies to the south east, flashing every 30 seconds; the steady red sector of Ram Island light is to the west; the Cuckolds is situated on the southern end of Cape Newagen, with group flashing every 6 seconds. On Seguin Island, two miles south of the mouth of the Kennebec River, the light is a fixed white.

THE NAVIGATOR'S BIBLE....

To identify a light in the U.S. today, all navigators need only a stop-watch or clock with a second-sweep and the Coast Guard Light List. This navigator's bible contains full information about every light and aid to navigation in American waters.

Lights may also be identified by their use of red or green panels, as in the Ram Island light. The effective range of a color beam is comparatively short. Red is only half the range of white; green is one-fourth the range of white.

The luminous and geographic range of a light provides another means of identification. The luminous range is governed by the intensity or candle power of the light; the geographic range is controlled by the height of the light.



LIGHT 500 FEET HIGH - VISIBLE 29.58 MILES
LIGHT 100 FEET HIGH - VISIBLE 13.23 MILES

PEMAQUID LIGHTHOUSE KEEPERS

	<u>Date of Appointment</u>
Isaac Dunham	November, 3, 1827
Nathaniel Gamage, Jr.	June 13, 1837
Jeremiah S. Mears	August 18, 1841
Ephraim Tibbetts	April 1, 1845
Robert Curtis	July 31, 1849
Samuel C. Tibbetts	April 9, 1853
John Fossett (Foster)	February 12, 1858
Joseph Lawler*	March 29, 1861
Marcus A. Hanna	July 30, 1869
William L. Sartell	January 31, 1873
Charles A. Dolliver	September 18, 1883
Clarence E. Marr	August 16, 1899
Herbert Robinson**	July 1, 1922

At the time the lighthouse became automatic, the keeper was Leroy S. Elwell, who was transferred to another lighthouse on October 1, 1934.

* Mr. Lawler's daughter, Susie, born June 10, 1868 was the only child to be born at the lighthouse.

** Herbert Robinson's daughter, Edith, now Mrs. Rogers, was married on the porch of the light-keeper's house.

A BRIEF HISTORY OF LIGHTHOUSES

SINCE ANCIENT TIMES....

To the mariner in the night, hour after hour in a howling gale, physically exhausted but unable to relax for a moment, peering into the endless darkness as the wind screams through the rigging of the ship that is tossed about the giant waves like a piece of flotsam, the sight of a light can mean safety.

In the days of sail, ships had only the wind to rely upon for motive power, and ships' masters could not precisely predict or control when they would arrive at a harbor. Rather than run the risk of going aground during the night, the ship would cruise off the coast until daylight.

The first real lighthouse we know anything about was erected by the Egyptians at the harbor of Alexandria, at the mouth of the Nile. It was considered one of the seven wonders of the ancient world. Thousands of slaves worked twenty years to build the lighthouse at Alexandria, with a white marble tower soaring four hundred feet into the air. It stood in the middle of a great courtyard where many galleries, arcades, and gardens were lined with notable works of art. In a large brazier above them all, a fire was kept burning continuously. By day it poured out a huge column of smoke, and by night its flaming fire could be seen for thirty miles. A statue of Poseidon, God of the Sea, stood on top above the brazier with his trident in one hand.

The lighthouse at Alexandria lasted for sixteen centuries. In AD 1349 an earthquake leveled it, and although the arabs attempted, without

success, to rebuild it, it has left the world the word "pharos". In France the word for lighthouse is "phare"; in Spain and Italy, "faro"; even in England for some time a lighthouse was known as a "pharos". The science of lighthouse engineering is known as "Pharology".

The world's oldest lighthouse, probably dating back to three hundred BC and still functioning today, is the tower of Hercules in Spain near the mouth of the Guadalquivir River. The first report of this lighthouse is from a traveller some twenty years before the birth of Christ.

Another famous lighthouse was the Colossus of Rhodes, built by the Greeks and undoubtedly the most unusual seamark ever erected: A giant statue of the sun god, Helios, towered over ships, with one leg on one island and the other on another island, the burning brazier held in his hand.

IN THE NEW WORLD....

Local merchants of old Boston, concerned for their shipping, petitioned the General Court of Massachusetts for "A lighthouse and lantern on some Head Land at the Entrance of the Harbor of Boston for the Direction of Ships and Vessels in the Night Time bound into said Harbor." The General Court looked into the matter and agreed there was a need for a lighthouse; the new King, George I, was induced to pass an act to build aids to navigation wherever needed along the coast of the New World. In 1716, just eighteen years after the great Eddystone Light went into commission, the keepers for the first time, displayed a light from Little Brewster marking the dangerous entrance to Boston Harbor.

To defray the cost of construction and maintenance the court instituted light dues consisting of "one penny per ton inwards, and another penny outwards, except coasters who are to pay two shillings each, at their clearance Out and all fishing vessels, wood sloops, etc., five shillings each year."

CAME THE REVOLUTION....

In 1775 American troops removed the lamps from the tower and set fire to it so that the Boston light would be of no benefit to the British. A week later, the British, protected by a marine guard, began repairing the tower. On hearing of this activity General George Washington dispatched three hundred troops landing in whaleboats to halt the work. The Americans defeated the guard and destroyed the repair work. When the British fleet left a year later, they blew up the tower. It was not replaced until the end of hostilities.

THE LIGHTHOUSE ESTABLISHMENT.....

Lighthouses in the United States were originally administered by local coastal authorities, and maintained by private contractors, who, in return for a fixed annual sum, were bound to keep the buildings in a good state of repair, supply oil and all other stores, and to pay the keepers. The Federal Government assumed charge in 1789. A Lighthouse Establishment was created under Alexander Hamilton, Secretary of the Treasury, to control the twelve stations then existing along the seaboard of the United States. These were Boston, Brant Point, Beaver Tail, New London, Sandy Hook, Cape Henlopen, Charleston, Gurnet, Portsmouth, Cape Ann, Great Point and Newburyport. Built in 1764 Sandy Hook is the only Colonial lighthouse to survive into present times, and is now this country's oldest lighthouse.

A BOOKKEEPER IN CHARGE....

By 1820 there were fifty-five lights when the Secretary transferred control to the Fifth Auditor, Stephen Pleasonton, one of the nation's principal bookkeepers, who, in spite of no maritime experience, held the post for thirty-two years.

In 1852 Congress created the nine-member Lighthouse Board whose function was to improve the poor navigational aids in this country. In spite of the fact that there were now three hundred and twenty-five lighthouses, lightships, buoys and guides, this country had slipped far behind the rest of the world in aids to navigation.

In 1910 Congress abolished the Lighthouse Board and created in its stead the Bureau of Lighthouses, where it remained until 1939 when the Bureau went out of existence and navigational aids were once again under the jurisdiction of the Treasury Department, being the responsibility of the United States Coast-guard.

THE LIGHT.....

Whatever its design, shape, material, height, or thickness, the light tower has one primary mission: To support the light the mariner needs to see. The tower's use as a day-mark explains its often distinctive coloration. Nevertheless, the lighthouse is principally a night-time aid, and as a consequence, the most important aspect of the lighthouse is the light.

Over the centuries the light tower has supported a variety of lights, but until the most recent years, when electricity came into use, the light has been a flame in one form or another.

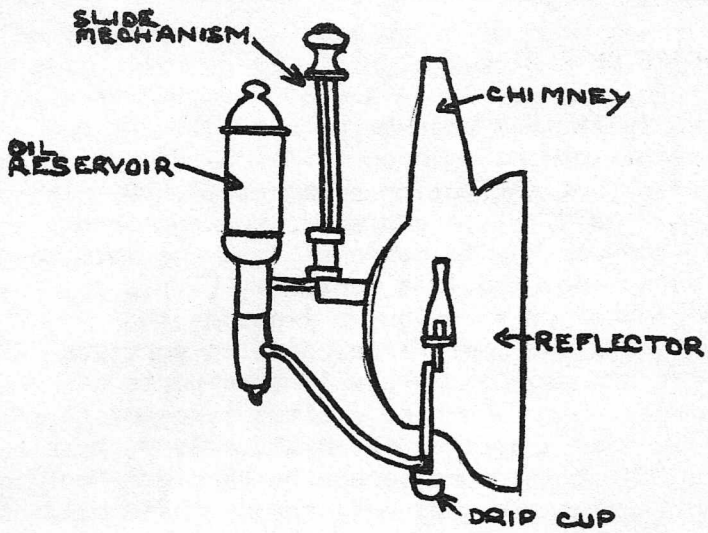
A BONFIRE ON A HILL.....

From ancient times when Egyptians built a bonfire of wood on an open hillside to mark the hazards of navigation along the 5,000 miles of the Nile, to a brazier mounted on a tower, the warning to mariners took the form of candles enclosed in a lantern. Giving a steadier but not so bright a light as the ancient wood and coal fires, candles survived into the nineteenth century in some parts of the world. Lamps burning various types of fuel, such as vegetable or animal oil, fish oil, colza or lard, replaced the candle. For a time lighthouses used only sperm whale oil, the high quality oil burning with an even, bright light.

THE ARGARD LAMP.....

By 1855 all lighthouses were burning kerosene, it being the most effective of the many fuels that had been used. The kerosene was heated when under pressure until it became a vapor, mixed with air, and burned under a mantle made of gauze and impregnated with metal oxides. This mantle gave about eight times as much light as the wick lamp and used less oil.

In 1781 Ami Argard in France, invented a lamp that had a hollow circular wick. It reached the U.S. in 1810. Two years later Captain Winslow Lewis, an unemployed ships captain, persuaded the Federal Government to adopt his version of the Argard lamp and parabolic reflector system which he called a "magnifying



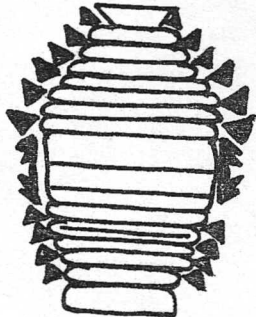
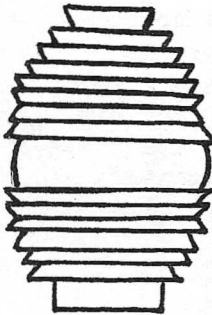
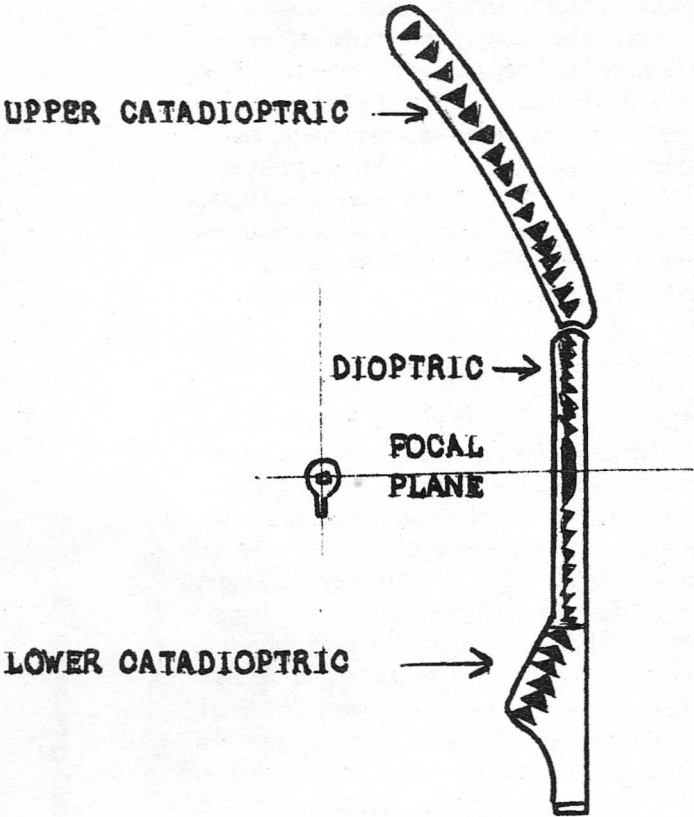
**THE ARGAND LAMP
AND PARABOLIC REFLECTOR**

and reflecting lantern", as the means of lighting this country's lighthouses. At a public exhibition at Boston Light tower before government representatives, Lewis demonstrated that the lamp and reflector were greatly superior to the old spider lamp system. In addition to giving bright light, the Lewis lamps used about half as much oil as the older lamps. The representatives were impressed and paid Lewis \$20,000 for his patent. All fifty-nine lighthouses in the U.S. were thereafter fitted with Captain Lewis's lamps.

THE FRESNEL LENS.....

In 1822 Augustin Jean Fresnel, a French physicist interested in optics, invented a lens which was to revolutionize lighthouse lighting and is still used in present time. Fresnel took a central piece of glass, which may be described as a bull's eye and around this disposed a number of concentric rings of glass. Each ring projects beyond one another and constitutes the edge of a lens which while its radius differs from that of its neighbor, owing to its position, yet is of the same focus in regard to the source of illumination. The parts were shaped with extreme care, held in position by fish glue, and mounted in a metal frame resembling a bee hive. The advantage of Monsieur Fresnel's design is the comparatively thin lens through which little or no light was absorbed but passed through, as opposed to the old parabolic reflectors which absorbed half the light. The circle of light was divided into "panels", each comprising its bull's eye and its own group of concentric rings and

CROSS SECTION OF AN ASSEMBLED FRESNEL LENS



prisms. These lenses came in several sizes.*

While France, England and Scotland were quick to adopt the new lens, the U.S. fell far behind by clinging to the Lewis lamp long after the superior efficiency of the Fresnel lens had been proved.

MISERABLE ARRANGEMENTS.....

The outcry by mariners finally reached the ears of the American Government. In 1837 an article appeared in the "American Coast Guard Pilot" which complained particularly about Winslow Lewis's "patent lamps". They were "nothing but an Argard lamp, with miserable arrangements." Congress was pressured by the sea captains, who complained that Britain and France were superior with the new Fresnel lens. But those who managed the lighthouse establishment were so enamored of the Lewis lamp that the Fresnel lens was ignored. Consequently, in 1826 when Congress appropriated \$4,000 to build a lighthouse tower at Pemaquid Point, it was Captain Lewis's lamps that were purchased. When the tower was rebuilt in 1837, the same lamps were used.

AN EXPERIMENT.....

It appears that Stephen Pleasonton, the Fifth Auditor of the Treasury Department, and in charge of this country's lighthouses, did write to France inquiring about this new lens in 1830. Upon learning that a first-order lens would cost \$5,000 and a third-order one \$2,000, he decided they were too expensive. Now, eight years later, Pleasonton agreed to experiment with the

*See page 24

Fresnel lens. Commodore Matthew C. Perry was sent to Europe to study the Fresnel lens and to buy a first-order fixed lens and a second-order revolving one. At a later date a third was purchased. Several years later, the Fifth Auditor was still not convinced of the superiority of the Fresnel lens and Congress was pressured to appoint a Board of Specialists to study aids to navigation. They found nothing good about the lighthouses they examined, except those at Navesink, Sankaty Head and Nantucket, where the three Fresnel lenses were installed. They reported to Congress: "The illuminating apparatus in the U.S. is of a description now nearly obsolete throughout all maritime countries..." The lights were so bad that lighthouses south of Navesink were virtually useless to the mariner "for want of sufficient power and range." At this time one ship's captain said, "the lights on Hatteras, Lookout Canaveral and Cape Florida, if not improved, had better be dispensed with as the navigator is apt to run ashore looking for them."

Congress then reorganized the U.S. Lighthouse Service, with the stipulation that Fresnel lenses were to be placed in all new lighthouses and in lighthouses needing new lighting. The lenses were duly ordered from France; by the time of the Civil War, all lighthouses had been fitted with the Fresnel lenses. Many Fresnel lenses are still in use in this country's lighthouses, now with electric bulbs rather than oil lamps.

THE U. S. COASTGUARD

The present-day Coast Guard was originally organized by Alexander Hamilton in 1789, thus making it the oldest branch of the sea-going forces. He commanded the organization "to watch closely lest the customs officials be evaded..." and that derelicts "be burned or otherwise destroyed, that property be salvaged, and that aid be given in any manner possible to mariners who needed aid, and that every effort be made to conserve life and property." The U.S. Coast Guard now tends over 400 lighthouses, many of them scheduled for automation as technology improves, as well as being responsible for all types of navigational aids. Their duties also encompass search and rescue, oceanographic research, ice-breaking, merchant marine safety, port safety, and military readiness, as well as their original purpose of enforcing the law against smugglers and law breakers.

The Coast Guard fleet now consists of 24 distinct classes of ships and seven types of aircraft. The word "cutter", once meaning a topsail schooner, now is reserved for named Coast Guard vessels. The Coast Guard operates all U.S. icebreakers for domestic, Arctic, and Antarctic service. There are also ocean and harbor tugs, riverboats, lightships and a square-rigger training ship. The Coast Guard maintains over 24,000 buoys along the inland and coastal waterways of the U.S., its territories, and Trust waters of the U.S. territories, and the Trust Territory of the Pacific.

ORDER OF LIGHTS

For the convenience of the navigator, light classifications are described as First, Second order, etc. There are 7 main groups, or orders. They are rated according to the inside radius or focal distance of the lens; The distance from the center of the light to the inner surface of the lens. A First order station means that the distance inside the lantern tower, from the actual center of the lantern where the flame or light is located, to the lens that surrounds the flame, is $36 \frac{2}{10}$ inches. A Second order station has a similar measurement of $27 \frac{6}{10}$ inches, because of its shorter distance from the flame or light to lens, and has correspondingly less power in the rays of light it gives. Third and Fourth order stations, respectively $19 \frac{7}{10}$ and $9 \frac{8}{10}$ inches, have a similar diminution of power. There is a higher classification than the first order, known as the hyperradial, used where great range is required and where fogs are prevalent, having a measurement of $51 \frac{3}{10}$ inches.

DATES OF INTEREST

- 1713 - First lighthouse built in the New World on "Little Brewster" at Boston Harbor.
- 1716 - Light displayed from Boston Light.
- 1775 - American troops put out the light at Boston Light.
- 1776 - British troops blew up Boston Light tower.
- 1781 - Ami Argard invented a lamp with a hollow circular wick. World's first revolving light installed at Carlstem, in Sweden.
- 1787 - Creation of the Lighthouse System by the new Federal Government.
- 1789 - There were twelve lighthouses in the U.S.
- 1800 - There were twenty-five lighthouses in the U.S.
- 1810 - Argard lamp reached the U.S.
- 1812 - Captain Winslow Lewis outfitted all forty-nine lighthouses in the United States with his version of the Argard lamp.
- 1822 - Augustin Jean Fresnel invented the Fresnel lens in France.
- 1826 - Samuel & Sarah Martin sold land at Pemaquid Point to Federal Government. Congress appropriated \$4,000 for lighthouse at Pemaquid Point.
- 1827 - Pemaquid Lighttower and light-keepers house were built.
- 1830 - The Fifth Auditor of the Treasury Department, Stephen Pleasonton, wrote to France inquiring about the Fresnel lens.
- 1835 - Pemaquid Point Lighthouse rebuilt.

- 1837 - Outcry against poor lighting for navigation reached the ears of the government.
- 1838 - Pleasonton agreed to experiment with the new lens. Six districts divided the Atlantic coast, with a naval officer in charge of each district.
- 1840 - Three Fresnel lenses were installed in the U.S.
- 1848 - Life Saving service established by the Federal Government.
- 1852 - Three hundred and twenty-five lighthouses in the U.S. Creation of the Lighthouse Board, who redivided the twelve lighthouse districts.
- 1855 - All lighthouses were burning kerosene under pressure.
- 1857 - New lightkeepers house at Pemaquid Point.
- 1859 - British used first magneto driven electric arc lamp in South Foreland lighthouse.
- 1896 - Brick Oil House built at Pemaquid Point.
- 1897 - Brick engine house to accommodate two Shipman fog-signal engines built at Pemaquid Point.
- 1899 - Shipman fog-signal engine replaced by a Stevens Striking Machine at Pemaquid Point. Wooden tower built to accommodate weights.
- 1903 - Lighthouses transferred to the Commerce Dept.
- 1910 - Bureau of Lighthouses established.
- 1924 - U.S. Lighthouse Service largest in world with 16,888 aids to navigation.

SOURCES

Coast Guard Records - Courtesy of Capt. Kenneth
Black (USCG, Ret.) Rockland, Maine.

National Archives and Records Service,
Washington, D.C.

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