

National Park Service  
U.S. Department of the Interior



Salem Maritime National Historic Site  
Salem, Massachusetts

# Pickled Fish and Salted Provisions

## *Historical Musings from Salem Maritime NHS*



## **Derby Wharf Light Station**

Volume VIII, Number 7  
February 2007

---

On the cover: Derby Wharf Light Station has stood on the end of Derby Wharf since 1871.

# Guardian of the (not very) Deep

*Salem Maritime National Historic Site includes the Derby Wharf Light Station, a white, twelve by twelve foot square brick structure with a roof deck about fourteen feet above ground level surmounted by a black iron and brass cupola (lantern). Powered by solar energy, the lantern currently houses a 300 candle-power bulb inside a 155 millimeter plastic optic lens twenty-two feet above the water. The National Park Service acquired title to the building from the Coast Guard in 1979. In a cooperative venture, the Friends of Salem Maritime, a local volunteer organization, and the National Park Service restored the structure to serviceable condition in 1983, and the lamp was re-lighted on October 4, 1983.*

## Lighting Derby Wharf

On July 15, 1870 the US Congress authorized an appropriation of \$30,000 to include the construction of a light station at the tip of Derby Wharf as part of a larger plan to “establish three lights to mark the main channel leading into this anchorage, with the view to its becoming a harbor of refuge which may be safely entered at any time.”<sup>1</sup> Replacing a light suspended from the old 1812 Derby Wharf Corporation warehouse at that location, the new tower guided shipping into the South River channel passing between Derby Wharf and the Naumkeag Steam Cotton Company mills to the Derby Street waterfront.

The United States purchased 1190 ½ square feet of land from the Derby Wharf Corporation on October 3, 1870 for \$1000 upon which to erect a light tower.<sup>2</sup> The new light was first exhibited on January 17, 1871 in conjunction with a similar lens installed at Fort Pickering Light at Winter Island. Temporarily displayed from the warehouse, the Derby Wharf light was relocated to its new brick tower in the spring of 1871.<sup>3</sup> The tower cost \$3000 to build.<sup>4</sup>

The first light keeper for Derby Wharf Light Station, Charles C. Pettingell, was appointed on January 10, 1871.

## Shipping in Nineteenth Century Salem Harbor

Contrary to the dismal picture of Salem’s maritime activity presented by Nathaniel Hawthorne in *The Scarlet Letter*, there was, in reality, a great deal of commerce being conducted. Coastal and Nova Scotia trade, and to a lesser degree, fishing, flourished into the twentieth century. From the opening of the Naumkeag Steam Cotton Mill complex in the 1840s and the industrialization of Essex County throughout the 19<sup>th</sup> century, there was an ever-growing demand for raw materials such as coal, lime, bark for the tanneries, building supplies and wood. Instead of the pepper-laden East Indiamen of his youth, Hawthorne watched humble, work-a-day schooners, barges and other assorted craft navigating the South River channel from his office window in the Custom House. However, he makes no mention of a lighthouse on the wharf.

# NOTICE TO MARINERS.

(No. 9.)

## UNITED STATES OF AMERICA—MASSACHUSETTS.

### *Fort Pickering Light, Winter Island, entrance to Salem Harbor.*

Notice is hereby given, that on and after the 17th day of January, 1871, a *fixed white* light will be exhibited at *Fort Pickering*. The light will be located on the beach, at the line of mean tide, on the S.E. point of *Winter Island*, 25 feet above high-water mark, and 30 feet above mean tide.

The light will be exhibited from the top of a wrought-iron shaft. The illuminating apparatus is of the 5th order of the system of Fresnel, and illuminates 270° of the horizon.

The lantern and shaft are painted *red*. This light must be kept on the star-board hand in entering the harbor.

Derby Wharf (Salem) light, bears S.W. by W.  $\frac{1}{2}$  W. by compass, 1 nautical mile.

Also, that on the same evening of the exhibition of Fort Pickering light, (January 17,) there will be shown a fixed *red* light from

### *Derby Wharf, Salem Harbor.*

This light will be located at the end of Derby Wharf, 15 feet above the top of the wharf, and 22 feet above mean tide. It is temporarily exhibited from the end of a building, and will be removed to a permanent foundation on the wharf, early in the spring of 1871.

The lens is of the 5th order of the system of Fresnel, and illuminates 270° of the horizon.

The lantern is painted *red*. Fort Pickering light heads N.E. by E.  $\frac{1}{2}$  E. by compass, 1 nautical mile.

BY ORDER OF THE LIGHT-HOUSE BOARD :

**W. B. SHUBRICK,**

*Rear Admiral U. S. Navy,*

*Chairman.*

TREASURY DEPARTMENT,

OFFICE LIGHT-HOUSE BOARD,

*Washington, D. C., January 13, 1871.*

This "Notice To Mariners" was issued in 1871, and describes the Fort Pickering and Derby Wharf Lights

An 1855 map of Salem Harbor, updated in 1869, does indicate a light at the end of Derby Wharf.<sup>5</sup> As this predates the official illumination of 1871, it indicates the likelihood of using some manner of light associated with the Derby Wharf Corporation warehouse in prior years. This would have been a logical measure as Derby Wharf is surrounded by water that was shallow to impassible at low tide. With a mean tide rise and fall of slightly more than 9 feet and what seems to be a natural depth in the channel of just a few feet at mean low water as indicated in Nathaniel Bowditch's observations in the 1790s, access to the inner harbor wharves has always been restricted. Vessels moored at the wharves bottomed out in the mud. An 1888 report prepared by the United States Engineering Office said of the South River channel: "The stream is half a mile long and 250 feet wide, and is nearly dry throughout at mean low water."<sup>6</sup> During the latter half of the 19<sup>th</sup> and early 20<sup>th</sup> centuries it became feasible to dredge the channel to 10 feet to accommodate coal barges that drew 10 or 11 feet of water. Channel maintenance dredging was done sporadically as the channel silted in, but it was still not adequate to handle larger coal barges and vessels. The shallowness of the channel was graphically summed up in 1913 by Charles R. Mason, local manager of the Salem Bay Line (steamship freight company) when the company's vessel, the steamer *May Archer*, went aground for the twenty-sixth time approaching or leaving Central Wharf: "Steamers cannot run on dry land, as they are not built that way, but like ducks must have water."<sup>7</sup> The ship drew 9 feet and the channel was only 6'9" deep at the time.

The repercussions of this situation among the business community were to spur a movement to significantly alter Salem's docking facilities and the main channel for deep-water vessels. This later resulted in a massive dredging and landfill effort along the main ship channel to create what is now the area of the Salem Harbor Generating Station. By the 1930s, Derby Wharf was rapidly deteriorating and the importance of Derby Wharf light was dimmed by the shifting of most commercial activity to the new location.

### **Modifications to Derby Light**

The light was modified as technology advanced and operational conditions warranted updating. Initially fitted with a fifth order Fresnel lens projecting a fixed red illumination, a sixth order lens was requested for Derby Wharf on August 9, 1892.<sup>8</sup> In 1904 a new fourth order lens was provided. In 1910 it was again sixth order. The illuminant was changed from oil to acetylene, and the projected light pattern was changed to flashing red in 1917. With this change the beacon was automated and the last keeper, William M. Osgood, was discharged from the position.<sup>9</sup>

The color of the tower is part of the identification characteristics of any given light. In a study of lighthouses by Major D. P. Heap, U. S. Army Corps of Engineers, the author states: "It is desirable that the lighthouses should be conspicuous during the daytime, as they make excellent day-marks; this is done either by their shape or some peculiarity in the way they are painted."<sup>10</sup>

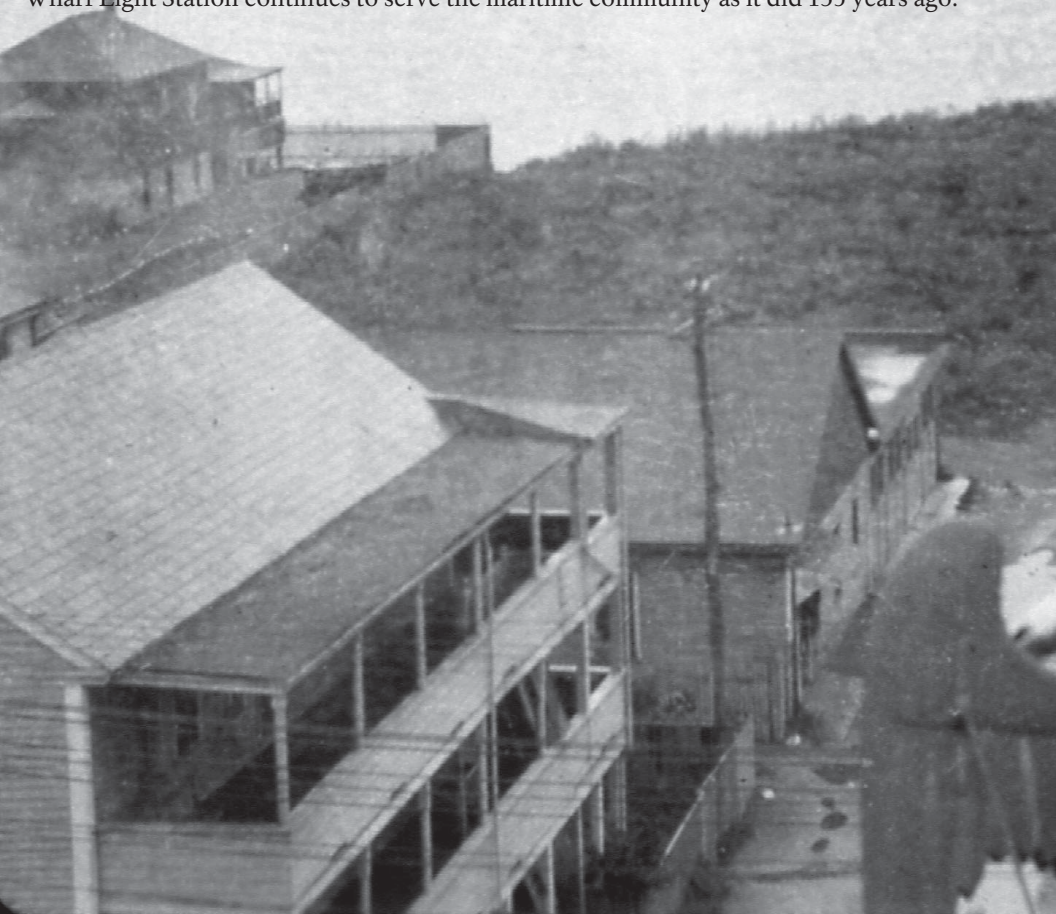
In 1922 the color of the tower was changed from red to white.<sup>11</sup> Although the buoy record card describing the sequence of maintenance, repairs, and alterations does not specifically state the reason for the change, the tower does repeat the color of its two companion light stations in the capacity of range lights marking the channel to the harbor of refuge.<sup>12</sup> A 1917 *Salem Evening News* article addresses the visibility issue as part of a plan to improve Derby

Wharf light: “The proposed rebuilding of Derby wharf light, which is used in entering Salem Bay as a range light, after getting into the main ship channel off Bakers Island, will unquestionably be welcome news for mariners. . .” The previous spring, Harbormaster William G. Peabody “called attention to the fact that since the erection of the new Naumkeag mills, it is impossible, particularly in winter, when entering Salem Harbor at night, to distinguish Derby wharf light from the many lights on the new cotton mills.”<sup>13</sup> The white and black color scheme authorized in 1922 has remained unchanged for 84 years.

The use of acetylene as an illuminant was discontinued on September 15, 1930, when the apparatus was changed back to a fixed red signal, now powered by a 300 candle-power incandescent lamp. Later the signal was again changed back to flashing red and it has retained this characteristic to the present, although since 1985 the lamp has been powered by solar energy with battery back-up. The current interval is a flashing red signal every six seconds.<sup>14</sup>

The light as it appears today is the result of a special use permit signed January 1, 1985, in which Salem Maritime National Historic Site agreed to maintain the lighthouse and the United States Coast Guard to service the solar powered light.

Although major changes have occurred in the types of craft using the waterway, the Derby Wharf Light Station continues to serve the maritime community as it did 135 years ago.



Background: in this 1935 photograph, Derby Light can be seen at the end of Derby Wharf.





## Salem Maritime National Historic Site

174 Derby Street  
Salem, MA 01970  
<http://www.nps.gov/sama>

### Notes

- <sup>1</sup> *Annual Report of the Light-House Board to the Secretary of the Treasury for the Year 1870* (GPO, Washington, D.C., 1870), pp. 12, 13.
- <sup>2</sup> *Registry of Deeds Book No. 813*, p. 77, Essex County, Southern District, Salem, Massachusetts
- <sup>3</sup> *Notice to Mariners, No. 9* (Treasury Department, Office Lighthouse Board, Washington, D.C., January 13, 1871).
- <sup>4</sup> *Proceedings of a Board of Survey, No. D-3-77, Derby Wharf Light, Salem, Mass.* (Department of Transportation, U.S. Coast Guard, June 21, 1977).
- <sup>5</sup> *Salem Harbor, Massachusetts From a Trigonometrical Survey, 1855*, New Edition 1869 (Reprint by Sibley Industries, Ashby, MA)
- <sup>6</sup> Preliminary Examination of Salem Harbor, Including South River, Massachusetts, United States Engineer Office, Boston, Mass., November 1, 1888
- <sup>7</sup> Steamer Has Had To Quit Until Channel Is Dredged, *Salem Evening News*, March 24, 1913.
- <sup>8</sup> Light-House Board, Treasury Department Form 153, request for sixth order lamp dated August 9, 1892.
- <sup>9</sup> Acetylene Gas Used In Derby Wharf Light, *Salem Evening News*, October 19, 1917.
- <sup>10</sup> Major D. P. Heap, U. S. Army Corps of Engineers, *Ancient and Modern Light-Houses* (Boston, 1889), pp. 174-5
- <sup>11</sup> Buoy Record Card, Department of Commerce and Labor, Lighthouse Service. Entry for December 28, 1922, Notice to Mariners # 10: "Changed color of tower from red to white."
- <sup>12</sup> Fort Pickering Light, Winter Island, Salem Harbor and Hospital Point Light, Beverly, MA
- <sup>13</sup> Rebuild Light on Derby Wharf, *Salem Evening News*, September 21, 1917
- <sup>14</sup> *Provisional Chart, U. S. East Coast, Massachusetts, Salem and Beverly Harbors*, National Oceanic and Atmospheric Administration, 21<sup>st</sup> edition, September 20, 1997.

Author: John Frayler, Park Historian, Salem Maritime NHS

### Image Credits:

Front cover: National Park Service  
Page Four: National Archives and Record Administration  
Pages Six and Seven: Peabody Essex Museum