



*Engraved Printing Plate for Chart of Salem Harbor, 1806*  
Drawn by Nathaniel Bowditch (1773-1838)

Peabody Essex Museum  
Salem in History, 2006

## Engraved Printing Plate for Chart of Salem Harbor, c. 1806

Drawn by Nathaniel Bowditch (1773-1838)

Salem, MA

Copper

Gift of Nathaniel Bowditch

M9796



### HISTORICAL CONTEXT

Following the Revolutionary War, American merchants set sail for distant ports. Because their trade had been restricted by Great Britain, American sailors relied on available European maps to chart their way in new waters. Nathaniel Bowditch edited, and from 1773-1838, expanded navigational tables published by John Hamilton Moore, who was one of the leading nautical chart publishers in Great Britain during the late 18th and early 19th centuries. Bowditch found more than 8,000 errors in Moore's charts that he corrected and expanded into his own publication, *The New American Practical Navigator* (1802). This text was so successful that it was in use well into the 20th century.

Bowditch was born in Salem, MA, where he self-studied Latin, Greek, mathematics, science, and astronomy. In 1794, he assisted Reverend William Bentley and shipmaster John Gibaut with a land survey of Salem. Gibaut hired Bowditch to work on a ship bound for the East Indies. During this and subsequent voyages, Bowditch studied charts and navigation, created new navigational tools, and eventually published his *Practical Navigator*. He also published navigational maps of Beverly, Salem, Marblehead, and Manchester Harbors in 1805. Always interested in disseminating scientific information, Bowditch was an organizer of the East India Marine Society (now the Peabody Essex Museum), which collected and shared navigational information among its members.

### ART HISTORICAL CONTEXT

To create a copper engraved plate that is used for printing, an engraver starts with a bright, burnished sheet of copper. The image (or here, map) is first traced with a fine needle or other sharp point. Next, a tool called a "burin" is used to etch into the copper plate, following the lightly traced pattern. To create stronger lines, the engraver cuts deeper with the burin; the deeper spaces will hold more ink during the printing process. As the burin cuts, it creates small metal shavings, known as "burr," that must be carefully removed by a scraper. To print, the engraved copper plate is warmed, inked, and then passed through a press with a sheet of paper that will be printed. The finished print will capture a mirror, or reverse image from the inked copper plate. The plate may be re-used a number of times. However, copper is a soft metal (which is useful for creating the engraving) and is therefore vulnerable to wear. Successive prints from a single copper plate will begin to lose clarity and detail.

### SAMPLE GUIDING QUESTIONS

- Describe the material, image and text that you see.
- Why might the letters be written "backwards?"
- How do you think this object was used?
- Why would this be important? (What might happen if the image were not accurate?)
- What kinds of skills or knowledge do you think Nathaniel Bowditch possessed in order to create an accurate chart of Salem Harbor?

### SUGGESTED LEARNING ACTIVITIES

- Read *Carry on Mr. Bowditch* and have the class make a list of his accomplishments.
- Examine images of navigational tools that Bowditch invented, and as a class, brainstorm what they were used for and how Bowditch might have made them. Consider how difficult it would be to navigate without accurate charts or instruments.

2003 Massachusetts History and Social Science Curriculum Frameworks: PreK-K.8, 3.9, 3.12, 5.10, 5.11, 5.33