



## COPPER SHEATHING for *USS Constitution*

On March 27, 1794, Congress passed the “Act to Provide a Naval Armament” which authorized President George Washington to acquire a fleet to create the new United States Navy. Joshua Humphreys, a ship designer in Philadelphia, had persuasively argued for building frigates (medium-sized sailing warships) as they would be the most economical, allowing the new Navy the most ships for the \$600,000 allocated for creating the fleet.

Paul Revere, of “Midnight Ride” fame in the American Revolution, was a 60-year old silversmith, merchant, and foundry man in 1794. He contracted with Henry Jackson, the Boston Naval Agent in charge of obtaining materials for the building of *USS Constitution*, to provide the copper and brass fittings for the ship “...as cheap as anyone and as well.”<sup>1</sup> Revere’s foundry provided 15 tons of drawn copper bolts used to fasten the hull planking to the live oak frames, a 242-pound bell, and other fittings for a total of \$3820.33.

Each of the six frigates was to be “copper bottomed,” meaning covered below the waterline in thousands pieces of overlapping copper sheathing. The British Royal Navy began copper cladding its warships in 1758 and found it extended the life of the ships by preventing boring mollusks from destroying the wood. It also allowed for greater ease in cleaning marine growth from the ships’ bottoms. The new United States Navy was to do the same but because rolled copper was not yet manufactured in America, Paul Revere became the “middle man” and acquired English copper sheathing that was then sold to the United States Navy. In volume one of his letter books, Joshua Humphreys recorded the amount of copper needed for the frigates: “12,000 feet of Sheet Copper at [blank] <sup>wt</sup> pr foot/240,000 Nails for Sheathing.”<sup>2</sup>

On July 27, 1797, just months before *Constitution* was to be launched in Boston Harbor, the Secretary of War wrote to George Claghorne, *Constitution*’s Naval Constructor:

“It being of importance to the United States that the Frigate *Constitution* should be coppered on the Stocks before she is Launched into the Water – you will therefore be pleased to cause the said Ship to be coppered as high as light water mark as soon as the Bottom is prepared, as it will prevent heaving down afterwards and a Consequent heavy expense...”<sup>3</sup>

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<sup>1</sup> As quoted in Esther Forbes, *Paul Revere & the World He Lived In*. (Boston: Houghton Mifflin Company, 1943), 378.

<sup>2</sup> Joshua Humphreys. Letter book, volume 1, 1793-1797, page 93. The Historical Society of Pennsylvania, Joshua Humphreys Papers, Coll. #306.

<sup>3</sup> [James McHenry] Secretary of War to George Claghorne, July 27, 1797. *Naval Documents related to the United States Wars with the Barbary Powers*, Volume 1. (Washington, DC: Government Printing Office, 1939), 205.

In early 1803, USS *Constitution* was readied by Commodore Edward Preble for a lengthy voyage to and deployment in the Mediterranean Sea against the North African Barbary Corsairs. The 1797 copper sheathing was worn out and new sheathing was needed. Enter Paul Revere again, for by 1803 he had a copper rolling mill in operation in Canton, Mass. and was able to provide the thousands of sheets of copper needed for *Constitution*.

Throughout the 19<sup>th</sup> century, *Constitution*'s copper sheathing would be periodically replaced, and beginning with the 1833 docking of the ship in the new Charlestown Navy Yard dry dock souvenirs were fashioned from the copper sheathing (for example, a miniature kettle was made from copper removed in the mid 19<sup>th</sup> century).<sup>4</sup> In the 20<sup>th</sup> century, the sheathing has been replaced in the following three restorations: 1927-1931, 1973-1974, and 1992-1996. The following list details the amount of copper used in 1992:

3,400 sheets (14" x 48") = ~10.2 tons (Weight per sheet = 6 pounds)  
Copper nails per sheet = ~120-150 (Weight copper nails total) = ~2,500 pounds  
Rows of copper sheathing = 28  
Weight copper sheets & nails (total) = ~11.45 tons

**NOTE: This weight does not include copper pins in USS *Constitution*, therefore this is not a weight of the total amount of copper presently in the ship.**



**USS *Constitution*, 1992, Dry Dock 1, Charlestown Navy Yard**  
*Naval History and Heritage Command DET Boston*

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<sup>4</sup> The souvenir *Constitution* copper kettle is part of the collections of the USS Constitution Museum, Boston.