



USS Constitution  
Museum

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# Outfitting *USS Constitution* during the War of 1812

Matthew Brenckle

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*A publication of the USS Constitution Museum, Boston*

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# Introduction

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A working warship required not only large numbers of men to run efficiently and effectively, but also mountains of *stuff*. The men who served the guns had to be fed and clothed, certainly, but the guns themselves required hundreds of items to keep them in good repair and functioning properly. Ravaged regularly by the sea, the very fabric of a wooden vessel needed constant repair. Every plank replaced and every seam recaulked called for timber, paint, pitch, oakum, and the tools to perform the work. A ship also had to provide living spaces and creature comforts according to each man's station in life. Enlisted men needed bags and hammocks by the hundred, while the officers' cabins and wardrooms called for elegant furnishings and table settings. When we consider the sheer mass of goods required to keep ships in commission, it is a wonder that they floated at all. Indeed, when fully loaded for a cruise, *Constitution* drew 23 feet of water aft - deeply laden to be sure.<sup>1</sup>

How do we know what items *Constitution* carried on her various cruises during the War of 1812? Luckily, the United States of the early 19<sup>th</sup> century was a parsimonious bureaucracy that made its servants account for every penny of public money spent. Naturally, this accounting produced reams of records minutely detailing every item purchased for naval vessels. The best source for these records are the settled accounts of the Fourth Auditor of the Treasury, known during the war period as the Accountant of the Navy. Any time a purser or navy agent purchased an item, no matter how inexpensive or seemingly inconsequential, he had to submit a receipt to the Fourth Auditor's office. These records have proved useful in filling in the blanks left by officer's journals and the official logbook. What follows here is a description of *Constitution's* material culture - the common items of everyday life - that went to sea during the War of 1812.

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<sup>1</sup> On October 26, 1812, Boston pilot Robert Knox submitted a bill to Amos Binney [4<sup>th</sup> Auditor Accounts, NARA RG 217 box 38] for piloting *Constitution* from Boston to Sea. According to him, she drew 23 feet when she sailed, allowing him to charge Binney \$43.12 (the going rate was \$1.87 ½ per foot of draught).

# Ship Fittings and Timber for the Hull and Deck

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A ship's hull was an incredibly complicated structure composed of thousands of individual components, each needing maintenance and repair. There were certain essential items common to every ship of the early 19<sup>th</sup> century, with which *Constitution* was well supplied. Perhaps the most frequently purchased items were nails, brads, and screws: the fasteners that held the disparate parts and pieces together. For example, between September 1 and October 15, 1812, *Constitution* received from Boston merchant Stephen Cushing 5,000 3d clout nails, 5,000 2d clout nails, 120 pounds of 20d nails, 4 gross of half inch screws, and 1,000 5d and 6,000 2d brads.<sup>2</sup>

The craftsmen who restored the ship after her encounter with HMS *Guerriere* on August 19, 1812 may have needed some of these fasteners. In September and October, Raymond and Fowle were contracted to repair “the Carved work on the Stern.” The damage must have been extensive because both Christopher Turner and Jonathon Palmer were also hired to perform “work ... on the Stern & Quarter Galleries.”<sup>3</sup> Besides patching up the decorative stern elements of the ship, workers set to repairing some of the damage received to the ship's side. Iron worker Darius Olmstead replaced 12 port hinges, as well as 16 ringbolts that had presumably been drawn out by the recoiling of the guns in battle.<sup>4</sup>

After *Constitution's* return from her battle with HMS *Java*, she underwent another series of repairs. During the period from May to September 1813, several plumbers (i.e. those who work with lead) and turners removed or installed a number of interesting features. In May and June, the head pump, used to pump water into the heads (toilets – holes positioned over the water), was removed (it was later repaired and replaced), and several scuppers cast and replaced.<sup>5</sup> In July and August, the plumbers made and installed “5 lead Cesterns [cisterns] for passage to Magazine,” as well as

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<sup>2</sup> Voucher to Stephan Cushing, Nov. 28, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA. A 2 d[penny] nail is 1 inch long, a 3d 1 ¼ inches long, and a 20d is 4 inches long.

<sup>3</sup> Voucher to Raymond and Fowle, Nov. 10, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA, and voucher to Christopher Turner, Oct. 3, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>4</sup> Voucher to Darius Olmstead, Nov. 19, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>5</sup> One of the scuppers replaced was the one that dealt Seaman Stephan Sheppard a painful wound. According to Surgeon Amos Evan's medical journal, during the engagement with *Java*, “a Ball came through the scupper hole of the ships side which is lined with lead & the particles of lead wounded him in innumerable places.” (Surgeon Amos Evans Medical Day Book, March 16, 1812 – August 27, 1812, Amos A. Evans Collection, vol. 1, William L. Clements Library, The University of Michigan).

“4 paint Cesterns.”<sup>6</sup> During August, the workmen also attended to some sanitary arrangements by “casting pipe for Ness[ess]ery” and for the “Manger”. As the lead work progressed, the turners and joiners constructed a new “Steairing [sic] Wheel” to replace the one shot away during the battle with *Java*.<sup>7</sup>

One of the more intriguing items installed during the 1813 refit was “a Copper Speaking pipe leading from Deck to ward Room.”<sup>8</sup> This feature would allow the officer on the quarterdeck to communicate directly with his colleagues below. The pipe probably led down near the binnacle (where the compass was mounted) or abaft (behind) the wheel. If the wheel was disabled, as it was during the battle with *Java*, the pipe would allow the quartermaster to speak directly to the men manning the tiller tackles located below in the officers’ pantry. The ship currently lacks this feature.

Most ships were brought into trim at this period using pig iron ballast (placed in the hull of the ship to enhance stability), or “kentledge.” Yet, in September 1813, John Tilley carted to the ship “seventy Tons of pebble Ballast.”<sup>9</sup>

<sup>6</sup> In 1808, the Royal Navy ordered carpenter’s storerooms fitted with lead cisterns to contain paint and oil, rather than keeping the items in buckets. Brian Lavery, *The Arming and Fitting of English Ships of War 1600-1815* (London, Conway Maritime Press: 1987) 193.

<sup>7</sup> Voucher to T & R Howe, Nov. 22, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>8</sup> Voucher to Nathaniel Alley, Jan. 26, 1814, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 39, NARA.

<sup>9</sup> Voucher to John Tilley, Sept. 17, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

# Rigging, Sails, Masts, Spars, and Yards

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The rigging of a sailing warship was just as complex as the fittings of the hull - and even more susceptible to damage from the enemy and the elements. Despite suffering relatively minor damages at the hand of HMS *Guerriere*, *Constitution* nevertheless required extensive rigging work when she returned to Boston. On September 24, 1812, ship chandlers W. and T. Harris of Boston delivered enough masts, spars, and appendages to completely re-rig the ship. The most expensive items were new main and fore masts, which together cost the navy \$1,728. The mizzen mast, although damaged, was simply fished (i.e., reinforced) at a cost of \$66. The ship also got three new topgallant masts and skysail masts. In addition, nearly every yard was replaced, from the relatively insignificant studdingsail booms and fore topgallant yard, to the massive main yard – 94 feet long and 21 ½ inches in diameter. Interestingly, while the Harris’s painted the lower masts and yards, the main yard appears to have been varnished, i.e. left bright. The topmast caps were also varnished.<sup>10</sup>

After the ship’s return from South American waters and her engagement with HMS *Java*, *Constitution* once again underwent a major rigging refit. There are no receipts detailing the replacement of mast and yards, but much of the standing and running rigging was obviously repaired. William Clannon billed the Navy Department \$136 for his “attendance as master Rigger on board the Frigate *Constitution* from June 17<sup>th</sup> to July 20<sup>th</sup> 1813.”<sup>11</sup> During the same period, metal worker Gersham Teel provided all of the ironwork needed to set up the standing rigging and replace the furniture of the tops and yards.<sup>12</sup>

Sails, or the canvas with which to make them, do not frequently appear in the navy agent’s receipts. In October 1812, Thomas Kendall submitted a bill for “working 40 ½ bolts Russia duck.”<sup>13</sup> Since a bolt contained 38 yards of 24-inch wide canvas, 40

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<sup>10</sup> Voucher to William and T Harris, Nov. 16, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>11</sup> Voucher to William M. Clannen, no date, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 39, NARA.

<sup>12</sup> Voucher to Gershom Teel, Jan. 24, 1814, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 39, NARA.

<sup>13</sup> Voucher to Thomas Kendall, Oct 29, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA. In this period, “duck” was made of heavy linen cloth.

bolts would have provided enough material to make several sails.<sup>14</sup> Kendall also used an additional bolt to construct five wind sails, funnel-like devices used to bring fresh air below decks.<sup>15</sup>

Another important feature of a ship was a well-stocked flag locker, carrying all of the various signals and national and foreign ensigns that might be needed when sailing in concert with other vessels or encountering enemy ships. In December 1813, the ship received “4 peices [sic] Wide Red Bunting Cont[ainin]g 44 yards each,”<sup>16</sup> and at other times white and blue bunting, all of which would be used to make signal flags and ensigns.

<sup>14</sup> “Parliamentary Regulations Relative to Sails and Sail-Cloth,” in David Steel, *The Elements and Practice of Rigging and Seamanship* (London, 1794), 144, and Levi Shepperd and Son of Hampshire Co., Mass- contract for sailcloth, Contracts , RG 45 Entry 336 Vol.1, NARA.

<sup>15</sup> “At all times when the weather is fair, the gratings are to be taken off and the wind sails are to be got up and all the air let into the ship that is possible.” “Orders and Regulations for the Government of the United States Frigate Constitution addressed to the first Lieutenant and other Commissioned Warrant and petty officers under my command, 1809,” Rodgers Family Papers, 1791-1885, Historical Society of Pennsylvania.

<sup>16</sup> Voucher to Bemis and Eddy, Dec. 23, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

# Paint

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Paint is an absolute necessity for a wooden ship. It protects the timbers from the weather, helps keep the caulking in place, and generally gives the ship a smart appearance. Based on log entries and receipts for pigments and oils, we have a good idea of what *Constitution* looked like during the war. In 1811, Captain Isaac Hull ordered the hull painted black, with a white gunstrake: the usual U.S. Navy color scheme until the end of the age of sail. The paintings of the battle with HMS *Guerriere* by Michele Felice Cornè and George Ropes, Jr. portray the ship with a yellow ochre stripe, however, suggesting that the ship may have been repainted soon after the declaration of war. In 1814, Stewart had the hull repainted with a yellow ochre gunstrake, probably for the same reason: to fool would-be opponents into thinking that *Constitution* was a British ship. A review of various receipts allows us to reconstruct all of the colors that would have been seen on the ship. White lead, Spanish white, and red lead were used to create most colors, which had to be mixed by the painter. Linseed oil, combined with red lead, formed the base for all exterior paints. Most colors were sold in “papers” or packets of dry pigment. Combining these pigments with the oil allowed the painter to vary the hue and intensity of any given color.<sup>17</sup> Besides the obvious black, white, and yellow, *Constitution’s* crew also had the opportunity to use Spanish brown (a cheap pigment made from iron oxide, probably used for gun carriages), Venetian red, vermilion, green, and Spanish indigo.<sup>18</sup>

Without detailed descriptions of the ship’s interior, we may never know exactly how these colors were used. The ceiling planking and bulkheads on the gun deck may have been painted white, or maybe even red, as was common in the Royal Navy. The berth deck was likely painted white or simply whitewashed. On October 20, 1812, Midshipman Frederick Baurý recorded that the crew had spent the day “Whitewashing berth deck and cockpit”.<sup>19</sup> It is unclear if both the bulkheads and the decks were whitewashed. However, since the lime in whitewash was considered a disinfectant,

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<sup>17</sup> Hezekiah Reynolds, *Directions for House and Ship Painting*, ed. Richard Candee (1812, reprint 1978), vi-vii, 7.

<sup>18</sup> Voucher to Binney and Sprague, August 28, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>19</sup> “Journal of Midshipman Frederick Baurý,” July 5, 1811 – February 16, 1813, Baurý Family Papers, 1809 – 1862. Massachusetts Historical Society.



it would make sense that they would whitewash the cockpit floor, especially after a battle. Although Baurý's entry comes two months after the battle with *Guerriere*, the whitewashing was done amidst the other post-battle repairs and general clean-up.<sup>20</sup>

<sup>20</sup> It is a common misconception that red paint was used to disguise blood on various surfaces during battle. Red was found all over a ship because it was a cheap color, and there was no reason to use more expensive pigments.

# Armaments: Long Guns, Carronades, Howitzers, and Small Arms

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*Constitution's* armaments closely resembled those of other ships of her class, and for the most part, there is nothing surprising among the many receipts recording purchases for the gunner's department. she carried long guns and carronades of various sizes, howitzers, and a range of small arms for both defending and boarding enemy ships. Occasionally, however, there are some receipts that present a different picture of the frigate's firepower than has previously been accepted. For example, the majority of carronades currently mounted on *Constitution's* spar deck are elevated by the use of quoins – wedge-shaped chocks that raise or depress the piece's muzzle depending on how far under the breech they are pushed. However, the ship's carronades were mounted on different carriages during the war. On September 30, C. and E. Faxon of Boston spent the day “Altering 24 Elevating Screws for the Frigate [sic] *Constitution*.” On October 7, Boston brass founder William Hunneman delivered “10 new brass Gun Caps for elevating screws.” Two days later, the Faxons were back “Drilling holes in 24 Elevating Screws & Altering handpins” and they also purchased “30 forelocks [cotter pins] to fasten on Caps to Elevating Screws.”<sup>21</sup> Not coincidentally, the number of elevating screws matches the number of carronades carried on *Constitution's* spar deck. Clearly then, the old style of quoin-elevated carriage had been phased out early in the war. The question that remains unanswered by the receipts is what type of carriages the carronades were mounted on: the so-called “conventional mounting”, consisting of a carriage or bed which slid on a secondary traversing platform, or the “non-recoil mounting,” consisting of any number of “patent” systems for reining in the carronades' wanted exuberance.<sup>22</sup>

Besides the 32 pound carronades fixed on the spar deck, *Constitution* also received a “12 pound Brass Carronade,” in October 1812.<sup>23</sup> This was probably used as a boat

<sup>21</sup> Voucher to C. & E. Faxon, Nov. 9, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA and Voucher to William C. Hunneman, Oct 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA. The elevating screw caps kept the weather out of the threads- not a place where one would want rust to accumulate.

<sup>22</sup> For more on carronades and the various mounting systems in use during the early 19<sup>th</sup> century, see Adrian B. Caruana, *The History of English Sea Ordnance 1523-1875, Vol 2, 1715-1815* (Ashley Lodge, Rotherfield, East Sussex, England: Jean Boudriot Publications, 1997), 195-211.

<sup>23</sup> Voucher to James Prince, Oct. 30, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

gun in the largest of the ship's boats. The issuing of small carronades or howitzers to ships was commonplace in the British service after 1796, when instructions were given to arm all vessels launched. Ships rated between 20 and 50 guns were to be provided a 12 pound carronade for their largest boat.<sup>24</sup> Unfortunately, there is no mention of a carriage for the piece. One historian has speculated on the British practice:

*Usage of carronades in boats was the standard, but the manner of mounting them appears to have changed frequently. Originally, the lower part of the mounting, the slide, ran the whole length of the boat, which had the advantage of allowing the carronade to be fired either fore or aft, but the disadvantage of maintaining the piece high in the boat, with a consequent loss of stability. In the Napoleonic War, the slide was shortened so as to extend only from the bow to the third or fourth thwart, and hinged at a distance of two thirds of its length from the bow, so as to enable the carronade to be lowered to the bottom boards of the boat when not in use.<sup>25</sup>*

The court martial testimony of a British officer from HMS *Macedonian* confirmed that this was also the practice in the American service. According to him, USS *United States* carried “a Twelve Pounder Carronade on the Gangway on a travelling carriage for her Launch.”<sup>26</sup> Such a gun would have proved useful for all sorts of amphibious landings, cutting-out expeditions, and boat-on-boat engagements.

The carronades and all the other firearms on board were useless without quality gunpowder. Although there were a number of American powder mills in operation (several in Delaware), the best cannon powder still came from the Royal contractors in England. In November 1813, *Constitution* took on board 212 barrels and 43 quarter-casks of “English Tower Proof Gunpowder” and 19 quarter-casks of American gunpowder.<sup>27</sup> The “Tower Proof” moniker suggests that this was made at the King's Mills. This was the best quality powder available; even the Royal Navy itself was only able to provide its ships outfitting for foreign service with two-thirds of their powder from this source. The rest was typically inferior quality “Merchants” powder made

<sup>1</sup> W.E. May, *The Boats of Men-of-War*, (Annapolis, Md.: Naval Institute Press, 1999), 113, 116.

<sup>2</sup> Adrian B. Caruana, *The History of English Sea Ordnance 1523-1875, Vol 2, 1715-1815* (Ashley Lodge, Rotherfield, East Sussex, England: Jean Boudriot Publications, 1997), 480.

<sup>3</sup> “Minutes of Proceedings at a Court Martial held on board His Majesty's Ship San Domingo at Bermuda on the 27<sup>th</sup> and by adjournment on the 28<sup>th</sup>, 29<sup>th</sup> and 31<sup>st</sup> days of May 1813,” Courts Martial Papers, 1813 May-June, The National Archives, Kew, ADM 1/5436.

<sup>4</sup> Vouchers to Elijah Withington, Nov. 3, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

by private contractors.<sup>28</sup> The receipts do not explain just how the U.S. Navy was able to purchase such a quantity of fine English powder during wartime. Imports would have been cut off since June 1812, so the powder likely came from prizes taken after that date.

Perhaps one of the most surprising innovations installed on *Constitution* during the war was a hot-shot furnace. On December 18, 1813, Navy Agent Amos Binney paid \$294.34 to George Darracott of Boston. The bill enumerates the items purchased: “1 Furnace for heating Shot 467lbs,” “Grates and Frame,” “1 p[ai]r Shot Tongs,” “1 Shot Ladle,” and “30 lbs Sheet Iron.” Clearly, here was an apparatus intended to heat shot fired at an enemy vessel. Charles Stewart explained the apparatus in a letter to the Secretary of the Navy:

*I have constructed a portable sheet iron furnace for heating red hot shot of the following dimentions [sic] which would answer as well for land service as sea service-- Lenth [sic] 3 feet depth 3 feet width 18 inches, it heated 21 shot 24 lbs. in 22 minutes with a pine wood fire. the construction of the pipe is such as gives it a great draught. from its dimentions [sic] you can readily conceive it occupies little room, and is calculated to set to the back part of our Galley where it interferes with nothing-- My purpose is only to use it against the enemys [sic] ships of such force as would render our safety precarious, (if we cannot otherwise escape,) by bringing them under our stern battery and firing a few red hot ball in their hull. They are not very expensive and all our frigates haveing [sic] them, the use of which might facilitate their escape from a superior force by the confusion they would be thrown into, if not the destruction of an enemy that is not disposed to contend with us on fair and equal terms.<sup>29</sup>*

It was hoped that the red-hot ball of iron would lodge in the opposing ship's side and set it on fire. This tactic was often employed by shore batteries during the period, but was generally considered too dangerous to use aboard ship. The problems of heating and transporting super-heated shot from furnace to gun, and then loading the gun without the powder charge going off prematurely, speak for themselves. Whether or

<sup>28</sup> Caruana, *Sea Ordnance*, 256.

<sup>29</sup> Captain Charles Stewart, to Sec. Navy, 5 Dec 1813: M125, Captain's Letters to the Secretary of the Navy, 1805-1861, NARA.

not Stewart used this apparatus during the engagement with HMS *Cyane* and HMS *Levant* has not been verified.<sup>30</sup>

How would this apparatus have worked? Generally three men were required to run a furnace. One stoked the fire, one added balls, and the third cleaned them as they came out of the fire. A red-hot shot was coaxed out of the furnace with an iron fork, cleaned with a rasp, and then picked up by a pair of circular-jawed tongs. A shot ladle, with three handles, was used to carry the shot to the guns. This operation had to be performed quickly so that the ball did not cool off before it was loaded in the gun. Loading a red-hot iron ball on top of a powder charge contained in a flannel bag was a delicate operation. Generally, cartridges were double-bagged to prevent loose powder from straying into the bore during the loading process. Once the gun crew rammed home the cartridge, a wet wad, consisting of loosely bundled junk (picked-apart rope) was rammed on top. This formed a barrier between the cartridge and the ball. The ball was rammed down, another wad rammed on top, and in quick succession the gun run out, pointed, and fired. With luck, the shot would lodge in the timbers of an enemy ship, where its crew could not get to it, and set the ship on fire.

Warships had to be prepared for battle, including boarding actions during engagements. Soon after arriving in Boston in July 1812, Isaac Hull “Sent a gang on shore to work at a Splinter netting.”<sup>31</sup> A splinter netting was a rope mesh spread above the spar deck in action to prevent rigging and other debris shot away aloft from raining onto the heads of the men below. If extended down to the bulwarks, it formed an effective barrier to boarding by the enemy.

When it came to boarding or fighting at close quarters, small arms played an important role in destroying the enemy’s personnel. But as one receipt reveals, sea service wreaked havoc with the ship’s store of small arms. In September 1812, Boston gunsmith Samuel Orcutt submitted a bill for cleaning and repairs to *Constitution’s* small arms. Although the ship’s armorer must have performed a perfunctory cleaning of the weapons after the engagement with *Guerriere*, Orcutt was hired to overhaul them all and give them a thorough and professional cleaning. His bill details that he cleaned 112 muskets, 127 pistols, 7 blunderbusses, 13 “Rifle guns”, and 177 “cannon locks.”<sup>32</sup> Besides cleaning, he also repaired the weapons. One wonders what

<sup>30</sup> The courts martial trials of the two British captains make no mention of the use of heated shot, and since they were quite particular in describing the action in terms of the quantity and quality of shot fired by *Constitution*, it can only be assumed that Stewart did not use the furnace. Indeed, since it was intended only as a last resort, to be used against overwhelming odds, Stewart probably never even considered using it.

<sup>31</sup> “Journal of Midshipman Frederick Baurý,” July 29, 1812, Baurý Family Papers, 1809 – 1862. Massachusetts Historical Society.

<sup>32</sup> Voucher to Samuel Orcutt, Sept 16, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

*Constitution's* crew were doing with them, considering the number of mainsprings, hammers, and cocks replaced or repaired and stocks mended or replaced. One suspects they were flung to the deck after being fired, for there is no other way to account for such damage. Some of these weapons may have been taken from *Guerriere* before she was scuttled, which might account for the seemingly large number of cannon locks in need of cleaning. The fact that the ramrod pipes replaced were brass further reinforces this notion. American-made ship's muskets tended to be iron mounted (except for certain contract pieces), whereas all British weapons had brass furniture. The "rifle guns" were most likely the U.S. Model 1803 rifle, the so-called Harpers Ferry rifle.<sup>33</sup>

When it came to rifles, *Constitution* apparently carried a species of weapon not previously known to have been issued to U.S. forces before 1819. In December 1813, Charles Stewart approved the purchase of "four pattend Rifles delivered to the Frigate Constitution at \$30 each."<sup>34</sup> This can be none other than John Hall's patent breechloading rifle. In May 1811, John H. Hall of Portland, Maine received a patent for what was to become the first-ever mass-produced breech-loading small arm ever adopted by the United States military, or indeed by any other country in the world. The first rifles looked not unlike Pennsylvania rifles, with brass furniture, patch-boxes, and curly maple stocks. Stewart probably purchased these early models for use aboard the ship. Not until 1817 was Hall able to convince the Army's Ordnance Department to test his rifles; having received 100 of the rifles for field testing, the government was so pleased with the results that it ordered 1,000 more.<sup>35</sup> By 1821, ships on the Mediterranean station had been equipped with Hall's rifles. In March of that year, Dutch Admiral Ruijsch reported to his superiors at the Dutch Naval Ministry that:

*I have observed on board of the Columbus another firearm being a rifled gun known under the name of Patent Riffle [sic]. This is an ordinary rifled gun which is loaded at the breech. The latter is opened by pressing a very heavy spring pushing it upwards; and the breech is closed by pressing it downwards. The charge is thus loaded in a better way than if it would have been rammed home by an iron ramrod. In my view, this is a much better weapon than all sorts of repeating guns. Not having been able to make a drawing of it, I am giving Your Excellency herewith the address where these*

<sup>33</sup> William Gilkerson, *Boarders Away II, With Fire* (Lincoln, RI: Andrew Mowbray, Inc., 1993), 216-222.

<sup>34</sup> Voucher to Henry Frost, Dec. [?] 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>35</sup> Robert M. Reilly, *United States Martial Flintlocks* (Lincoln, RI: Andrew Mowbray, Inc., 1986), 136-138.

guns are made and to be had. This is no secret with them since these guns are used extensively on land.<sup>36</sup>

And the address appended to Ruijsch's report: "John. N. Hall, Patent Rifle, Portland (State of Main), United States of America."<sup>37</sup> Clearly then, the "pattent rifles" purchased for *Constitution* in 1813 were John Hall's famous breechloaders. Some of the rifle balls peppering the decks of HMS *Cyane* and HMS *Levant* probably came from these weapons.

The gunner's stores encompassed not only the great guns and small arms, but also a whole host of incendiary devices. Among the items frequently purchased for *Constitution* were "false fires," "portfires," and "blue lights." The first was a sort of hand-held flare used to signal between ships at night. According to Marshall's *Practical Marine Gunnery*, the "best" false fires were made of two pounds of mealed powder, one pound sulphur, two pounds saltpetre, and one pound charcoal.<sup>38</sup> Having assembled the requisite ingredients, the gunner mixed them together and packed them into a stiffened paper tube with a fuse. Once lit, the composition would burn quickly and brightly, producing a light that could be seen for several miles. Portfires were literally portable fires used to touch off the guns. The navy seems to have preferred this to the more traditional slow match (at least when not using cannon locks) because of the surer ignition they provided. The "best dried Portfire" was made of four pounds saltpeter, two pounds mealed powder, one pound sulphur, and one pound antimony; the finished product resembled a hand-held road flare of today. Blue lights were rockets that, as the name suggests, burned blue upon ignition and were used for signaling. On October 1, 1812, William Bainbridge requested, among other items for the gunner's stores, "50 False Fires," "20 Port Fires," and "50 Blue Lights," as well as "1 Brass Mandrill for Rocket Moulds complete."<sup>39</sup> On the October 16, John Burbeck delivered four dozen falsefires and 20 portfires, while five days later John F. Truman delivered "72 false fire moulds," presumably the paper canisters later filled with the false fire ingredients.<sup>40</sup>

<sup>36</sup> Quoted in Gilkerson, *Boarders Away*, 223.

<sup>37</sup> *Ibid.*

<sup>38</sup> George Marshall, *Marshall's Practical Marine Gunnery*... (Norfolk, Va.: Thomas G. Broughton, 1822), 113-114.

<sup>39</sup> Required in the Gunner's Department on board the U.S. Frigate *Constitution*, Oct. 1, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>40</sup> Voucher to John Burbeck, Oct 20, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA, and Voucher to John F. Truman, Oct 31, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

# Boats

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Every ship carried a number of boats used to ferry crew, cargo, supplies, and visitors from ship to shore, and for any number of other utilitarian purposes. This was especially true in American ports, where in the Early National Era there were few wharves or piers with enough water alongside to accommodate large vessels. The Boston Navy Yard had no wharf at the beginning of the War of 1812, and most warships were forced to anchor in the harbor or even further out in President's Roads. Besides tending the ship while in port, boats could be used for various offensive expeditions against enemy vessels or towns, for picking up men who fell overboard at sea, or, in the last resort, saving part of the crew of a sinking vessel.

*Constitution* carried a large complement of boats that frequently needed replacement and repair. In his book on *Constitution*, Karl Heinz Marquardt maintains that the ship carried seven or eight boats depending on the ship's function at the time (i.e. whether she was a commodore's flagship or not).<sup>41</sup> Receipts from various boat builders give us a better sense of what boats the ship actually carried during the war. For example, on October 17, 1812, Fairhaven boat builder Barzillai Adams submitted a bill for "one whale Boat" and "five [17 ft long] oars," and included the cost of packing and shipping the boat from Fairhaven to Boston.<sup>42</sup> Later, *Constitution* received "two Whale Boats built by Charles Folger of Nantucket at \$40." The two boats were painted by M. and W. Coffin and were transported by Captain R. Starbuck.<sup>43</sup> Nantucket whaleboats were generally lightly built, swift boats used in the whale fishery. Today, *Constitution* carries two whaleboats in her quarter davits (cranes for hoisting and lowering the boats), but these are more heavily built than the original boats.

*Constitution* probably carried the three whaleboats in her quarter and stern davits, but the other boats were nested on the main hatch amidships. A log entry from August 10, 1812, however, notes that the fifth cutter - the boat that brought the declaration of war to the ship on June 18 - and the green cutter were kept at the stern and quarter galleries. Earlier, in July, the log noted that the first and second cutters

<sup>41</sup> Karl Heinz Marquardt, *The 44-Gun Frigate USS Constitution* (Annapolis, Md.: Naval Institute Press, 2005), 28.

<sup>42</sup> Voucher to Barzillai Adams, Oct. 17, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA. A note on terminology: The word whaleboat never appears in the ship's log at this period. In fact all the boats (save the gig) are referred to as "cutters." Were all the boats really cutters, or was this a case of a generic term being applied to all the boats, regardless of form?

<sup>43</sup> Voucher to William Lovering, Jr., Nov. [?], 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.



were “hoisted out,” suggesting that they were normally stowed amidships. In January 1814, it was mentioned that the gig was stowed in the first cutter. On October 21, 1812, Boston boat builder Samuel Yendell submitted a bill for a new 28-foot cutter and for repairing the gig (the boat reserved for the captain) and the “1<sup>st</sup> cutter,” as well as providing “rudder irons,” ringbolts, and tholepins for the new whaleboats.<sup>44</sup> These new boats and repairs were probably needed after the engagement with HMS *Guerriere*, even though after the battle the first, second, and third cutters were still seaworthy.<sup>45</sup> By May 1813 the boats were in need of repair again, probably as a result of the engagement with HMS *Java* in December 1812. During that engagement, at least one of the boats - in which two tigers or leopards were chained - was shattered by an enemy shot; since the same round continued on through the other side of the ship, it likely destroyed at least one other boat as well.<sup>46</sup> This time Yendell performed work on the first, second, and fourth cutters - all made of oak. The ship’s log made frequent reference to a fifth cutter, suggesting that the ship carried at least five of these utilitarian boats. Then in July 1813, John Wade supplied another 26-foot cutter for the ship. Thus it was probably the third cutter that was destroyed in the waist during the *Java* engagement. The first cutter and the gig survived the battle with *Cyane* and *Levant*, only to be cut adrift during the escape from the British squadron at Porta Praya on March 11, 1815.<sup>47</sup>

<sup>44</sup> Voucher to Samuel Yendell, Nov. 16, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, Box 38, NARA.

<sup>45</sup> USS *Constitution* Log, August 19, 1812.

<sup>46</sup> *Niles Weekly Register* (Baltimore), June 17, 1815, 289. Regarding the tigers, there is no information given as to why the ship was carrying two tigers in the first place. It would seem to be a dangerous idea to have tigers on board a warship, especially during a battle.

<sup>47</sup> USS *Constitution* Log, March 11, 1815.

# Navigational Instruments and Charts

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The art and science of guiding a ship over a vast and trackless ocean requires a number of special instruments, most of which were perfected in the generation or two leading up to the War of 1812. Among the most costly, delicate, and essential instruments available to the early U.S. Navy was the chronometer. Invented by William Harrison in the mid-18th century, the chronometer allowed navigators to determine their longitude east or west of a certain fixed point. Local time could be measured by observing the sun and adding or subtracting from the time given by the chronometer (usually Greenwich Mean Time). Since it was known that 15 degrees of longitude equaled a change of one hour of local time, it was relatively easy to calculate one's position on the globe. Unfortunately, even in the early 19th century, chronometers were shockingly expensive instruments. In September 1812, George Harrison (no relation to the inventor), navy agent at Philadelphia, sent a chronometer to Commodore Bainbridge on USS *Constitution* in Boston.<sup>48</sup> This may be the same chronometer that Stephen Dutch delivered to the ship in October 1812. Marked "No. 317 Hutton London," the timepiece cost \$400.<sup>49</sup> To put this price in perspective, an able seaman made only \$12 per month. This was a very fine instrument, but one that was necessary for navigating a large and rather more expensive frigate. Though it was designed for shipboard use, the chronometer still needed frequent maintenance. On October 4, 1812, John Beath submitted a bill for "cleaning Timepiece." This first job must not have been sufficient, because 12 days later he submitted another bill for a new pendulum spring and for "snaping and cleaning a Timepiece."<sup>50</sup> In 1813, *Constitution* received a second (or perhaps replacement) chronometer. That November, Stephen Dutch submitted a bill for cleaning and rating chronometer no. 306.<sup>51</sup>

A chronometer helped a navigator determine longitude, but he also needed to find latitude to pinpoint his position. This was determined by measuring the height or angle of the sun at local noon. *Constitution's* officers had two instruments at their

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<sup>48</sup> Records of the Office of the Secretary of the Navy, RG45, NARA.

<sup>49</sup> Voucher to Stephan Dutch, Oct [?] 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>50</sup> Vouchers to John Beath, Oct 4 and Oct 16, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>51</sup> Voucher to Stephen Dutch, Nov. 19, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

disposal for this calculation. In July 1812, Boston ship chandlers Bemis and Eddy supplied the ship with an \$85 sextant and a \$25 quadrant.<sup>52</sup> Boston mathematical instrument maker Gedney King repaired both instruments within a few months.<sup>53</sup>

King's bills reveal a number of interesting navigational items repaired or replaced. In October 1812, he repaired two azimuth compasses, an amplitude compass, two cabin compasses, seven brass binnacle compasses, and four wood compasses.<sup>54</sup> The compass, in its most basic form, contains a needle that points to magnetic north. The instrument allows sailors to steer a ship on a given course and also take bearings on distant landmarks. Azimuth compasses, such as *Constitution* carried, were used to observe the amount of magnetic variation. To check this, one took the bearing of the sun, moon, or a star and compared that with the calculated bearing based on the compass used for steering a course. The difference between the two was the magnetic variation.<sup>55</sup> A few days after King submitted his bill, *Constitution* received "one Stobbe's [?] improved Azimuth Compass," presumably incorporating the new prism sight invented by Schmalcalder in 1812.<sup>56</sup> An amplitude compass could also be used to find variation by measuring the angle between the point at which the sun rises and sets. The difference of the measured amplitude from the mean gave the variation.

Another bill submitted by Gedney King in 1813 records a number of other interesting items at the disposal of *Constitution's* officers. The instrument maker repaired eight half-hour glasses, 16 log glasses (used for measuring the length of time the log line was cast), one night telescope, and two day-or-night telescopes. The ship also received one "best patent 2 hour glass," "1 common hour glass," and a case of mathematical instruments. The glasses were necessary for keeping track of not only the watch, but also the all-important log line used to calculate the ship's speed. The telescopes allowed the officers to see distant objects in the daytime or at night.

All of these instruments, however, were useless without reliable charts of the surrounding seas. The charts purchased by *Constitution's* commanders show where they might have taken the ship, had events not intervened. In July 1812, as the crew feverishly prepared to go to sea, John Carlton delivered "2 large books of charts

<sup>52</sup> Voucher to Bemis and Eddy, 28 July 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>53</sup> King's shop was at no. 10 North Row (Boston Directory, 1813)

<sup>54</sup> Voucher to Gedney Kin, Oct. 15, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>55</sup> Peter Kemp, ed., *The Oxford Companion to Ships and the Sea* (Oxford: Oxford University Press, 1993), 190.

<sup>56</sup> *Ibid.*, and Voucher to James Magee, Oct. 19, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

called the East India & Orientle [sic] Pilot.”<sup>57</sup> The first was most likely the book of 114 plates of maps, charts, plans, and sailing directions called *The East India Pilot, or Oriental Navigator*, first published in London by Sayer and Bennett in 1778. The second book was probably *The Oriental Navigator*, published by Laurie and Whittle in London in 1794 as a companion to the *East India Pilot*.<sup>58</sup> Both books were invaluable to anyone contemplating a voyage into those regions. The same could be said of the large number of charts purchased of Bemis & Eddy at the end of July. Among these items were charts of places as wide afield as the Gulf of St. Lawrence, Long Island Sound and New York, the Gulf of Mexico, the Spanish Main, Brazil, the coast of Africa, the Windward Islands, and the Western Atlantic.<sup>59</sup> In October, bookseller Ebenezer Larkin supplemented these charts with one “Malhams Gazetteer- 2 vols,” the full title of which was *The Naval Gazetteer, or Seamans’ Complete Guide*, published in Boston in 1797 by Spotswood and Nancrede for John Malham. It contained 17 charts of the east and west coasts of America.<sup>60</sup>

<sup>57</sup> Voucher to John Carlton, July 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>58</sup> *The East India Pilot*, 1778. From The University of Western Australia, University Library, The Erulkar Collection. It is possible that the books in question were *The East India Pilot* published by William Heath in 1805, or R. H. Laurie’s 1810 reprint of *The Complete East India Pilot*. The latter publisher took over Robert Sayer’s publishing house in 1792, and published many revisions of his work. One of these revisions, rather than the original 1778 edition, was probably what *Constitution* carried in her navigational library.

<sup>59</sup> Voucher to Bemis and Eddy, July 29, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>60</sup> Voucher to Ebenezer Larkin, Oct. 1, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

# Cabin and Berth Deck Fittings and Furnishings

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A ship was not just a vessel, but also a home for hundreds of men. Although they could not know the creature comforts of a house on land, the sailors and officers made the most of the space allotted them. The officers in particular, with greater space and funds at their disposal, did their best to make the wardroom and cabins homey. For example, on October 20, 1812, William Bainbridge approved the purchase of items for *Constitution's* wardroom. The tableware purchased from Daniel Hastings, a seller of “crockery ware” on Hamilton Street in Boston, included the following:

*3 doz ½ p[in]t Cut Tumblers*

*3 doz ½ pt wine glass*

*2 Sett Coffee Bowls & Saucers*

*2 2 qt Pitchers*

*1 Copper Tea Kettle*

*1 Japanese Pitcher*

*1 Sett Buckhorn knives & forks*

*1 Coffee Mill*

*1 Coffee Biggin*

*4 10/16 Table Cloths*

*8 5/8 Breakfast do.*

*18 knapkins*

*Baskets*

Adding up to a total of \$172.25, these items enabled the officers and their guests to dine in style.<sup>61</sup> Four days later, Congress Street cabinet maker William English delivered “12 Chairs for Ward room” to *Constitution*.<sup>62</sup> After her return to Boston, the wardroom received an additional 18 chairs from Nolan and Gridley’s Pitt Lane

<sup>61</sup> Voucher to Daniel Hastings, Oct. 20, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 39, NARA.

<sup>62</sup> Voucher to William English, Oct. 24, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 39, NARA.

furniture warehouse on July 31, 1813. Costing only \$1.22, these were obviously not the best pieces of furniture.<sup>63</sup> Some of the earlier ones may have been demolished during the previous cruise, but more than likely the wardroom officers needed more seating for dinner. With at least 13 men occupying the room on any given day, not to mention any guests that might be invited, they would need all the seating that could be crammed into the relatively narrow wardroom. Bainbridge also ordered new tables and had the old ones repaired. These included a “large 6 feet dining table,” a “Pembroke table,” another “large 6 feet dining table to match the above large table,” and a “large side board.”<sup>64</sup>

As spacious and elegant as the wardroom might have seemed to the crew, Bainbridge’s private domain was truly fitted out in style. In September and October 1812 Jacob Forster performed work on *Constitution’s* cabin. On September 21, he delivered “70 ft St. Domingo Maho[gany] for finishing cabin.” The next day he returned with “27 ft thin [Honduras] Bay Maho[gany] for cabin,” as well as 11 more feet of the more expensive St. Domingo mahogany. In addition to finishing the “cabin,” Forster also supplied two table leaves with brass furniture, two keys for a sideboard, and cloth for a secretary.<sup>65</sup> Still, the dark paneled opulence of *Constitution’s* cabin was nothing compared to that of Samuel Evan’s cabin on *Chesapeake*. Wishing to have a cabin as flamboyant as his personality, he ordered a “soffa” and pillows in red moreen and hung the stern gallery windows with red-fringed silk curtains suspended by brass rods and rings.<sup>66</sup> He did not deny high style to his officers either, approving a scheme to reed 12 columns in the wardroom.<sup>67</sup>

All the eating and drinking in the wardroom and cabin would have occasioned the frequent question of “where’s the head?”<sup>68</sup> Officers did not generally visit the toilet facilities ranged on either side of the head, but rather made use of the quarter gal-

<sup>63</sup> Voucher to Nolen and Gridley, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 39, NARA.

<sup>64</sup> Voucher to Jacob Forster, n.d, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 39, NARA.

<sup>65</sup> Voucher to Jacob Forster, Sept-Oct 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 39, NARA.

<sup>66</sup> Voucher to A.C Jones [or Fones], Dec. 3, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 39, NARA.

<sup>67</sup> Voucher to Lemuel Shephard, Dec. 25, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA. Reeding was a popular design feature in high-style Federal interiors.

<sup>68</sup> One medical authority noted that sailors urinated more frequently than men on land. “I have frequently observed in common with other officers,” says Mr. H., “that sailors never fail to empty the bladder on the first symptoms of distention; and the facilities afforded them as far as regards unmixed society and locality favour greatly this salutary habit. It is also of importance to notice, that no description of people are less subject to dyspepsia, or more prone to strictures in the urethra.” A. Copeland Hutchinson, “On the comparative infrequency of Urinary Calculi among sea-faring people,” in *The New England Journal of Medicine and Surgery*, Vol. X (Boston: Wells and Lilly, 1821), 198.

leries or chamber pots in their cabins. A bill from Chamber Street tinplate worker Andrew Green included “2 pewter bedpans,” and “2 pewter urinals.”<sup>69</sup> According to Assheton Humphreys, there were yet other, more refined places for *Constitution*’s officers to use:

*[W]hat are called the "spice boxes" on board men of war are temples erected to the service of Cloacinas; those on board the Constitution had been displaced to afford room to work the forward gun deck guns in action and those who paid their respects at her shrine were now compelled to make the chains the scene of their profane rites, or worship at her [altar ?] by stealth in the quarter gallery. It was upon the third day that Capt Falcon had been on board and his eyes upon every thing that passed, when walking the Quarter deck in company with Lieut Ballard he remarked in a tone truly contemptuous that "a British Officer would think it derogatory to be found in the chains in the obscene manner in which he perceived the Americans visited them." To this impertinent remark the following pertinent answer was made and it had the effect of silencing the gentleman upon such subjects for the future "Why, Sir, we know that these things are mere matter of opinion and our reputation not at all affected by it provided our discipline otherwise is such as will do ourselves credit and our country justice, and when her reputation is at stake we are particular in little else, provided our guns tell well, and you can be a competent judge of how far that end has been attained."<sup>70</sup>*

What form these “spice boxes” took is anyone’s guess, but they were probably similar to the commodes used in homes ashore: lidded boxes with seats.<sup>71</sup> Where they were removed to, and why they were not replaced after the battle remains a mystery, and Humphreys never mentions them again.

<sup>69</sup> Voucher to Andrew Green, Dec. 11, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>70</sup> Assheton Humphreys, *The USS Constitution’s Finest Fight, 1815: The Journal of Acting Chaplain Assheton Humphreys, US Navy*, Tyrone Martin, ed. (Mount Pleasant, SC: Nautical and Aviation Publishing Company of America, 2000) 35-36.

<sup>71</sup> Charles Ware, “Frigate United States Ware #15,” c. 1820. From Drawings of Naval Vessels and Equipment, 1939-1945, RG45, NARA. This drawing shows two structures at the forward end of the gun deck which Ware labeled “Round Houses.” Humphrey’s term “spice box” may be a colloquialism referring to these structures. Their location abreast the forward two guns would necessitate their removal when the ship cleared for action.

# Fuel and Lighting

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Below decks, a wooden ship could be a very dark place. In good weather, with the hatches off and gunports open, the gundeck at least might be relatively bright and airy. The berth deck, however, would have been in a perpetual state of gloom, while the hold and orlop would have been dark as pitch. Because natural light could not penetrate very far into the hull, artificial light in the form of candles and lamps were a necessity. However, these lighting methods also presented a very real fire danger. Once alight, a wooden ship burned rapidly; there was very little the crew could do to extinguish a blaze once it took hold in the timbers or rigging.<sup>72</sup> For this reason, every ship's internal regulations were very particular about extinguishing candles and other fires: "No lights on any account whatever at sea, or in harbour, are to be allowed to remain unattended in any birth [sic] or cabin, and none but the lanterns are to be allowed in the tiers."<sup>73</sup> Unfortunately, there were always accidents. As Amos Evans remembered:

*Were alarmed about 9 o'clock with the cry of fire in the cockpit -- Produced by one of the Surgeon's Mates having left a candle burning in his state room with the door locked. We found considerable difficulty in opening the door, in attempting to force which I had my right hand jamm<sup>d</sup> with a crowbar: in consequence of which I am under the necessity of writing with my left... The cry of fire is dreadful on shore, but ten thousand times more distressing on board a powder ship at sea. It produced much confusion, but was instantly extinguished. The Surgeon's Mate, who is truly a worthy fellow, was arrested for his negligence.<sup>74</sup>*

Quick thinking by the crew averted disaster in this case, since the cockpit was located just ahead of the after magazine containing the highly combustible gunpowder. Had the fire spread from the surgeon's mate's cabin, the ship would have been destroyed.<sup>75</sup>

<sup>72</sup> Between 1793 and 1815, 10 Royal Navy ships were lost to fire. Brian Lavery, *The Arming and Fitting of English Ships of War 1600-1815* (London, Conway Maritime Press: 1987) 185.

<sup>73</sup> "Orders and Regulations for the Government of the United States Frigate Constitution addressed to the first Lieutenant and other Commissioned Warrant and petty officers under my command, 1809," Rodgers Family Papers, 1791-1885, Historical Society of Pennsylvania.

<sup>74</sup> Amos Evans, *Journal Kept on Board the Frigate Constitution 1812* (Concord, Mass: Bankers Lithograph Co., 1967) 166.

<sup>75</sup> The crew, who were regularly drilled in responding to fires, could extinguish small fires with some of the many leather buckets scattered about the ship. A larger blaze required the use of the "Fire Engine." William C. Hunneman repaired the ship's engine and supplied



The best way to contain an open flame, and make it portable at the same time, was to use a lantern. For general lighting purposes, *Constitution* carried glass-and-horn hand lanterns. These would have been used by sentries and the master-at-arms while making his rounds, and possibly by the officers in the wardroom and cockpit. In addition, the ship was supplied with numerous “battle lanterns,” for lighting the gundeck during night engagements, and “Signall Lanterns” for relaying messages to ships in the night.<sup>76</sup> These lanterns could be illuminated with either cheap tallow candles or more expensive and cleaner-burning spermaceti candles. In mid-1812, Isaac Hull requested 334 dozen of the former and 300 pounds of the latter.<sup>77</sup>

Due to its location deep in the hold, the ship’s magazine was extremely dark. But whereas other parts of the hold could be lighted with an open flame, the highly combustible nature of the powder in the magazine precluded such a solution. In August 1813, Andrew Green submitted a bill for “fitting 2 lamps with Copper slides for magazine;”<sup>78</sup> these were probably similar to those used on other ships. The lamp, with its burning wick and fuel reservoir, was kept in a small “light room” outside the magazine proper. The copper slides presumably allowed the light to be covered or uncovered in the magazine.

Winslow Lewis, a “proprietor of patent skylights,”<sup>79</sup> outfitted *Constitution* with seven “9 Inch Patent Convex Lens’s [sic],” and a “9 inch patent Illuminator Reflector.”<sup>80</sup> The convex lens would have added considerably to the brightness of the oil lamp behind it. This powerful lamp was used for signaling at night.

A candle might have lighted a dark passage, but it could not provide warmth or heat for cooking. The galley range could, but it had a voracious appetite for wood. For example, between August 6 and October 28, 1812, Daniel Stetson delivered to *Constitution* 10 cords of maplewood and 35 cords of oak.<sup>81</sup> A cord of firewood (four by four by eight feet) weighs between two and three tons: in three months the ship

new lengths of “leading Hose,” and “Suction Hose.” Voucher to William C. Hunneman, Dec. 27, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>76</sup> Voucher to Andrew Green, Nov. 21, 1812, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>77</sup> “Required for the use of the U. States Frigate Constitution, Isaac Hull Esqr, Commander,” Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>78</sup> Voucher to Andrew Green, Dec. 11, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>79</sup> Suffolk County, Boston City Massachusetts 1810 Directory, [www.ancestry.com](http://www.ancestry.com).

<sup>80</sup> Vouchers to Winslow Lewis, Sept 16, 1813, and Dec. 14, 1813, Voucher to Andrew Green, Dec. 11, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

<sup>81</sup> Voucher to David Stetson, Dec. 17, 1813, Voucher to Andrew Green, Dec. 11, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA.

consumed between 90 and 135 tons of wood. The wood was good for cooking, but the many braziers and cabin stoves scattered through the ship required another fuel. In September, Thomas Waine delivered 20 bushels of coal, while Eliphalet Leach brought 43 bushels of charcoal.<sup>82</sup>

<sup>82</sup> “‘C’ The United States Navy Department for the Frigate Constitution to Amos Binney,” and Voucher to Andrew Green, Dec. 11, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, box 38, NARA. These fuels were also needed for the armourer’s forge.

# Galley

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Cooking for a crew of 450 men or more required food preparation on a large scale. The ship's cook and his mates were well equipped to handle the hundreds of pounds of provisions boiled, roasted, or otherwise coaxed into edibility each day. In September 1813, Boston coppersmith Nathaniel Alley brought down to the harbor from his shop on Union Street the following items for *Constitution's* galley: "2 Coppr & 1 Iron Covers for Galley," "a 16 qrt Coppr Teakettle," "3 Coppr Saus [sic] Pans with Covers," "a large Iron ladle & tormentor" (an enormous fork with a long handle) and "a large Coppr Cistern for the funnel from the Galley to pass through" (an important item that, when filled with water, would prevent the hot funnel from setting the deck on fire). Apart from a few assorted iron skillets or pans purchased from various merchants, these were the only tools at the cook's disposal. Considering the level of culinary finesse required to boil beef, pork, peas, and rice, they were wholly adequate to the task. The purser, or rather the purser's steward, was also provided with a range of tools to issue out provisions to the crew. Andrew Green supplied several sets of scales, iron and tin weights, a set of tin gill measures, a "flour shovell," and a copper hand pump for pumping spirits (or water) from a cask.<sup>83</sup>

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<sup>83</sup> Voucher to Andrew Green, Dec. 11, 1813, Amos Binney Settled Accounts, 4<sup>th</sup> Auditor of the Treasury Alphabetical Series, RG 217, Box 38, NARA.

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