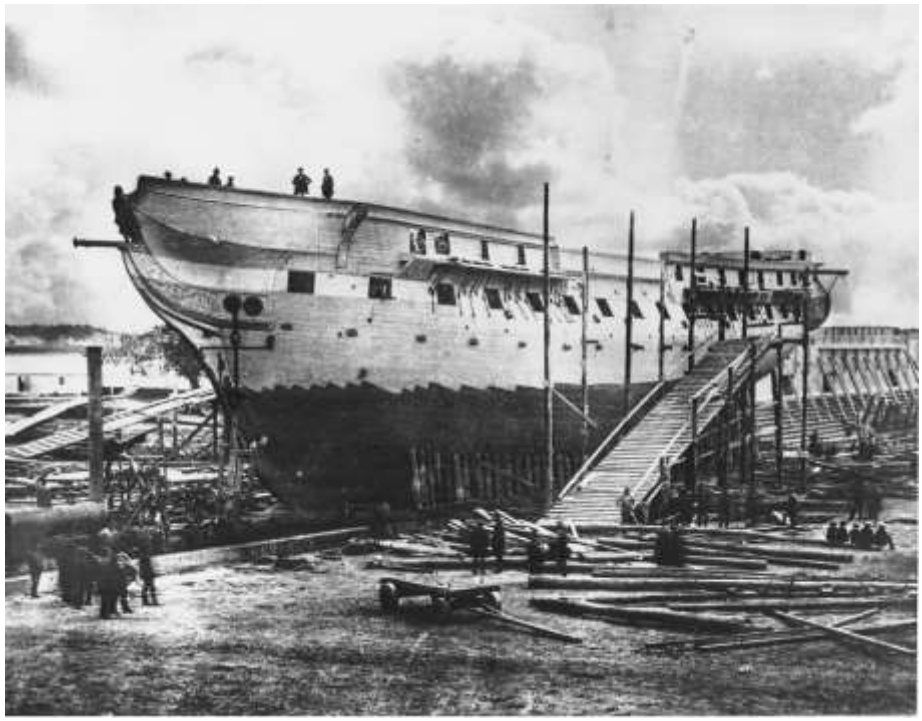


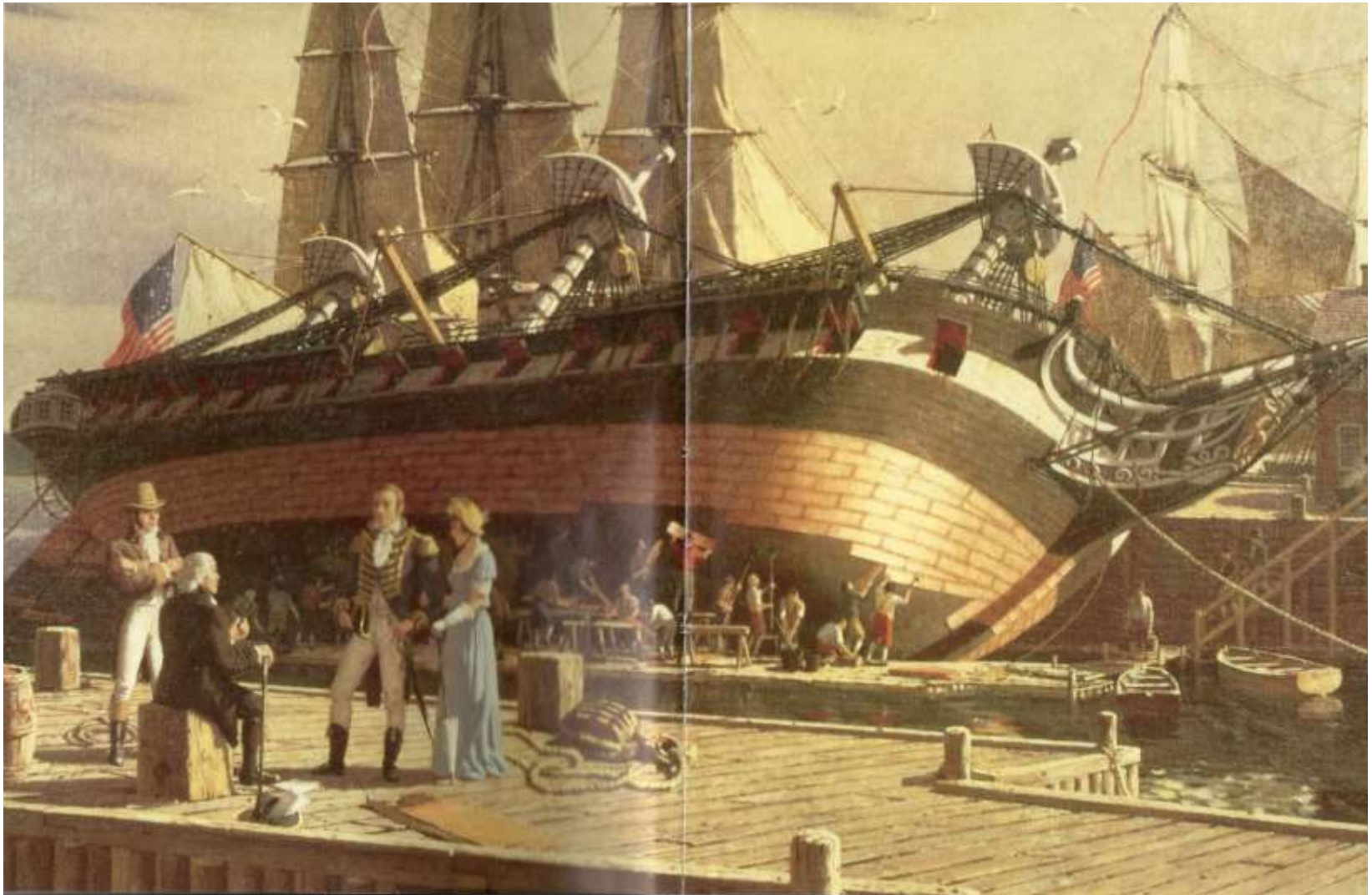
Re-building & Restoring USS Constitution for her 2nd, 3rd, and 4th Centuries of Service - 1833-2010

Margherita M. Desy, Historian
Naval History & Heritage Command Detachment Boston



Repairing a Ship's Hull Before Dry Docks

1803 "Careening" USS *Constitution* to replace copper sheathing (20th century image)



“Let us keep ‘Old Iron Sides’ at home. She has, literally, become a Nation’s ship, and should be preserved...in honorable pomp, as a glorious monument of her own, and our other naval victories.”

National Intelligencer, 1815



***Constitution* was repaired & re-built at the Charlestown Navy Yard after the *Guerriere* & *Java* battles; after the *Cyane* & *Levant* battle, *Constitution* again returned to Boston, but wasn't repaired until 1820-21, prior to sailing to the Mediterranean**

Inscription, John Quincy Adams Dry Dock

(Head of dock)

COMMENCED 10TH . JULY, 1827.

JOHN Q. ADAMS, PRESIDENT OF THE UNITED STATES.

SAMUEL L. SOUTHARD SECRETARY OF THE NAVY.

AUTHORISED BY THE 19TH CONGRESS.



OPENED 24TH. JUNE, 1833.

ANDREW JACKSON PRESIDENT OF THE UNITED STATES.

LEVI WOODBURY SECRETARY OF THE NAVY.

LOAMMI BALDWIN ENGINEER.



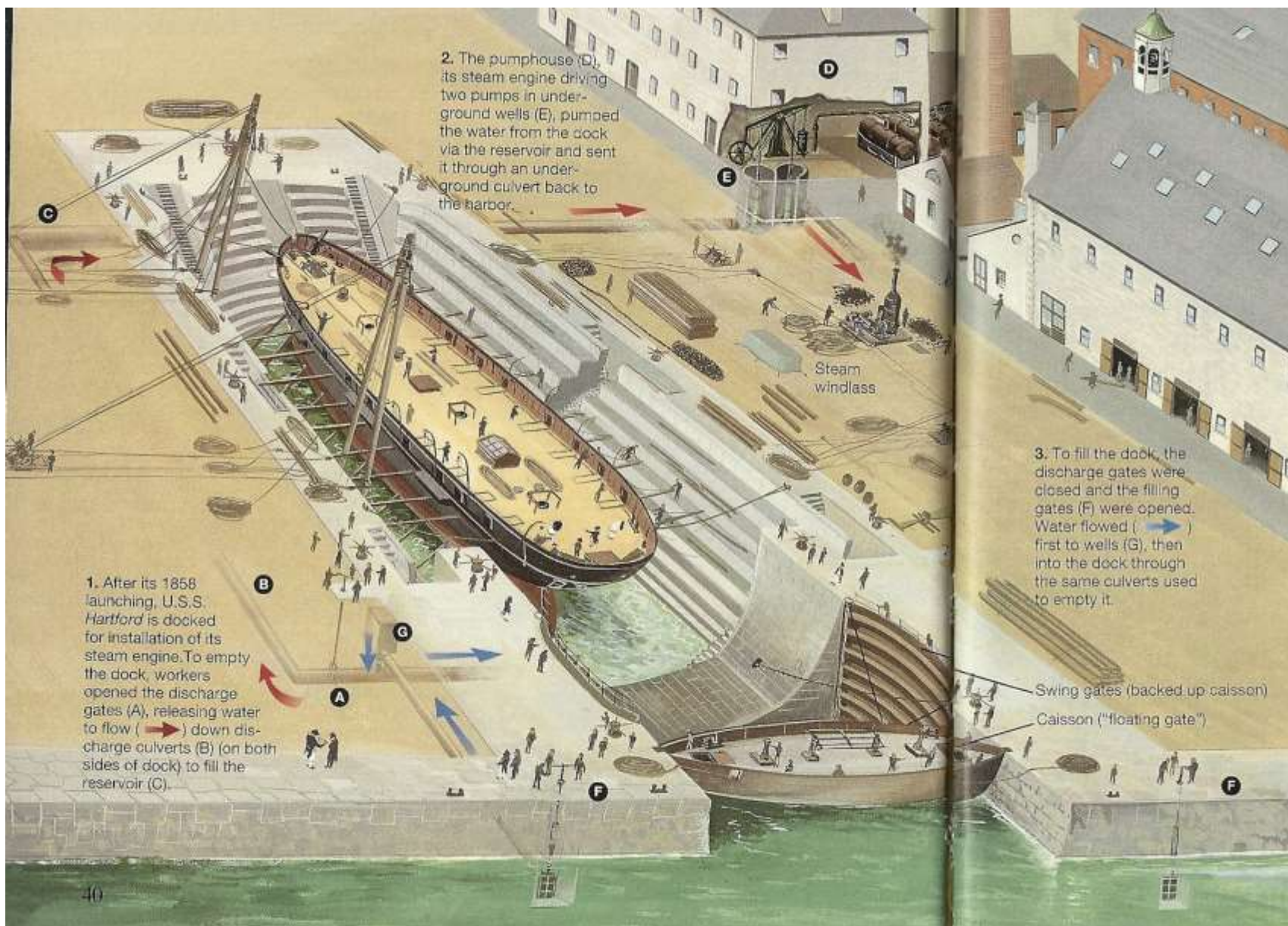
USS *Constitution* first vessel to enter Dry Dock #1 on 24 June 1833.

First caisson (floating gate) constructed of wood; used until 1902; 2nd caisson (the one in place today) was the first steel-hulled "vessel" built in the Charlestown Navy Yard. The 3rd caisson, built for the USN, will be in place for the 2015-2017/8 *Constitution* restoration.



Original 1833 wooden caisson, photographed in 1903. (BNHP photo)

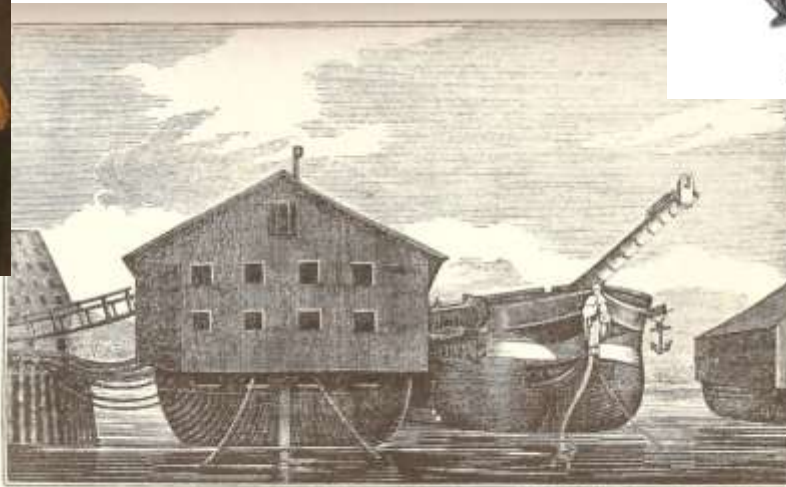
Operation of Dry Dock #1



USS Constitution & the Jackson Figurehead Controversy

**Ay, tear her tattered ensign down!
Long has it waved on high,
And many an eye has danced to see
That banner in the sky;
Beneath it rung the battle shout,
And burst the cannon's roar;
The meteor of the ocean air
Shall sweep the clouds no more...**

Oliver Wendell Holmes, 1830



View of the Constitution, as viewed between the U. S. 74's Cutwax and Independence, at the Navy Yard, Charlestown, Mass., in June, 1834.

From the American Magazine, October, 1834. The first Jackson figurehead is seen, before mutilation.



Figurehead of Andrew Jackson.

**Laban Beecher, carver;
by the time the Jackson
figurehead was made,
Pres. Jackson was hated
in Boston because of the
closure of the 2nd Bank
of the United States,
causing financial
hardships in Boston &
New England.**



**1857-1858 Re-build, Portsmouth Naval Shipyard
First time *Constitution* is photographed**

***Constitution* re-built, 1857-58, Portsmouth Naval Shipyard where cabins/offices added to spar deck; altered stern with 3 windows at spar deck & 3 windows at Captain's cabin ; transition of *Constitution* to training ship for USN/Naval Academy.**

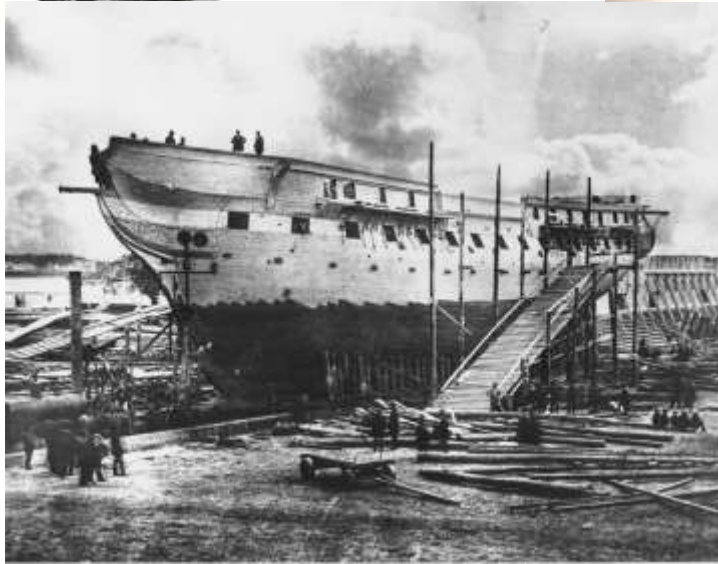
1834 Andrew Jackson figurehead replaced 1847, removed 1871



1834 Jackson figurehead



1847 Jackson figurehead



USS Constitution

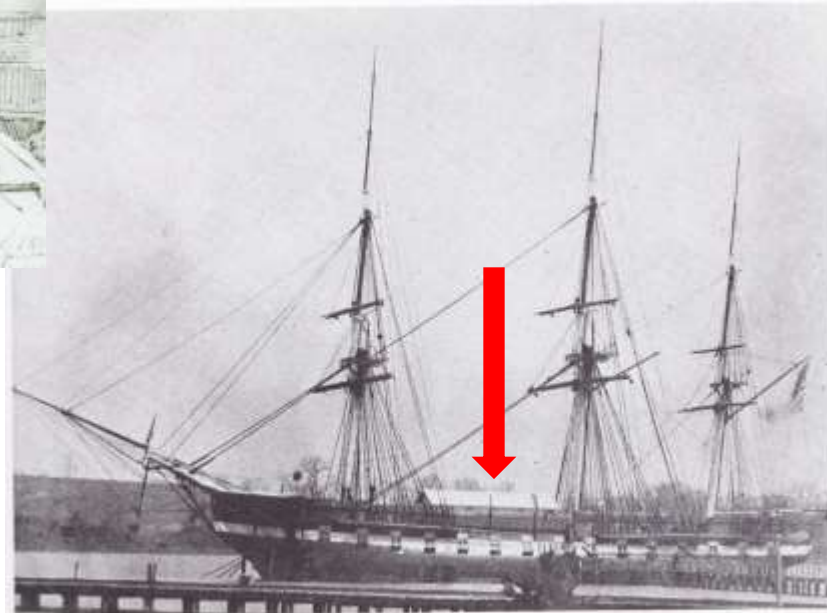
Sail Training Ship for the U.S. Naval Academy

1858-1861 – Sail training cruises

1861-1865 – Non-sailing training vessel for U. S. Naval Academy – Annapolis, MD & Newport, RI



**Classroom spaces on gun deck & “school house”
on spar deck**

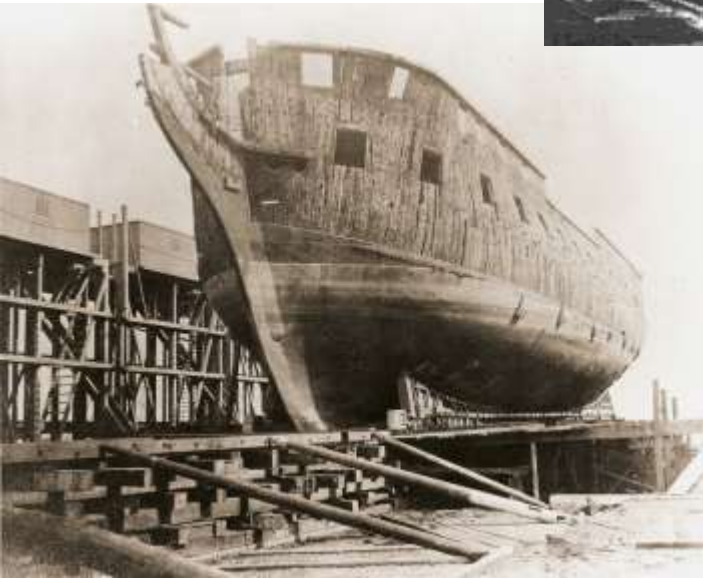
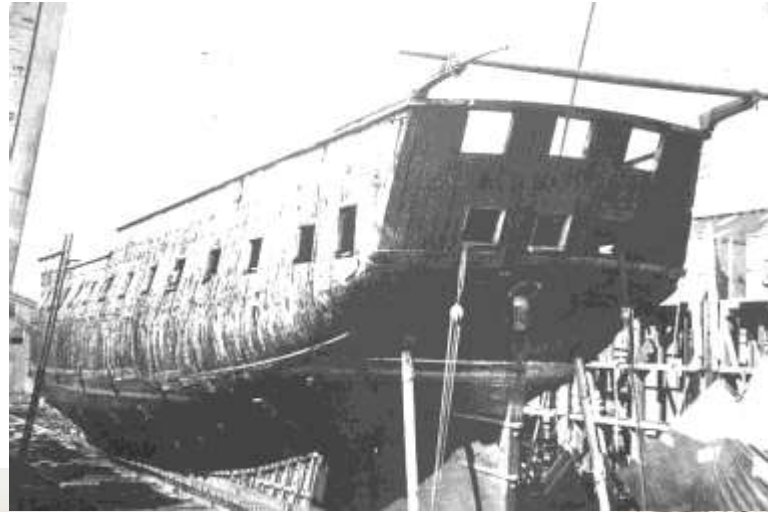


Constitution at the Naval Academy after the Civil War. Note the “school house” built over her main hatch area.

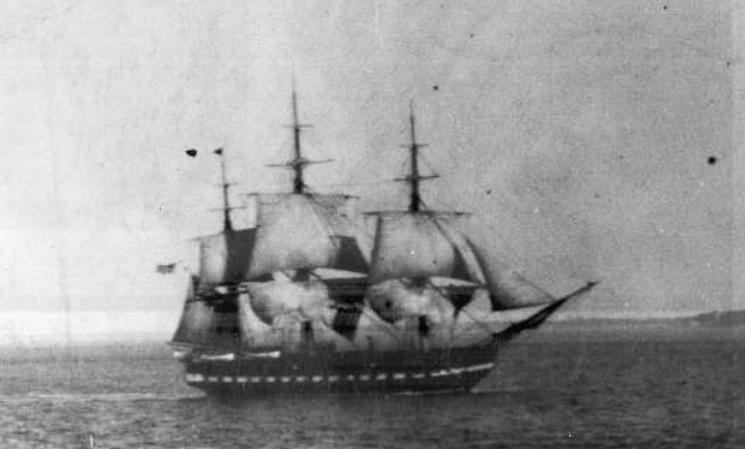
1872-1877 Philadelphia Navy Yard Re-build

Lengthy, on-again, off-again re-building

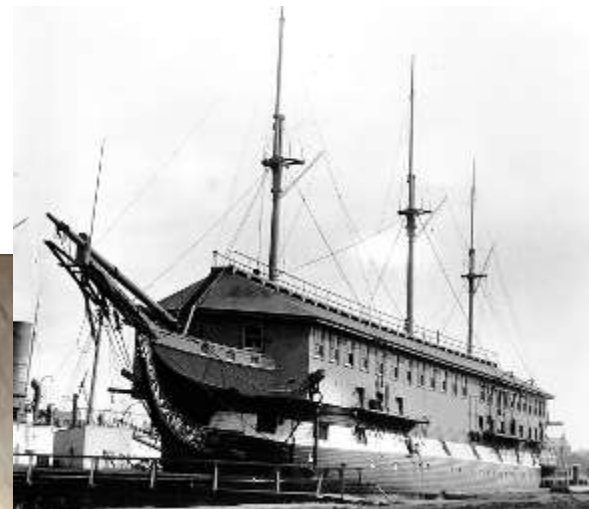
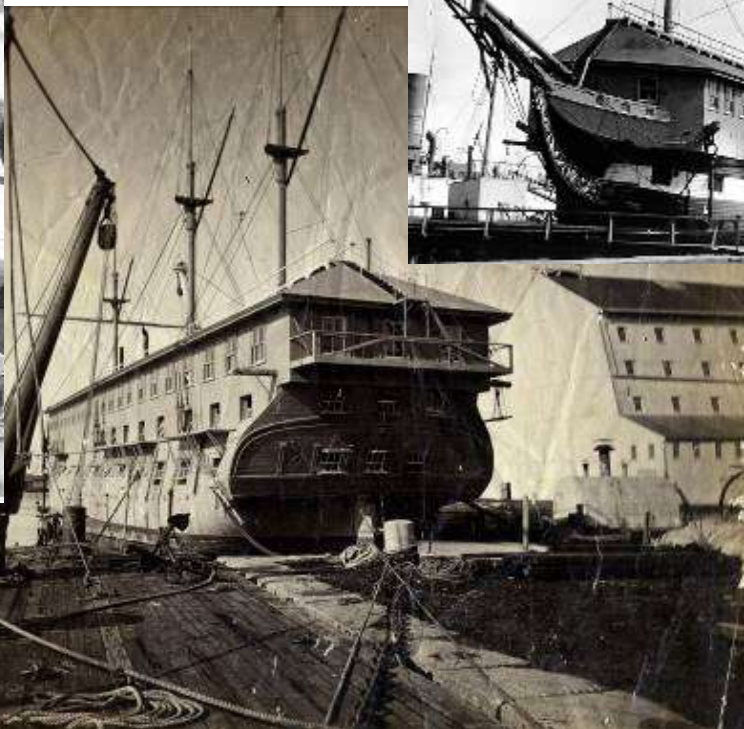
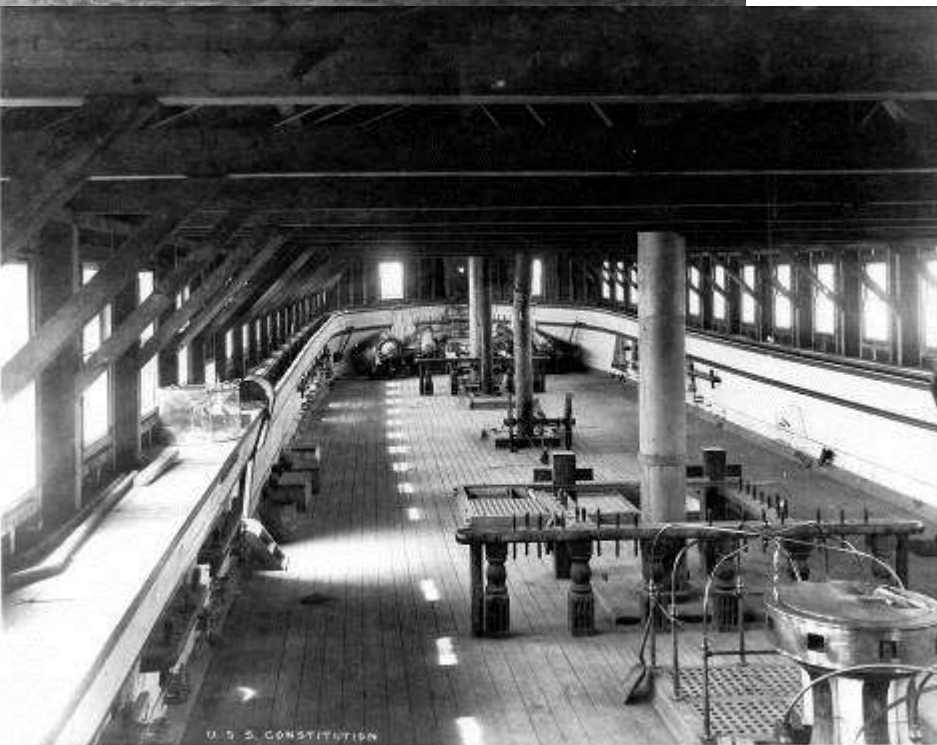
At the conclusion, *Constitution* sailed to Le Havre, France – one of two vessels which carried the United States exhibits to the Exposition Universelle, Paris



"THE HARPIES OF THE SHORE"
"Old Ironsides" turned into a freighter. Unloading at Havre the American exhibits for the Paris Exposition of 1878. From *L'illustration*, 1878.



1881 Last Sail
Receiving Ship, Portsmouth Navy Yard, 1882-1897
Returned to Charlestown Navy Yard, September, 1897
for 100th Anniversary



1906-07 Restoration of USS *Constitution* – for her 3rd Century of Service

The 1906-07 work on *Constitution* was to counter the suggestion by Secretary of the Navy Charles Joseph Bonaparte to use “Old Ironsides” for target practice in the Atlantic Ocean! Pres. Theodore Roosevelt disagreed & Bonaparte was removed as Sec. of the Navy & became Attorney General where he helped to create the FBI!

The 1906 work is considered the first real “restoration” of *Constitution* as the USN deliberately attempted to recreate the ship of the W/1812 era. A new rig was installed; upper hull planking & some framing above the waterline was replaced; otherwise the ship remained the same – this was a \$100,000 “cosmetic” restoration. The 1812 *Constitution* model at Peabody Essex Museum was used as documentary evidence of the 1812 look to the ship



1927-1930 Re-building and Purported 1812 Restoration of USS *Constitution*

1925 – a structural survey revealed *Constitution* was in dire condition; fund-raising began through the sale of images of the ship and the “pennies” campaign with school children nationwide.

16 June 1927 – *Constitution* entered dry dock #1 to begin a 4-year restoration.

Total cost of the restoration: \$921,108.49 – of this amount, \$154,000 was raised by American school children in their “Pennies Campaign” and \$216,429.98 was raised through the sale of *Constitution* souvenirs.

85 % of *Constitution* was “renewed” (i.e. replaced) in this restoration; without this work, the ship might not have survived into the 20th century



USSC entered dry dock 16 June 1927; the first re-building of significance in over 50 years...

If *Constitution* had not been so completely re-built in the 1927 restoration, it is unlikely she would have survived to the end of the 20th century.



Oct. 28, 1929:
New bowsprit –
the Stock
Market would
crash on Oct. 29th,
ushering in the
Great Depression

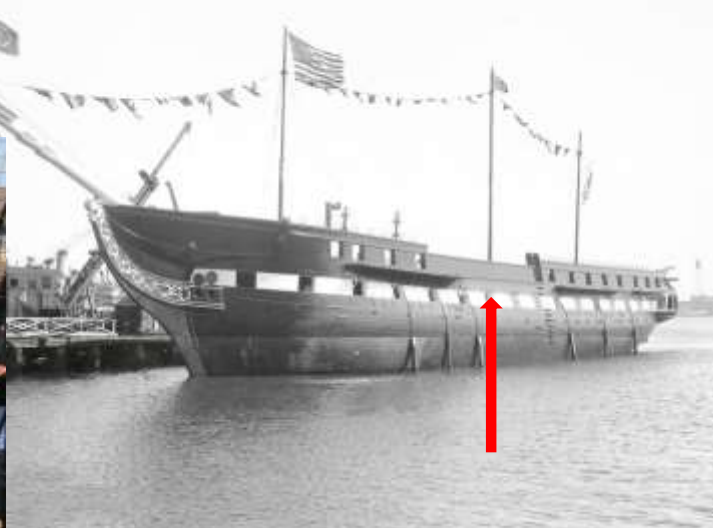


Research behind the 1927-30 restoration of USS *Constitution*

LT John Lord, supervisor of construction, conducted extensive restoration research – the claim was that *Constitution* was restored to her appearance in the War of 1812 – this was not so. Mis-interpreting plans from 1847/49, Lord thought the waist was solid in

1812 – it was, in fact, open, yet the inaccurate filled-in waist was kept for the rest of the 20th century, until re-opened in 2010. LT Lord's

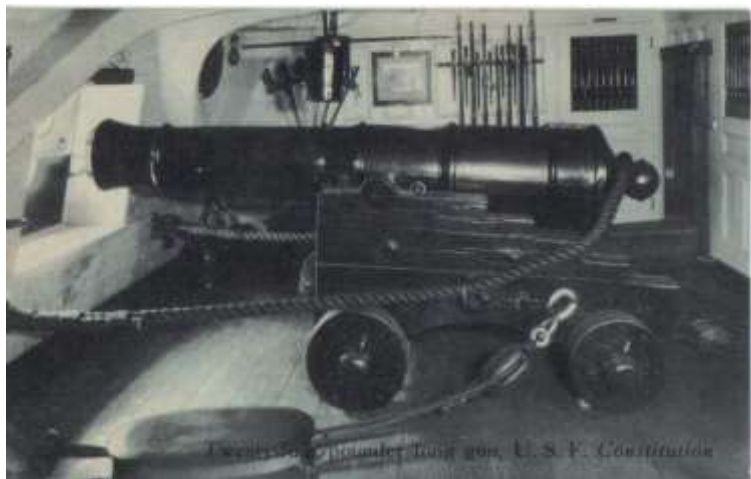
Constitution, after the 1927-31 restoration was well crafted, but did not at all represent the ship in the W/1812 era – Lord's look to the ship was a mash-up of many eras; slowly the ship is being brought to her 1812 look.



Constitution, 1930

New guns were cast for *Constitution* in the Charlestown Navy Yard.

The 1927 long guns were based on mid-18th British guns – an inaccurate pattern for “Old Ironsides” for the War of 1812 era – these are the guns still aboard today.



Twenty pounder long gun, U.S.F. Constitution



Total cost of restoration: \$921,108.49

***Constitution* outfitted with sails & rigging, although she was towed by the minesweeper USS *Grebe* for the National Cruise.**



***Constitution's* National Cruise took in the Atlantic, Gulf, & Pacific coasts of the U.S. & visited 76 ports for 90 stops; 4.6 million guests visited the ship.**

***Constitution* returned to Boston after the National Cruise,
May, 1934**

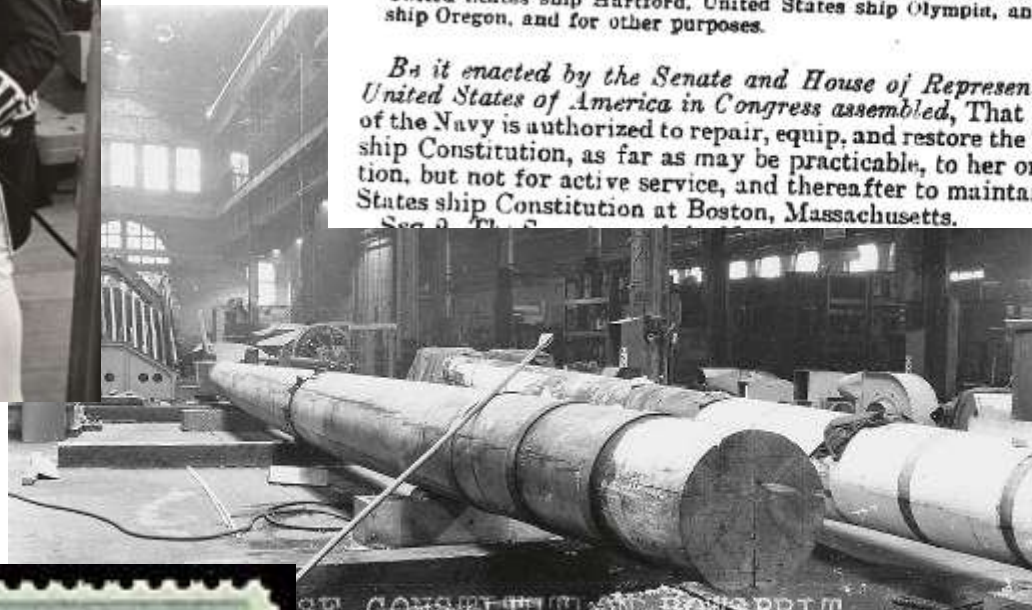
During World War II, *Constitution* was used for officers awaiting court martial and had a shallow house built over the spar deck to protect the ship & possibly to create office space...



Post-WWII to the 1980s: Restorations & Business as usual



Queen Elizabeth visited,
July, 1976



1954 Legislation

1949 - New bowsprit

Crane, Indiana, 1976

Public Law 523

CHAPTER 565

AN ACT

To provide for the restoration and maintenance of the United States ship Constitution and to authorize the disposition of the United States ship Constellation, United States ship Hartford, United States ship Olympia, and United States ship Oregon, and for other purposes.

July 24, 1954
H. R. 3247

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Navy is authorized to repair, equip, and restore the United States ship Constitution, as far as may be practicable, to her original condition, but not for active service, and thereafter to maintain the United States ship Constitution at Boston, Massachusetts.

Historic ship -
U.S.S. Constitution
Restoration.



1947 USPS Stamp ,
USSC 150th anniversary

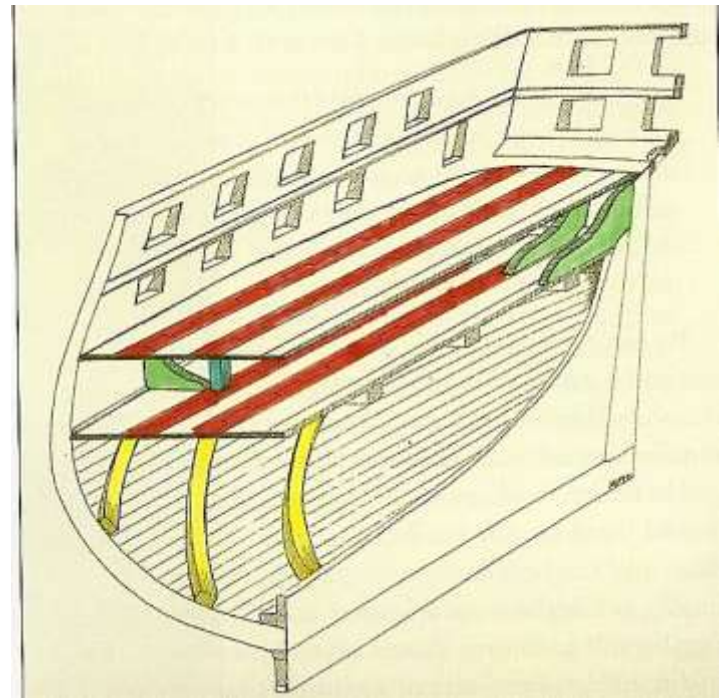
U.S.S. CONSTITUTION, BOWSPRIT
ONBOARD END-BANDED
058-497 INK 11/29



1992 & 2007 Restorations

Preparing the ship for her 4th Century of Service

Constitution was dry-docked for nearly 4 years, 1992-1996. For the restoration, structural elements that had long-ago been removed were re-created and installed on board.



Constitution entered dry dock in September, 1992; the ship was floated out of dock April, 1996.

5 structural elements were identified as having been called for by Joshua Humphreys in his “Dimensions and sizes of materials for building a Frigate of forty-four guns”, 1794:

1. THICK STRAKES – on the Gun & Berth Decks



2. Bow & transom knees – are placed over the thick strakes & strengthen the bow & stern, by supporting the bow & stern



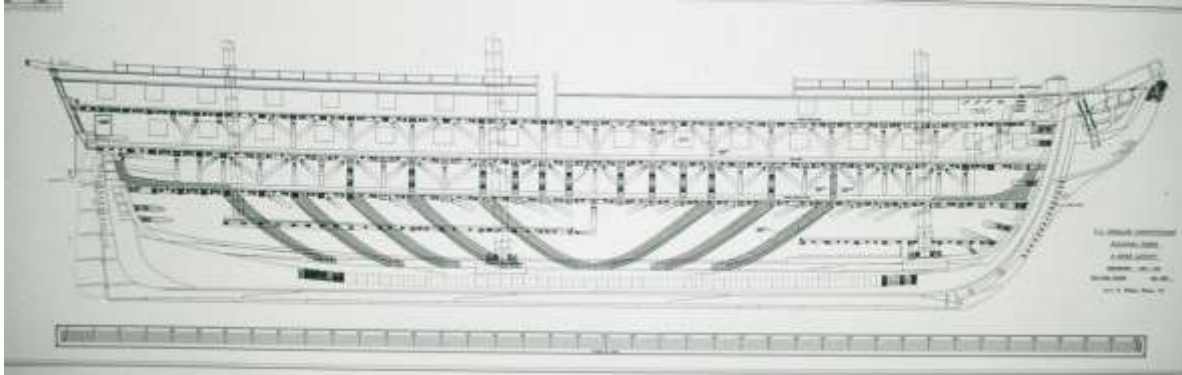
**3. Knees – twelve on each side of the berth deck.
Today the knees are laminated white oak, creating a solid structure that looks like a “C”, replacing what would have been one hanging knee & one standing knee, bolted together.**



4. "Pillars or stanchions" – three rows were to be installed on the berth deck, supporting the great weight of the gun deck guns and the gun deck structure



5. "Diagonal Riders" – help to displace the weight & stresses from the upper decks & bring that stress down to the keelson



Modern diagonal riders are solid laminated white oak – would have been multiple pieces of white & live oak scarfed together in 1797

Restoring USS Constitution for her 4th Century of Service

Removing the 14" hog in Constitution's 150-foot keel was paramount



New copper sheathing, 3,400 sheets, was installed; new lower masts were made...



Six Oceanus sails were made for *Constitution*; the first sails on the ship since the National Cruise of 1931-34.



July 21, 1997

**200th anniversary sail – 1st sail
in 116 years!**



WoodenBoat
THE MAGAZINE FOR WOODEN BOAT OWNERS, BUILDERS, AND DESIGNERS

CONSTITUTION Sails
Historic Photographs of Maritime Maine
A New Hoisting Gaff for the Handboard
Build a Dayboat
The Boats of Bangladesh

NOVEMBER/DECEMBER 1997
NUMBER 128
\$4.99
\$5.99 in Canada
\$5.00 in U.K.

Restoration 2007-2010:

Replace main hatch coaming; replace spar deck planking & re-establish camber (curve) in the deck; open waist bulwarks & re-create waist hammock irons & netting



Camber re-created by installing shims on each deck beam & ledge (above)



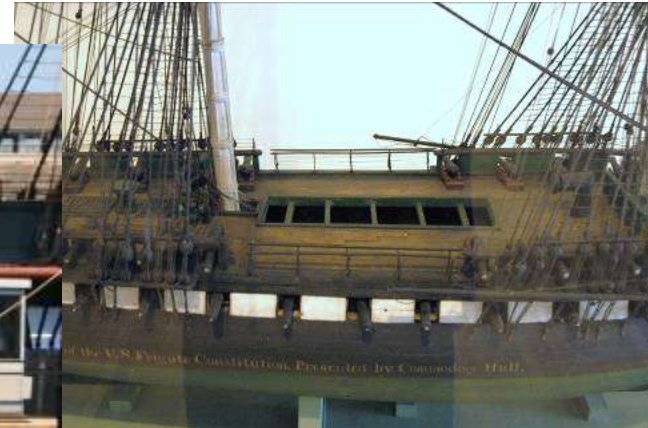
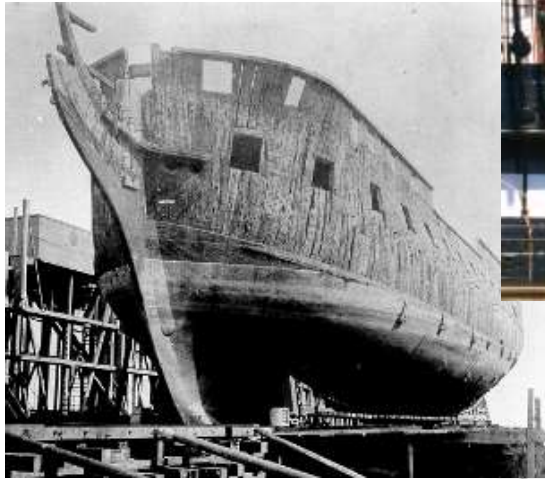
Solid fir decking (left) & laminated white oak (right)

“...repair and restore USS Constitution...as far as practicable...to its 1812 configuration...”
Mission, Naval History & Heritage Command Detachment Boston

Research/documentation is an implicit, important element of the mission of the NHHC Detachment Boston.

Restoring the spar deck open waist of USS Constitution & lowering upper bulwarks as per her War of 1812 look was a goal of 2007-2010 re-building.

c. 1875, USSC , Philadelphia



Peabody Essex Museum



1906-07 re-building,; open waist re-created, using 1812 USSC model



NavSea presentation on Open Waist

Lowering the upper bulwarks to 1812 height

The upper bulwarks that had been inaccurately raised in the 1927 restoration were cut away and lowered to the proper height as found in 1812.

USS 'OLD IRONSIDES'

A RETURN TO GLORY

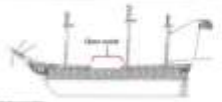
The latest restoration of USS Constitution is making additional deck changes bringing the ship over close to its original appearance.

USS Constitution's main-deck gun, which is mounted on the main deck, is being replaced by a 24-pounder. The 24-pounder is a smaller gun than the 32-pounder that was on the ship in 1812. The 24-pounder is a smaller gun than the 32-pounder that was on the ship in 1812. The 24-pounder is a smaller gun than the 32-pounder that was on the ship in 1812.

Restoration efforts to bring the ship back to its original appearance are well advanced. The ship's main-deck gun, which is mounted on the main deck, is being replaced by a 24-pounder. The 24-pounder is a smaller gun than the 32-pounder that was on the ship in 1812. The 24-pounder is a smaller gun than the 32-pounder that was on the ship in 1812.

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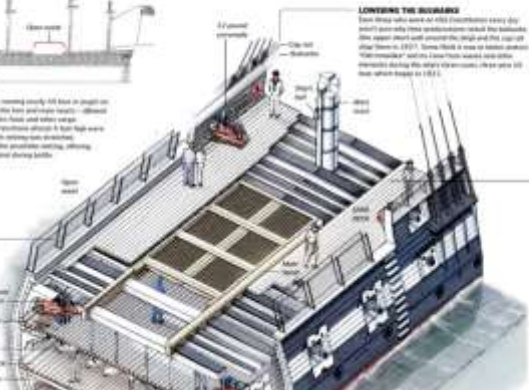
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RE-ERECTING THE MAIN DECK

When the ship was raised in 1927, the main deck was raised to a height of 18 feet above the water. The main deck is now being lowered to its original height of 16 feet above the water.

To restore the upper bulwarks, workers are cutting through the 18-foot bulwarks and re-erecting the 16-foot bulwarks.



LOWERING THE BULWARKS

Even those who work on USS Constitution every day aren't sure why their predecessors raised the bulwarks. The upper short wall around the ship and the cap rail atop them in 1927. Some think it was to better protect "Old Ironsides" and its crew from waves and other elements during the ship's three-coast, three-year US tour, which began in 1931.



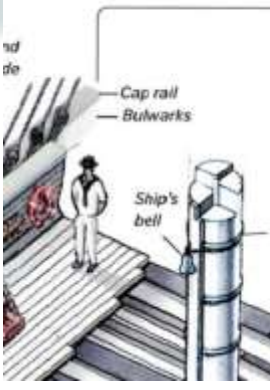
The current bulwark is 18 feet high. The restored bulwark is 16 feet high. The difference is 2 feet.

RESTORING THE MAIN DECK

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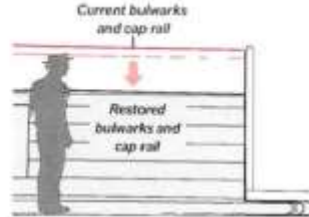
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The current restoration is reducing the height of the bulwarks and cap rail around the ship - a total of 350 linear feet - by 18 inches to bring back the ship's 1812 appearance.

“...sail on, O Ship of State...”

**October 28, 2009 National Defense Authorization Act, FY 2010 – Section 1014
‘Designation of USS *Constitution* as America’s Ship of State’**



**Henry W. Longfellow
Nahant, 1850**



“It is the sense of Congress that the President, Vice President, executive branch officials, and members of Congress should utilize the U.S.S. Constitution for the conducting of pertinent matters of state, signing legislation relating to the Armed Forces, and signing maritime related treaties.” National Defense Authorization Act, FY 2010:

Detailing how *Constitution* could be used as ‘America’s Ship of State’