Guide to the National Archives and Records Administration USS Monitor Collection
Catalog Number MS341

The Library at The Mariners' Museum

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Processed 2005
DESCRIPTIVE SUMMARY

Repository: The Library at The Mariners' Museum
Title: National Archives and Records Administration USS Monitor Collection
Catalog number: MS341
Accession number: None
Physical Characteristics: 62 items (Photocopies)
Language(s): English
Creator(s): Cornelius Bushnell, John Ericsson, Gustavus Fox, John Griswold, Alban Stimers, and Henry Wise (bulk)

SCOPE AND CONTENT

This collection consists of 62 photocopies of items documenting the design, construction and testing of USS Monitor and her armament. The majority of the material in this collection is correspondence. However, there are also contracts, drawings, specifications and other material-types. The dates of these materials range from 1854 through 1913; the bulk though is from 1861 and 1862.

Among the correspondents are Cornelius Bushnell, Admiral John Dahlgren, John Ericsson, Assistant Secretary of the Navy Gustavus Fox, John Griswold, Alban Stimers, Secretary of the Navy Gideon Welles, John Winslow, and Henry Wise. These individuals represent three groups associated with Monitor which are represented in this collection: those associated with her design, those associated with her construction; and the U.S. Navy.

Archivists from The Mariners’ Museum selected and photocopied these materials from Record Group 45 (Naval Records Collection of the Office of Naval Records and Library) at the National Archives and Records Administration. These materials were selected based on their potential usefulness to researchers and staff conducting Monitor-related research at The Mariners' Museum.

ADMINISTRATIVE INFORMATION

Accession number
None
Accession date
None
Restrictions
Collection is open to all researchers.
Publication Rights
Procurement of rights to publish materials from this collection must be made through the United States National Archives and Records Administration.
Desperate to break the Federal blockade, Confederate engineers and workers labored throughout the summer of 1861 to convert the Federal frigate USS *Merrimac* into the ironclad CSS *Virginia*. Progress of the conversion was reported in Southern newspapers and picked up by the press in the North. As work progressed on the *Virginia*, it became evident to Secretary of the United States Navy Gideon Welles that if the conversion of the *Merrimac* were successful, no Federal ship could stop her. The need to offset this threat spurred the Navy Department to create an Ironclad Board. Consisting of navy officers, the Board was charged with seeking and evaluating plans for the construction of ironclad vessels for Federal service.

On August 3, 1861, Secretary Welles published an announcement calling for the submission of designs and plans of ironclads to the Navy Ironclad Board. Many designs were presented to the board. This included a proposal by Cornelius Bushnell and Samuel Pook for an ironclad steamer that eventually became the USS *Galena*. In creating the plans for his steamer, Bushnell sought the advice of renowned engineer John Ericsson. Ericsson showed Bushnell his plans and model of an “impregnable iron battery” designed for Napoleon III of France in 1854. Bushnell was so impressed with Ericsson’s radical designs that he presented them to Secretary Welles. Secretary Welles agreed that the design had “extraordinary and valuable features” and that it should be submitted to the Ironclad Board for consideration. Bushnell presented Ericsson's designs to the Board. However, Ericsson’s ironclad designs were rejected as too outlandish for consideration. Undaunted, Bushnell persuaded Ericsson to appear before the Board to defend the design.

When the Ironclad Board submitted its final report to Secretary Welles, Ericsson's design was one of three recommended for approval. On October 4, 1861, the Department of the Navy signed a contract with John Ericsson, Cornelius Bushnell, John F. Winslow, and John A. Griswold for the construction of an “iron clad battery”. The contract stipulated that total compensation for the ship would be $275,000 spread over equal payments of $50,000 each based on progress of construction of the ship. From each payment, the Navy Department would retain 25% until the *Monitor* was proven to be successful in every way or payment would be withheld. According to the contract, construction of the “battery” must be completed within 100 days.

To meet the deadline set by the government, Ericsson subcontracted the construction and fabrication of his ironclad to eight foundries. In a particularly ambitious plan, each subcontractor supplied various components of the ship at separate locations, shipping the
completed parts to a central location for assembly. John A. Griswold, principal partner in Rensselaer Iron Works and owner of Bessemer steel patents, was selected to oversee the financial management of the project. His associates, John F. Winslow, co-owner of Albany Iron Works, oversaw the procurement of the necessary iron and armor plate for the “Battery” and Thomas Rowland, of the Continental Iron Works at Green Point, New York, was contracted for the final construction of the Monitor.

Delamater Iron Works of New York City constructed the engines and boilers, Novelty Iron Works of New York City rolled the iron plates for the turret and oversaw its assembly, and Clute Brothers and Company of Schenectady produced the donkey engine to power the turret. Holdane and Company of New York City, Albany Iron Works of Troy, and H. Abbot and Son of Baltimore rolled additional iron plate for the turret, as well as bars and rivets. The Niagara Steam Forge of Buffalo, New York, furnished two iron port stoppers. As these parts were produced, they were shipped to Continental Iron Works in Green Point, New York, where the hull was laid and the final assembly was performed.

The assembly of the Monitor was in itself an amazing engineering feat. Eight foundries, working independently and perhaps with no clear idea of what the final product would look like, successfully produced Ericsson’s Iron Clad Battery. When the ship was launched on January 30, 1861, Ericsson and his associates had missed his one hundred-day deadline by 18 days, but no one seemed to notice. The United States Navy had its Monitor to check the South's Virginia.

SERIES DESCRIPTION

This collection is divided into six (6) series
  I. Subject Files
  II. Contracts
  III. Correspondence
  IV. Drawings
  V. Reports
  VI. Specifications

The arrangement of these six series is based on two factors: arrangement within RG 45 and material-types. Series I is arranged as it is within RG 45, which is by volume number and thereunder by page number. Series II through VI are arranged according to material-type and thereunder chronologically, which was imposed at the time of processing. The documents in series II through VI were each selected from a variety of RG 45’s series and the arrangement of these series does not correspond with that of RG 45.
Series I: Subject Files

Features selected documents concerning the design, construction and performance of USS Monitor. This series is arranged by volume number and thereunder by page number and is comprised of correspondence, a certificate, a communiqué, drawings, and a fact sheet. Material ranges in dates from 1854 through 1862 with the bulk being from September through December 1861 when Monitor was being designed and constructed. Correspondents include Cornelius Bushnell, John Ericsson, Assistant Secretary of the Navy Gustavus Fox, John Griswold, Commodore Joseph Smith, Alban Stimers and John Winslow. These documents are from the volumes 555, 2599, 2600 and 2601 of the 1775-1910 Subject File in RG 45.

Series II: Contracts

Features three contracts—two handwritten documents and a subsequent transcription of one—from October of 1861 concerning the construction of Monitor. Arranged chronologically. Parties mentioned include Cornelius Bushnell, Continental Iron Works, John Ericsson, John Griswold, Thomas Rowland, Secretary of the Navy Gideon Welles, and John Winslow.

Series III: Correspondence:

Features twelve documents concerning the design, specifications, and armaments of Monitor. Arranged chronologically. Material ranges in dates from August 17, 1862, through November 25, 1913, with the bulk of it being from 1861 and 1862. Correspondents include Cornelius Bushnell, John Dahlgren, John Ericsson, and Assistant Secretary of the Navy Gustavus Fox.

Series IV: Drawings

Features one sketch and one page of drawings of Monitor from an unidentified publication.

Series V: Reports

Features one March 29, 1862, report given to the Confederate States House of Representatives concerning the construction of CSS Virginia.

Series VI: Specifications

Features two documents—one undated; the other from October 1861—concerning the instructions and description of structural material and methods of an ironclad steam battery and Monitor.
Page 166
Correspondence, June 28, 1862: John Ericsson to Secretary of the Navy Gideon Welles,
Two-page letter noting that he invented the impregnable battery and revolving cupola, citing a communiqué he sent to Emperor Napoleon III in 1854 as evidence. He contests the claims of the British Government that Captain Cowper Coles, a Briton, invented the revolving cupola that would evolve into the revolving turret.

Page 166a
Communiqué (extract from), September 26, 1854 (enclosure from previous item): John Ericsson to Emperor Napoleon III
Three-page communiqué describing the form and function of the impregnable battery and revolving cupola. He forecasts the effect that this type of vessel will have on naval warfare.

Page 166b
Drawing, 1854: Plan of Ericsson’s Impregnable Battery and Revolving Cupola
Concept vessel designed by John Ericsson for Emperor Napoleon III. Features side elevation and transverse section through the cupola.

Page 167
Correspondence, June 28, 1862: John Ericsson to Assistant Secretary of the Navy Gustavus Fox
Two-page letter following up on the Department of Navy's decision to proceed with the construction of additional Monitor class vessels. Notes his thoughts on the effects of plunging shot from elevated batteries on Monitor.

Page 167a
Drawing, June 28, 1862: John Ericsson to Assistant Secretary of the Navy Gustavus Fox
One-page drawing of trajectory of fire from Fort Darling on Monitor in the James River. Concerns Ericsson's thoughts on the effects of plunging shot on Monitor.
Fact sheet, September 15, 1861: John Ericsson
Three-page description of his impregnable battery focusing on its speed, displacement, stability, functionality, and ventilation.

Correspondence, September 27, 1861: John Ericsson to Commodore Joseph Smith
Two-page letter concerning the effects on the turret of Monitor’s guns being fired. Notes the ventilation system in the turret and addresses vibrations resulting from the guns being fired.

Correspondence, September 23, 1861 (enclosure from previous item):
John Ericsson to Cornelius Bushnell
One-page letter giving permission to Bushnell to alter plans as needed while Ericsson is away meeting with manufacturers concerning construction contracts for Monitor.

Correspondence, September 30, 1861: John Ericsson to Commodore Joseph Smith

Correspondence, October 2, 1861: John Ericsson to Commodore Joseph Smith
One-page letter supporting Smith’s proposal to test the turret under fire before proceeding with further construction. Also briefly mentions Ericsson’s association with John Flack Winslow.

Correspondence, October 4, 1861: John Ericsson to Commodore Joseph Smith
One-page letter indicating Winslow’s support of Smith’s proposal to test the turret under fire, but asking that the schedule be accelerated. Notes progress on the machinery and recommends Alban Stimers as an engineer.
Page 42
Correspondence, October 4, 1861: John Ericsson to Commodore Joseph Smith
Two-page letter detailing amended specifications of the Monitor. Concerns the length of the vessel; the wood-type of the beams; turret’s watertight joint; material-type of the gun carriage; material-type of the deck; and size of the engine.

Page 43
Correspondence, October 4, 1861: Cornelius Bushnell to Commodore Joseph Smith
One-page letter approving the contract for the construction of Monitor, but asking for one amendment: that the testing period be reduced from three-months.

Page 50
Correspondence, October 8, 1861: John Ericsson to Commodore Joseph Smith
One-page letter requesting authority to select the Monitor’s plating. Also comments on manufacturers’ estimated production schedules for steel plates.

Page 63
Correspondence, October 13, 1861: John Ericsson to Commodore Joseph Smith
One-page letter requesting a diagram of the Dahlgren gun so that work on the turret can continue.

Page 65
Correspondence, October 14, 1861: John Ericsson to Commodore Joseph Smith
Three-page letter refuting critical observations concerning Monitor’s displacement and stability. Features an illustration and numerous calculations.

Page 70
Correspondence, October 16, 1861: John Ericsson to Commodore Joseph Smith
Two-page letter concerning Monitor’s stability. Features numerous calculations.

Page 72
Correspondence, October 17, 1861: John Ericsson to Commodore Joseph Smith
Three-page letter listing the size and displacement of Monitor and noting that too much work has been done to implement Smith’s suggestions.
Discusses the size and placement of the deck plating. Also estimates the Monitor’s speed. Features an illustration

Page 73  
Correspondence, October 18, 1861: John Ericsson to Commodore Joseph Smith  
Three-page letter responding to a set of calculations forwarded by Smith calling into question Monitor’s projected displacement. Also notes various changes made during construction.

Page 74  
Correspondence, October 18, 1861: John Ericsson to Commodore Joseph Smith  
Two-page letter detailing the turret’s ventilation system.

Page 76  
Correspondence, October 19, 1861: John Ericsson to Commodore Joseph Smith  
One-page letter concerning the size and weight of Monitor’s plating as well as the progress of its production.

Page 87  
Correspondence, October 24, 1861: John Ericsson to Commodore Joseph Smith  
Two-page letter responding to questions Smith had concerning the pilothouse’s dimensions, the size of the plating, and material-types used in Monitor’s construction.

Page 91  
Correspondence, October 25, 1861: John Ericsson to Commodore Joseph Smith  
Three-page letter concerning methods of attaching the plating and other iron components. Ericsson also asks that Monitor’s engineer be carefully selected.

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Page 16  
Correspondence, November 7, 1861: Cornelius Bushnell to Commodore Joseph Smith  
One-page letter indicating that, with protection from stray shot and torpedoes, no more ports are being cut until Commodore Smith’s approval is given.
Page 19
Correspondence, November 9, 1861: Cornelius Bushnell to Commodore Joseph Smith and subsequent endorsement from Smith to Bushnell
Three-page letter discussing difficulties with design, focusing on the copper sheathing and rubber and how they will work with iron plating and other iron parts (stern post, propeller shaft, etc.).

In the endorsement Smith insists that the hull be sheathed with copper and instructs Bushnell to have work cease on the iron rudder and stern post until further analysis.

Page 32
Correspondence, November 13, 1861: John Griswold and John Winslow to Commodore Joseph Smith
One-page letter concerning the thickness of the iron plating.

Page 37
Correspondence, November 15, 1861: Alban Stimers to Secretary of the Navy Gideon Welles.
One-page letter suggesting modifications to the 11” Dahlgren gun used Monitor; Stimers notes that shortening it by 18” will ease reloading.

Page 39
Correspondence, November 16, 1861: Cornelius Bushnell to Commodore Joseph Smith
Two-page letter concerning the proposed modifications to the thickness of the iron plating.

Page 40
Correspondence, November 16, 1861: John Ericsson to Commodore Joseph Smith
One-page letter giving an update on the progress of Monitor, commenting on the engines, turret machinery, and the irregular arrival of the iron plating.

Page 40
Certificate, November 15, 1861 (enclosure from previous item): issued by Alban Stimers
Certification that $50,000 worth of work has been done on Monitor, as was specified in the contract.

Page 45
Correspondence, November 18, 1861: Alban Stimers to Commodore Joseph Smith
One-page letter requesting that Smith direct Ericsson to shorten the 11” Dahlgren gun by 18” at his own expense.
Page 51
Correspondence, November 20, 1861: John Ericsson to Commodore Joseph Smith
Two-page letter concerning Monitor’s guns, in particular their recoil and how they will be run out. Ericsson also notes that he has no objection to Stimers’s suggestion to shorten the guns.

Page 52
Correspondence, November 20, 1861: Daniel B. Martin to Commodore Joseph Smith
One-page letter proposing use of 7/5” thicker iron plating to both improve resistance to fire and ease installation.

Page 55
Correspondence, November 21, 1861: Cornelius Bushnell to Commodore Joseph Smith
One-page letter noting that he recommends using iron for the construction of the propeller, after-stern post, and rudder instead of brass.

Page 59
Correspondence, November 23, 1861: Alban Stimers to Commodore Joseph Smith and subsequent endorsement from Smith to Stimers
Three-page letter in which addresses the difference between the published and actual dimensions, the fact that fastenings were changed after range tests, and that the guns’ recoil distance of 6 feet. Stimers also requests an assistant for engineering work on the engine.

In the endorsement Smith notes that the assistant has been assigned and notes that the guns’ recoil distance is acceptable.

Page 81
Correspondence, December 7, 1861: Alban Stimers to Commodore Joseph Smith
One-page letter announcing the arrival of Isaac Newton as first assistant engineer and requesting to order the manufacture of fifty pieces of wrought iron shot for use against an enemy ironclad.

Page 82
Correspondence, December 10, 1861: Cornelius Bushnell to Commodore Joseph Smith and subsequent endorsement from Smith to Bushnell
One-page letter noting that 3”-thick planks were used instead of 2 ½” to better adhere to the oakum. Also requests to add tarred felt beneath the iron deck plates to protect the deck.
In the endorsement Smith asks that Bushnell send a copy of the plating plan.

Page 92
Correspondence, December 17, 1861: John Ericsson to Commodore Joseph Smith
One-page letter giving a progress report on Monitor’s construction and noting that the distribution of the turret’s weight does not strain the beams. Also states that he, instead of Captain Cowper Coles, should be credited as the inventor of the revolving turret as his 1854 designs predate all others.

Page 99
Correspondence, December 22, 1861: W.L. Heist to Commodore Joseph Smith
Two-page letter concerning Monitor’s propeller. Provides a progress report and speculates that because of the size of her propeller, Monitor could not be towed to the Chesapeake Bay and would have to be towed to sea.

Page 101
Correspondence, December 22, 1861: Alban Stimers to Commodore Joseph Smith
Two-page letter concerning the procurement of wrought iron shot for 11” guns. Notes the cost and that it will be used only for short ranges and must be solid.

Page 108
Correspondence, December 28, 1861: Samuel Pook to Commodore Joseph Smith
One-page letter concerning the bow plating.

Page 109
Correspondence, December 28, 1861: Alban Stimers to Commodore Joseph Smith
One-page document featuring a note sent to Mr. Horatio Allen, president of Novelty Iron Works, in regard to the order for 10 of the wrought iron shot ordered for Monitor.

Page 110
Correspondence, December 28, 1861: Alban Stimers to Commodore Joseph Smith
Two-page letter discussing work on iron shot and battery of Monitor. Also notes that Charles B. Dahlgren (son of John Dahlgren) passed 3rd Engineer Exam and that Stimers would like to have him onboard Monitor.
Series II: Contracts

Folder 7  October 4, 1861
Nine-page, handwritten copy of the contract detailing the arrangement between Secretary of the Navy Gideon Welles and John Ericsson, John Winslow and John Griswold for the construction of the “Shot Proof Steam Battery.”

October 4, 1861
Four-page, typescript copy of the above document.

October 25, 1862
Three-page, handwritten copy of the contract between Thomas Rowland, the owner of Continental Iron Works, and John Ericsson, John Winslow, John Griswold, and Cornelius Bushnell for the construction of Monitor.

Series III: Correspondence

Folder 8  August 17, 1861: John Ericsson to Cornelius Bushnell
Three-page letter from John Ericsson to Cornelius Bushnell responding to Bushnell’s observations on the construction if Monitor.

September 11, 1861: John Ericsson to Cornelius Bushnell
Two-page letter regarding the armor weight as well as the stability and dimensions of Monitor.

January 30, 1862: John Ericsson to Assistant Secretary of the Navy Gustavus Fox
One-page telegram concerning the draft of Monitor after construction is completed.

May 1, 1862: Assistant Secretary of the Navy Gustavus Fox to John Dahlgren
One-page letter regarding changing the turret’s dimensions to accommodate 15-inch guns.

May 5, 1862: Henry Wise to John Dahlgren
One-page telegram on behalf of John Ericsson requesting the weight of the 13-inch gun.

May 5, 1862: Henry Wise to John Ericsson
One-page telegram advising a 13 inch gun will weight 700 pounds than a 15 inch gun.

May 6, 1862: Henry Wise to John Dahlgren
One-page telegram asking whether the interior of the turret can
accommodate a gun with a barrel diameter of 20 inches.

May 7, 1862: John Dahlgren to Assistant Secretary of the Navy Gustavus Fox
One-page note indicating that he will respond to an unidentified inquiry by letter.

June 15, 1862: Assistant Secretary of the Navy Gustavus Fox to John Ericsson
One-page note suggesting that both iron and wood beams be factored into the design of Monitor and the Department of the Navy have the final decision as to which is used.

July 10, 1862: G.B. Davids to Rear Admiral Louis Goldsborough
One-page letter concerning the ordering and arrival of sheets of iron for Monitor.

February 23, 1863: Assistant Secretary of the Navy Gustavus Fox to John Ericsson
One-page letter indicating that the plans and specifications for Monitor are at 413 Broadway in New York City and that they should be picked up and reviewed as bids for work open on February 25th.

November 25, 1913: Secretary of the Navy Josephus Daniels to Eli Atwood
Two-page letter describing the construction of Monitor and CSS Virginia and who supplied the anchor chain for the Monitor.

Series IV: Drawings

Folder 9
Drawings of Monitor sections, undated
1. Transverse section through turret of original Monitor
2. Longitudinal Section Aft
3. [Longitudinal Section Forward]

Sketch of midship section of turret of Monitor, undated

Series V: Reports

Folder 10
Two-page report concerning construction of the CSS Virginia from the recovered hulk of the USS Merrimack.
Series VI: Specifications

Folder 11  
Extract copied from specifications of the Monitor, October 1861
Two-page typescript document noting the dimensions and specifications of the turret of Monitor.

Specification of an Impregnable Floating Battery, October 1861
Ten-page handwritten document indicating the dimensions of Monitor, specifications, and instructions concerning construction. Also features information concerning the engine.

J. Ericsson’s Armor Vessel, circa 1861
One-page handwritten document listing weights of particular components of Monitor—iron; wood; armor; cannon and carriages; ammunition; stores; engines; coal; windlass; officers, crew and their effects and provisions; masts, spars, and rigging; lifeboats and davits; furniture; and cooking apparatus and utensils.

Building instructions for an iron-clad steam battery, circa 1865
Seven-page printed document indicating the dimensions of Monitor, specifications, and instructions concerning construction.

The Monitor, undated
Four-page handwritten document noting the dimensions and specifications of Monitor as well as information concerning the engine.

MATERIALS REMOVED
None

SUBJECTS
Bushnell, Cornelius S. (Cornelius Scranton), 1826-1896
Contracts
Correspondence
Dahlgren, John Adolphus Bernard, 1809-1870
Drawings
Ericsson, John, 1803-1889
Fox, Gustavus Vasa, 1821-1883
Griswold, John A. (John Augustus), 1818-1872
Monitor (Ironclad : 1862)
Specifications
Stimers, Alban
Telegrams
United States – History – Civil War, 1861- 1865
Virginia (Ironclad : 1861)
Welles, Gideon, 1802-1878
Winslow, John