Ironclads

Lesson Plan created by:

Abraham Lincoln Presidential Library & Museum

The Civil War Tech Program is made possible thanks to generous support from AT&T.

LESSON PLAN

Grade: 4th-8th

Title: Ironclad Civil War Tech

Timeframe: 2-45 minutes or 1-90 minute class periods (can be adapted to longer or shorter time period)

Brief Synopsis: Are your kids ready for Civil War Tech: Ironclads? The success of the battle between the Ironclad ships *USS Monitor* and the *CSS Virginia*, created a demand for development of Ironclads in the Civil War. This lesson gives students the chance to learn about ironclad ship technology and make their own ships before testing them in a life-sized version of the game Battleship

Essential Question: How were Ironclads important as a type of Civil War technology and how did they changing naval warfare?

Objectives: Students will be able

1. To create their own ironclad, test it, and redesign it to state afloat
2. To create a reenactment of the Battle at Hamilton Road using the boat they designed.

Learning Standards: This lesson addresses the following Illinois State Learning Standards.

ELA

CCR Reading: Key Ideas and Details:
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

CCR Reading: Integration of Knowledge and Ideas:
7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.

CCR Speaking and Listening: Comprehension and Collaboration:
1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally

Social Science

Inquiry Skills

4th-5th grade:

Communicating Conclusions and Taking Informed Action
SS.IS.8.3.3-5. Use listening, consensus- building, and voting procedures to decide on and take action in their classroom and school.

6th-8th grade:

Developing Questions and Planning Inquiries
SS.IS.2.6-8. Ask essential and focusing questions that will lead to independent research.

Evaluating Sources and Using Evidence
SS.IS.5.6-8.MC. Develop claims and counterclaims while pointing out the strengths and limitations of both.

Communicating Conclusions and Taking Informed Action
SS.IS.6.6-8.LC. Construct arguments using claims and evidence from multiple sources, while acknowledging their strengths and limitations.
SS.IS.8.6-8.MC. Apply a range of deliberative and democratic procedures to make decisions and take action in schools and community contexts.

Civics

4th grade:

SS.CV.1.4. Distinguish the responsibilities and powers of government officials at the local, state, and national levels.

5th grade:

SS.CV.1.5. Distinguish the responsibilities and powers of government officials at various levels and branches of government and in different times and places.

6th-8th grade:

SS.CV.5.6-8.MdC. Analyze the purposes, implementation, and consequences of public policies in historic and contemporary settings.

Geography

6th-8th grade:

SS.G.1.6-8.LC. Use geographic representations (maps, photographs, satellite images, etc.) to explain relationships between the locations (places and regions) and changes in their environment.
SS.G.2.6-8.LC. Explain how humans and their environment affect one another.

Economics and Financial Literacy

6th-8th grade:

SS.EC.3.6-8.MdC. Explain barriers to trade and how those barriers influence trade among nations.

History

5th grade:

SS.H.1.5. Create and use a chronological sequence of related events to compare developments that happened at the same time.

SS.H.3.5. Explain probable causes and effects of events and developments in U.S. history.

6th-8th grade:

SS.H.1.6-8.LC. Classify series of historical events and developments as examples of change and/or continuity.
SS.H.1.6-8.MdC. Analyze connections among events and developments in broader historical contexts.
SS.H.1.6-8.MC. Use questions generated about individuals and groups to analyze why they, and the developments they shaped, are seen as historically significant
SS.H.4.6-8.LC. Explain multiple causes and effects of historical events.
SS.H.4.6-8.MC. Organize applicable evidence into a coherent argument about the past.

Science

Engineering Design

4th-5th grade:

E 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints
on materials, time, or cost.
3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

6th-8th grade:

MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

Mathematics

Operations and Algebraic Thinking: understanding of patterns and relationships
Measurement and Data: Represent and interpret data.
Upper grades
Statistics and Probability: Draw informal comparative inferences about two populations and Investigate patterns of association in bivariate data.

Vocabulary Words:

Ironclad	a 19th-century warship covered in thick iron like armor to protect the ship
Draft	The depth of a ship's hull
Tinclad	a 19th-century ship whose lighter and thinner iron-like armor allowed them to be lighter and fast than the heavier ironclads and operated on shallow rivers like the Mississippi River during the U.S. Civil War
Buoyancy	the ability or tenancy to float on water or other fluids
Reenactment	the acting out of past events like a battle
Union	the northern states of the U.S during the 1800s that opposed the seceding southern states during the US Civil War
Confederacy	the eleven southern states that seceded from the U.S. in 1860 and 1861 to form their own government
Cheesebox	Something like a cylindrical box used to hold cheese, in this case used to refer to the gun turret on the *USS Monitor*, the ship looked like a cheesebox on a raft

Materials:

Overall:
Background sheets on Ironclad
Discussion Questions (see below)
Ironclads Images PDF (in packet)
Content Information Sheet
Experiment #1 Card – Buoyancy Experiment (in packet)
Experiment #2 Card – Reenacting the Battle of the Ironclads (in packet)
Experiment # 3 Card – Building the Battle of the Ironclads (in packet)
Materials for Experiments – see experiment card for listing (in packet)

Procedures:

1. Introduce the idea of the Ironclad using what students think the word means and what is it.
2. Discuss the history of the Ironclad and early experiments
3. Explain the Buoyancy Experiment (Experiment #1 Card) that students will doing.
4. Discuss what students learned with the experiment and the questions from Buoyancy Experiment.
5. Using photographs of Confederate (*CSS Virginia*), East Coast Union (*USS Monitor*), and Mississippi River Union (*USS St. Louis*) ironclads or PowerPoint Presentation, discuss the design of each ship, their strengths and weaknesses
6. Discuss the Battle of the Ironclads, 9 March 1862, *USS Monitor* v *CSS Virginia* up to the point of the *USS Monitor* arriving

7. Explain how students will be reenacting the Battle of the Ironclads using Experiment #2 Card.
8. Discuss the questions for Reenacting the Battle of the Ironclads.
9. Have students do Building of the Battle of the Ironclads using Experiment #3 Card.
10. Discuss the questions for Building of the Battle of the Ironclads
11. Continue discussing what happened with the Battle at Hampton Roads after the *USS Monitor* arrived.
12. Have students watch Battle of the Ironclads video by the Virginia Historical Society (4:26 minutes) http://www.youtube.com/watch?v=exM2YuGoWIE
13. Discuss students what they have learned about ironclads
14. Have students watch The *USS Monitor* by wideawakefilms (6:54 minutes), https://www.youtube.com/watch?v=N7ffAvRpwwE
15. Have students discuss the conclusion questions.

Discussion questions:

Introduction and overview:

1. What does the word Ironclad make you think of? What is an Ironclad ship?
2. Why would the United States and Confederate States want to build ironclad ships? What advantages and disadvantages?

Buoyancy Experiment (Experiment #1 Card)

3. What challenges did ironclad designers and builders have to work through to make sure their ships floated?
4. What did ironclad ship captains have to consider when they planned their movements through rivers and ports?

Reenacting the Battle of the Ironclads (Experiment #2 Card)

5. What challenges did each ironclad have in battle?
6. What advantages did each ironclad have in battle?
7. Who won the battle? Why?

Building the Battle of the Ironclads (Experiment #3 Card)

8. What building techniques were the most effective during your battle?
9. What would you change for your next battle?
10. Which Civil War ironclad design does your ship most resemble?

Conclusion

16. What were the two ships involved in the first battle between two ironclads?
17. Why were ironclads important?
18. How did they change naval warfare?
19. Ask students what they have learned about ironclads

Resources:

Websites
Overview of the *USS Monitor* v. *CSS Virginia*
http://www.usni.org/magazines/navalhistory/2014-01/confederate-ironclad-navy

Library of Congress list of newspaper articles and resources about ironclads in the Civil War
http://www.loc.gov/rr/news/topics/ironclads.html

New York Times summary of the battle between the *USS Monitor* and the *CSS Virginia*
http://learning.blogs.nytimes.com/2012/03/09/march-9-1862-the-monitor-and-merrimac-face-off-in-battle-of-hampton-roads/?_r=0

New York Times article from 1862 on the battle between the *USS Monitor* and the *CSS Virginia*
http://www.nytimes.com/learning/general/onthisday/big/0309.html#article

Steel and Steam: Naval Technology in the Civil War Era by Roger A. Bailey
http://www.civilwar.org/education/history/navy-hub/navy-history/steel-steam.html?referrer=https://www.google.com/

Videos
Battle of the Ironclads video by the Virginia Historical Society (4:26 minutes)
http://www.youtube.com/watch?v=exM2YuGoWIE

The *USS Monitor* by wideawakefilms (6:54 minutes)
https://www.youtube.com/watch?v=N7ffAvRpwwE

Books
MacBride, Robert. *Civil War Ironclads: the Dawn of Naval Armor*. Philadelphia: Chilton Books, 1962.

Still, William N., Jr. Iron Afloat: the Story of the Confederate Armorclads. Nashville, Tennessee: Vanderbilt University Press, 1971.

Further Reflection: (more questions)

1. Have students work in groups to discuss who they felt won the Battle of the Ironclads and why. Make sure they defend their position this evidence from their experiments and the discussions. This can be a writing assignment or presentation.
2. Have students work in groups to explain how ironclads changed the face of navy warfare. Make sure they defend their position. This can be a writing assignment or presentation.

Content Information Sheet

History & Early Experiments of the Ironclads

1. History of Ironclads
    i. 19th century technological advances made Ironclads possible
        1. Marine steam engines went into use around 1815
        2. Large amounts of cheap wrought iron available
    ii. Development of heavy naval gun and heavy shell gun
2. Early experiments with Ironclads
    i. Russians used against Turks in the Battle of Sinope in 1853
    ii. British and French began to build after success of iron-plated floating batteries during the Crimean War (1853-1856)
        1. French Gloire, 1859 and British Warrior, 1860
        2. Both were conventional propeller driven steam frigates; only sides armored and sail rigging remained

2. Building Ironclads
    1. 3 August 1861 US Congress passed bill authorizing construction of armored ships and floating batteries (order for 3)
        i. United States built 10 classes of ships made up of more than 55 ironclads and 20 tinclads
        ii. Approximately 20 ironclads used on the Mississippi River
        iii. Most East Coast ships based on designs by Swedish engineer John Ericsson
        iv. Mississippi River ships based on designs by steamboat salvage businessman James B. Eads
    2. May 1861 Confederate Secretary of the Navy Stephan Mallory allocated $2 million to purchase ironclad ships abroad
    3. June 1861 Confederate states authorized the conversion of the *USS Merrimack* into the *CSS Virginia* at Norfolk Navy Yard
        i. Confederates built approximately 50 ironclads, more than 20 saw action.

Designs 3 Ironclad ships: strengths and weaknesses.

USS Monitor

i. Designed by John Ericsson for use on the East Coast waterways
ii. Negotiated contract for construction of ironclads on 4 Oct 1862 with delivery date 100 days later
iii. Design:
    1. Called a cheesebox on a raft referring to the round turret on the low flat hull
    2. 172 ft long, 41 ft wide (57.3 yards long, 13.7 yards wide)
    3. Rotating turret armored with 8 inches of iron
    4. Pilot house and turret were connected by one speaking tube which could only be used when the turret was on centerline
    5. Hull lowered underwater to eliminate target
        a. 18 inches of hull above water
        b. 1 inch of iron on deck
    6. Covered propeller by projecting the ship's raft beyond hull

7. Submerged hull led to ventilation issues affecting the crew and engines
8. Ship subject to waves due to overhang, no technology existed at the time to help secure ship
9. Armed with 2-11 inch Dahlgren guns before commissioning on 25 February 1862
10. 10 ft 6 in draft
    a. Draft: Distance between the surface of the water and the lowest point of the vessel

2. *CSS Virginia*
   i. 20 April 1861 US troops set the USS Merrimack on fire before they left the Gosport Navy Yard in Norfolk, but the ship only burned to waterline
      1. Engines and hull in workable condition but engines were never entirely reliable
      2. Confederates decide to convert the Merrimack into ironclad CSS Virginia in June 1861
   ii. Design
      1. Experimented with amount of iron in James River before deciding on two layers of two inch iron plates
      2. 10 guns, 4 on each side, one pointing forward, one pointing behind with powerful ram on bow
      3. Rectangular casemate with slanting sides pierced for guns on all four sides
      4. Heavy timbers faced with 4 inches of iron plates
      5. Long tapered hull with iron ram on bow characteristic
      6. Bow & stern sections submerged 2 feet under water
      7. No protection under the waterline left rudder and propeller exposed
      8. Before going into action at Hampton Roads, the captain had the ship covered in pork fat so that the shells would roll off the sides.
   iii. Ship had problems with 22 foot draft causing it to run aground

3. *USS St. Louis*
   i. Built by a network of subcontractors throughout the Ohio Valley, revitalizing shipbuilding in St. Louis for use on the Mississippi River
   ii. USS St. Louis built as first of 7 ships in the Cairo Class designed by James Eads
   iii. Design
      1. 6 foot draft allowed for movement through shallow rivers
      2. 13 guns each: 3 in bow, four on each side, two astern
      3. Sloping casemate built on top of a standard riverboat covering all but a blunt bow and 10 feet of the stern uncovered
      4. Paddlewheel completely surrounded by casemate
      5. 2.5 inches of railroad iron armored the forward side of casemate and section of the sides near the boilers and engines: Rest of casemate backed with 24 inches of oak.
      6. High pressure boilers would explode like bombs if hit and scald sailors in the compartment with superheated steam

Battle of the USS Monitor v CSS Virginia, 9 March 1862

1. First time two ironclads battled each other
2. Presence of *CSS Virginia* blocked James River use by Union
3. *CSS Virginia*, former *USS Merrimack*, battled several ships at Hampton Roads on 8 March 1862, sinking *USS Congress* and *USS Cumberland*
4. *CSS Virginia* retreated on 8 March 1862 due to deep draft issues
    iv. Couldn't get close to *USS Minnesota* and *USS Roanoke* without grounding herself
5. *USS Monitor* arrived during the night taking position behind the *USS Minnesota*
6. Two ships fought for several hours until a draw
    i. *USS Monitor* moved out from behind the *USS Minnesota* when the *CSS Virginia* reappeared the following morning to attack the *USS Minnesota*
    ii. The two ships fought in close contact for several hours
    iii. *USS Monitor* withdrew to shallow waters in order to tend to commanding officer's wounds after the pilothouse was struck by a shell
    iv. *CSS Virginia* left, though leaking badly
    v. North and South both claimed victory
7. Damages
    i. *USS Monitor* freely moved while *CSS Virginia* limited due to loss of smokestack the day before
    ii. *USS Monitor* pilot house hit and captain blinded
    iii. Deep draft restricted CSS Virginia's movements
8. Ships met again on 11 April 1862 when CSS Virginia appeared at Hampton Roads with several attendant ships
    i. Union squadron, including *USS Monitor*, did not engage
    ii. One of *CSS Virginia's* gunboats captured 3 Union gunboats almost within range of Union ships
    iii. Could not risk losing *USS Monitor* by pursuing *CSS Virginia*
9. Aftereffects of battle
    i. Confederate States Navy built ironclads with more protection along waterline
    ii. United States military improved tactical and strategic use of ironclads
10. Ships' fates
    i. Confederates burned *CSS Virginia* on 11 May 1862 when US captured Norfolk and the ship's deep draft prevented ship from leaving
    ii. *USS Monitor* sank off the shores of North Carolina after facing heavy waves December 1862

Experiment #1 Card – Buoyancy Experiment

Materials:
2 matching sheets of aluminum foil per participant
Deep container to hold water
Water

Procedure (10 minutes):
1. Pass out two sheets of aluminum foil to each participant.
2. Ask them to place the sheet in water. Does it float or does it sink?
3. Ask them to crumple the sheet in a ball and drop it in the water. Does it float or does it sink?
4. Ask them to build a boat using the second sheet of foil. Place the boat in the water. Does it float or does it sink?
5. Why did the ball sink and the boat sail? The boat and the ball have the same weight, but they cover different amounts of surface. The boat spreads its' weight over the surface of the water allowing it to float.

Knowledge Application:
1. What challenges did ironclad designers and builders have to work through to make sure their ships floated?
2. What did ironclad ship captains have to consider when they planned their movements through rivers and ports?

Experiment #2 Card – Reenacting the Battle of the Ironclads

Materials:
7 Volunteers
25-30 craft pompoms

Procedure (10 minutes):

1. Assign volunteers their ship role – *CSS Virginia* (4 people), and *USS Monitor* (3 people).
2. Distribute bags of pompoms to each of ships to use as cannon balls. Larger pompoms go to the *USS Monitor*. Explain the *USS Monitor* had more powerful guns that shot larger shells, but the *CSS Virginia* had more guns.
3. Position the people composing the *CSS Virginia* so that one person faces forward, two people stand back to back and sideways behind them, and a fourth person stands with their back to the two center people. They should make a formation that resembles l==l. Explain that each person is allowed to fire their guns only in the direction they are facing.
4. Position the people composing the *USS Monitor* so that one person faces forward, one person faces sideways, and one person faces backwards. They should make a formation that resembles l=l. Explain that the people in the front and the back are not allowed to fire. The person in the middle will fire only while spinning in a slow moving circle. They may only fire when the center person can see the other ship.
5. Put each "ship" on opposite ends of the room and instruct them to move towards each other. The *USS Monitor* should move out from behind a set of desks or people representing the *USS Minnesota*. As the two ships near each other they may begin firing. The ships may fire from close proximity while circling each other.
6. After the ships have fired on each other for 2-3 minutes, inform the *USS Monitor* that their pilothouse has been hit and their captain injured. They need to retreat briefly to get a new person in charge. When they retreat, have the *USS Monitor* volunteers switch places. After switching places, they should return to the battle scene.
7. After the *USS Monitor* retreats, inform the *CSS Virginia* that the *USS Monitor* has moved to an area that is too shallow for your ship and they should retreat to assess their damages.
8. Upon returning to the battle scene, the *USS Monitor* will hold their fire and protect the *USS Minnesota*.

Knowledge Application:

1. What challenges did each ironclad have in battle?
2. What advantages did each ironclad have in battle?
3. Who won the battle? Why?

Experiment #3 Card – Building the Battle of the Ironclads

Materials

Aluminum Foil (not heavy duty)
2 large containers
Water
10 Clothespins
8 stacks of 4 quarters taped together
15 stacks of 5 pennies taped together
Small materials to use for weapons (coins, marbles, bolts)

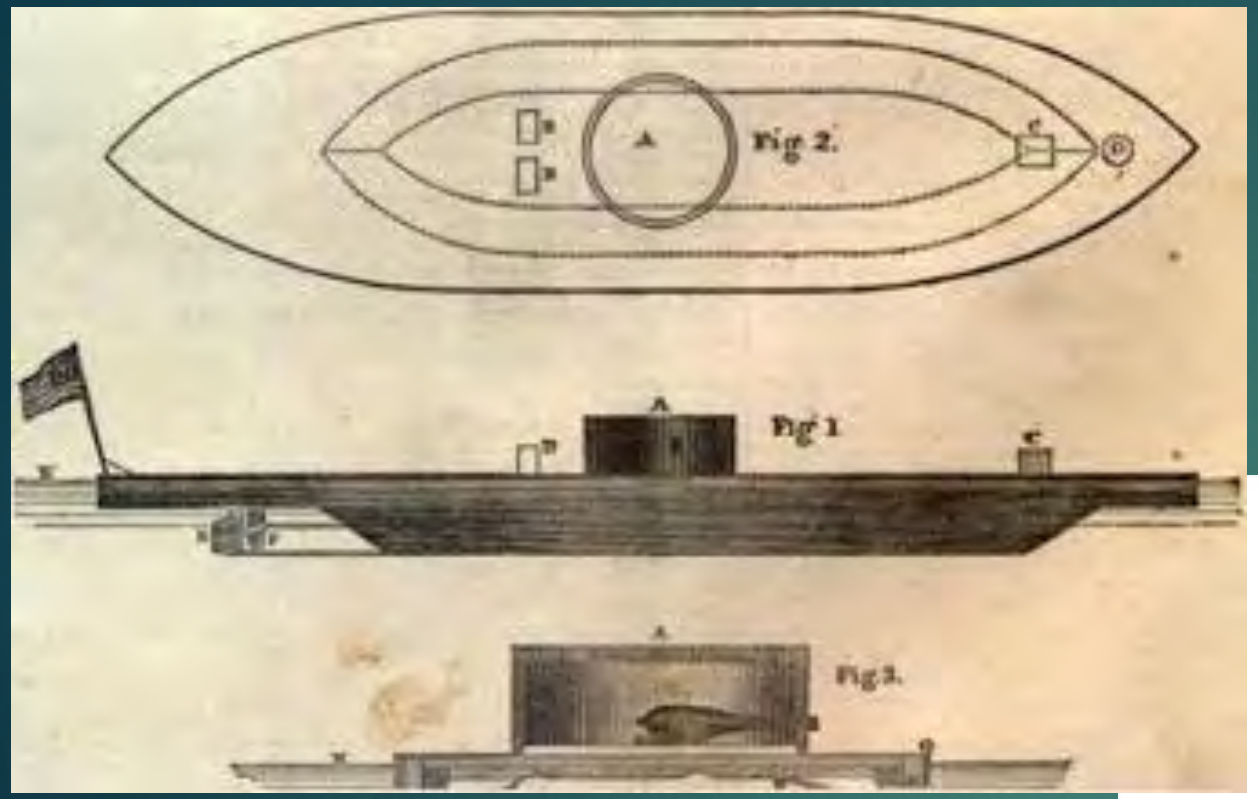
Procedure (25 minutes):

1. Divide participants into small group of no more than four people.
1. Design and draw an ironclad boat that will meet the challenges of enemy fire. The boat must be able to float, carry the weight of a crew and guns, not drag or touch the bottom of the water container, and sustain fire from enemy ships. The boat may be designed how you want, but make sure it can meet the requirements above.
2. After drawing your ship, receive permission to build from the Secretary of Defense.
3. Gather your building supplies and construct your ship. The ship must be able to hold a minimum of 5 clothespins (your crew) and 4 stacks of quarters (weaponry). As you build, you may test your ship to see if it is seaworthy in one of the large containers of water.
4. While the teams are building, the Secretary of Defense will fill the large containers with water and place the weapons materials next to each container.
5. At the end of building time, the Secretary of Defense will call ships to battle.
6. Explain the rules of Ironclad Battleship
    a. Teams will take turns selecting an item to fire. Both teams must fire the item on the other ship.
    b. Each team may use any of the items on the table, nothing else.
    c. When an item is fired, it must be fired from an area no more than 12 inches from their ship.
    d. The Secretary of Defense will determine when a ship has officially sunk.
7. Select the first two teams to battle.
8. Two teams will place their boats in opposing water containers.
9. Flip a coin to see which team will fire first.
10. Have the teams take turns firing until one of the ships sinks.
11. Repeat steps 9-11 until each team has an opportunity to battle. Time permitting, the winning teams may continue to battle until there is one remaining ship.
12. After the battle, team members use the battle review to examine their ship's performance.

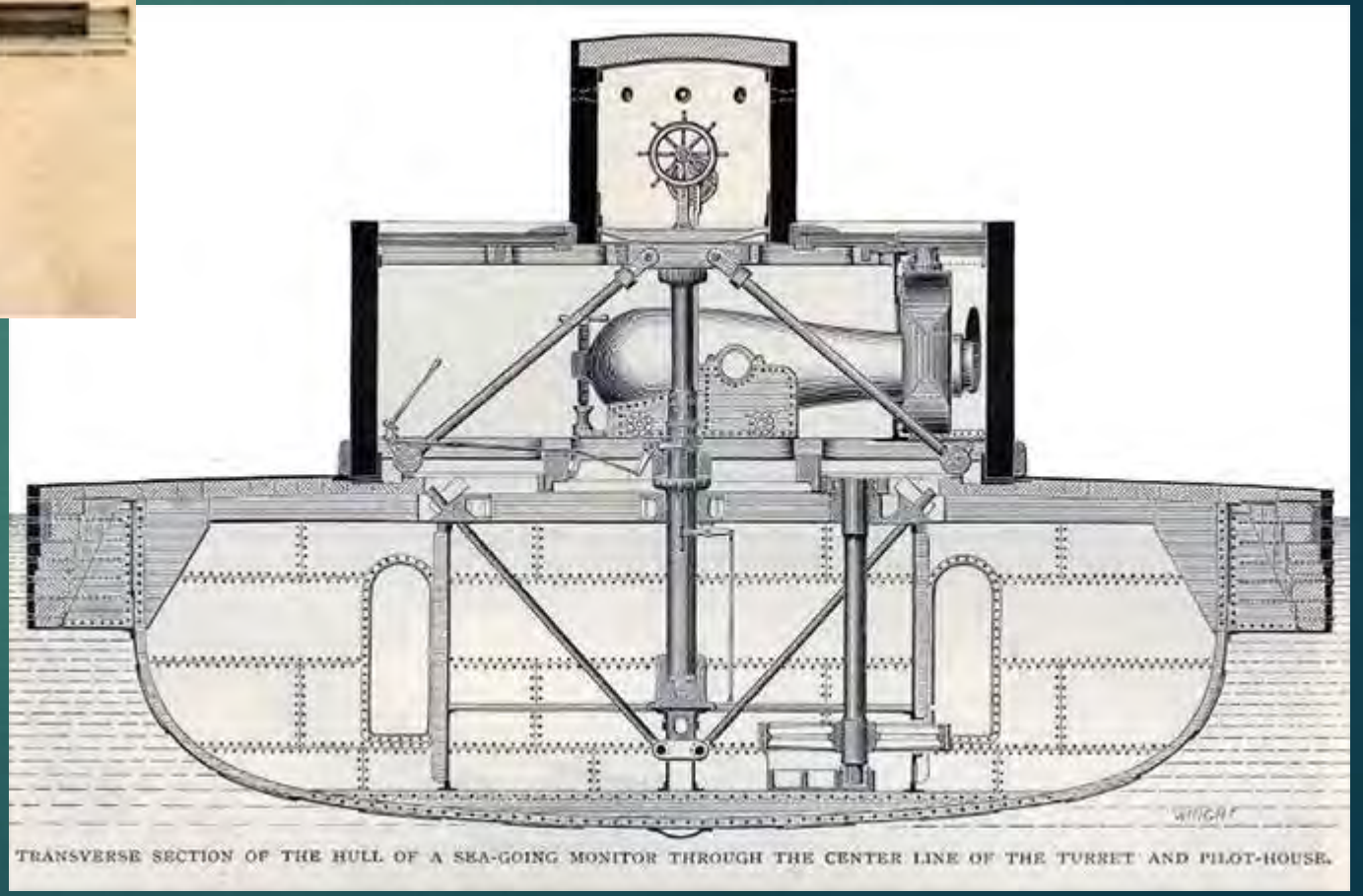
Knowledge Application:

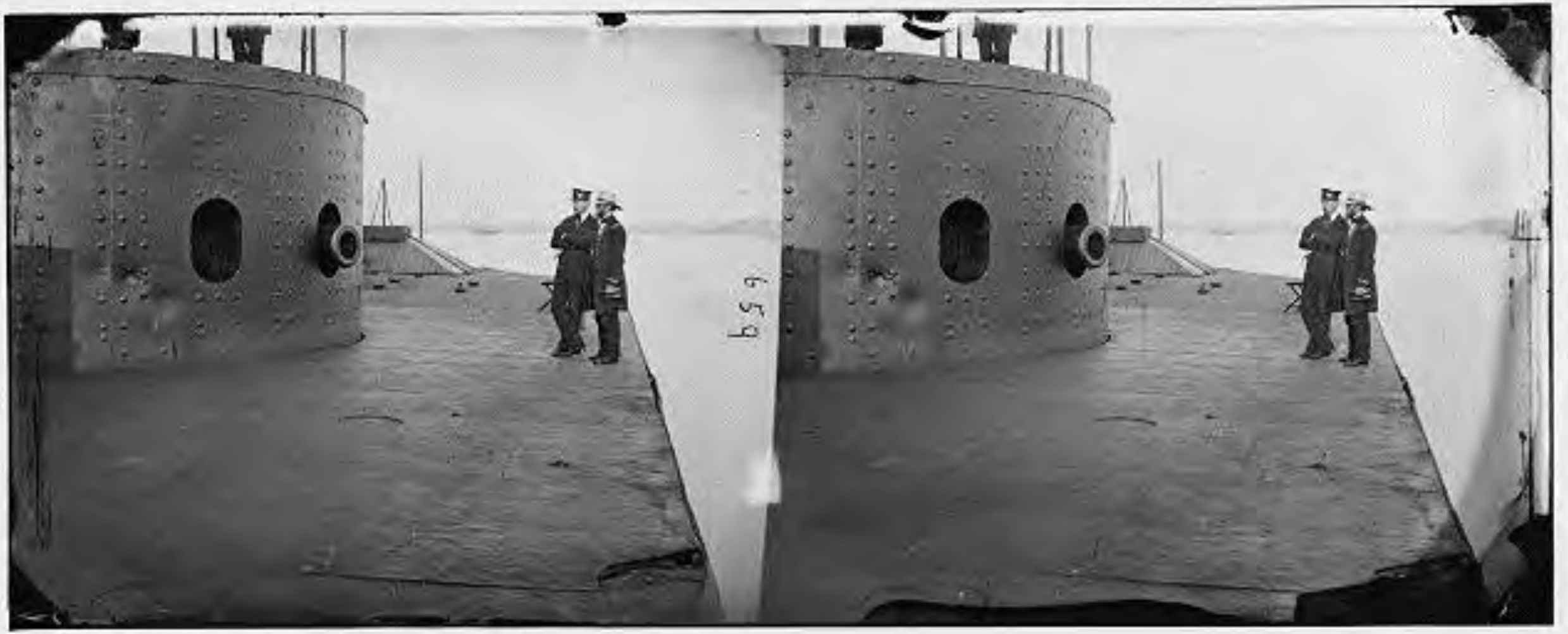
1. What building techniques were the most effective during your battle?
2. What did not work?
3. What would you change for your next battle?
4. Which Civil War ironclad design does your ship most resemble?

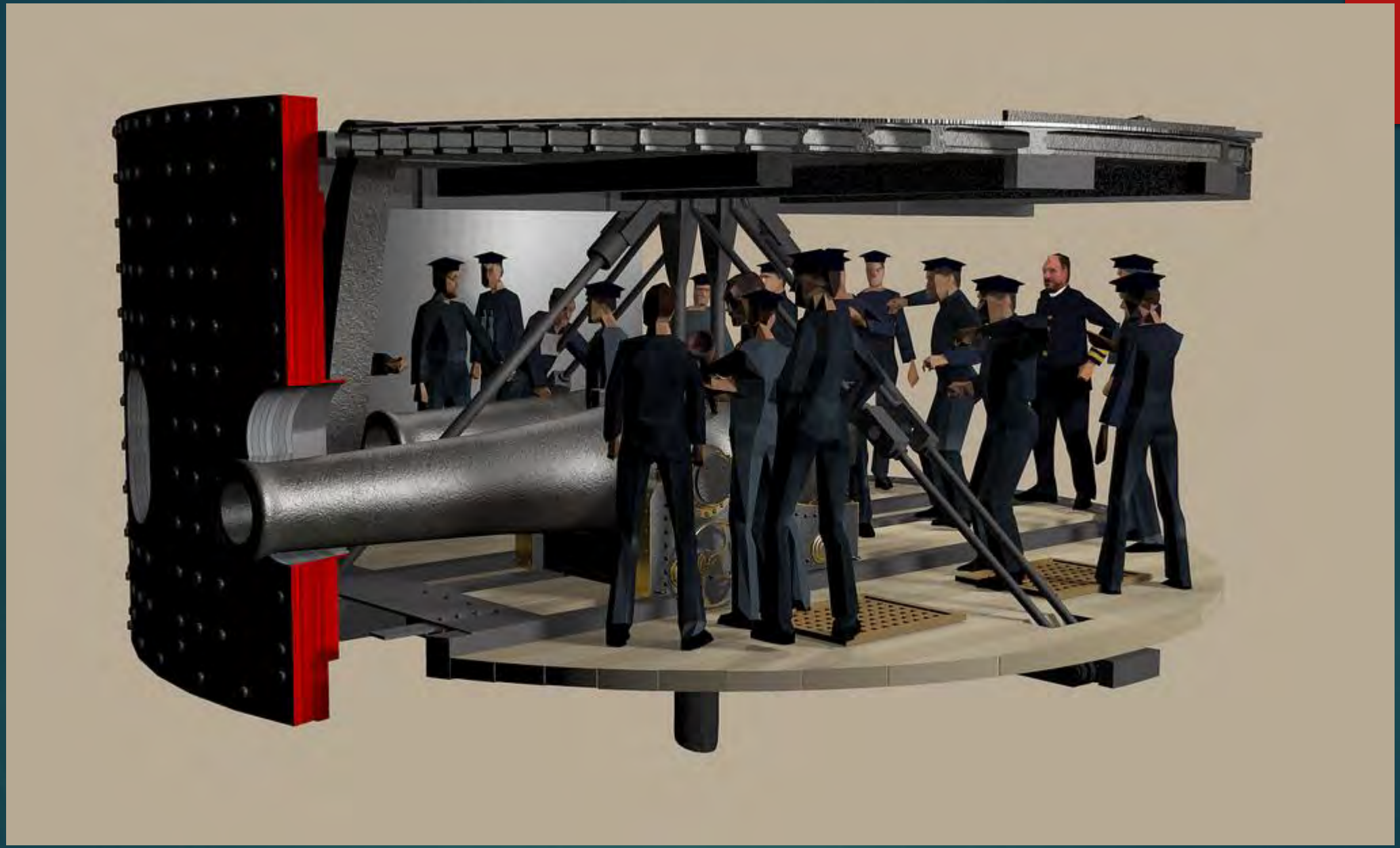
Civil War Tech: Ironclads



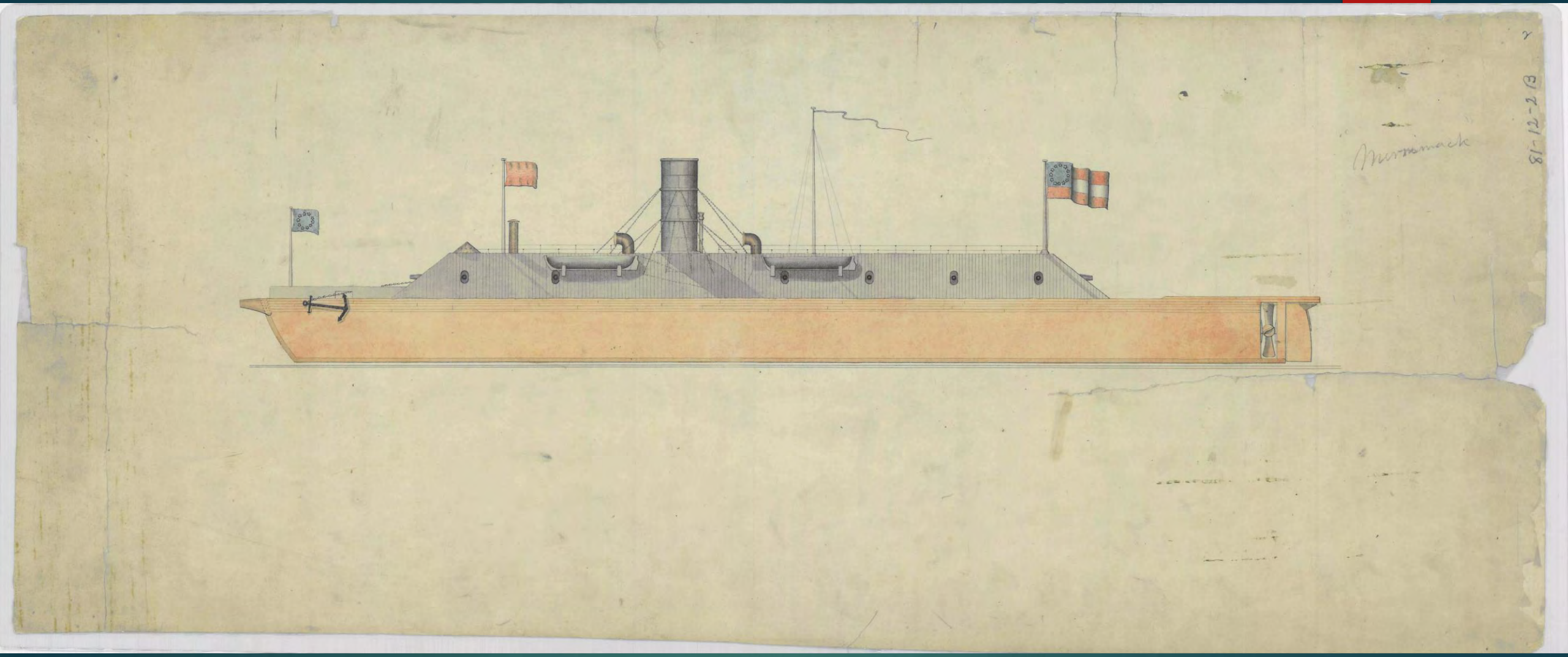
USS Monitor


TRANSVERSE SECTION OF THE HULL OF A SEA-GOING MONITOR THROUGH THE CENTER LINE OF THE TURRET AND PILOT-HOUSE.



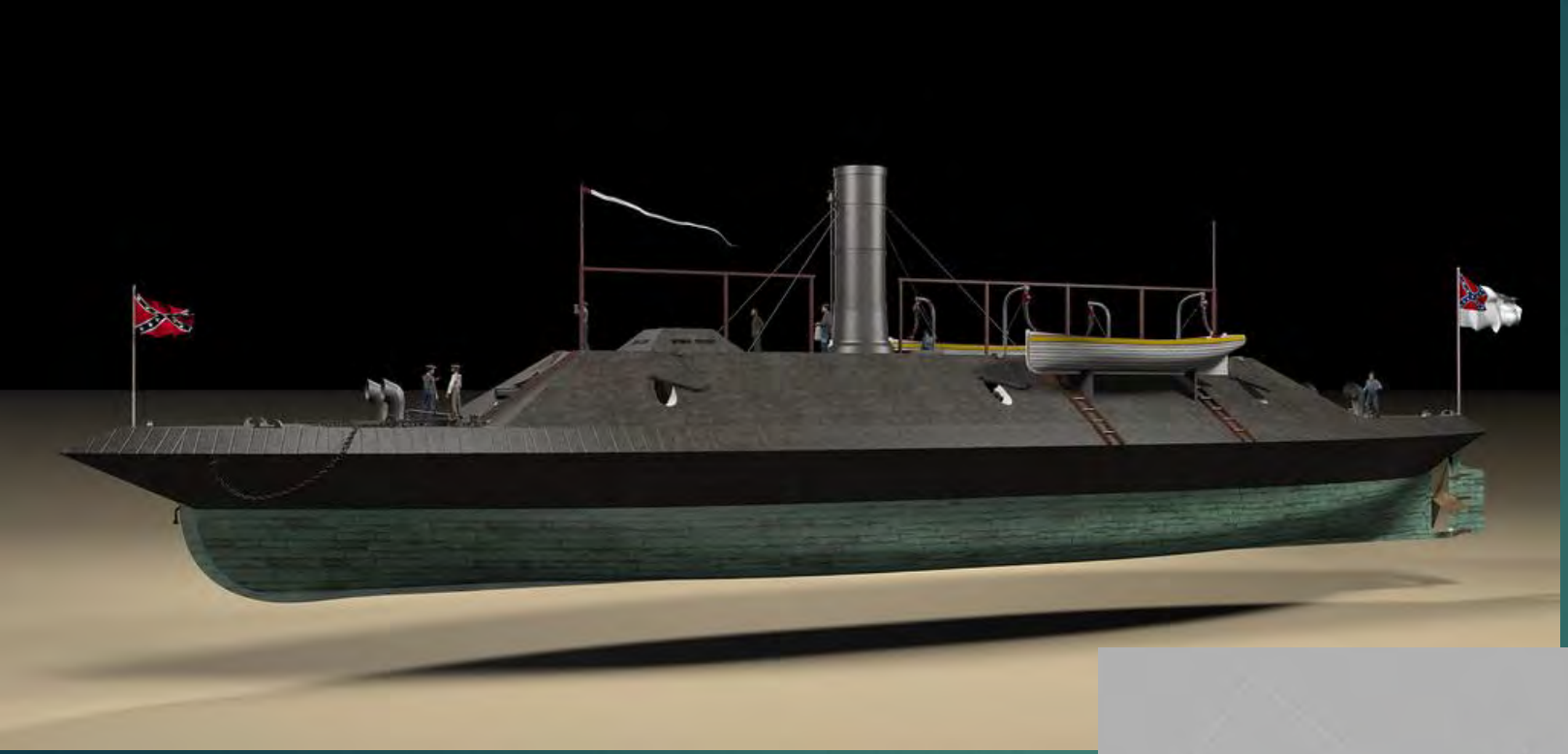


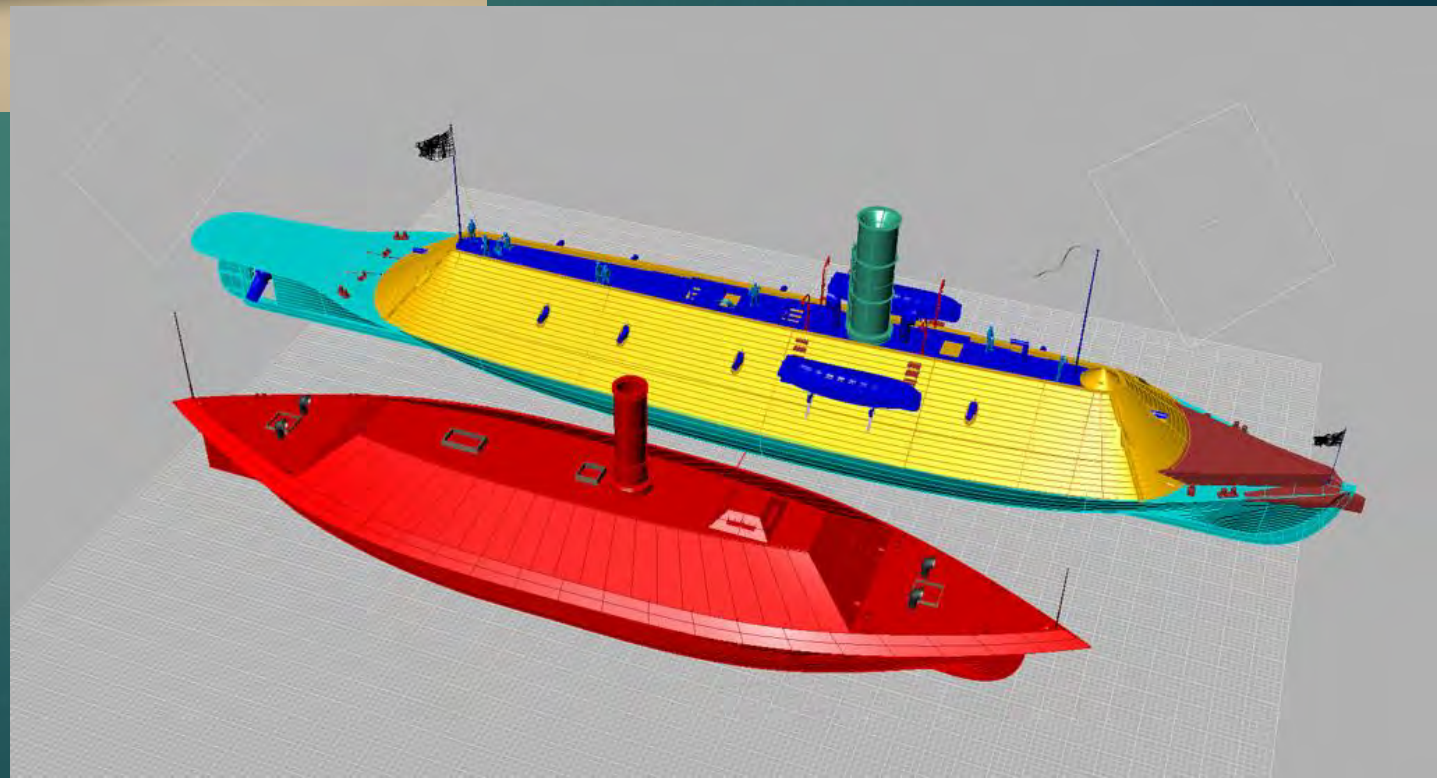
Drawing by Andy Hall,
www.deadconfederates.com

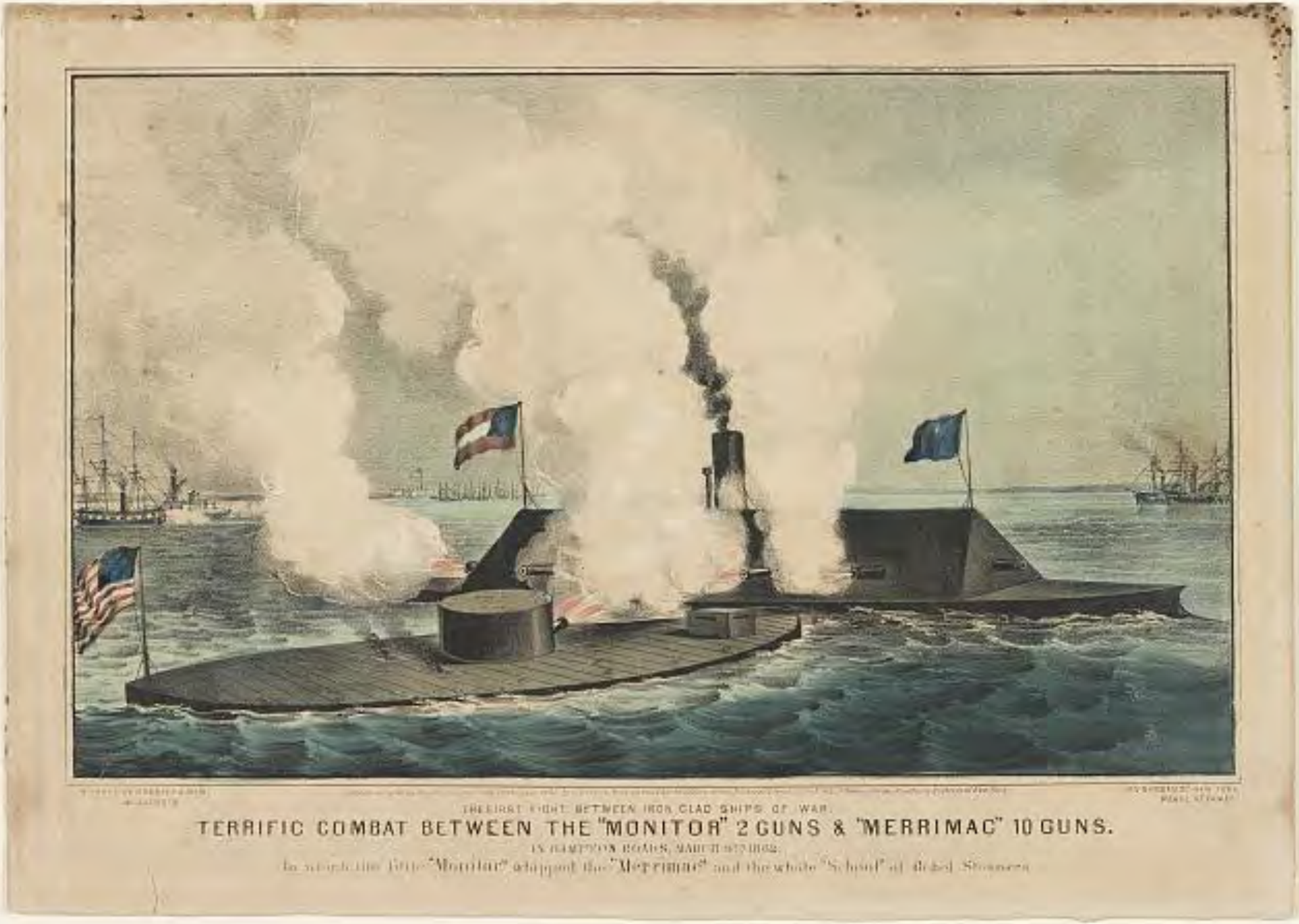


CSS Virginia


B-3351







THE FIRST FIGHT BETWEEN IRON CLAD SHIPS OF WAR.

TERRIFIC COMBAT BETWEEN THE "MONITOR" 2 GUNS & "MERRIMAC" 10 GUNS.

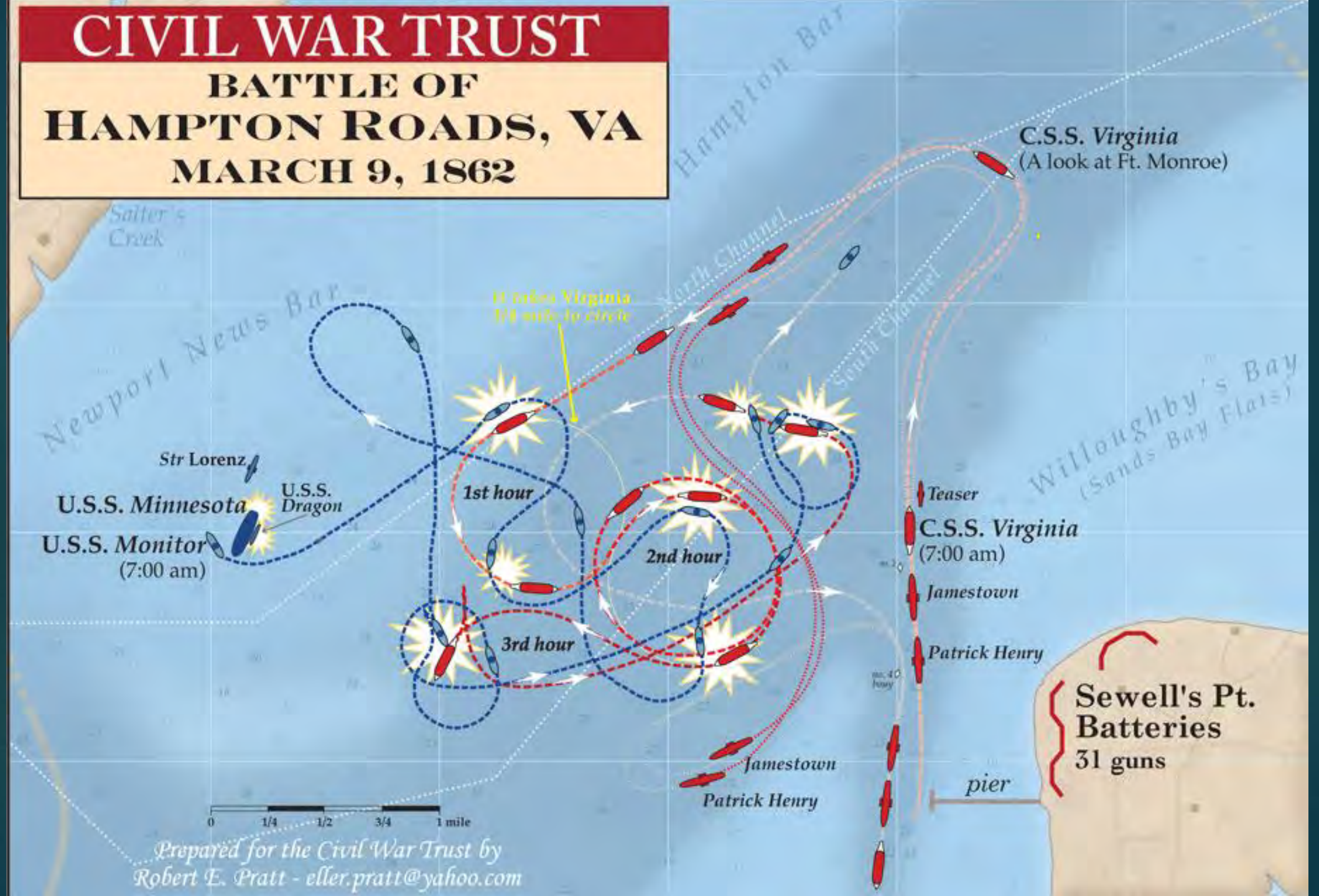
IN HAMPTON ROADS, MARCH 9TH 1862.

In which the little "Monitor" whipped the "Merrimac" and the whole "School" of dried Steamers


CIVIL WAR TRUST
BATTLE OF
HAMPTON ROADS, VA
MARCH 8, 1862
Civilwar.org
HAMPTON
(Burned by Gen. Magruder August, 1861)
HAMPTON
Federal camps
Hospitals
Hospitals
CAMP HAMILTON
Chesapeake Bay
Fort Monroe
10,000 men
180 guns
U.S.S. Monitor
(Enters Hampton Roads about 9:00 p.m.)
James River Fleet joins the Virginia
CSS Teaser
CSS Patrick Henry
CSS Jamestown (Thomas Jefferson)
Area of new land
Virginia
(turning)
Reindeer
(captured)
schooner
(burned)
NEWPORT NEWS/ Point
Whilden
(sunk)
CAMP BUTLER
8,000 troops
8 guns
U.S.S. Cumberland
(swings around)
(all non-military ships leave area by midnight)
Area of MARCH 9th Battle of the Ironclads
Catinat
(French observing)
Gassendi
(French observing)
Fort Wool
10 guns
220 men
St. Lawrence
(grounded 5:45 pm)
Young America
Whitehall
Cambridge
Congress
(grounded 4 pm)
Minnesota
(grounded 3 pm)
Roanoke
(by 5 pm)
U.S.S. Congress
Virginia
(2:15 pm)
Patrick Henry
(damaged)
Jamestown
(towing)
Patrick Henry
(by 5:30 pm)
Teaser
(4:30 pm)
Jamestown
Raleigh
Raleigh
(1:30 pm)
Beaufort
(5:30 pm)
Zouave
(fires on approaching Virginia)
Virginia
(1:00pm)
Area of new land
Sewell's Pt. Batteries
31 guns
pier
(7:30 pm)
Confederate camps
Beaufort
Harmony
James River
Hampton Roads
Elizabeth River
0
1 mile
N
W
E
S
Area of new land
Pig Pt. Batteries
6 guns Battery
C.S.S. Germantown
floating battery
C.S.S. Beaufort
Confederate camps
Craney Island Batteries
C.S.S. Virginia
(11:30 a.m.)
C.S.S. Raleigh
Lambert's Point Batteries
C.S.S. Harmony
Battery
Fort Norfolk
NORFOLK
Naval Hospital & Battery
PORTSMOUTH
30 guns
Gosport
Gosport Navy Yard
Legend
Confederate
Union
C.S.S. Virginia
Main Ships
Union blockade ship positions before battle
Supporting Ships
Ships & forts under attack or damaged during battle
Route of ships
Modern roads
1862 Town limits
Prepared for the Civil War Trust by
Robert E. Pratt - eller.pratt@yahoo.com

CIVIL WAR TRUST

BATTLE OF HAMPTON ROADS, VA
MARCH 9, 1862



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USS St. Louis

Mississippi River Ironclad