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OF EVENTS IN THE

WAR OF THE REBELLION,

BEING PAPERS READ BEFORE THE

RHODE ISLAND SOLDIERS AND SAILORS

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THE MONITOR

AND

THE MERRIMAC.

BY
FRANK B. BUTTS,
[Formerly Paymaster's Clerk, United States Navy.]

PROVIDENCE:
PUBLISHED BY THE SOCIETY.
1890.

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THE MONITOR AND THE MERRIMAC.

In front of a miner's cottage, in a picturesque valley, surrounded by iron mountains, in the province of Wermland in Central Sweden, there stands a simple granite shaft twenty feet high. This memorial was erected by the miners in the year 1867, upon the face of which, in golden letters, is this legend.

JOHN ERICSSON

WAS BORN HERE IN 1803.

It was here that the great inventor, famous in two hemispheres, first saw the light of day.

The father of John Ericsson was a mining proprietor, so that in his boyhood he had ample opportunity to watch the operation of the various engines and machinery connected with the mines. At the age of ten years he constructed, after his own

plans, a miniature saw mill, and also made numerous drawings of complicated mechanical contrivances with instruments of his own invention and manufacture. When only nine years of age he made his first scale drawings at the office of the Gotha Ship Canal, and three years later he made the drawings of the famous Sunderland iron bridge.

In 1814 he attracted the attention of the celebrated Count Platen, who had learned of his boyish efforts, and sought an interview with him. After carefully examining the various plans and drawings which this youth exhibited the count handed them back to him, simply observing, in an impressive manner: "Continue as you have commenced and you will one day produce something extraordinary." These few words greatly encouraged the young mechanician. Immediately after this interview young Ericsson was appointed a cadet in the corps of engineers, and after six months' tuition, at the age of twelve was appointed nivelleur (leveler) at the Grand Ship Canal of Sweden, which connects the North Sea with the Baltic. His association with military men in this work led him at the age of

seventeen to enter the Swedish army as an ensign. After several promotions he gained the title of captain, but having turned his attention to experiments, with flame as a motive power, he found his duties as a soldier taking too much of the time he wished for study and resigned his commission.

On the 18th of May, 1826, he left his native country, and, though it always retained the first place in his affections, he never returned. He proceeded to England, where he began the construction of a number of his new inventions, and in order to bring them before the public he associated himself with a mechanical house in London. Invention after invention soon followed in rapid succession, among which was the steam boiler on the principle of artificial draft, a feature now applied to all locomotive and marine engines where anthracite coal is used. He next produced the steam fire engine and the famous caloric engine. He startled the mechanical world with his invention of the screw propeller by which he changed the whole construction of the navies of the world.

Mr. Ericsson* emigrated to this country in 1839, at the age of thirty-six. His first great achievement after his arrival was the building of the United States steam frigate *Princeton*, the first screw war vessel afloat, and the first to have all the machinery below the water line. He also planned a French frigate of fifty guns, which proved a great success. His next undertaking was the planning and invention of the steamer *Ericsson*, which, although not answering all that was commercially expected of her, was an entire mechanical success, and as a marine structure she has never been equaled.

An act of congress, approved August 3, 1861, directed the Secretary of the Navy to appoint a Board of three skillful naval officers to examine plans for the construction of iron clad vessels, and advertisements were made for proposals. Many plans were submitted, among them one by C. H. Bushnell, of New Haven, who was awarded a contract for the building of the corvette *Galena*. There had been some doubt expressed as to whether

* Captain John Ericsson, the great engineer and builder of the *Monitor*, died at his home, 36 Beach Street, New York of cystitis, March 7, 1889, in his eighty-sixth year.

the vessel could carry the armor proposed by Mr. Bushnell, and he visited M. C. H. Delamater, of New York, who advised him to consult Captain Ericsson, which he did. During this interview Ericsson drew from one of his shelves plans of a type of vessel, that he had eight years previously submitted to the Emperor of France. Mr. Bushnell urged him to submit them to the Secretary of the Navy. Captain Ericsson declared he would never visit Washington again, owing to the shabby treatment he had received in the refusal of congress to appropriate a small amount due him for his labor in planning and constructing the steamer *Princeton*. Mr Bushnell was so favorably impressed with the plans that he proposed they be intrusted to him, to which Captain Ericsson assented. Mr. Bushnell hastened to Washington, and laid the invention before Secretary Welles, who perceived its advantages and promised his support. After this Mr. Bushnell experienced the usual waste of time and patience that is required to accomplish anything in Washington. He secured the assistance of Hon. John A. Griswold and Mr. John F. Winslow, of

Troy, N. Y., both self-made, honest, noble-hearted and enegetic men, filled with patriotism and anxiety for their country, who, wishing to aid Ericsson with his invention, agreed to furnish the means and take all the risks which the enterprise required.

The plans were then shown to the Secretary of State, Mr. Seward, and to President Lincoln, who were favorably impressed, and they went with Mr. Bushnell to the meeting of the board. Commodore Joseph Smith, president of the board, gave the plan his earnest support, although the frigate *Iron Sides*, which was his favorite, had been contracted for and work begun. Commodore Hiram Paulding, second on the board, was brought to a favorable view, but the third Commodore, C. H. Davis, sternly opposed the plan, and notwithstanding the powerful support of President Lincoln and of Secretary Welles, he dismissed Mr. Bushnell, saying: "Never let me see the thing again; take it home with you and worship it. You will not commit idolatry, for it has no likeness to anything in the heaven above, or the earth beneath, or in the waters under the earth."

In order to bring Captain Ericsson before the board Mr. Bushnell represented to him that the plan had been favorably received, and that some technical details required his explanation. Presenting himself before the board, the great inventor was surprised to find that he was an unexpected visitor, and that his plan had already been rejected. He inquired the reason for their resolution, and then, with fiery eloquence, he laid the principles of the design before them, claiming that in view of what the rebels were doing at the Norfolk Navy Yard, and the peril of our wooden ships, they should give him an order to build his vessel before leaving the room, and they did.

The next great man among Ericsson's friends, and one who aided the government in bringing into use new ideas developed by the extraordinary and peculiar requirements of the war, was Thomas A. Rowland, the contractor and builder of the *Monitor*. Upon the agreement of the naval board, Secretary Welles directed Captain Ericsson to return to New York to begin work at once, and the contract would be sent on for signature. Immediately Mr. Row-

land was summoned by telegraph into the office and presence of the great inventor. "How much are you going to charge to build my new ship," said Ericsson, without raising his eyes from the plans he was still hurrying to finish. Mr. Rowland had been interviewed at the works by Messrs. Winslow, Griswold and Bushnell the day preceding. "Nine cents a pound," answered Rowland, "Tut, tut, Tom, it's too much. I will give you seven and a half cents," said Ericsson, and the bargain was made at that price.

There was nothing extraordinary in the contract between Ericsson, Winslow, Griswold and Mr. Rowland, except that it should be completed in the shortest possible space of time, and that the parties of the first part should have power to employ more men if they thought the number engaged was insufficient. The contract, however, on the part of the government and these gentlemen, who were anxious to assist their country out of its peril, was the most remarkable. Messrs. Bushnell, Griswold, and Winslow guaranteed to the government the vessel's impregnability, its entire satisfaction, and delivery

within one hundred days from date of the contract. The contract contained a distinct proviso that the entire structure should prove successful in practical operation before the final payment, and in case of failure they should be liable to the government for the entire amount advanced to them.

The frigate *New Iron Sides* and corvette *Galena*, both representing new principles in iron-mailed vessels, had been contracted for and were being constructed, but the long time it would take for them to be completed, the threatening aspect of what was being done by the rebels in rebuilding the *Merrimac*, and the hurried manner in which they were preparing her for action, alarmed the navy department to the necessity of having a vessel ready to cope with anything they could make. The *Monitor* was wanted quickly; there was no time to be lost. Ericsson had not fully completed his plans when the contract was signed. Night and day he labored to furnish designs as fast as the material could be procured. All the force that could work was employed (night and day). Mr. Rowland, constantly in superintendence, hurried the work forward that it

might be finished in time to save the country's honor.

The hull of the *Monitor*, the deck beams, timbers, side armor and decks were built by Mr. Rowland. The turret was built at the Novelty Iron Works, transported in sections and put together by Rowland's men. The port stoppers and other heavy forgings, as well as some of the heavy turnings, were made at different machine shops, wherever machinery was to be had, that could be applied to making this new kind of work. Mr. George H. Corliss, our distinguished steam engine builder, contributed to the work by making a boiler rest. The steam machinery, boilers, etc., were built at the Delamater Iron Works, and put on board by Delamater's machinists.

The contract to build the *Monitor* was signed Oct. 5, 1861. She was launched Jan. 30, 1862, and delivered at the navy yard after her first trial trip, Feb. 19, 1862. She had two trial trips afterwards. On the second she was in commission under command of Lieut. John L. Worden, but owing to some imperfection in her steering apparatus she was

unable to go farther down the harbor than Wall Street, New York. The 4th of March she went down to Sandy Hook and tried her guns, having a board of naval officers, who made a favorable and satisfactory report.

Lieutenant Worden, United States Navy, was ordered to take command with authority from the navy department to select a crew from any vessel in New York harbor. He asked for volunteers from the receiving ship *North Carolina* and the frigate *Sabine*. The manouvres of this new experimental vessel had been watched, and the probabilities discussed with much interest by old sailors, and they readily conceived its objects. It was not difficult, therefore, to procure a crew,—a great many more volunteered than were wanted, and to use Lieutenant Worden's own words: "They were as fine a body of men as any man ever commanded." I will here give a list of the crew who went on board in New York and were in the *Monitor* at the time of her engagement with the *Merrimac*:

Commander—Lieut. JOHN L. WORDEN, U. S. N.
Executive Officer—Lieut. SAMUEL D. GREENE, U. S. N.
Volunteer Master—LOUIS N. STODDER.
Volunteer Master—JOHN J. N. WEBBER.
Assistant Paymaster—WILLIAM F. KEELER.
Assistant Surgeon—DANIEL C. LOGUE.
Chief Engineer—A. C. STIMMERS.
First Assistant Engineer—ISAAC NEWTON.
Second Assistant Engineer—ALBERT B. CAMPBELL.
Third Assistant Engineer—R. W. HANDS.
Third Assistant Engineer—M. F. SUNSTRUN.
Acting Master's Mate—GEORGE FREDERICKSON.
Captain's Clerk—DANIEL TOFFEY.
Hospital Steward—R. R. HUBDELL.
Paymaster's Steward—JESSE M. JONES.
Quartermaster—PETER WILLIAMS.
Quartemaster—RICHARD ANGER.
Quartermaster—MOSES B. STERNS.
Master-at-Arms—JOHN ROONEY.
Boatswain's Mate—JOHN STOCKING.
Yeoman—WILLIAM BRYAN.
Gunner's Mate—JOSEPH CROWN.
Quarter Gunner—JOHN B. CONKLIN.
Captain of Hold—THOMAS CARROLL, 1ST.
Carpenter's Mate—DERICK BRINKMAN.
Officer's Steward—DAVID CUDDERBACK.
Officer's Cook—EDWARD MOORE.
Ship's Cook—THOMAS LANGHRAM.

Seamen: Charles F. Sylvester, Thomas B. Vial, William Marion, Auton Bosting, Charles Peterson, Daniel Welch, Anthony

Connoly, Peter Truscott, Hans Anderson, James Fenwick, Lawrence Murray. *First Class Boy:* Thomas Carroll, 2d. *First Class Firemen:* Robert Williams, George S. Geer, William Richardson, John Garrety, Abraham H. Tester, Mathew Leonard, Thomas Joyce, Patrick Hannon, Edmund Brown, John Driscoll. *Coal Heavers:* Michael Mooney, William Durst, Christy Price, John Mason, James Seery, Ellis Roberts, Robert Quinn.

Subsequently joined the *Monitor* at different dates:

Commander—Lieut. W. N. JEFFERS, from March 10 to August 1.
Commander—F. H. STEVENS, from August 1 to September 1.
Commander—JOHN P. BANKHEAD, from September 1 to time of disaster.
Ensign—NORMAN ATWATER.
Third Assistant Engineer—S. A. LEWIS.

Seamen: William Allen, Francis B. Butts, William Egan, John Monahan, Charles Smith, Charles H. Scott, William Nicklis. *Officer's Steward:* Daniel Moore. *Officer's Cook:* Robert Howard. *Firemen:* Charles H. Smith, John O. Brown, Henry Remington, William Coleman, William Morrison. *Cabin Boy:* William H. Nichols, *Boy:* Edwin McCann.

The following are the names of those lost on the *Monitor* at the time of her wreck:

Ensign: Norman Atwater. *Acting Ensign:* George Fredrickson. *Third Assistant Engineer:* R. W. Hans. *Third Assistant Engineer:* S. A. Lewis. *Boatswain's Mate:* John Stocking. *Quarter Gunner:* James Fenwick. *Yeoman* William Bryan. *Officer's Steward:* Daniel Moore. *Officer's Cook:* Robert Howard. *Seamen:* William Allen, William Egan, William H. Nichols, William Nicklis, Charles H. Scott, Henry Robinson.

It is now twenty-three years this very month* since I was associated with these men, and as I write each name, I think of something in their character, or an incident that has not occurred to me before in years. Charles F. Silvester was my next man at drill, and helped me raise the heavy shot to the muzzle of the ponderous cannon. John Rooney, the Master-at-Arms and funny man of the birth-deck. George S. Geer, with whom I chummed and slung in the next hammock. John Stocking, the boatswain's mate, one of the very best types of an American sailor, and my tutor in seamanship,—I saw him swept from the deck and drowned that fearful night when the vessel foundered. Mr. R. W. Hands, engineer, the favorite of all on board, stood the engineer's watch when the ship went down, and died at his post of duty.

The *Monitor* was put in commission Feb. 8, 1862, and Commander Worden and all the officers and crew worked constantly, in getting her ready, and during her trial trips. She was finished Feb. 20, 1862, when Commander Worden received the following sailing orders:

*Read before the Society October, 1883.

NAVY DEPARTMENT,
WASHINGTON, D. C., February 20, 1862.

SIR:—Proceed with the United States Steamer *Monitor* under your command to Hampton Roads, Va., and on your arrival there report by letter to the department. Commodore Paulding has been instructed to charter a vessel to accompany the *Monitor*, provided none of our vessels are going South about the same time she sails. Transmit to the department a muster roll of the crew and a separate list of the officers of the *Monitor* before sailing from New York.

I am respectfully your obedient servant,
GIDEON WELLES, *Secretary of Navy.*

To LIEUT. JOHN L. WORDEN U. S. N.
Commanding U. S. Iron Clad Steamer Monitor, New York.

Commander Worden worked steadily in getting the *Monitor* ready for sea, and when this had been accomplished he received the following sailing orders from the commandant of the navy yard at New York:

NAVY YARD, NEW YORK, March 4, 1862.

Lieut. Commanding JOHN L. WORDEN. *U. S. Steamer Monitor:*

SIR:—When the weather permits, you will proceed with the *Monitor*, under your command, to Hampton Roads, and on your arrival report to the senior naval officer there. I have hired the steamer *James Freeborn* to tow the *Monitor* and have directed the propellers *Sachem* and *Currituck* to attend on you to the mouth of the Chesapeake. If it should be necessary to retain them longer you are authorized to do so. When you shall have no

further use for the *Freeborn* be pleased to give the captain a certificate with directions to return to New York, and immediately, on his arrival report to me.

Wishing you a safe and successful passage,

I am respectfully your obedient servant,

H. PAULDING, *Commanding.*

The *Monitor* left New York on the afternoon of March 6, 1862, with a fair indication of good weather, in tow of the tug *Seth Low*, and accompained by the gunboats *Currituck* and *Sachem*. They proceeded without incident until the next day at noon, when they had reached the Capes of Delaware, and the water began to sweep over the deck of the *Monitor* and broke into the vessel under the turret and through the hawser pipe. The wind and sea increased during the afternoon, and the water broke over the blower pipes into the ventilating machinery, which soon became useless and stopped the draft of the furnaces. The engine room was immediately filled with gas, which prostrated the engineers and firemen, who had to be carried to the top of the turret in order to revive. At this time the voyage had a most discouraging outlook. The motive power was checked, and the water was breaking

into the ship in considerable quantities. Commander Worden ordered the hand pumps started and the men to bailing. The vessel was headed in shore and the sea having smoothed down after an hour or two, the blowers were put in order, and the vessels were put on their course again. About midnight, when they were crossing a shoal, the water again broke over the blower pipes, causing a renewal of the accident and wetting the wheel ropes, which jammed, and, until the shoal was crossed, or for half an hour, the *Monitor* was at the mercy of the sea. Damages were again repaired and the vessel proceeded smoothly until they were passing Cape Henry light, when heavy firing was heard in the direction of Fortress Monroe, and they were not mistaken in thinking that the *Merrimac* had come out and that an engagement was going on with our fleet at Hampton Roads. The decks were cleared, and the *Monitor* made ready for action, as it was thought the *Merrimac* would attempt to escape to the North. Here for the first time quarters was beat on board the *Monitor*, and a drill was had in handling the guns and ammunition. When about a dozen miles

from Fortress Monroe a pilot was taken on board, from whom was learned the true state of affairs at Hampton Roads, the disasters to the *Cumberland* and *Congress*, the formidable character of the *Merrimac* and the gloom that overshadowed all who had witnessed the fight.

Such was the state of affairs when the *Monitor* arrived at Hampton Roads, that the sturdy commanders trembled in face of the coming day, and all was silence and gloom. The sloop-of-war *Cumberland*, having a crew of three hundred men, and mounting twenty-four guns, now lay on the bottom with only her top-gallant masts and pennant above the water, marking the spot where one hundred and seventeen mangled bodies lay buried beneath the waves. The *Congress*, a fifty-gun frigate, had also met her destruction, and now lay on shore with the flames kindled by hot shot of the *Merrimac* sweeping out her hull. The *Roanoke* and *Minnesota*, steam frigates of forty guns each, the pride of the navy and the most perfect of any men-of-war of the period, laid hard and fast on shore, with broken machinery and as powerless as if they had been

unarmed. The capture or entire destruction of the Federal fleet at Hampton Roads and the escape of the *Merrimac* and the rebel cruisers seemed inevitable.

At 9 o'clock, P. M., of this memorable day, March 8, 1862, the *Monitor* anchored near the *Roanoke*, and Lieutenant Worden immediately reported on board to Captain Marston, where he spent much of the evening, and the crew was given a short drill of half an hour. The working of the guns and the movements of the turret were new to all on board, but were readily learned by these practical gunners. When Captain Worden had finished his interview with the senior officer and returned, the *Monitor* was got underway, and at 2 o'clock on the morning of the 9th anchored near the frigate *Minnesota* at Newport News. An incident occurred at this time reflecting great credit upon a man of whom very little, if anything, has ever been said.

Pilot Samuel Howard, attached to the United States bark *Amanda*, went on board the *Monitor* as soon as she was seen coming into the Roads, and remained with her until brought alongside the *Roanoke*.

When it was decided that the *Monitor* should proceed up the Roads and protect the *Minnesota*, Captain Worden inquired of the flag-officer for a pilot. Mr. Howard volunteered, to which the Captain of the *Amanda* objected, as he was already short of officers. A pilot who had been left on the bark was sent for, but he declined to go. Two other pilots were then sent for from the pilot boat, but they declined to go, assigning as a reason that they knew nothing about the Roads. Mr. Howard then volunteering again was permitted to go. The night was hazy, the smoke of the battle having settled upon the water. He proceeded by the north star and the light of the burning *Congress*, and laid the *Monitor* alongside the *Minnesota* ready for battle the next day.

There were at that time in Hampton Roads sixteen of all classes of war vessels, mounting 298 guns, which that day had proven their utter worthlessness to engage a mailed vessel. Tired and exhausted with the constant employment of the past three days, in view of the work that would be needed of them on the morrow, the crew of the *Monitor* was allowed sleep and rest. "It was a most glorious sleep," said one of them to me. "I closed my eyes with my thoughts filled with the horror of that day's work of destruction, and depressed by the burden of what was depending upon us on the morrow. Overcome with fatigue, dreams of the victory that awaited us added pleasure to my sleep. I was hardly more delighted when the *Merrimac* withdrew from the fight than when I awoke from my vision. I was invigorated with strength and courage,—a victory seemed sure."

At half-past five in the morning all hands were called, and the ship was immediately cleared of her sea-rig and got ready for battle, shot were hoisted into the turret, and a thorough inspection made, so that everything about the ship should be in working order. Breakfast was soon over, and it seemed as quiet and solemn as if preparing for the funerals of those who had been slain the day before. At half-past seven o'clock a long line of black smoke was seen, preceded by the steamers *Jamestown*, *Patrick Henry* and *Teazer*. It was the signal for battle. The crews of the different vessels stood by their

guns, fuzes in hands. The *Monitor* steamed slowly from beneath the bows of the *Minnesota*, where she had been partly concealed, to meet the challenger in an open field. It was alike an astonishment to the rebels and our own people; neither had seen her when she arrived, and many were the conjectures of what it could be. Some said a huge water tank; others an infernal machine; none that she had guns, and not till they saw steam rise from her deck did they think she had power to move herself. Onward, with the brave Worden at her wheel, she was steered straight for the *Merrimac*, whose consorts, loaded with spectators and soldiers, had dropped astern and out of the channel. Onward in a straight line the *Monitor* kept her course. Her diminutive size, for only the turret could be seen by those who were a mile or more away, made her seem like a rat attacking an alligator. The *Merrimac* stopped her engines, as if to survey and wonder at the audacity of the nondescript. The *Monitor* was approaching on her starboard bow. Then, as if seized with impulsive rage, and as if a huge breath would waft her enemy away, the *Merrimac* poured a broad-

side of solid shot at her. For an instant she was enveloped in smoke, and people who were looking on held their breath in doubt of seeing the *Monitor* again. It was a moment of great suspense. Then as a gentle breeze swept over the scene the *Monitor* appeared. At this instant the flash of her own guns was seen, and then their report, louder than any cannon that had ever been heard, thundered across the sea. It seemed to jar the very earth, and the iron scales of the invincible crumbled and cracked from their fastenings. One on board the *Merrimac* at this time has told me that, though at first entirely confident of victory, consternation took hold of them all. "D—n it!" said one, "the thing is full of guns!"

The enthusiasm at this moment among the thousand of civilians and soldiers, who lined the shore to witness the fight, was beyond description and their own control. Such a spontaneous burst of cheers was never before heard. Men were frantic with joy.

The *Monitor* continued her approach, reserving fire that every shot might take effect, until she came parallel with the *Merrimac*, but heading in the

opposite direction. In this way they passed slowly within a few yards of each other, both delivering and receiving the other's fire. Some anxiety had been felt about the turret machinery, many persons having thought that a heavy shot striking the turret with great velocity would damage it so as to stop its working, but finding that it was revolving freely, and that the *Monitor* was apparently uninjured, Captain Worden headed again towards the *Merrimac* with renewed confidence and engaged her at close quarters.

Again they joined in close combat, the *Monitor* lying bow on, at times touching, both delivering their fire as rapidly as possible. At the same time the marines on the *Merrimac* poured an incessant fire of musketry at the peek-holes about the pilot-house and turret. The speed of the two vessels was about equal, but the light draught of the *Monitor* gave her an advantage. The rebels finding that they could make nothing of the invulnerable cheese-box, as they called her, and foiled and maddened at the loss of their coveted prize, turned towards the *Minnesota*, determined, if possible, to destroy her.

The *Merrimac* went head on and received a full broadside of the *Minnesota*. Fifty solid nine-inch shot struck square. Any wooden vessel that ever floated would have gone to pieces under such a fire. The *Merrimac* was unharmed. She returned the fire with her forward rifle guns. One shell passed through four rooms, tearing away partitions and setting the ship on fire. Another passed through the boiler of the steamer *Dragon* which lay alongside, blowing her up and killing and wounding seventeen men. Before a third was fired the *Monitor* interposed, compelling the *Merrimac* to change her position. The two combatants then made a complete circle in their endeavors to get a favorable position, each seeking to discharge a broadside into some vital part. The *Merrimac* then turned sharp and made a plunge towards the *Minnesota*, but Worden was vigilant, and crossed the stern of the *Merrimac*, sending two solid shot into her. To get back again between her and the *Minnesota*, the *Monitor* had almost to cross her bow. The *Merrimac* steamed up quickly, and finding that the *Monitor* would be struck with her prow Worden sheered towards the

enemy's stern, avoiding a direct blow, and, as they came into collision, each vessel delivered a broadside into the other. At this point a shell from the *Merrimac* struck the pilot-house exactly over the peek-hole through which Captain Worden was looking. The shell exploding, filled his face and eyes with powder and fragments of iron, utterly blinding and for a time rendering him unconscious. Lieutenant Greene, who had been in charge of the turret division, immediately left the guns and spent full thirty minutes nursing the wounded commander, during which time the gunners shotted the guns, and, as the *Merrimac* was turning away, discharged them at close range into her stern, a blow that made her whole frame shudder and seemed at once to be fatal. There was no officer to direct the movements of the vessel except the pilot Howard. As the two combatants parted from the struggle they were headed in opposite directions, both away from their goal. Presuming that the fight would be continued, Pilot Howard ran the vessel a short distance down the channel and turning brought her again close to the protection of the *Minnesota*, when Lieutenant

Greene stepped into the pilot-house and assumed command. It was then observed that the *Merrimac* had taken the channel and was heading towards Norfolk. She was soon joined by her consorts, and taken up to their refuge under the batteries of Craney Island, the *Merrimac* apparently sagging down astern.

Thus ended the greatest naval battle of the world. The *Cumberland* went into action with 376 men. When the survivors were mustered there were only 255. The crew of the *Congress* were 434; of these 298 got to shore. Three were killed and sixteen wounded on the *Minnesota*. One sloop-of-war 24 guns, and one frigate 50 guns, totally destroyed. One first-class steam frigate, carrying 40 nine-inch Dahlgren guns, disabled. Two others were driven off, glad of the low water which kept the *Merrimac* away.

When the sun went down the 8th of March it appeared to those who were acquainted with the appalling facts that the cause of the Union was well nigh, if not utterly lost. No victory with such decided results for the present, or with such bright hopes for the future, was gained by the rebels either

before or after. That night was one of exultation among the conspirators wherever the telegraph could carry the news. The easy and entire destruction of the Union navy, the capture of Washington, the laying of the northern cities under contribution, the raising of the blockade, recognition in Europe; in short the complete triumph of the rebel cause seemed the natural consequence of that day's work. The rebels knew of nothing between them and entire success, and our government had no means of arresting this impending ruin, except an experimental and most diminutive war-ship, in which experienced naval officers and scientific naval constructors had little or no confidence, and which had not even reached the scene of action.

The importance of this battle to the cause of the Union can only be estimated from revelations of the secret archives department, which appear to prove that England and France were watching the result of this very affair, resolved to take the side of Southern secession had the Northern fleet been vanquished. The result of this day's conflict proved to them the entire worthlessness of their wooden

navies, and, that their ships were safer in their own waters. When the tidings of this fight crossed the Atlantic, the London *Times* affirmed that England had on the day before 149 first class war-ships, now there were only two; beyond these there was not one that could safely be pitted against the *Monitor*, and even these were not invulnerable, for, being iron-plated only amidships, they would be set in a blaze at either extremity in a few minutes by shell from this new war-ship.

After the battle Captain Worden was taken at once to Washington, and an incident, connected with him there, illustrates the character of Abraham Lincoln. A cabinet meeting was in session, when it was told the President that the wounded commander of the *Monitor* was in the city. He instantly rose, took his hat saying, "Excuse me, gentlemen, I must see this fellow," and went immediately to his room. Worden was on a sofa, his eyes bandaged, his face swollen and bloody. The President was announced, and he took his hand in silence. "Mr. President," said the wounded officer, "You do me great honor by this visit." "Sir," replied Mr. Lin-

coln, while the tears ran down his cheeks, "I am the one who is honored by this interview."

Commander Worden was the recipient of many congratulatory letters from various societies and individuals. A resolution of the Senate and House of Representatives of the United States, tendering thanks, etc.; a letter of thanks from the Secretary of the Navy; a resolution of the Assembly of the State of New York, authorizing a sword to be presented; a letter of the Secretary of State of the State of New York, accompanying the sword on its presentation; a resolution of thanks from the Chamber of Commerce, of New York; also a gold box from the citizens of the city of Buffalo.

The only perceptible danger to those on board the *Monitor*, after the first round from the *Merrimac*, was to those in the turret, who were in great danger from the flying of bolt-heads driven with great force across the turret, and, from the concussion, which would for a time paralyze a man if he should in any way be in contact with the turret when struck by a shot. There were several sight-holes, through the turret, about an inch and a quarter in diameter,

through which now and then a musket bullet, fired by the *Merrimac* marines, would enter the turret.

The *Monitor* was struck during the engagement twenty-one times. Eight times on the side armor, seven times on the turret, four times on the deck and twice on the pilot-house. None of the marks were very large, hardly indented into the armor plating sufficient to hold as much as a common tea-saucer, and only two that crooked or bulged the iron on the inner side of the turret. The pilot-house was a clumsy affair, built of eight-inch iron beams placed log-house fashion and bolted together. The one hit when Captain Worden was wounded was cracked and slightly turned out of place. The *Monitor* also received seven other hits from the *Minnesota* as she lay at times between the two vessels enveloped in smoke, but these were mere scratches compared with the scars of the *Merrimac*.

The hull of the *Monitor* was constructed of a double thickness of iron three-eighths of an inch thick, strengthened by iron ribs and knees. It was 147 feet long, 36 feet wide, and twelve feet deep, built sharp at both ends, the sides flanging regularly,

with a flat bottom and hollow iron keel. Upon the hull was laid a deck projecting four feet from the sides, ten feet at the bow, and sixteen feet at the stern, over the rudder and propeller. This deck protected the hull by an overhang, built of oaken blocks three and a half feet thick, over which were bolted five series of one-inch iron plates above the water line, diminishing to first four, then to three, again to two inches. The entire length was 174 feet, the breadth 42 feet, and it was rated at 776 tons. The turret was constructed of plates of iron an inch thick, about three feet wide and nine long. Eight of these were bolted together in such a way that the joints were firmly strengthened. It was thus nine feet high, eight inches thick and twenty feet in diameter. The two port-holes were oval, just large enough to allow the guns to be run out with sufficient height to give room for the elevation of the guns; they were closed by heavy wrought iron pendulums, that were swung either side by pulleys. Two eleven-inch Dahlgren guns, weighing 16,000 pounds each, using spherical shot of 168 pounds, with a charge of 15 pounds of powder, were mounted side

by side on iron carriages. The pilot-house, built of nine-inch square iron beams, was on the forward deck, about three feet high and four feet wide, covered by a heavy iron plate. Nothing else was above the deck except the flag-staff, so that the guns had an unobstructed range in any direction. The top of the deck was plated with two layers of half-inch iron, through which was made a hatchway for the engine-room, and one forward to allow the passage of the crew. Both were covered in action with iron plates the thickness of the deck. There was also a dead-light in the deck in each of the officer's rooms, which furnished light and ventilation, except in action, when they were closed with iron covers or battle-plates, the same as were the hatches.

There were two engines 40-inch diameter of cylinder by 26-inch stroke of piston, and they would make 80 revolutions per minute, and the vessel made eight knots an hour in smooth water. Six knots was, however, her common speed. It is hardly possible for a person unaccustomed to the relative size of vessels to make a correct comparison between the *Monitor* and her opponent as they

appeared together during the engagement. The *Merrimac* being five times her tonnage, it may be imagined she was a very large vessel, the other a very small one. Thus it was that during the engagement our people viewing the fight could not always see the *Monitor*, and only the sound of her guns gave evidence of her existence, whose echoes sounded over sea and land, mingled with the cheers of thousands, whose throbbing hearts gave impulse to their joy.

In order clearly to understand the honor and fame that has been awarded to the *Monitor* for her victory, something should be known of the build and formidable character of the vessel with which she was engaged, as well as the amount of property saved from destruction, and the damage the *Merrimac* and the two rebel cruisers would have done if they had escaped to sea.

What I am to state was told me by mechanics who worked in raising her, and getting her ready for sea, also from those who were on board during the fight, or went in her consorts as spectators.

In 1855, the United States built, at different navy yards, four steam frigates: the *Merrimac*, the *Wabash*, the *Minnesota*, the *Roanoke*, and, by contract, at a private yard, the frigate *Niagara*. They were all nearly alike, of about 3,500 tons burden, carrying a heavy battery of nine and ten-inch Dahlgren guns. In April, 1861, the *Merrimac* was at Norfolk navy yard undergoing repairs. When the navy yard was abandoned she was scuttled and set on fire, but, it being low tide, she only sunk to the gun-deck, and the fire was extinguished. She was soon raised by the Confederates, and the dry-dock, which had by accident or misfortune escaped destruction, was opened for her reception. After an examination, it was found that the bottom of the hull and the engines and boilers were entirely uninjured, and John M. Brooke, formerly a lieutenant in the United States navy, and John L. Porter, Confederate naval constructor, reported plans for her reconstruction into a shot-proof steam battery. The hull was cut down to within three feet of the waterline to form the gun-deck, and the hull was plated with iron four feet below the surface. Both ends,

for seventy feet, were cut down to the water-line and covered over so as to be submerged when the ship was ready for action. On the midship section, one hundred and seventy feet in length, were placed, side by side, pine beams a foot square and fifteen feet long, like rafters of a house, at an inclination of forty-five degrees. These projected over the edge and two feet into the water. Upon these beams were placed two layers of oak planks four inches thick, one layer horizontal the other vertical. This was overlaid in the same manner with two thicknesses of iron plates, two inches thick and eight inches wide, firmly bolted through the wood-work and fastened on the inside. Experiments made by Lieutenant Brooke proved this thickness of iron insufficient, and a layer of railroad rails was added to the forward and exposed portions of the roof. This roof did not come to a point, but was flat on top, rendered bomb-proof by iron plates. Her armament consisted of two seven-inch rifled cannon, mounted on pivot on bow and stern, two six-inch rifles and six nine-inch smooth-bore broadside guns — ten in all. The ends of the casemate were rounded and

a false bow of wood was built over to keep the water from banking against the casemate; and, in appearance, the *Merrimac* almost exactly resembled a house submerged to the eaves. She had a draft of twenty-three feet.

There is not room in an article like this for comment upon the battle fought by the *Merrimac* and *Monitor*. If their commanders had known exactly how much their own vessels could be depended upon, and the strength and impregnability of their opponent, the battle would have ended sooner, with a far different result. It would have been unwise for the *Merrimac* to have risked a battle with the *Monitor* without trying to escape to sea, where she could have done more damage than to have sunk a dozen iron-clads, and accomplished the mission that was intended, without any permanent injury. The *Monitor* had an advantage on the waters where they fought by being of less draft, and the long high sides which the *Merrimac* exposed enabled the gunners to train the guns without missing a shot. No guns of such calibre as the *Monitor's* had ever been experimented with, and a charge of fifteen pounds

of powder, such as Captain Worden had been instructed with caution to use, was thought to be enormous, and all that the guns would bear. Subsequent tests have proved that thirty pounds would not have been an over-charge, while even forty pounds might have been used with impunity. With such a charge of powder as either of these a shot would have bored the *Merrimac* through and through, and the battle could not have lasted after a second round.

The *Monitor* was managed with the greatest bravery and skill, so far as the movements of the ship were concerned, but as much cannot be said of the management of the turret and guns. The turret, as is well understood, was of great weight, resting on a single shaft from the centre of the roof, exactly like an umbrella when opened, the movements being governed by a lever, the same as is used in starting an ordinary engine. I will not attempt to explain why this was not better operated. It has been said (without truth, however,) that the turret worked badly, and that the vessel had to be turned in order to bring the guns to bear. The facts of the story

are: when the turret was fairly started it revolved with considerable speed, and instead of keeping their assailant in view, by looking through the peek-holes in the turret, and gradually checking the movement as the guns were brought to bear, the guns' crew would watch through the open ports until the *Merrimac* was to be seen, and then the steam would be suddenly shut off, causing this heavy mass to vibrate in such a manner as to swing backwards and forwards, several times, before it would stop at a rest. There was no attention paid to training the guns, except to hit the *Merrimac* somewhere. The water-line, the machinery, or a concentrated fire, the most essential principles taught in gunnery, were apparently not thought of by the officer in charge of the turret division, and the guns were often fired without stopping the turret at all. The *Monitor* was in no way disabled. Except the injuries to Captain Worden and one of the iron beams of which the pilot-house was built, the *Monitor* and all on board were in as good condition after the battle as when it began.

The *Merrimac* was managed in the most brave and

daring manner, and too much praise cannot be given to her commander and those who trained her guns. When was there a parallel to the correctness of the sighting of her guns, as those who have seen the marks of her shot on the *Monitor* can testify? They hit eight times in a line along the hull on a surface not more than a foot in width, and so close to the water that either would have flooded the ship if there had been no armor. Two shots struck within a space of six inches from one of the port-holes, and one shot hit between the ports. One shot struck exactly in the centre of the turret, avoiding a glancing stroke, and fell crumbled to the deck. Two struck the pilot-house, a target only four feet wide and three feet high, one of them exactly over the crack through which Captain Worden was looking, placing him *hors de combat*.

Of the condition of the *Merrimac* after the battle, the most reliable account I have ever had was given to me by a ship carpenter who was employed at the Norfolk navy yard during the time it was in possession of the Confederate government. From his ex-

perience I should think he was fully capable of making a correct estimate in such a matter. He told me that the *Merrimac* was in a disabled condition and could not have been engaged any longer; that a shot had entered one of the forward ports, disabling two guns and killing and wounding nineteen men; that the water had entered through her battered sides in such a quantity that she was obliged to retire. He further said that he worked on her after she had been taken into the dry-dock, and that the armor was torn off and bent into every conceivable shape; that her whole frame was battered and shaken beyond repair, and it was with the gravest fears that she was held in defence of the city of Norfolk.

The *Merrimac* and *Monitor* never met again. For a month they lay watching each other, neither side caring to take the chances of losing a battle. Captain Jeffers, in the course of his inspection of the *Monitor*, upon assuming command, said, "Sir," if I knew as much of the *Merrimac* from newspaper descriptions and pictorial representations and diagrams as the rebels know of the *Monitor*, I would go up to Norfolk and sink her before sundown."

On the 3d day of May, General Magruder retired from Yorktown. Norfolk was abandoned, the strong positions at Sewell's Point and Craney Island evacuated, and the rebel troops were concentrated for the defence of Richmond. The *Merrimac* was shut out from her retreat, and all day and night they worked to lighten her, in order to cross the shoals so as to take her up the James River. In this they did not succeed. The poor old commander, Joseph Tatnall, who had spent his whole life in the naval service of the United States, saw nothing to be done but to destroy his vessel. So he ran her ashore, landed the crew and set her on fire, fore and aft. She burned fiercely for an hour, and on the morning of May 11, 1862, she blew up. Thus ended the *Merrimac*.

Four days after the destruction of the *Merrimac* the *Monitor* and *Galena* ascended the James. It was hoped they could reach Richmond. The expedition, however, met a serious obstacle at Drewry's Bluff, upon which, about 200 feet above the river, had been hastily constructed what has since been known as Fort Darling. The river here less than two hundred yards wide, was also obstructed by a

line of piles and sunken vessels, and a great number of sharpshooters were concealed along the banks. Three wooden gun-boats accompanied the expedition, which anchored about a mile below the fort. The *Galena* took position within 600 yards, and the *Monitor* went still nearer, but it was found that the guns could not be elevated enough to reach the fort, and she dropped astern again to where her guns could be brought to bear. While in this position, unconscious of any danger except from the sharpshooters, who kept up a steady fire at the port-holes, a masked battery, located near the shore and not more then 200 feet from the *Monitor*, discharged its only gun, a ten-inch Dahlgren; the shot hit the turret fair in the centre, fell to the deck and rolled into the water. The shot penetrated the iron about half its diameter leaving a perfect mould. She was also struck twice on the hull from Fort Darling, leaving only slight scars.

The action lasted three hours, during which time the *Galena* had been exposed to the full fire of the fort. Thirteen shot and shell penetrated her side. The deck was pierced by the plunging fire, and

the narrow iron plates that composed the light armor of the vessel were broken and forced from their fastenings, proving that light-armored vessels are of no use against heavy guns. The *Galena* had lost thirteen killed and as many severely wounded, and having expended nearly all her ammunition she withdrew, followed by the *Monitor*.

Lieutenant Jeffers, who commanded the *Monitor*, said in his official report of this affair: "The action was most gallantly fought against great odds, and with the usual effect against earthworks. So long as our vessels kept up a rapid fire, the enemy rarely fired in return, but the moment our fire slackened they remanned their guns. It is impossible to reduce such works except with the aid of a land force."

The *Monitor* returned to Hampton Roads, where she remained until the first of October, when she went to Washington navy yard for repairs, and a few important improvements. The 6th of November, she hauled out from the navy yard into the Potomac, and the next day started towards the South. After a pleasant sail down the river, she

anchored for the night, and the following day, under a most beautiful autumn sun, steamed down the broad Chesapeake, and late in the afternoon arrived at Hampton Roads.

The reappearence of the little wonder inspired demonstrations of joy, in both land and naval forces, and cheer upon cheer rent the air from transports laden with troops, and the men-of-wars-men climbed into the rigging and gave vent to their enthusiasm with waving hands and continuous cheers. Some of the vessels dipped their flags in silent recognition, and the heavy cannon of the fortress boomed forth friendly greetings.

From this time till late in December the *Monitor* laid at her former moorings off Newport News, when, in contemplation of an attack on the fortifications at Charleston, she was taken to Fortress Monroe, and preparations made for an ocean voyage. The time for sailing was not definitely given by the navy department, it having been left to the judgment of experienced navigators. At length, on the 29th of December, after a storm of several days, there were indications of favorable weather, and the *Monitor*

started out in tow of the side wheel steamer *Rhode Island*, which had been detailed to be the convoy.

The weather was heavy, but it seemed as though the storm had passed, and that the next day when Hatteras should be reached the sea would be calm, and a safe and easy passage accomplished. The sea was much agitated from the previous storm, but nothing occurred to indicate danger till the second day, when a renewal of the storm tossed the sea into most frantic action, and the waves rolled in succession over the little craft, completely submerging her. After a severe struggle, lasting for twelve hours, she sprung a leak. The pumps, one of which of great power had just been put in, were set working. For a time it seemed as though she would be kept clear, but the coal became wet, which deadened the fires. The steam ran down, and the machinery failed to perform its duty. Soon the water reached the furnaces. The furniture in the cabin was afloat, and nothing could be done but to save life. It was a solemn thought for the crew to give up the ship, but all that could be done had been done.

Signals of distress brought her convoy within hailing distance, and boats were sent to rescue the crew. In doing this many were swept by the heavy sea into eternity. Others stupified with fear remained on the turret, and some who had not heard the order to leave the ship stood at their posts of duty within her, and were swallowed by the sea. The writer assisted the captain, John B. Bankhead, in getting into the boat, and with one other of the crew was the last person saved from this ill-fated ship.

The battle of the *Monitor* is over. All honor to the names of Ericsson, Winslow, Griswold, Bushnell, Rowland, Worden, and those who volunteered for the fight. She now lies fathoms deep beneath the stormy waves of Hatteras. In her noble souls have gone down. Their names are for history; and so long as we remain a people, so long will the work of the *Monitor* be remembered, and her story told.

PERSONAL NARRATIVES

OF EVENTS IN THE

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