THE UNITED STATES LIGHT-HOUSE BOARD - 1860

Third in a Series

(Andrew Atkinson Humphreys)

By John T. Graham

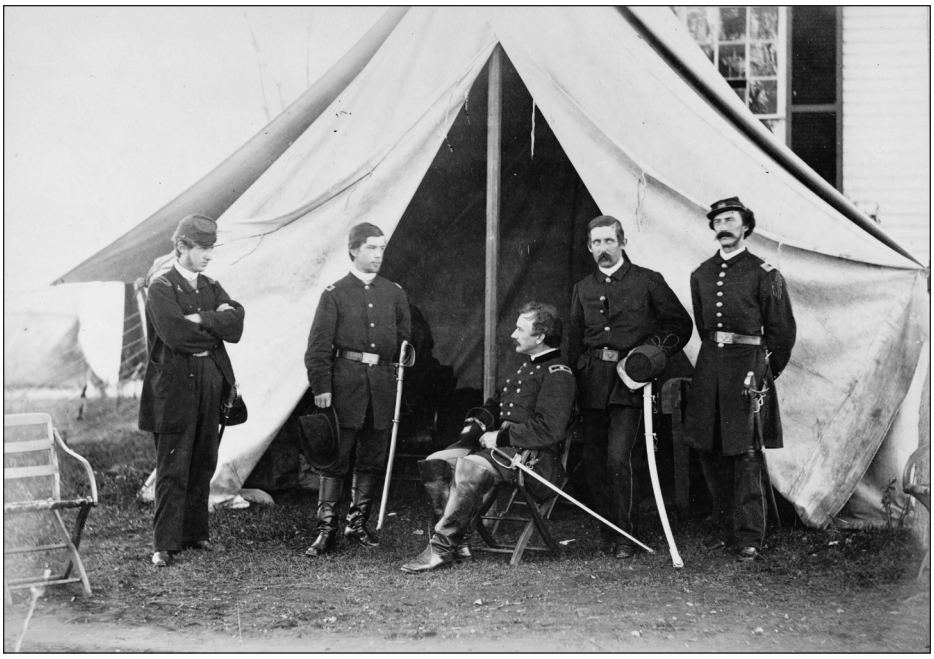
Preface: *This is the third in a series of articles that examine the lives of the men who served on the Light-House Board in the year 1860. This moment in time was selected because of a seal installed at the Montauk Point, New York, lighthouse at the time of its 1860 renovation, which lists the then-current members of the board.*



Andrew Atkinson Humphreys was a career Army officer who distinguished himself on the battlefields of the Civil War and in innumerable assignments as a military engineer. He served as the chief of engineers of the Army from 1866 until 1879. Humphreys served two different terms on the Light-house Board. The first was from May 1856 until February 1862, when he was relieved to assume wartime duties. During this term he chaired the board's Committee on Engineering. Following his Civil War commands, he was reappointed to the board in February 1870 and served until January 1874. During this second term, he chaired the board's Committee on Finance.

Humphreys was born in Philadelphia on November 2, 1810. His great-great-grandfather had emigrated from Wales in 1682, settling in what is now Montgomery County, Pennsylvania. Both Andrew's father and grandfather were distinguished naval architects. Grandfather Joshua Humphreys designed the USS *Constitution*, and its five sister frigates. His father, Samuel Humphreys, was the first "Chief Constructor" of the Navy, and was also the designer and construction overseer of major warships USS *Philadelphia*, USS *Franklin*, and the first USS *Pennsylvania*, all built at the Philadelphia Navy Yard.

Humphreys was one of four children of Samuel and Letitia Atkinson Humphreys. His



Major General Humphreys, (center) in 1863 with his staff. Library of Congress photo.

brother Joshua (1813-1873) served as an officer in the U.S. Navy, resigning in 1861 to serve in a similar capacity in the Confederate Navy.

Humphreys attended Nazareth Hall (now Moravian College in Bethlehem, Pennsylvania), and in 1827 was admitted to the U.S. Military Academy at West Point. He graduated with the class of 1831 and was commissioned a second lieutenant of Artillery. Although not an engineer officer, some of his early assignments involved "topographical duty" and "making surveys" in West Florida and at Cape Cod, Massachusetts. He saw his first combat serving in the Second Seminole War in Florida in 1835.

After resigning his Army commission in September 1836, Humphreys spent the next few years as a civilian working with Army Major Hartman Bache (another future Light-House Board member) on a design for a screw-pile lighthouse at Brandywine Shoal, New Jersey. Bache's plans were rejected because of the cost of the project, and another decade passed before a caisson lighthouse was built there. Humphreys also assisted Bache with design plans for a never-built breakwater structure at Coal Shoal, off Cape May, New Jersey.

In July 1838, the army Topographical Engineers were reorganized into a separate Corps, and Humphreys was reappointed at the rank of first Lieutenant. He spent the next several years involved with land surveys, harbor improvements, and bridge construction. In 1843 he prepared a plan for the first major extension of the U.S. Capitol building. The essential elements of his design were ultimately adopted. He became associated with Alexander Bache (a cousin of Hartman Bache and a future original member of the Light-House Board) in 1844. Bache was superintendent of the Coast Survey, and Humphreys was assigned as his assistant.

Humphreys married Rebecca Hollingsworth on June 19, 1839. Andrew and Rebecca had four children: Henry Hollingsworth (1840); Charles (1844); Rebecca Hollingsworth (1849); and Leticia Atkinson, named for her paternal grandmother (1856). Both sons followed their father into the Army, although neither attended West Point. Henry also served in the Civil War and authored several biographies of his father and of other historical figures.

In 1850 Humphreys began the project that was perhaps the defining engineering accomplishment of his career. It occupied much of his time for the rest of his life. This was the first systematic evaluation of water flow volumes, and of the movement of silt deposits, in the Mississippi River and its tributaries. Continual flooding of the towns and lowlands along the rivers caused massive losses of property and lives. Mitigating such flooding, and the improvement of ship navigation across the huge sand bars that formed at the mouths of rivers, were the primary objectives. No such scientific studies had ever before been undertaken.

Two young engineer graduates of the Military Academy were soon assigned to work with him; they accomplished much of the field work under Humphreys' oversight. They were Lieutenants Henry L. Abbot (1831-1927) and Gouverneur K. Warren (1830-1882). Both men went on to serve with distinction in the Civil War, as well as to have distinguished Army engineer careers of their own. Abbot served under Humphreys' lead in other assignments as well, and he authored a tribute "Memoir" to his mentor years later.

Years of study by Humphreys, Abbot, Warren, and others ultimately resulted in the 1861 "Report on the Physics and Hydraulics of the Mississippi River." Primarily authored by Humphreys, the report credits Abbot as the co-author. This report, submitted to the Secretary of War, was widely acclaimed, and it was also printed and distributed in most of the principal languages of Europe. It firmly established Humphreys' credentials in the new field of hydraulic engineering.

It was while working with him on this river project that Abbot observed an incident that he felt characterized Humphreys' whole life. While studying a report that "bore evident marks of neglect and ignorance of its subject, he (Humphreys) brought his clenched fist down heavily upon the table, exclaiming, 'I cannot understand how any man can be willing to assume charge of a work without making it his business to know everything about it from A to Izzard.'"

Beginning in 1854, Humphreys was assigned to chart and evaluate potential routes for a transcontinental railroad. Abbot assisted him with this project also. The tumult of sectional rivalry before the war, and the years of conflict that followed, postponed completion of this feat of engineering until 1869, but his early report to Congress would be instrumental in the ultimate selection of the final route.

He assumed one more duty when, on May 21, 1856, he was appointed to the Light-House Board, joining his earlier mentor Alexander Bache. In 1860 he was detailed to still another duty, as a member of a board

Facing page: Major General A.A. Humphreys circa 1860s. Library of Congress photo.

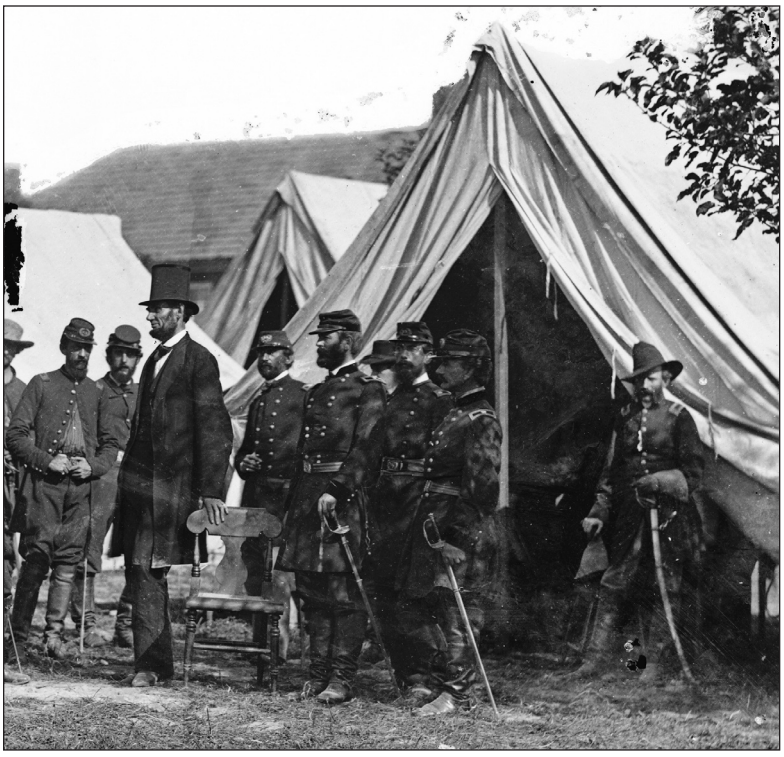
of officers "instituted to revise the program of instruction at the Military Academy." By 1861, with the war underway, Humphreys was assigned as General McClellan's chief topographical engineer. His Light-House Board duties were completely interrupted in February of 1862, when he was assigned to command the 3rd Division of the 5th Corps of the Army of the Potomac. He and his command served gallantly at the Battles of Antietam and Fredericksburg later that year. General Daniel Butterfield later wrote, "I hardly know how to express my appreciation of the soldierly qualities, the gallantry, the energy displayed by my division commanders, Generals Sykes, Humphreys, and Griffin."

Following the Union defeat at Fredericksburg, Humphreys wrote to his wife, describing the thrill of battle: "As the storm of bullets whistled around me, and as the shells and shrapnel burst close to me in every direction with hissing sound, the excitement grew more glorious still. Oh, it was sublime." Following the war, the Commonwealth of Pennsylvania erected a statue of Humphreys on the Fredericksburg battlefield to commemorate the ill-fated charge of his division against the Confederate line on Mayre's Heights.

Humphreys was known to like long conversations with his staff after the evening meals in camp. He had knowledge of many things and liked to share and trade that knowledge. He considered war "a godlike occupation," stating that war was "a very bad thing in the sequel, but before and during a battle it is a damn fine thing!" Charles Dana, the assistant secretary of war, described him as "one of the loudest swearers" he had ever known, "a man of distinguished and brilliant profanity."

Following the Battle of Gettysburg, where Humphreys and his division again displayed conspicuous gallantry, he received a brevet promotion to major general, and he acceded to General George Meade's request to serve as his chief of staff. Humphreys continued in that assignment until November of 1864, when he took command of the Army's II Corps. His last military engagement was at the Battle of Sailor's (Sayler's) Creek just prior to Robert E. Lee's surrender at Appomattox in April of 1865. Pennsylvania later erected another statue of Humphreys on the battlefield at Gettysburg.

For a brief period after the war, he was engaged in working on levees on the lower Mississippi River. On August 8, 1866, upon the retirement of Colonel Richard Delafield, Humphreys was appointed as chief of engineers of the Army, the position that fellow Light-House Board member Joseph Totten had also held for many years. In this capacity he would oversee a substantial expansion of the Corps' river and harbor work. He also established the Engineer School of Application (now the Army Engineer School). He received the degree of L.L.D. from Harvard University in 1868. He was reappointed to the Lighthouse Board on February 21, 1870, and served until January 19, 1874, this time chairing the Committee on Finance. During the latter part of his tenure he served, from 1872 until 1877, on the Commission To Examine Into Canal Routes Across the Isthmus Connecting North and South America (the nation of Panama did not yet exist.) From 1877 to 1879, he served on the Washington Monument Commission.



This photo taken at the campgrounds of the 1862 Battle of Antietam shows General Humphreys (second from right) with President Abraham Lincoln. Library of Congress photo.

Humphreys was one of the 50 original founders ("Corporators"), in 1863, of the National Academy of Sciences, then and now one of our nation's premier scientific research and education institutions. Other prestigious organizations in which he was involved are, to name but a few: The American Philosophical Society (1857), The American Academy of Arts and Sciences (1863), The Imperial Royal Geological Institute of Vienna (1862), and The Royal Institute of Science and Art of Milan Italy (1864).

As it had for years, the Mississippi River continued to play large during Humphreys' term as the chief of engineers. The passage of ships across the huge sandbars that continually formed at the mouth of the Mississippi was still an obstacle that the Corps of Engineers studied and analyzed but could not effectively solve. As the river approaches the Gulf of Mexico it spreads and gradually slows, depositing its huge load of sediment. Ships frequently ran aground on the sandbars that formed. Huge machines operated by the Corps to dredge shipping channels simply could not keep up. By 1874, under intense pressure for the Corps to do something, Humphreys proposed building a canal from below New Orleans to the Gulf. This proposal brought him into a prolonged public and politically infused debate with James Buchanan Eads, perhaps the most famous civilian engineer of the era. Eads thought the canal scheme was ludicrous. He suggested instead that lawmakers contract with him to build jetties, or underwater walls running parallel to the current of the river. The jetties would create a narrower channel, which would speed up the water running between them. The faster water flowed, the more sediment it would

carry. Eads claimed the extra force would be enough to carve out the sandbars and carry the sediment into the Gulf. Eads was so confident that his solution was the better that he offered to build the jetties without any advance payment. Payment would only be required if the jetties worked.

Feeling just as strongly that the bypassing-canal system was the better solution, Humphreys tried on numerous occasions to sabotage the Ead's project. Eads, however, was a formidable opponent, described as "… a bitter and unrelenting foe.… To him the unfolding of great and correct principles was more than personal friendships. His beliefs were his friends." The often vicious debate between Eads and Humphreys played out in the press, with members of Congress and the public taking sides.

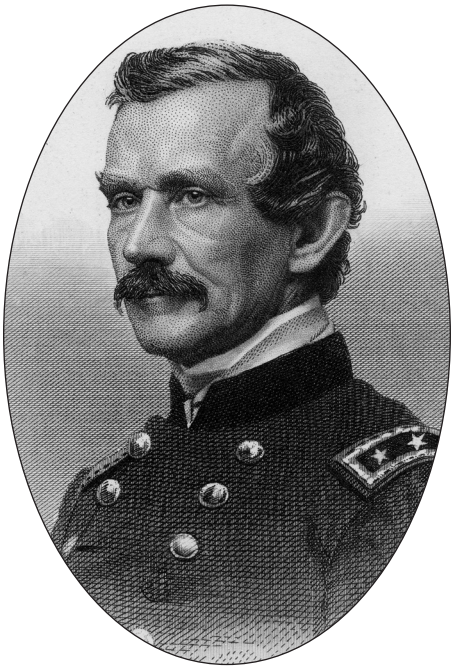
In the end, Eads proved his point, as Congress approved his plan over that of Humphreys and the Corps. Eads was hired and when the jetties were finally completed in 1879, they created a 30-foot deep channel, one that ensured ships could get into and out of New Orleans. The city went from being the ninth largest to the second largest port in the nation (after New York). The jetties sealed Eads' reputation as a master of river engineering. The decision to build the jetties also sealed Humphreys' fate. Defeated and dejected, he voluntarily retired from his position as chief of engineers on June 30, 1879, fifty-two years after entering the Army at West Point.

Humphreys' retirement was short. He spent much of those few years documenting his Civil War experiences and his family history. Among the several books he authored are *The Virginia Campaigns of 1864 and 1865*, and *From Gettysburg to the Rapidan*. He collaborated with J. Grant Wilson on *The History of the Frigate Constitution*, one of the early warships designed by his grandfather Joshua.

Abbot's Memoir tells us that "General Humphreys passed from life on the evening of December 27, 1883, as he would have wished, seated alone at his table. The family had retired, bidding him good night apparently in his usual health." He was buried in the Congressional Cemetery in Washington, as were his father and brother Joshua, and his daughter Rebecca, who died at the age of 29 in 1879. His wife, Rebecca, would outlive him by 15 years, passing on in July 1897 in Concordville, Pennsylvania. She was buried with Andrew in the Congressional Cemetery. The terms of her will left $1,000 for the erection of a monument to her husband in the Congressional Cemetery.

Fort Belvoir, Virginia, for many years the home base of the Army Corps of Engineers, was founded during World War I, and was originally named Camp A. A. Humphreys, in the general's honor. It was renamed in the 1930s for the Belvoir Plantation, the colonial era home of Thomas Lord Fairfax, who once owned the lands on which the camp was founded.

The lengthy biographical "Memoir," read to the National Academy of Sciences by fellow Army engineer, NAS Corporator, and longtime protégé Henry L. Abbot, following Humphreys' death, continued: "General Humphreys was eminent both as a scientist and as a soldier, a man of broad and liberal views, of commanding intellect, and of the highest personal honor. In his social relations, General Humphreys exerted a personal magnetism which can hardly be expressed in words. His manners were marked by all the graceful courtesy of the old school, while the unaffected simplicity and modesty of his character, and the force and vigor of his ideas, left an impression not easily effaced. He was a gentleman by nature, not merely by artificial polish, and no one could be thrown in his society without recognizing the fact."



Major General A.A. Humphreys. Photo courtesy the National Academy of Sciences.

Andrew Atkinson Humphreys was another eminent and distinguished engineer, who brought professionalism, scientific expertise, and an unquestioned dedication to duty to the still-new Light-House Board, and served it well during the years of major expansion of the American Light-House Establishment. He was another excellent choice to lead the agency into this new era.

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