

1965

A Robert Fulton Exhibit

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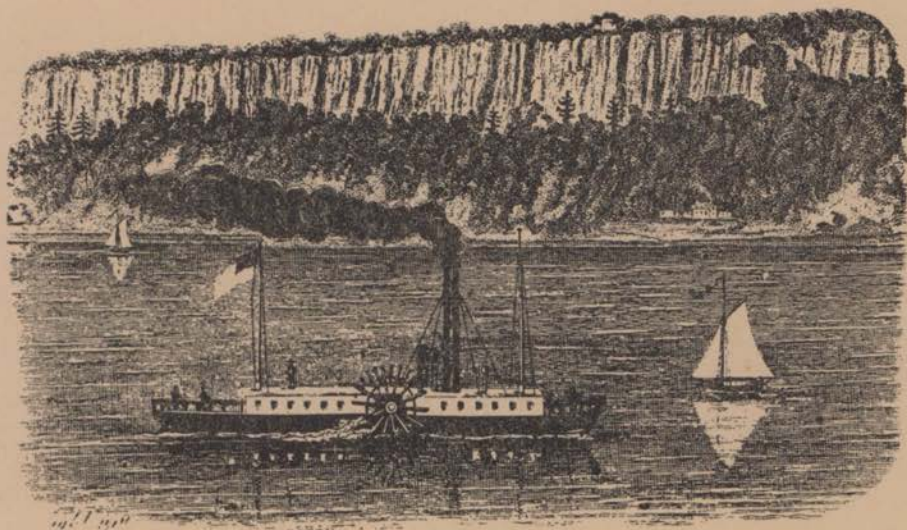
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a robert fulton exhibit



robert fulton 1765-1815

ARTIST AND ENGINEER, Robert Fulton was born in Lancaster County, Pennsylvania, on November 14, 1765. He began his professional career as a portrait and landscape painter in Philadelphia. By the age of nineteen he had progressed to the point where he could benefit most by studying in London under the celebrated artist, Benjamin West. Soon after his arrival there, he became interested in Civil Engineering, especially in the Duke of Bridgewater's project for a canal from Birmingham to the sea. By 1793 he had virtually given up his painting to devote full attention to engineering.

Fulton's genius soon became evident. In 1796 his first book, on canal navigation, appeared. His invention of a power-shovel for cutting canals remained in use in England for many years. Again, his application of the double inclined plane for transporting barges across terrain where digging was too difficult soon became standard practice.

Europe was at this time in the throes of the Napoleonic Wars which, by reason of Britain's use of the blockade and of the search of foreign vessels in transit, led Fulton to espouse the cause of freedom of the seas. In support of his strong belief he went to Paris and undertook to develop and build underwater mines and torpedoes, as well as a steam-powered vessel from which to launch them. His work came to the attention of Napoleon, who presently commissioned construction and trial of what promised to be so formidable a weapon. Both the boat and the torpedoes succeeded, but because Fulton could find no British targets close to the shore

of France, the Ministry of Marine lost interest. In 1803 he took his invention to England, where the British Admiralty also displayed an interest. Again he failed, this time because of defective torpedoes; and again officialdom dropped the matter. His monograph, "Torpedo War, and Submarine Explosives," finally appeared in New York in 1810.

It is commonly supposed that Robert Fulton invented the steamboat. But this is not the case. Steam power for boats had been successfully tried in Scotland by the end of the eighteenth century. Fulton's steamboat built for delivering torpedoes led him to design the "Clermont," and his real contribution lay in adding to his technical skill the imagination to see its use as a passenger carrier. The "Clermont," running between New York and Albany, was succeeded by a number of other vessels to whose operations and management Fulton devoted the remainder of his life.

Robert Fulton died on February 24, 1815.

THE DRAWINGS of the "Great Torpedo" and the "Small Torpedo" are originals, signed by Fulton, and were given to the Library by Mr. Robert B. Honeyman, '20, and Mrs. Honeyman.

Fulton's first biographer was the eminent New York lawyer and politician, Cadwallader D. Colden. His biography of Fulton has now become quite scarce. A copy is shown in the present exhibition, as also are two subsequent biographies, one by W. B. Parsons, the other by Henry Winram Dickinson, who received the honorary degree, Doctor of Engineering, from Lehigh in 1938.

Works by Robert Fulton

Monographs

1. "A Treatise on the Improvement of Canal Navigation; Exhibiting the Numerous Advantages to be Derived from Small Canals. And Boats of Two to Five Feet Wide, Containing from Two to Five Tons Burthen. With a Description of the Machinery for Facilitating Conveyance by Water through the Most Mountainous Countries, Independent of Locks and Aqueducts: Including Observations on the Great Importance of Water Communications, with Thoughts on, and Designs for, Aqueducts and Bridges of Iron and Wood. Illustrated with Seventeen Plates." By R. Fulton, Civil Engineer. London, I. and J. Taylor, 1796.
2. "Torpedo War, and Submarine Explosions." By Robert Fulton ... [motto] The Liberty of the Seas will be the Happiness of the Earth. New York, 1810.

Drawings

3. "Great Torpedo. About 20 feet long 3 wide, And 2 deep Sufficient to contain 2,000 Combustible balls each 4 Inches diameter; and one ton of powder. This may be varied by having a less number of balls and more powder, to be ballanced in the water like the small one. . . . July 21st 1804. R. F."

4. "Small Torpedo. 7 feet long 4 foot wide and one foot deep capable of containing from 150 to 180 combustible balls and 200 pounds of powder. The AA ends left open at the top to receive ballast BB two pieces of cork two inches thick 18 long and six wide to suspend the torpedo any given depth in Water, C the deckwork battery.

"Two combustible bombs real size one 6 inches the other 4 inches diameter, each must have a barbed copper nail so that it may stick where it falls also a fuse to take fire at the time of explosion, and sit [sic] fire to the mass when fallen.

"Composed of rope yarns, Rosin, Salt petre, and oil of turpentine or any other inflamible matter. R. F. July 24th 1804."

Biographies of Fulton

5. Colden, Cadwallader Davis. "The Life of Robert Fulton, By His Friend." New York, 1817.
6. Dickinson, Henry Winram. "Robert Fulton Engineer" and "Artist His Life and Works." London, 1913.
7. Parson, William Barclay. "Robert Fulton and the Submarine." New York, 1922.

Cover depicts Fulton's steamboat, "Clermont," on the Hudson River, from an engraving after S. Hollyer, as supplied by The Bettmann Archive. Exhibit flyer prepared by James D. Mack and the Lehigh University Office of Publications.