



Job Abbott 1845-1896.

Job Abbot

By Frank Griggs, Jr., Ph.D., P.E., P.L.S.

Job Abbott was born on August 23, 1845 in Andover, Massachusetts. He was the son of Nathan B. Abbott, one of the well-known Abbott families in the area. He attended local schools and then Phillips Andover Academy near his home. He then enrolled at the Lawrence Scientific School, Harvard University. It opened in 1847, as Harvard decided to provide a program in engineering and the physical sciences to go along with its historic law, divinity and medicine programs. Abbott Lawrence, its earlier benefactor, suggested that its faculty “number among its teachers men who have practiced and are practicing the arts they are called to teach. Let theory be proved by practical results.” Abbott graduated in 1864, near the end of the Civil War.

Job worked briefly for Manchester Locomotive Works, one of the leading manufacturers of locomotives, in New Hampshire. He then went into civil engineering as an assistant engineer on the Long Island Rail Road, after which he went west and joined the Pittsburgh, Fort Wayne and Chicago Railroad. He was stationed in Canton, Ohio, where in 1866 he laid out part of the town practicing as a civil and mining engineer. He was then admitted to the Ohio bar, specializing in Patent Law. This experience brought him into contact with the Wrought Iron Bridge Company located in Canton, where he served on the Board of Directors for several years. The Wrought Iron Bridge company was one of many smaller bridge fabricators that sold what some have called catalog bridges to local governments. In 1872, he became vice-president and chief engineer of the Company, starting his long time involvement with bridges. Through his efforts, the company became one of the major builders of prefabricated bridges. The company produced catalogues, as early as 1872, that were used by local governments to choose the type of bridge they required.

The firm was also active selling bridges in Ontario, Canada until 1879. At this time, Canada placed a 25 per cent tariff on imported fabricated ironwork and steelwork, and all American firms were unable to compete. Since Canada did not have its own bridge building industry, some Toronto and Montreal men organized the Toronto Bridge Company with the help of Abbott and the Wrought Iron Bridge Company. In 1880, Abbott was

named president and chief engineer. His previous contacts with railway builders opened many doors and business improved greatly. He saw that the location of his fabricating plant and its distance from Montreal, where many railroad company headquarters were located, put him at a disadvantage in competing for the huge number of bridges that would be needed.

Abbott and his colleagues decided to form a new company with headquarters near Montreal and on September 23, 1882 a charter was issued to Dominion Bridge Company Limited. The new company was permitted to manufacture iron and steel, as well as to fabricate and erect bridges and structural work throughout Canada; hence the name Dominion. Abbott became president and chief engineer. English and Scottish investors purchased a large portion of the available stock with the understanding that the new firm would purchase steel from their plants, which were not required to pay the 25% duty. The new firm decided to locate its plant at Lachine, near Montreal.

Two of its early important contracts were a cantilever bridge over the Reversing Falls at Saint John, New Brunswick and another cantilever, the Lachine Rapids

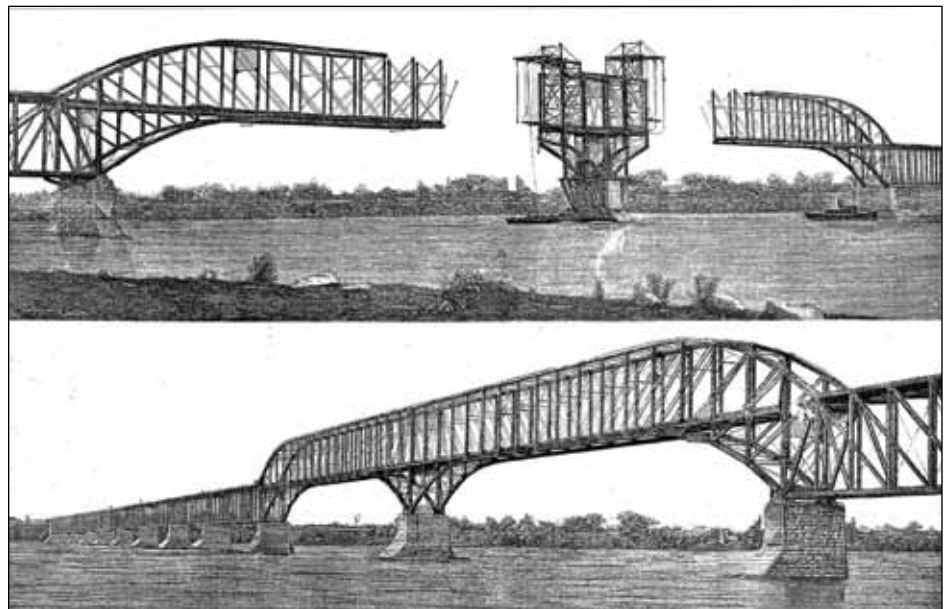
Bridge, over 3,400 feet long linking Montreal and the south shore. Abbott designed the St. John Bridge, which was built next to Edward Serrell’s suspension bridge that opened in 1853. It was an early example of cantilever construction in Canada.

The Lachine Rapids Bridge was designed by C. Shaler Smith, but the details of fabrication and erection were worked out by Abbott and his staff.

The company also built the Coteau Bridge (a 17 span truss bridge with a 355-foot swing span) across the St Lawrence River for the Canada Atlantic Railway, and the low level with swing span Grand Narrows Bridge at Iona, Nova Scotia for the Intercolonial Railway. While its specialty was railway bridges, primarily for the Canadian Pacific Railroad which was replacing its wooden



St. John Cantilever (1885).



Lachine Rapids Bridge (1886).

trestle bridges, it also constructed many smaller bridges in towns and counties and steel framework for tall buildings.

Abbott, being president and chief engineer, was largely responsible for the success of Dominion Bridge. He was also the main salesman and negotiated many contracts with major clients. Like many engineers of the time, he devoted himself exclusively to his profession, often to the detriment of his health. Between October 1887 and March 1888 he was away from his post due to health issues. In June 1890 he resigned as President of the company and returned to the United States, setting up an office in New York City and becoming chief engineer of the New York Rapid Transit Railway. He returned to bridge building as a consulting engineer for the Wheeling Bridge and Terminal Railway Company of West Virginia that was built to carry the Baltimore and Ohio Railroad across the Ohio River. He designed the bridge, sometimes called the Martin's Ferry Bridge, located adjacent to Charles Ellet's Wheeling Suspension Bridge that carried two tracks across the Ohio River. It opened in 1891 and served until 1982 when it was abandoned. It was demolished in 1993.

Abbott finished his career as chief engineer on the Bangor and Aroostock Railroad in Maine that ran from Brownsville north to Caribou. He designed 200 miles of road, as well as all the stations along the route. His health again declined, however, and he died in August 1896, just before his 51st birthday. The *Andover Townsman* wrote in his obituary that he was, "taken sick in March, 1895...but...manfully carried on through his work in Maine and although suffering much, he never complained, and only gave up in April last, on the insistence of his friends." The *Townsman* also wrote, "hardly more than in the prime of his life, Mr. Abbott's best work seemed to be yet before him and his death will come as a personal loss to a host of friends." He is buried in the South Parish Church Cemetery in his hometown of Andover, Massachusetts. He was one of the giants in 19th century bridge building. It was he, along with Edward Serrell, who brought American methods in bridge building to Canada, building some of the greatest bridges



Wheeling Railroad Bridge 1891.

of his time. He was inducted into the Canadian Business Hall of Fame in 1984. ■



Dr. Griggs specializes in the restoration of historic bridges, having restored many 19th Century cast and wrought iron bridges. He was formerly Director of Historic Bridge Programs for Clough, Harbour & Associates LLP in Albany, NY, and is now an independent Consulting Engineer. Dr. Griggs can be reached at fgriggs@nycap.rr.com.

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