

## Ralph Modjeski - Biography

**Ralph Modjeski** (born Rudolf Modrzejewski) was born in Krakow, Poland on January 27, 1861. Despite his mother's recommendation to become a concert pianist, in 1878 Ralph went to France to study at the École des Ponts et Chaussées, one of the leading schools of Civil Engineering in Europe. He graduated in 1885 at the top of his class.



*Rock Island (aka Government) Bridge*

His career began working for the famous bridge builder George Morison. In 1893 Modjeski founded his own practice and landed his first major project in 1895, the Government Bridge at Rock Island, IL crossing the Mississippi



*Ralph Modjeski*

River. The bridge is double-deck with rail above and vehicular below, includes a unique rim-bearing swing span with chain drive

providing unlimited rotation, and remains in service today averaging over 5,000 openings annually.

Among many notable engineers that would apprentice with Modjeski, Joseph B. Strauss served as his assistant during a study for the City of Chicago, helping the City to establish their preferred "Chicago-type" bascule bridge design in 1901. Modjeski embraced and developed new concepts that set records for movable and fixed bridges. Partnered with Alfred Noble, he served as Chief Engineer for three swing bridges across the Columbia and Willamette Rivers in Portland, Oregon, all between 1905-1908. The Willamette swing bridge had a length of 521 feet, making it the longest swing span bridge at the time.

In August 1908, he was appointed to a Board of Engineers to examine the failure mode and recommend design changes for replacement of the 1907 failed Quebec Bridge. Modjeski, along with Lt. Col. Charles Monsarrat and C. C. Schnieder, received tenders for the new bridge. It was these three engineers who oversaw the construction of the new Quebec Bridge, successfully opened in September 1917. Their consideration of transport and construction stresses was unique for the time. The bridge remains the longest cantilever bridge in the world.



*Broadway Bridge*

Through his career, Modjeski designed 7 swing and 6 bascule bridges, all of which included substantial approaches. Modjeski oversaw design and construction of two bridges containing Rall-type Bascules, the McKinley Bridge in 1907 and the Broadway Bridge in 1913. At the time it was built, the Broadway Bridge in Portland, Oregon, was the world's longest double leaf bascule bridge. Today, it is the largest of the three functioning Rall-type bascule bridges. In 1919 Modjeski served as Chief Engineer for a Strauss Heel-Trunnion Bascule Bridge over the Thames River in New London, CT.

Between 1920 and 1930 his firm completed nearly twenty

bridges, including the Tacony-Palmyra, a unique Rolling Lift Bascule Bridge of Philadelphia in 1929.

Modjeski designed and consulted on seven major suspension bridges. Two of these, the Ben Franklin and Ambassador were the longest when constructed. One of his later projects was as President of the Board of Consultants for the San Francisco Oakland Bay Bridge. The design consisted of a long deck truss eastern approach followed by a major cantilever bridge followed in turn by a tunnel through the Yerba Buena Island and then by a double suspension bridge with a common middle anchorage. It was being built at the same time as the nearby Golden Gate Bridge, but opened six months earlier on November 12, 1936. At the time it was the world's longest bridge in total length. Modjeski passed away June 26, 1940, in Los Angeles, CA.



*Tacony-Palmyra Bridge*