

BOOK REVIEW

John K. Brown, *Spanning the Gilded Age: James Eads and the Great Steel Bridge*

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Spanning the Gilded Age is a history of a novel bridge built across the Mississippi River between 1867 and 1874 at St Louis, Missouri, in the United States. An important western city in antebellum America, St Louis prospered from river-based trade. The river at St Louis was wide and often turbulent, and had no crossing apart from ferry boats. But, as Chicago gained on St Louis by becoming a railroad hub, businessmen of St Louis sought a railroad bridge to better compete. They got the St Louis Bridge, renamed the Eads Bridge in honour of its promoter and designer, James Eads. This double-deck bridge, with three arched spans over the river, carried trains on its lower deck and street traffic above. It was the first bridge over the Mississippi where the river widened. In addition to having record-setting spans (all exceeding five hundred feet, or 152 meters), it was the first US bridge with structural members made of steel and the first for which pneumatic caissons were used to build the foundations of river piers. Eads, its self-taught chief engineer, is celebrated as a maverick genius.

The book is a largely chronological account of the bridge, starting with Eads's background and career up to 1867, continuing through the design and construction of the bridge, and then treating its foreclosure (in 1875) and the operations of the bridge company, into the twentieth century. Historians and writers have not overlooked this prominent bridge or its designer; there are books and articles about both. A claim the author makes for his book is that, unlike the others, it covers the history of the bridge beyond its opening. Indeed, despite its technical firsts, the real novelty of this bridge is its operations over time. Unlike a railroad bridge built by a particular railroad to carry its own equipment, the Eads Bridge was built by a private bridge company to serve any railroad arriving at the city.

The story of the bridge company is where the author puts his focus. Readers learn how the bridge was financed (most of the funds came from the London market) and the associated infrastructure needed to make the bridge functional. The bridge entered St Louis in its downtown, and a tunnel was built (cut and cover) to allow trains to travel under city streets. The tunnel was developed by a separate, private company allied with the bridge company. A depot was built too, also by a private, allied company. When the railroads terminating in St Louis failed to build tracks to the bridge, the bridge company had to become a transport business, building tracks and using its own equipment to shuttle trains over the bridge. This aspect of the bridge – that it was an element in a transport network in the city – will probably be new information for many readers.

Readers interested in a technical history of the bridge, however, will find little new in this book. The author relies on earlier works, notably C.M. Woodward's *A History of the St. Louis Bridge* (1882) and Quinta Scott and Howard Miller's *The Eads Bridge* (1979) for information about the bridge's design and construction.

A theme of the book is that the bridge company is an example of the private businesses that built urban infrastructure in the nineteenth century. According to the author, these overlooked, private ventures are important because they provided services that would not have been available otherwise and thereby advanced the 'general good, more or less' (p. 267). To support this point, the author mentions several categories of infrastructure that were largely privately owned: waterworks, gas lighting, and street railroads. The matter of public versus private development of infrastructure raises questions beyond the book's main topic. Why were some bridges built by private interests and others by governments? The author does not address this question but does state that governments lacked the 'revenues, administrative capacities, vision, or political will' to build such projects (pp. xiv–xvi). Yet St Louis offered to guarantee \$4 million in bonds for the Eads Bridge at the start of the project, so it probably had the financial wherewithal to finance some sort of bridge. Moreover, at this time, St Louisans approved an expensive waterworks project, which the city built (1867–71) and paid for over time with user fees.

Despite the author's praise for the bridge, the difficulties heroically overcome in its construction, and the fact that it is still standing (although reconfigured and rehabilitated), the stories of the self-dealing of its promoters and investors, and the fact that its profitability was due to the monopoly that the transit company had over river crossings, can leave one wondering whether St Louis would have been better off with a different, less expensive bridge. On the one hand, Brown suggests that alternatives would have been inferior, citing failures of iron bridges and that the Eads Bridge created a transport system that served the city well. On the other hand, he acknowledges that an iron truss bridge could have been built faster and at a lower cost. Who knows what impact such a bridge might have had? For readers unfamiliar with the Eads Bridge and wanting to know more, the book provides a comprehensive overview. Business historians will be interested in the story of the financing of the bridge project, which involved nineteenth-century business leaders, including Andrew Carnegie, J. Edgar Thomson and Thomas Scott of the Pennsylvania Railroad, bankers and financiers Junius and J. Pierpont Morgan, and railroad magnate Jay Gould.