Historic Bridge Foundation Facebook Archives

Focus Bridges: Mississippi River From Cairo to Chester

The Mississippi River from Chester, Illinois, to Cairo, Illinois, offers an interesting variety of large historic bridges, although the future of several is at risk. At Chester, the bridge over the Mississippi River features distinctive two-span continuous through and deck truss spans, a design often used by its designer, Sverdrup and Parcel of St. Louis. This bridge has an unusual history in that the bridge was completed in August 23, 1942, but only two years later a tornado hit the main spans of this bridge and collapsed those spans on July 29, 1944, with the approach spans being spared. The main spans were quickly replaced in-kind with the same design and opened by August 24, 1946. The bridge was a toll bridge until January 1, 1989. This bridge is slated for demolition and replacement.

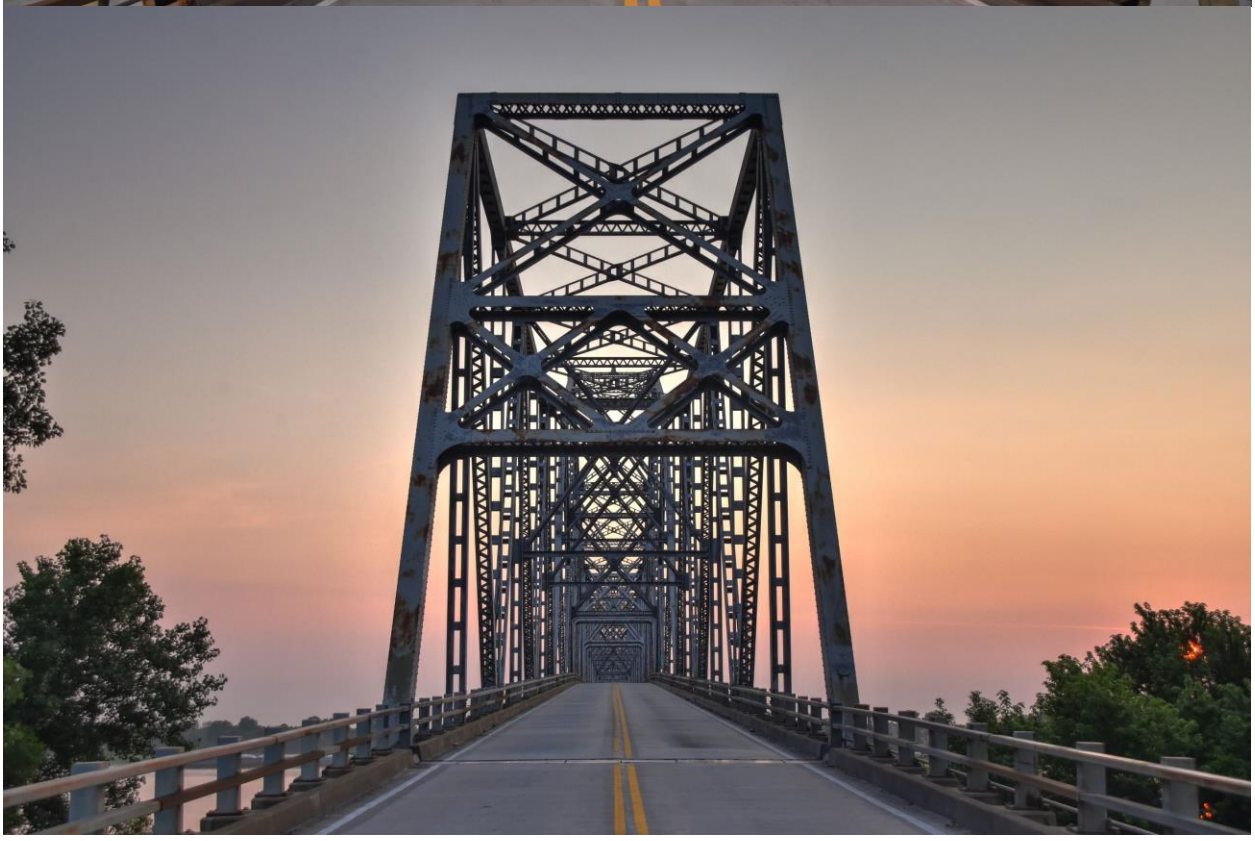
The next historic bridge south of Chester is at Thebes, Illinois. A much older bridge, this major railroad bridge was completed in 1905 to the design of noted engineers Ralph Modjeski and Alfred Noble. Among the earlier surviving cantilever truss bridges in the country, this bridge features five cantilever truss spans and concrete deck arch approach spans. The main cantilever truss system is arranged in a rare manner. Rather than the traditional three-span format consisting of two anchor arm spans and a single span with two cantilever arms and a suspended span, this bridge features a five span cantilever truss system. It has a central span consisting of cantilever arms holding a Pennsylvania through truss suspended span. The end spans are quite interesting, as they include what could be called a "half-suspended span," where a Pennsylvania truss rests on a pier at the far end, and on the interior end is held by a cantilever arm. Between the end spans and the center span are anchor spans (also called "fixed" spans) which act as anchor arms for both the center and end truss spans. As of 2021, the concrete arch spans were undergoing repairs.

Lastly, the city of Cairo, Illinois, features a unique setting as the confluence of the Mississippi and Ohio Rivers. Where the two rivers meet, two impressive cantilever truss bridges can be seen, one crossing the Ohio River and the other crossing the Mississippi River. Despite their proximity to each other, the age and design of each bridge differs. The Mississippi River Bridge was built in 1929 and was designed by a renowned engineering firm, Waddell and Hardesty, which included famous engineer J. A. L. Waddell. This bridge has a traditional span composition of a two-tower cantilever through truss system over the river. What is more unusual is that a cantilevered through truss system continues over a number of spans beyond the main three cantilever spans. It does this in such a way that these additional through

truss spans have horizontal top chords, giving the bridge a unique appearance like a tunnel or tube leading to the largest three spans of the bridge which have two towers like a traditional cantilever truss. The bridge over the Ohio River differs from this design. Built slightly later in 1937, this bridge was designed by a different well-known engineering firm, Modjeski and Masters (including noted engineer Ralph Modjeski who designed the aforementioned Thebes Bridge). Th Ohio River Bridge is visually and structurally notable among cantilever truss bridges because it has multiple "towers" in the truss layout. Traditional cantilever through truss bridges have only two towers, between which are cantilever arms and a suspended span over the navigation channel. This particular bridge, however, has four towers as part of its five main cantilever truss spans. With very few highway bridges providing a crossing in this area, both the Ohio and Mississippi River Bridges carry a lot of truck traffic despite their narrow roadways. Partly as a consequence of this, the Ohio River Bridge is slated for demolition and replacement, and it seems safe to assume the Mississippi River Bridge will eventually be at risk for replacement as well.

Mississippi River Bridge, Cairo:

Ohio River Bridge, Cairo:



Chester Bridge: