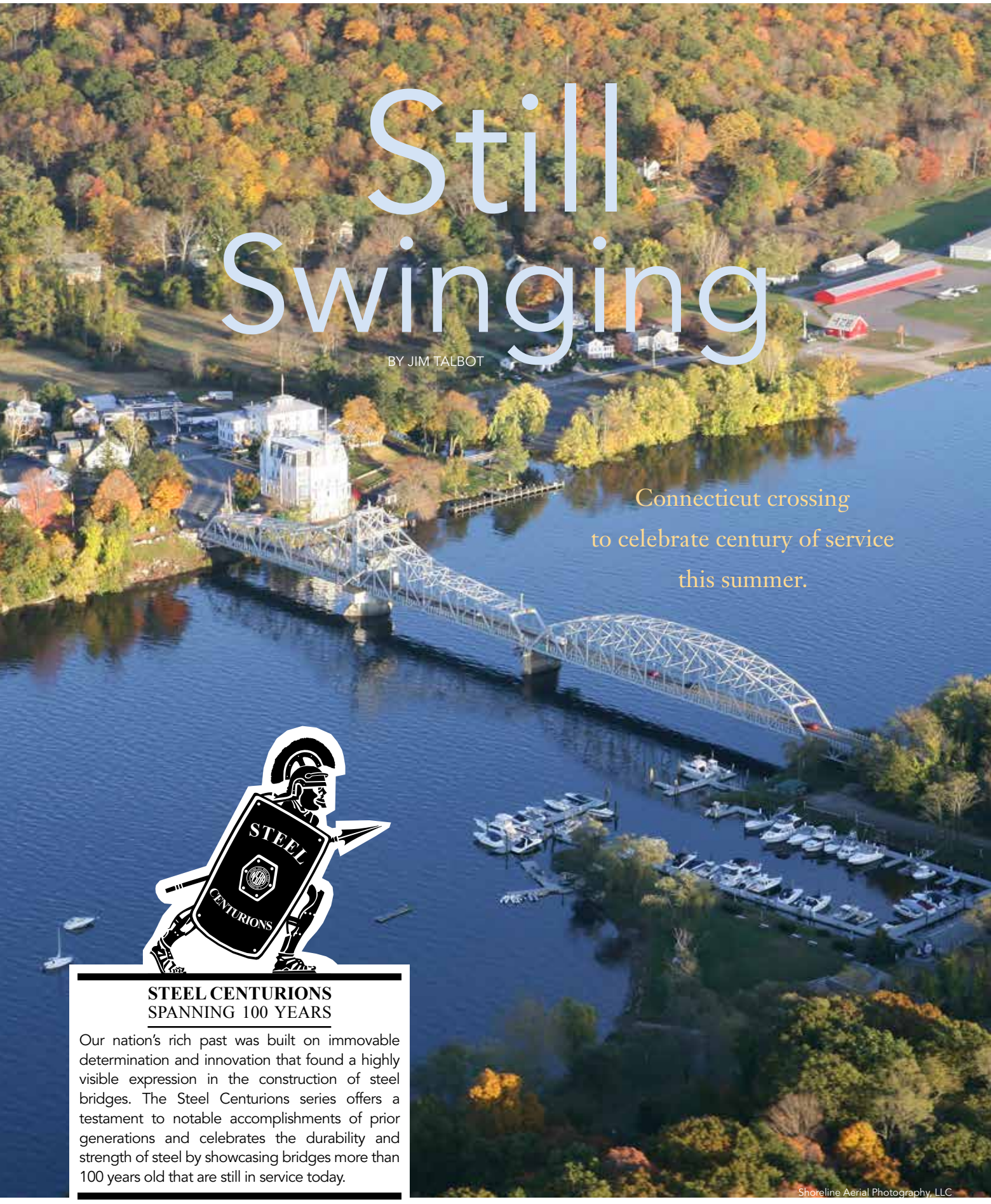
Still Swinging

BY JIM TALBOT

Connecticut crossing to celebrate century of service this summer.



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STEEL CENTURIONS
SPANNING 100 YEARS

Our nation's rich past was built on immovable determination and innovation that found a highly visible expression in the construction of steel bridges. The Steel Centurions series offers a testament to notable accomplishments of prior generations and celebrates the durability and strength of steel by showcasing bridges more than 100 years old that are still in service today.


Cianbro


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THE CONNECTICUT RIVER separates the towns of Haddam and East Haddam, Conn. For more than two centuries a ferry service, which started in 1694, offered travel between the two towns.

On Flag Day in 1913, the East Haddam Bridge officially opened, making the ferry service unnecessary; soon thereafter the state retired it. The bridge's opening consisted of a day-long celebration that included a speech by the governor, a 17-gun salute, an automobile parade, a fife and drum team and a band concert. And this June 14 will mark 100 years of service for the bridge.

When the bridge was built, it consisted of two steel spans: a 326-ft riveted Pennsylvania truss and a 461-ft Warren truss with verticals for the swing portion. The superstructure contained 1,200 tons of structural steel, with 715 tons devoted to the swing. Two 50-hp motors powered the turning of the bridge and a 30-in.-diameter phosphor bronze disc supported the bridge at its center in swinging mode. As the operator closed the bridge, he controlled motor-driven wedge bearings that supported the bridge ends. The deck, an open metal grating, was 24 ft wide between the curbs and had trolley rails along the north side.

The East Haddam Bridge was designed by Alfred P. Boller, who designed many large and complex bridges, including several moving bridges in New York City and the first railroad bridge across the Thames River at New London, Conn. Boller's expertise in deep river foundations proved valuable (25 ft to 40 ft where the bridge crosses the Connecticut River), and James Rollins of Holbrook, Cabot and Rollins also contributed to the foundation work. Supervising engineer Edward W. Bush designed the piers and approach roadways. The American Bridge Company built the bridge.

Broader Base

When it opened, the bridge contributed to the region's growth and commerce. The landing on the east side originally contained the freight offices of the Hartford and New York Transportation Co., a general store, a post office and various office rooms. Local establishments on both sides benefitted from a wider customer base.

This bridge and one other were the first two paid for by the state. Recognizing the regional value of such projects, the legislature soon placed responsibility for such bridges with the State Highway Department rather than with special commissions.

Today, the bridge remains open to vehicles, carrying about 11,800 motorists a day. Its value is even more apparent during openings for river traffic—especially when patrons from the western side are trying to reach the Goodspeed Opera House, a stone's throw from the bridge itself on the eastern side of the river, before the overture (occasionally the Goodspeed staff delays the curtain for ticket holders). The nearest alternate crossings are 17 miles north or 20 miles south.

The bridge operator's house sits atop the swinging span, and operators still log opening and closing events by hand. Unlike a century ago, they can watch TV and ride an exercise bike between openings.

Undue Stress

The deck was retrofitted with concrete in 1986. However, the added weight placed undue stress on the pivot bearing, which in February 1999 caused the bridge to fail in the open position. The state contracted with Cianbro Companies to fix the situation.

The Cianbro team faced several heavy rigging challenges that included jacking up the 900-ton swing span, installing a 5-ton casting for the center bearing and replacing the spherical center bearing. Cianbro demolished and removed the existing bridge deck and stringers while maintaining one-way traffic during night lane closures and full two-way traffic during the day. The new deck consists of 11,000 sq. ft of 12-ft by 22-ft grating panels, each weighing 10 tons.

The team also installed new variable-speed motor control consoles on the existing motors, as well as new balance wheels in the swing span. Cianbro won the 2001 Build Connecticut Award for this project, which it completed in July 1999. In 2007, Cianbro followed up by painting the entire bridge, provided some structural upgrades and installed a completely new electrical system. As such, the bridge is poised to continue its legacy to its 100th birthday and beyond. **MSC**

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