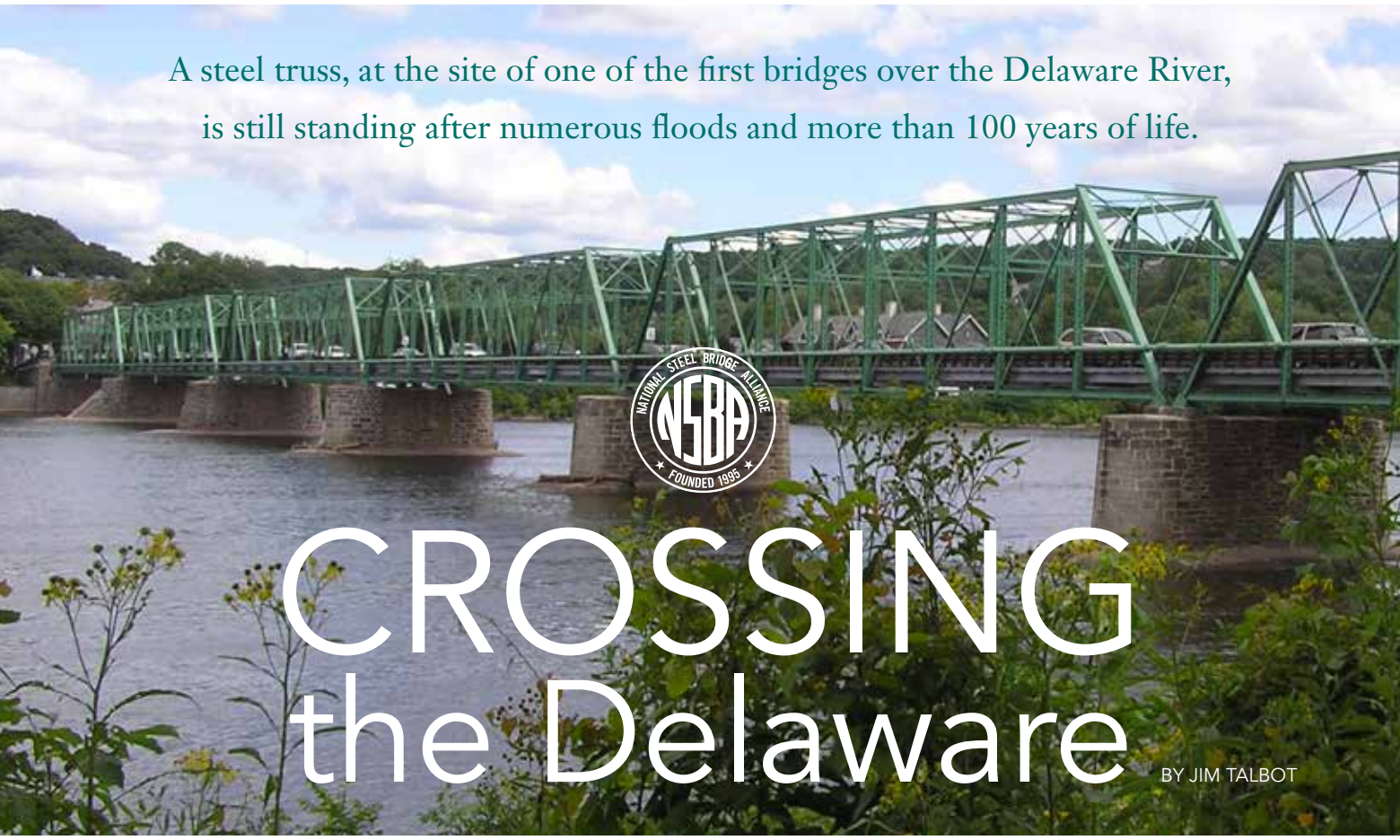

A steel truss, at the site of one of the first bridges over the Delaware River, is still standing after numerous floods and more than 100 years of life.

CROSSING the Delaware

BY JIM TALBOT

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.

THE MOST FAMOUS CROSSING of the Delaware River happened in 1776, when America's first president, George Washington, brought troops across the river in a surprise attack against Hessian Forces during the American Revolutionary War.

Nearly 40 years later, in September 1814, a covered span followed suit and became the first bridge to cross the Delaware River that connected New Hope, Pa., and Lambertville, N.J., replacing Coryell's Ferry.

Designed by Lewis Wernwag, a German immigrant and pioneering bridge-builder, the wooden covered bridge was 32 ft wide and had two wagon lanes and two lanes for pedestrians. Flooding carried the bridge away in January of 1841, and another flood destroyed a second, similar bridge at this site in 1903.

From Wood to Steel

This led to the construction of a steel, pin-connected Pratt truss bridge in 1904, the New Hope-Lambertville Bridge. Lewis F. Shoemaker and Company of Pottstown, Pa., built the bridge, listing R.G. Devlin as the engineer. The cost: $63,818.81.

Today, the bridge carries 14,000 vehicles across the Delaware River daily; roughly the same number of pedestrians cross the bridge on a single summer weekend day. No other bridge across the Delaware sees this level of foot traffic. Tourists, residents, antique shoppers, bikers and others use the crossing to take advantage of the many attractions offered by the two communities on opposite banks.

The six-span bridge contains 962 tons of steel. Each nine-panel span measures 171 ft, and the bridge has a total length of about 1,050 ft and a roadway width of 20.3 ft. Vertical truss members measure 27 ft in height, and abutments date back to the original 1814 bridge. Pedestrians cross on a

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cantilevered walkway along its southern downstream side. Additionally, the bridge carries a pumped 8-in. sewer line to a treatment plant located in Lambertville.

For its first 15 years, tolls supported the bridge's operation and maintenance, but now tolls on other bridges across the Delaware support these activities, along with security. (The Delaware River Joint Toll Bridge Commission, created in 1934, owns and operates the bridge; the commission operates 20 Delaware River bridges in all.) The bridge carried U.S. Route 202 over the Delaware River until 1971, when the route was realigned to cross the river upstream on a new bridge; it now carries Route 179.

Surviving the Flood

The flood of August 1955—the greatest the Delaware River had ever experienced—destroyed many of the structures crossing it. The New Hope-Lambertville Bridge was one of the rare survivors, though its No. 2 span was seriously damaged, forcing a closure for five weeks. In 2004, the bridge underwent an extensive $7.7 million rehabilitation project, coinciding with its 100th anniversary. This figure included preliminary and final design, public involvement, construction and oversight. It also funded a free shuttle service for pedestrians, which operated when the project closed the bridge to traffic on weekdays. On weekends, construction stopped and the bridge reopened to minimize economic impact to the two connected communities.

The centennial project replaced flooring systems, sidewalk and handrails. The walkway was widened from 6 ft to 8 ft and paneled with fiberglass. Other improvements included miscellaneous steel repairs, blast-cleaning, sewer line rehabilitation and modifications to safety and lighting. Painting crews added three coats of "bridge green" anticorrosive polyurethane paint. The general contractor, J.D. Eckman, Inc., faced

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with a $10,000 per day reward or penalty, completed the project a week ahead of schedule.

As part of its security system, nine cameras on the bridge now feed images to the commission's command center. Threats of flood damage in 2005 and 2006 motivated the commission to install a radar-based level sensor to the side of the bridge that measures the river's height every 15 minutes and transmits the data via satellite to the National Weather Service and other entities. Biannual maintenance activity includes sending divers underwater to inspect for defects, cracks and scaling on the bridge's supports.

This past D-Day anniversary (June 6), maintenance crews hung banners at both ends to commemorate 200 years of bridge crossings over the Delaware River. The banners had images of the steel truss bridge as it appears today and the wooden bridge destroyed in the great flood of 1903. In addition, a film covering the bridge's history premiered in April: *The New Hope-Lambertville Bridge, Connecting Two Towns, Spanning Two Centuries.*

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