Old Lake Shore Road Bridge: Sarnia’s Own Heritage

Presented By:
Nathan Holth

Metal truss bridges feature a network of metal beams arranged in a pattern based on triangles that work to support the bridge.

Through Truss

Pony Truss

Warren truss (repeating “V’s”)

Truss designs are classified by how the “diagonal members” are positioned. The two most basic types are shown.

Pratt truss (pointing bottom, center)

Polygonal top chord

Some truss bridges have a “top chord” that is polygonal (giving the truss an arch shape)

The Old Lakeshore Road Bridge is a polygonal Warren pony truss bridge.
Old Lakeshore Road Bridge

- Built in 1910
- Builder: Jenks-Dresser Company of Sarnia
- 100 feet (30.5 meters) in length.

Mill marks on the bridge indicate that at least some of the steel came from Carnegie, which in 1910 was a subsidiary of U.S. Steel.

Heritage Significance: Engineering

State of Maine, 1908

- I estimate that 20 or less Polygonal Warren pony truss bridges from 1910 or earlier survive in the United States.
- Old Lakeshore Road Bridge is the oldest example I have found in Ontario.

Heritage Significance: Engineering

1963

- Most polygonal Warren truss bridges in Ontario date to after 1920, and were built into the 1960s.
- Old Lakeshore Road Bridge is important as an early, possibly prototypical example in Ontario.

Heritage Significance: Engineering

- The bridge’s 100 foot (30.5 meter) length is a long span for a pony truss of its age.
- Most 1910 and earlier pony truss bridges are under 100 feet (30.5 meters).
- Pony truss bridges in excess of 100 feet (30.5 meters) generally date to after 1920.

Heritage Significance: Integrity

Old Lakeshore Road Bridge’s trusses appear to be largely unaltered, retaining original design and materials. This adds to the heritage significance of the bridge.


**Heritage Significance: Craftsmanship and Beauty**

**Modern Truss** Old Lakeshore Road

Old Lakeshore Road Bridge has a more intricate and detailed design than modern truss bridges. These details both reveal the work of craftsmen and offer aesthetic qualities as well.

**Heritage Significance: Craftsmanship and Beauty**

**Old Lakeshore Road**

Unlike modern bridges, this bridge’s trusses are carefully “built up” from smaller parts like angles, channels, and v-lacing. All are held together by many rivets.

**Heritage Significance: Craftsmanship and Beauty**

**Driven at the end of the day?**

Minor imperfections in these rivets

Not only does the bridge’s complex design give visitors geometric beauty to appreciate, the bridge’s trusses are a physical record of the craftsmen who built it.

**Heritage Significance: Local Connections**

**1908 Advertisement**

Jenks and Dresser separated in 1910 (Dresser ran the Port Huron half and Jenks ran the Sarnia half). The Sarnia interest appears to have later changed its name to Sarnia Bridge Company.

**Heritage Significance: Local Connections**

Bridge was built by Jenks-Dresser Company of Sarnia, Ontario. Firm also operated in Port Huron.

**Heritage Significance: Local Connections**

The vast majority of surviving truss bridges in Ontario appear to have been built by Hamilton Bridge Company and Dominion Bridge Company.

**Heritage Significance: Local Connections**

- Old Lakeshore Road Bridge is one of the few known surviving examples of Sarnia’s contribution to bridge construction.
- Located in Sarnia and built by Sarnia, this bridge has considerable local heritage significance.
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<tr>
<th>Preservation Alternatives</th>
<th>Preservation Alternatives: Restore In Place</th>
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<tbody>
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<td>Historic Bridge Park, Calhoun County, Michigan</td>
<td>• Prior to closure, this bridge appeared to serve substantial pedestrian and bicycle traffic who likely would be supportive of this alternative. • Retains bridge in original, historical location. • Attractive bridge compliments the great views of Lake Huron visible from its deck.</td>
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Bridge is feasible to restore for many light or non-vehicular uses.  
The bridge is a unique focal point.  
Reuse is a commitment to sustainability

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<td>The King Street Bridge in London, Ontario is a great example of a heritage truss bridge restored in place for non-motorized use.</td>
<td>• Bridge could be moved to a new location where a bridge is needed. • This may open doors to funding associated with its destination. • Above bridge was moved to connect a cemetery to a park.</td>
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| • Possibilities: Trails, nature center, golf course, observation deck, fishing pier, building access.  
• Above bridge provides access to second story of a building located on hilly terrain. | • Bridge could be moved and placed on the ground as an exhibit, or simply in storage. • Bridge could always be moved to a functional location at a later date. • Low cost alternative to demolition. |

Central Penn College, Pennsylvania  
Goshen, Indiana  
Castalia, Iowa
Brief Overview of Preservation Feasibility

Deck system appears to be the main part of the bridge that is in very serious condition.
Deck replacement is a typical part of a heritage truss bridge rehabilitation.
Deck removal would be required if bridge was moved to a new location.

Overall, the trusses are in decent condition. Areas of deterioration are isolated and easily corrected during rehabilitation.

Use Rivets In Rehabilitation!

Many engineers think that failed rivets must be replaced with modern bolts. This is not true. Riveting is not a “lost art.” It is not costly or time consuming to do, and replacing rivets with rivets maintains the original design of the bridge.

Experience Counts!

Bach Ornamental and Structural Steel is a Michigan firm that has restored many truss bridges.
bachornamental.com

VJM Metal Craftsman is a resource to contact for information and training on restoration techniques like riveting.
historicbridgerestoration.com

Save money and increase project quality: Seek engineers and contractors with extensive experience in heritage truss rehabilitation.
They will understand what needs to be fixed and what doesn’t, and how to get the job done right.

A Concluding Thought...

The fate of the vast majority of heritage metal truss bridges is demolition and replacement with a modern bridge.

The Old Lakeshore Road Bridge is Worth Preserving!