

The Truss Bridge

You already know about three types of bridges: beam bridges, arch bridges, and suspension bridges. There are several other types of bridges including truss, cantilever, and cable-stayed bridges. The first of these bridges is much like the beam bridge, except it has additional braces. These members are called trusses. Truss bridges are much more rigid than beam bridges. In addition, the triangular structure of the truss helps to distribute the bridge's load over a larger area. Due to this distribution of forces, truss bridges can be much larger than beam bridges.

While beam bridges are the oldest type of bridge, truss bridges are the earliest form of "modern" bridges. The first truss bridges were made of wood. Wood worked well initially, but due to weather, the wood would become weak from rot. Some bridge builders attempted to solve this problem by putting a roof or cover on the bridge. These covered bridges can still be seen today. Another problem with wood bridges was the load the wood could support. The first versions of the locomotive were very small and not very heavy. As locomotives improved, they became significantly faster and heavier. Many wooden truss bridges needed reinforcement with iron or steel. Some were torn down and replaced with newer versions of the truss bridge.

Truss bridges were categorized by the location of their trusses. The three categories are: a through truss, deck truss, or pony/half-through truss. Trusses are positioned higher than the deck of the bridge in a through truss bridge. If the trusses are lower than the deck, then the bridge is a deck truss. When the trusses extend both under and above the roadway, it is called a half-through or pony truss.

Can you tell to which category these bridges belong? (Hint: Where is the deck or roadway?)

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<http://loc.gov/pictures/item/nj0900/>



Astoria-Megler Bridge
Astoria and Megler, Oregon



Pulaski Skyway
Newark and Jersey City, New Jersey