# WHAT IS A CABLE STAYED BRIDGE?

## RIVER BRIDGE OF CHOICE

The cable stayed concept was designed in the late 16th century, but has become very popular over the past few decades around the world.

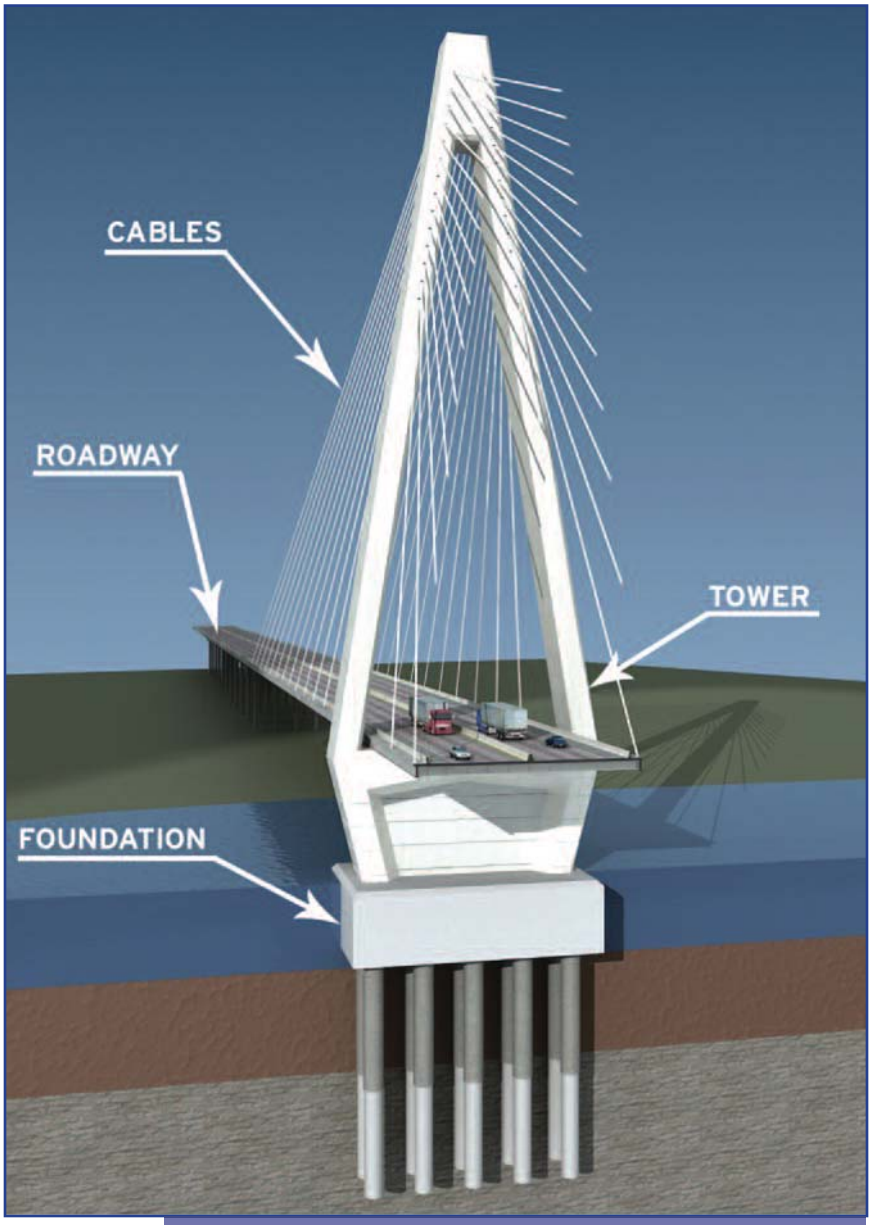
With a cable stayed bridge, the cables support the bridge deck (the roadway) – these cables are connected to one or more towers that are built in the middle of the bridge. To visualize this, imagine you are standing up with your arms out as straight as possible. Can you imagine how tired your muscles would get after just a little bit of this?

Now, tie a piece of rope to each elbow and lay the rope over the top of your head. Then, have someone else tie a second piece of rope to each wrist and lay it over the top of your head. Now, your head and body is carrying the weight of your arms, and not your muscles. These ropes are like the cable stays of the bridge, and your body and head are acting like the towers that are built in the center of the bridge.

Although the cables are thin, there are enough of them to help make the bridge secure. This gives the bridge the same support as that of steel girders, but significantly reduces the weight, and conserves steel.

The towers of cable stayed bridges can vary drastically. Some of them are a single vertical pole, while some look like giant "A"s, some look like huge rectangles, and some look like a diamond (the shape, not the stone). The tower design is based on the type of foundation, the length of the section between the towers, and a few other variables.

Because they are architecturally distinctive, as well as easier and cheaper to build, cable stayed bridges are quickly becoming the bridge of choice for engineers needing to span between 500 and 2,800 feet.




## DID YOU KNOW?

- With a main span of 1,500 feet, the new Mississippi River Bridge will be the third longest in the U.S.
- The John J. Audubon (which will be finished in 2010) in Louisiana is the longest U.S. bridge; the Arthur Ravenel in South Carolina is the second longest.
- The new bridge towers will be 400 feet, which is two-thirds the height of the Arch.