Terrell County Memorial
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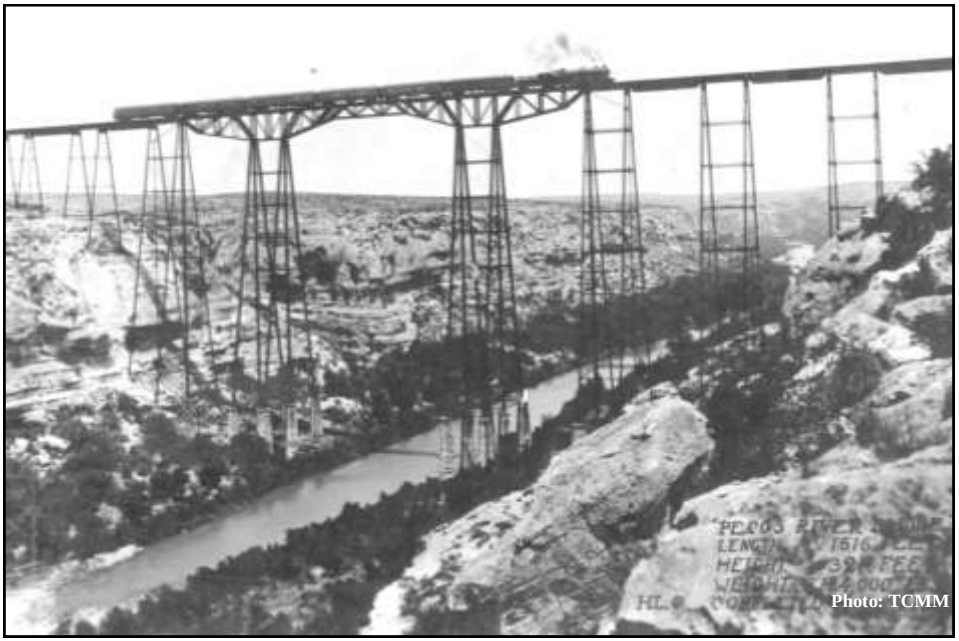
Sanderson, Texas

Museum News

Viaduct



Standing at almost 323 feet tall, 1516 feet in length and weighing in at 8,124,000 pounds, the Pecos River High Bridge, or Viaduct, as it was known on the GH&SA Railway, was third-tallest railway bridge in the world at its completion in 1893.

When the first southern transcontinental rail route was being built in the early 1880s, the most direct route was not the one always taken. Sometimes gigantic obstacles loomed up that prevented a direct route.

The Pecos River Canyon in western Texas presented just such an obstacle to the Southern Pacific Railroad and its subsidiary, the Galveston, Harrisburg and San Antonio Railway.

The giant chasm in the arid desert land posed an insurmountable obstacle to engineers of the time. Their solution was to angle the railroad to the south, bringing the route parallel with the Rio Grande for a short distance, enabling them to make the connection with a smaller, seemingly more manageable truss bridge.

But, it was a costly move. Two tun-

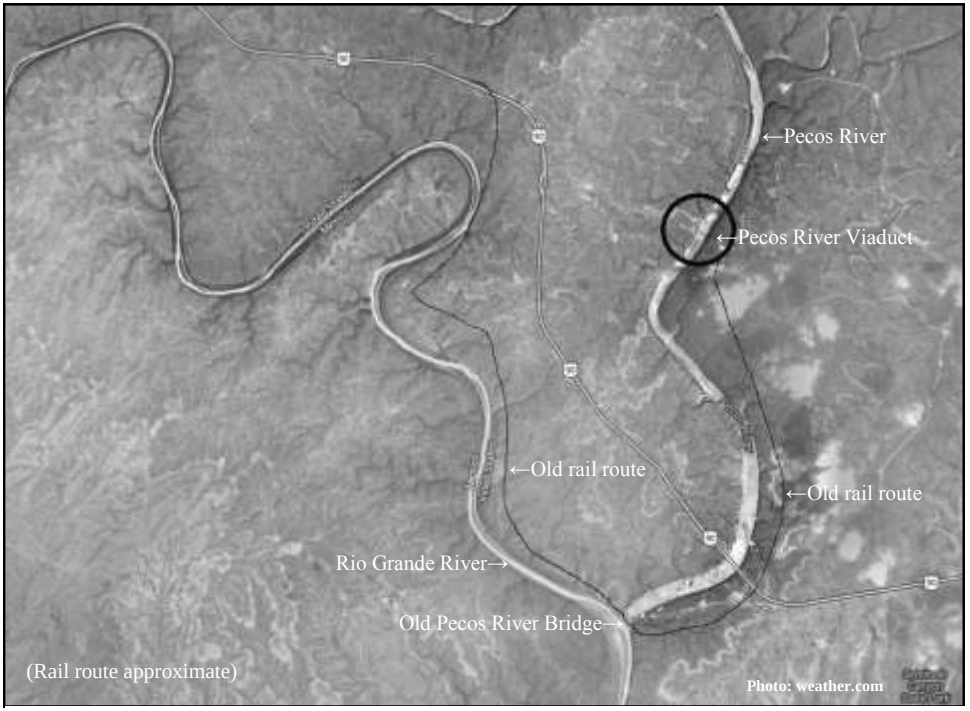
The first Pecos River bridge, ca 1885, built at the confluence of the Pecos and the Rio Grande. A much more serviceable and simple bridge to build and maintain, it was thought, it served for ten years until the Pecos viaduct was constructed to the north.

nels, both over 1,500 feet in length, had to be blasted from the solid rock, in addition to construction of over 6,000 feet of wood and iron trestles/bridges. Following the lay of tortuous canyon lands, sharp curves and steep grades virtually assured the railroad that the lengths of trains and the kinds of equipment that could be run on such tracks would limit profits.

As soon as the economic realities became known, plans were made to construct a bridge worthy enough to span such a daunting canyon. However, the technology of the time caused a problem.

Today, such a structure would be constructed using giant gantry cranes to put the elements in place. Lacking that technology, a device called a "traveler" was used by the Phoenix Bridge Company of Phoenixville, PA, contractors for the iron work.

Basically, the "traveler" (r.) was a flat car with a boom that moved forward onto completed bridge sections, laying the next section in place. When the center of the gorge was reached from the eastern approach, the traveler was disassembled and shipped to the western side of the Pecos by the old route. Working from that side, the two



Modern map showing the location of the Pecos River Viaduct (circled,) the US Highway 90 bridge and the old rail route superimposed over the area. The photo, upper left on the opposite page, depicts the simple truss bridge that crossed the Pecos at the confluence of it and the Rio Grande, at the extreme bottom of the satellite map, above .

halves were joined to complete the project.

When completed in 1892, the new route eliminated eleven miles of track and three water stop/stations.

From the beginning, the structure posed a safety and security hazard. Watchmen were hired to keep guard against saboteurs and to perform safety inspections to assure that the structure was fit for duty.

Due to the scaly, brackish nature of Pecos River water, it was not potable nor was it suitable for boiler water in the steam engines of the time. Fresh water from a natural spring on site was pumped in to satisfy those needs.

During the Mexican Revolution, Texas Rangers protected the bridge from would-be saboteurs, and during World Wars I and II the approaches to the bridge were guarded by camps of U. S. Army soldiers, in the interest of national security.

At two different times (1910 and 1929) the ironwork was "beefed up" with added bracing, as lengths and weights of trains increased.

No small concern was generated in 1922 when a convoy of 20 giant 2-10-2 locomotives, the so-called *Prosperity Special*, was ferried through from the Baldwin Locomotive Works in Eddystone, PA, on its way to delivery to the Southern Pacific Lines in California. As it passed over the Pecos Viaduct, the engines were slowed to a snail's-pace as worried locomotive engineers wondered if the structure could bear up under the weight of thousands of tons of heavy machinery. The spindly-looking structure, however, bore up quite well.

By the time of the Japanese sneak attack on Pearl Harbor in 1941, a re-

Prosperity Special*—Order of 50 new 2-10-2 locomotives for the Southern Pacific Lines, 20 of which went to California via the Pecos River Viaduct.*

evaluation of national assets revealed that the 1893 Pecos River Viaduct was practically obsolete as a key link in the national defense strategy.

In 1942, the U. S. Army Corp of Engineers determined the location for a new bridge just a quarter-mile from the original location. The new bridge was opened on December 21, 1944, and continues in use to this day.

The 1893 structure was kept in place for five more years as an insurance policy. In 1949 the Southern Pacific entered into negotiations with the government of Guatemala to sell the bridge outright for use in that country. Reportedly, negotiations fell through and eventually the bridge was sold off piece-meal to several states to be used in sections as smaller bridges. The remaining metal was sold as scrap.

A marvel of its age, the Pecos River Viaduct was the tallest bridge in the U. S. and third-tallest in the world. Born of economic necessity, it was a triumph of engineering. It was, and its successor continues to be, a key link in the national security of our country, and a tribute to human ingenuity and endeavor.

"Beefing up" the Pecos River Viaduct—maintenance on the world-class bridge.

References

Terrell County Memorial Museum photo collection
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