

The Fifth Columbia-Wrightsville Bridge

Robert S. Mayo, C. E.

Until November 11, 1930, all the main line traffic of U.S. 30, the Lincoln Highway, crossed the Susquehanna on a bridge of the Pennsylvania Railroad. This was a single-track bridge, the ties of which were covered with wood planks to give a roadway. The bridge was just wide enough to pass two lines of traffic: if an overwidth vehicle came along, it was necessary to stop all opposing traffic until this wide load had crossed the river. There were no sidewalks so that pedestrians, and there seemed to be many of them in those days, had to duck in and out of traffic as best they could when crossing the bridge.

In those days the Pennsylvania Railroad ran at least eight passenger trains between Lancaster and York, four each way, and at least two local freights. When a train came along, highway traffic was stopped until the train had cleared the bridge. The worst offender being the west-bound local freight which left its caboose on the bridge until it had completed switching the industries in Wrightsville, meanwhile the Lincoln Highway was tied up tighter than a drum until all freight cars had been picked up or set off. Traffic entering or leaving the bridge on the Columbia end crossed the main freight tracks, the "low grade line", of the PRR. There were many freight trains at all hours, day and night, and there were a few passenger trains on the "river road" from Columbia to Harrisburg. All south bound and east bound freight trains stopped to take water at the Columbia Roundhouse after which all highway traffic waited until the train got to rolling and cleared the crossing. Delays of half an hour were not uncommon.

The Pennsylvania Railroad charged 20¢ for an automobile and driver to cross the bridge, passengers being charged 4¢ additional. Pedestrians paid 3¢. During 1954 railroad traffic between Columbia and York was abandoned and this bridge was scrapped in 1962.

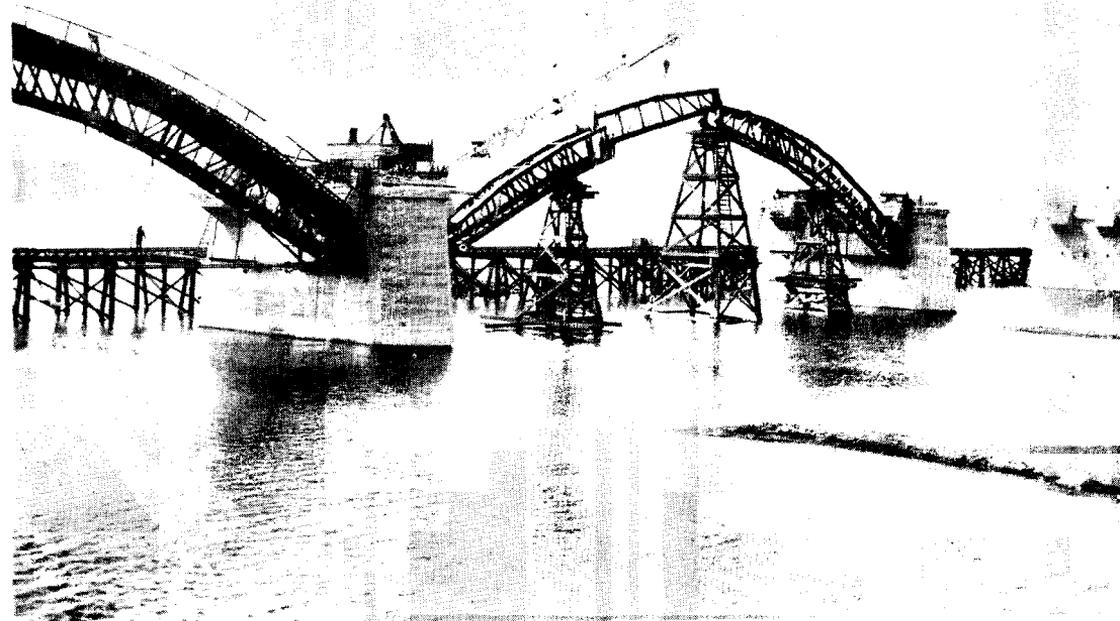
The traffic situation worsened. Even in 1929 the delays to the traffic on the Lincoln Highway became intolerable. The Commonwealth passed enabling legislation and on November 3, 1928 the voters of Lancaster and York Counties approved an indebtedness

of \$1.5 million each for the construction of an Intercounty Toll Bridge. The County Commissioners, of both counties after taking office in January of 1929, immediately set forth choosing a Joint Board of Toll Bridge Commissioners. For Lancaster County, G. Graybill Diehm was chosen chairman. Others from Lancaster were: James Simpson, Charles Passmore, Ralph Eby and Oliver Schaeffer. From York County, Emmanuel Smith was appointed Secretary; others from York County were John Landis, W. E. Wiley, William Menges and George Love.

A number of Consulting Engineers were invited to submit proposals designing the bridge. Of these distinguished engineers, James Long of Norristown was selected to prepare the plans. Mr. Long presented a design for a bridge which was immediately adopted. His plan consisted of 29 piers and 28 arches, each 185 feet clear span with each arch having 7-ft. x 4-ft. at the crown with a rise of 32 feet. The roadway was 38 feet wide with a 6-ft. sidewalk on the south side. The design required 100,000 cubic yards of concrete and 8,000,000 pounds of steel rods.



Signing Contract for Bridge. L. to R. standing, James B. Long, George S. Love, James F. Simpson, Oliver S. Schaeffer, John J. Landis, W. Everett Wiley, and Charles A. Passmore. Seated are Emanuel Smith and G. Graybill Diehm signing the contract.



Erecting steel centers on the Columbia side.

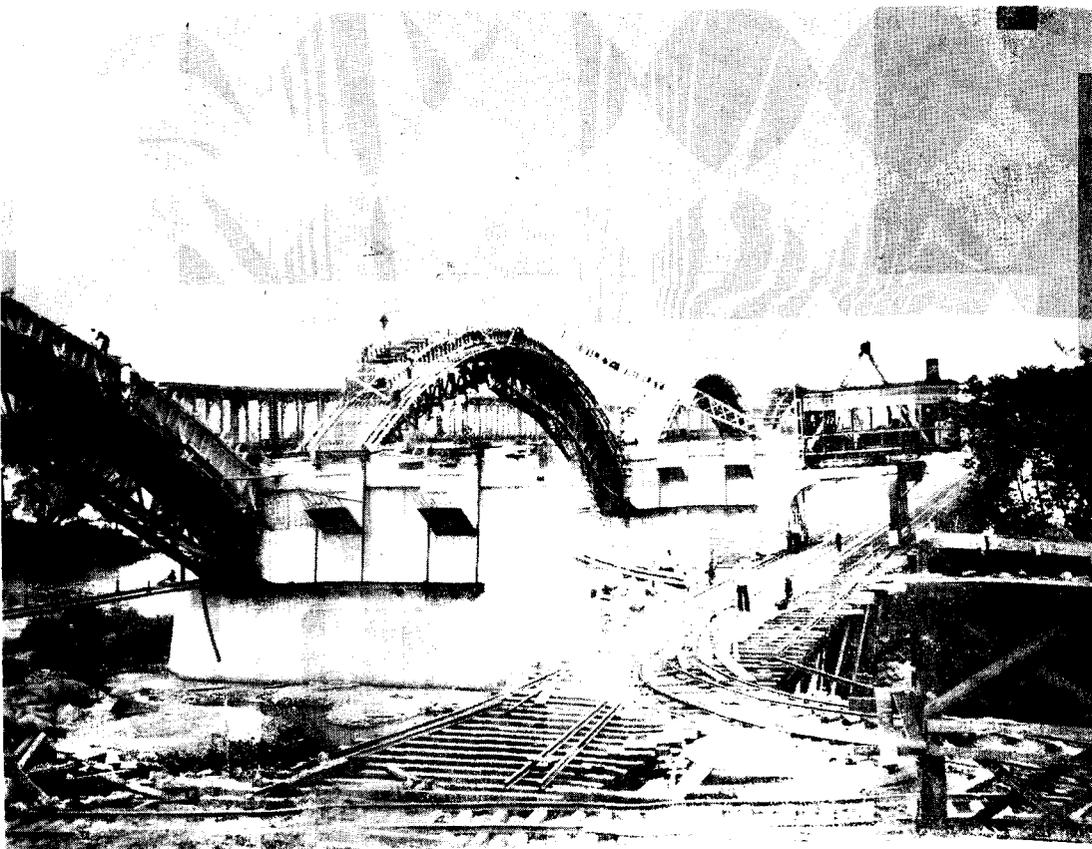
Mr. Long produced a very graceful and sturdy design yet one which was simple to build. Today, after forty years, we can fault Jimmy Long on only two points: (1) The roadway should have been wider but what he designed was the standard of that day, and (2) The solid railing prevents the motorists from seeing the Susquehanna River. Yet I know of a Lancaster County couple who are alive today because their car, when hit by a speeding driver, slid along the rail rather than going over the top. This bridge has stood forty years with only minor repairs. It was, when it was built, the longest multiple arch highway bridge in the world. It still is.

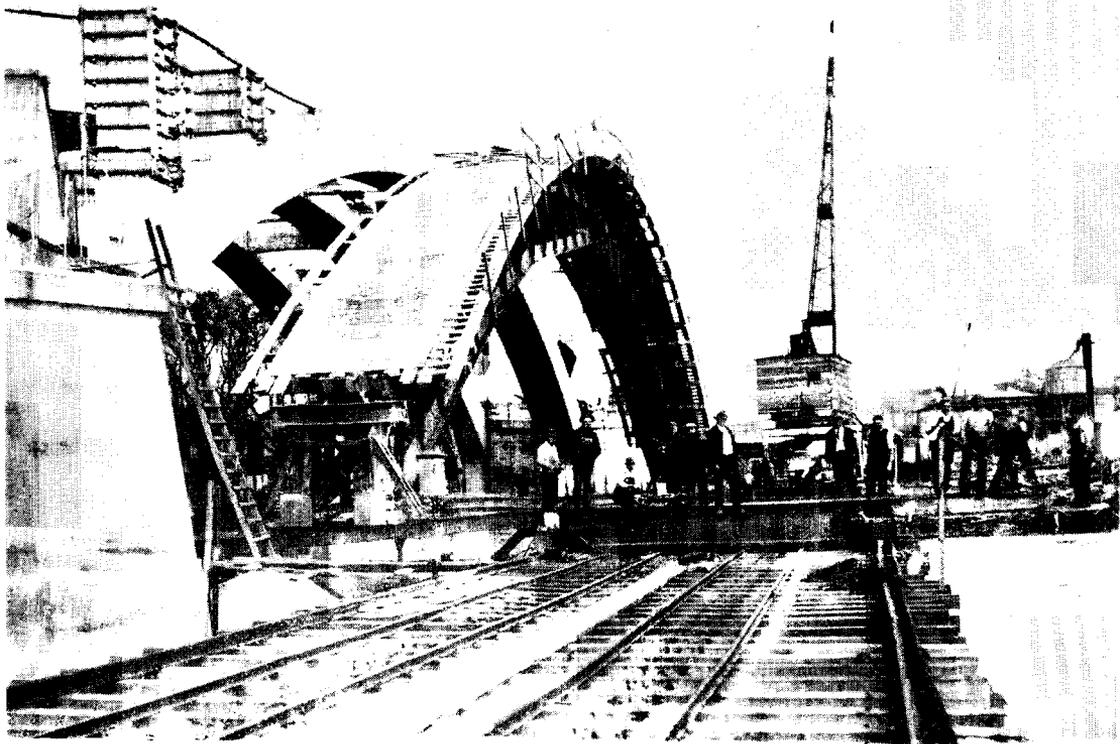
Bids were called for on April 9, 1929. Eleven contractors presented tenders which ranged from \$2.5 million to \$3.3 million. Wiley-Maxon Construction Company of Dayton, Ohio, was the low bidder and was awarded the contract. This was a new organization, but rich in experience. Glen Wiley, a bridge builder from Dayton, Ohio, with many years of experience, was the inventor of the "Wiley Whirley", a steam crane with an unusually long boom. Mr. Wiley, now a resident of Lancaster, had as his partner Glenway Maxon who had long been a Civil Engineer for the U.S. Corps of Engineers.

The contractor let no grass grow under his feet—the first concrete being poured on June 12, 1929. Meanwhile equipment was being assembled, a mixing plant on each side of the river was prepared and a trestle was erected from bank to bank. This trestle was the unique feature of this construction in that it was over a mile in length and carried three tracks, two of which were narrow-gauge tracks for the gasoline locomotives or “dinkies” which hauled concrete buckets from the mixing plants to the various spots along the bridge. The third of these tracks was a wide-gauge track on which was mounted six steam-powered Wiley Whirleys. These cranes needed to be mounted on gantries high enough for the concrete trains to pass underneath them. This trestle alone required one million feet-board-measure of lumber (one ship load) which was brought from the west coast. Only sixty years before this, lumber would have been rafted down the river from Pennsylvania’s once great forests. By 1929 it was cheaper to bring the lumber from Oregon.

There were twenty-nine piers in the river which required twenty-nine cofferdams of the Ohio River type, consisting of two

Setting wooden side forms for the first pour. Wrightsville side.





Sliding a steel centering out from under a completed arch. It will be loaded on the carriage shown and moved to the next span.

wooden panels around the circumference. These were filled with puddled clay and the interior pumped out. Occasionally there was a sand bar on the site of the pier and in that condition a local "sand sucker", or coal dredge, was called in to clear the area before starting the cofferdam. The water ranged in depth from six to nine feet. All the piers were keyed two feet into bed rock.

Blaw-Knox Steel Centers were employed for the false work to support the ribs: the author of this article being Field Engineer for this Pittsburgh Company. Five sets of centers were erected on each side of the river under the north rib, and after the concrete had been poured and obtained sufficient strength, (7 days) they were slid sideways 16 feet and spotted to catch the second rib of that span. After supporting the third rib they were loaded onto a flat car and towed five spans ahead. The writer was in charge of this phase of the work and it was quite a sight to see these sets of steel centers being slid out from under one concrete rib, moved to another span, and prepared for supporting the ribs of the new span.

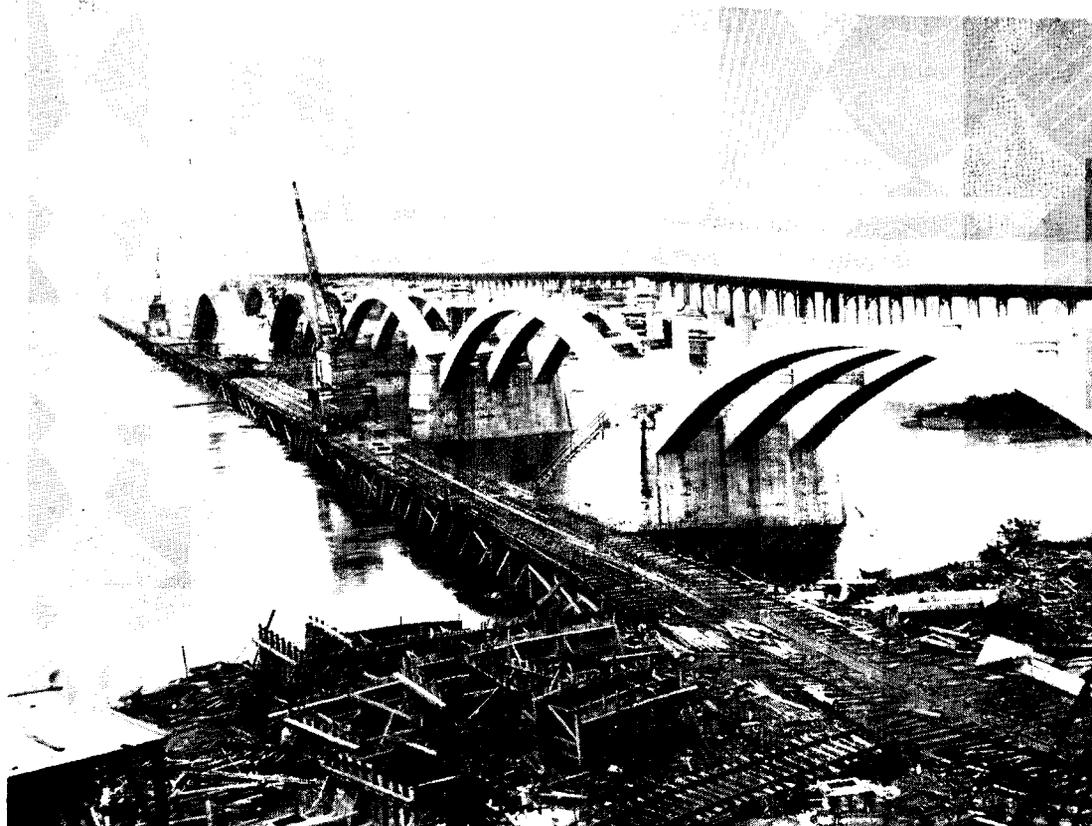
In looking back, this can be described as a "good job". There were two organizations on each side of the river who were in friendly competition. Paul Rule, Lee Wilson and Ray Von Helveston (all now deceased) were on the Columbia side. Ward McNeil, Frank Clemens and Lawrence Ohl were on the Wrightsville side.

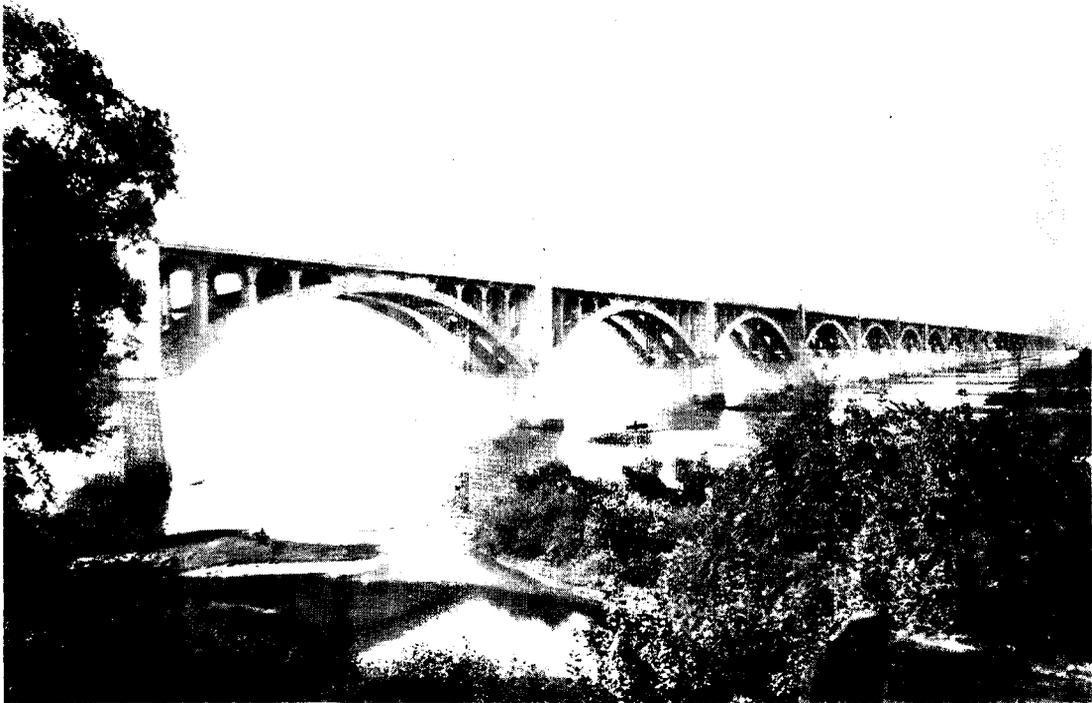
The bridge was completed and accepted on September 28, 1930. The contractor was given a bonus of \$400 per day for early completion which amounted to 140 days. This was indeed a bargain for the Commissioners and the taxpayers of the two counties. Immediately they began to collect a toll of \$1200 per day, at 25¢ per car.

The dedication ceremony was held on November 11, 1930 with Governor John Fisher and Dr. Henry Apple of Franklin and Marshall College giving addresses. There was a parade which consisted of the National Guard with its band, a Navy band, and veterans of the Civil War, the Spanish-American War and World War I.

This bridge promptly paid for itself and on January 31, 1943 it was made toll free. This is one of the few occasions when a toll bridge or a toll tunnel, when it has paid for itself, was made toll free!

Ribs of the first five spans have been completed. Steel centering is being moved along the trestle to the next five spans.





The Bridge Completed: 1930.

EDITOR'S NOTE

The first bridge between Columbia and Wrightsville, over the Susquehanna, was a covered wooden bridge built in 1814 and served until 1832. The world's longest wooden bridge, was built by Jonathan Wolcott, of Connecticut in collaboration with Henry and Samuel Slaymaker, local builders. Details of this bridge are recorded in the Journal of the Lancaster County Historical Society, Vol. XLVI, Nos. 4 & 5, 1942, by Robert H. Goodell.

The second bridge, also a covered wooden bridge, was built in 1834 by James Moore, John Evans and Joseph Ott. It featured a double deck towing path on the downstream side of the bridge to permit mule teams to tow canal boats across the river. It was in service until 1863, when it was burned in the face of a Confederate invasion threat during the Civil War. Details of this bridge are recorded in the Journal of the Lancaster County Historical Society, Vol. LVII, No. 1, 1953 by Robert H. Goodell.

The third bridge, like the first two, was also a covered wooden bridge. It was constructed in 1868 by the Columbia Bank (and Bridge) Company in collaboration with the Pennsylvania Railroad. It used the piers of the second bridge but had a "super structure for carriages, wagons, pedestrains and railroad trains". The bridge was blown down by a spectacular hurricane September 30, 1896.

The fourth bridge was built of heavy pre-fabricated steel, using box-like trusses. It was opened for traffic June 7, 1897. By 1921, with 6,000 vehicles using the bridge daily, difficult traffic problems were developing with the railroad. A local commission was formed to build the fifth highway bridge. The last diesel electric passenger train crossed the fourth bridge January 4, 1954, and the last freight train in March, 1958. PRR decided to sell the old bridge for scrap. So for the first time, a Columbia-Wrightsville bridge was taken down rather than being destroyed by wind, water or fire. The last span was removed in November, 1964.

A sixth bridge is now in the making. Route 30 is to cross the Susquehanna north of the present one. It will be a four-lane concrete structure and is expected to be completed in the summer of 1971.

ADDENDUM

Omitted inadvertently from the Table of Contents for Volume 72 was the list of Gunsmiths of Lancaster County, Pa., Period 1728-1863 as compiled by Samuel E. Dyke in 1959 and revised by Charles B. Grove in 1969, which appeared on pages 50 to 60.