

# The History of the Potomac Bridges in the Washington Area

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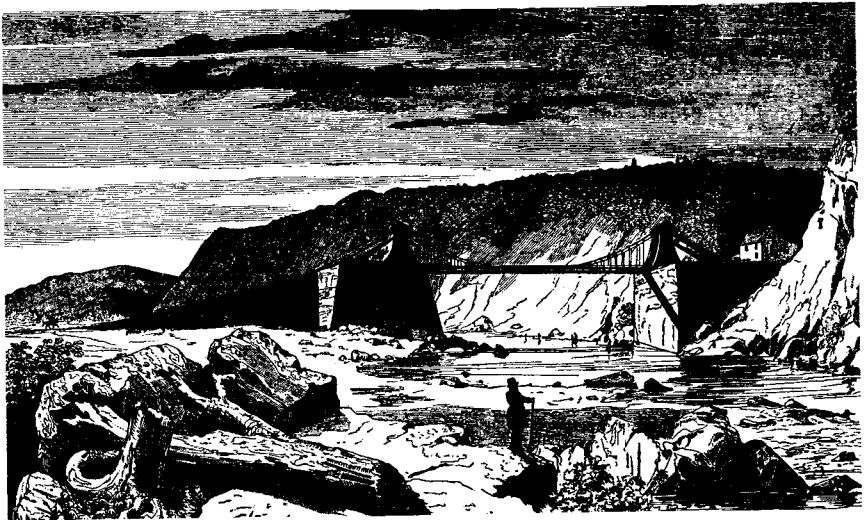
District of Columbia Department of Highways

(Condensed from an illustrated lecture given at the meeting of the Arlington Historical Society on March 8, 1957.)

The history of the bridges across the Potomac between Washington, District of Columbia, and what is now Arlington, Virginia, covers a period of 150 years.

## Chain Bridge

The first bridge was constructed at the site of the present Chain Bridge in 1797 by the Georgetown Potomac Bridge Company. This was not a chain bridge but a covered timber structure. The location was chosen since the river is narrow enough at this point to make bridging it relatively inexpensive. The Company issued 400 shares with a value of \$200 each. Timothy Palmer was the artist designer. The chief traffic was droves of cattle which were driven across to the Georgetown auction markets after drinking heavily at Pimmit Run. After only seven years of use by this "watered stock" the bridge collapsed in 1804.



"Old Chain Bridge"

Site was old Indian crossing probably visited by Capt. John Smith in 1608, and indicated on his map of 1612. First bridge was a covered timber structure built in 1797. The second bridge, built in 1808, was supported by chains of 4-foot links anchored in stone abutments on each end.

The first bridge at this site of which a picture exists was the second one, a suspension bridge built in 1808, the first to be known as the "Chain Bridge". The roadway — 136 feet long — was suspended from huge chains anchored in stone abutments. This one lasted two years before flood waters swept it away in 1810. In 1811 an Act of Congress permitted the Georgetown Potomac Company to assess its stockholders for funds with which to rebuild. This bridge lasted until 1852 but private ownership ended in 1833. In that year, as the result of bitter complaints about the high toll charges which included one of 25 cents for a horse, Congress appropriated \$150,000 to permit the Georgetown Board of Aldermen and the Common Council to purchase and operate the bridge as a municipal activity, and the toll charges were abolished. In 1852 the bridge was seriously damaged and in the following year Congress appropriated \$30,000 for its restoration. Municipal control was abolished at that time. There is some confusion in the records as to what form the bridge now took.

By the time of the Civil War, however, we have Brady photographs which show what it looked like then. It was of timbered truss construction on masonry piers and covered the entire valley as well as the barge canal. These stone piers are the same ones which are in place today. Such construction has a life span of 200 years so they are good for some time yet. This bridge was of great importance during the Civil War as the connection between Federal troops in Fairfax County and the reserve encampments at Tennytown on the District side.

One Brady photograph shows the sentinel box on the bridge. The first Union Army sentinel to be court martialed for sleeping at his post during the War had fallen asleep on the District end of the bridge. He was Private William Scott of the 3rd Vermont Volunteers who had taken a friend's place on the night of August 31, 1861. On September 9, he was sentenced to be shot but his case was carried to President Lincoln who pardoned him. He made a fine record in the Army and was killed seven months later during the campaign in Virginia.

In 1874, a new bridge was built by the Phoenix Bridge Company with eight iron trusses 1,350 feet long overall. It had a timber floor laid on the old stone abutments and was designed to carry a concentrated vehicular load of six tons. A minister-farmer, the Reverend Mutersbaugh of Fairfax, was chosen to

make a test of its strength. He loaded a six-horse wagon with wood and drove across to Georgetown. Reloading with fertilizer, considered a heavy load in those days, he drove back over the bridge and declared that it could bear any load it would be called upon to carry.

In the 1920's the bridge began to show the effect of constant pounding by the Potomac floods and ice jams. In 1926 serious signs of failure appeared including a large cavity in the abutment on the Virginia side. The District Commissioners set up strict speed and load limits in June 1927 and set a 24 hour watch. The bridge was closed to all traffic in periods of high water which was considered to be when the water reached a level five feet above normal. This caused considerable controversy: commuters using the bridge wanted it shut only when real danger was imminent while Arlington County wanted traffic halted completely since it was fearful of damage to the newly installed 8-inch water mains supplying the County from the Dalecarlia Reservoir which ran under the bridge.

In July 1927, the bridge was closed to permit repairs to the abutment on the Virginia side. A concrete pier was constructed at a cost of \$39,000. The bridge was reopened on August 11, 1928, during non-working hours to permit the repairs to proceed. Later that month it went back in full time service. The 1936 flood was too much for the bridge, waters rising to cover its floor. The bridge was also obsolete from the point of view of capacity. In 1937 the superstructure was dismantled and in 1938 \$393,000 was spent to build a steel cantilever girder structure, five feet higher from the river than the previous bridge. This is the bridge which is in use today.

### **Aqueduct Bridge**

The Aqueduct Bridge was constructed in 1843 by the Alexandria Canal, Railroad, and Bridge Company to bring the C&O canal over the Potomac to connect with a canal to Alexandria. The conduit for the canal rested on stone piers covered with woodwork. Over this was a roadway for "persons, vehicles, and animals" as a contemporary account put it. The canal was used until the Civil War when it was drained to permit its use for the passage of soldiers. In 1866 when the bridge reverted to private ownership it was found that the canal conduit had sprung leaks and it was abandoned. Even before the Civil War

canal operation over the bridge had not been a financial success. The bridge was operated for wagon passage but the high tolls caused considerable agitation. Sometime between 1879 and 1888—the limits are set by landmarks in existing photographs—the superstructure was torn down. In the meantime Congress had appropriated \$125,000 to purchase it, an offer which was accepted in 1886. In 1888 a new superstructure was built. This was 24 feet wide with 3 foot sidewalks. In 1889 there were signs that the substructure was weakening and divers had to go down to plug holes with bags of cement. In 1907 three piers were replaced. By 1911 the tracks of the Great Falls and Old Dominion Railroad ran across the bridge from the terminal on the Georgetown side.

In 1916 Congress authorized the dismantling of the Aqueduct Bridge and the construction of a new one. This was completed in 1923 and named the Francis Scott Key Bridge. Originally it had six concrete arch spans with a 72-foot vertical clearance. A seventh span was added in 1939 to bring the bridge across the George Washington Parkway being constructed on the Virginia side. The roadway, of reinforced concrete, was 50 feet wide. The Aqueduct Bridge was not torn down until 1934 and the piers remain today.

The latest change in the Key Bridge has just been completed with the removal of the street car tracks and the widening of the roadway to six lanes, sidewalks being carried across on cantilever construction.

### **Long Bridge, Railroad, and Highway Bridges**

No picture exists of the first Long Bridge but the Brady photograph of the second, in 1860, shows one which was not too different. In 1808 the Washington Bridge Company sold 2,000 shares of stock at \$100 a share to finance the construction of a bridge. The tolls included charges of 3c a head for swine and sheep, and \$1 for stages and coaches. For various reasons this bridge was closed for long periods. The first major threat to its safety came during the War of 1812. In August, 1814, the British invaders of Washington set the Washington end afire to frustrate an attack from the south, and the American forces burned the Virginia end to prevent pursuit. The fires were put out before they spread to the center of the span.

In 1831 the spring floods washed away the superstructure and Congress purchased the franchise, abolished the tolls, and appropriated \$200,000 for a new bridge. This was completed in 1835 at a cost of only \$114,000, a remarkable instance of saving the government money. Complaints were registered about this bridge: that the piles reduced the river's rate of flow and that navigation to Georgetown was hindered by deposits of alluvia in the shipping channel. The bridge suffered damage from ice, floods, and boats.

During the Civil War the Long Bridge was a principal route for the Union Army to the South. At the end of the war, the Union forces encamped at the Virginia end crossed the Bridge in a steady stream for two days—March 23 and 24, 1865—to take part in the Grand Review, the longest parade ever staged in Washington.

In March 1863, the Washington and Alexandria Railroad Company was permitted to lay a single track across the bridge. The next year this Company built a railroad bridge 75 feet south. The track across the Long Bridge was later torn out. In 1870, the Baltimore and Potomac Railroad Company assumed control of the bridge and rebuilt it as a single track bridge. In 1901, Congress authorized the construction of a new double track railway bridge and of a highway bridge. The Highway Bridge was constructed by the Pennsylvania Bridge Company in 1904, 1,000 feet upstream from the original Long Bridge, at a cost of \$1,500,000. The Long Bridge and the present Railway Bridge have the same location.

The Pennsylvania Railroad built the Railway Bridge, originally a steel truss structure but since World War II a plate girder span. In 1928, the steel buckle plate floor of the Highway Bridge was replaced with 7-foot laminated timber with sheet asphalt covering. The Virginia end was redesigned in 1930 to accommodate the Mount Vernon Memorial Boulevard.

Construction of twin spans to replace the Highway Bridge was authorized by Congress in 1947 and \$7 million appropriated for the job. The present southern Highway Bridge was completed in 1950 but its construction used up all the funds which had been appropriated. The Old Highway Bridge is inadequate for its present traffic load and the structure is showing signs of failure.

## **Analostan Island**

For a time there was a causeway from the Virginia shore to what was then known as Mason's Island or Analostan Island and is now Theodore Roosevelt Island. People crossed there to take a ferry to the Washington side of the Potomac. Later, in the 1860's, there was a pontoon bridge from the District side to the Island on which there was a pleasure resort. This is the same location used for a pontoon bridge during World War II.

## **Memorial Bridge**

The first proposal for a Memorial Bridge was made by President Jackson in 1831; a second proposal was made by Daniel Webster in 1851. When Grant died in 1885 this project received serious consideration with the idea that the bridge should cross Analostan Island connecting with the extension of New York Avenue. A competition was held for design of this bridge; one of those submitted looked like a medieval structure from the Rhine Valley! There were more than half a dozen further proposals for such a bridge to the end of the 19th Century and many bills concerning this were introduced in Congress. These led to prolonged controversy and innumerable hearings.

In 1901, the Senate Park Commission known as the McMillan Commission, proposed a new bridge near the Lincoln Memorial where the Memorial Bridge runs today. The then approved design is very much like that in place probably due to the fact that McKim of the prominent architectural firm of McKim, Mead, and White was a member of the McMillan Commission and also submitted the winning design to the Arlington Memorial Bridge Commission created in 1913. No action was taken, however, until 1921 when President Harding on his way to dedicate the Tomb of the Unknown Soldier in Arlington Cemetery had to cross the Highway Bridge. A car broke down causing a traffic block which prevented many officials from attending the ceremony.

Construction of the Memorial Bridge was begun in 1925 and completed in 1932 at an expenditure of \$14.7 million of which \$7.25 million was spent on the structure and the remainder on the approaches. Each leaf of the draw span weighs 6,000 tons and is 92 feet long. It takes one minute to raise or lower each leaf. The total length of the Bridge is 2,138 feet and vertical clearance ranges from 28 to 35 feet.