The Vincennes Bridge Over the Wabash River*

By ROBERT B. YULE

"On the Banks of the Wabash" is a phrase of song and story, and justly an oft repeated phrase in the state of Indiana. Let us imagine for a moment the Wabash River as not crossing the state or forming its southwestern boundary. What towns would be found instead of Wabash, Peru, Delphi, Lafayette, Attica, Williamsport, Newport, Clinton, Terre Haute, Vincennes and New Harmony? What would be found instead of the fertile fields of the river's immense drainage area? What would have been the history of the state without this River as an artery from which many early settlements branched?

"Vincennes" is a name appearing early in the history of the Old Northwest. The existence and fame of the town were an almost direct consequence of its location on the banks of the Wabash. It is a place which must have been an Indian rendezvous and possibly a permanent Indian village from its discovery by a roaming tribe. It is the site of an early trading post and of a fort built by Francois Morgan de Vincennes, probably as early as 1702, the fort which was captured by George Rogers Clark in his history making campaigns of 1778 and 1779.[1]

Early in the settlement of the middle west, a trail was established connecting Vincennes with New Albany, Jeffersonville and Louisville on the east, and St. Louis on the west. Villages were gradually built up along this old trail, known as the "Buffalo Trace," and Vincennes soon became a widely known stopping point because of the difficult Wabash River crossing and the fact that here was an intersecting north and south route. By 1865 Vincennes was a city of about five thousand people. The old trail soon lost its importance because of railroad development, but the decreasing overland traffic of the time was replaced by the local traffic composed of people from the Illinois side of the Wabash who came to trade in the well stocked stores of the thriving town.

The first ferry license at Vincennes was issued to Colonel Francis Vigo on February 16, 1805. In later years, there

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* This paper was read before one of the sessions of the annual Indiana History Conference which was held at the Claypool Hotel in Indianapolis on December 7-8, 1934.

[1] Henry S. Cauthorn, *A History of Vincennes* (1901), 36.

were two ferries, one on Main Street and the other at Broadway.[2] Wind, high water and drift made ferry operation uncertain and sometimes dangerous. Consequently local people must have discussed the feasibility of a bridge as soon as large bridges became common in the more thickly populated eastern states. On October 13, 1859, the Vincennes Drawbridge Company was incorporated with a capital stock of $40,000 in shares of $50 each.[3] The capitalization was later increased and a total of about $77,500 worth of stock was sold.[4]

The Drawbridge Company must have found difficulty in selling all of its stock as an agitation developed to have the city participate in the project. On December 18, 1865, after the receipt of a petition containing the signatures of more than three-fourths of the resident taxpayers, an ordinance was passed by the city council authorizing the proper city officials to subscribe for $20,000 of the stock of the Vincennes Drawbridge Company.[5] On February 4, 1867, on receipt of a similar petition, the subscription was increased to a total of $45,000.[6] This ordinance authorized the issuance and sale of bonds of the city in specified amounts with specified maturity dates and set a rate of twelve cents on each $100 of taxable property for the payment of interest and the formation of a sinking fund for the amortization of the principal. The money obtained from the sale of the bonds was to be used to purchase Drawbridge Company stock. A committee of three councilmen, to be known as the "Bridge Committee" was appointed to vote the stock in all actions of the Drawbridge Company stockholders.[7]

The Board of Directors of the Vincennes Drawbridge Company signed a contract on March 22, 1867, with Cyrus M. Allen and the firm of Canada & Hinckley for the construction of a bridge across the Wabash River at the foot of Main Street in Vincennes. Cyrus M. Allen was a local lawyer, councilman and legislator, while Canada & Hinckley

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[2] Hubbard Madison Smith, *Historical Sketch of Old Vincennes* (1902), 279; Indiana *Territorial Journal.*

[3] George E. Greene, *History of Knox County,* I, 518.

[4] Council Records, City of Vincennes, March 25, 1889.

[5] *Ibid.,* Dec. 18, 1865.

[6] *Ibid.,* Feb. 4, 1867.

[7] *Ibid.*

had headquarters in Chicago.[8] Work actually started on July 19, 1867.[9]

Evidently several of the foundations for the piers were completed before the spring of 1868 since the following appeared in the Vincennes *Times* of March 28, 1868: "We notice that a huge pile of drift accumulated against one of the piers of the new bridge during the late freshet, still holds its grip with the prospect of remaining during the season." On August 22 the same paper carried an item to the effect that two spans were nearly completed, adding: "It will be one of the most beautiful bridges in the State and will reflect credit on the contractors." Finally on Dec. 19, 1868, a statement appeared that the work was at last so far completed that the bridge had been opened to the public. The following schedule of tolls was set out accompanied with an opinion that the rates were too high:

Vehicles drawn by 4 horses, mules or oxen	50¢
Vehicles drawn by 2 horses, mules or oxen	35¢
Vehicles drawn by 1 horse, mule or oxen	25¢
For each person and horse or mule	15¢
For every person on foot	5¢
For hogs, sheep or calves, led or driven, per head	5¢
For horses, asses or mules, per head	10¢
Not more than 5 head of cattle shall be allowed to cross at once.	

The toll rates as published were up to the limits permitted in the Illinois Legislative Act of 1869 authorizing the erection of toll gates and the collection of tolls.[10]

The bridge replaced the Main Street ferry but on January 23, 1869, the Broadway Street ferry was still in operation as the following news item appeared in the Vincennes *Times* of that date: "It will be seen by advertisment that Sam Haynes is bound to bring ferry rates within the bounds of reason, by running constantly at the Broadway landing at half rates." In the advertising section, the following appeared: "NO MONOPOLY—Low tolls and low ferriage. The ferry will run for one half rates. All such as desire to encourage low rates, should patronize the ferry."

[8] Vincennes *Western Sun* (weekly), Mar. 23, 1867.
[9] *Ibid.*, July 19, 1867.
[10] *Illinois Private Laws*, 1869, 289.

In order to prevent the ferry from keeping business away from the new bridge, the Illinois Legislature was influenced to pass a law during the session of 1869 prohibiting the operation of a ferry within three miles of a toll bridge.[11] The bridge had been in service only a few months when it was the victim of an unusual accident. On April 19, 1869, a near cyclone passed over the city unroofing many buildings and wrecking two covered spans on the Indiana side of the river.[12] When the bridge was wrecked, the law was in effect and the *Western Sun* in its issue of May 1, 1869, called attention to the fact that Vincennes and Illinois were completely shut off from each other. Judging from the wording of later references to the situation appearing on May 29 and June 5, the ferry must have resumed operation at the Broadway landing, either under the auspices of the Bridge Company or by others with law enforcement agencies winking at the violation of the statute.

Naturally there was agitation to repair or replace the wrecked spans of the bridge but apparently the Company was financially unable to undertake the work as on April 19, 1869, the City Council was asked to appropriate $15,000 for that purpose.[13] After discussing the problem until June 21, 1869, it was finally decided that the city would borrow and loan the Drawbridge Company a maximum of $6,000 to be used for the repair of the bridge. The city ordinance of that date specified that the Drawbridge Company was to give a mortgage on all the property of the Company and that all tolls, less sums for maintenance, should be deposited each month with the city treasurer until the loan should be paid. It was further required that Charles Dawes, or some other mechanic, to be approved by the Council, should superintend the work. Bills were to be paid by order of the Council on presentation by Dawes.[14] On September 4, 1869, the *Sun* reported that the work would be completed in ten days.

The original spans were probably rebuilt, replacing whatever parts were necessary, but the roof and siding of the two spans were left off.[15] By 1875 the two spans which had been

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[11] *Ibid.*

[12] Vincennes *Western Sun* (weekly), Apr. 24, 1869.

[13] Council Records, City of Vincennes, Apr. 29, 1869.

[14] *Ibid.*, June 21, 1869.

[15] Indiana State Highway Commission, Bridge Department, Book BR, 199.

repaired became so weak that it was thought necessary to replace them. It is interesting to note that in the Council meeting of June 19, 1875, the Bridge Committee was instructed to inquire if the Drawbridge Company directors had let a contract for the replacement of the two weak spans by new iron spans. It was stated that the city owned more than half of the capital stock, and it can be deduced that the Council felt that the members should be consulted in regard to any contract. The Drawbridge Company directors later supplied the Council with data in regard to the contract and specifications, and on June 28, 1875, a contract was let to the Massillon Iron Bridge Company of Massillon, Ohio, for the replacement of the two unsafe spans. The contract price was $10,000 and the work was completed before the end of that year.[16]

Considerable opposition developed to the collection of tolls since citizens of Illinois could go to Lawrenceville to trade and thus avoid paying the toll. Consequently the City of Vincennes bought the stock of the Drawbridge Company which it did not already own at forty cents on the dollar, with the object of making the bridge free.[17] There were some legal questions involved, but finally the City Council set January 1, 1889, as the date when toll collections should cease.[18] The Drawbridge Company had paid dividends from time to time as is evidenced by records of the Council and City treasurer, but the amounts were not large and the stockholders were willing to pass on to the general public the responsibility of maintaining an aging bridge. For the next thirty-two years, the City kept the bridge in repair, but found it a continual burden as various parts of the wooden structure had to be repaired or replaced from time to time. In 1905, or near that time, concrete toe-walls were placed around the abutments.[19]

By 1921 Indiana and Illinois had developed state highway systems and an agreement was entered into between the two commonwealths to assume joint responsibility for repairs to the structure. Beginning with the placing of a new timber floor in 1921, the two states participated equally in the cost

[16] Council Records, City of Vincennes, Book F, 445.

[17] *Ibid.*, March 25, 1889. During this period the names and holdings of the individual stockholders are listed.

[18] *Ibid.*, Book 0, 203.

[19] Indiana State Highway Commission. Bridge Department, Book BR, 199.

of repairs and new construction.[20] About 1923, the Illinois Division of Highways, in collaboration with the Indiana State Highway Commission, proceeded with the preparation of plans for a high level steel truss bridge down stream from the old bridge. Construction funds were not immediately available and work was indefinitely postponed.

The old timber spans on the Illinois side of the river had sagged somewhat and the roof and siding were removed to lighten the bridge itself without decreasing its strength. By 1925, the timbers at the bearing points and at some other parts of the trusses had rotted badly and it was necessary to prop up the spans by placing timber bents under the trusses. A bent was placed at each end of one span and at one end of the other. A few months later, protecting timber cutwaters were built, bents were placed under the center of each span and some of the web members in the middle of each span were reinforced.[21] Late in 1926, the old timber spans, in spite of all the work done on them, were no longer safe and a contract was entered into with the Vincennes Bridge Company of Vincennes, Indiana, for their replacement by steel spans. This work was completed in April, 1927.[22] The forces of nature and the heavy traffic took their toll and in 1929 it was found necessary to replace the swing span of the old bridge with two steel spans in order to keep it in service until the memorial bridge could be completed. The two steel spans were constructed by the Vincennes Bridge Company.[23]

The Indiana Legislature at the 1927 session enacted legislation and appropriated funds for the purpose of building a memorial to George Rogers Clark on the site of Fort Sackville.[24] The Federal Congress later created a Commission and appropriated funds to participate in the project.[25] The intended memorial grounds were to include the Indiana approach to a bridge at Vigo Street and the memorial sponsors urged that plans be drawn that would result in the construction of a bridge harmonizing with a memorial whose surface treatment would be largely stone. Recognizing the desirability of such an action, the 1923 bridge plans were discarded and

[20] *Ibid.*, File 55A, 29.
[21] *Ibid.*, File FA, 100.
[22] *Ibid.*, File 50A, 577.
[23] *Ibid.*, File 50A, 984.
[24] *Acts of Indiana General Assembly*, 1927, chap. 22.
[25] *Acts of Congress*, May 23, 1928.

the Indiana State Highway Commission prepared plans for a high level, reinforced concrete arch-bridge of the open spandrel type.

In January 1931, a contract was entered into with the Ferguson Construction Company and Donald B. Ferguson of Rockford, Illinois, and work began on the new bridge. It was completed in 1932 and the historic bridge so many times repaired was removed.[26] In spite of the years, the masonry of the old bridge was still in excellent condition and there was no evidence that the river had ever scoured deep enough to get under the piers. There is no record of the last time the swing-span was operated but it is reported to have been about 1922.[27] During the early years of the original bridge many cargo boats moved up and down the river and it was an everyday occurrence to open the swing-span. By the turn of the century, the railroads had taken most of the freight and passenger business from the river boats on all but the largest rivers and it became rarely necessary to open the swing-span.

During the last years that the Main Street bridge was used it became necessary to have a ferry in operation during the periods when the bridge was closed for repairs. The author remembers quite well crossing the river by ferry on a rainy night early in the winter of 1925 while the bridge was being repaired. Just after clearing the Illinois bank, a large piece of drift lodged between the cable and the ferry boat so that the boat could move neither forward nor backward. After a long battle in rain and darkness, with the boat weaving drunkenly in the strong current, the ferry operators finally disengaged the drift, and the ferry proceeded across the river. The replacement of the swing span was accomplished by erecting the new spans alongside the old and moving them in while traffic was halted temporarily.

At the present time [December, 1934], the George Rogers Clark Memorial with its attending landscaping is practically completed so that a new era has begun. Let us hope that the beautiful new bridge may have a span of useful life of longer duration than did the first bridge which served for sixty-four years, and that the new structure may not experience the vicissitudes of that unlucky product of a pioneer age.

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[26] Indiana State Highway Commission, Bridge Department, File 50A, 690.
[27] *Ibid.*, *Book* BR, 199.

In order to complete the history of the bridges at the Vincennes crossing of the Wabash River, it seems advisable to add some technical data that is essential to an engineering record. The following facts and figures are arranged so that they may be consulted with convenience.

Record of Major Construction and Repair.

In 1867-68, the Vincennes Drawbridge Company, with Cyrus M. Allen and Canada & Hinckley as the contractors, constructed the Main Street bridge. In 1869 the same company, with Charles Dawes as Superintendent of the work, repaired two spans of the bridge on the Indiana side of the river. In 1875 the Bridge Company employed the Massillon Iron Bridge Company to replace the two spans on the Indiana side at a cost of $10,000.

In 1921, the Indiana State Highway Commission, acting for Indiana and Illinois, employed Thomas J. Edwards and Son to put a new floor in the bridge at a cost of $5,014.81. The materials were obtained from the Simpson Lumber Company.

In February, 1925, The Indiana Commission, again acting for Indiana and Illinois, employed the Vincennes Bridge Company to repair two spans of the bridge on the Illinois side, at a cost of $3,118.85. In December of the same year, further repairs were made on the same spans by the Vincennes Bridge Company, at a cost of $4,499.70. For the repairs of 1921 and 1925, the Indiana Highway Commission furnished further materials valued at about $1,000.

The most extensive repairs ever made on the old bridge, were completed in 1926-27, by the Vincennes Bridge Company, under the direction of the Indiana State Commission acting for Indiana and Illinois. Two spans on the Illinois side were entirely replaced, the cost being $28,043.49. The following year, the Mott Core Drilling Company of Huntington, West Virginia, completed some foundation borings at a cost of $1,032. In 1929, the Indiana Commission, acting for the two states, engaged the Vincennes Bridge Company to replace the swing-span of the bridge with two steel spans, which cost $12,305.97.

It was in the year 1931, that the State Highway Commission, acting for Illinois as well as for Indiana, employed the Ferguson Construction Company and Donald B. Ferguson to

construct the new Clark Memorial Bridge across the Wabash at the end of Vigo Street. This splendid work was finished in 1932, at a cost of more than a quarter million dollars, the exact sum being $259,026.94. The old Vincennes Bridge at the end of Main Street was dismantled in 1932 by the Ferguson Construction Company as a part of their contract. For the steel and timber salvaged from the old bridge, the Vincennes Bridge Company paid $1,557, that company being the highest bidder.

Bridge as Built in 1868.

Substructure:

Abutment one (Indiana side)—Stone masonry. Flared wings. Toe-wall added about 1905.

Piers two and three—Stone masonry. Up-stream end triangular, down-stream end square.

Pier four—Stone masonry. Circular. Diameter 20'6".

Piers five and six—Stone masonry. Up-stream end triangular, downstream end square.

Abutment seven (Illinois side)—Stone masonry. Flared wings. Toe-wall built about 1905.

Superstructure:

Span one (Indiana side)—

Type, covered timber Howe truss.
Clear Span Length, 155',0"
Clear Roadway Width, 16',0"
Height (c to c chords), 14'8"
Panels, 16—9',10" approx.
Top Chord, 3—8"x9" timbers.
Bottom Chord, 3—5"x11" timbers.
Main inclined Web Members, 2—6"x9" timbers.
Counters (in every panel), 1—5½"x5½" timber.
Vertical Web Members, 2 Rods 1⅛" round.
Floor Beams, transverse timber. Joists resting directly on bottom chord. (Adjacent timber spans continuous over the pier).

Span two—All data same as span one except clear length of 156', 8½".

Spans three and four—Swing span pivoting on pier four and ends resting on piers three and five.

Type, variable depth, combination timber and iron. Howe truss. No top lateral system.
Clear Span Lenths 61',6" and 60',5½"
Truss Length, 144' approx.
Height (c to c chords), center 15',9"
Panels, 16—9',1" approx.
Top Chord, 3 curved plates 5"x½", Long axis vertical, blocked apart by spreaders.

Bottom Chord, 2 plates 5″x½″. Long axis vertical, blocked apart by spreaders.
Main Inclined Web Members, 2—5″x6¾″ timbers.
Counters (in every panel), 1—5″x6¾″ timbers.
Vertical Web Members, 2—rods 1¼″ round.
Floor Beams, transverse 3″x12″. Joists resting directly on the bottom chord.

The truss members were designated as though each half was a simple span supported at the ends, except that the change in inclination of the main web members was placed one panel point off center away from the center pier. The center support was a combination of rim and center bearing. The dead and live loads were transmitted to a framework of beams under the floor and over the pier. The center bearing and drum were framed to the underside of the beams. The drum was supported on small wide-rimed wheels turning on axles radiating from a collar around the center bearing. The wheel track and rack were in one piece, the rack and pinion being on the outside. The span was turned by man-power, a crank being applied to a spindle rising vertically from the pinion to the floor level.

Span five—Same as span one, except clear span length of 153′,9″
Span six (Illinois side)—Same as span one, except clear span length of 148′,7″

Changes in 1875

Superstructure:

Span one (Indiana side)—
Type, wrought iron bowstring truss with several panels of top lateral system at center of span.
Clear Span Length, 155′,0″
Clear Roadway Width, 16′,0″
Height (c to c chords), 18′,0″ approx.
Panels, 20—8′,0″ approx.
Top Chord, 2 curved plates, 12″x½″, long axis horizontal, 1′,5½″ centers. Plates blocked apart in about 12″ panels by 41½″ round rods as X bracing and 2⅝″ round rods perpendicular to plates holding all together.
Lower Chord, 2 plates 10″x⅝″, long axis vertical.
Verticals, 2¾″ on each axis.
Inclined Web Members, ¾″ round rod.
Floor Beams, 3″x12″ at 1′,6″ centers, resting directly on bottom chord.
Span two—same as span one.

Changes in 1926.

Superstructure:

Span five—

Type, high camel back steel Pratt truss. Shop riveted and field bolted. Plank floor. Built so as to be easily taken down and re-erected elsewhere.

Clear Span Length, 153′,9″

Clear Roadway Width, 20′,0″

Height (c to c chords), center 30′,8⅛″. Hip 22′,4¼″

Panels, 8—19′,6″

Designed for live load of 100 lbs. per square foot of roadway surface or a 20 ton traction engine.

Span six—

Type, same as Span five.

Clear Span Length, 148′,7″

Clear Roadway Width, 20′,0″

Height (c to c chords), center 30′,1″. Hips, 21′,11⅛″.

Panels, 8—19′,1½″

Designed for loading same as for span five.

Changes in 1929

Superstructure:

Spans three and four—

Type, pony Warren triangular steel truss. Shop riveted and field bolted. Plank floor. Built so as to be easily taken down and re-erected elsewhere.

Clear Span Lengths, 61′6″ and 60′,5½″.

Length of Truss, 72′,0″ c to c bearings.

Clear Roadway Width, 20′,0″.

Height (c to c chords), 8′,6″.

Panels, 6—12′,0″.

Designed for live stock of 120 lbs. per sq. ft. of roadway surface or a 20 ton traction engine.

Structure Built in 1932.

Substructure:

Concrete on timber piling.

Bottoms of footings on river piers, 17′ below low water.

Superstructure:

Type, reinforced concrete open spandrel arch.

Clear Span Lengths (Indiana side) 80′, 145′, 170′. (Illinois side) 180′, 170′, 145′, 70′.

Arch Rises, 20—32′,7¼″; 36′,8⅜″; 38′,3″; 36′,8⅜″; 32′,7¼″; 28′, 10½″ (Spring lines level).

Clear Roadway Width, 32′,0″ and 2—5′,0″ sidewalks.

Height, on 1100′ vertical curve between five per cent. grades. At center of bridge, bottom of footings to crown of roadway, 76′,3″. At center of bridge, 1913 high water stage to under-clearance elevation, 31.93′

Note: The Information in regard to details of the struc-

tural designs is from records of the Indiana State Highway Commission, Bridge Department. See survey field books numbered 146, 182, and 199 and plans 50-A-690.