Article Corrections By HistoricBridges.org: Steel was not exclusively used for metal truss bridges by 1890, in fact wrought iron continued to be commonly used for metal truss bridges until around 1900. While certainly available during this period, steel was expensive and gobbled up for use as railroad rails because Wrought Iron was too soft for this purpose, while still being quite effective for bridge construction. Also, the approach pony truss span is a Queenpost truss, not a Pratt.

Upper Bluffton Bridge
By Jason D. Smith

Location: Upper Iowa River on West Ravine Road, just west of Bluffton, at the entrance to the Logsdon Campground (Section 9, T99N- R9W Bluffton Twp.)

Description: Two-span truss bridge. The west span is a pin-connected pony truss bridge, while the east span is a six-panel through iron truss bridge with town-lattice portal and heel bracings (the latter angling at 45° from portal to end post), and ornamental plaques on the top of the portals and at the joint where the end post and upper chord meet. Both truss bridges are of Pratt design.

Dimension: 154 ft. long total (through truss length: 116 ft), 14.8 ft. wide, and (14) ft. vertical clearance (through truss span). Note: The vertical clearance was reduced to 9 ft. last year.

Built: 1878 (fabricated) and 1880 (erected) by Wrought Iron Bridge Company of Canton, OH

Comments:

One of many bridges built by the Wrought Iron Bridge Co. during the 1870s and 1880s in Winneshiek County, the Upper Bluffton Bridge is significant in many different ways. First of all, the bridge is one of the "textbook-truss" bridges that was constructed during this period. This means that the bridge parts were fabricated at the bridge company in Ohio, before being transferred by train and wagon to its original destination. There, the bridge was assembled by local contractors, using pinned connections to hold the structure together. Like building a house using the Erector set during the 1880s and 90s and more modern sets a century later, this type of bridge assembly work became very popular, and many bridge companies including the King Bridge and Iron Company in Cleveland, OH later adopted this technique as a way of saving time and labor. Furthermore, these bridges could be disassembled and reassembled at a different location if necessary, which served as an advantage for many who wished to maximize the life span of the bridges and their usefulness on various roads during those days. Secondly, the Upper Bluffton is unique because it represented change regarding bridge construction. This meant that at the time of the bridge's construction, the Pratt truss bridge became the most preferred bridge type to be used, because of the structure's ability to withstand pressure towards the middle, thanks to the diagonal bracings slanting downwards

towards the center of the bridge. Designed by Thomas and Caleb Pratt in 1844, the design later expanded to include subdivided types, some of which can still be found in the county and will be discussed in later bridge commentaries. Other truss types used during this time, including the bowstring arch, Howe, Fink, and Bollmann trusses were being phased out one by one due to structural deficiencies. The Upper Bluffton Bridge represented this changing trend in bridge design.

In addition, the bridge was constructed at the twilight of the usage of iron for bridge construction. After its development through the Bessemer process in 1851 (patented in 1855) and in light of the Great Chicago Fire in 1871, steel became the norm in architectural and bridge construction because of its durability and flexibility in extreme weather conditions. This made assembling and reassembling the bridges even easier. Furthermore, steel bridges were able to withstand more pressure by heavier vehicles including freight and passenger trains, which resulted in the construction of longer and heavier spans from the 1880s onwards. By the 1890s, steel was exclusively used for bridge construction because of the numerous advantages it had over the iron structures. The Upper Bluffton Bridge is one of only a few iron bridges still remaining in Iowa and one of the six existing structures in Winneshiek Co. that was built using the material that eventually became obsolete for bridge construction. The fourth reason for the bridge's significance is its location at the palisades of the Upper Iowa River. The palisades stretches from the bridge northwards toward the Chimney Rock area and Hruska campground and beyond, presenting boaters and tourists with a splendid view of the river. Many theorists in the field of environment and technology are sometimes of the opinion that architecture and nature do not mix, that nature must be controlled through architecture so that people can access goods and services from far away. However, like covered bridges, metal truss bridges blend in beautifully with the natural surroundings, providing the visitors and even photographers with a picturesque view of the landscape and the peace and tranquility for those wanting to escape the sprawling stresses of life we refer to as modernization. The Upper Bluffton represents a fine example of how nature and architecture do get along without the slightest disturbance. Even though the bridge is difficult to reach due to the sharp curve and a slight downhill grade while leaving the village (and we must admit, we missed the bridge the first time while we were trying to photograph it), when crossing it, it presents the driver with a picturesque view of the steep bluffs of the Upper Iowa River to the right, and steep wooded hills to the left beyond the campground. Furthermore, the bridge is a source of recreation for it lies next to the campground and provides access for canoeists and fishermen alike. From my own personal experiences visiting and photographing a truss bridge

before and after it was replaced, a person can tell the difference between a structure that is lightweight but fits perfectly in the landscape, and one that is modern and able to carry more traffic, but is a total eyesore. Can you imagine the Upper Bluffton Bridge being the next victim of such modernization?

At the present time, the Upper Bluffton Bridge is on the five-year replacement plan and is scheduled to be replaced in 2010. For some, it might be a sigh of relief because the structure cannot handle the heavy loads anymore as well as it did decades earlier. The bridge carries a 3-ton weight limit and is further handicapped by the vertical clearance limit of nine feet. Furthermore, extensive repairs have been conducted on the bridge, which included the construction of a reinforcement pier between the pony and high truss spans in 1995. Most recently, several stringers were replaced with those taken from a previous truss bridge that existed in Winneshiek Co. This work took place last year. Despite the restrictions on the bridge, many drivers choose to ignore the signs and cross the bridge anyway, which could potentially spell disaster for the bridge in the long run. As recently as last spring in Missouri, another Pratt high truss design, also a Wrought Iron Bridge structure, fell into the river as a result of this ignorance, sparking an outrage from many who believed that the driver should bear full responsibility for wreckless driving and intentionally destroying public property. To this day there is no word on whether he was prosecuted for this incident. However, in many cases, the driver usually escapes any form of criminal litigation. More information is available through the link provided at the end of this commentary.

For many, the bridge's replacement would not be a welcoming idea for reasons already mentioned earlier in the commentary. On the one hand, the Upper Bluffton Bridge provides the shortest direct route to the campground, owned by Randy's Bluffton Store, Canoe Rental and Campground. On the other hand, there are alternatives towards preserving the structure, which has been listed as historically significant on both the local as well as the national levels. By considering the alternatives in preserving the bridge in its place, it could serve as the best of both worlds for everybody. First of all, the bridge would have another life if it was remodelled and open only for recreational purposes with access to the campground being rerouted for all other vehicles. This could be done either by constructing a bridge on the other side of the campground (which would eliminate the dangerous steep curve going down to the bridge), or by rerouting the road, which would mean accessing the campground from the south and west. The second option (though financially feasible) would be a long detour and in

order to eliminate the temptation of crossing the bridge, the west approach would have to be taken out or narrowed to make it only accessible for bikes and pedestrians. In the long term, it would serve as an asset for many wishing to see the relict of the past being reused again, which brings us up to the second point. There have been many examples of bridges that have been renovated and reused again for the purpose of maintaining its integrity and attraction for passers-by who love to see the structure in its place. In the case of two bridges, one in Pennsylvania, the other in Ohio/Michigan, these structures were built of iron and by the same bridge company that built the Upper Bluffton, but were reopened for traffic. Links are available at the end of this commentary for those who want to know more about it. In the case of the Upper Bluffton Bridge, it is possible to refurbish the structure and reconstruct it back in its original spot to be used again, without having to spoil its historic significance. The only set back to this is that the bridge would need a new center pier, for the old one is falling apart. However, despite the costs for that plus the renovation in general in the short term, in the long term, the renovation plan, which could take 1-2 years to complete, will be well worth the cost, for many would like to see this historic wonder of Winneshiek County be reused in its original location, but only for the purpose of seeing it, not for travelling across it in supersized RVs.

Imagine taking your child across the bridge and walking (or biking) back in time to when it was built, when it was used during the 1880s and beyond, and just witnessing the natural surroundings the bridge provides you. Imagine doing research on the bridge's history by looking at the structure itself (not just the plaques) and relating it to American history and the age of innovation during the time of its construction. Imagine fishing from the bridge with your friends when it is all quiet and the only voice you hear is your cussing because the fish is playing games with your hook. Imagine yourself on the bridge either writing about its beauty and tranquility, like Alexander von Humboldt, Paul Gruchow, and Sigmund Olson (just to name a few) or drawing the structure and its surroundings for an art competition and receiving a blue ribbon for the work you have done. But most importantly, imagine yourself taking a group on a guided tour of the county, where apart from knowing more about the Scandanavian heritage, you know more about the architectural and natural aspects of Winneshiek Co., and you happen to take your group to the campground and especially to this particular bridge and you allow them to take a look at it. Surely you don't want them to see a concrete structure a.k.a. "that ugly boring bridge," would you?

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Resources:

Frenchman Bluff Bridge Disaster in Missouri available here:
http://bridgehunter.com/mo/lincoln/frenchmans-bluff/

Examples of bridge preservation in Michigan and Pennsylvania available here:

http://www.historicbridges.org/truss/maple/index.htm
http://www.venangoil.com/bridgesjerseybridge.html

The next commentary will deal with the Chimney Rock Bridge, which means if you would like to submit a personal story about this, please do so before 1 March so that we can publish the article on the 16th. Furthermore, we'll pay a tribute to a local icon of Decorah, the Tavener (Green / 5th Avenue) Bridge.