



Historic Bridge Foundation Facebook Archives

Focus Bridge: Little Harbor Bridge, New Castle, New Hampshire

November 2017

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Carrying Route 1B over Little Harbor, the Little Harbor Bridge is also known as both the Wentworth Bridge and the Newcastle-Rye Bridge. It is one of only two highway bascule bridges surviving in New Hampshire. The bridge is undergoing a Section 106 review and its fate is unknown. If the bridge is replaced, an extremely rare bridge type in New Hampshire will be lost.

The existing bridge was built in 1941-1942, in part to support naval defenses at Portsmouth Harbor during World War II. The main span of the bridge is a single leaf fixed trunnion bascule, with a 33 foot 9 inch bascule span providing 28 foot 9 inches of clearance for navigation. The leaf superstructure consists of a girder and floorbeam system, with all beams being rolled wide flange beams. Two steel stringer approach spans are located at the southwest end of the bridge while the northeastern end has three steel stringer approach spans.

This bridge is unusual as an extremely compact and simple design of a bascule bridge. Not only is the span itself short, its supporting bascule pier is surprisingly small, and the entirety of the machinery is contained within a simple box-like enclosure under the deck. Although the counterweight is located under the deck, there is no tailpit, with the counterweight fully exposed. Typically, bascule bridges have enormous piers which double as large machinery and electrical rooms, and also (for bascules with the counterweight under the deck) have a large tailpit to contain the counterweight. It is likely that the small size of this bascule span eliminated the need for the large gearing, braking, and electrical systems typically found on larger bascule spans.

This crossing has a long history with the 1941-2 bridge being the 4th bridge at the location. An earlier bridge dated to 1874, and stone abutments from this bridge survive today. This bridge may have been the one that appears in early 20th Century photos and postcards, largely due to its proximity to the notable Wentworth Hotel, which was the subject of photographs and postcards. In these photographs,

the bridge is shown as a timber stringer (trestle-style) structure. The main span is a double-leaf bascule span. The bascule appears to have been a very simple cable-drawn bascule, similar to a medieval-style castle drawbridge.



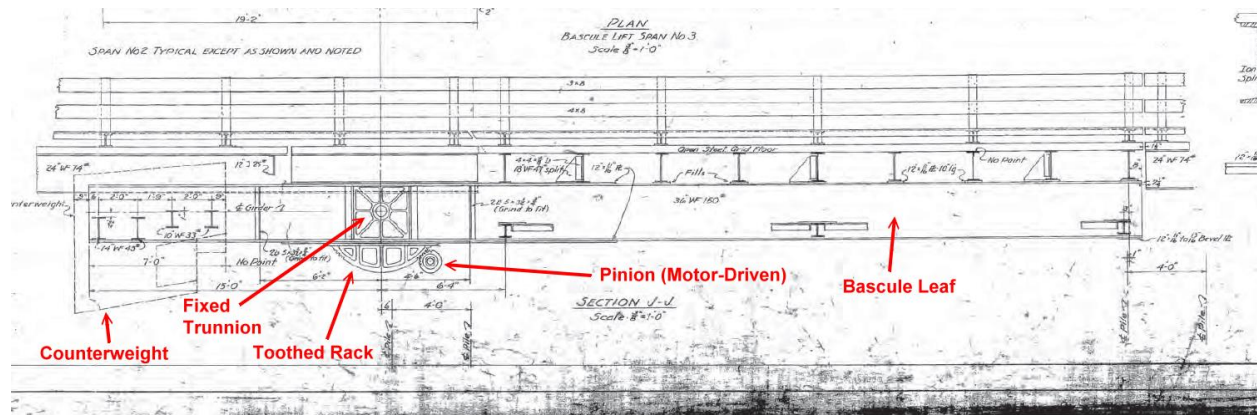
Elevation of the bridge.



View beside bridge.



View beside bridge pier showing the bascule span in raised position.



Taken from the original plans for the bridge, this drawing of the bascule span has had labels added in red showing the major parts of the bascule span.



A view of the motors for the bascule span.



A view of the mechanical enclosure which houses the motors for the bridge.



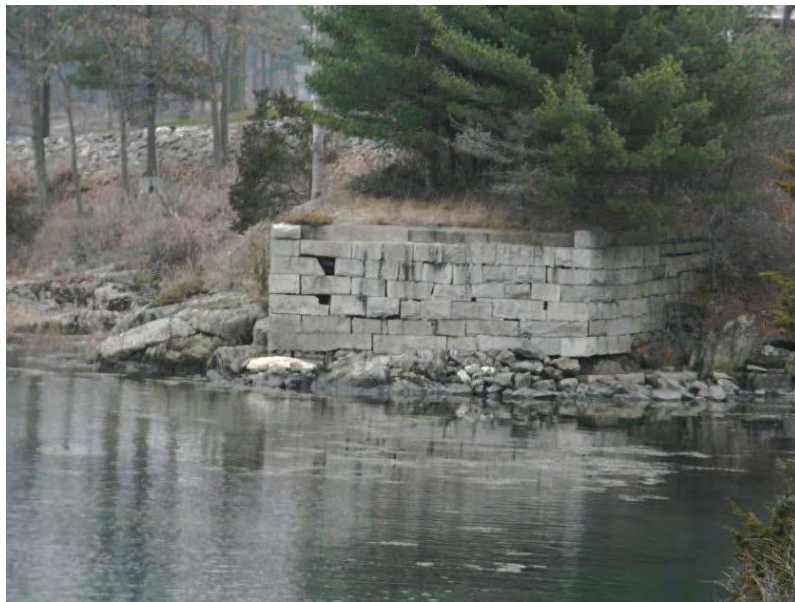
A view of the concrete counterweight for the bascule span.



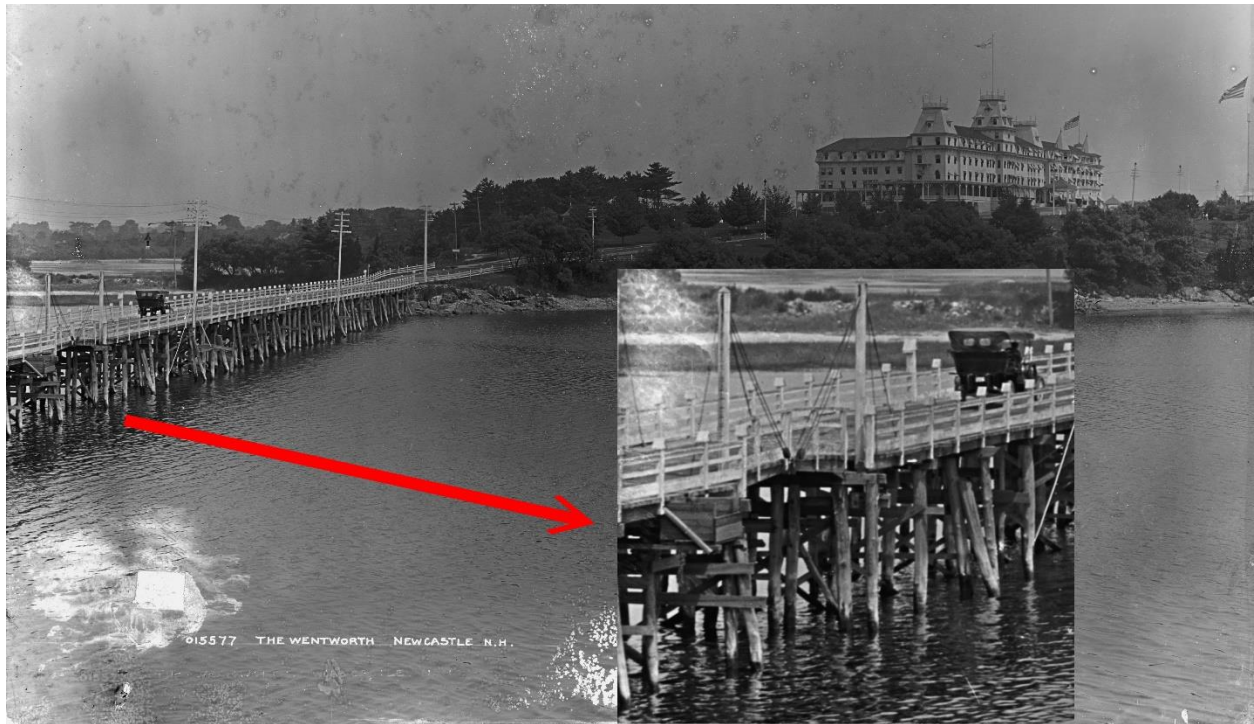
An aerial view of the bridge.



A historical photo of the bridge.



Surviving abutment from the previous bridge at this location, located next to the existing bridge.



Historical ca. 1908 photo showing the previous bridge at this location. The bascule span is visible and enlarged for clarity.



Historical ca. 1901 photo showing the previous bridge at this location. The bascule span is visible and enlarged for clarity.



Historical early 20th century photo showing the Wentworth Hotel, with the previous bridge partially visible at the far left.



Historical ca. 1901 photo showing the Wentworth Hotel, with the previous bridge visible in the distance as well.