

Huey P. Long – Span by Span Erection of Widening Trusses

John P. Brestin, PE, SE
Vice President
HNTB Corporation
Kansas City, MO, USA
jbrestin@hntb.com



John Brestin, received his masters in civil engineering from Purdue University, USA. He worked for Kirkham Michael and Kiewit before joining HNTB in 2003. His main area of expertise is in the design and construction of long span and movable bridges.

Summary: The Huey P. Long Truss Bridge, crosses the Mississippi River in New Orleans, Louisiana, USA and carries rail and vehicular traffic. One of the primary project goals was to minimize the risk of ship impact to falsework in the river. The risks associated with widening a truss that affects multiple modes of transportation gave rise to an innovative method to erect the primary trusses span by span that requires no falsework in the river. This method utilizes temporary stabilizing beams that span between the bottom chords of the proposed widening trusses and have stabilizing towers to brace the compression chord of the truss while lifting. The whole system of trusses and stabilizing frames is lifted at the four corners by strand jacks. Once the trusses are lifted 150 vertical feet, the stabilizing frames telescope inward and pull the widening trusses transversely and are then lowered slightly onto their permanent bearings.

Keywords: Long Span Bridges, Trusses, Innovative Erection, Reduced Impact to Navigation.

1. Introduction

The Huey P. Long Bridge crosses the Mississippi River in New Orleans, Louisiana. Built in 1935, it is a 561 meter span, continuous cantilever truss bridge with an adjacent 162 meter simple span through truss which carries rail and vehicular traffic. This project will widen the bridge by adding two widening trusses to the existing trusses that form an integrated system.

As this stretch of the Mississippi River is a heavily travelled shipping channel, one of the primary project goals is to minimize the risk of ship impact to falsework in the river. This gave rise to an innovative method by which the primary trusses were erected span-by-span which required no falsework in the river; a method which had never before been attempted for spans of this magnitude. During the widening, temporary stabilizing frames that span between the bottom chords of the proposed widening trusses brace the compression chord of the truss while lifting. The whole system is lifted at the four corners by strand jacks supported on the top of the widened pier trusses. Once the trusses are lifted 45 vertical meters, the stabilizing frames telescope inward to move the widening trusses transversely and then lower them slightly onto their permanent bearings. This paper outlines the erection of the widening trusses as well the rationale behind the selection of the erection method. It also describes specific elements that are used to assure that the navigation closures will be held to the minimum.

A viable span-by-span erection scheme must include a plan that minimizes the navigation outages. This is particularly important in this location as the shipping traffic into the New Orleans port is extremely heavy. Efficient execution of the lifts to stay within the 54-hour navigation closure is accomplished by paying close attention to detail while quick connections are made. Systems must have back up plans and the plan must be carefully laid out. This paper describes the connections