



APPLIED SCIENCE INTERNATIONAL SUCCESS STORY

TULE LAKE BRIDGE DEMOLITION

Corpus Christi, TX, 2008

Engineered Analysis When Direction Really Matters

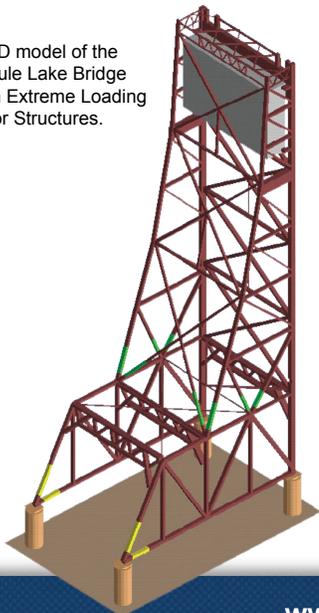
Constructed in 1959, the Tule Lake Lift Span Bridge crossed the main shipping channel in The Port of Corpus Christi, Texas. Port engineers blasted the two lift bridge support towers in April 2008 after the bridge's span was removed a month earlier. The 350 by 48 foot span was taken away by a barge before it was cut up into 3 foot sections to be sold to a smelter. The span weighed in at over 1700 tons.



Tule Lake Bridge Demolition

The Tule Lake Lift Bridge was originally built to service railcars but over its lifespan had suffered structural deterioration along its lifting system. Cracks in the bridge's shafts and sheaves, part of the pulley system, had forced the port to ban car traffic and allow only rail traffic since September 2006. Prior to the demolition, structural cracking along the bridge's lifting system made the bridge hazardous to port and railroad employees and daily business.

3D model of the Tule Lake Bridge in Extreme Loading for Structures.

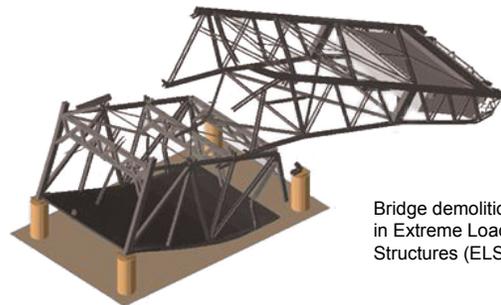


The towers were demolished by D.H. Griffin of Texas Inc. using explosive demolition methods. Each tower stood just under 200 feet in height and contained a 900 ton concrete and steel counterweight. The total weight of each tower was approximately 1600 tons.

A critical requirement of the project was to ensure that

the demolition of the towers would not cause a hazard to the navigation of vessels using the shipping channel. Applied Science International modeled several *what if* scenarios for Discovery Channel producers, in addition to the actual demolition scenario chosen by D.H. Griffin.

ASI used the original construction plans to build the 3D model in Extreme Loading® for Structures (ELS), taking all of the structural elements into consideration: columns, girders, bracing, and lattice. The engineered analysis showed several of the possible *bad* scenarios where the towers or parts of them could potentially fall into the shipping channel and obstruct it. Additionally, the analysis of the implemented scenario was a perfect match to the real-life case.



Bridge demolition analysis in Extreme Loading for Structures (ELS).

The movie about the demolition of the bridge, including the analysis created by ASI, was first aired on Discovery Channel in January 2009. The analysis results clearly demonstrate the ability of ELS to show the true-to-life results of actual failure scenarios as well as the prediction of impact forces and final location of structural components on the ground.



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