

STUDY OF CONSTRUCTION AND DESIGN OF CABLE SUSPENSION BRIDGE

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ABSTRACT

The most common use of bridge is to transport vehicle. the material used in a bridge change over time and the evolution of technology. the static analysis of bridge is a really part on the construction, engineer have to be certain for the safety and stability of structure in the possible way. Nowadays, the usual material is used in a bridge are steel and concrete. The material used in bridge change over time and the evolution of technology..

Keyword : - Analysis, , Seismic design,, Design criteria,, cables, Linear analysis.

1. INTRODUCTION

. The iron suspension bridge, assumed to have originated in the Orient, appeared in Europe in the 16th century and was developed in the 18th century. Although wrought iron chain was used as the main cables in the middle of the 18th century, a rapid expansion of the center span length took place in the latter half of the 19th century triggered by the invention of steel. Today, the suspension bridge is most suitable type for very long-span bridge and actually represents 20 or more of all the longest span bridges in the world. Finley in the United States in 1801, which had a center span of 21.3 m. The bridge's distinguishing feature was the adoption of a truss stiffening girder which gave rigidity to the bridge.

2. DESIGN ANALYSIS

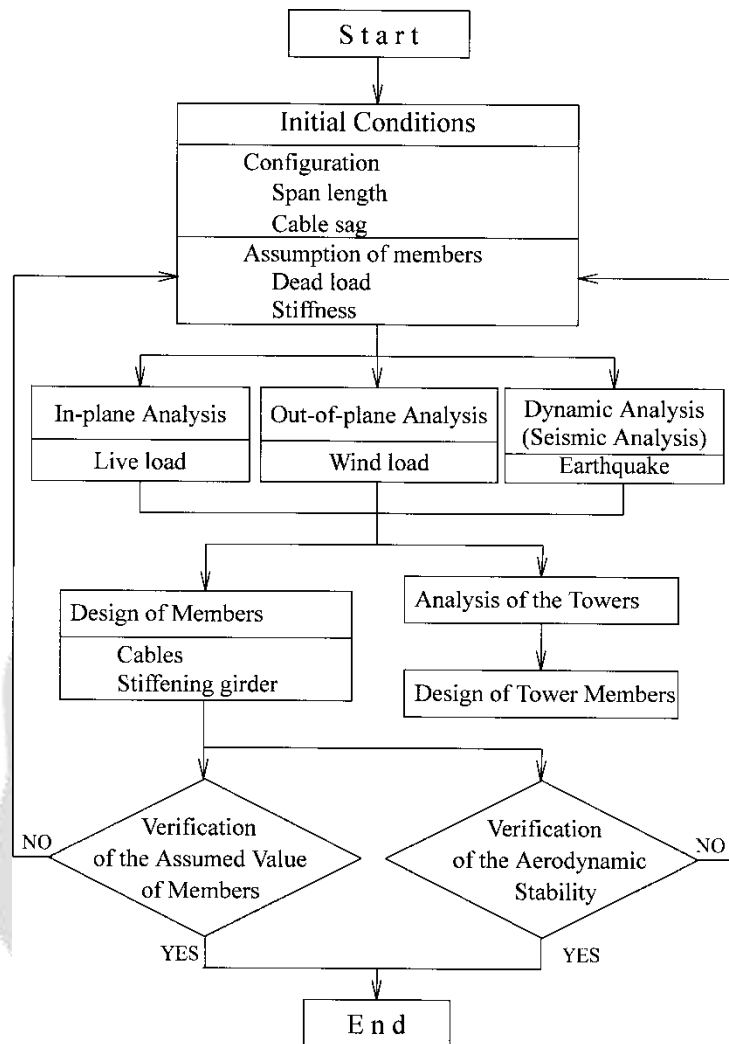
A general design procedure for a suspension bridge superstructure is shown in Figure.1 Most rational structure for a particular site is selected from the result of preliminary design over various alternatives. Then final detailed design proceeds. Other design loads include effects due to errors in fabrication and erection of members, temperature change, and possible movement of the supports. Design loads for a suspension bridge must take into consideration the natural conditions of the construction site, the importance of a bridge, its span length, and its function (vehicular or railway traffic). It is important in the design of suspension bridges to determine the dead load accurately because the dead load typically dominates the forces on the main components of the bridge. Securing structural safety against strong winds and earthquakes is also an important issue for long-span suspension bridges.

Design Load

1. In the case of wind, consideration of the vibrational and aerodynamic characteristics is extremely important.
2. In the case of earthquake, assumption of earthquake magnitude and evaluation of energy content are crucial for bridges in regions prone to large-scale events.

Analysis Procedure

General procedure used for the design of a modern suspension bridge is as follows FIGURE.

**FIGURE**

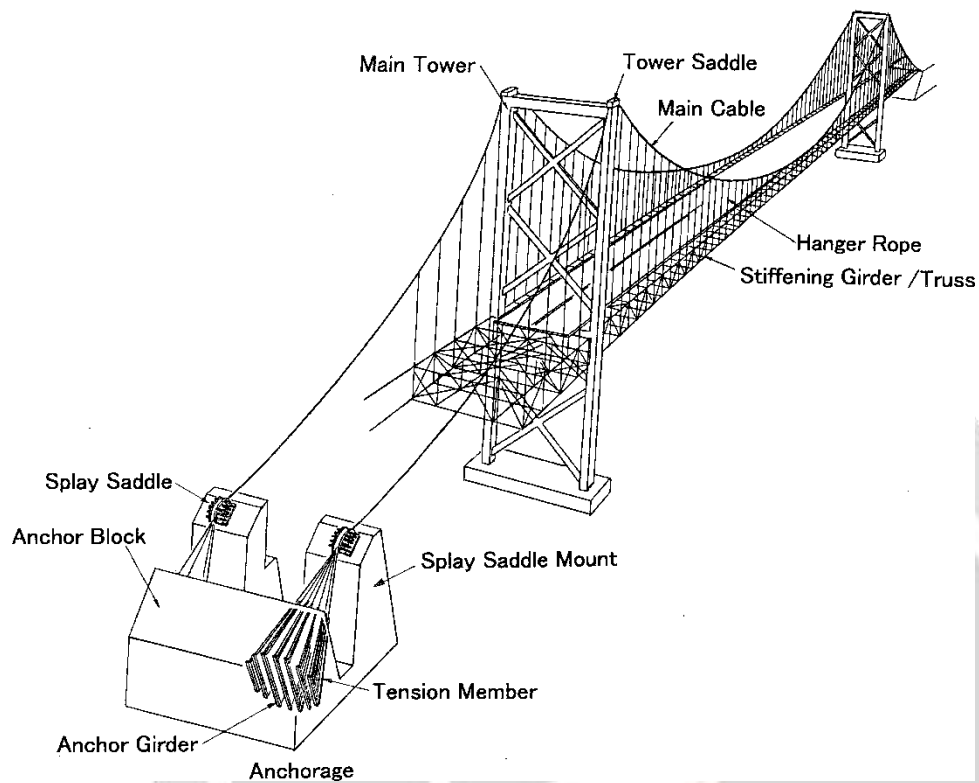


FIGURE.1

4. CONCLUSIONS

These are the pinnacles in modern days bridge technology. Longer span up to 2000ft to 7000ft is possible. These bridges are mainly meant for light and heavy roadways rather than railways. The main forces in a suspension bridge are tension in the main cables and compression in the pillars.

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