

Alternative Proposal for Suspension Bridge Cable

Hajime HOSOKAWA

Structural Engineer
H&K Engineering Ltd.
Tokyo, Japan
hosokawa_hajime@yahoo.co.jp

Hajime Hosokawa, born 1949, received his civil engineering degree from the Nagoya Univ.



Paul H. MUELLER

Construction Consultant
P.H. Mueller International Inc.
Fort Lauderdale, FL, USA
paulhmueller@bellsouth.net



Paul H. Mueller, born 1928, received engineering training in Germany, gained bridge construction know-how while working with Phoenix Bridge Co. and American Bridge Division (US Steel) in the USA

Summary

Historically the construction of cables for suspension bridges has most of the time used the parallel wire system, either by engaging the Aerial Spinning (AS) method or the Parallel Wire Strand (PWS) method. Either method of installation requires high technology knowhow, engineered machinery and well trained personal. For this reason only a limited number of companies are able to perform that type of construction. Following we will discuss and propose an alternative cable system which will be easier to install. Our proposal is the “Long-Lay” Strand, which has been widely used on Cable Stay bridges. The application of the proposed system would achieve a better quality as well as easier construction, compared to the conventional parallel wire system or the conventional wire rope system.

Keywords: *suspension bridge; cable; cable saddle; cable compaction; strand*

1. Introduction

We have been involved in many suspension bridge construction projects in the world. There have been basically two existing cable systems, each of which has also the variations as shown in *Fig. 1.1*.

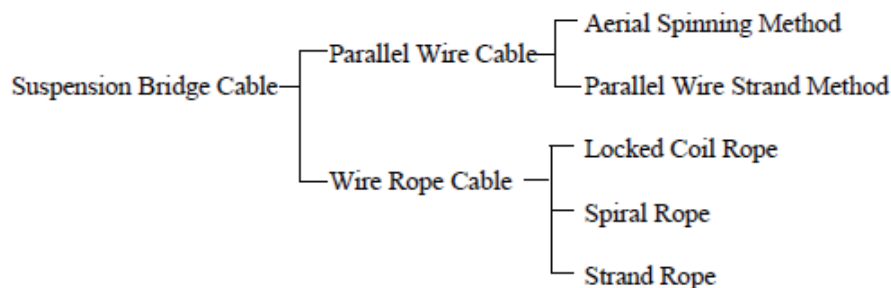


Fig. 1.1 Existing Cable Systems for Suspension Bridge

Fig. 1.2 shows the historical transition for those cable systems. However as various problems have been discovered throughout the history of cable construction, we do have to review these systems for future suspension bridge cable construction, despite the fact that these systems have been in use over a long period of time since their development. Based on these reviews, we herewith propose the alternative proposal for the suspension bridge cable.