

Yi Sun-sin Bridge: Several Unique Features on the Cable Erection Procedure

Jonghoon MOON
Manager
Daelim Industrial Co.
Seoul, Korea
triton@daelim.co.kr

Jonghoon Moon, born 1974,
received his Ph.D. from Seoul
National University.

Seungwook JEONG
Senior Manager
Daelim Industrial Co.
Seoul, Korea
swjeong@daelim.co.kr

Seungwook Jeong, born 1966,
received his M.S. from Hanyang
University.

Hyunsok CHOI
Assistant Manager
Daelim Industrial Co.
Seoul, Korea
chhhs@daelim.co.kr

Hyunsok Choi, born 1982,
received his M.S. from Seoul
National University.

Summary

Although four suspension bridges have already been built in Korea, constructing the Yi Sun-sin Bridge is a great challenge not only because its main span length of 1545m is almost three times as long as the previous longest suspension bridge in Korea, but also because it is the first suspension bridge for which Korean engineers solely carried out all of the construction tasks, creating their own equipment and devices for the cable erection process as well. In this paper, several unique features pertaining to the cable erection procedures are introduced instead of the details of ordinary cable erection procedures, which are not very different from those of other long-span suspension bridges. An improved spinning wheel, a wire supply method for the spinning of extra- strands, and a band-hanger installation method are described.

Keywords: suspension bridge; cable erection; spinning wheel; wire supply; band-hanger installation.

1. Introduction

The Yi Sun-sin Bridge is a suspension bridge under construction which will connect the Yeosu National Industrial Complex to the Gwangyang International Port. The bridge was named after the world-famous admiral Yi Sun-sin, who defeated the Japanese navy during the Imjin War (1592-1598). The metric length of the main span is identical to his birth year, 1545.

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2. Basic information

The cable of the Yi Sun-sin Bridge was installed by the air-spinning (AS) method. The spinning wheel used with this method can pull four loops of wires. The total weight of the two cables is 12800 tons and each cable has 12800 wires such that a round-trip of four wires weighs about 4 tons. One strand composed of 400 wires can be made by 50 trips of the spinning wheel.