



Fire on the New Little Belt Bridge

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Summary

One of the main cables on The New Little Belt Bridge was in the summer 2013 exposed by direct fire from a burning truck parked right beside its lowest point. The fire was fully defeated within 30 minutes but the fire exposure had lasted for around 45 minutes. The main cable capacity was luckily not violated by the heating but one suspender had to be replaced. Many other repair works, on bridge elements with minor or no impact on the structural integrity of the bridge, was carried out in the coming weeks and it took in total 4 month before the traffic on the bridge was fully restored, except for special heavy transports. The owner of the bridge, The Danish Road Directorate, has based on the experiences from the fire, started up a revision of the existing risk analyses study in order to support a decision on possible future actions in order to reduce the risk for fire related damages. For the responsible engineers it is recommended to be prepared with information and knowledge that makes it possible to carry out immediate assessment of the remaining structural integrity of the bridge.

Keywords: Suspension bridge; main cables; suspenders; cable steel; box girder; fire exposure; stress measurements; temperature indicators.

1. Introduction

On 23 July 2013, very early in the morning, an east going truck loaded with paper and electronic equipment caught into fire, when passing the New Little Belt Bridge in Denmark, a 2x3 lane suspension bridge with emergency lanes.



The truck driver parked the heavily burning truck in the emergency lane right beside the lowest point of the main cable and then he called the fire brigade.

The alarm was received at 02.08 and the fire brigade arrived at the bridge 02.16. The fire was defeated at 02.45.

The east going traffic in the side of the bridge with the burning truck was stopped immediately at arrival of the fire brigade and the bridge was totally closed for traffic at 02.50.

The responsible engineers for the bridge had been informed about the fire and could at arrival start the inspection of the fire damaged parts.

Fig. 1: The burning truck right at the main cable