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Canal bridge Magdeburg – Studies, draft, construction and enterprise

Summary

The transfer of the canal *Mittellandkanal* across the river *Elbe* was the core of project 17 in the course of the transport project *Deutsche Einheit* (Reunification).
The structure consists of two parts: the foreshore bridge with two eight-field continuous beams and the main bridge with one three-field continuous beam. The total length is 918 m with a maximum span of 106 m and a total weight of 24 900 t of steel. The shipping trough is 34 m wide and the overall height of the superstructure is 8.15 m.
The solution of a waterway junction had to compete with the idea of a barrage in the river Elbe but was selected because of economical reasons and a minor intervention in the area of unspoiled nature.

Keywords: waterway, canal, canal bridge; bridge; flood protection

1. Preliminary investigations and draft

1.1 Initial situation

Ships coming from the west had to be lifted down in *Rothensee* from the canal towards the port of *Magdeburg*, had to go downstream the *Elbe* to *Niegripp* and turn again into the *Elbe-Havel*-canal. The unloading of the ships depended strongly on the respective water level of the *Elbe*.

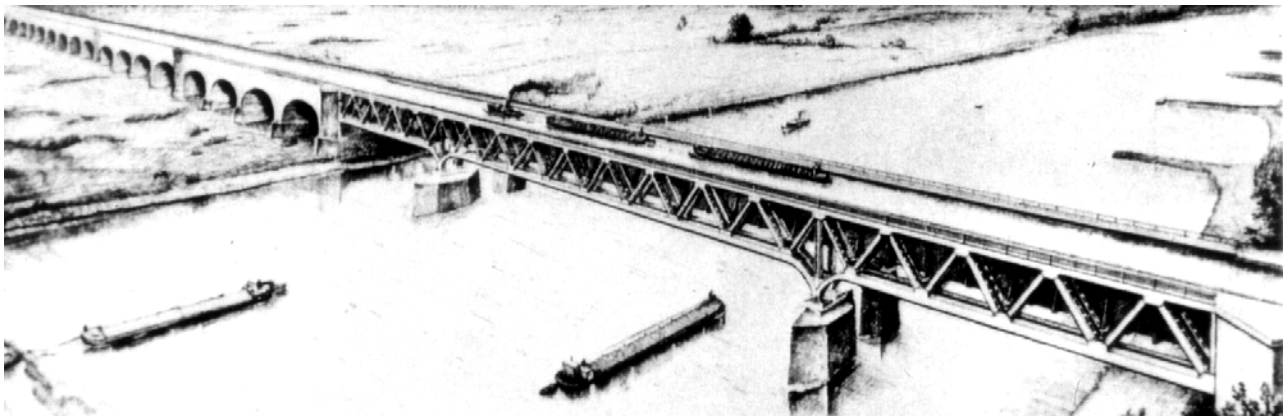

Fig. 1 *Perspective projection, planning of 1935*

First plans for the transfer of the canal across the *Elbe* exist already since the 1930s (fig. 1).
The crossing concept consisted of the main bridge across the *Elbe* with three spans, whose large central opening should have 106.0 m bearing distance. The foreshore bridge should consist of 3-pinned arched girders with a length of 20.0 - 34.0 m
When the construction work was stopped in 1942 the two abutments, all column foundations and 1/5 of the reinforced concrete superstructure for the foreshore bridge were finished.

1.2 Crossing possibilities

Variants for the traverse were an open bridge or a barrage solution.
For the barrage solution the following construction works had to be considered:

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