

BALANCED LIFT METHOD

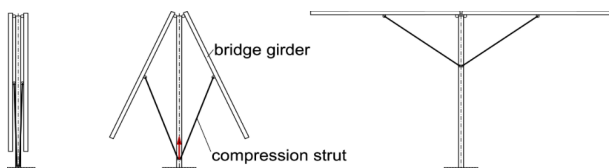


▲ Large scale test of a 50 m long bridge

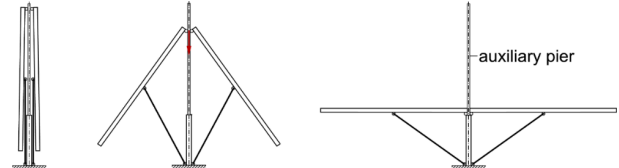
This new bridge construction method consists of assembling the key elements of the bridge girders in a vertical position and then rotating the bridge girders into the final horizontal position. The span of the bridge girders is reduced by the compression struts which enables considerable savings in construction materials. The proposed method will be especially advantageous for bridges with high piers and span lengths between 50 m and 250 m. The usage of temporary piers (see photograph) enables the expedient application of the balanced lift method for bridges with piers with low piers.

CONSTRUCTION METHODS

Bridges with high piers



Bridges with low piers



ADVANTAGES

- Savings in construction materials of approx. 20% to 30% in comparison to incremental launching or the balanced cantilever method
- Fast vertical assembly of bridge girders and compression struts
- Faster construction of the bridge girders, shorter construction time and reduced costs
- Established technologies are available for the lifting or lowering process and the hinges
- The method is also applicable for temporary bridges and lift bridges

PATENT STATUS

- Patents granted in DE, US, CA, AU, RU, JP, CN
- Patents pending in EP, NO, IN

COOPERATION POSSIBILITIES

- Project based cooperation
- License agreements

KONTAKT

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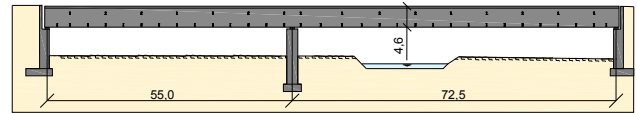
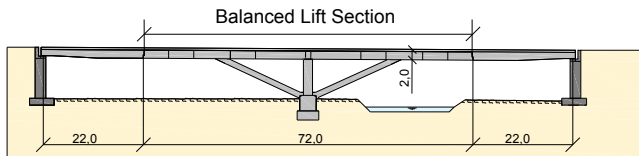
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BALANCED LIFT METHOD

CONVENTIONAL CONSTRUCTION METHODS

BRIDGES WITH TWO SPANS AND LOW PIERS

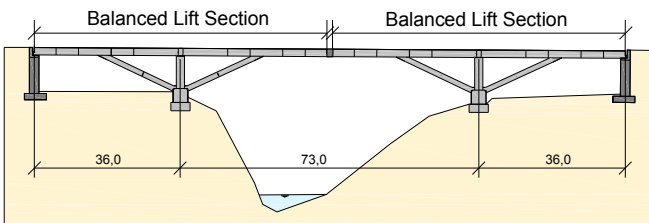
Span l = 50 – 80 m



An example of bridges with two spans and low piers are the S7 bridges spanning the Lafnitz and Lahnbach Rivers in Austria. The erection of the bridges by balanced lift method has been commissioned by ASFINAG. The bridges will be built in an environmentally sensitive area, therefore a construction using conventional formwork is not permitted. The alternative design using the balanced lift method proved to be 30 % less expensive than the original design with the launching of steel bridge girders. A complete detailed design has been performed by the TU Wien in cooperation with Schimetta Consult GmbH.

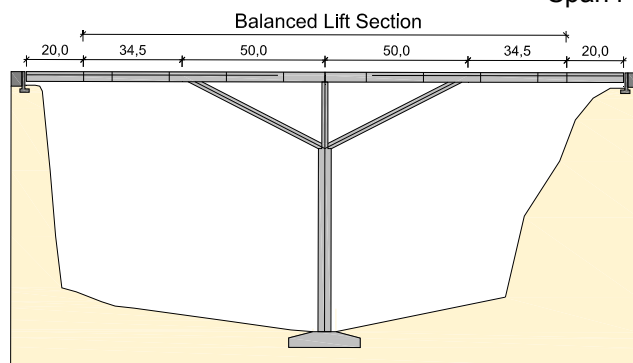
BRIDGES WITH THREE SPANS AND LOW PIERS

Main span l = 50 – 100 m



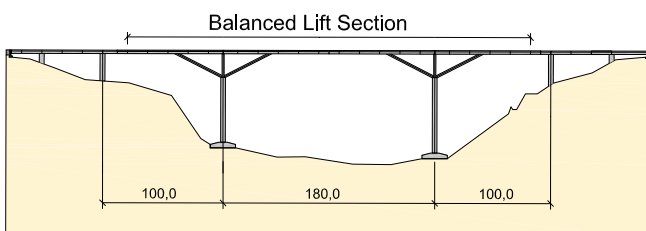
BRIDGES WITH TWO SPANS AND HIGH PIERS

Span l = 50 – 125 m



MULTISPAN BRIDGES WITH HIGH PIERS

Main span l = 100 – 250 m



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