



# Highway Bridge Superstructure Engineering: LRFD Approaches to Design and Analysis

By Narendra Taly



**Highway Bridge Superstructure Engineering: LRFD Approaches to Design and Analysis** By Narendra Taly

*A How-To Guide for Bridge Engineers and Designers*

**Highway Bridge Superstructure Engineering: LRFD Approaches to Design and Analysis** provides a detailed discussion of traditional structural design perspectives, and serves as a state-of-the-art resource on the latest design and analysis of highway bridge superstructures. This book is applicable to highway bridges of all construction and material types, and is based on the load and resistance factor design (LRFD) philosophy. It discusses the theory of probability (with an explanation leading to the calibration process and reliability), and includes fully solved design examples of steel, reinforced and prestressed concrete bridge superstructures. It also contains step-by-step calculations for determining the distribution factors for several different types of bridge superstructures (which form the basis of load and resistance design specifications) and can be found in the *AASHTO LRFD Bridge Design Specifications*.

**Fully Realize the Basis and Significance of LRFD Specifications**

**Divided into six chapters, this instructive text:**

- Introduces bridge engineering as a discipline of structural design
- Describes numerous types of highway bridge superstructures systems
- Presents a detailed discussion of various types of loads that act on bridge superstructures and substructures
- Discusses the methods of analyses of highway bridge superstructures
- Includes a detailed discussion of reinforced and prestressed concrete bridges, and slab-steel girder bridges

Highway Bridge Superstructure Engineering: LRFD Approaches to Design and

Analysis can be used for teaching highway bridge design courses to undergraduate- and graduate-level classes, and as an excellent resource for practicing engineers.

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**Highway Bridge Superstructure Engineering: LRFD Approaches to Design and Analysis** By Narendra Taly **Bibliography**

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#### Review

"Professor Taly's well-organized, well-balanced and thorough book is a welcome and timely addition to the technical literature of bridge engineering. The book distinguishes itself by its focused approach to practical highway bridge superstructure design. In addition to the thorough outline of specification development, load application, superstructure analysis and design, the book includes extensive worked examples of practical concrete and steel superstructures."

?John F. Unsworth, P.Eng., Chief Bridge Engineer, Canadian Pacific

"A well-presented and logically organized book of state-of-the-art knowledge of AASHTO LRFD-based highway superstructure design... Generally speaking, '**Bridge Engineering**' encompasses many fields, such as planning, design, construction and maintenance..."

?Lian Duan, Ph.D., P.E., Senior Bridge Engineer and Steel Committee Chair, California Department of Transportation, Sacramento, California, USA

#### About the Author

**Narendra Taly**, Ph.D, P.E., F.ASCE, is a professor (emeritus) of civil engineering at California State University, Los Angeles. He has more than 55 years of experience in the fields of civil and structural engineering design. This is his seventh book in the field of structural engineering.

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##### Tony Edwin:

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