

**A TEXT-BOOK ON ROOFS
AND BRIDGES, PART II.
GRAPHIC STATICS**

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A Text-Book on Roofs and Bridges, Part II. Graphic Statics by Mansfield Merriman & Henry S. Jacoby

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MANSFIELD MERRIMAN & HENRY S. JACOBY

**A TEXT-BOOK ON ROOFS
AND BRIDGES, PART II.
GRAPHIC STATICS**

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A TEXT-BOOK
ON
ROOFS AND BRIDGES.

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PART II.
GRAPHIC STATICS.

BY
MANSFIELD MERRIMAN,
PROFESSOR OF CIVIL ENGINEERING IN LEHIGH UNIVERSITY,
AND
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PREFACE.

The course of instruction in roofs and bridges given to students of civil engineering in Lehigh University consists of four parts; first, the computation of stresses in roof trusses and in all the common styles of simple bridge trusses; second, the analysis of stresses by graphic methods; third, the design of a bridge, which includes the proportioning of details and the preparation of working drawings; and fourth, the discussion of cantilever, suspension, continuous and arched bridges. In the following pages the second part of this course is presented, together with additional matter so as to form a tolerably complete treatise on Graphic Statics as applied to the discussion of common roofs and bridges.

In an elementary text-book of this kind it is not expected that much will be found that is new except method of arrangement and presentation. Attention is called, however, to the abbreviated processes employed in some of the diagrams for wind stresses, to the determination of stresses due to initial tension, and to portions of the analysis of maximum moments and shears under locomotive wheel loads as possessing points of novelty and practical value. These new features are due to the experienced Instructor whose name appears on the title page in connection with my own; the larger portion of the text has also been written by him, and the cuts and plates are his work.

The universal approbation expressed concerning the utility of the blank leaves in Part I leads me to insert them in this volume also. On these pages students may record in permanent form the numerical computations which are always requisite preparatory to graphical analysis, and also make free hand sketches of some of the stress diagrams required in the problems. But I regard it as essential that a few well chosen cases shall be thoroughly and completely worked out as indicated on the plates, which show the manner in which for many years I have required students to finish drawings in Graphic Statics. Here, as in Part I, the minimum as well as the maximum stresses are determined for most of the examples, and all varieties of loading are treated so that students may be able to work in accordance with all kinds of specifications.

MANSFIELD MERRIMAN.

LEHIGH UNIVERSITY, BETHLEHEM, PA.,

December 18, 1889.

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