

# ENGINEERS' LIBRARY

Any book reviewed in these columns may be obtained through the Book Department of  
The Canadian Engineer.

## CONTENTS.

### Book Reviews:

Graphics and Structural Design .....	785
Overhead Electric Power Transmission .....	785
Switchgear and the Control of Electric Light and Power Circuits .....	786
General Metallurgy .....	786
Publications Received .....	787
Catalogues Received .....	787

## BOOK REVIEWS.

**GRAPHICS AND STRUCTURAL DESIGN.**—By H. D. Hess, M.E., Professor of Machine Design, Sibley College, Cornell University. New York: Publishers, John Wiley & Sons, Inc., London; Canadian selling agents, Renouf Publishing Company, Montreal; pp. viii. + 426; 361 text figures; cloth; 6 x 9 inches. Price, \$3.00 net.

Reviewed by C. R. Young, M. Can. Soc. C.E.,  
Assistant Professor of Structural Engineering, University of Toronto.

In spite of the frequent condemnation of general treatises on structural engineering, there exists a considerable demand for such works. Many engineers, whose activities lie mainly outside the structural field, as well as those just entering it, feel the need of a simple, elementary, immediately-usable book on the design of a variety of ordinary, everyday structures. Numerous attempts to meet this demand have been made, and it must be admitted that they have not always been attended with success. Inadequate and erroneous treatment of the subjects discussed, with the complete neglect of others equally important, has so frequently characterized such efforts that the chances of the reader deriving any real assistance from a book of this kind purchased at random are small, indeed.

The present volume is an unusually successful venture in this difficult field. The author's special object is the discussion of useful problems "on the border line between Civil and Mechanical Engineering," and, while the book is intended for student use, it cannot fail to be of very real value to any one whose work is not too highly specialized.

Of necessity, many subjects must be treated in the borderland which Professor Hess indicates as the field of his book. The subject is introduced by the presentation in the first chapter of general data on materials, common formulas and properties of sections. Chapters 2 to 5 are devoted to graphical and analytical methods of analysis of structures, including the method of influences diagrams. Chapter 6 concerns riveted connections. Columns are given an effective short treatment in Chapter 7. A variety of steel structures are then given consideration, covering conveyer girders, trussed and suspended pipes, transmission line towers, mill

buildings, a railway girder span, crane frames and bridges of travelling cranes. Unfortunately, no attempt is made at stress analysis in the case of transmission line towers, although a few pages on this subject would have supplied a very real present need in engineering literature. The author's reason for designing a railway plate girder was that it made a more comprehensive and better problem than a runway girder, and one who could design the former was well prepared for the simpler structure. A particularly useful portion of the book is the 28 pages devoted to the detailed design of the structural parts of jib and travelling cranes. In reinforced concrete, slabs, beams and columns are covered in a concise manner. Foundations, including those for machines, form the subject of Chapter 15. A very valuable chapter is that on chimneys, comprising the design of these structures in brick, steel and reinforced concrete. Chapter 17 contains a discussion of retaining walls, with a detailed design of a typical wall, while Chapter 18 is given to the consideration of the allied subject of bins. Floors, walls and roofs occupy Chapters 20 and 21. One of the most valuable features of the book is the inclusion of authoritative specifications covering materials, design and workmanship in both steel and reinforced concrete structures, and such clauses as are necessary to cover the timber and masonry work entering into ordinary structures. The volume is concluded with 195 useful problems.

One does not find it difficult to commend the book. Indeed, every mechanical engineer who has to do with structural problems at all, and every civil engineer who must at times concern himself with the structural features of the mechanical engineer's work should possess a copy.

**Overhead Electric Power Transmission.**—By Alfred Still. Published by McGraw-Hill Book Company, New York. 306 pages; illustrated; cloth; 6 x 9 inches. Price, \$3.00 net.

Reviewed by Prof. H. W. Price,  
Department of Electrical Engineering, University of Toronto.

Books have been published which deal copiously with problems of engineers in charge of construction of lines for high and low voltage and of moderate and large capacity. Other books treat the complicated problems of high-voltage, long-distance transmission. This book by Mr. Alfred Still is aimed directly at a composite field, of special value and convenience to engineers having under consideration the design of a transmission system for estimated service.

Three outstanding features of this book are these: (1) It is evidently written by a man who has been "through the mill," and has known the inconvenience of searching here and there for specific information on methods of arriving at the best choice of details of a transmission system for given service under specified operating and financial limitations. The book resembles the notes of such a man, who took time to systematically arrange and elaborate the problems he considered, and examples of his methods of solution.

(2) The information contained is thoroughly cross-indexed for convenience of the reader. An unusual supplementary index of formulas, data, charts, sample calculations,