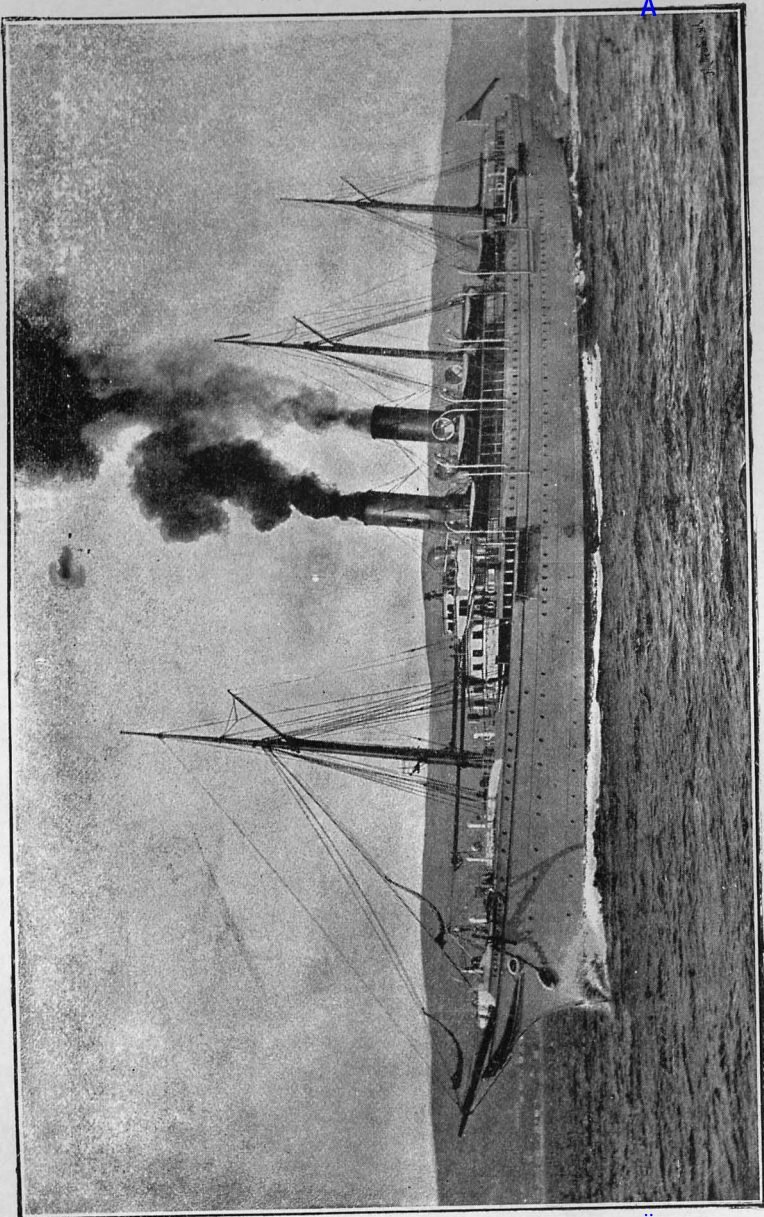


STEAMSHIPS AND THEIR MACHINERY  
FROM FIRST TO LAST



THE CANADIAN-PACIFIC COMPANY'S R.M.S. "EMPRESS OF INDIA."

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# STEAMSHIPS AND THEIR MACHINERY FROM FIRST TO LAST

BY

J. W. C. HALDANE

CIVIL AND MECHANICAL AND CONSULTING ENGINEER

*WITH MANY PLATES AND OTHER ILLUSTRATIONS*

LONDON

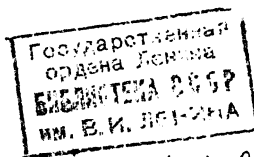
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## PREFACE.

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*The very high appreciation of my book on "Civil and Mechanical Engineering" by readers of all classes has encouraged me to prepare another upon "Steamships and their Machinery, from first to last." This treatise is based upon the Author's practice, since 1852, in the Works of Messrs. Denny, Neilson & Co., and Tod & Macgregor, of the Clyde, and Laird Brothers, of Birkenhead, etc.; also as a Consulting Engineer since 1873. Its object has been to describe in a simple, unconventional, and readable manner, the latest phases of Marine Engineering and its surroundings in all departments. Its contents, therefore, include chapters upon Works and their Machinery—Shipbuilding—Design and Construction of Engines and Boilers: also Auxiliaries for hoisting, steering, refrigerating, electric lighting, etc. Chapter XXIX contains a sketch of life on board an ocean racer while "Breaking the Record," and other Notes; and Chapter XXX a few concluding remarks of a general character.*

*With the object of gaining the best and latest information at all points, and especially upon the great establishments to which special chapters have been devoted, I had the privilege of being allowed to critically survey these and other Works. Every opportunity was kindly placed at my disposal for this purpose by various Firms, and, in addition to this, a large amount of valuable matter concerning the latest phases of advanced practice was generously supplied by engineers, etc., throughout the country, to utilise in my own way with a free hand.*