

**TREATISE ON THE
WORKING AND
MANAGEMENT OF STEAM
BOILERS AND ENGINES**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649347704

Treatise on the working and management of steam boilers and engines by Frederick Colyer

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

FREDERICK COLYER

**TREATISE ON THE
WORKING AND
MANAGEMENT OF STEAM
BOILERS AND ENGINES**

PREFACE.

I HAVE been induced to write this work for the purpose of providing a small treatise giving an outline of the principal kinds of engines and boilers in general use, to indicate the most suitable forms for particular purposes, and to give simple rules as to their working and management. I do not think that any work has yet been written that is of much service to the proprietors and users of steam engines and boilers, for whom this work is specially intended. The design of the book is to convey leading instructions and simple rules as to the working and management of steam boilers and engines, in a form easy to understand; it is hoped that the work may be acceptable to those for whom it is principally intended, as well as for any one who takes an interest in such matters.

The large number of engines and boilers in use in this country, and the small knowledge possessed by

many proprietors of such apparatus as to the proper and economical way to work them, will be, I hope, a sufficient apology for trying to supply a want many have expressed for a book of this kind.

With all its faults and shortcomings, I leave it to the lenient consideration of my readers.

FREDERICK COLYER,

M. INST. C.E., M. INST. M.E.,
CIVIL ENGINEER.

18, GREAT GEORGE STREET, WESTMINSTER,

November 1884.

CONTENTS.



CHAPTER I.

INTRODUCTION	1
----------------------	---

CHAPTER II.

BOILERS	4
-----------------	---

CHAPTER III.

BRICKWORK SETTINGS FOR BOILERS	18
--	----

CHAPTER IV.

BOILER HOUSES AND WORKING OF BOILERS	23
--	----

CHAPTER V.

FITTINGS OF BOILERS AND METHOD OF WORKING	36
---	----

CHAPTER VI.

ENGINES AND RULES FOR WORKING	44
---------------------------------------	----

CHAPTER VII.

FOUNDATIONS OF ENGINES AND ENGINE HOUSES	66
--	----

ON THE
WORKING AND MANAGEMENT
OF
STEAM BOILERS AND ENGINES.

CHAPTER I.

INTRODUCTION.

THE proper and economical working and management of steam boilers and engines is a subject worthy of careful consideration; the various mills and manufactories in the country usually derive the motive power for their machines from this apparatus. The object of this work is to give an idea to managers and proprietors of such places, as to the most suitable kind of engine and boiler for their purposes; and to supply them with suggestions as to the best system of management. The economical working of boilers and engines is a matter of great importance, especially in large

concerns; the subject does not hitherto appear to have had the attention it deserves. The selection of the best kind of engine suitable for a mill or manufactory, is often a matter of some difficulty, to meet this want a general outline of each class in general use is given, to help the purchaser to form a right judgment in the matter. It is not intended to enter into much detail as to the construction of boilers and engines, it being assumed that most people who read the book are fairly conversant with such matters. In many factories a large loss annually takes place from the careless management of the motive power; it too often happens that the working is left in the hands of ignorant men, with the result of great waste in fuel, and too often in the occurrence of serious accidents. The author ventures to recommend all users and proprietors of steam boilers and engines, to make themselves acquainted with the construction and working of the machines by which motive power is given to their mills, and also that they should use more care in the selection of men to whom is intrusted apparatus so fraught with danger and possible heavy loss, when not skilfully managed; added to which a careless stoker especially will cause heavy loss in the extra quantity of coals used beyond

the amount really required when the boilers are properly worked. The first subject treated will be "Boilers, their Fittings and Appliances," with proposals for their proper working and economical management. An outline of the different classes of boilers is given, also an idea of the most suitable kinds adapted for particular purposes. Engines are then treated, a short description of the forms or classes generally used is given, and rules for working, speed, and consumption of steam, &c. Boiler and engine house construction is also treated, together with boiler (brickwork) settings, and the foundations for engines. Technicalities have been avoided as much as possible, in order to make the work more useful to those who are not engineers by training, and to express, in plain language, rules and ideas for their guidance. The subject of engines and boilers is too large to treat in detail here; any one wanting any further information is referred to the author's book upon 'Steam Engines and Boilers' (E. & F. N. Spon, London), in which will be found details of construction of all descriptions, both for land, locomotive, and marine purposes.