

**MANUAL OF RAILWAY
ENGINEERING IN
IRELAND FOR THE
FIELD AND THE OFFICE**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649642977

Manual of Railway Engineering in Ireland for the Field and the Office by Charles P. Cotton

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

CHARLES P. COTTON

**MANUAL OF RAILWAY
ENGINEERING IN
IRELAND FOR THE
FIELD AND THE OFFICE**

MANUAL
OF
RAILWAY ENGINEERING

FOR

The Field and the Office.

SECOND EDITION REVISED AND ENLARGED.

BY

CHARLES P. COTTON,

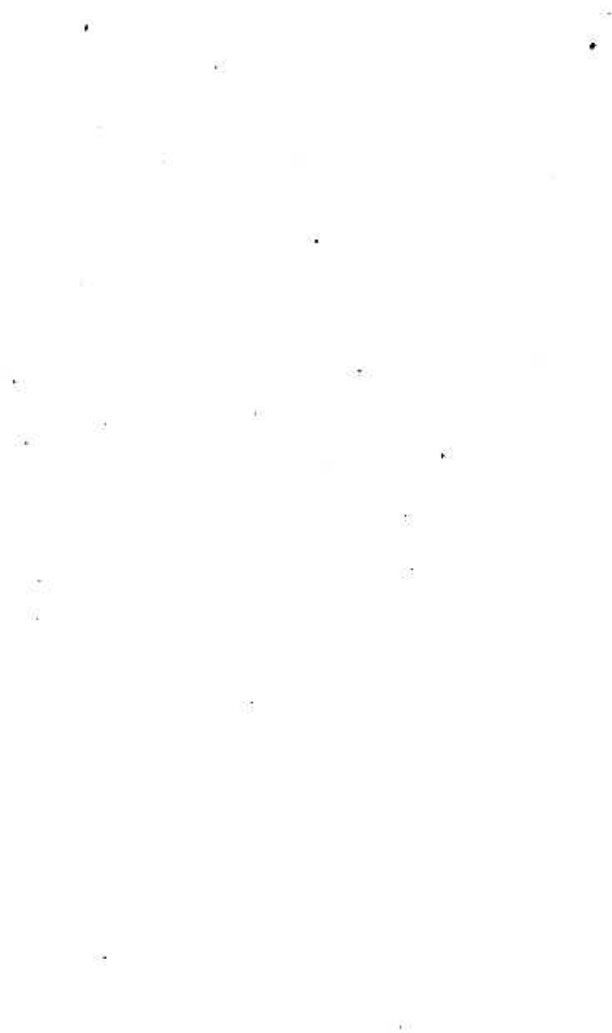
M. INST. C.E.

DUBLIN: WILLIAM MCGEE, 18 NASSAU STREET.

LONDON: E. & F. N. SPON, 48 CHARING CROSS.

1874.

181 . 20



THE object of the Author in writing this Manual was, first, to assist pupils on joining an office to understand what was going on around them; and, secondly, that it should be a book of reference in the various routine steps up to the preparation and letting of a Railway contract.

The Author in this work only deals with ordinary every-day work, leaving anything outside that to be sought in the many treatises specially written on the various subjects that a Railway Engineer may have exceptionally to deal with.

AUGUST, 1874.

CONTENTS.

PARLIAMENTARY WORK—	Page
Standing Orders,	2
Levelling,	11
Correcting Plans in the Field,	15
Correcting Plans in the Office	16
Plotting the Section,	18
Lithographing,	22
Referencing	23
Estimate,	24
CONTRACT WORK—	
Railways' Clauses Act,	28
Field Work in preparing Contract,	37
Staking out,	39
Levelling,	53
Plotting the Section,	57
Survey,	62
Drawings,	67
Specification,	85
Estimate,	128
APPENDIX—	
Laying out Curves,	145
Documents to be sent to Board of Trade before opening,	147
Memorandum of Important Requirements,	150
Acquisition of Land,	156
Sundry Acts of Parliament,	161
Detail Estimate of Bridge,	163
Opposition on Standing Orders,	165
Sundry Standing Orders,	172
Curved Plate Girders	175

PART I.

PARLIAMENTARY WORK.

ON THE PREPARATION OF PARLIAMENTARY PLANS, AND THE EXECUTION OF OTHER WORK CONNECTED THEREWITH.

In the preparation of Parliamentary plans, the work which is required of the engineer may be divided into the following operations :—

In the field,

Levelling,
Correcting plans,
Referencing ;

And in the office,

Plotting the section, and finishing up same,
Correcting plans and proofs, &c.,
Preparing estimate.

Though each assistant engineer, when dispatched to the country, has special directions given to him about his work, still he should have a thorough knowledge of the requirements of standing orders : and therefore extracts and explanations are here given of such of the standing orders of both houses of Parliament, as refer to the engineering part of the work necessary for obtaining a private Act of Parliament.