

WIRELESS TELEGRAPHY

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649083275

Wireless telegraphy by Gustav Eichhorn

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

GUSTAV EICHHORN

**WIRELESS
TELEGRAPHY**

WIRELESS TELEGRAPHY

CHARLES GRIFFIN & CO., LTD., PUBLISHERS.

SECOND EDITION. Revised. Fully Illustrated. 24s. net.

CENTRAL ELECTRICAL STATIONS.

Their Design, Organisation, and Management.

By CHAS. WORDINGHAM, A.K.C., M.Inst.C.E., M.I.Mech.E., etc.

"One of the most valuable contributions to central station literature we have had for some time."—*Electricity*.

In Large 8vo. Handsome Cloth. Profusely Illustrated. 12s. 6d. net.

ELECTRICITY CONTROL.

A Treatise on Electric Switchgear, and Systems of Transmission.

By LEONARD ANDREWS, Assoc.M.Inst.C.E., M.I.E.E.

"The author's style is clear and forcible. . . . The illustrations are excellently reproduced . . . obviously a book which should form part of the library of every electrical engineer."—*Technica*.

In Large 8vo. Handsome Cloth. Profusely Illustrated.

ELECTRICITY METERS.

By HENRY G. SOLOMON, A.M.I.E.E.

Deals in a lucid and exhaustive manner with all types of meters for measuring continuous and single- and polyphase currents; and with meters for special purposes, such as battery, switchboard, tramcar meters, etc.

SECOND EDITION. Revised and Enlarged. Fully Illustrated. 21s. net.

ELECTRIC SMELTING AND REFINING.

A Practical Manual of the Extraction and Treatment of Metals by Electrical Methods.

Being the "ELEKTRO-METALLURGIE" of DR. W. BORCHERS.

Translated by WALTER G. McMILLAN, F.I.C., F.C.S.

"Must of necessity be acquired by everyone interested in the subject."—*Nature*.

SECOND EDITION. Revised, Enlarged, and Partly Rewritten. 10s. 6d.

ELECTRO-METALLURGY: A Treatise On.

Embracing the application of Electrolysis to the Plating, Depositing, Smelting, and Refining of Various Metals.

By WALTER G. McMILLAN, F.I.C., F.C.S.

"One of the best and most complete manuals hitherto published on electro-metallurgy."—*Electrical Review*.

SEVENTEENTH EDITION. Revised and Enlarged. Pocket Size. Leather. 8s. 6d.

A POCKET-BOOK OF ELECTRICAL RULES AND TABLES.

By JOHN MUNRO, C.E., and ANDREW JAMIESON, M.Inst.C.E., F.R.S.E.

"Worthy of the highest recommendation we can give it."—*Electrician*.

In FIVE VOLUMES. Handsome Cloth. Fully Illustrated.

A TEXT-BOOK OF PHYSICS.

By J. H. POYNTING, Sc.D., F.R.S.
Professor of Physics, Birmingham
University.

And J. J. THOMSON, M.A., F.R.S.,
Prof. of Experimental Physics in Cambridge
University.

INTRODUCTORY VOLUME, Fully Illustrated. THIRD EDITION, Revised. Price, 10s. 6d.

PROPERTIES OF MATTER.

"The style is clear and convincing, and the information up-to-date, including as it does all the recent research on the subject."—*Cambridge Review*.

VOLUME II. THIRD EDITION, Revised. Fully Illustrated. 8s. 6d.

SOUND.

"The work . . . may be recommended to anyone desirous of possessing an EASY, UP-TO-DATE STANDARD TREATISE ON ACOUSTICS."—*Literature*.

VOLUME III. SECOND EDITION, Revised. Fully Illustrated. 15s.

HEAT.

"Well up to date, and extremely clear and exact throughout, and is as complete as it would be possible to make such a text-book."—*Nature*.

Remaining Volumes in Preparation—Light: Magnetism and Electricity.

LONDON: CHAS. GRIFFIN & CO., LTD., EXETER ST., STRAND.

WIRELESS TELEGRAPHY

BY

GUSTAV EICHHORN, PH.D.,

FORMERLY MANAGER OF THE LARGE BALTIC EXPERIMENTAL STATIONS FOR
PROFESSOR BRAUN, SIEMENS AND HALSKE.

With 79 Illustrations.



LONDON:
CHARLES GRIFFIN AND COMPANY, LIMITED,
EXETER STREET, STRAND.

1906.

[All Rights Reserved.]

76-103
67
GENERAL

Dedicated

TO

PROFESSOR M. WIEN, Ph.D.

WITH

EXPRESSION

OF HIGHEST ESTEEM.

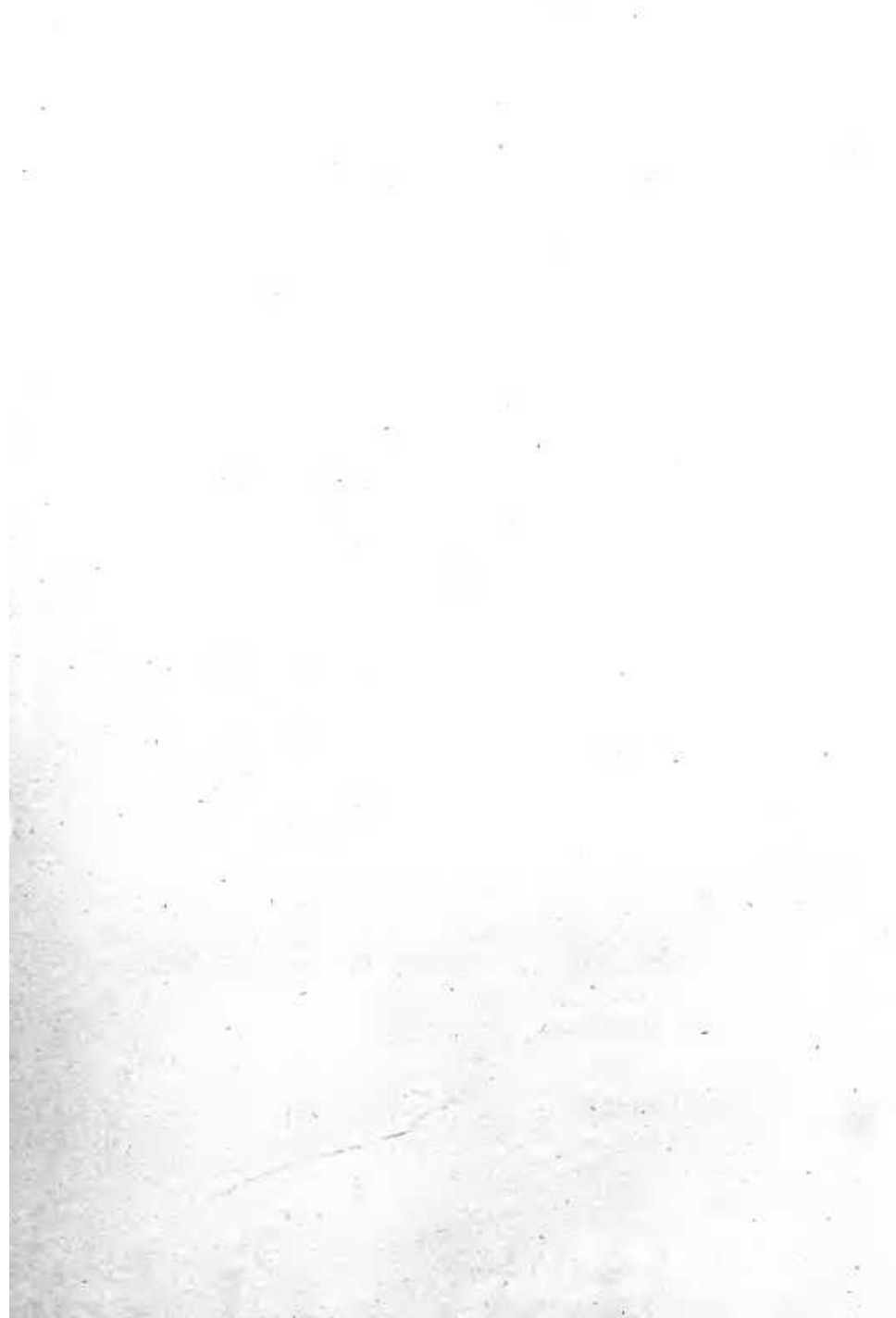
P R E F A C E.

ANY reader expecting this book to consist of a compilation of the so-called "systems" of Wireless Telegraphy will be deceived. I fail to see that such a compilation would be of use to anyone, believing rather that a simple and comprehensive unfolding of the fundamental principles and working methods of modern telegraphy by means of electric waves is the more appropriate. On these grounds I may claim the right to term my work objective. Besides, I can draw on the abundant store of personal practical experience I was able to gather as manager of the important experimental stations on the Baltic Sea (Sassnitz-Gross-Moellen) for Professor Braun, Siemens & Halske. Hence I hope to create interest in wider circles for this rapidly growing branch of science and technology, as well as to perform some service to those more closely concerned with the subject, by combining theory and practice.

It is for me a welcome duty to offer my thanks in this place to Dr L. Mandelstam, for his advice and skilful co-operation in the most recent attempts to develop a selective system of wireless telegraphy. I am also greatly obliged to the Gesellschaft für drahtlose Telegraphie "Telefunken," of Berlin, for the use of blocks and photographs, and also wish to express my thankfulness to Mr M. G. Fox, for his kind assistance in revising the English style of the manuscript.

G. EICHHORN.

ZÜRICH, *January* 1906.



CONTENTS.

	PAGE
CHAPTER I.	
INTRODUCTION,	1
CHAPTER II.	
THE ETHER AND ELECTRICAL OSCILLATIONS,	3
CHAPTER III.	
COUPLED SYSTEMS,	14
CHAPTER IV.	
THE RECEIVER,	20
CHAPTER V.	
THEORETICAL RESULTS FURNISHED BY THE SENDER,	23
CHAPTER VI.	
THEORETICAL RESULTS AND CALCULATIONS IN RESPECT OF SENDER AND RECEIVER,	36
CHAPTER VII.	
BRAUN—ENERGY SYSTEMS,	51
CHAPTER VIII.	
MEASUREMENT OF WAVES,	56
CHAPTER IX.	
MANAGEMENT OF A STATION,	62