

# **THE ELEMENTS OF DIRECT CURRENT ELECTRICAL ENGINEERING**

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The Elements of Direct Current Electrical Engineering by H. F. Trewman & G. E. Condliffe

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**H. F. TREWMAN & G. E. CONDLIFFE**

**THE ELEMENTS OF DIRECT  
CURRENT ELECTRICAL  
ENGINEERING**



THE ELEMENTS OF  
DIRECT CURRENT  
ELECTRICAL ENGINEERING

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## PREFACE

THE main object of the authors of this work has been to bridge the gap existing between the elementary text-books on magnetism and simple current electricity, Ohm's Law, etc., and so many of the more advanced books which deal with the design point of view. Not only the authors, but also many of their friends, have often found difficulty in recommending to students a book which would, without containing many details of a nature more or less superfluous to the purpose, present in a concise form to second-year students at Universities and Technical Schools the theoretical principles underlying Direct Current Electrical Engineering.

No attempt has been made to avoid the use of the Calculus where it simplifies proofs, since it is an essential to all students of engineering; but, in this book, only a very elementary knowledge of that subject is demanded.

With a view to simplification, only typical examples and cases are considered, as, for instance, in the chapter on instruments, since, if these are thoroughly mastered, other types of instruments and machines will be readily understood.

Thanks are due to Messrs. Metropolitan Vickers Electrical Company and the Reason Manufacturing Company for valuable help with drawings and information.

In spite of careful revision, errors easily creep into a work of this nature and, in such a case, the authors will be grateful to have any of these pointed out to them or to receive suggestions as to a second edition, if that should be required.

H. F. T. and G. E. C.

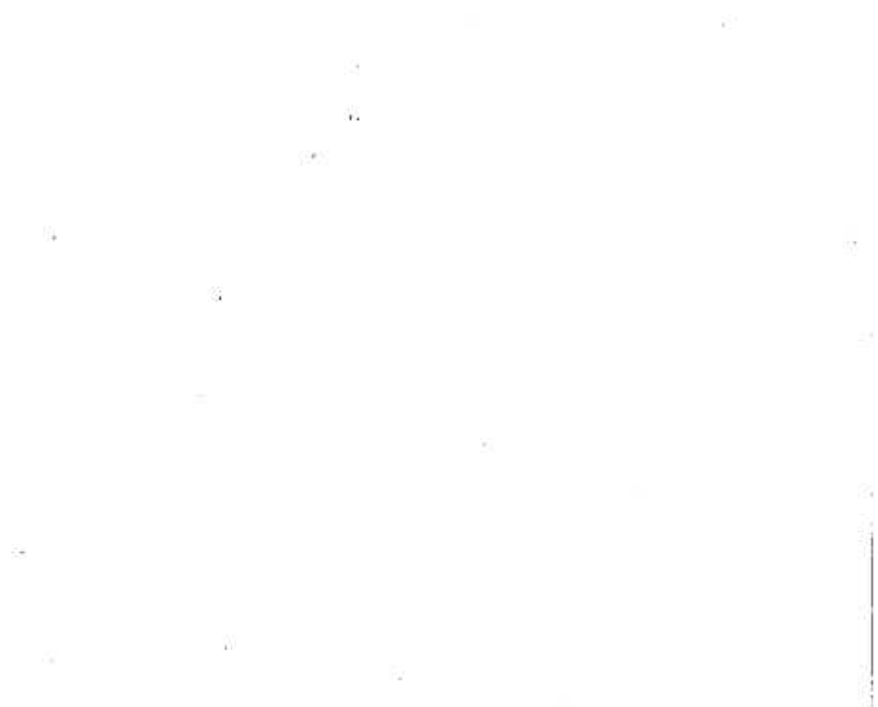


Figure 1

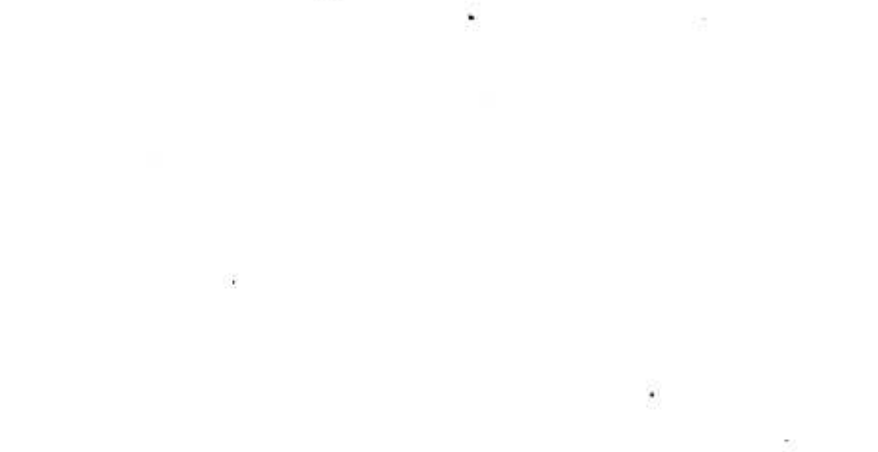


Figure 2



# CONTENTS

	PAGE
PREFACE . . . . .	iii
CHAPTER I	
UNITS, ETC. . . . .	1
C. G. S. Units—Practical units—Magnetic field due to current—Strength of field due to current—Solenoid—Lines of force—Flux—Magneto motive force—Reluctance.	
CHAPTER II	
INDUCED CURRENTS . . . . .	15
Current induced by changing flux—Lenz's law—Fleming's rule—Self and mutual induction—Effect of breaking inductive circuit—Rise of current in inductive circuit—Ballistic galvanometer.	
CHAPTER III	
ELECTRO MAGNETISM . . . . .	32
Permeability—Relation between B and H—Relation between $\mu$ and H—Hysteresis—Steinmetz law—Physical theory of hysteresis—Magnetic testing—Reluctance—Magnetic leakage.	
CHAPTER IV	
INSTRUMENTS . . . . .	58
Classifications—Ammeters and voltmeters—Shunts—Dynamometers—Kelvin ampere balance—Wattmeters—Recording ammeters and voltmeters—Supply meters—Crompton potentiometer—Calibration of ammeters and voltmeters.	

## CHAPTER V

## STORAGE BATTERIES . . . . .

PAGE

81

Advantages—Composition of cell—Chemical formulae—Charge and discharge curves—Method of charging—Efficiency—Internal resistance—Tests—Care of battery.

## CHAPTER VI

## THE DYNAMO . . . . .

95

Brief history—Commutator—Simple ring winding—Lap and wave windings—E.M.F.'s in lap and wave windings—Winding rules—Total E.M.F. of machine.

## CHAPTER VII

## EXCITATION AND THE MAGNETIC CIRCUIT . . . . .

110

Methods of excitation—Parts of a dynamo—Necessity for laminated armature—Magnetic path—Ampere turns required for various portions of magnetic path—Müller's formula for air gap corrections.

## CHAPTER VIII

## COMMUTATION AND ARMATURE REACTION . . . . .

130

Change of direction of current in conductors—Ideal commutation—Reactance voltage—Means of correcting bad commutation—Calculation of reactance voltage—Cross magnetization of armature—Demagnetization due to brush lead.

## CHAPTER IX

## LOSSES . . . . .

145

Efficiency—Copper losses—Iron losses—Eddy current losses—Mechanical losses—Brush contact losses—Temperature rise in armature—Experimental analysis of losses—Running down test.

## CONTENTS

vii

### CHAPTER X

	PAGE
OPERATION OF THE DYNAMO . . . . .	161
Separately excited dynamo—Series dynamo— Critical resistance—Characteristics of series dynamo —Resistance in external circuit—Power lines—Use of series dynamos—Shunt dynamo—Critical resis- tance—Use of shunt dynamos—Compound dynamo —Use of compound dynamos.	

### CHAPTER XI

THE DIRECT CURRENT MOTOR . . . . .	178
Dynamo as motor—Torque of motor—Induction factor—Characteristics—Lost torque—Speed varia- tion—Starters—Reversing switches—Automatic controls—Calculation of starter resistance—Motor generator—C.M.B. converter.	

### CHAPTER XII

TESTS . . . . .	201
Efficiency—Soames' brake—Eddy current brake —Field's test of series machines—Swinburne's test —Regenerative methods—Hopkinson's tests— Temperature test—Regulation.	
ANSWERS TO EXAMPLES . . . . .	215
INDEX . . . . .	217