

## P R E F A C E .

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It is hoped that the effect of this book will be to introduce the subject of Wireless Telegraphy to the student in such a manner that he will not be frightened away from the subject before he has got a grasp of its principles.

There is no doubt that at first sight the subject presents many difficulties, upsetting, apparently, all our preconceived ideas about electricity. Again, as in all new sciences, many new words and expressions appear, which are still somewhat loosely used by different writers, greatly to the confusion of the student.

The Service man who intends to take up wireless turns first to the official publications on the subject. He at once finds himself confronted by many Annual Reports of the Torpedo School, the Wireless Manual, and several hand-books of the various installations in the Service. Now, except in the case of the last-named books, the information is useful to a great extent, but a large amount is out of date.

This unfortunate state of affairs is unavoidable, on account of the rapidity with which changes follow each other, but the consequence is that the student has no starting point from which to work, and will probably go ashore and buy a book on the subject.

Without wishing to detract in any way from the value of these latter books, it may be said that they do not meet the present requirements. They may be roughly divided into two headings. Firstly, the elementary books, written for the "man in the street," giving much interesting, but hardly useful historical information, and little theory. Secondly, the theoretical book, filled throughout with differential equations which completely baffle the man of average attainments. Further, such books usually presuppose a knowledge of the theory of alternating currents on the part of the student.

From this book it is hoped that practical and theoretical instruction may be obtained sufficient for the efficient working of the Service instruments, and perhaps for the appreciation of the principles governing their design, while the examples given illustrating the enormous utility of curves may tempt the student to undertake some elementary mathematical work, of which an outline is given in the Appendix. A very slight knowledge of Algebra and Trigonometry will probably suffice for the comprehension of all the work in this book, and an attempt will be made to exhibit the principles, without the formidable array of technicalities usually employed, of the differential calculus.

By confining ourselves to broad principles instead of to details of interest at the moment of writing, it is hoped that the book may, for some time at least, represent a foundation on which the Telegraphist may build a sound knowledge of his trade. The importance of the good education of the Telegraphist Ratings of the Fleet cannot be over-estimated. Day by day the necessity for rapidity and reliability of communication increases, for as the speed of ships increases, so more rapidly do new tactical situations succeed each other.

The information that an Admiral requires is short, accurate, and *timely*; not detailed, verbose, and consequently *late*.

For the success of W.T. in war, then, it will be seen that the first requisite is good telegraphy. The telegraphist must be able to read weak as well as rapid signals, and, further, be able to read through atmospheric, accidental, and even deliberate hostile interference.

In addition to these qualifications, a thorough knowledge of the theory and of the care and the repair of his instruments is necessary before he can be called a good operator. Practice will make a telegraphist; it is hoped that this book will help to turn out good operators.

From considerable experience among the telegraphists of the Fleet, the writer is of the opinion that they do not sufficiently appreciate the value of a thorough grounding in the principles of direct currents. The elementary principles of electricity and direct current practice can be but lightly touched upon in this book, so broad is the field we have to cover, and so well has the subject been treated in Vol. I. of the Torpedo Manual; but it would be of enormous advantage to themselves and to the Service, if the telegraphist ratings would but realise that they must walk before they can fly.

It is the application of this principle that may possibly make the early part of this book somewhat tedious reading to the senior ratings, but it is for the coming generation that the book is primarily written.