

LOCAL BATTERY AND CENTRAL BATTERY TELEPHONES

CONTENTS

	Page
Introduction	1
Principle of operation	2
Principles of the anti-sidetone induction coil circuit	8
Practical A.S.T.I.C. telephone circuits	11
Shared service telephones	22
Portable telephone	27
Conclusions	28

Figs 5, 16, 17, 18, 21, 23, 38, 40, 42 and 43 are appended to this pamphlet.

INTRODUCTION

This pamphlet describes in some detail the operating principles of the common types of telephone set that are installed at subscribers' premises. Later pamphlets in this series will deal with extension plan numbers, house exchanges and private branch exchanges.

To transmit sound from one place to another, other than directly through air or similar sound-conducting media, an arrangement is required consisting of:-

- (a) An instrument to convert the energy of the sound waves into energy of a different form.
- (b) A medium through which the energy can travel.
- (c) A second instrument which re-converts the energy received into sound waves similar to those originally produced.

The instruments required in (a) and (c) are known as a transmitter and receiver respectively. It will be found that the term 'transducer', i.e. a power-transforming device for insertion between electrical, mechanical or acoustic parts of systems of communication, is sometimes used for the transmitter or receiver. The transmitter consists essentially of a quantity of carbon granules packed between two carbon electrodes. One electrode is fixed while the other is firmly attached to a diaphragm. The receiver consists essentially of a permanent magnet together with an electromagnet mounted in close proximity to a diaphragm. These instruments are described in detail in Educational Pamphlet - Draft Series - General 4/1. The transmitting medium, as far as this aspect of telephony is concerned, is a pair of metal wires.