

CHAPTER ONE

GENERAL DESCRIPTION

1. Purpose of Equipment

- (a) Outfit R.I.S.4 is designed to serve the same general function as Outfit R.I.S.3. The chief advantages resulting from the use of the R.I.S.4 are, simplification of controls, economy in space, and provision for loudspeaker operation.
- (b) In common with the R.I.S.3, it is a device which can be plugged into the output stage of any wireless receiver to suppress interference from Radar equipments operating with a repetition frequency of 50 c.p.s (such as Types 279 and 281).
- (c) These equipments are different from the Suppressor Outfit R.I.S.5 in that they are designed for the suppression of interference from 50 c.p.s. Radar equipment, whereas the R.I.S.5 is designed for use in conjunction with high repetition frequency Radar equipment (Type 291). A further point of difference is that the R.I.S.3 and R.I.S.4 take the form of output units which can be attached to any receiver without modification, whereas the R.I.S.5 is connected to the early stages of the receiver, necessitating changes to the receiver circuit.

2. Principles of Operation

- (a) The outfit R.I.S.4 consists of a conventional A.F. Amplifier and output unit, preceded by a diode switching circuit which is actuated by pulses from a pulse generator which is part of the outfit.
- (b) The pulse generator is designed to produce voltage pulses of short

duration which are synchronised with the transmitted pulses from the Radar equipment.

- (c) These generated pulses cause the switching circuit to "open", so virtually breaking the circuit between the input jacks and the A.F. amplifier. The output from the receiver is thus prevented from reaching the telephones or loudspeakers during the instants when Radar pulses are being received, and this form of interference with the required signal, is so eliminated.
- (d) The breaks in reception are not of sufficient duration to be audible in reception, but the operation of the switching circuit does introduce a small amount of "switching noise". This takes the form of a buzzing sound superimposed on the signal. A manually operated switch is therefore provided, to allow the pulse generator to be isolated from the switching circuit when no interference from Radar equipment is being received. The unit then functions as an ordinary A.F. Amplifier and all signals are passed on to the output circuit for reproduction by telephone or loudspeaker as required.
- (e) To maintain synchronism between the Radar transmitter pulses and the suppressor pulses, a phasing control is provided and, apart from the pulse switch described above, this is the only operational control in the unit. It is essential that the same supply mains should be used for the pulse generator as for the Radar equipment. On the other hand, it may be required to operate the outfit as an ordinary amplifier unit when the Radar equipment is not in operation and the supply mains for it are switched off.

(f) Two supplies are therefore provided for the R.I.S.4 outfit; one, which is common to the Radar equipment, is used for operating the pulse generator; the other, which also supplies the receiver, is used to provide H.T. and heater voltages for the valves.