# Chapter 1 WIRELESS INSTALLATION

**Note.**—*This chapter covers all Mk. 11 aircraft, with or without ejector seats.*

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## LIST OF ILLUSTRATIONS



### Introduction

**1.** This chapter contains information relating to the location and wiring of the various items of equipment of the wireless installation together with notes covering the servicing of all the equipment other than the sets themselves and their controllers. Information on the servicing of these is beyond the scope of this manual and will be found in A.P.2538HA, Vol. 1, Sect. 1. At the end of the chapter are illustrations showing the location, wiring and unit mountings.

## DESCRIPTION

### A.R.I. 5490

**2.** The A.R.I.5490 equipment comprises two V.H.F. transmitter-receivers, one Type 1935 and one 1936, either of which can be remotely controlled to select any one of ten channels; this makes available twenty channels in all.

**3.** The two transmitter-receiver units are mounted on a shelf in the nose compartment and are accessible by way of the hinged nosecap. The two controllers, Type 382, are mounted underneath the centre of the instrument panel; between them is the set change-over switch.

**4.** A mic.-tel. socket is fitted to the forward edge of each pilot's seat and a press-to-speak push-switch is incorporated in each throttle lever. The muting switch is on the upper instrument panel.

**5.** On the forward face of bulkhead No. 1, at the starboard side of the nose compartment, is a panel containing the set change-over relay and the intercommunication relay. Also on this panel are two mic.-tel. test sockets and a two-way press-to-speak test switch.

**6.** Aerials for both sets are mounted on the top surface of the booms; one is Type 228, the other Type 229.

## SERVICING

### Bonding and screening

**7.** To prevent interference with the radio equipment, the aircraft bonding connections should be kept clean and tight. The resistance between the radio earth terminal and any part of the bonding system must not exceed 0·025 ohm. It should also be ensured that all connectors and metal braided cables throughout the aircraft are adequately clipped to prevent intermittent contact between the screening of the cables and the aircraft, and that clips intended to earth the casing make good contact with both the casing and the airframe. The locking rings on connectors and braided cables must be kept clean and securely tightened.

*(A.L.55, Feb. 56)*

**Connector cables and fixed wiring**

**8.** Periodically, the connector cables and the fixed wiring should be examined for deterioration and the connections at the pins and terminal blocks checked for cleanliness, security and tightness. Also the cables should be tested for continuity and insulation resistance to earth. To prevent damage to condensers and other components by high voltage, the connectors should be removed from the set before insulation resistance testing the cables. The contacts in the press-to-transmit switches should be cleaned periodically.

**Mic.-tel. socket**

**9.** The mic.-tel. socket should be tested in all attitudes to ensure that the strain is taken by the check-cord and not by the cables. The connections at the terminal blocks on the pilot's seat should be inspected for tightness and the socket cables for security. When not in use, the socket should be clipped in its stowage. Clean the socket regularly, internally and externally, to ensure freedom from dirt and moisture, and occasionally apply a small quantity of transformer oil around and between the brass nuts at the far end of the inside of the socket.

**Aerials**

**10.** The aerials should be inspected periodically for cracks and signs of fatigue. Test the insulation between each aerial and earth ; the minimum resistance should be 20 megohms. The aerial cable should be tested for insulation resistance to earth and the connector plug between rib 1 and the firewall must be kept tight and free from fuel or oil.

**Note . . .**

*The matching stub on each aerial is short-circuited, the inner connector being connected to the braid at the end remote from the bollard. The matching stub should therefore be disconnected before carrying out an insulation resistance test to earth of the aerials and their cables.*

## REMOVAL AND REFITTING

**Transmitter/receivers**

**11.** The two transmitter/receivers are mounted in the nose compartment and are easily accessible after the nose cowling has been hinged upward (*Sect.* 3, *Chap.* 1, *para.* 4). Each receiver is mounted in a tray, being secured by rear locating spigots and forward knurled securing nuts. With these nuts loosened, together with all electrical disconnections made, the sets may be removed.

**Controllers and aerials**

**12.** Both controllers may be removed by disconnecting the electrical cables and removing the three 2 B.A. bolts retaining each component. Each aerial is accessible by removing the oval access panel outboard of each boom. To remove an aerial the sealing plate should be removed, together with the aerial sealing grommet, from the upper surface of the boom.

**13.** Remove the terminal cover from the bollard of the aerial and disconnect the aerial connector and matching stub. Then remove the four bolts securing the aerial bollard to the mounting bracket and withdraw the aerial into the boom, eventually removing the aerial via the side access panel.

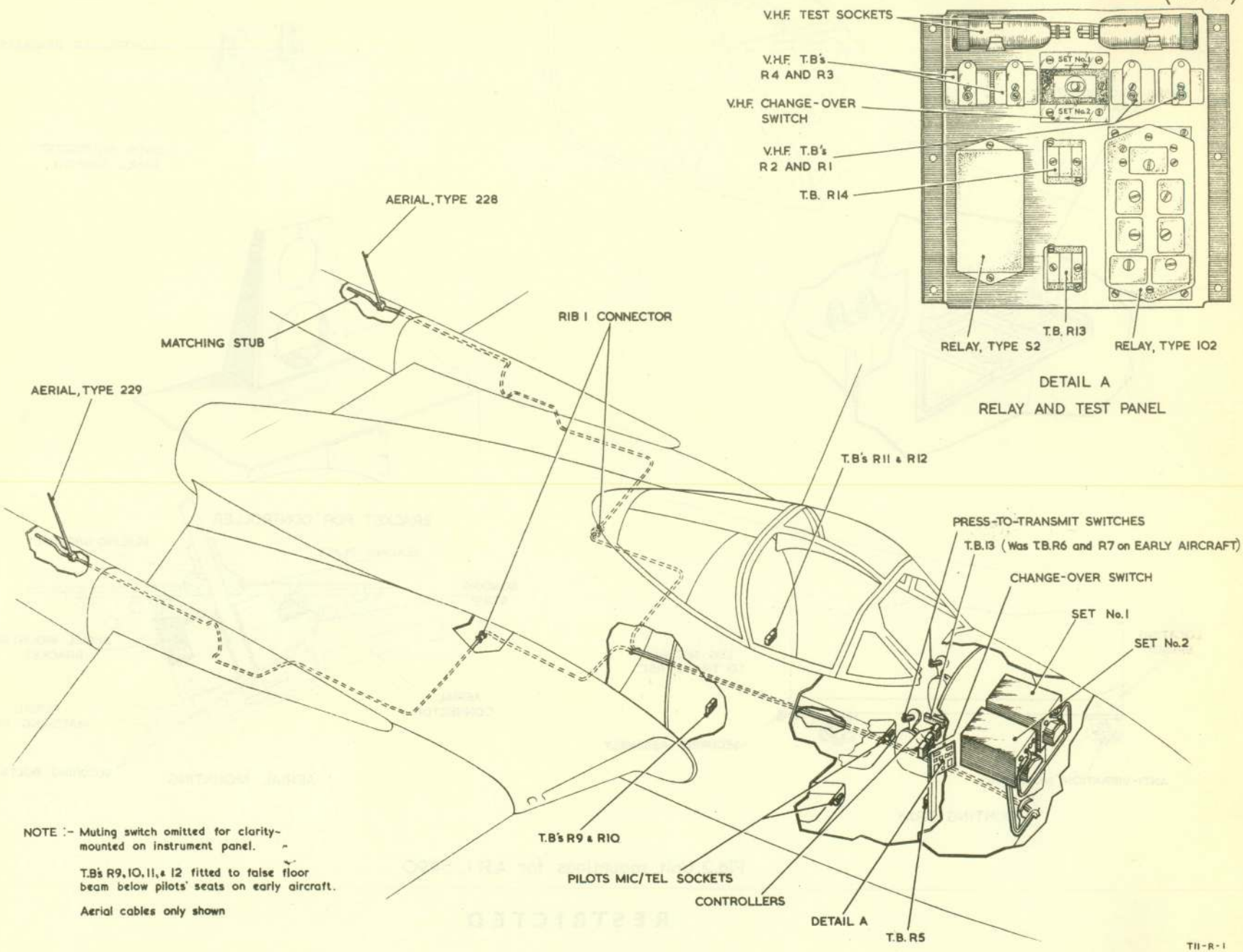


Fig.1. A.R.I. 5490 location

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105.2

(A.L. 55, Feb. 56)

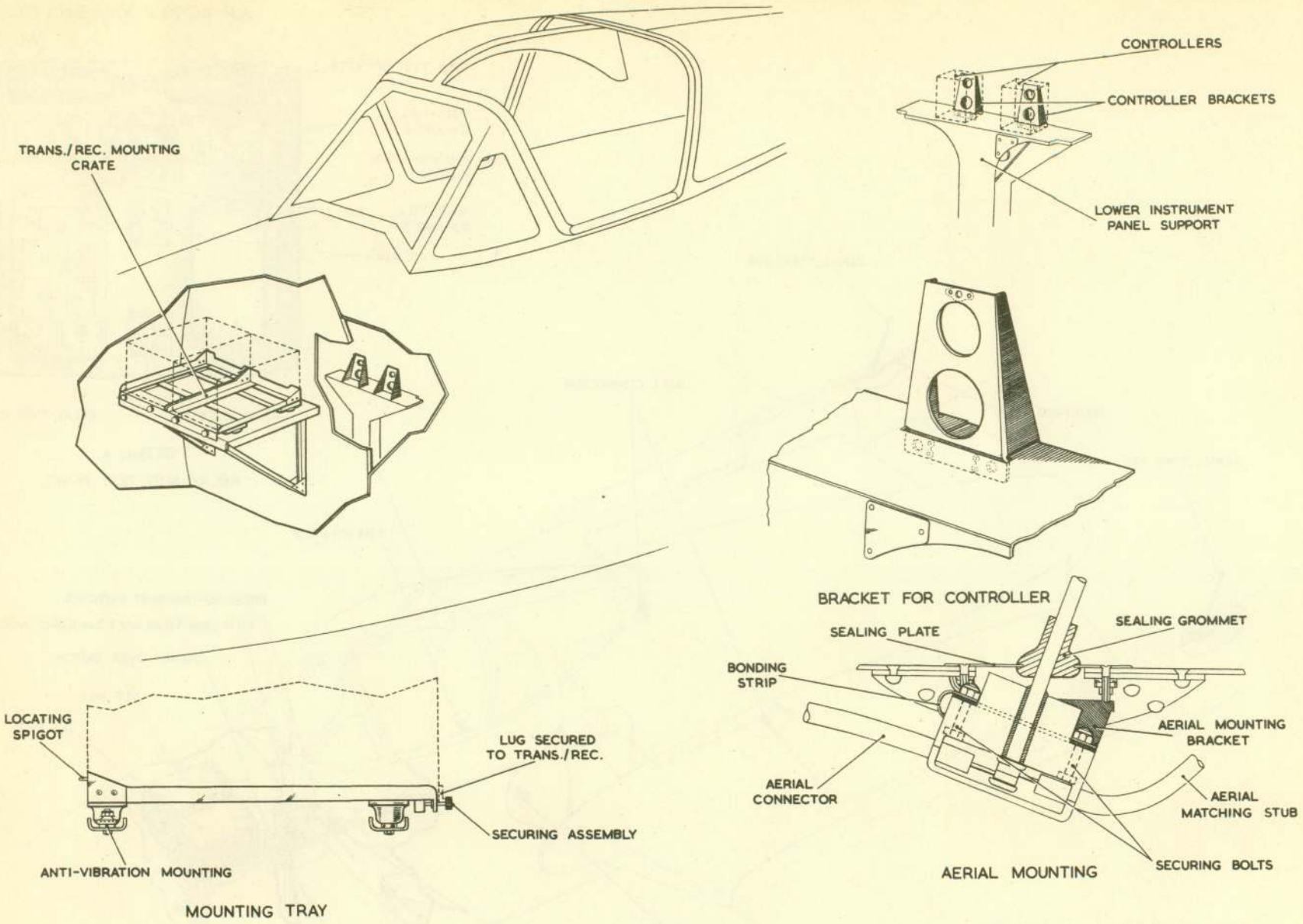


Fig.2. Unit mountings for A.R.I. 5490

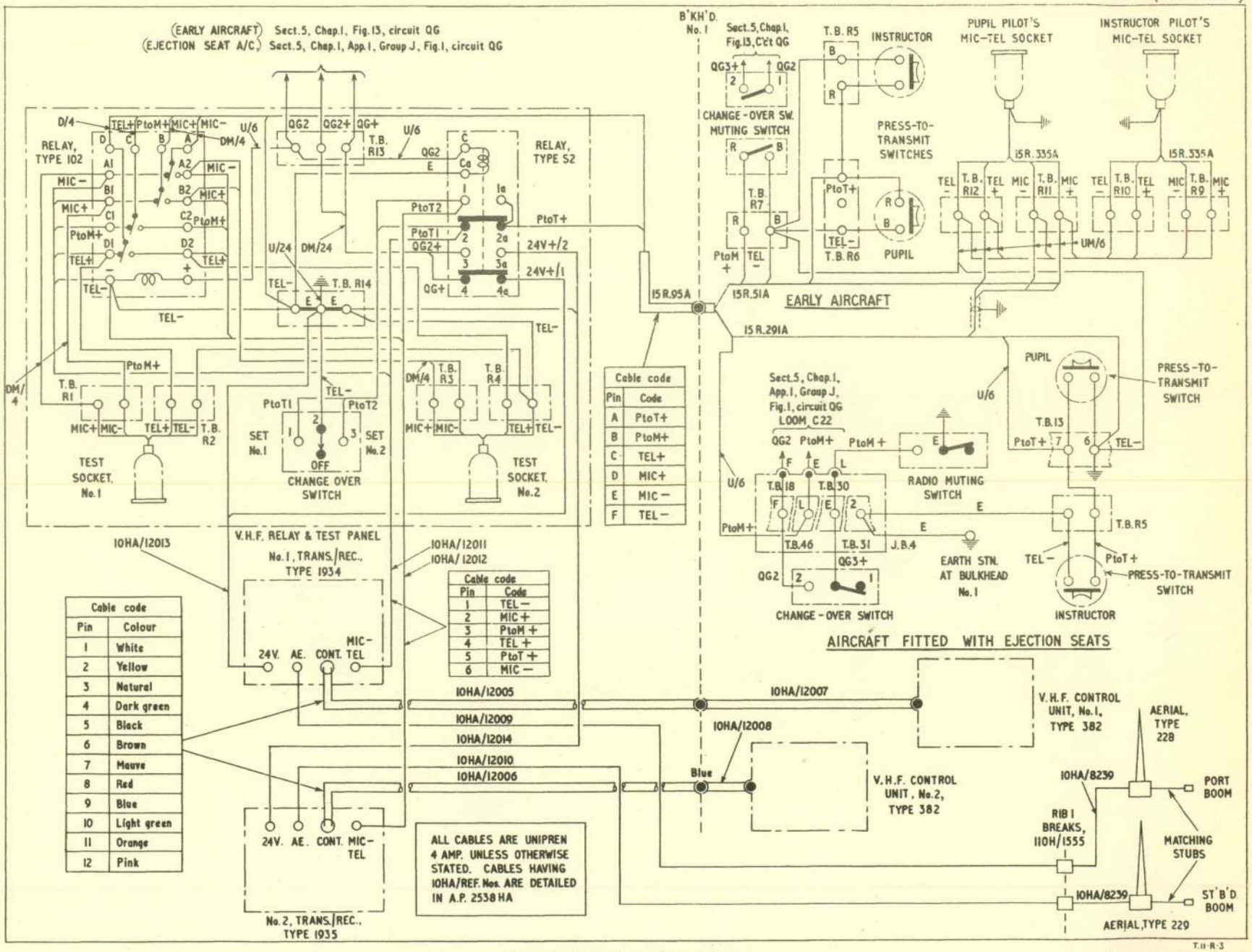


Fig. 3. A.R.I. 5490 wiring

(A.L. 55, Feb. 56)