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A.P.4308A, Vol. 1, Part 2, Sect. 5, Chap. 1, App. 1
A.L.52, Mar. 68

APPENDIX 1 - UHF. Installation (ARI. 18197/1)

(Mod. H. 263)

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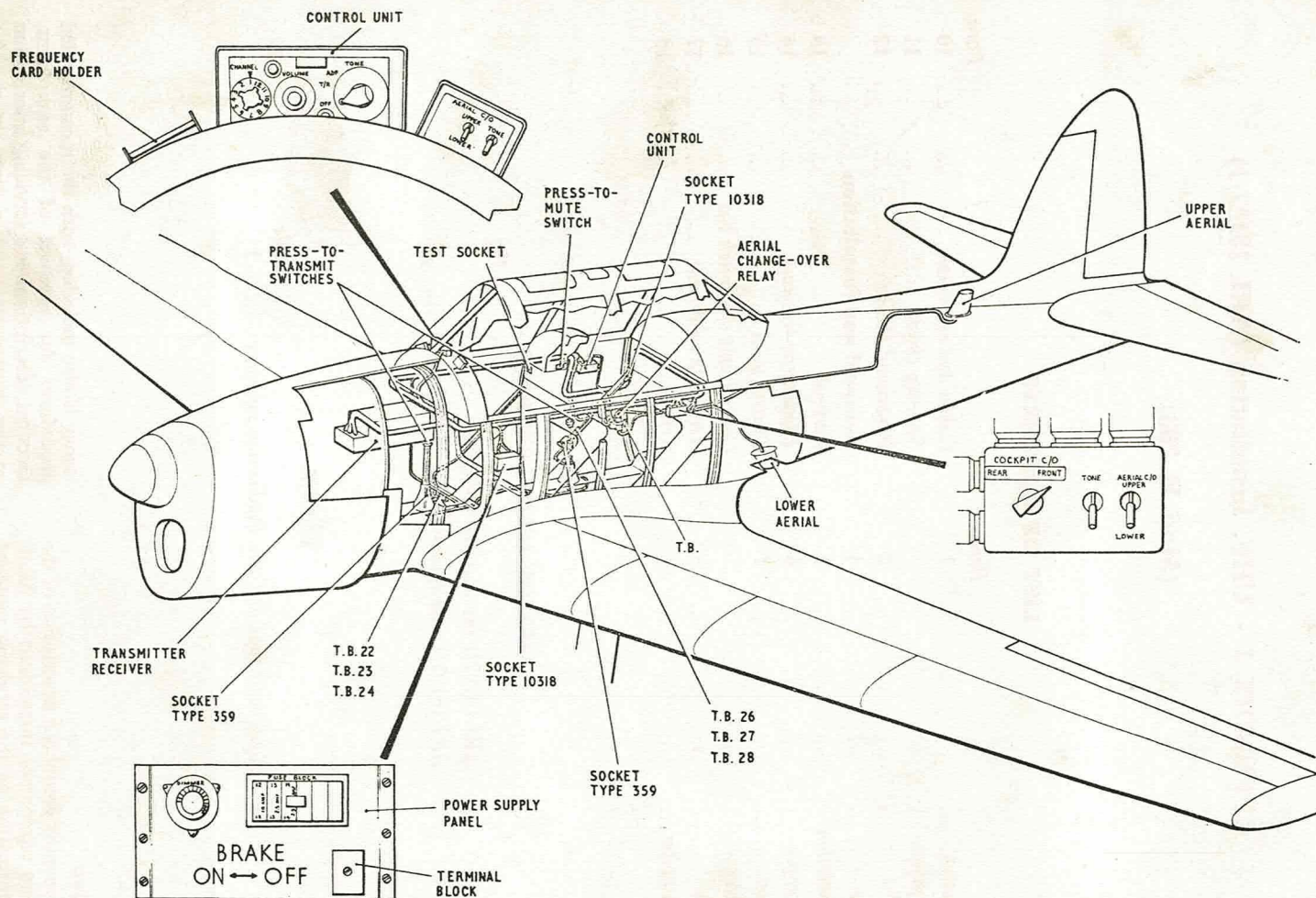
Introduction

1. This appendix contains a description of the U.H.F. radio equipment introduced by Mod. H.263. Information on the servicing required to maintain the installation in a state of effi-

ciency is also included, with the recommended procedures for removal of the equipment. Detailed descriptions and servicing information on the equipment used is given in the Air Publications listed in Table 1.

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Fig. 1. ARI.18197/1 installation—location

TABLE 1
Equipment type and Air Publication reference

Equipment type	Cat. or Ref. No.	Air Publication
U.H.F./ARI.18197/1		
U.H.F. transmitter-receiver	5821-99-913-2149	A.P.116D-0106-1
Mounting tray	5975-99-913-2152	
Control unit	5821-99-913-2150	
Aerials	5985-99-911-8266	
Aerial c/o relay	5945-99-932-1485	
Control unit c/o switch box	C1-Z-3631	Hawker Siddeley design

DESCRIPTION

General (fig. 1)

2. The U.H.F. system (ARI.18197/1) provides amplitude modulated communication on any one of twelve pre-set channels in the frequency range 225 to 399.9 Mc/s, and inter-communication facilities.

3. The installation contains a transmitter-receiver mounted forward of the front instrument panel, with a control unit in each cockpit. Access to the transmitter-receiver is obtained from the front cockpit. Two U.H.F. aerials are mounted on the fuselage aft of the canopy, one on the upper fuselage and the other on the lower fuselage. Selection of the appropriate aerial is effected by a change-over switch in each cockpit. Operation of the control units and aerial change-over switches is effected by a cockpit change-over switch.

Controls

4. Each control unit incorporates a CHANNEL selector switch, VOLUME control and an OFF-T/R-ADF-TONE function switch. The ADF position of the function control switch is inoperative. An illuminated 'plastek' front panel is fitted, the lighting of which is controlled by the dimmer control situated on the U.H.F. fuse panel assembly mounted on the port wall of the front cockpit. An additional control box is fitted on the port wall of the rear cockpit and incorporates a COCKPIT C/O-REAR-FRONT switch, a spring-loaded TONE switch and an

AERIAL C/O-UPPER-LOWER switch. To starboard of the front controller an additional panel incorporates an AERIAL C/O-UPPER-LOWER switch and a spring-loaded TONE switch. A PRESS-TO-TRANSMIT push-switch is fitted to each control column and a PRESS-TO-MUTE switch is located in the rear cockpit on the starboard wall. With the appropriate function switch set to T/R, intercommunication is available between cockpits using the head-set switch. Operation of the mute switch allows interference free inter-communication.

Interconnection

5. An interconnection diagram for the U.H.F. system is given on fig. 2. For further details, reference should be made to A.P. 116D-0106-1.

Power supply

6. The power supplies for the installation are taken from the main supply panel through fuses mounted in a panel on the port wall of the front cockpit.

WARNING . . .

If the aircraft is to be flown solo, from the front cockpit, ensure that the COCKPIT C/O-REAR-FRONT switch is in the FRONT position before take off.

Operation

7. The setting up and operating instructions for the U.H.F. installation are given in the Air Publication listed in Table 1.

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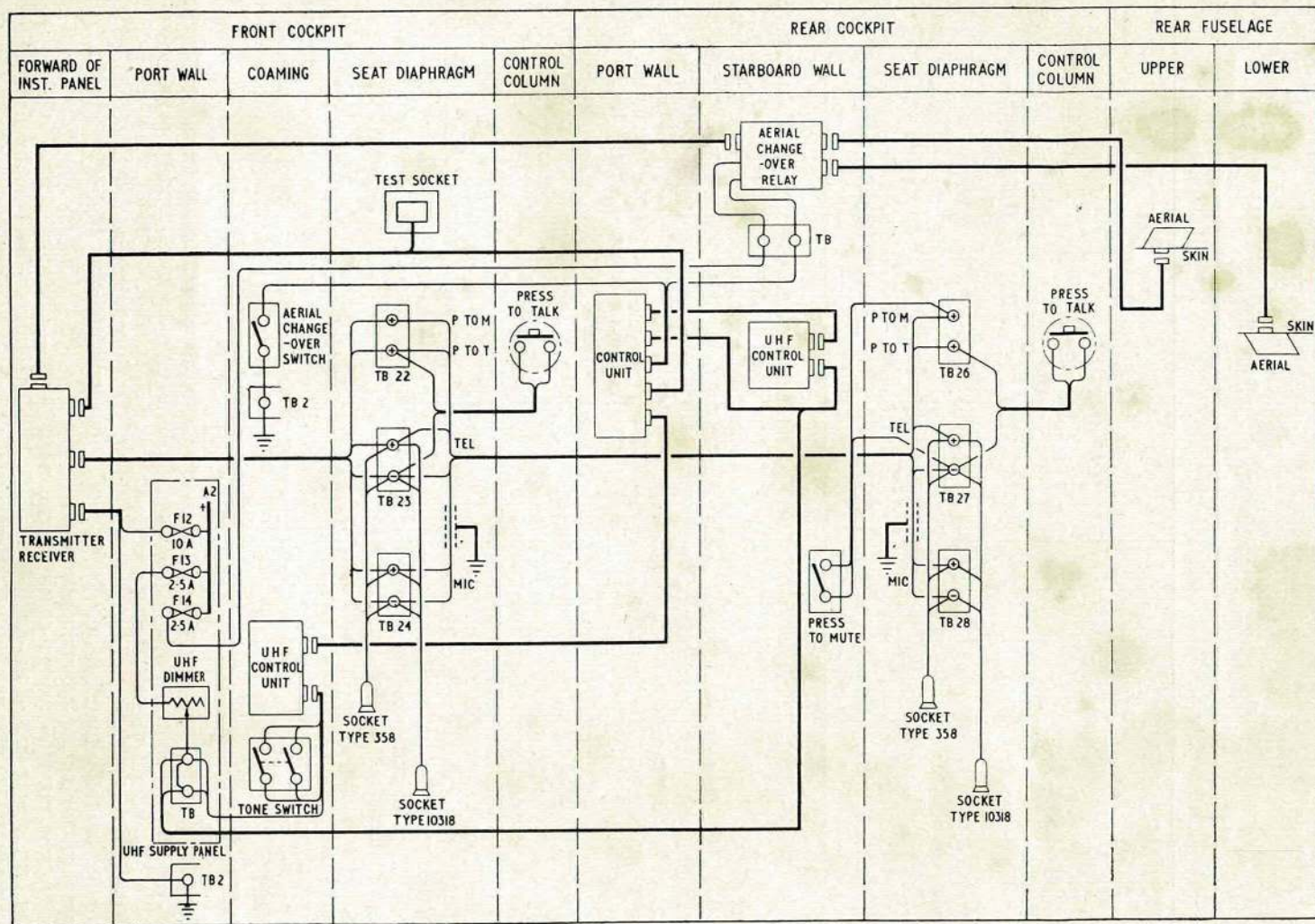


Fig. 2. ARL18197/1 installation—interconnection

SERVICING

General

8. Servicing of the wireless installation is described in the Air Publication listed in Table 1, but any unit suspected of being defective should be carefully checked in situ and if found to be faulty, removed from the aircraft for rectification. The locations of the components are illustrated on Fig. 1.

Power supplies

9. Report of a fault in the installation necessitates that the power supplies be checked first. The supply voltage, both on and off load, should be tested, and a check made to ensure that the connectors carrying the supply to the U.H.F. equipment are correctly assembled. Refer to Sect. 4, Chap. 2 for routeing and theoretical diagrams of the power supplies.

Cables and connectors

10. Servicing of the cables and connectors consists of the standard continuity and insulation resistance tests, together with periodical examination throughout their entire length for signs of damage to, or deterioration of the insulation. If defects are found, the complete cable or connector must be renewed. All the clips securing the cables and connectors to the aircraft's structure must be examined for signs of looseness, and any insecure clips tightened as necessary to prevent chafing. Plug and socket connections must be checked to ensure that they are fitting properly, and that the fixings are tightened securely.

Security checks

11. The following security checks must be made to ensure that all the wireless equipment is properly installed and secure:—

- (1) Ensure that the transmitter-receiver is secure in the mounting rack and that the clamping devices are tightened sufficiently to prevent movement or vibration. Check that locking wire is fitted where necessary.
- (2) Check all mounting bolts for security; ensure that the anti-vibration mounts are undamaged; and check that the fixed mounting structure is secure.
- (3) Check that control units and switches are securely mounted. With the electrical power switched off, operate all the controls and ensure that they are undamaged and serviceable.

(4) Check the security of the aerials.

(5) Examine all the plugs and sockets for correct mating and security.

(6) Check that any strain on the mic-tel. sockets is taken up by the check-cords, and not by the cables attached to the sockets.

Functional checks

12. To ensure that the wireless installation is set up and operating correctly, the functional checks given in the Air Publication listed in Table 1, must be made, using the test sets and equipment prescribed. To enable the U.H.F. installation to be ground tested and adjusted in situ, a test socket is provided on the rear star-board corner of the front seat diaphragm. The test socket is used in conjunction with the test sets as described in the relevant Air Publication.

REMOVAL AND INSTALLATION

General

13. The recommended procedure for removing the majority of the components is given in the following paragraphs. The method of installation is, in general, a reversal of the removal sequence, but when there is any special assembly feature it is covered by a note in the appropriate paragraph. Before removing or replacing any component, the aircraft must be rendered electrically safe (as described in Sect. 4).

Transmitter-receiver

14. Remove the transmitter-receiver as follows:—

WARNING . . .

If the U.H.F. transmitter-receiver is changed the compass must be reswung.

- (1) Render the aircraft electrically safe (as described in Sect. 4).
- (2) Disconnect the aerial connector from the transmitter-receiver, fit an approved cap and cover to the plug and socket, and stow the connector clear of the transmitter-receiver and instrument panel.
- (3) Remove the two bolts securing the mounting tray assembly to the support channels. Support the mounting tray before removing the last bolt.

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- (4) Lower mounting tray assembly.
- (5) Unscrew the two knurled screws at the front of the mounting tray and allow these to drop clear of the retaining catches on the unit.
- (6) Disengage the spigots at the rear of the transmitter-receiver from the mounting tray by using the handle to withdraw the set along the tray. Still using the handle, carefully remove the set from the aircraft.

Control units

15. To remove a control unit from either of the cockpits, proceed as follows:—

- (1) Render the aircraft electrically safe (as described in Sect. 4).
- (2) Disconnect the connectors at rear of control unit mounted on coaming in the front cockpit or on top of control unit mounted on starboard wall of rear cockpit and fit approved caps and covers to the plugs and sockets.
- (3) Unscrew the four captive screws and remove the unit.

Note . . .

Before fitting a control unit ensure that the connectors are mounted on the correct face and the side brackets are in the correct position.

Control unit c/o switch box

16. To remove the control unit c/o switch box from the port wall of the rear cockpit, proceed as follows:—

- (1) Render the aircraft electrically safe (as described in Sect. 4).
- (2) Disconnect the connectors and fit approved caps and covers to the plugs and sockets.

- (3) Remove the four screws retaining the switch box to the mounting brackets and remove unit.

Aerial c/o relay unit

17. To remove the aerial c/o relay unit from the starboard wall of the rear cockpit, proceed as follows:—

- (1) Render the aircraft electrically safe (as described in Sect. 4).
- (2) Remove radio access panel in rear seat.
- (3) Disconnect the connectors and fit approved caps and covers to the plugs and sockets.
- (4) Disconnect the leads to relay unit from adjacent terminal block.
- (5) Remove the two screws retaining the relay unit to the stand-off bracket and remove unit.

Aerials

18. To remove an aerial from either the upper rear fuselage or aft starboard keel, proceed as follows:—

- (1) Render the aircraft electrically safe (as described in Sect. 4).
- (2) Remove the eight bolts retaining the aerial to the fuselage and withdraw the aerial.
- (3) (Lower aerial only). Remove the bolts retaining the locking clip to the aerial connector assembly.
- (4) Disconnect the aerial connector and fit an approved cap and cover to the plug and socket.

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