Chapter 1

WIRELESS INSTALLATION

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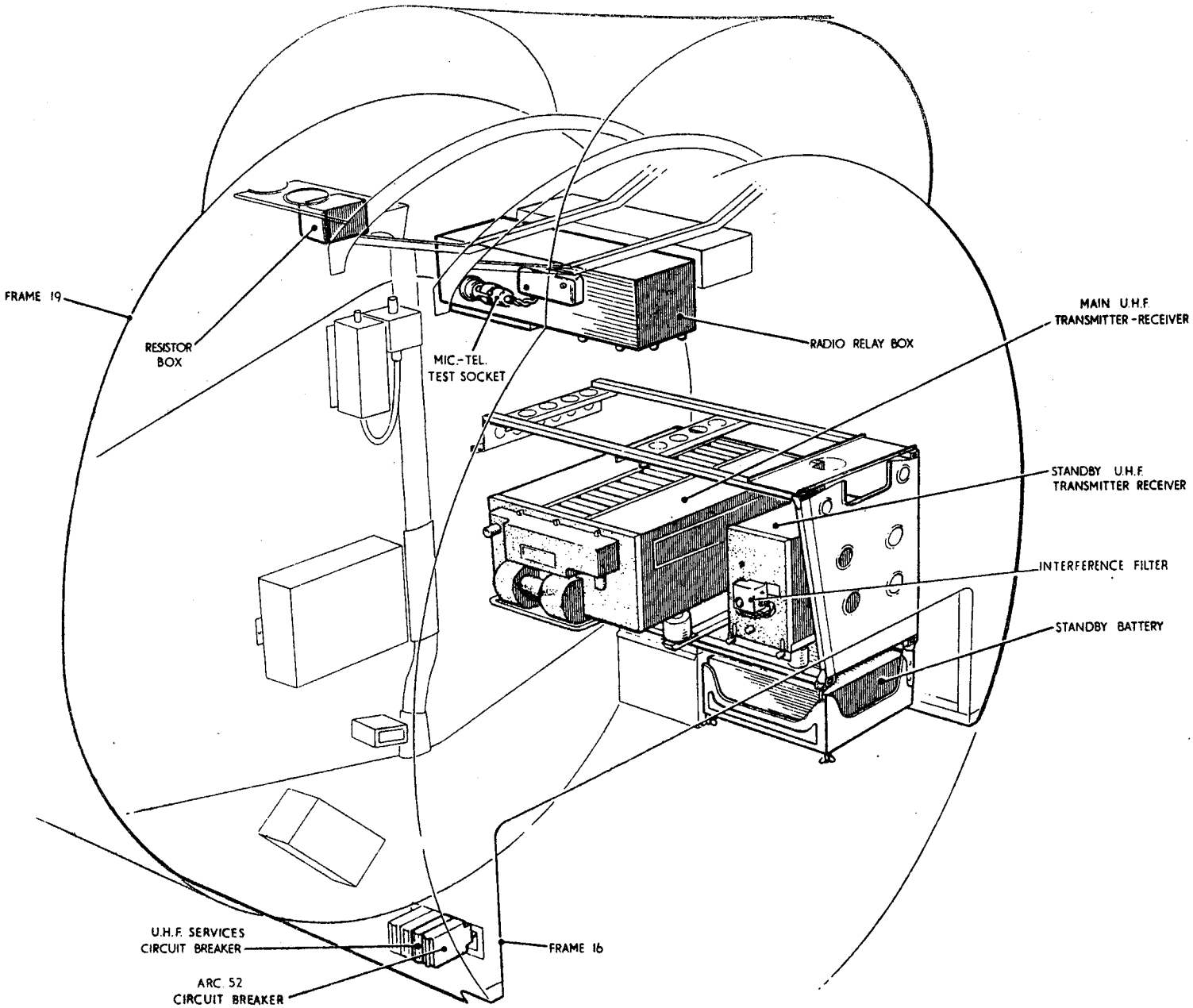

Fig. 1 Wireless installation — location (1)

Introduction

1. This Chapter contains a description of the wireless installation of this aircraft including the servicing information necessary to maintain the installation in an efficient condition. Information on the removal of the various components, together with illustrations showing the location and interconnection of the equipment are also included. For technical information and a detailed description of the standard equipment used, reference should be made to the Air Publications listed in Table 1.

TABLE 1

Equipment Type and Air Publication

Equipment type	Air Publication
A.R.I.18124/1	
Transmitter-receiver, Type 5/ARC 52 Mounting tray, Type MT.1477/AR 52 Aerial McMichel (Blade Type) (pre Mod.1384) Aerial, Chelton, Type 16–1 (Mod.1384) Mic./tel. socket, Type 359 Control unit, Type C.1607/2	A.P.116D-0133-1
A.R.I.23057	
Transmitter-receiver, Type M.4 or M.6 Mounting tray, Type 103 Whip aerial, Type 11789 Interference filter 5915-99-970-0362	A.P.116D-0110-16
Standby battery (24V), Type Voltabloc No.19-Vo-7	A.P.113C-200 series
A.R.I.18012	
Tele-briefing system	A.P.116N-0301-1
A.R.I.5877	
Radio compass, Type AD772 R.F. amplifier, Type 8281 Hunting rack, Type 8288 I.F. amplifier, Type 8282 Mounting rack, Type 8289 Bearing indicator, Type 8284 Control unit, Type 8283 Loop Aerial, Type 8280 Sense Aerial array, Type 402 Q.E. corrector unit, Ref.10.D.20169 R.F. filter unit, Type M.162 (Mod.1028)	A.P.116B-0102-16

DESCRIPTION

General

2. The wireless installation consists of a U.H.F. communication system *(A.R.I. 18124/1)* with which is associated a U.H.F. standby system *(A.R.I.23057)* and a tele-briefing system *(A.R.I.18012)*. A system to give the pilot audio warning of loss of hydraulic pressure is linked with the U.H.F. system. A radio compass system *(A.R.I.5877)* is also installed. Most of the wireless equipment is carried in the radio bay in the front fuselage, being remotely controlled by switches and control units situated in the cabin. The location of all the wireless equipment is illustrated in fig.1, 2 and 3.

Radio bay and mounting structure

3. The radio bay is located in the front fuselage and extends aft from frame 16 to the forward transport joint. Apart from the radio sets and their associated equipment, this bay also contains various electrical components, notably, the electrical supply panel, generator control panel and the batteries. Access to the bay may be obtained by opening the access doors in the undersurface of the front fuselage immediately in front of the forward transport joint.

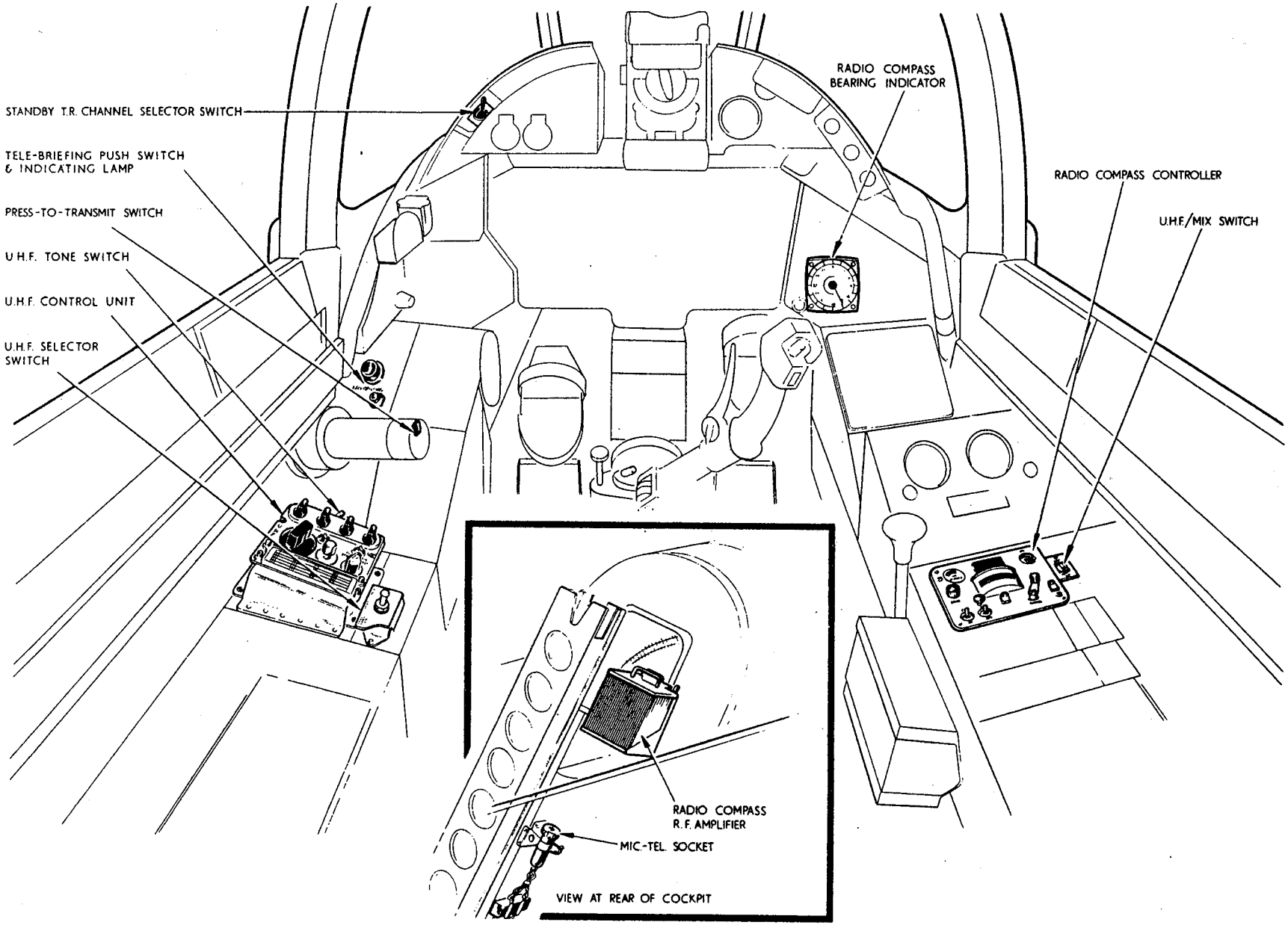

Fig. 2 Wireless installation – location (2)

▶ **(Mod 1438 added)** ◀

4. The radio mounting structure is in two main parts, each carrying mounting plates and bearers for the transmitter-receivers and their associated equipment. The upper structure consists of two angle-sectioned beams with a platform carried between them. The complete assembly extends across the radio bay and is bolted to frames 17A and 17B. Another platform is attached to the starboard side of the beam bolted to frame 17B and extends aft to brackets on frame 19. The lower structure extends along the port side of the radio bay and consists of a number of square tubes, attached by gusset plates, and arranged to form two platforms, one above the other. The forward end of the structure is strengthened by a diaphragm and the complete assembly secured to brackets on frames 16 and 19.

A.R.I.18124/1

5. The multi-channel U.H.F. communication system *(A.R.I.18124/1)* uses a transmitter-receiver carried in a mounting tray situated at the aft end of the bottom platform of the lower mounting structure described in para.4. The installation employs a blade type aerial which projects upwards from the starboard side of the hood fairing above the radio bay. A mic./tel. pull-out socket for the pilot's ejector seat connection is located on the port side of the flying control casings.

6. The installation is remotely controlled by a control unit, a press-to-transmit push-switch, a tone transmit ON/OFF switch, and a Normal/Standby set selector switch. The control unit, which incorporates two panel lamps to provide diffused illumination of the controls, is situated on the cabin port shelf. The press-to-transmit push-switch is incorporated in the throttle twist grip, and the ON/OFF tone transmission switch is situated on the cabin port shelf adjacent to its control unit. The Normal/Standby set selector switch, labelled U.H.F.–MAIN, S'BY and S'BY EMGY. BATT. is also situated on the cabin port shelf, and, on pre-Mod 1438 aircraft, incorporates a ganged and guarded switch lever. Post-Mod 1438 aircraft are fitted with a set selector switch which incorporates a switch lever with a pull-to-unlock facility.

7. The installation is supplied through a circuit breaker, which is marked U.H.F. SERVICES and situated below the electrical supply panel in the radio bay. This circuit breaker is fed from the aircraft's d.c. electrical system and feeds the main transmitter-receiver, via a further circuit breaker which is marked ARC.52 and located adjacent to the U.H.F. services circuit breaker. Normal/Standby set selection, mic./tel and press-to-transmit switching is accomplished by a number of relays contained together with the circuit fuses, in a readily detachable box, known as the radio relay box. This box is mounted to the underside of the top radio mounting structure, described in para.4. The box is used to integrate all the radio installations and carries the control relays and fuses for the U.H.F. standby set, tele-briefing, hydraulic pressure failure audio warning installations, together with a resistor network for the D.M.E. output. Two test sockets, one for the main and the other receiver are also attached to this box. A mic./tel. socket for use when adjusting the sets, is stowed in a spring clip on the radio relay box.

A.R.I.23057

8. The U.H.F. standby communication system *(A.R.I.23057)* is carried in case of failure of the aircraft's normal transmitter-receiver. It employs a pre-set, two channel transmitter-receiver, which is carried in a mounting tray situated just forward of the main U.H.F. transmitter-receiver on the bottom platform of the lower radio mounting structure. The installation uses a whip aerial, which projects upwards from between frames 9 and 10 on the starboard underside of the front fuselage.

9. The installation is supplied with power from the aircraft's main d.c. electrical system, but should this source fail, a 24-volt standby battery may be brought into service. The main d.c. supply is taken from a fuse in the radio relay box and is reduced to the value required by the installation by a resistor carried in a box attached to the platform on the starboard side of the upper radio mounting structure *(para.4)*. When the Type M.6 set is installed the power supply is taken through an interference filter mounted on the front of the set. The standby battery is carried in a readily detachable mounting crate attached to the forward undersurface of the lower radio mounting structure.

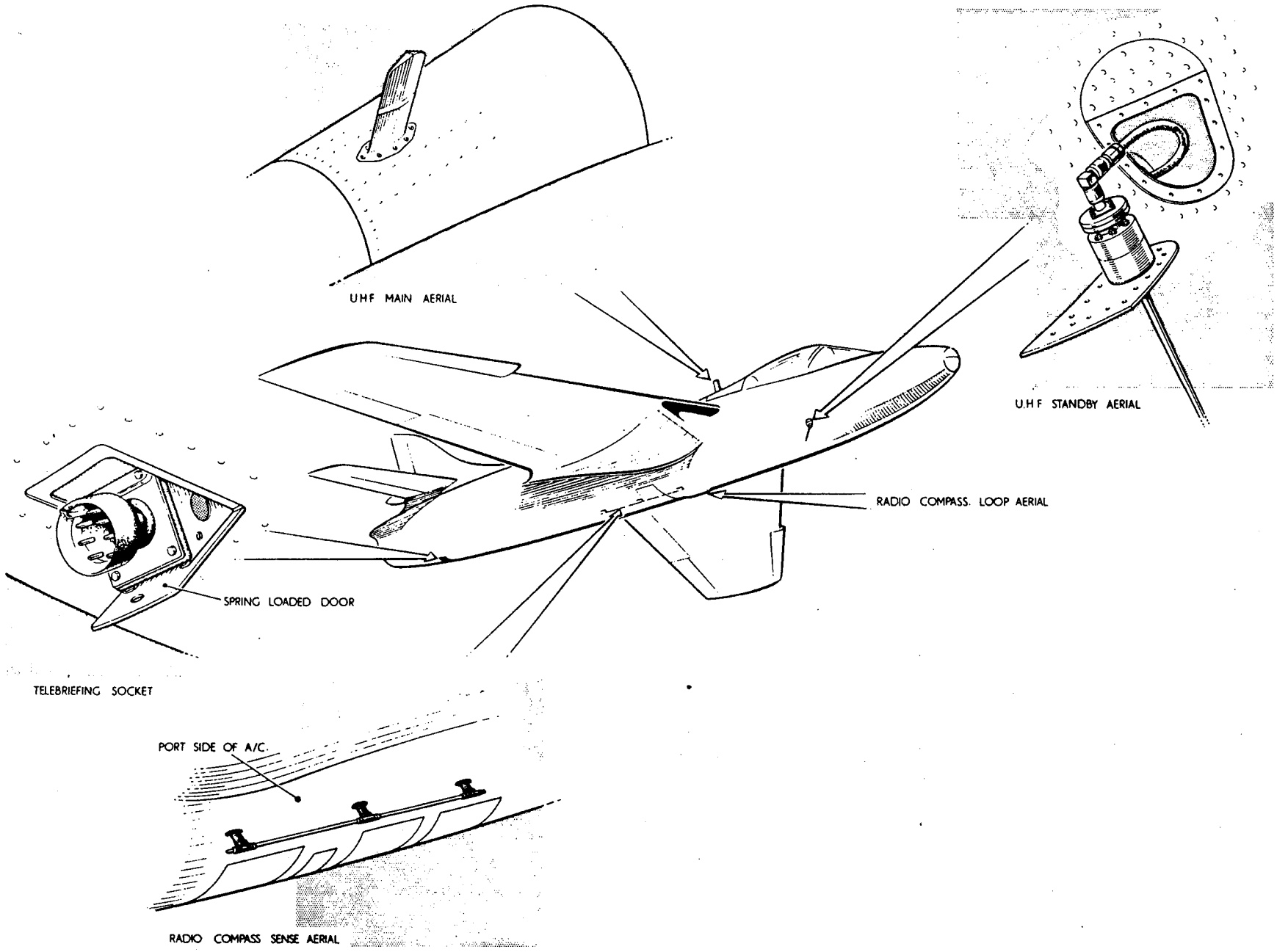

Fig.3 Wireless installation - location (3)

10. Switching from the main transmitter-receiver to the standby set and from the main d.c. supply to the standby battery is accomplished by operation of the Normal/Standby switch *(para.6)*. This switch also controls relays within the radio relay box *(para.7)*, which switch the pilot's mic./tel. socket and the press-to-transmit push-switch to the standby set. Two channel working is provided for by a selector switch marked GUARD and ALTVE, which is mounted on a bracket attached to the port windscreen platform. This switch is normally set to the GUARD position, but may be set to ALTVE. to select the alternative channel.

A.R.I.18012

11. A push-switch and an indicator lamp, for the tele-briefing system *(A.R.I.18012)* are mounted on the forward end of the cabin port shelf. Provision for the connection of the tele-briefing cable, is made by a plug mounted on a spring-loaded access door in the undersurface of the rear fuselage, between frames 53 and 54. The control relays and a fuse for this installation are contained in the radio relay box located in the radio bay.

A.R.I.5877

12. The sub-miniature radio compass *(A.R.I.5877)* is employed for automatic direction finding, the bearing of the selected signal being given on an indicator in the cabin. The installation incorporates a R.F. amplifier and an I.F. amplifier, which together form a radio receiver. This receiver employs loop and sense aerials, the loop aerial being provided with a Q.E. corrector unit and post Mod.1028 an R.F. filter unit is introduced into the sense aerial circuit. The installation is remotely controlled by a control unit and a U.H.F./MIX switch situated in the cabin.

13. The R.F. amplifier is carried in a mounting rack bolted to the tie member extending between the flying control casing and the port top longeron. The I.F. amplifier is supported in a mounting rack, which is bolted to the upper radio mounting structure between frames 17A and 17B at the top of the radio bay. The bearing indicator is situated on the starboard instrument panel and the radio compass control unit, together with the U.H.F./MIX switch, is located on the cabin starboard shelf.

14. The loop aerial is situated in a fairing attached to the fuel pump access door located between frames 19 and 21 at the bottom of the centre fuselage. The sense aerial array, which is supported on three stub masts, extends lengthwise, from just aft of frame 26 to frame 35, along the lower port side of the centre fuselage. The loop aerial's Q.E. corrector unit is situated in the radio bay, being attached to a mounting bracket bolted to the port side of the aircraft's main battery mounting structure and the sense aerial R.F. filter unit *(Mod.1028)* is mounted on the rear face of the R.F. amplifier mounting plate.

15. The installation is supplied from the aircraft's normal d.c. electrical system, via a fuse located in the cabin starboard shelf. The audio signal output from the receiver is fed to the pilot's mic./tel. socket via an interconnection with the U.H.F. installation.

Power supplies and operating frequencies

16. The electrical supply circuits for the radio installations and the operation of the control relays in the radio relay box are described in Sect.5, Chap.1, Group H.1 Information on the hydraulic pressure failure audio warning system is given in Sect.5, Chap.2, Group 5.A. The frequency range of the main U.H.F. transmitter-receiver extends from 225.0 to 399.9 Mc/s and the installation provides for the automatic selection of any one of 19 pre-set frequency channels *(including the guard frequency)*, and manual selection of any one of 1,750 frequency channels spaced 100 kc/s apart. The U.H.F. stand-by transmitter-receiver operates on a frequency of 243.0 Mc/s or an alternative channel, spaced by 1 Mc/s above or below this frequency. The radio compass receiver will operate on any frequency within the range of 200 to 1,700 kc/s in three switched bands.

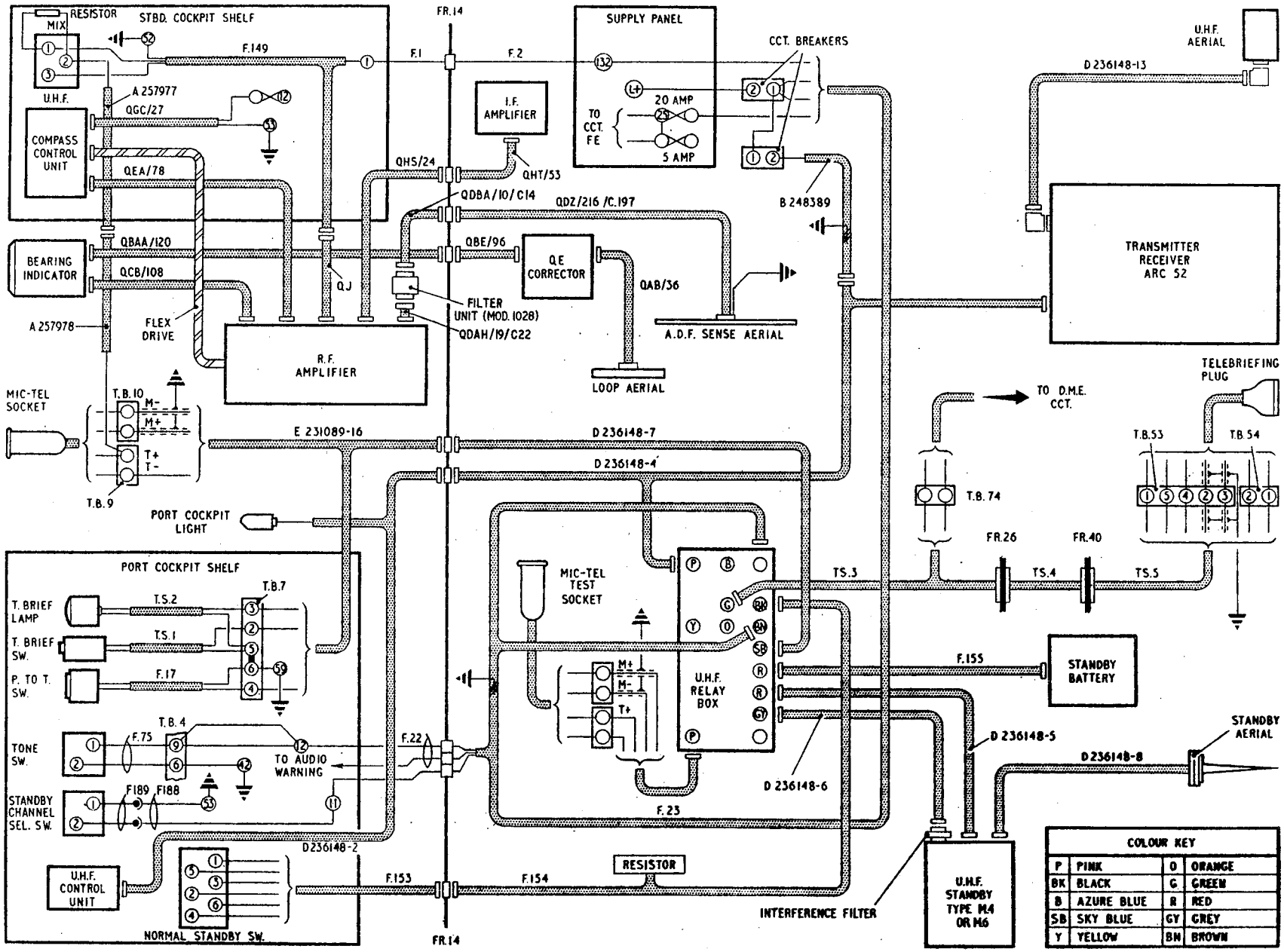

Fig.4 Wireless installation - interconnections
◀ (Mod.1028 incorporated) ▶

T.P.(E) 11712

Interconnection

17. The various components of the wireless installations are interconnected as shown in fig.4 by connectors, strapped and clipped to the aircraft's structure. These connectors are metal-braided and non-braided types fitted with standard and miniature plugs and sockets; the metal braided connectors being bonded where necessary by the clips holding them in position. A wiring diagram of the radio relay box is given in fig.5.

OPERATION

General

18. For the guidance of servicing personnel, a brief description of the operating procedure for the various radio installations will be found in the following paragraphs.

A.R.I.18124/1

19. The setting-up and operating instructions for the A.R.I.18124/1 are given in detail in A.P.2531J, Vol.1. All control of the installation is achieved by the use of the U.H.F. control unit, Normal/Standby set selector switch, tone switch and press-to-transmit push-switch. The installation is supplied from the aircraft's main d.c. electrical system and may be used whenever the aircraft's battery master switch is placed in the ON position.

20. The U.H.F. control unit incorporates all the operational controls and provides the following facilities:-

(1) *Function switch.* This is a four-position rotary switch engraved OFF, T/R, T/R + G and ADF. In the OFF position, the installation is inoperative as the power supply relay within the transmitter-receiver is not energized. In the T/R position, the power supply relay is energized and the main transmitter-receiver is switched on for operational purposes. With the switch in the T/R + G position, the guard receiver in addition to the main transmitter-receiver is available. In the ADF position, the transmitter-receiver is switched for automatic direction finding operations with the appropriate airborne equipment and also permits normal communication facilities.

(2) *Channel selector switch.* This is engraved CHAN and has 20 positions. Those positions numbered 1 to 18 are used to select the required pre-set frequency channels. The two remaining positions are annotated M and G. The M position is used to switch the frequency selection to manual control and the G position is normally set to the guard frequency, thus enabling the main transmitter-receiver to be used on the guard frequency independently of the guard receiver. The frequencies of the pre-set channels are marked on an ivorine tablet below the channel selector switch.

(3) *Manual frequency control.* The MANUAL control consists of four control knobs, each of which is associated with numbers appearing in an aperture above each knob. The controls are manipulated to set the numbers to correspond with the required frequency channel, thus enabling any one of the 1,750 channels to be selected as required. This selection is overridden whenever the channel selector switch is moved from the M position.

(4) *Volume control.* This is a potentiometer, engraved VOLUME, and is used to adjust the level of the audio signal to the telephones.

21. The Normal/Standby set selector switch is a three-position toggle switch labelled U.H.F. - MAIN, S'BY and S'BY EMGY. BATT. The switch controls the change-over from the main transmitter-receiver to the standby set and also the switching of the standby set's power supply as follows:-

(1) When the switch is in the MAIN position, the pilot's mic.-tel. socket and press-to-transmit push-switch are connected to the main transmitter-receiver via the relays in the radio relay box.

(2) When the switch is in the S'BY position, the relays in the radio box switch the pilot's mic.-tel. socket and press-to-transmit push-switch to the standby transmitter-receiver. In this position of the switch, the standby set is supplied from the aircraft's main d.c. electrical system.

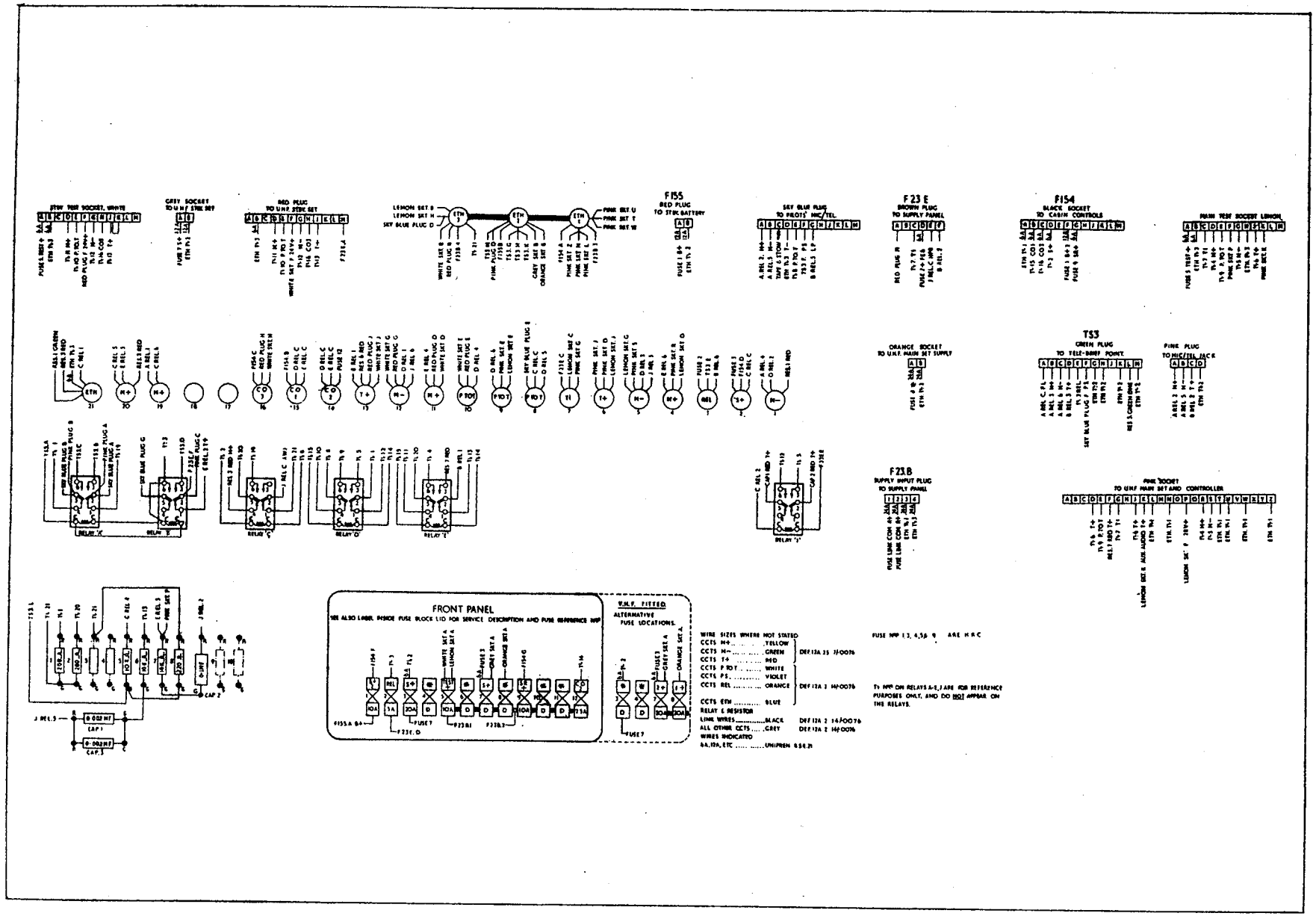

Fig.5 Wiring of U.H.F. radio relay box

(3) When the switch is in the S'BY EMGY. BATT. position, the pilot's mic.-tel. socket and the press-to-transmit push-switch are still connected to the standby transmitter-receiver, but the aircraft's main d.c. supply is isolated and the standby battery brought into service to supply the set.

22. The tone switch is a single-pole, two-position toggle switch labelled TONE-OFF and ON. When this switch is in the ON position, the main transmitter is automatically tone modulated at between 920 c/s and 1120 c/s for direction finding or emergency purposes.

23. The press-to-transmit push-switch is a push-button incorporated in the throttle twist grip and is engraved PRESS TO TRANSMIT. It must not be confused with the air brake control switch, which is also fitted in the twist grip. The push-switch is used for both the main and standby transmitters, being switched to the set in use by relays within the radio relay box. When pressed, the switch makes the earth return for a switching relay within the transmitter-receiver in use, and this relay, when energized, switches the set from receiver to transmit.

24. By rotating the function switch from OFF to any one of the other three positions, the transmitter-receiver is switched on and warms up ready for operation. When switched on, the transmitter-receiver is automatically in the "receiver" condition, thus signals on the frequency selected by the channel selector switch will be heard. The audio level of these signals may be adjusted by use of the volume control. To transmit on the selected channel, it is necessary for the operator to press the press-to-transmit push-switch for as long as transmission is required. Release of the press-to-transmit push-switch automatically restores the transmitter-receiver to the "receive" condition.

25. When the function switch is rotated to the T/R + G position, the guard receiver is brought into operation, and, if the channel selector switch is set to any channel other than G, watch can be maintained on both the guard and the frequency at which the main transmitter-receiver is being operated. Should it be necessary to operate the main receiver at the guard frequency, or to transmit and receive at this frequency, the function switch should be set to T/R and the channel selector switch set to G. The guard receiver is thereby cut off and the installation operated as described in para.24.

A.R.I.23057

26. Operating and setting-up instructions for the A.R.I.23057 are given in detail in A.P.2531N, Vol.1. The installation may be supplied either from the aircraft's main d.c. electrical system, or from the standby battery. The standby transmitter-receiver is brought into use and its power supply selected by operation of the U.H.F. Normal/Standby set selector switch *(para. 21)*, and either the guard or alternative channel selected by the channel selector switch *(para.10)*. The set is switched from the "receive" to transmit condition by operation of the press-to-transmit push-switch *(para.23)*.

◀ 27. To prevent unnecessary discharge the standby battery should only be brought into service if the aircraft's main d.c. electrical system fails. ▶

A.R.I.18012

28. The operation of the A.R.I.18012 system is described in detail in A.P.2876G, Vol.1. The system is brought into operation automatically, by relays within the radio relay box, whenever the external cable is connected with the aircraft's tele-briefing plug. These relays transfer the pilot's mic.-tel. socket from the U.H.F. installation to the tele-briefing cable, and, at the same time, the aircraft's tele-briefing lamp is lit to indicate that briefing information may be received over the system.

29. When it is required to speak back over the system, the aircraft's tele-briefing push-switch must be pressed. This action energizes a relay in the tele-briefing building and connects the pilot's microphone to the landline, via an amplifier also located in this building. At the same time,

a lamp lights in the building to indicate that the microphone is in circuit.

A.R.I.5877

30. Operating and setting-up instructions for the A.R.I.5877 radio compass are described in A.P.2530M, Vol.1. The installation obtains its electrical supply from the aircraft's main d.c. system, and may be brought into operation when the aircraft's battery master switch is placed in the ON position. The installation is operated from a control unit, and an U.H.F./MIX switch situated in the cabin.

31. The radio compass control unit provides the following facilities:-

(1) *Equipment on/off switch.* This is a single-pole, two-position toggle switch, engraved ON. It controls the the d.c. supply to the equipment, and when the switch is moved to the ON position, the equipment warms-up ready for operation.

(2) *ADF/Receiver switch.* This is a double-pole, two-position toggle switch engraved ADF and REC. It controls the R.F. amplifier and I.F. amplifier circuits as follows:-

(a) ADF position - the equipment is connected for fully automatic direction finding.

(b) REC position - the automatic direction finding facility is inoperative, and the equipment functions only as a conventional receiver.

(3) *Frequency band selector.* This is a three-position, lever-operated rotary switch which projects through a slot adjacent to the tuning dial on the control unit. Operation of this switch selects the required frequency band, and also causes the appropriate scale on the tuning dial to be illuminated. The frequency bands are as follows:-

Band 1 .....200 to 415 kc/s.
Band 2 .....415 to 840 kc/s.
Band 3 .....840 to 1700 kc/s.

(4) *Tuning control and indicator.* The tuning control is a cranked handle labelled TUNING. It is geared to a flexible drive shaft connecting the control unit with the tuning mechanism in the R.F. amplifier. Indication of the signal frequency is given by the scale on the tuning dial drum. The tuning indicator is a moving coil meter engraved TUNE. Signal strength is indicated by clockwise deflection of the meter needle.

(5) *Gain control.* This consists of two ganged potentiometers engraved GAIN. It controls the R.F., I.F., and A.F., stages of the receiver and is used to regulate the output level of the received signals as fed to the pilot's telephones.

(6) *B.F.O switch.* This is a single-pole, two-position toggle switch engraved C.W. and R.T. When the switch is in the C.W. position, the beat frequency oscillator valve in the I.F. amplifier is energized to enable keyed continuous wave stations to be received. For the reception of radio telephony signals, the switch should be kept in the R.T. position.

(7) *Panel illumination control.* This is a small knob marked DIM PUSH. It operates a shutter device which controls the brightness of the tuning scale and panel illumination. The knob is pushed inwards to decrease the brightness.

Note . . .

A spare dial lamp, screwed into a dummy holder marked SPARE, is provided on the front panel of the control unit.

32. The U.H.F./MIX switch is a single-pole, two-position toggle switch employed to switch the audio output of the radio compass to the pilot's telephones. When the switch is in the U.H.F. position, the audio output from the radio compass is isolated, and signals from the U.H.F. transmitter-receiver only are fed to the pilot's telephones. When the switch is placed in the MIX position, the audio output from the radio compass receiver is mixed with the U.H.F. signals, thus both the radio compass and U.H.F. signals are fed to the pilot's telephones.

SERVICING

General

33. Servicing of the wireless equipment is covered in the appropriate Air Publications listed in Table 1, but any unit suspected of being unserviceable should be carefully checked in-situ, and, if found to be faulty, removed from the aircraft and taken into the workshop for rectification action as necessary. The location of the components is illustrated in fig.1, 2 and 3, the interconnection is given in fig.4, and a wiring diagram of the power supplies will be found in Sect.5, Chap.1.

Power supplies

34. If a fault is reported in the wireless installation, the power supplies should first be checked, in conjunction with the appropriate routeing and theoretical diagram in Sect.5, Chap.1, to ensure that the trouble is not in the aircraft's electrical system. The voltage, both on and off load, must be tested, and a check made to ensure that the connectors carrying the supply to the equipment are correctly assembled.

Cables and connectors

35. Servicing of the cables and connectors consists of the standard continuity and insulation resistance tests, together with a periodical examination throughout their entire length for signs of damage to, or deterioration of the insulation. If any defects are found, the complete cable or connector must be replaced. The Part number references of the connectors are given in fig.4. 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 screwed fully home.

Security check

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

(1) Ensure that all the units are secure in their mounting racks and that the clamping devices are tightened sufficiently to prevent movement or vibration. Check that locking wire is fitted where necessary.

(2) Inspect 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 all the control units and switches are securely mounted. With electrical power switched off, operate all the controls and ensure that they are undamaged and serviceable.

(4) Check the security of all the aerials.

(5) Ensure that the radio relay box, and the standby battery crate are securely mounted.

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

(7) Check that any strain on the pilot's mic.-tel. socket is taken up by the check-cord, and not by the cable attached to the socket.

Functional check

37. To ensure that the wireless installation is set up and operating correctly, the functional checks given in the appropriate Air Publications listed in Table 1 must be made, using the test sets and equipment provided. To enable the U.H.F. installation to be ground tested and adjusted in-situ, two test sockets, one for the main and the other for the standby transmitter-receiver, are provided on the radio relay box in the radio bay. These test sockets are used in conjunction with the U.H.F. test set as described in the appropriate Air Publication. A mic.-tel. socket, wired in parallel with the pilot's socket, is provided for intercommunication use when adjusting the installation. This socket, which is used in conjunction with a standard headset, is stowed in a spring clip attached to the radio relay box.

Fault finding

38. If a fault is reported, an attempt should be made, in-situ, to locate the faulty unit. Before any other tests are made, the low tension source should be checked, the voltage, both on and off load, tested, and the tightness of the connectors ensured. Any unit found to be faulty should be taken to the workshop for testing and repair. For full details of

the fault finding and testing procedure, reference should be made to the Air Publications listed in Table 1.

39. If the radio relay box is found to be faulty, it should be removed from the aircraft for Bay servicing and replaced by a fully serviceable item. When the aircraft is undergoing its Minor Servicing, this box should be removed from the aircraft for a thorough check and adjustment to ensure that it is fully serviceable.

Final check

40. After servicing the wireless installation, ensure that all the equipment is switched off, and that all access doors removed to give access to the equipment, are correctly replaced and secured.

REMOVAL AND ASSEMBLY

General

41. The recommended procedure for removing the main components of the wireless installation is given in the following paragraphs. The method of assembly 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.5, Chap.1, Group A.1.

U.H.F. main transmitter-receiver

42. The recommended method of removing this transmitter-receiver is as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Disconnect the two connectors from the transmitter-receiver, fit approved caps and covers to the plugs and sockets, and stow the connectors clear of the set.

(3) Remove the locking wire from the two wing-nuts at the front of the mounting tray and unscrew these nuts until they drop clear of the set.

(4) Disengage the rear of the transmitter-receiver from the spring loaded dowels on 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.

U.H.F. main aerial

43. The method of removing this aerial is as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Remove the hood fairing sufficiently to gain access to the aerial connector, and, after disengaging the retaining spring from the aerial connector plug, disconnect the aerial connector from the aerial socket. Fit an approved cap and cover to the plug and socket.

(3) The aerial may now be removed from the hood fairing by removing the eight bolts, nuts and washers securing the aerial base to the mounting plate. The lugs holding the aerial connector plug retaining spring are also secured by two of these bolts; care must be taken to retain these with the hood fairing when the aerial is removed.

Note . . .

When re-assembling the aerial, ensure good electrical bonding by checking that all mating surfaces are absolutely clean and making perfect contact. Ensure that the aerial connector retaining spring is re-fitted and seal the aperture around the aerial base with Bostik compound to prevent the entry of water.

U.H.F. control unit

44. To remove the U.H.F. control unit proceed as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1. Group A.1.

(2) Disengage the four Dzus fasteners securing the control unit and lift the unit out of its mounting.

(3) Disconnect the connector from the control unit and fit an approved cap and cover to the plug and socket.

(4) Remove the control unit from the aircraft.

Radio relay box

45. This box is designed for easy removal, being supported on quick-release mountings. The recommended method of removing the box is as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1. Group A.1.

(2) Disconnect all the connectors from the relay box, fit approved caps and covers to the plugs and sockets and stow the connectors clear of the box.

(3) Remove the two bolts passing through the mounting lugs on the right hand side of the box casing. Release the box from its attachment brackets by swinging it downwards and to starboard to disengage the locating hooks.

(4) Remove the box from the aircraft.

U.H.F. standby transmitter-receiver

46. To remove the standby transmitter-receiver, proceed as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Disconnect the connectors from the transmitter-receiver, fit approved caps and covers to the plugs and sockets and stow the connectors clear of the set.

(3) Unscrew the two knurled nut fasteners at the front of the mounting tray and allow them to drop clear of the retaining catches on the set.

(4) Disengage the spring-loaded 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.

U.H.F. standby aerial

47. The recommended method of removing this aerial is as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Remove the fourteen countersunk headed bolts from around the periphery of the aerial access panel in the starboard skin of the front fuselage.

(3) Withdraw the aerial and access panel sufficiently to gain access to the aerial connector and disconnect this connector from the aerial socket. Fit an approved cap and cover to the plug and socket.

(4) Remove the aerial from the access panel by unscrewing the five nuts from the bolts securing the aerial base to the access panel, taking care to retain the washers.

Note . . .

When re-assembling the aerial, ensure good electrical bonding by checking that all mating surfaces are absolutely clean. Pay particular attention to the door landing.

U.H.F. standby battery

48. The standby battery is carried in a crate which is readily detachable from the aircraft, and should be removed in its crate as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Disconnect the two leads of cable assembly F.155 from the terminals on the standby battery. Insulate the bare ends of these leads and stow clear of the battery.

(3) Remove the locking wire from the wing-nuts below the battery crate, and supporting the crate, slacken off the wing-nuts until the tie-rods clear the locating pads on the bottom of the crate.

(4) Swing the crate downwards and inboard to disengage the retaining hooks. Remove the crate and battery from the aircraft.

Note . . .

After re-assembly of the battery and crate, lock the wing-nuts to the lugs on the mounting crate with 22 s.w.g. stainless steel wire to Spec.189 or 161.

Radio compass R.F. amplifier

49. To remove this R.F. amplifier proceed as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Unscrew the two knurled nut fasteners, securing the R.F. amplifier in its mounting tray, until they clear the retaining catches on the amplifier.

(3) Using the handle on the amplifier unit, carefully withdraw the unit from its mounting tray and remove it from the aircraft.

Radio compass I.F. amplifier

50. To remove this I.F. amplifier proceed as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Unscrew the two knurled nut fasteners, securing the I.F. amplifier in its mounting tray, until they fall clear of the retaining catches.

(3) Using the handle on the amplifier unit, carefully withdraw the unit from its mounting tray and remove it from the aircraft.

Radio compass loop aerial

51. This aerial is mounted in a fairing on the fuel pump access door in the undersurface of the centre fuselage. To remove the aerial proceed as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Remove the screws securing the fuel pump access door to the undersurface of the centre fuselage and lower the door sufficiently to gain access to the aerial connector. Disconnect the aerial connector and remove the access door from the aircraft.

(3) The fairing, complete with aerial, may now be removed by unscrewing the four special bolts securing the fairing to the door.

Note . . .

These are the four outer bolts, which pass through the fairing to engage with anchor nuts on the door and should not be confused with the aerial attachments.

(4) To remove the aerial from the fairing it is necessary to unscrew the four special nuts from the bolts securing the aerial in position. These nuts are locked with shellac.

Note . . .

When re-assembling the loop aerial ensure that the aerial connector is locked with 22 s.w.g. stainless steel wire.

Radio compass sense aerial

52. To remove this aerial array proceed as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Gain access to the aerial connector via the engine access door, disengage the terminal cover from the terminal post at the top of the central stub mast, and disconnect the aerial connector.

(3) Support the aerial array to prevent distortion, and unscrew the six screws securing each stub mast to the nut plates on the fuselage skin. Remove the aerial from the aircraft.

Note . . .

When re-assembling the aerial, ensure that the aerial terminal cover is replaced and that the earth wire is intact and bolted to frame 31.

Radio compass Q.E. corrector unit

53. The method of removing the Q.E. corrector unit is as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Disconnect the two connectors from the Q.E. corrector unit, fit approved caps and covers to the plugs and sockets and stow the connectors clear of the unit.

(3) Remove the main cover assembly from the Q.E. corrector unit by disengaging the two fasteners.

(4) The Q.E. corrector unit may now be removed by unscrewing the four captive screws securing the unit to its mounting plate. Replace the cover assembly.

Note . . .

When re-assembling the Q.E. corrector unit ensure that the connectors are locked with 22 s.w.g. stainless steel wire.

Radio compass bearing indicator

54. To remove this bearing indicator proceed as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Gain access to the forward face of the indicator and disconnect the two connectors. Fit approved caps and covers to the plugs and sockets.

(3) Remove the indicator by unscrewing the four screws passing through its mounting flange. When unscrewing the two lower attachments ensure that the distance tubes are retained.

Note . . .

When re-assembling the indicator ensure that its connectors are locked with 22 s.w.g. stainless steel wire.

Radio compass control unit

55. The method of removing this control unit is as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Release the control unit from its backplate by unscrewing the two large knurled screws located adjacent to the tuning meter and tuning crank.

(3) Lift the unit from the backplate to disengage the locating spigots, tuning drive and electrical connections. Remove the control unit from the aircraft.

(4) If it is required to remove the backplate, it is first necessary to remove the cabin starboard shelf *(Sect.5, Chap.1, Group A.2)* after which the removal of the backplate will be self-evident.

Radio mounting structure

56. The lower radio mounting structure extends from frame 16 to frame 19, thus, when breaking down the aircraft at the front transport joint as described in Sect.3, Chap.1, it is necessary to remove this structure. The recommended procedure is as follows:-

(1) Render the aircraft electrically safe as described in Sect.5, Chap.1, Group A.1.

(2) Remove the standby battery *(para.48)*.

(3) Remove the gun firing panel and the type 200 inverter *(Sect.5, Chap.1, Group A.2)*.

(4) Remove the U.H.F.transmitter-receiver *(para.42 and 46)*.

(5) Remove the I.F.F. transmitter-receiver and coder unit *(Sect.6, Chap.2)*.

(6) Stow all the disconnected cables clear of the mounting structure, releasing any clips and strapping as found necessary.

(7) Release all clips and strapping from the cables attached to the mounting structure to ensure that the removal of the structure will be unobstructed.

(8) Release the mounting structure from frames 16 and 19 by removing the nuts, bolts and washers securing it to the brackets on these frames.

(9) Remove the lower radio mounting mounting structure from the aircraft.

(10) The aft platform of the upper radio mounting structure, which supports terminal block No.109 is also attached to brackets on frame 19, thus the cables to this terminal block must be disconnected and the platform released from frame 19 when breaking down the aircraft. It is not, however, necessary to remove the upper radio mounting structure.

LIST OF APPENDICES

Appendix 1 — Mod.1379

(A.R.I.18012)

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

Introduction

1. This modification which is associated with S.R.I.M. 3821 describes the effect on the telebriefing installation A.R.18012 which is described in Chap.1.

2. Mod.1379 is essentially concerned with the Radio Supplies and Relay Box which is described in Sect.5, Chap.1, Group H.1, App.3.

DESCRIPTION

General

3. With the embodiment of Mod.1379 circuit switching to complete telebriefing communication ceases to be automatic when the telebriefing land line is connected. The energising circuits for the switching relays A, B and F are completed by momentarily depressing the cockpit T.B. push switch. The relay energising circuits are self retaining and the relays remain energised when the T.B. push switch is released. The cockpit T.B. indicator light is illuminated to indicate that the telebriefing interconnection is complete. Pilot to telebriefing control call-up is made by depressing the cockpit T.B. switch which completes the ground installation call-up indicator lamp circuit.

SERVICING

General

4. This modification has no effect on servicing which remains as described in Chap.1 of this section.

REMOVAL AND ASSEMBLY

General

5. This modification has no effect on removal and assembly which is described in Chap.1 of this section.

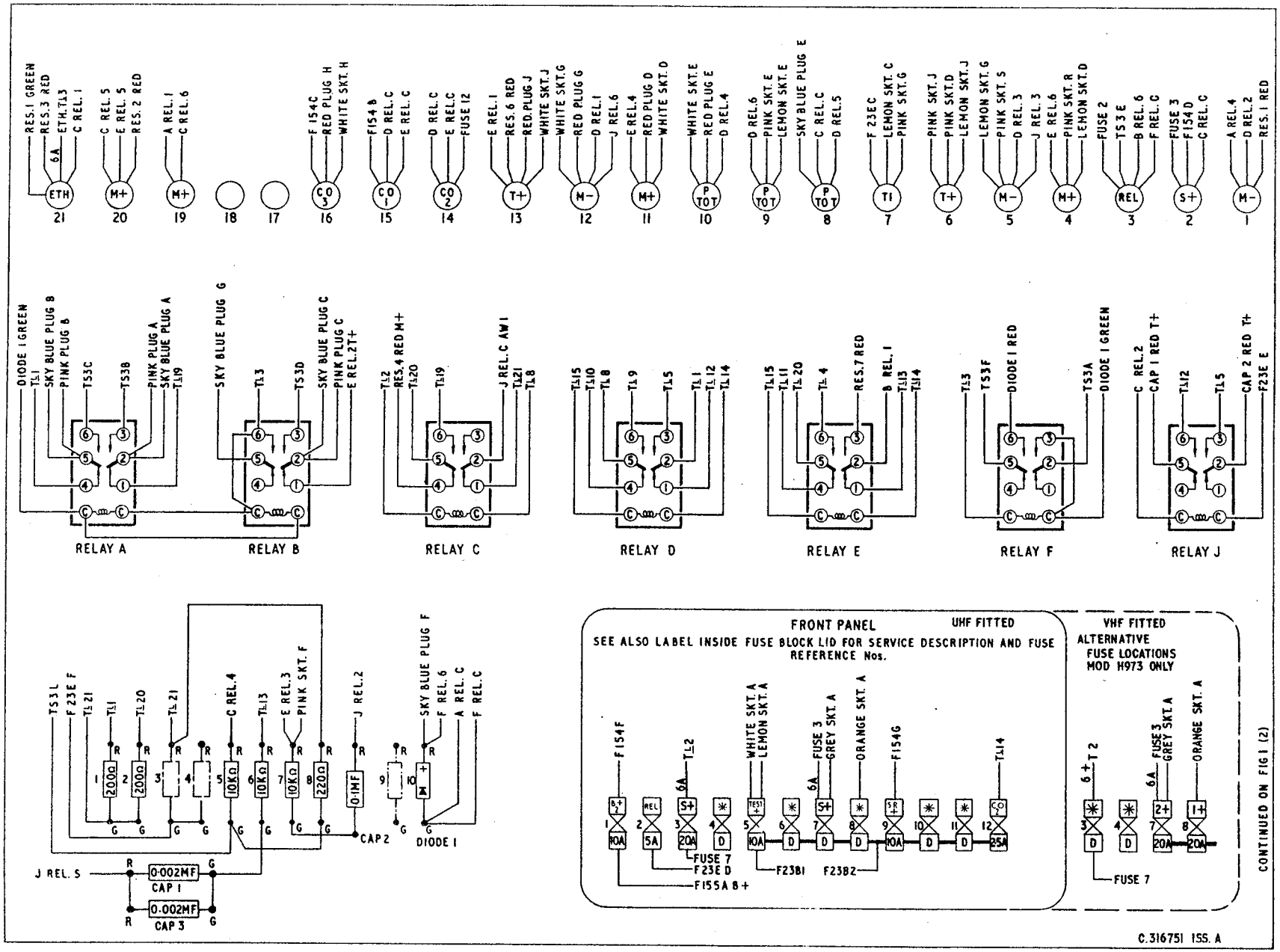

Fig. 1(1) Wiring of U.H.F. radio relay box

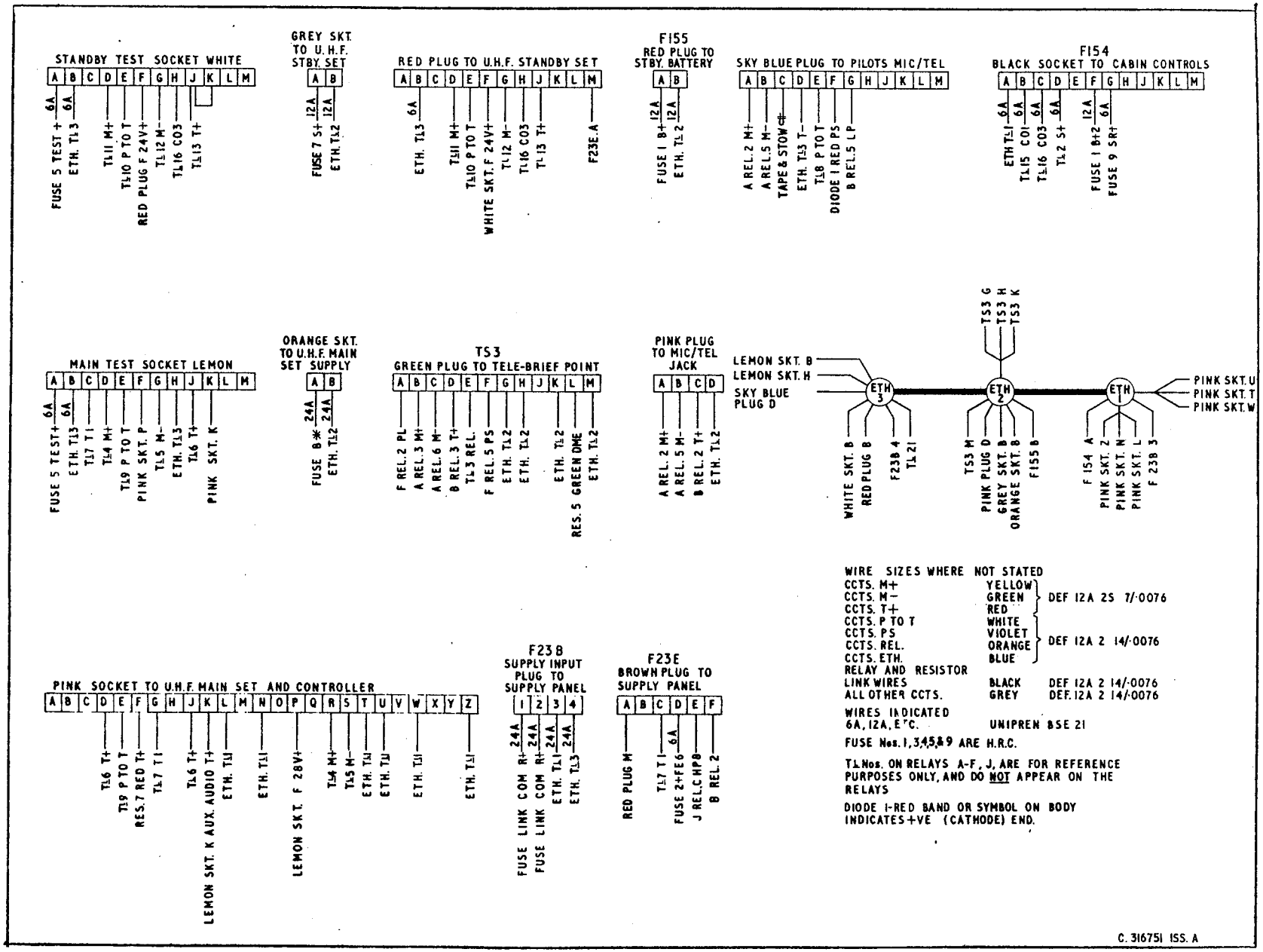

Fig. 1(2) Wiring of U.H.F. radio relay box

Chapter 1.A

TEMPORARY V.H.F. WIRELESS INSTALLATION

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

TABLE

Introduction

1. This Chapter describes the temporary V.H.F. wireless equipment installed in aircraft embodying Mod.973 and includes the servicing information necessary to maintain the installation in an efficient condition. Information is given on the removal of the various components together with illustrations showing the location and interconnection of the equipment. The detailed description and technical information regarding the standard equipment used, is given in Air Publication 2528P, Vol.1.

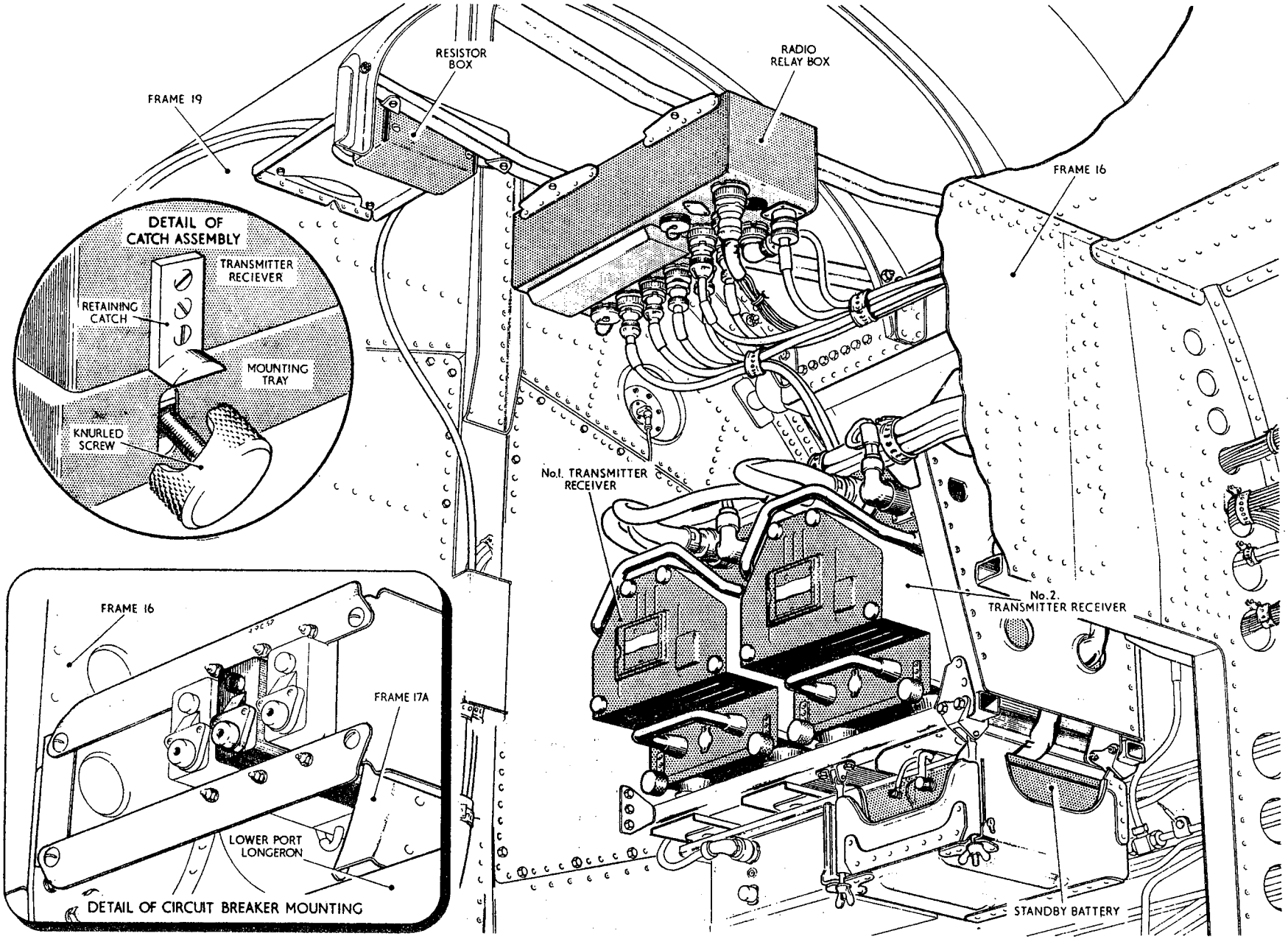

Fig.1 location (1)

RESTRICTED

TABLE 1

Equipment type and Air Publication references

Equipment Type	Air Publications
A.R.I.18065	
Transmitter-receiver No.1, Type 1985A Transmitter-receiver No.2, Type 1987A Mounting rack, Type 873/2 Control unit, Type 382 Mic.-tel. socket, Type 359 Aerial (Stbd.), Type 229 Aerial (Port), Type 226	A.P.2528P, Vol.1
24 volt standby battery, Type Voltabloc, Ref.No.10-VO-7	A.P.4343A, Vol.1, Sect.11
A.R.I.18012	A.P.2876G, Vol.1

DESCRIPTION

General

2. The wireless equipment consists of a twin 10 channel V.H.F. communication system, *(A.R.I.18065)* with which is associated a telebriefing system *(A.R.I.18012)*. A system to give the pilot audio warning of loss of hydraulic pressure is also linked with the installation. The transmitter-receivers and associated equipment are carried in the radio bay in the front fuselage and are remotely operated by control units situated in the cabin. The installation employs two whip aerials, one of which projects upwards through the top skin of each outer wing. When in use, the external telebriefing cable engages with a plug located in the undersurface of the rear fuselage. The location of the wireless equipment is illustrated in fig.1 and 2.

Radio bay and mounting structure

3. The radio bay is located in the front fuselage and extends aft from frame 16 to the forward transport joint. The radio mounting structure in these aircraft is similar to that described in Sect.6, Chap.1. Access to the bay may be obtained by opening the access doors, located in the undersurface of the front fuselage immediately in front of the forward transport joint.

A.R.I.18065

4. The transmitter-receivers are carried side by side in mounting racks on the bottom platform of the radio mounting structure. The transmitter-receiver known as set No.1 is located at the aft end of the mounting, while that known as set No.2 is located at the forward end of the structure. Each transmitter-receiver is remotely controlled by a control unit, but a single press-to-transmit push-switch is used for both transmitter-receivers. Only one set is employed at any given time, being selected by a set selector switch marked V.H.F. - No.1 set, No.2 set and No.2 set alternative, the latter position enabling the press-to-transmit control circuit of No.2 set to be supplied from a standby battery should fuse 9 in the radio relay box fail. Both remote control units and the selector switch are situated on the cabin port shelf and the press-to-transmit push-switch is incorporated in the throttle twist grip. The supply to the sets, the mic.-tel., and press-to-transmit switching from one set to the other is accomplished by a number of relays contained, together with the supply fuses, in a quickly detachable box, known as the radio relay box situated in the radio bay. A mic.-tel. socket for use when adjusting the sets, is stowed in a spring clip on this relay box. The No.1 transmitter-receiver employs an aerial, mounted on a small access panel in the upper surface of the starboard outer wing, while the No.2 transmitter-receiver uses an aerial mounted in a similar position on the port outer wing. A mic.-tel., pull-out socket for the pilot's ejector seat connection is located on the port side of the flying control casing. A standby battery, which is provided as an alternative source of supply for No.2 transmitter-receiver's press-to-transmit control circuit is carried in a crate attached to the forward undersurface of the lower radio mounting structure.

A.R.I.18012

5. The telebriefing installation in these aircraft is similar to that described in Sect.6, Chap.1.

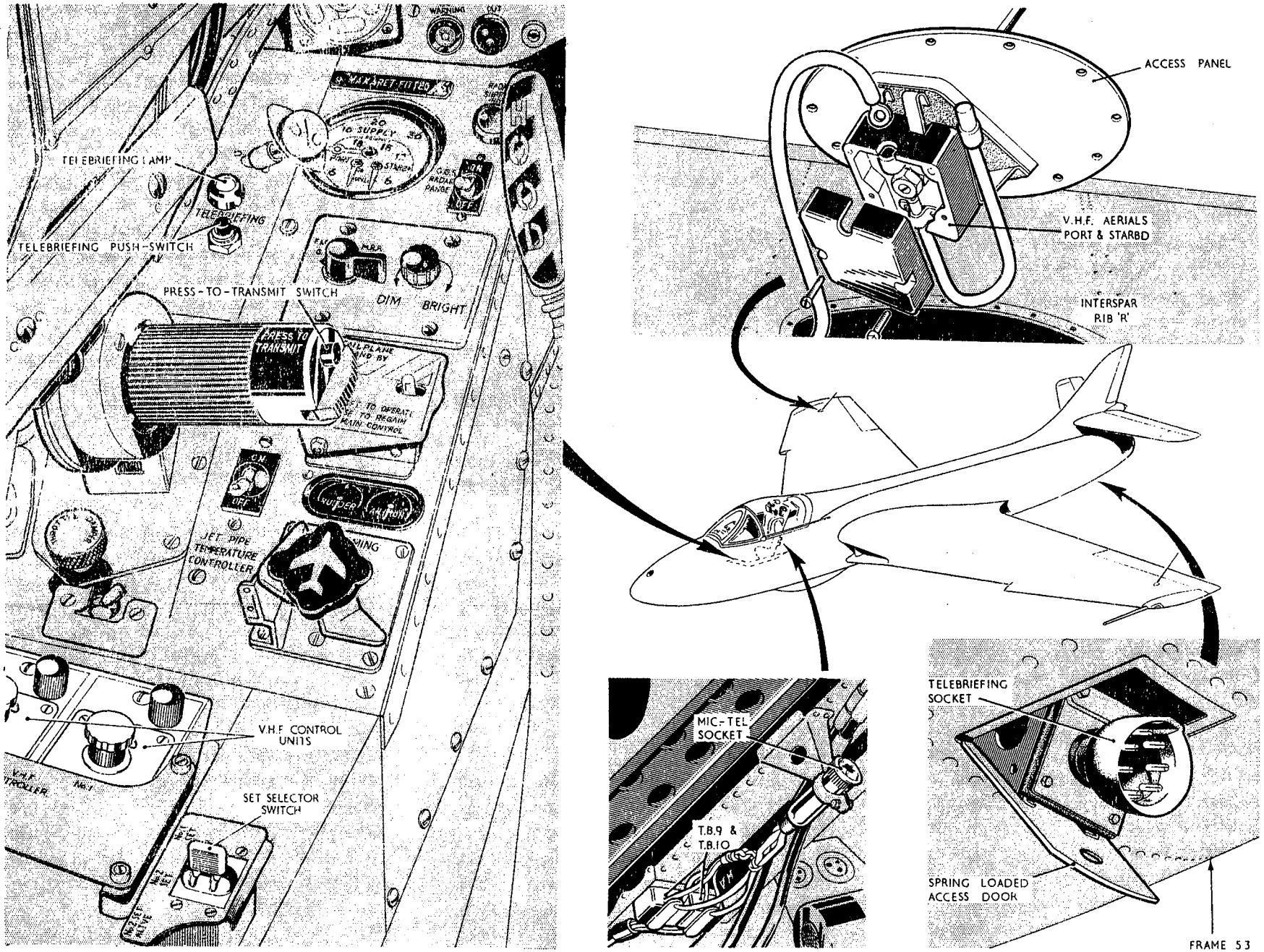

Fig. 2 Location (2)

Power supplies and operating frequencies

6. The electrical supply circuit for the radio installation and the operation of the control relays in the radio relay box are described in Sect.5, Chap.1, while information on the hydraulic pressure failure audio warning system is given in Sect.5, Chap.2. The frequency range of No.1 transmitter-receiver is from 100 to 125 Mc/s, while that of No.2 transmitter-receiver extends from 115 to 145 Mc/s, thus the installation offers twenty pre-set frequency channels within this range, for selection by the remote control units.

Interconnection

7. The various components of the installation are interconnected as shown in fig.3 by a number of connectors, strapped and clipped to the aircraft structure. The connectors are of the metal-braided type fitted with standard and miniature plugs and sockets, the metal braided connectors being bonded where necessary by the clips holding them in position. A wiring diagram of the radio relay box is given in fig.4.

OPERATION

A.R.I.18065

8. The setting-up operating instructions for the A.R.I.18065 are given in A.P.2528P, Vol.1, but for the guidance of servicing personnel a brief description of the operating procedure, will be found in the following paragraphs.

9. Both transmitter-receivers of the installation are supplied with power from the aircraft's electrical system and warm up ready for operation when the battery master switch is placed in the ON position. The mic.-tel. socket and press-to-transmit push-switch are normally connected to set No.1 but may be transferred to set No.2 by operation of the set selector switch. As all the frequency channels are set up before flight, it is only necessary for the operator to know the relation between these frequency channels and the channel letter coding on the dials of the control units to enable him to select any one of the twenty frequency channels available.

10. With the set selector in set No.1 position, rotation of the selector switch knob of No.1 control unit, which is the inboard of the two control units located on the cabin port shelf, from OFF to any one of the other ten positions will select No.1 transmitter-receiver to the channel allocated for that particular position of the selector switch. When selected, the transmitter-receiver is automatically in the "receive" condition thus signals on the selected channel will be heard. When it is required to transmit on the selected channel, it is necessary for the operator to press the press-to-transmit push switch situated in the throttle twist-grip for as long as transmission is required. When the press-to-transmit push-switch is released, the transmitter-receiver will automatically return to the "receive" condition.

11. When it is required to employ set No.2, it is first necessary to place the set selector switch to set No.2 position as this operation de-energizes relays D and E in the radio relay box, which in turn transfer the mic.-tel. socket and the press-to-transmit push-switch from set No.1 to set No.2. Rotation of the selector switch knob of No.2 control unit from OFF to any one of the other ten positions will now select No.2 transmitter-receiver to the frequency channel allocated for that position of the control unit selector switch. When selected, this transmitter-receiver is also automatically set to "receive" and the press-to-transmit push-switch must be pressed for as long as transmission is required. When the push-switch is released the set will automatically return to the "receive" condition. If fuse 9 in the radio relay box blows, the press-to-transmit control circuit of No.2 transmitter-receiver may be supplied from the standby battery by placing the set selector switch to the No.2 SET ALTVE. position.

12. When the selector switch knob of the control unit for the set selected is rotated from OFF to any other position, the indicator dial will be illuminated by a lamp within the control unit. The degree of illumination may be controlled by a lamp dimmer control also situated on the control unit. In case of hydraulic pressure failure, the audio warning system, which is controlled by the hydraulic pressure indicator circuit, as described in Sect.5, Chap.2, will come into operation irrespective of which transmitter-receiver is in use or whether it is switched to receive or transmit.

A.R.I.18012

13. The operation of the telebriefing installation of these aircraft is similar to that described in Sect.6, Chap.1.

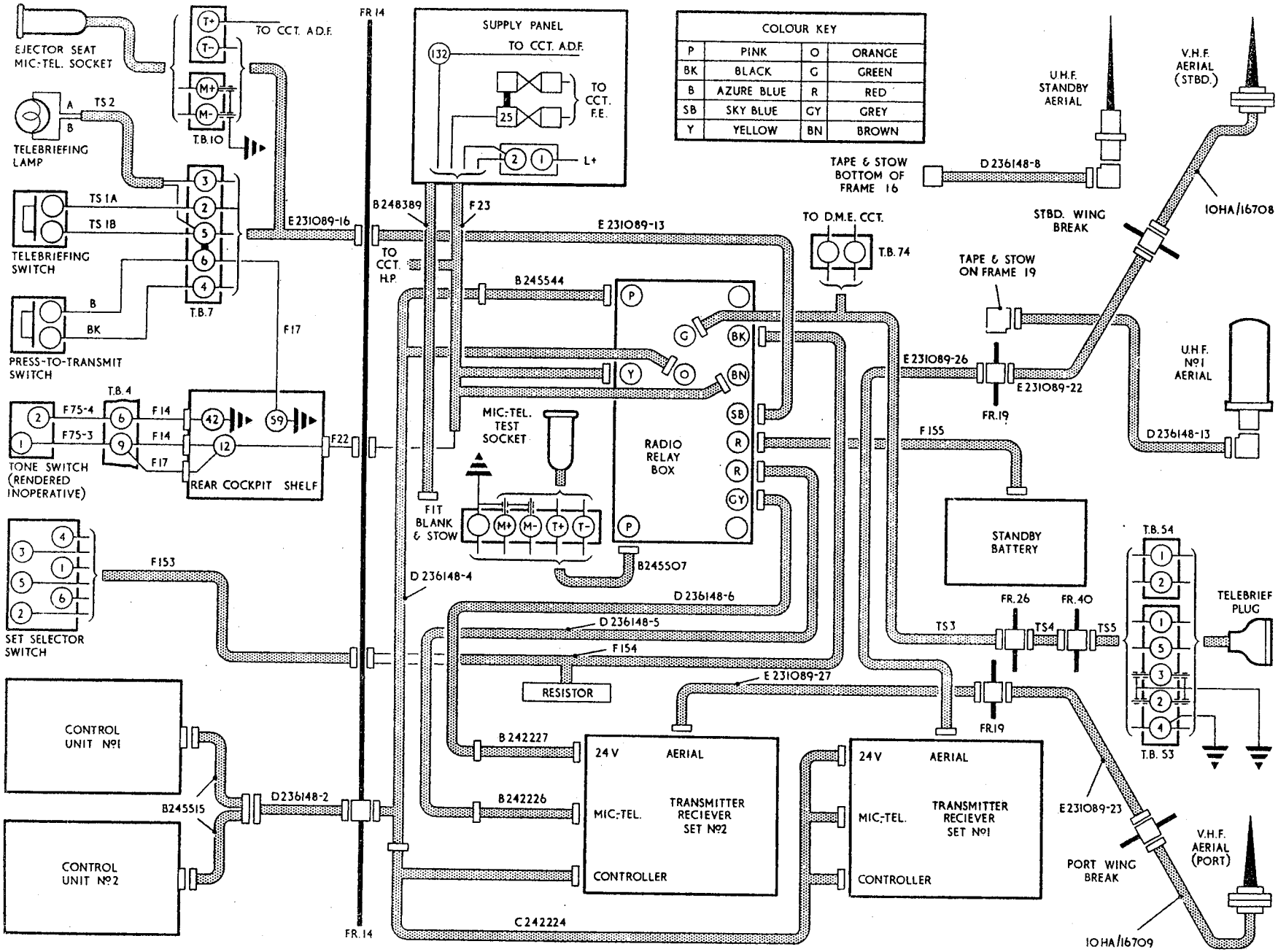

Fig.3 Interconnection

SERVICING

General

14. Servicing of the wireless installation is fully covered in the A.P.2528P, Vol.1, but any units suspected of being unserviceable should be carefully checked in-situ as described in the following paragraphs and, if found to be faulty, removed from the aircraft and taken into the workshop for rectification action as necessary. The location of the components is illustrated in fig.1 and 2, the interconnection in fig.3 and a wiring diagram of the power supplies will be found in Sect.5, Chap.1.

Power supplies

15. If a fault is reported in the wireless installation, the power supplies should first be checked, by reference to the appropriate routeing and theoretical diagram given in Sect.5, Chap.1 to ensure that the trouble is not located in the aircraft's electrical system. The voltage, both on and off load, must be tested and a check made to ensure that the connectors carrying the supply to the equipment are correctly assembled.

Cables and connectors

16. Servicing of the cables and connectors consists of the standard continuity and insulation resistance tests, together with a periodical examination throughout their entire length for any signs of damage to, or deterioration of, the insulation. If any defects are found, the complete cable or connector must be replaced; the type references of the connectors are given in fig.3. All the clips securing the cables and connectors to the structure must be examined for signs of looseness and rectified as necessary to prevent chafing. Plug and socket connections must be checked to ensure that they are fitting properly and that the fixings are screwed fully home.

Mic.-tel. test socket

17. To eliminate the necessity of using the pilot's mic.-tel. socket when adjusting the wireless installation and to enable the adjustments to be made from within the radio bay, a mic.-tel. test socket, connected in parallel with the pilot's socket, is provided. This test socket is stowed in a spring clip at the bottom of the radio relay box and is used in conjunction with a standard headset. It should be noted that when using this test socket, it will first be necessary to place the set selector switch to the position corresponding to the transmitter-receiver being adjusted, and to select the required frequency channel by use of the associated control unit, before commencing operations.

A.R.I.18065

General

18. In-situ servicing of this installation is confined to security and functional checks of the equipment, together with elementary fault-finding. All other operations, including any which demand the removal of covers, require the prior removal of the unit or units concerned to the workshop for servicing as described in A.P.2528P, Vol.1.

Security check

19. The following checks should be carried out on the various units of the installation, to ensure that the equipment is properly installed and secure:-

(1) Check the tightness of the clamps holding the transmitter-receivers in their mounting racks.

(2) Check the security of the resilient mounts on the mounting racks and ensure that the fixed mounting structure is secure.

(3) Check that the set selector switch and control units are securely mounted.

(4) Check the security of the aerials.

(5) Ensure that the radio relay box is securely mounted.

(6) Check that all the plugs and sockets are fitting properly and that the fixings are screwed firmly home.

(7) Check that the test mic.-tel. socket is secure in its clip and that any strain on the pilot's mic.-tel. socket is taken up by the check-cord and not by the cable attached to the socket.

Functional check

20. After the installation has been set-up in accordance with the instructions given in A.P.2528P, Vol.1, the in-situ functional check consists of ensuring that each transmitter-receiver and its associated control unit, relays, etc., are operating correctly. The recommended method is as follows.-

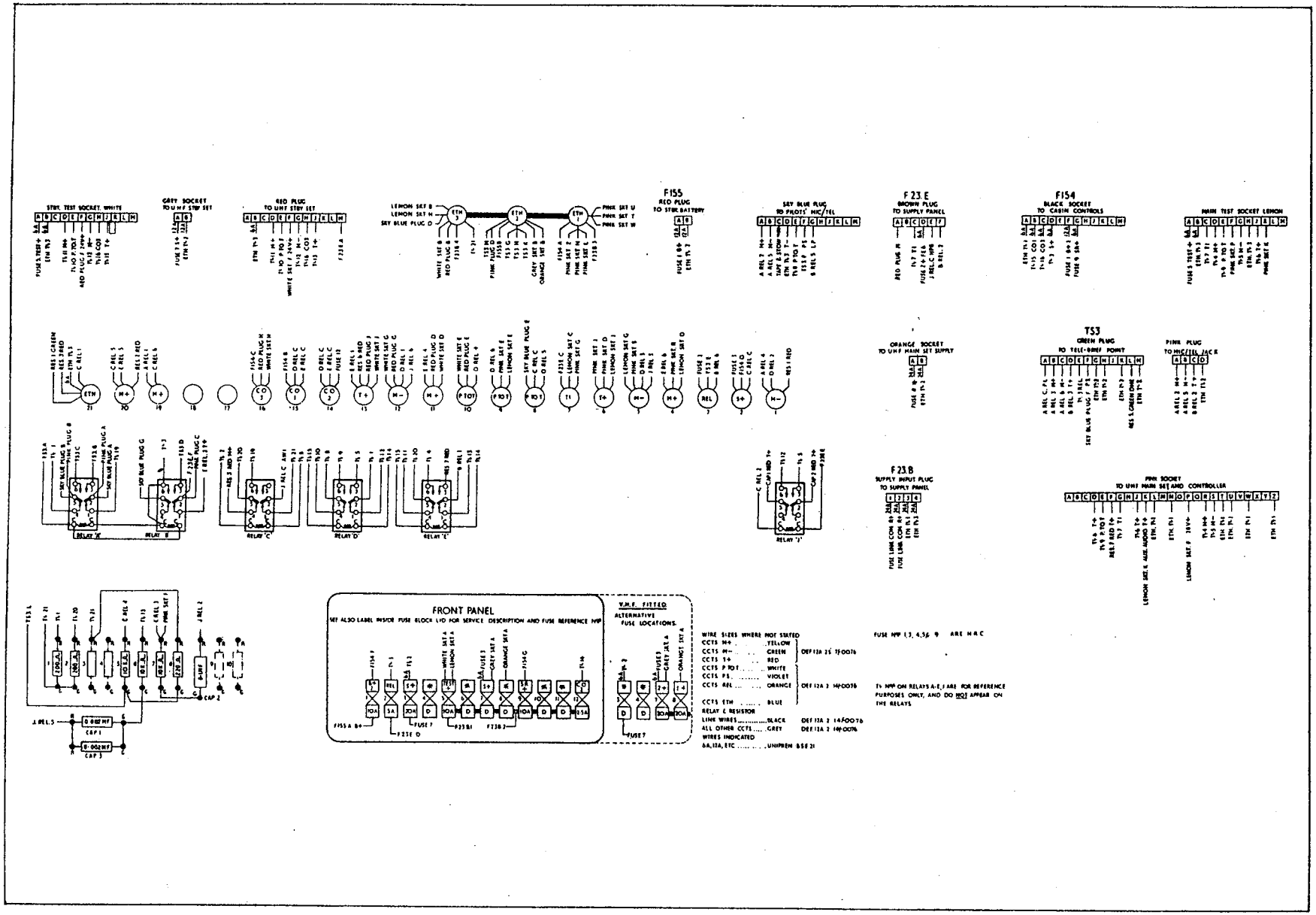

Fig. 4 Wiring of radio relay box

(1) Connect a standard microphone and telephone headset to the pilot's mic.-tel. socket.

(2) Place the set selector switch on the cabin port shelf to the No.1 position.

(3) Switch on the transmitter-receiver by selecting, on No.1 control unit, a suitable test frequency channel, as previously agreed with the control tower.

(4) If the transmitter-receiver is operating correctly, signals will be heard in the telephones.

(5) Press the press-to-transmit push-switch in the throttle twist grip and check that the signals cease.

(6) Still pressing the press-to-transmit push-switch, call up the control tower in the normal manner and ask for a report of your transmission.

(7) To obtain this report, release the press-to-transmit push-switch and signals will again be heard.

(8) Place the set selector switch to the No.2 position and check that the signals cease. Switch off No.1 transmitter-receiver.

(9) Switch on No.2 transmitter-receiver by selecting, on No.2 control unit, a suitable test frequency channel, as previously agreed with the control tower.

(10) If No.2 transmitter-receiver is operating correctly, signals will be heard on this frequency.

(11) Repeat operations (5) to (7) to check that No.2 transmitter-receiver is transmitting correctly.

(12) Place the set selector switch to the set No.1 position and check that signals cease. Switch off No.2 transmitter-receiver.

(13) When the test is completed, remove the microphone and telephones from the pilot's mic.-tel. socket.

Fault finding

21. If a fault is reported, a careful test should be made, in-situ, in an attempt to locate the faulty unit. Before any other tests are made, the low tension source should be checked, the tightness of the connectors ensured and the voltage, both on and off load, tested. Any unit found to be faulty should be taken to the workshop for testing and repair. For full details of the fault finding and testing procedure, reference should be made to A.P.2528P, Vol.1. If the radio relay box is found to be faulty, it should be removed from the aircraft and replaced with a fully serviceable item. The faulty box should then be taken to the workshop for testing and repair and then returned to store to be held as spare. When the aircraft is undergoing its Minor Servicing this box should be removed from the aircraft for a thorough check and adjustment to ensure that its operation is reliable in service.

Final check

22. After servicing the wireless installation, ensure that all the equipment is left switched off and that all access doors, removed to gain access to the equipment, are correctly replaced and secured.

REMOVAL AND ASSEMBLY

General

23. The recommended procedure for removing the majority of the components which comprise the wireless installation is given in the following paragraphs. The method of assembly is, in general, the 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.5, Chap.1, Group A.1.

Transmitter-receivers No.1 and No.2

24. The recommended method of removing these transmitter-receivers is as follows:-

(1) Render the aircraft electrically safe *(Sect.5, Chap.1, Group A.1).*

(2) Disconnect the four connectors from transmitter-receiver No.2, fit approved caps and covers to the plugs and sockets. Stow the connectors clear of the set.

(3) Unscrew the two knurled screws at the front of the mounting tray and allow these to drop clear of the retaining catches on the set.

(4) Disengage the spigots at the rear of the transmitter-receiver from the mounting tray by using the handles to withdraw the set along the tray. Still using the handles carefully remove the set from the aircraft.

(5) Repeat the above procedure for the removal of transmitter-receiver No.1.

Radio relay box

25. This box is designed for easy removal, being supported in quick-release mountings. The recommended method of removing the box is described in Sect.6, Chap.1.

Aerials

26. The recommended method of removing either of the aerials, complete with matching stubs, is as follows:-

(1) Render the aircraft electrically safe *(Sect.5, Chap.1, Group A.1).*

(2) Remove the sixteen countersunk-headed bolts from around the periphery of the aerial access panel in the top surface of the outer wing.

(3) Raise the access panel to gain access to the aerial bollard and remove the moulded cover from the bollard.

(4) Unscrew the top retaining nut from the end of the aerial rod, take off the two nuts securing the U-shaped bonding clip, and remove the aerial connector from the rod.

(5) The access panel, complete with aerial and matching stub, may now be removed from the wing by releasing the balloon cord.

(6) To remove the aerial unit from the panel, it is necessary to release the mounting bracket by unscrewing the four stiffnuts from the bolts securing the bracket to the panel, taking care to retain the six washers. The aerial, matching stub and mounting bracket may now be removed from the panel by withdrawing the aerial rod through the rubber grommet.

(7) To remove the aerial unit from the mounting bracket, unscrew the four stiffnuts from the bolts securing the aerial to the mounting bracket, taking care to retain the washers.

Note . . .

When assembling the aerial and mounting bracket to the access panel, care must be taken to ensure that the earthing straps are assembled between two washers under the nuts on the bolts securing the mounting bracket to the panel. Also ensure that the matching stub is assembled on the opposite side to the earthing straps and snugly coiled and clipped as found before removal. When assembling the access panel to the wing ensure that the mating surfaces are scraped clean to provide a good electrical contact.

Control units

27. To remove the control units, proceed as follows:-

(1) Render the aircraft electrically safe *(Sect.5, Chap.1, Group A.1).*

(2) Unscrew the four screws securing the control unit access panel to the cabin port shelf and lift this panel to gain access to the connectors assembled to the control units.

(3) Disconnect the connectors from the control units.

(4) The control units may now be removed by unscrewing the two screws and one bolt securing each unit.

Radio mounting structure

28. The radio mounting structure extends from frame 16 to frame 19, being bolted to these two frames, thus when dismantling the aircraft at the front transport joint, as described in Sect.3, Chap.1, it is necessary to remove this structure. The commended procedure is described in Sect.6, Chap.1.