Chapter 9A A.R.I.23219

LIST OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

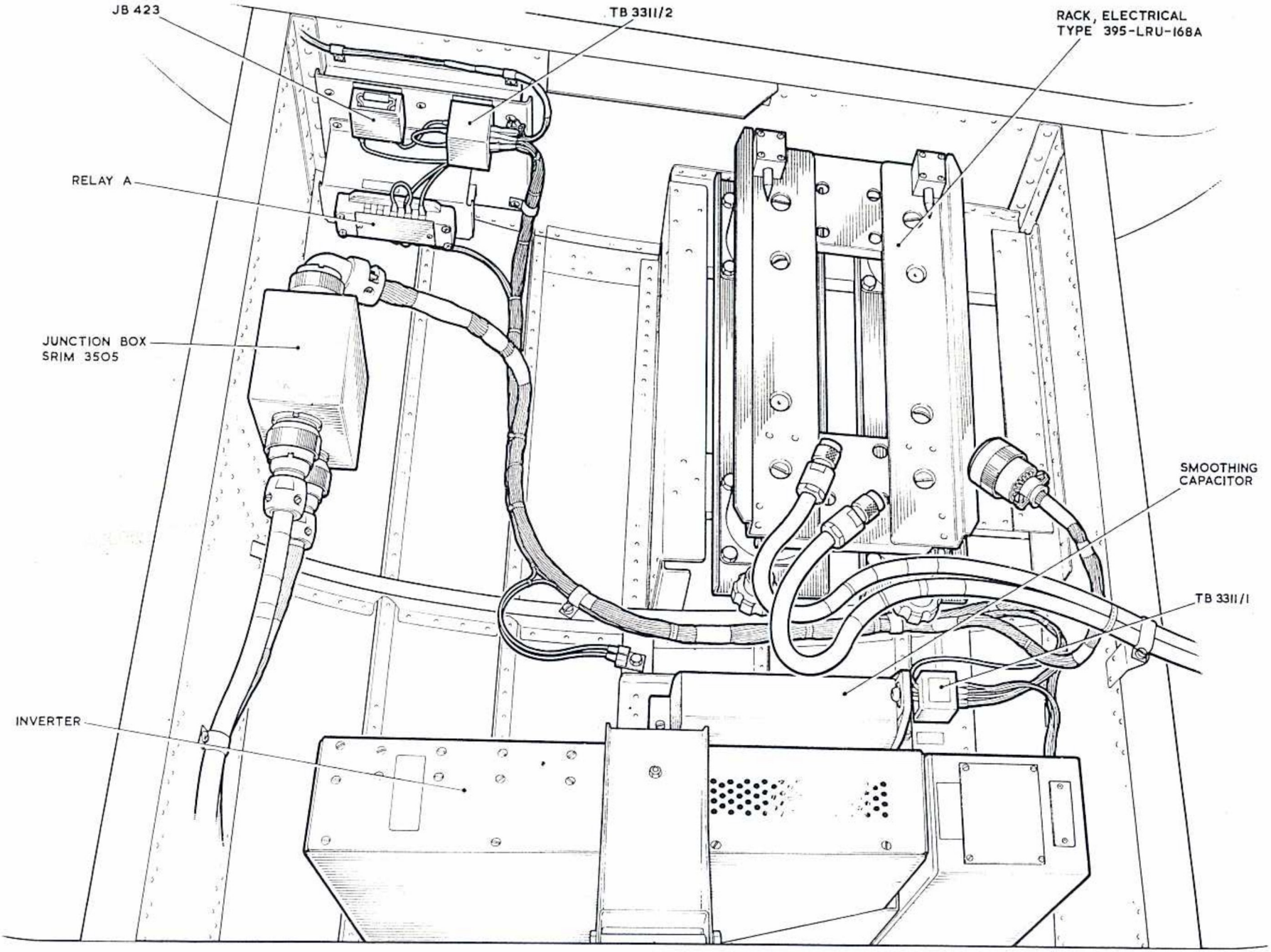


Fig.1 Installation of relays and inverter Type E182

Introduction

1. With Mod 1462 embodied on the aircraft A.R.I.18215/1 is removed and A.R.I. 23219 fitted.

2. The A.R.I.23219 is a low level altimeter with a range from 0 to 5000 feet; a capability for setting minimum height is provided. The height indicator scale is linear from 0 to 200 feet and quasi logarithmic from 200 to 5000 feet, incorporating a minimum height marker which may be moved around its circumference. The complete installation is illustrated in fig.1 to fig.4 and a routing chart is provided in fig.5.

Equipment and controls

3. The installation comprises the following items of equipment.

Transmitter/Receiver
(Ref.No.RT-804/APN-171(V))

Junction box
(Ref.No.SRIM 3503)

Control switch
(Ref.No.5CW/9268)

Height indicator
(Ref.No.1D-1345/APN-171(V))

Aerials (horn) (2)
(Ref.No.10B/9542804)

Power supplies inverter, Type E182
(Ref.No.5UB/8239

Power supplies

4. At the wireless operator's station, fuse BV11 and No.3 circuit breaker supply the 28-volt d.c. required to operate the equipment. A 115-volt, 400 c/s supply for the equipment is provided by a static inverter, Type E182 in the rear fuselage, or alternatively by No.4 inverter via fuse CF. Full details will be found in Sect.6, Chap.2B of this publication.

Transmitter/Receiver

5. The function of the transmitter/receiver is to transmit a pulsed signal which is reflected back from the earth's surface and later received for comparison with a direct signal fed from the transmitter to the receiver. In the receiver, the reflected and direct signals intersect at a point proportional to the height of the aircraft from the ground.

6. Connections to the transmitter/receiver unit are through plugs and sockets fitted to the front panel. The plugs and sockets are identified as follows:-

J1. Power supplies and output to height indicator.

J2. Receiver aerial connection.

J3. Transmitter aerial connection.

7. The transmitter/receiver is fitted on a shock proof mounting aft of former 40.

Junction box

8. The junction box is mounted at the starboard side of the aircraft between formers 40 and 41. Plugs and sockets are provided at the junction box, indicator and transmitter/receiver.

Control switch

9. The control switch labelled NORM/OFF/STBY, is mounted at the 1st pilot's instrument panel directly below the height indicator. The equipment is switched on by setting the switch to either NORM or STBY; the significance of each position is as follows:-

NORM - the radio altimeter derives its power from the static inverter, Type E182 in the rear fuselage.

STBY - the radio altimeter derives its power from the No.4 main inverter

Height Indicator

10. The height indicator is mounted at the 1st pilot's instrument panel. It comprises a meter movement with a full scale deflection of 330 degrees, a minimum height marker mounted on the periphery of the meter, and a warning flag mounted at the bottom centre of the meter. The minimum height marker is set by a combined control labelled SET/OFF and PRESS TO TEST.

11. Set the minimum height marker to the required height by rotating the 'SET' control. When the aircraft descends below the set height, a 'low' warning (amber) lamp at the bottom right of the indicator will light. To test the altimeter press the combined control; the height indicator should read approximately 90 feet.

Aerials

12. The aerial system consists of two horn shaped aerials mounted inside a fairing under the fuselage between formers 35 and 37.

13. Connection is made between the two aerials and the transmitter/receiver by means of co-axial connectors.

SERVICING

General

14. Overall checks of the installation should be carried out in accordance with the instructions detailed in A.P.116B-0208-1.

Height Indicator, Ref.No.1D-1345/APN-171 (V)

15. Failure of the indicator OFF flag to lift when the equipment is switched on at the control switch may be due to one of the following faults:-

(1) No 28-volt d.c. supplies to the units

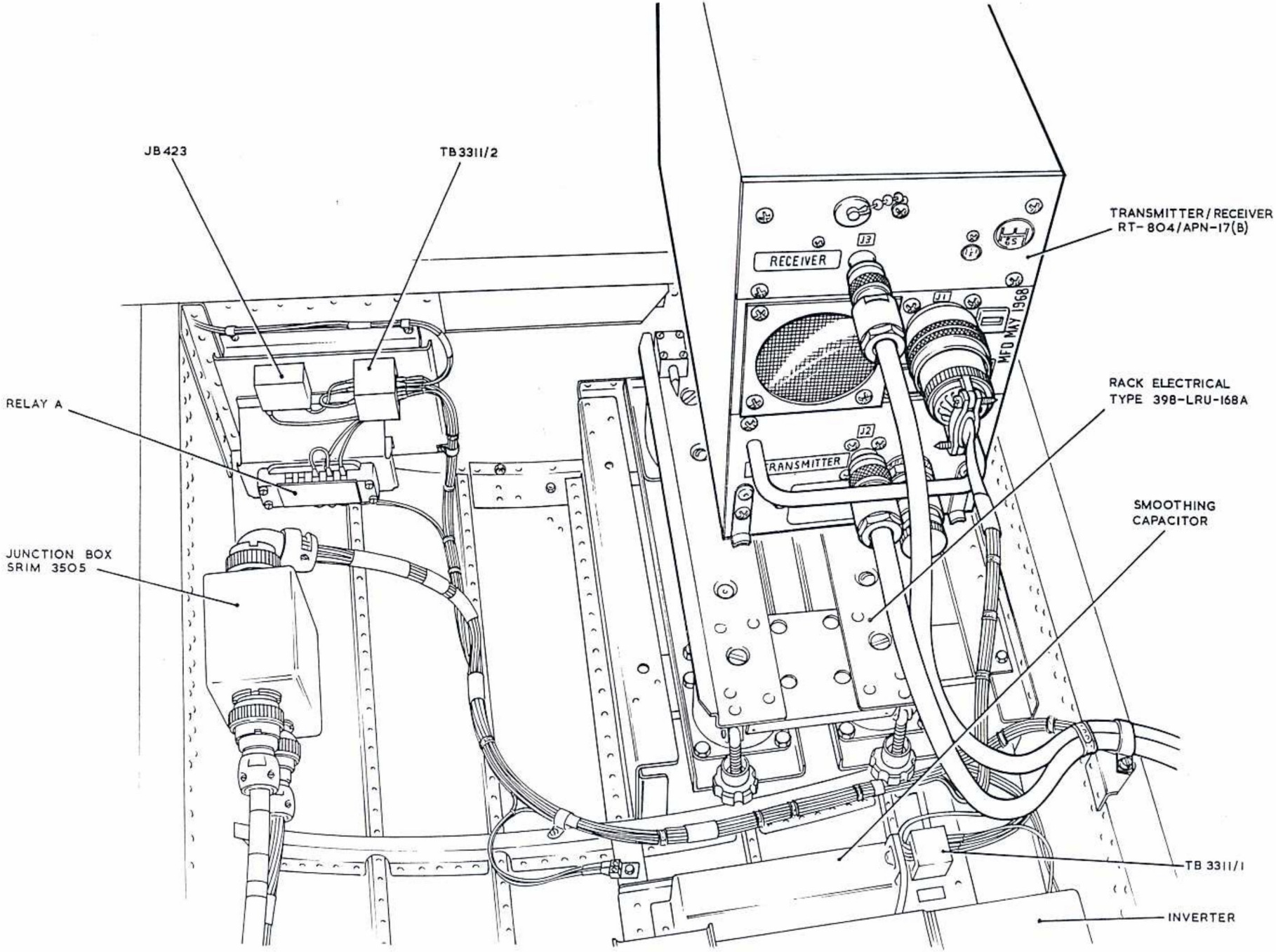


Fig 2 Installation of transmitter / receiver

(2) No 115-volt a.c. supplies to the units

(3) Fault in the co-axial connector linking the indicator to the transmitter/receiver.

(4) Fault in the flag mechanism in the height indicator.

(5) Fault in one of the units.

In-flight test
16. Check that the flag is operating correctly, i.e. the flag should have lifted on switching ON. If the flag does not lift, the fault may be as laid down in para.15.

Altimeter test
17. Push the test button, the altimeter should read 90 feet.

Limit light check
18. Set the minimum height control marker to a position above the height of the aircraft. The warning light should come on.

Junction box SRIM 3503
19. As this unit only interconnects the individual units of the equipment any servicing will be in the nature of a general examination for loose or damaged plugs and connectors.

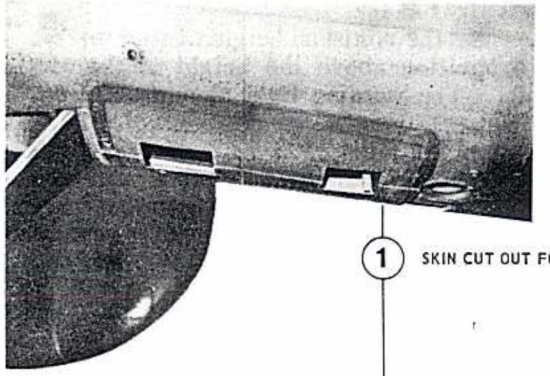
REMOVAL AND ASSEMBLY

Transmitter/receiver
20. This unit may be removed after first disconnecting the multi-way and co-axial plugs. Release the two knurled nuts on the front of the unit and ease forward away from the mounting frame.

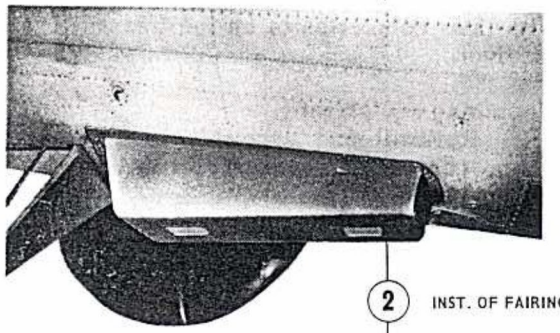
21. When re-fitting make sure the dowels at the rear mate correctly.

Junction box, SRIM 3503
22. This unit is mounted at the starboard side of the aircraft adjacent to the transmitter/receiver. Locating dowels on the junction box allow accurate alignment of the multi-way and co-axial connectors with their counter-parts on the transmitter/receiver.

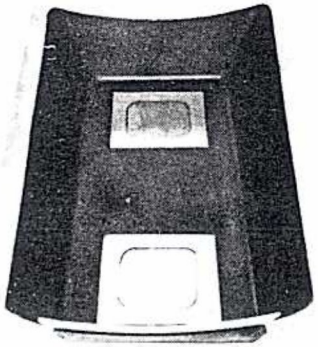
Remaining equipment
23. Removal and assembly instructions are not considered necessary for the remaining equipment.



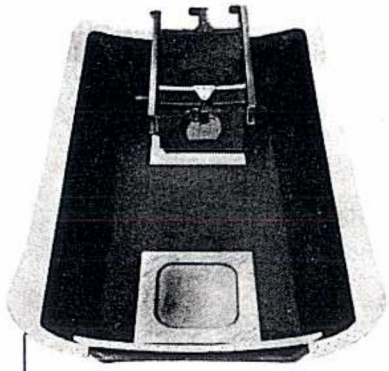
1 SKIN CUT OUT FOR AERIALS



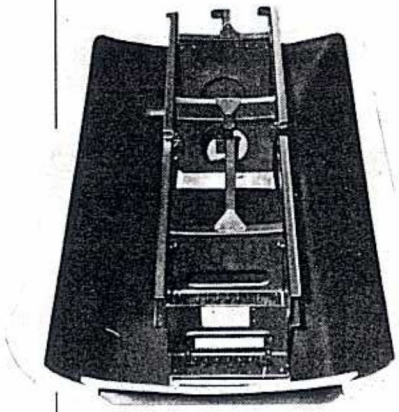
2 INST. OF FAIRING



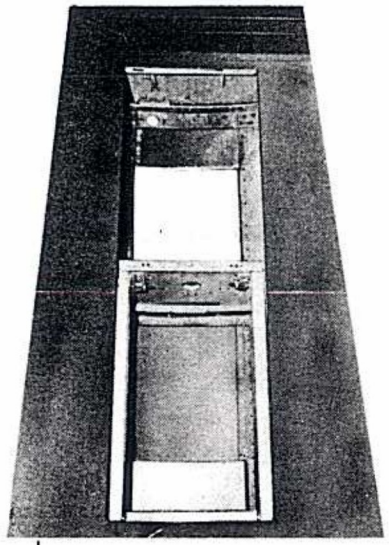
3 AERIAL FAIRING



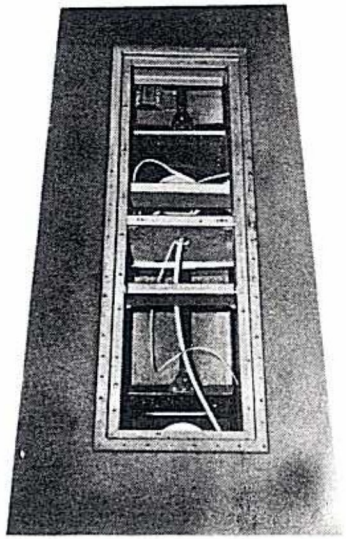
4 FAIRING AND REAR AERIAL MTG.



5 AERIAL ASSEMBLY



6 FLOOR CUT-OUT



7 FLOOR ACCESS TO AERIAL

FIG 3 Fairing and aerial assembly

TABLE 1

Major items of equipment

Item	Ref.No.	Type	A.P.Ref.
Transmitter/Receiver	RT-804/APN-171(V)		
Height Indicator	1D-1345/APN-171(V)		101B-0501-15B
Tray Mounting	1987638/1		
Inverter	5UB/8329	E182	
Relay (2)	5CW/6852	10B	
Mounting (2)	30B/9611218		
Switch	5CW/9268		
Junction Box	SRIM 3503		
Aerial (2)	10B/9542804	140 LRU 144 B	
Capacitor 5000 MFD	Radio Spares Ltd.		

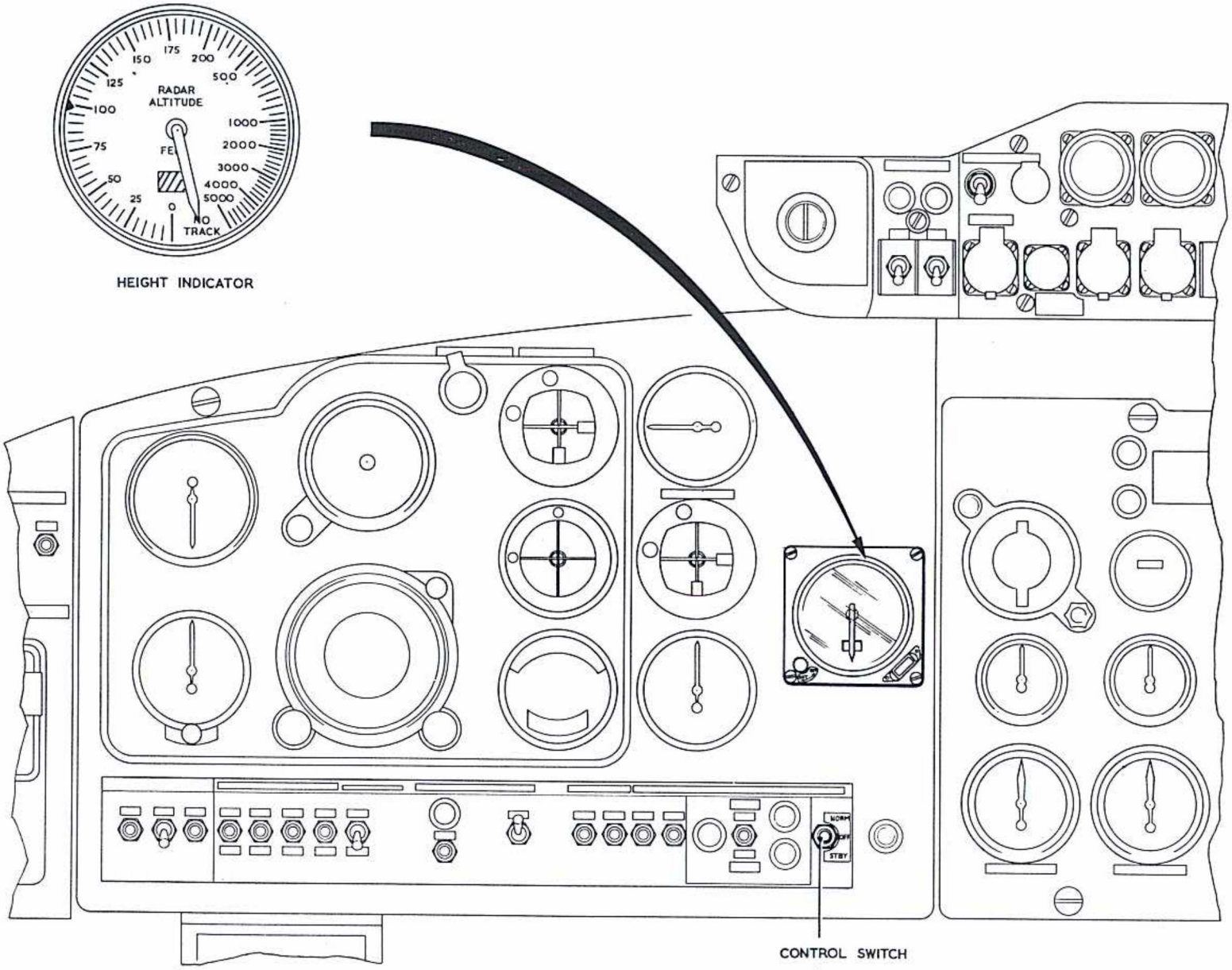
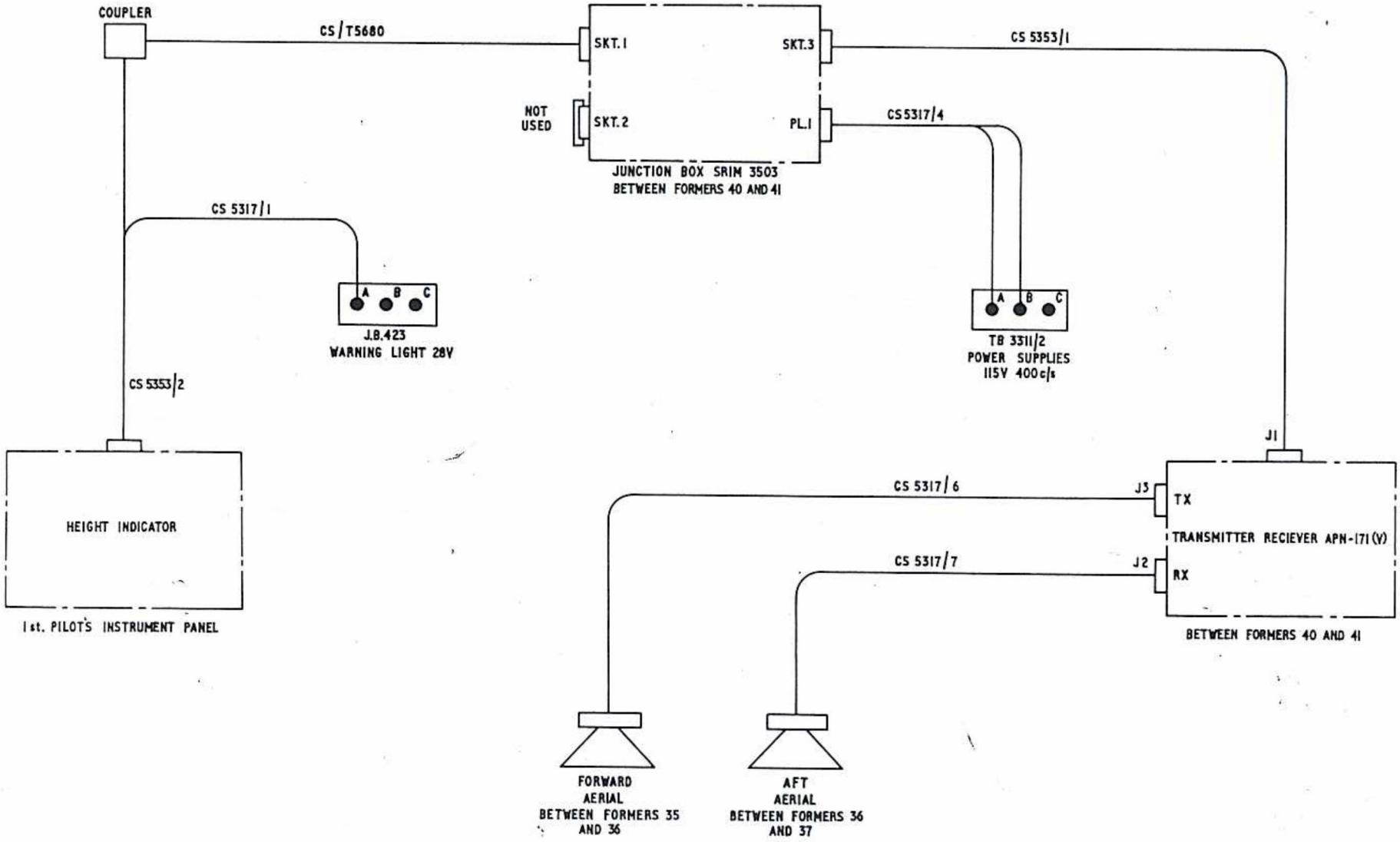


Fig.4 1st pilot's instrument panel

TABLE 2

Connectors for ARI 23219

Part No.	Ref.No.	Connecting
5315/1	10HB/20983	Supply and control cable loom
5315/2	10HB/20984	Radio altimeter switch loom
5317/3	10HB/20987	IFF Aerial to IFF aerial break, mounting bracket
5317/4	10HB/20988	Junction box SRIM 3503 to T.B.3311/2
5317/6	10HB/20990	T/R Unit to FWD Aerial
5317/7	10HB/20991	T/R Unit to AFT Aerial
5353/1	10HB/21188	Indicator to coupler
5353/2	10HB/21189	Junction box SRIM 3503 to T/R Unit



714730 342 9/70 H.S.A. 1353

Fig. 5 A.R.I. 23219