

## CHAPTER 5

## ARI-18228/1

(Completely revised)

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**Introduction**

1. The ARI-18228/1, fitted to the aircraft by Mod.2304 is a passive device and will not cause radio interference to other equipment in the aircraft.

**DESCRIPTION****Band coverage**

2. The ARI provides information on aircraft illumination as follows:-

- (1) By providing visual and audio warning of illumination by radar operating in the tracking mode.
- (2) Identifying the radar signal.

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- (3) Providing directional and frequency band information of the illumination.

**Visual displays**

3. Bearings relative to aircraft heading and band information of pulse modulated radar are presented as vector traces on a CRT. Two warning lamps provide pulse lock and TWS signal information. Four lamps provide CW information.

**Audio warning**

4. Audio warning controlled by a three-position switch is available for the aircraft's intercomm system Sect.8, Chap.1 of this publication.

## LIST OF ILLUSTRATIONS

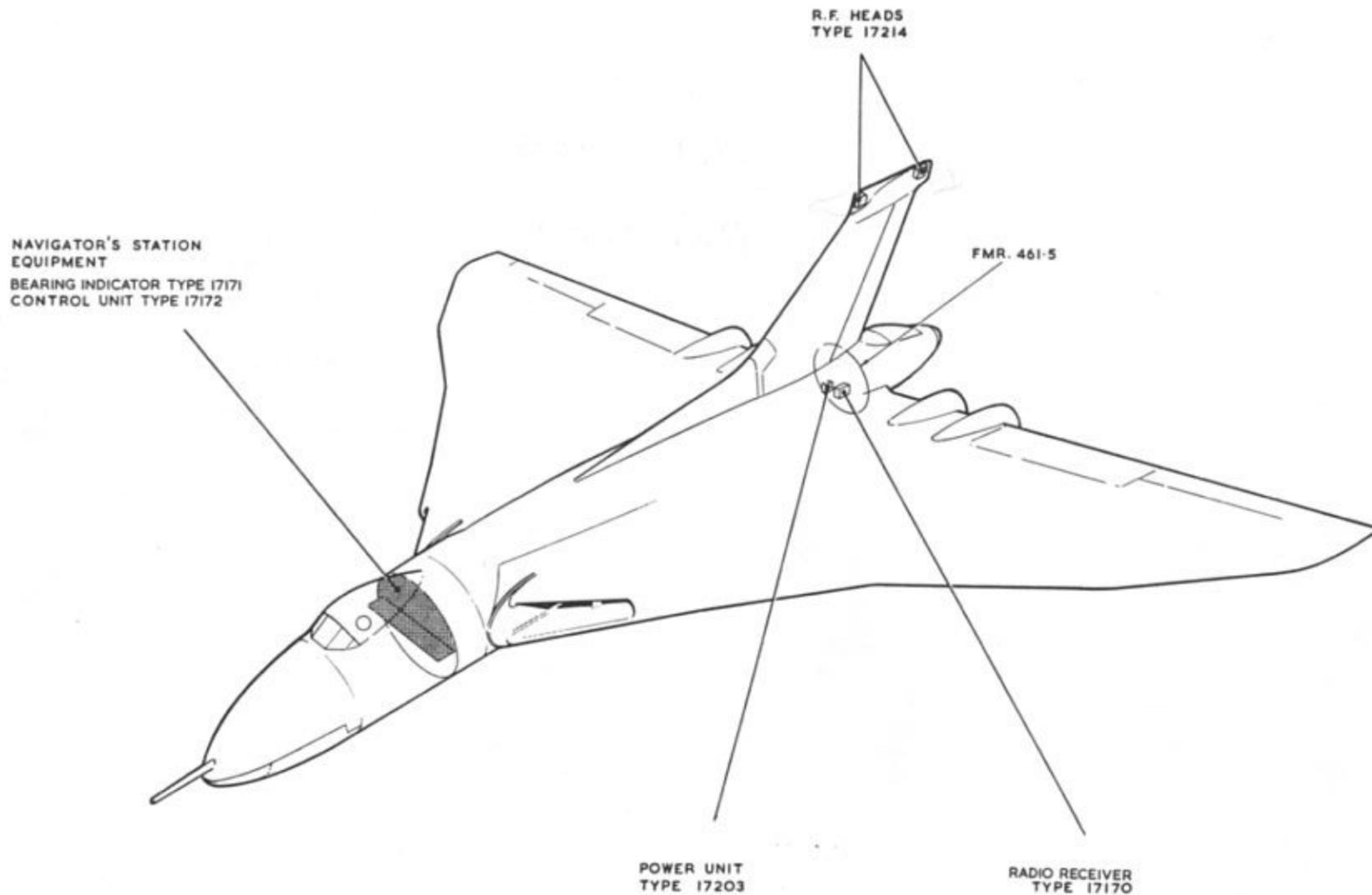
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## DETAILS OF UNITS

5. The following units comprise the ARI and are located as shown in fig.1.

Radio - receiver	
Type 17170	10Q/5895-99-618-3291
Indicator	
Type 17171	10Q/5895-99-618-3293
Control unit	
Type 17172	10L/5895-99-618-3290
Power supply unit -	
Type 17203	10K/5895-99-618-3292
RF heads (2) -	
Type 17214	10D/5895-99-618-3807

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Fig.1 Location of equipment

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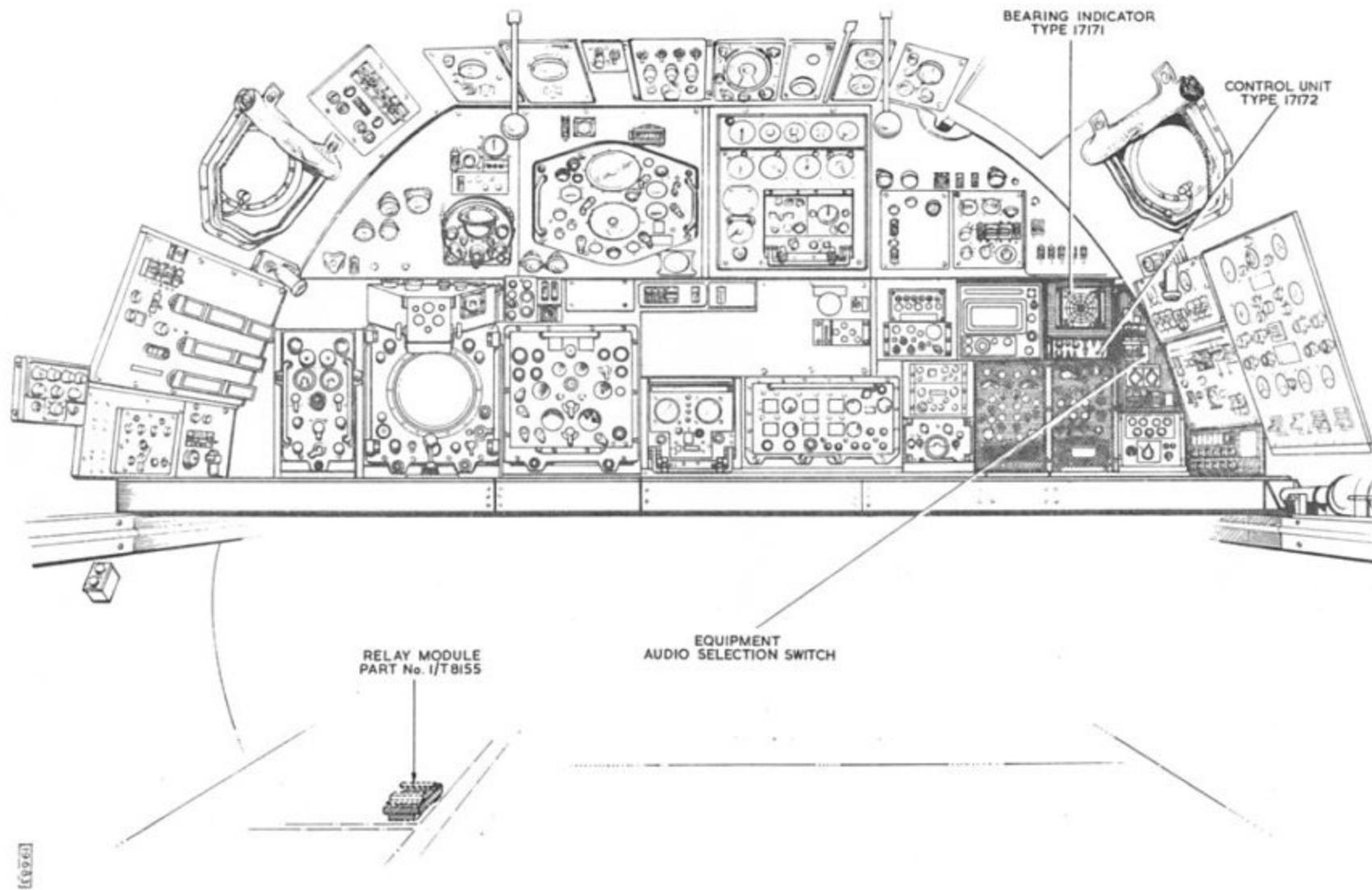


Fig. 2 Crew station equipment

**Radio receiver**

6. The radio receiver is housed in a ½ ATR box and installed as illustrated in fig.3. A panel at the front of the unit carries the plugs and sockets used to link it to other units of the ARI. An internal cooling fan assembly is fitted. The radio receiver accepts the video outputs in each of the three bands from the two RF heads assemblies. The circuits of the radio receiver process the video inputs for display purposes.

**Bearing indicator**

7. The bearing indicator (fig.7), displays the signal information derived from the radio receiver in the form of traces on the CRT. Trace brilliance is adjusted from the control unit. Pulse TWS and CW outputs from the radio receiver are fed to indicator lamps arranged around the tube face. An internal cooling fan is fitted. Input and output signals are via a multi-pole plug mounted at the rear of the unit.

**Control unit**

8. The control unit (fig7), contains all the mechanical switches and controls for operation of the ARI.

9. In addition to the selection of operational modes the following functions can also be carried out.

- (1) Switching of power supplies.
- (2) Control of brilliance on panel illumination.
- (3) Control of brilliance of CRT and warning lamps.
- (4) Self test switching.

**Power supply unit**

10. The power supply unit, installed as shown in fig.3 provides all the power supplies for operation of the ARI. Input power supplies are described in Sect.6, Chap.22 of this publication.

**RF heads**

11. There are two RF head box assemblies fitted in the fin cap (fig.4). One faces forward and the other faces aft. Each box assembly contains six aerials in pairs, one pair to each of the three frequency bands. Video signals at the output of the RF head assemblies are conveyed to the radio receiver via co-axial cables. Radio absorbent material (RAM) is bonded to the box assemblies. Provision is made to prevent ingress of moisture and all co-axial connections are hermetically sealed. A desiccant pack is included in the box assembly.

**Audio warning controls**

12. Audio warning can be given depending on the setting of control switches on the control unit and the position of the equipment audio selection switch. This switch is located adjacent to the conference intercomm ON/OFF switch at the AEOs station, the three switch positions are:-

- (1) Upper (C) – ARI-18235 audio to intercomm.
- (2) Middle (C-J) – ARI-18228 and ARI-18235 audio to intercomm.
- (3) Lower (E-J) – ARI-18228 audio to intercomm.

**Visual warning controls**

13. In addition to audio warning the control switches may be set to give a visual warning of all inputs to the ARI.

**Self test**

14. A self test facility is incorporated to test the equipment in its various roles. Tests are carried out by setting a test switch to one of 12 positions and depressing a push-switch to start each test.

15. A full description of the ARI together with testing and setting up instructions will be found in CD 116F-0207-1A.

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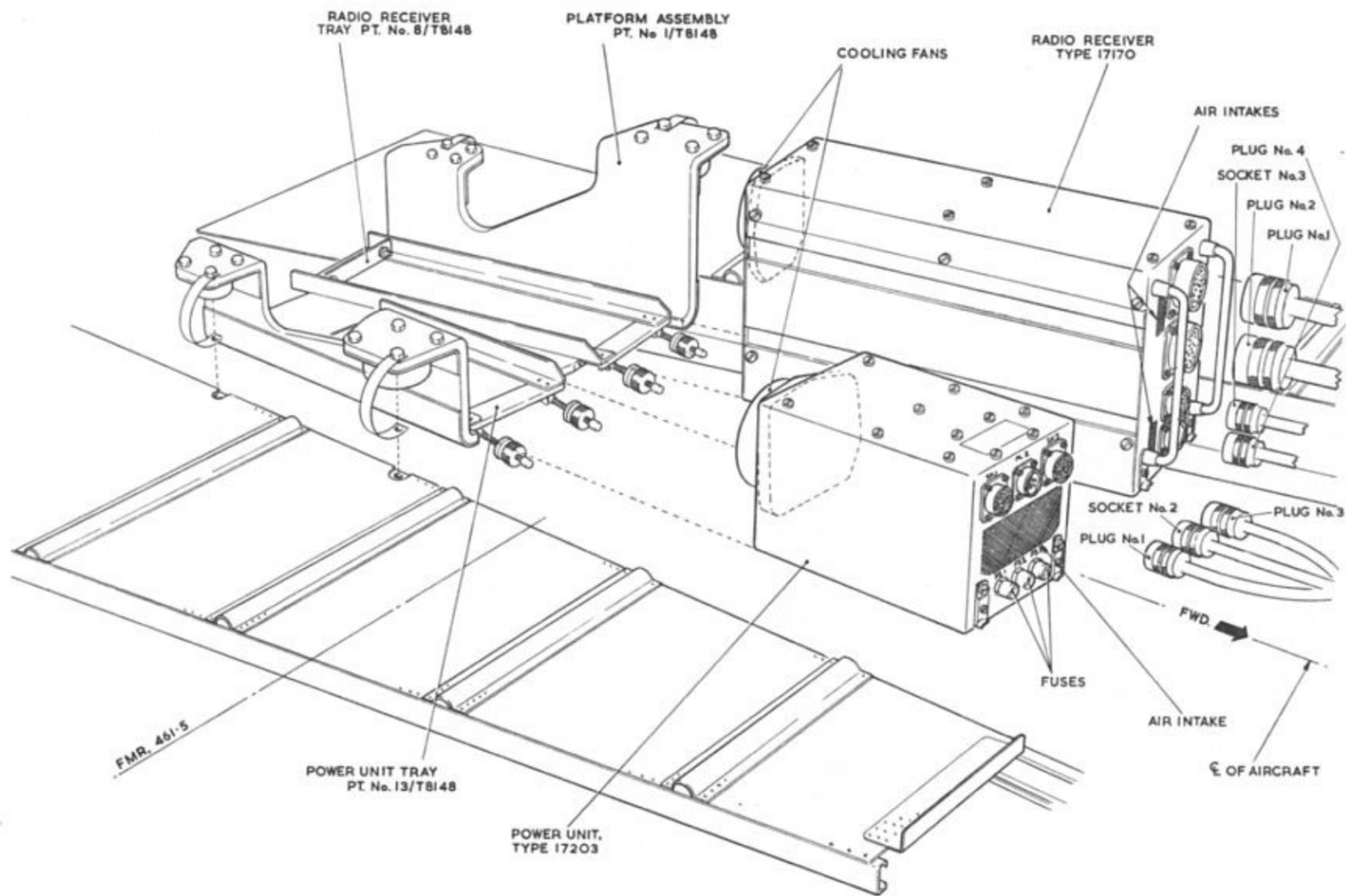


Fig. 3 Receiver and power unit details

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TABLE 1

## Connections for ARI-18228/1

Part No.	Cable form	Connecting
2/T8143	37/0076, Type CSM (4 cores) 19/006, Type BSM (12 cores) 7/0048, Type BSM (3 cores)	Bearing indicator to plug break 191
3/T8143	19/006, Type BSM (39 cores) 7/0048, Type BSM (4 cores) 37/0076 (6 cores) RG178 B/U (2 cores)	Plug break 1034 to Radio receiver (SK4) Plug breaks 1241 and 1242, Power supply unit (SK1) and Radio receiver (PL3)
4/T8143	7/0048, Type BSM (3 cores) 19/006B, (12 cores) 37/0076, Type CSM (4 cores)	Plug break 191 to Power supply unit (SK3)
5/T8143	RG178 B/U (21 cores)	Radio receiver (SK1) to forward RF head and plug breaks 1238 to 1240
6/T8143	RG178 B/U (21 cores)	Radio receiver (SK2) to aft RF head and plug breaks 1241 to 1243
7/T8143	37/0076C (5 cores)	Power supply unit (PL2) to relay No. 831 (B1) and (C1), TB's 1847 (A) and 1848 (A)
9/T8143	19/0076 B (4 cores)	Control unit (PL2) to TB 1758 (6) and TB 1042 (B) and (D)
10/T8143	37/0076 C (2 cores) 19/006 B (25 cores) RG178 B/U (2 cores) 7/0048 Type BSM (1 core)	Plug break 1034 to Control unit (PL1) Plug break 1244 and TB 1758 (1) and (7)
11/T8143	Nyvinmetsheath 22 (2 cores) Minivin 22 (6 cores)	TB 1760 (2) to TB 1077 (E) (through blanking switch) TB 1760 (3) and (4) to TB 1074 (A) and (C) and TB 1078 (D) and (E) TB 1760 (5) to TB 681 (B) TB 1759 (7) to TB 1077 (E) (through blanking switch) and TB 1074 (B)
12/T8143	Minivin 20 (1 core)	TB 681 (B) to TB 1760 (5)

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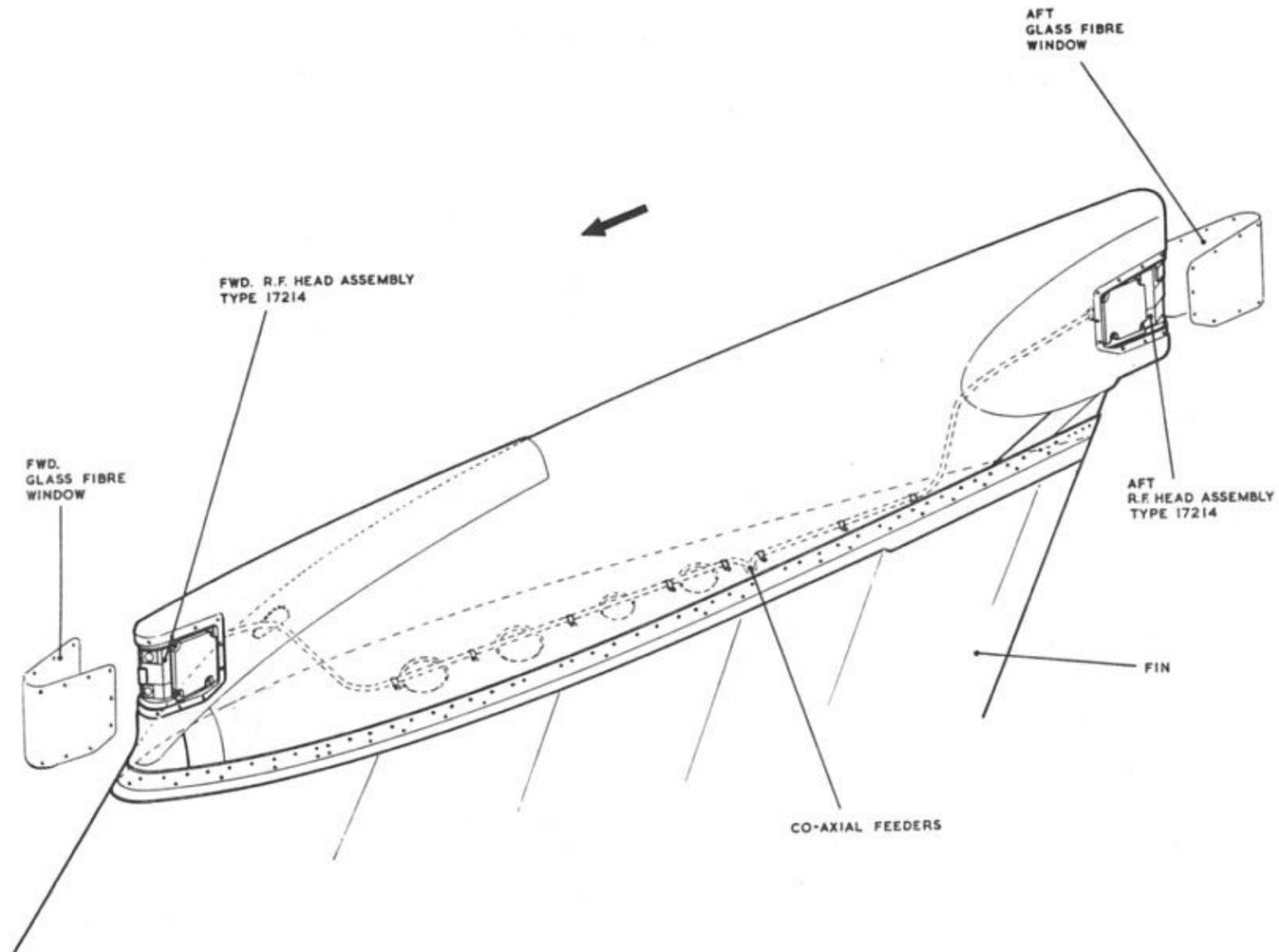


Fig.4 RF Heads in fin cap

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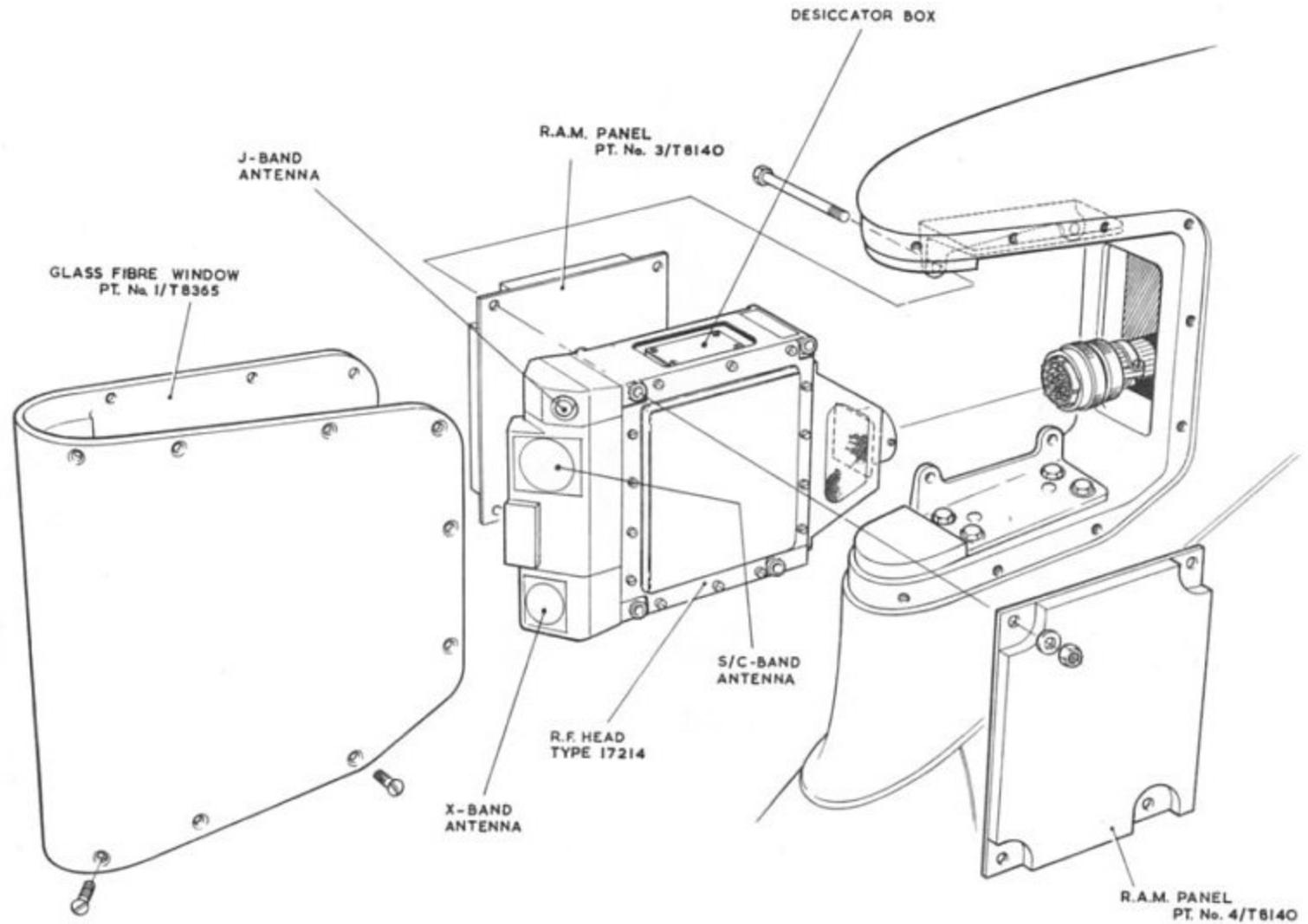


Fig.5 R.F. head assembly - fwd.  
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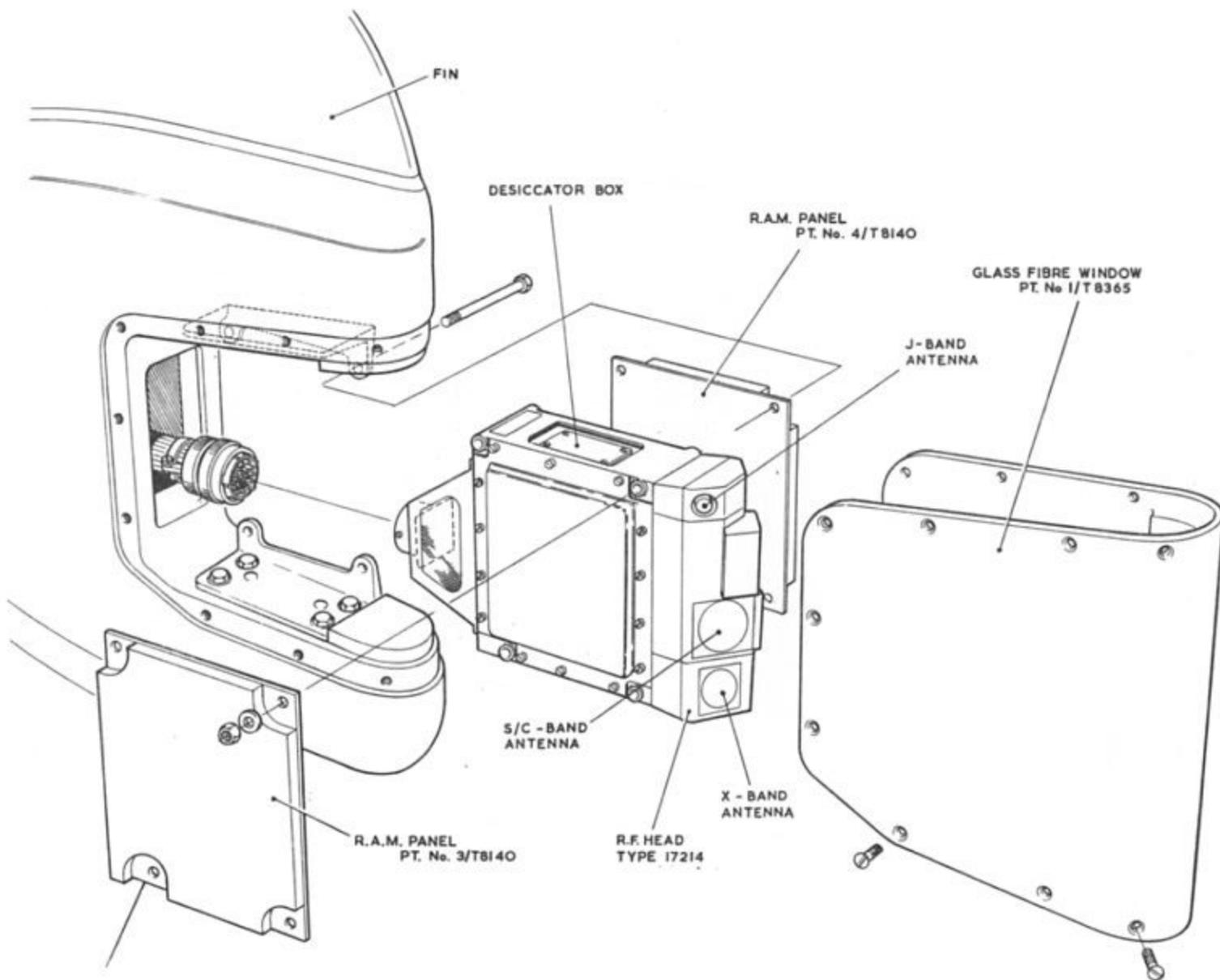
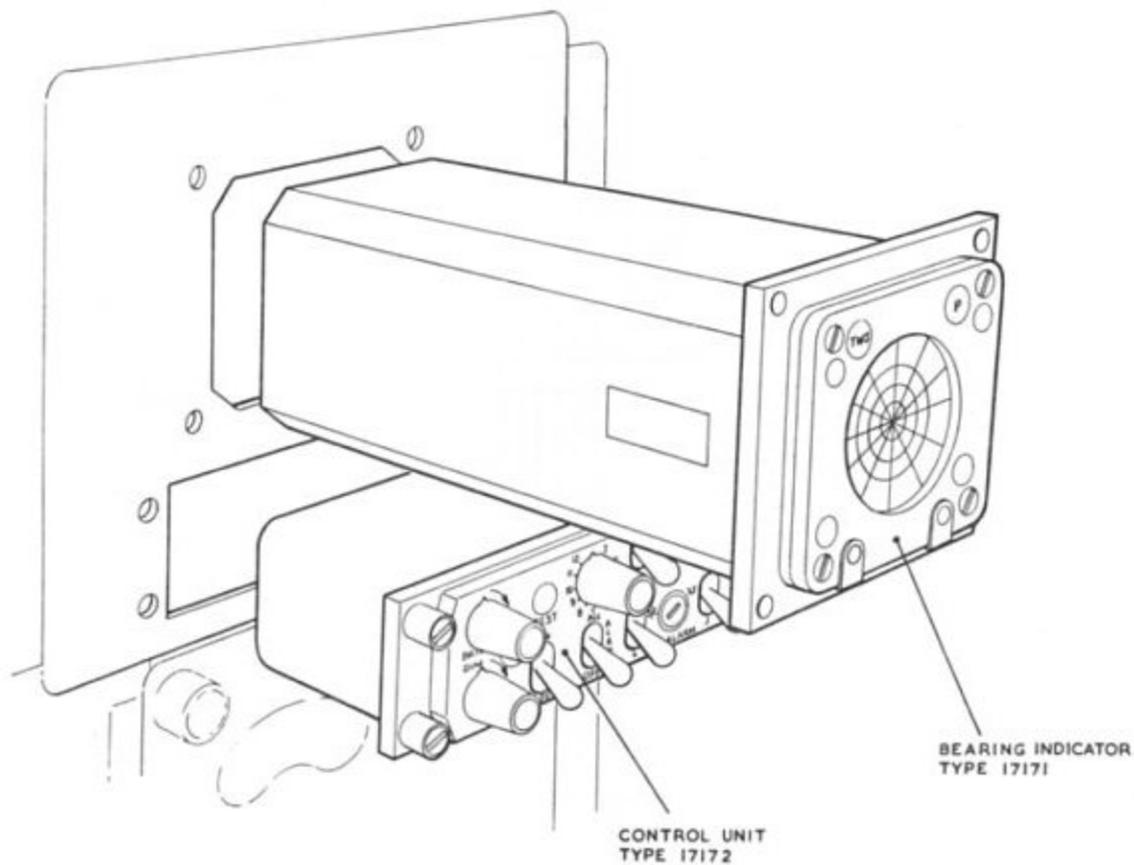


Fig.6 R.F. Head assembly - aft

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Fig.7 Control unit and bearing indicator

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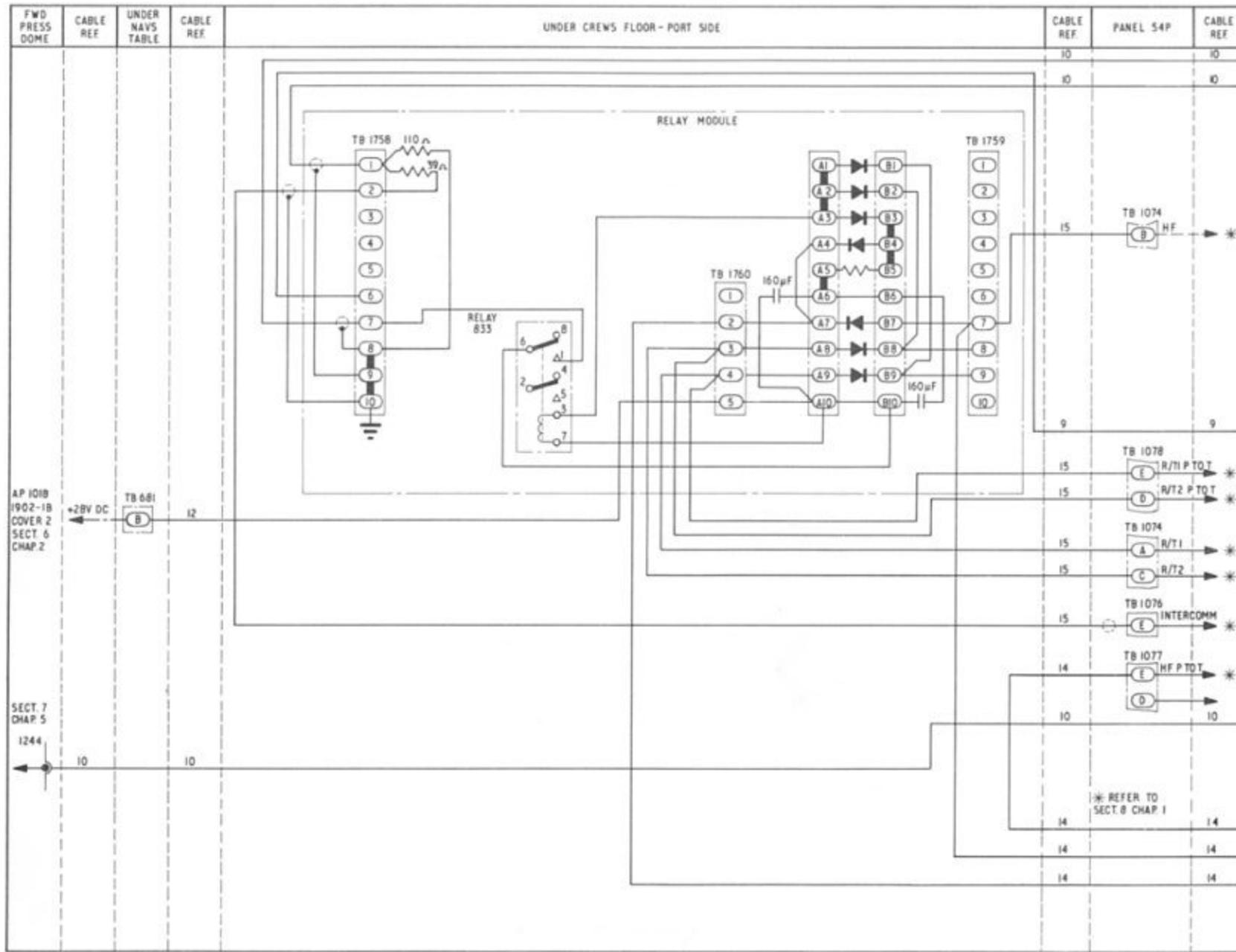


Fig. 8 (I) Routing chart for ARI 18228/1 - Pre SRIM 3965 (Mod 2496)  
 ▶ Mod 2472 ◀

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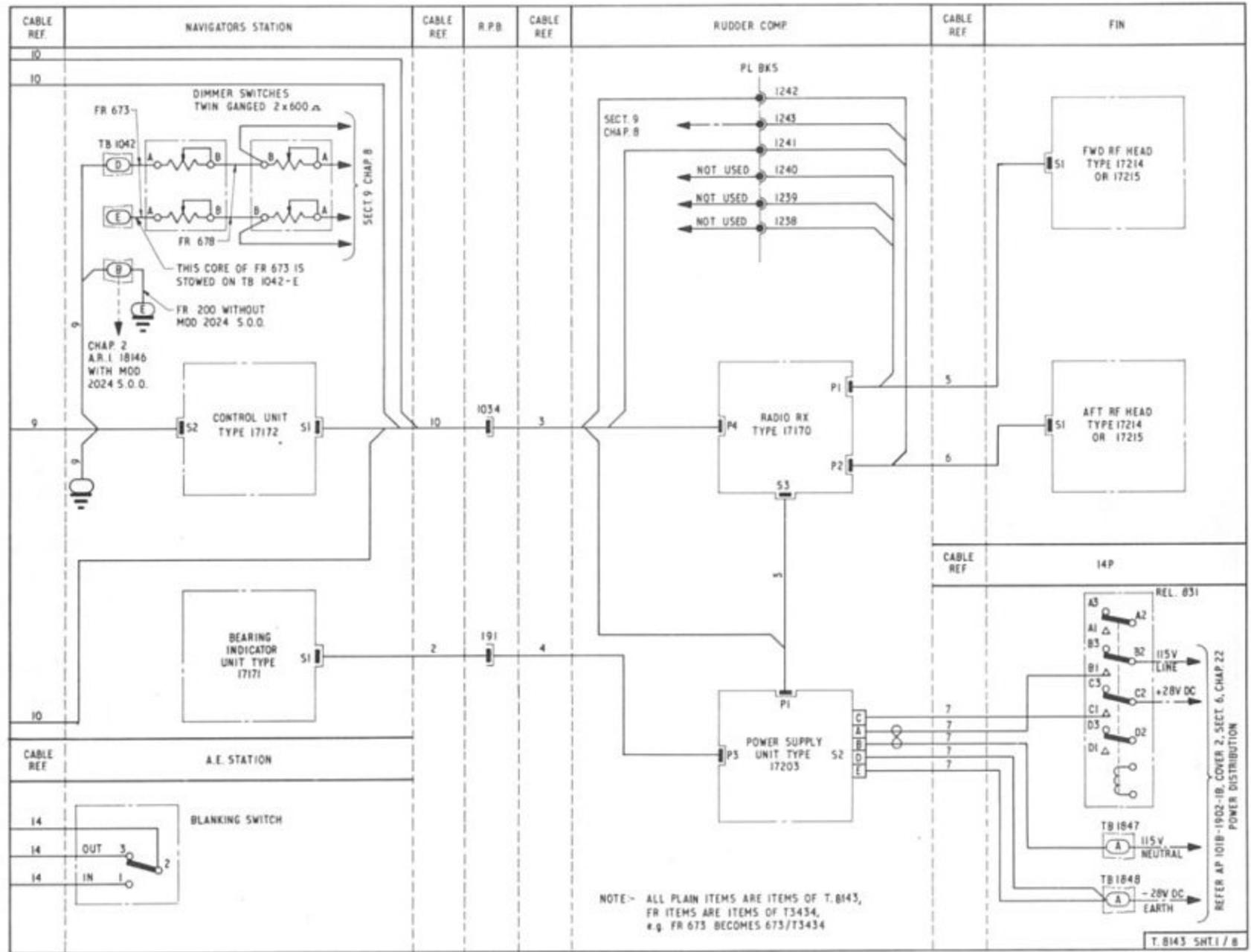


Fig. 8 (2) Routing chart for ARI.182281/1 Pre SRIM 3965 (Mod 2496)



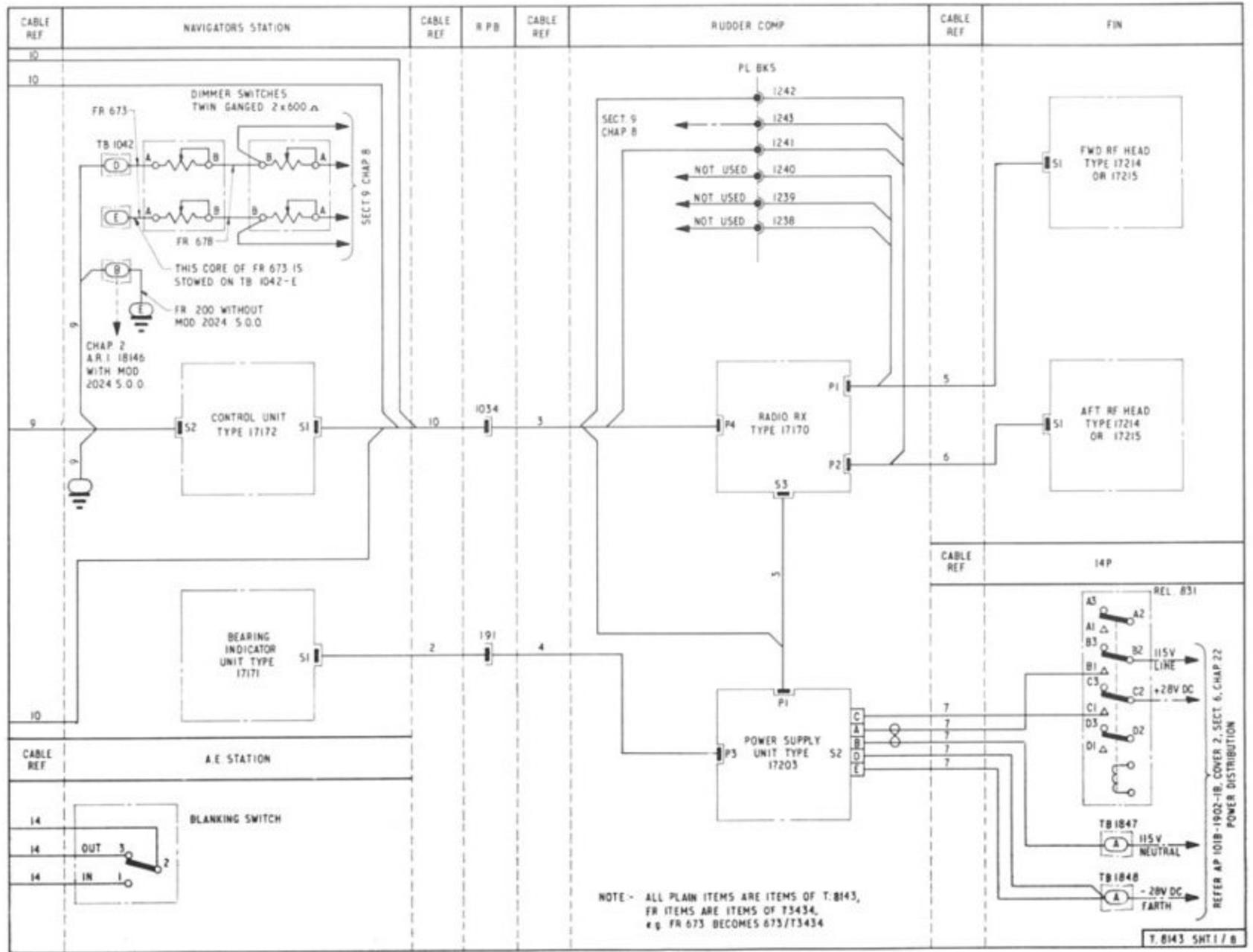


Fig. 9 (2) Routing chart for ARI.1822B/I Post SRIM 3965 (Mod 2496)

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