GROUP D — FLYING INSTRUMENTS

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ILLUSTRATION

Introduction

1. The information contained in this group covers only the electrical supply for the instruments concerned. Further information relating to the flying instruments is contained in Chapter 2, Group B of this Section. The turn and slip indicator change-over relay, and the heated pressure head are described in the following specialist Air Publications:—

Equipment	Air Publication
Relay, Type Q3	4343C, Vol.1, Sect.3, Chap.6
Pressure head, Mk.8T	◀ 1275B Vol.1, Sect.27, Chap.8, App.2 ▶

TURN AND SLIP INDICATOR

Description

2. As this is the most important of the flying instruments, its d.c. power supply has been safe-guarded. The normal supply is via the closed contacts 5-6 of an energised Type Q3 relay, the relay drawing its supply from the same fuse. Should this fuse fail and the relay contacts 5-6 consequently open, the relay contacts 3-4 will close and the indicator will draw its supply from a standby fuse.

3. Should the normal aircraft d.c. supply fail the indicator can be switched into the emergency battery circuit, the turn and slip indicator switch being connected to the emergency lighting switch (*Group* C, *fig.* 3). The indicator is described, and the routing chart is given, in Chap. 2, Group B of this Section.

Servicing

4. Periodically the main fuse (fuse 23 in J.B.1) should be removed and the standby circuit tested. Servicing information for the relay is given in the specialist Air Publication listed in para. 1.

FLAP POSITION INDICATOR

5. This Desynn indicating system is supplied with d.c., the system being described, together with the circuit routing chart in Chapter 2, Group B of this Section.

GYRO COMPASS AND ARTIFICIAL HORIZON

6. These two instrument systems derive their a.c. supply from the inverters described in Group A of this Chapter. The compass system has an additional d.c. supply. Both systems are described, and their circuit routing charts are given, in Chap. 2, Group B of this Section.

PRESSURE HEAD HEATER

Description

7. The pressure head fitted to the top leading edge of the port tail fin provides the pressure and static atmospheric pressure references for the capsule-type instruments described in Chap. 2, Group A of this Section. To obviate icing up of the pressure head apertures an electrical heater element is incorporated in the pressure head, and is controlled by a switch fitted to the main instrument panel.

Note . . .

This circuit must not be left switched ON whilst the aircraft is standing on the ground or the heater element will burn out.

Servicing

WARNING

The pressure head apertures should be inspected for cleanliness at regular intervals, and the pressure head cover should be fitted, whilst the aircraft is not being used, to guard against the weather and dirt.

8. The pressure head heater should be periodically tested as follows :—

(1) Switch the heater ON ; allow the pressure head to heat up until it is too warm to hold with the bare hand. Switch OFF and, whilst the pressure head is still hot, measure the insulation resistance of the heater leads to earth ; the reading should not be less than 0·5-megohm.

(2) When the pressure head has cooled down again measure the insulation resistance to earth ; the reading should not be less than 3·0-megohms.

Note . . .

In each case a standard 250-volt insulation resistance tester should be used.

(3) Measure the continuity resistance of the heater element, when cold, with a suitable test meter ; the resistance should be approximatly 6·0 ohms.

9. The pressure head is described in the specialist Air Publication listed in para. 1.

Removal

10. To remove the pressure head it is first necessary to remove the port rudder (*Sect.* 3, *Chap.* 3). Next, disconnect the static and pressure pipe lines at the top union of the port fin and remove the union nuts and rubber sealing washers from the pipe lines.

11. Straighten the pipe lines and, with the locking nut and bolt at the pressure head removed and the electrical leads disconnected from T.B.31, push the pipe lines forward and withdraw them, together with the pressure head, from the fin.

12. To refit the pressure head the reverse of the fore-going procedure should be followed, great care being taken when bending the pipe lines to ensure that they again connect to the top union of the fin.

Note . . .

Whenever the pipe lines have been disconnected and then reconnected they should be leak tested as described in Chap. 2, Group A of this Section.

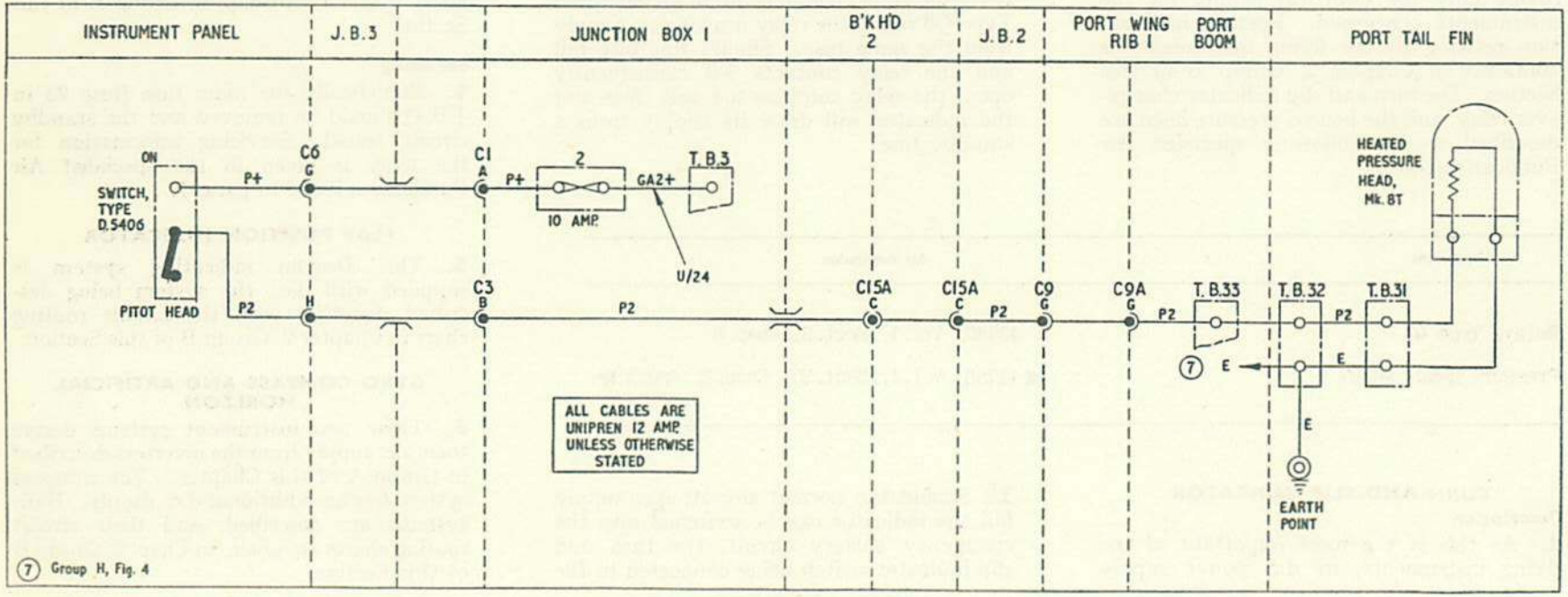

Fig. 1. Pressure head heater—P

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