

GROUP 3.B

ELECTRICALLY-OPERATED INSTRUMENTS

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Equipment employed

1. The electrically-operated flying instruments employed in this aircraft are listed below, together with the relevant Air

Publications to which reference should be made for a detailed description and the necessary servicing required to maintain them in an efficient condition.

Corrector control box	}	
Precession amplifier, Type A		} <i>A.P.1275B, Vol. 1, Sect. 11</i>
Detector unit, Type A		
Gyro unit, Type A		
Indicator, Type 472FL (<i>tailplane position</i>)	}	
Indicator, Type 473FL (<i>flaps</i>)		
Indicator, Type 501FL (<i>rudder and aileron</i>)		
Desynn transmitter, Type 470FL (<i>rudder and aileron</i>)		
Desynn transmitter, Type D (<i>tailplane position and flaps</i>)		
Artificial horizon, Mk. 4	}	} <i>A.P.1275B, Vol. 1, Sect. 13</i>
Turn and slip indicator, Mk. 2		

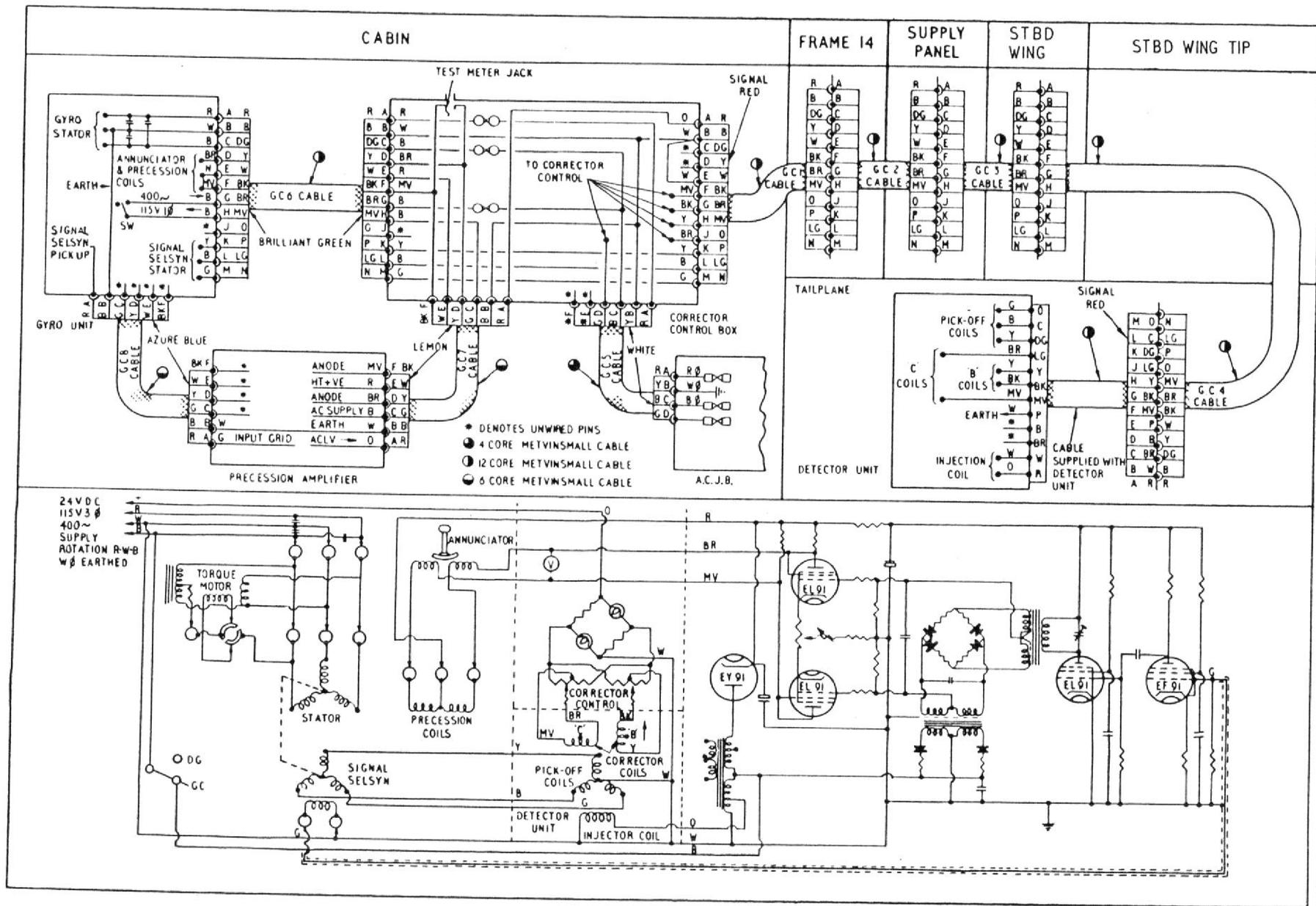
Introduction

2. This Group contains a description of the electrically-operated flying instruments installed in this aircraft, including the necessary routing and theoretical diagrams of these installations. For a general description of the instrument installation, reference should be made to Group 1.A. The location and access to all the instruments and associated equipment is given in Group 1.C. Detailed information on the standard components used will be found in the relevant Air Publications (*listed in para. 1*).

DESCRIPTION

Gyro compass (Code C)

3. The gyro unit of the Type Mk. 4F gyro magnetic compass installation is situated on the centre-line of the centre instrument panel just below the artificial horizon. The gyro unit is an electrically-operated directional gyro, which is orientated in the earth's



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Fig. 1. Gyro compass
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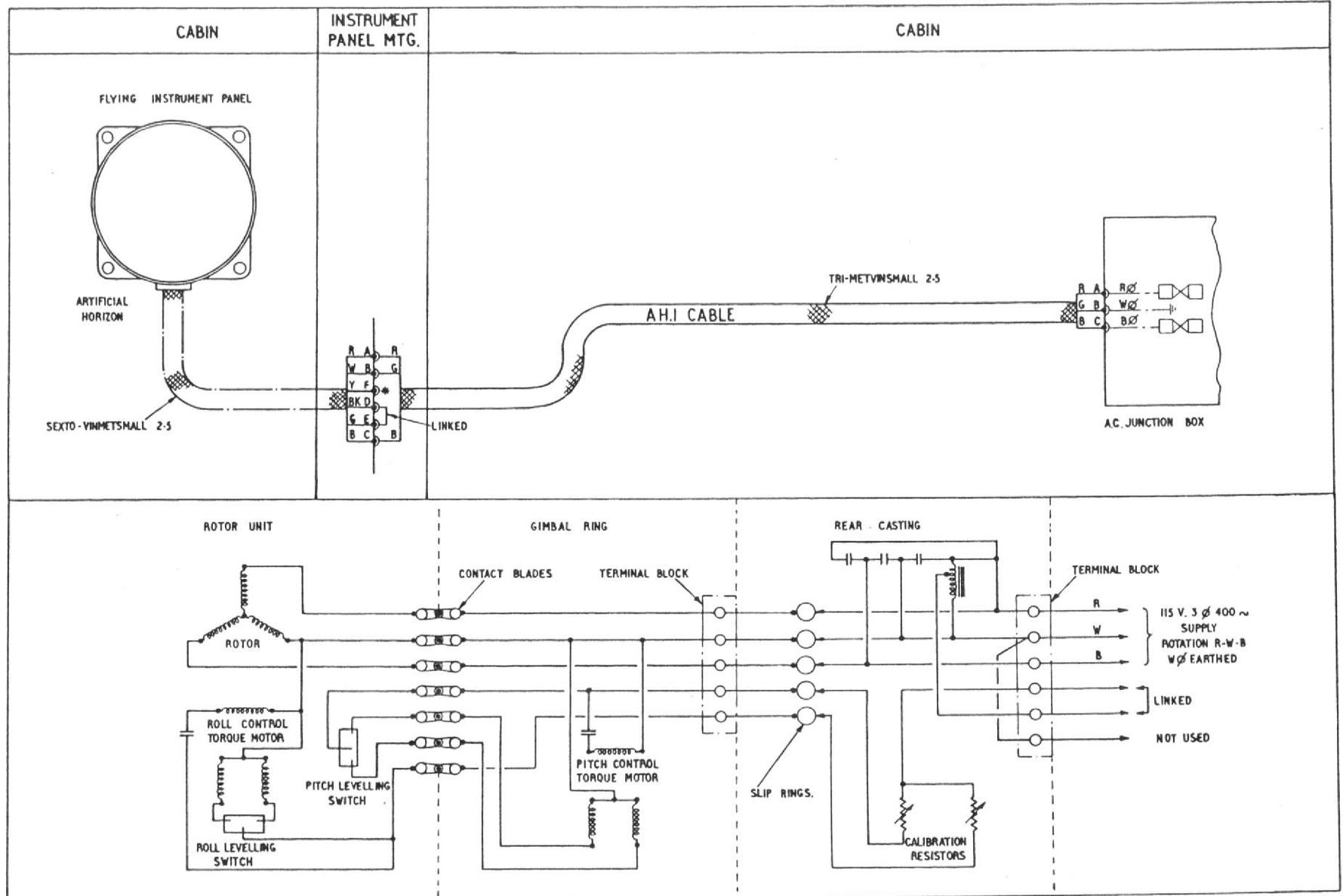
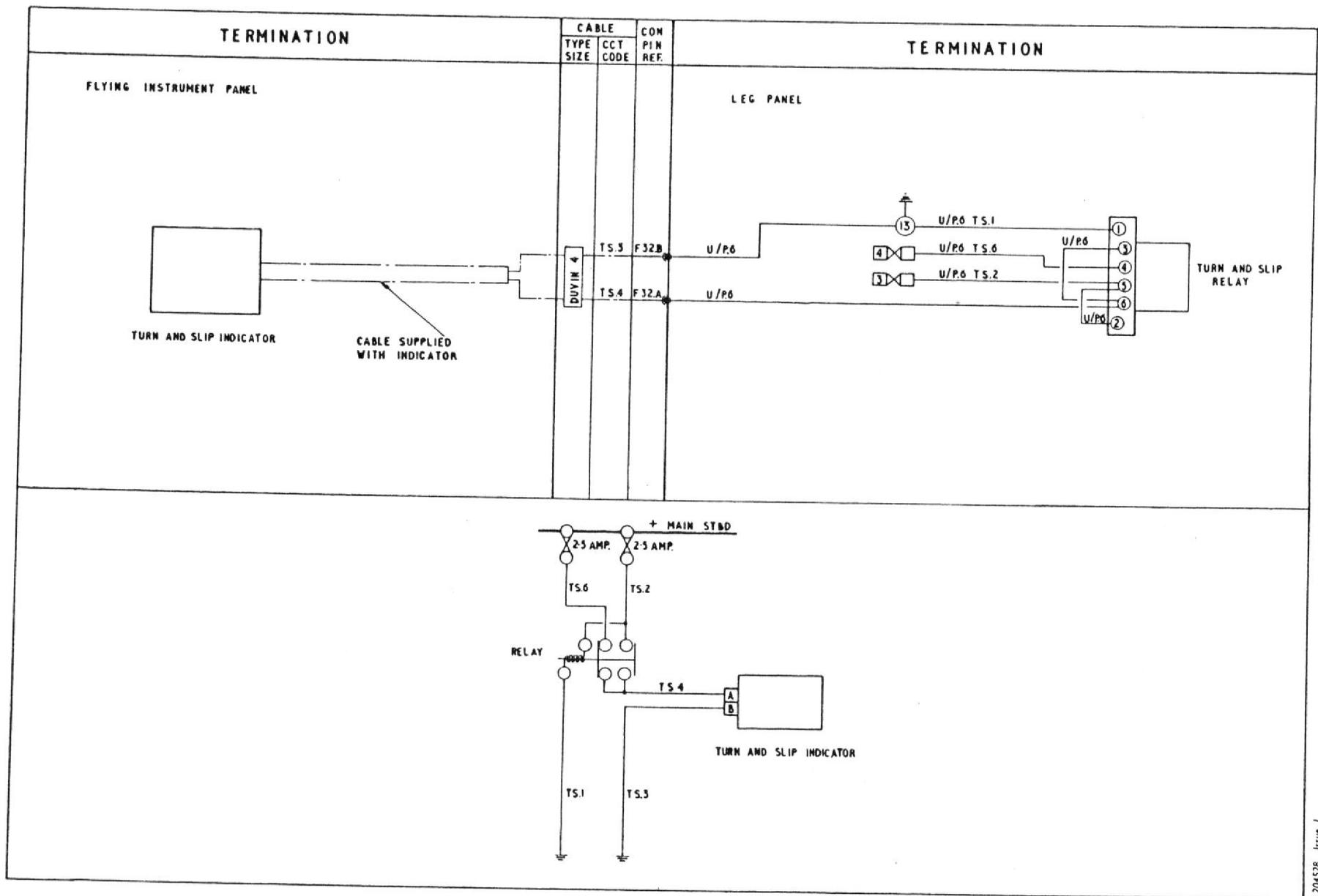


Fig. 2. Artificial horizon

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Fig. 3. Turn and slip indicator

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magnetic field by a remote detector unit located in the starboard wing tip. The instrument gives a continuous indication of the aircraft magnetic heading at all times throughout flight. The installation, which also incorporates a precession amplifier and a corrector control box, is supplied with d.c. for compass correction and three-phase a.c. from the a.c. supplies circuit described in Sect. 5, Chap. 1, Group E.1. The precession amplifier and corrector control box are both located on the starboard side of the cabin. A routing and theoretical diagram of the installation is given in fig. 1, but for a full description of the compass and the principles of operation, reference should be made to the relevant Air Publication (*listed in para. 1*).

Artificial horizon (Code H)

4. The artificial horizon is located on the centre instrument panel just above the gyro compass and provides a continuous indication of the aircraft attitude in roll and pitch in relation to the natural horizon. The instrument is an electrically-operated gyroscope, the gyro unit being basically a three-phase induction motor, which is supplied with three-phase a.c. from the a.c. supplies circuit described in Sect. 5, Chap. 1, Group E.1.

Turn and slip indicator (Code T.S.)

General

5. This indicator is fitted on the starboard side of the centre instrument panel just below the rate of climb indicator. It is provided to indicate the aircraft lateral attitude in relation to level flight and to indicate skid, side slip or correct bank during a turn. The

indicator is an electrically-operated instrument which is supplied from the aircraft 24 volt d.c. supply immediately the battery master switch is placed in the ON position. It is provided with duplicated fuses located in the leg panel and the supply from the fuses to the instrument is controlled by a relay also located in the leg panel.

Operation

6. The operation of the supply circuit is such that when the battery master switch is placed in the ON position, the turn and slip relay is energized, via the normal fuse. Contacts of this relay, which are made while the relay is energized, feed the supply from the normal fuse to operate the indicator. If the normal fuse fails, the relay will immediately be de-energized, thus making the other set of contacts, which are fed from the standby fuse and also connected to the indicator. The indicator is now supplied from the standby fuse and remains in operation with no apparent indication of fuse failure.

Note . . .

Due to the fuse change-over facility of this circuit, it is important to check that the normal and standby fuses are both serviceable before each flight.

Tail plane position indicator (Code TD)

7. The incidence of the tail plane is shown on an indicator situated on the port side of the centre instrument panel just above the machmeter. A routing and theoretical diagram of the electrical circuit is given in Chap. 1, Group D3. Details of the Desynn system will be found in the relevant Air Publications (*listed in para. 1*).

Rudder and aileron tab position indicators (Code RD and AD)

8. The settings of the rudder and aileron trim tabs are shown on a trim indicator located just forward of the trim switch on the cabin port shelf. Routing and theoretical diagrams of the electrical circuits are given in Chap. 1, Group D1. Details of the Desynn system will be found in the relevant Air Publications (*listed in para. 1*).

Flap position indicator (Code FD)

9. This indicator is located on the port side of the centre instrument panel below the machmeter. A routing and theoretical diagram of the electrical circuit is given in Chap. 1, Group D4. Details of the Desynn system will be found in the relevant Air Publications (*list in para. 1*).

SERVICING

General

10. The necessary servicing to maintain the electrically-operated flying instruments in an efficient condition and the standard serviceability tests, which should be applied is contained in the relevant Air Publications (*listed in para. 1*). The method of adjusting the linkages to the various Desynn transmitters will be found in Sect. 3, Chap. 4. Before servicing or removing any of the electrically-operated instruments, the aircraft must be rendered electrically safe (*described in Sect. 5, Chap. 1, Group A.1*).

REMOVAL AND ASSEMBLY

General

11. The removal of the instrument panels carrying the electrically-operated flying instruments is described in Group 1.B. Once access has been obtained, the removal of the instruments from the panels should present no difficulties.



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