

## Group 1.A

## INSTALLATION DETAILS

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**Introduction**

1. This group contains a general description of the instrument installation of this aircraft as a whole, including the general servicing information required to maintain the installation in an efficient condition. For detailed information on the standard instruments employed, reference should be made to the appropriate Air Publications, which are quoted in the various groups of this chapter. For details of the circuit codes of the electrically operated instruments, refer to the table in Sect.5, Chap.1, Group A.1.

## DESCRIPTION

**General**

2. Electrical, mechanical and air pressure operated instruments are installed in this aircraft and certain items are duplicated to cover the dual control requirements of the aircraft. The electrically operated instruments, with the exception of those which generate their own power i.e. tachometer, are supplied from the aircraft's normal 28 volt d.c. system or from the 115 volt, 3 phase a.c.system, as described in Sect.5, Chap.1. A separate standby 24 volt battery supply is also available for the emergency operation of the turn and slip indicators. The air pressure operated instruments are supplied from a pressure head projecting forward from the port wing tip, as explained in Group 3A.

3. The majority of the instruments are mounted on the instrument panels and on the cabin shelves. The instrument panels consists of five separate panels, which are attached by flexible and anti-vibration mountings to a structure extending across the top of frame 8. The cabin shelves extend aft, one on each side of the cabin, from the instrument panels to frame 11. The gyro gun sights and camera recorder are carried on fixed mountings above the instrument panels.

**Instrument panel mounting structure**

4. This structure extends transversely across the top of frame 8, the major part being a tie member, which is supported at its centre by a vertical strut extending to the cabin floor. On the port side, below this tie member, are two large brackets, which project towards each other from frame 8 and the vertical support strut. The inner ends of these brackets are attached to a Y-shaped shelf member extending forward to an angle member on frame 6. From an extension of the bracket attached to the vertical support strut, a cross strut extends to starboard, below the tie member, to a further bracket on frame 8.

5. The tie member carries four small brackets, to each of which is assembled a pair of anti-vibration mountings and a further pair of mountings are incorporated at the inner ends of each of the two large brackets below the tie member. The cross strut also carries two small brackets, to each of which is assembled a pair of anti-vibration mountings. The four port pairs of anti-vibration mountings support the Pupil's flying instrument panel, while those on the starboard side carry the starboard instrument panel, which contains the Instructor's flying instruments.

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6. The tie member also carries two large brackets, which extend upwards, while further brackets extend between the tie member and the lower structure. These brackets are used to support the centre instrument panel, and the oxygen regulator. The port instrument panel is supported on flexible mountings, which are attached to lugs mounted on the decking skin and to a bracket projecting aft from the instrument panel lower mounting structure adjacent to frame 8. The starboard side instrument panel is attached to a lug on the underside of the starboard top longeron and to the top forward end of the cabin starboard shelf.

#### **Panels and shelves**

7. The instrument panels and cabin shelves are all constructed of light-alloy sheet, which is lightly shot blasted and finished matt black. The instruments, indicators and switches are mounted through suitable holes in the panels and are identified where necessary by eau-de-nil coloured lettering.

#### **Instruments**

8. The majority of the instruments installed in this aircraft are standard items

of equipment, which are fully described in the relevant volumes of the A.P.1275 and A.P.4343 series, to which reference should be made when it is required to obtain any information not contained in this chapter.

### **SERVICING**

#### **Instrument panels**

9. These panels should be examined periodically for distortion, security and to ensure that the flexible and anti-vibration mountings are serviceable and not damaged in any way. If damaged, they must be replaced without delay. All the earthing connectors at the flexible and anti-vibration mountings should also be examined to ensure that they are not broken and that they are making good electrical connections. When refitting earthing connectors care must be taken to ensure that the surfaces in contact are perfectly clean and in particular, free from grease and paint. Completed assemblies should be protected by applying one coat of blue oil-base paint to D.T.D. Spec.827. The mounting structure for the panels should also be examined for damage and distortion. All the instruments on the panels should be examined for security and any insecure attachments rectified.

#### **Cabin shelves**

10. For the general servicing information

required for these shelves, reference should be made to Sect.5, Chap.1, Group A.1.

#### **Instruments**

11. The necessary servicing to maintain the instruments in an efficient condition and the standard serviceability tests which should be applied, together with the equipment to be used and the method of conducting the tests, is contained in the relevant Air Publications for the instrument concerned. Reference is made to these publications in the appropriate groups of this chapter. Before servicing or removing any of the electrically operated instruments, the aircraft must be rendered electrically safe, as described in Section 5, Chapter 1, Group A.1.

### **REMOVAL AND ASSEMBLY**

#### **General**

12. The removal of the instrument panels installed in the cabin is fully described in Group 1.B. Once access has been obtained, the removal of the instruments from the panels, should present no unusual difficulties. The location and access to all the instruments and their associated equipment is indicated in Group 1.C.

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