Chapter 2

INSTRUMENT INSTALLATION

Note—A detailed list of contents appears at the beginning of each group.

LIST OF GROUPS

INTRODUCTION

1. This Chapter contains a description of the instrument installation, and gives details of each separate instrument system, servicing information and the method of removing components from the aircraft where this is not readily apparent. Where the instrument system components are individually described, and the servicing given, in a specialist Air Publication, reference is made to that Publication. A list of these references is given, where applicable, in the introduction to each group.

2. Related instrument systems are set out in groups, as shown in the list of contents. Each group bears an arbitrary code letter, as do those instrument systems which are electrically operated. These resultant circuits are identified by either one or two letters, the coding appearing after the circuit title in the List of Illustrations in each group.

GENERAL INFORMATION

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

Introduction

1. The information given under this heading deals with the instrument panels, and gives general information on the manner of presenting the information in this Chapter.

INSTRUMENT PANEL

Description

2. All the instruments indicators, except for the oxygen indicator, accelerometer and standby compass, are fitted to a main instrument panel mounted immediately in front of the pilots. The blind flying instruments are grouped centrally on this panel, and are encompassed by a painted white continuous line.

3. The panel is secured by six anti-vibration mountings to cross members which are bracketed between the cabin walls. The four lower mountings are hinged such that, when all six Oddie pin fasteners securing the panel to the anti-vibration mountings have been loosened, the panel may be pivoted rearward and downward to provide access to the backs of the instruments; the extent of movement is governed by two strain wires which are anchored to the cabin structure, and secured to the top of the panel by key-rings.

4. A small shrouded upper panel is secured to the cabin structure by two Oddie pins, and locates immediately above the main instrument panel. The accelerometer is fitted to this upper panel, the standby compass being bracketed to the top of the panel shroud.

5. The oxygen indicator is integral with the pupil pilot's oxygen regulator which is bracketed to the cabin port wall, immediately below the port lower corner of the main instrument panel.

6. All the instrument dial markings and pointers, except where specified in the text, have been fluorized so that they may be discernible in the dark due to the interaction of the ultra-violet cabin lighting (*Chap.* 1, *Group H*). The two instrument panels have a matt black finish, as do the instrument faces; this provides a contrast with the instrument presentations.

Servicing

7. General notes on instrument panels and their mountings are contained in the Air Publication detailed below.

Equipment	Air Publication
Instrument panel and anti-vibration mountings	1275A, Vol. 1, Sect. 10, Chap. 1

8. The paint finish of the panel should be periodically inspected for scratches, while the anti-vibration mountings should be checked for resilience and serviceability.

Removal

9. To remove the upper instrument panel all that is required is to loosen the two Oddie pins, to remove the panel from its location, and to disconnect the socket of loom C23A from the plug on the panel port support bracket.

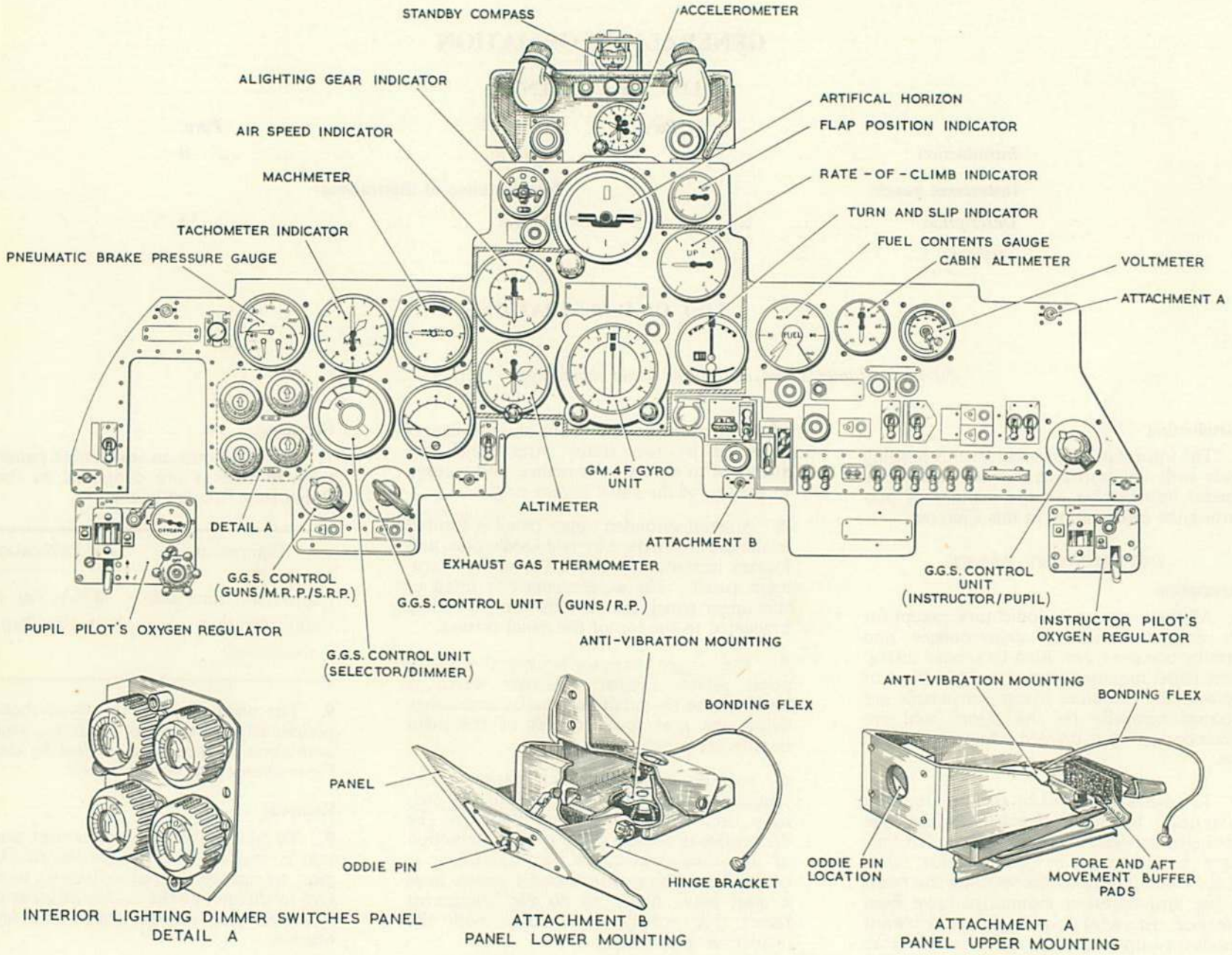

Fig.1 Pilots' instruments and instrument panel mountings

10. To remove the main instrument panel the following procedure is recommended:

Warning . . .

Both gyro gun sights must be raised to the combat position BEFORE the main instrument panel is lowered.

(1) Render the aircraft electrically safe by moving the GROUND/FLIGHT switch actuating rod OUT, ensuring that no external supply is connected to the aircraft.

(2) Loosen the six Oddie pin fasteners securing the panel to the anti-vibration mountings, and lower the panel.

(3) Make the following disconnections as follows:

(*a*) Sockets C5, C6 and C22 from J.B.3;

(*b*) Socket C20 and the artificial horizon and turn and slip indicator sockets from J.B.4;

(*c*) The two sockets from the gyro compass gyro unit and the socket and torsional drive from the Z.B.X. control unit; this latter unit must be reconnected by the Radio tradesman in accordance with the instructions given in Sect. 6, Chap. 1.

(*d*) The cable from the exhaust gas thermometer indicator; a shorting link (e.g., unipren 6-amp. cable) should be connected across the vacated indicator terminals to damp the pointer movement and removed when the cables are reconnected when the panel is refitted.

(*e*) The sockets from the G.G.S. control units Type PT. Mk. 1 (INSTRUCTOR/PUPIL) and Type PS. Mk. 1 (GUNS/M.R.P./S.R.P.).

(4) Remove both the G.G.S. control units Type S. Mk. 3 (SELECTOR/DIMMER) and Type P. Mk. 3 (GUNS/R.P.) from the panel, reassembling the nuts and bolts (and, SELECTOR/DIMMER only, the distance pieces) to the components for safe keeping.

(5) Disconnect both the pressure and static flexible pipe lines by loosening their hose clips: the pipe line ends should be sealed to prevent ingress of foreign matter.

Warning . . .

The brake pressure gauge pipe unions are not to be loosened until the pneumatic system pressure has been exhausted (*Sect.* 3, *Chap.* 7).

(6) The three flexible pipe connections to the brake pressure gauge should be disconnected.

(7) Disconnect the two strain wires from the panel, and remove the bolt and castellated nut from each of the four lower anti-vibration mounting hinges by first removing the split pins. The panel should now be free from the aircraft.

11. When refitting the panel the reverse of the aforementioned procedure should be adopted, taking care:—

(1) To fit new split pins to lock the castellated nuts at the four panel hinges.

(2) To ensure that the brake pressure gauge connections are leakproof.

(3) That the pressure and static flexible pipe lines are correctly secured to the panel connections (*Group A*), and

(4) That the shorting link is removed from the exhaust gas thermometer indicator terminals, and that the Radio tradesman reconnects the torsional drive of the Z.B.X. radio control unit in accordance with the instructions given in Sect. 6, Chap. 1.

12. When the panel has been refitted both an electrical and pressure-static type instruments functional test should be carried out.

INTERPRETATION OF ILLUSTRATIONS

General

13. Illustrations are included in each group to show the location and access of the components used in each instrument system. Where an electrical system is included a separate circuit routing chart is given.

14. The method of reading these routing charts, and the manner in which all illustrations should be read and used, is described in Chap. 1, Gen. Inf., of this Section.