

Part I

Chapter 12—Pitot-static System and Flight Instruments

List of Contents

	<i>Para.</i>
Pitot-static system	1
Pitot-static operated instruments	2
Other instruments	3
Malfunctioning of the pitot-static system	4

1 Pitot-static system

(a) The pitot-static system may be divided into the following five separate systems:

- (i) Port wing pressure head.
- (ii) Starboard wing pressure head.
- (iii) Nose pitot head.
- (iv) Fuselage static vents.
- (v) Wing static vents.

(b) The port wing pressure head system supplies both pitot and static pressure to the following:

- 1st pilot's machmeter, ASI, altimeter* and rate of climb indicator*
- Bombsight computer

(* = Static pressure only)

(c) The starboard wing pressure head system supplies both pitot and static pressure to the following:

- 2nd pilot's machmeter, ASI, altimeter* and rate of climb indicator*
- Master navigator's ASI and altimeter*
- VG recorder
- Undercarriage switch
- Auto-mach trim switch
- Mach compensator (Auto-pilot)
- Flight data unit and amplifier unit (Autostabiliser)
- Bomb fusing switch
- Fatigue meter switch
- Auto-pilot pressure unit*
- Mk. 3 calculator*
- True airspeed unit

(* = Static pressure only)

(d) The nose pitot head supplies pitot pressure for the “Q” feel units.

(e) The large diameter vents on the fuselage supply static pressure for the “Q” feel units. The small vents at Stn. 191 supply static pressure for the auto-pilot pressure unit, altitude cut-out switch and manometric height unit.

(f) The port and starboard pressure heads and the nose pitot head are electrically heated. The controlling on/off switches for the heater elements are on panel AZ.

(g) Post-Mod. 3498 the feel simulator compartment heaters are controlled by a FEEL SIMULATOR, ON/OFF switch on panel AZ. Pre-Mod. 3498 they are controlled by the nose pitot heater switch.

2 Pitot-static operated instruments

(a) Airspeed indicators

Three ASI's are fitted, one on each pilot's instrument panel and one at the navigator's station. The 2nd pilot's ASI is fitted with a flag which appears and oscillates in the face of the dial if speed is reduced below 160 knots with the undercarriage up and also if the Blue Steel fin fold switch is not selected UP before the undercarriage is lowered.

(b) Altimeters

Three altimeters are fitted, one on each pilot's instrument panel and one at the navigator's station. When Mod. 3190 is embodied vibrators are fitted to the Mk. 19B or C altimeter at the 2nd pilot's station. ▶

(c) Machmeters

A machmeter is fitted on each pilot's instrument panel.

3 Other instruments

(a) Electrically-operated instruments

See Part 1, Chap. 6, para. 14 and Chap. 8.

(b) Accelerometer

The accelerometer is mounted in front of the 1st pilot on AZ and indicates all normal accelerations imposed on the aircraft in the pitching plane by means of three concentrically-mounted pointers. One pointer indicates instantaneous G and automatically reverts to 1G reading when the aircraft is in straight level flight. The other two register the maximum positive and negative G readings respectively until reset manually.

(c) Outside air temperature gauge

An outside air temperature gauge is fitted on panel AB and at the navigator's station.

4 Malfunctioning of the pitot-static system

(a) The starboard system contains a greater number of pipe joints than the port system and is therefore more susceptible to a leak developing. Also its greater volume may cause some instrument lag.

(b) If a discrepancy occurs between the readings of the 1st and 2nd pilots' pressure instruments it is more likely that the instruments fed from the starboard system are in error.

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