

GROUND TEST INSTRUCTIONS

SECTION 4

A.S.I. SYSTEM

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PART 1 – A.S.I. SYSTEM PRESSURE AND LEAK TESTS

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PART 1

A.S.I. SYSTEM

The following Pressure and Leak Tests (to S.I.S.2834) cover the A.S.I. System progressively.

Each Test Requirement must be within permissible limits before the next Test is commenced.

1. PIPELINES PRESSURE TESTS

Pressure Test the A.S.I. System pipelines in EACH of the following Completed Units:—

Centre Fuselage and Wings Assembly.

Front Fuselage Assembly (with Instruments disconnected).

Each Assembly must maintain 10 p.s.i. for FIVE minutes without leakage.

2. FRONT FUSELAGE TESTS – CABIN 'UNPRESSURISED'

Make Tests on Front Fuselage with Cabin open to atmosphere by the following operations which must be made in the sequence given:—

- (i) Check all A.S.I. System Instruments connected.
- (ii) Using Shop Rig, apply suction to Static line (connection aft of Frame 17A) until A.S.I. indicates 130 knots.
- (iii) Suction 'OFF': check time for A.S.I. Indicator to fall to 117 knots (NOT LESS than 30 secs.).
- (iv) Using Shop Rig, apply pressure to Pressure line (connection aft of Frame 17A) until A.S.I. indicates 130 knots.
- (v) Pressure 'OFF': check time for A.S.I. Indicator to fall to 117 knots (NOT LESS than 30 secs.).
- (vi) When (iii) and (v) are satisfactory pressurise Cabin to working differential pressure of 3½ p.s.i.

3. FRONT FUSELAGE TESTS – CABIN 'PRESSURISED'

Make Tests on Front Fuselage with Cabin pressurised to working differential pressure of 3½ p.s.i. by the following operations which must be made in the sequence given:—

- (i) Check all A.S.I. System Instruments connected.
- (ii) Using Shop Rig, apply suction to Static line (connection aft of Frame 17A) until A.S.I. indicates 130 knots.
- (iii) Suction 'OFF': check time for A.S.I. Indicator to fall to 117 knots (NOT LESS than 65 secs.).
- (iv) Using Shop Rig, apply pressure to Pressure line (connection aft of Frame 17A) until A.S.I. indicates 117 knots.

## 3. FRONT FUSELAGE TESTS – CABIN 'PRESSURISED' (Continued).

- (v) Pressure 'OFF': check in 30 secs. that A.S.I. Indicator has not RISEN to 130 knots.

If requirements called for in (iii) and (v) are NOT obtained source of leakage must be inside pressurised region.

It may happen in (v) that A.S.I. Indicator may remain stationary or fall: in each case Installation is satisfactory, since there would be either:—

- (a) compensating leak on each side of pressure wall,  
(or)  
(b) larger leak is outside pressure wall (this being already checked in 'Unpressurised Cabin' Tests).

## 4. TESTS ON COMPLETE AIRCRAFT

Test the complete Aircraft A.S.I. System by the following operations which must be made in the sequence given:—

- (i) Isolate all Instruments from A.S.I. System.  
(ii) Pressurise complete System to 10 p.s.i.  
(iii) Check 10 p.s.i. is maintained for FIVE minutes without leakage.  
(iv) Connect all A.S.I. System Instruments.  
(v) Apply progressive pressure to Pitot Head until Machmeter needle moves; check needle indicates RISE in Mach number.  
(vi) Fit Adaptor (1376) to Pressure Head; fit Leak Tester (6C/849) pressure connection to adaptor.  
(vii) Turn Tester knob to 'SUCTION TO STATIC'.  
(viii) Apply Hand Pump pressure until Pointer reads 130 knots.  
(ix) Check Aircraft A.S.I. needle is synchronised with Tester Pointer throughout this movement and that movement is in correct direction.

Note . . .

Any undue lag of the Aircraft A.S.I. needle compared with Tester Pointer indicates foreign matter in the pipelines which must be cleared.

- (x) Stop Pressure; check time for Pointer to fall to 125 knots (NOT LESS than 3 minutes). (AP.1275B, Vol.2, Part 1, Leaflet A8).

Note . . .

If the leak is outside the specified limits disconnect the pressure head. Apply 'PRESSURE' to the 'PITOT-LINE' and 'SUCTION' to the 'STATIC-LINE' separately to discover the source of the leak. On reassembly carry out the overall test as in (vi) to (x).

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