A.P. 4685, *Vol.* 1, *Part* 2, *Sect.* 3, *Chap.* 2, *App.* 2
*A.L.*105, *Feb.* 69

TOKEN LEAF FOR

STANDARD SERVICEABILITY TEST

for

PITOT-STATIC TRANSDUCER, TYPE A

This appendix has been revised and re-issued in A.P.112F-0005-1.

in App. 3. If the capsule unit is faulty, declare the transducer unserviceable.

Incorrect outputs

6. One or more incorrect outputs may be due to faults in the following:—

(1) The appropriate output component(s). Check these as detailed in App. 3.

(2) Wiring. Carry out the checks detailed in para. 15.

(3) Gear train. Carry out the checks detailed in para. 11 to 13. If the gear train is faulty, declare the transducer unserviceable.

Note . . .

If the adjustable cam assembly or the compensating drive unit is faulty, declare the transducer unserviceable.

7. If all outputs are incorrect, this may be due to faults detailed in para. 6 or to faults in the servo amplifier. Carry out the checks detailed in App. 3.

8. If there is no output, carry out the checks detailed in para. 6 and 7.

Outputs correct in one direction only

9. This may be due to the following:—

(1) Faulty capsule unit.

(2) Excessive backlash in the gear train.

Declare the transducer unserviceable if the condition in either sub-para. (1) or (2) is present.

Servo run-away

10. If servo run-away occurs, check the following as detailed in para. 6 and 7:—

(1) Capsule unit.

(2) Servo amplifier.

(3) Gear train.

(4) Wiring.

Gear train checks

11. Examine the gear train to determine:—

(1) Whether any gear or pinion is damaged (broken teeth, distortion, etc.).

(2) That all split clamps are tightened to the correct torque loading (see Table 2, App. 3), with the two halves of each clamp symmetrically placed on the collar.

(3) That there is no undue backlash throughout the gear train.

(4) That spindle end float is such that all gears and pinions remain in mesh at all times.

12. If gears are damaged, or if either of the split clamps securing the sector or the gear 76 teeth (App. 3, fig. 1) is loose, or if there is undue backlash, declare the transducer unserviceable. Carry out the appropriate setting-up test detailed in App. 3 before tightening loose split clamp screws associated with CX1 or RV3. Tighten any other loose split clamp screws. Carry out the standard serviceability test when any adjustment is made to the gear train.

13. If the split clamp of the slip clutch on axis 3 is loose, it should be tightened to the correct torque loading such that when a gramme gauge is inserted in one of the holes of the gear, 200 teeth (App. 3, fig. 1), then:—

(1) The force required to turn the gear train must not exceed 9 gm (pre-mod. ADS/37) or 7 gm (post-mod. ADS/37).

(2) If the 135T gear on axis 4 (Chap. 2, fig. 7) is held to prevent it moving, the force required to slip the clutch must not exceed 17 gm (pre-mod. ADS/37) or 12 gm (post-mod. ADS/37).

Compensating drive unit checks

14. (1) Examine the cam unit to ensure that at 200 kt I.A.S. (66·3 mb) the cam follower rests at a point on the cam at which it makes an angle of 162° with the small dip in the cam surface (App. 3, fig. 2). If the cam is incorrectly situated, declare the transducer unserviceable.

(2) Rotate the gear, 200 teeth (App. 3, fig. 1) by hand to turn the cam follower through one complete revolution. Check that the follower runs on the cam profile and that the sectors do not become unmeshed. If the cam follower lifts off the cam profile, check that the idler sector does not foul the input spindle. If necessary, release the idler sector split clamp and turn the idler sector clear of the spindle. Tighten the split clamp, using the correct torque screwdriver as detailed in Table 2, App. 3.

(3) Using a gramme gauge, check that the force required to lift the cam follower off the cam profile is between 135 gm and 165 gm.

Wiring checks

15. Continuity tests are given in App. 1. If these fail, disconnect the transducer from all test equipment and carry out the following checks:—

(1) Check that each pin on socket PT.1 and plug PT.2 is connected to the appropriate point(s) as shown on the circuit diagram (Chap. 2) and that the resistance across a connection in each case does not exceed 0·2 ohm.

(2) Check that all soldered connections are mechanically sound and that there is

adequate clearance between adjacent terminals.

(3) Using insulation tester, Ref. No. 5G/1621, check that the resistance between each pin of PT.1 and PT.2 and the chassis of the transducer is in each case greater than 10 megohms.

Voltages

16. It is assumed that all supplies at PT.1 and PT.2 are correct, since these are supplied by the test set. Should a sub-unit or output component be suspect, check the voltage supplies at the appropriate point. Tolerances are given in App. 1, Table 3 (test set, Type 9) or Table 5 (test set, Type 9A).

17. Failure of any test in para. 16 indicates a wiring fault. Declare the transducer unserviceable.

Leak test

18. Failure of this test is due to faulty capsule unit 'O' rings or sealed connections. Declare the transducer unserviceable.

Ranging tests

19. Should any of these tests fail, the most likely causes will be:—

(1) Faulty capsule unit.

(2) Incorrect sensitivity, due to an unbalanced pick-off bridge (RV5).

(3) Faulty gear train.

(4) Faulty output component (CX1, RV3).

(5) Faulty microswitch (MSW1, MSW2, MSW3).

(6) Faulty servo amplifier.

(7) Faulty wiring.

This file was downloaded
from the RTFM Library.
Link: www.scottbouch.com/rtfm

Please see site for usage terms,
and more aircraft documents.