GROUND TEST INSTRUCTIONS

SECTION 16

OXYGEN SYSTEM

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SECTION 16

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PART 1

OXYGEN SYSTEM

The following tests must be made on the oxygen system and components. On completion of tests, protective covers for charging and cylinder valves must be immediately replaced.

1. OXYGEN SYSTEM – WARNING

No oil or grease must be permitted to come into contact with oxygen cylinders or any part of the oxygen system, especially when cylinders are being fitted or replaced. Inadvertent contamination must be immediately (and carefully) removed.

2. PIPELINES AND SYSTEM

All pipelines of the system must be 'blown through' on the bench prior to installation (using oil free dry air 1500–1800 p.s.i.). After blowing, all open ends must be carefully blanked off (and left blanked until installation).

When charging cylinders for the first time carry out the following operations in the sequence given:–

(i) Disconnect feed pipe from regulator

(ii) Remove pipeline filters.

(iii) Cylinder valves 'ON'; blow through system for FIVE seconds; cylinder valves 'OFF'.

(iv) Replace pipeline filters (ensure correct way round).

(v) Reconnect feed pipe to regulator.

(vi) Replenish oxygen cylinders.

3. IN–SITU CHARGING TESTS

Test the 'in-situ' charging system by the following operations, which must be made in the sequence given:–

(i) Disconnect system cylinders and regulator from charging side of system.

(ii) Connect an external oxygen supply to 'in-situ' charging valve; open charging valve.

(iii) Ensure supply 'ON' (slowly); check (aurally) that oxygen issues from EACH disconnected pipe (proving non-return valves correctly fitted).

(iv) External supply 'OFF'; close in-situ valve; disconnect external oxygen supply.

3. IN–SITU CHARGING TESTS

(v) Reconnect system cylinders and regulator; check regulator valve is 'OFF'.

(vi) Open valves on system cylinders.

4. SYSTEM FUNCTIONING TESTS

Check functioning of installation by the following operations, which must be made in the sequence given:–

(i) Check contents of oxygen cylinders. If less than 'FULL' replenish. Ensure cylinders fully 'ON'.

(ii) Regulator valve 'OFF'; contents gauge 'FULL'; check for leaks at 'ON–OFF' valve:–

If there is a reading on the 'FLOW INDICATOR' pressure gauge, depress 'EMERGENCY' toggle switch until gauge reads 'ZERO'). Release and check no pressure builds up for thirty seconds.

(iii) Regulator valve 'ON'; check pressure 200–400 p.s.i.

(iv) Regulator valve 'OFF'; check pressure drop not more than 25 p.s.i. per minute.

(v) Fit mask (or test suction tube) to 'Quick Release' socket; turn regulator valve 'ON'.

(vi) Set 'EMERGENCY' toggle switch to 'RIGHT', 'LEFT' and 'CENTRE'; flow should be distinct from the mask (or tube) in each case. Pinch tube tightly below mask (or plug free end of tube), flow should cease and blinker return to 'NORMAL'.

(vii) Regulator valve 'ON', air inlet 'NORMAL'; fit mask to face (or plug into free end of tube), set 'EMERGENCY' toggle switch to 'RIGHT', 'LEFT' and 'CENTRE'. Turn regulator valve 'OFF', pressure must not fall to 'ZERO' in less than one minute.

(viii) Regulator valve 'OFF'; switch to '100 PER CENT, OXYGEN'. Suck gently through mask (or tube); there should be considerable resistance. Whilst sucking, switch to 'NORMAL'. There should be no resistance.

(ix) Regulator valve 'ON', air inlet 'NORMAL'; suck through mask (or tube); visual blinker indicator should show whilst suction is being applied.

(x) Regulator valve 'OFF'; check for leaks (with soap solution) in pipeline joints and connections.

(xi) Blank off end of delivery pipe (fabric taped on) to prevent ingress of dust and dirt; remove all traces of soap solution; check labels fitted at non-return valves and filter.

(xii) Check pilot's supply tube (attached to seat) has sufficient slack to permit full seat movement.

(xiii) Check cylinder pressures (1500 p.s.i. min).

5. SEAT EMERGENCY OXYGEN – TWO SEAT A/C. 'PULL–OFF' LOAD

The maximum permissible 'pull-off' load for emergency oxygen sets mounted on ejection seats (two seat aircraft) is 30 lbs. (D.A.R.D. Tech. Circ. No.203 refers). All emergency oxygen installations must be tested that this load (measured at the emergency knob) does not exceed the maximum, and inspection approval of the test is to be entered on the individual aircraft records.