PART III

MANAGEMENT OF SYSTEMS AND USE OF EQUIPMENT

52. Management of the fuel system

(a) The internal tanks and the wing drop tanks all feed the engine automatically when the low and high pressure fuel cocks are on.

(b) The booster pump must be switched ON before starting and left on at all times when the engine is running. The fuel pressure warning light will come on when pressure is low, indicating that there is a fault in the system or that the booster pump is switched off. ~~The engine will run satisfactorily with the booster pump off below 20,000 ft., but above this height full power may not be obtained.~~ A2/1

(c) Transfer of fuel from the wing drop tanks into the fuselage tanks begins when approximately 120 lb. have been used from the fuselage tanks.

53. Engine handling

(a) *Engine control*

(i) Throttle movements should be made slowly to avoid resonance and high jet pipe temperature. When Goblin Mod. 1130 is incorporated the engine may be throttled fully back at any altitude, the minimum pressure valve ensuring that burner pressure does not fall too low to support combustion; the idling r.p.m. are therefore increased with altitude.

(ii) Cases have occurred of flame-out or near flame-out (burbling) at altitude when carrying out manoeuvres involving a stall. This is due to a combination of

low B.P.C. pressure and low forward speed leading to reduced fuel flow at the burners. Goblin Mod. 1130 increases both the B.P.C. pressure setting and minimum fuel flow. Until the Mod. is embodied it is recommended that, to reduce the possibility of flame-out, engine r.p.m. in stall manoeuvres should not be less than the following:—

20,000 ft.	5,500 r.p.m.
30,000 ft.	7,500 r.p.m.
35,000 ft.	8,500 r.p.m.

(iii) During sustained turns at all altitudes there may be a tendency for engine r.p.m. to fall off slightly, up to a maximum of 1,000 r.p.m. The original r.p.m. will be regained when straight and level flight is resumed.

(b) *H.P. pump isolating check*

(i) Increase engine r.p.m. to 4,000 and set the isolating switch ON. This should result in an increase of about 1,000 r.p.m., pre-mod. 1130, or of about 800–900 r.p.m. post-mod. 1130. Should the desired increase not be achieved the system is unserviceable and the aircraft must not be flown.

(ii) After the check return the switch to off and note that the r.p.m. drop to the original figure.

(c) *Use of the H.P. pump isolating switch for take-off*

If the isolating switch has been set to ON for take-off it must be returned to off at a safe height whilst still at full throttle. This should cause little or no drop in r.p.m.; the engine can then be throttled to the desired power. If the isolating switch is switched to off after power has been reduced a sudden drop of approximately 1,000 r.p.m. will result.

(d) *Use of the H.P. pump isolating switch in flight*

If a sudden inexplicable drop in engine r.p.m. occurs the throttle should be closed and the isolating switch set to ON. (If the isolating switch is not switched to ON within 4 seconds there is a probability of flame extinction). Once the switch has been set to isolate it must

be left there and the engine opened up slowly to the desired r.p.m. Idling r.p.m. will be high and landing must be carried out with caution.

54. Management of the pressurising and demisting systems

(a) The control wheel for regulating the supply and temperature of the pressurised air must be set to OFF, HOT or REDUCE when the aircraft is on the ground with the engine running, in order to avoid overheating the cold air unit. COLD or MIX must not be selected on the ground.

(b) It is recommended that the cockpit is pressurised immediately after take-off. If not, the pressure warning light will come on at about 17,000 ft. The pressure control should then be operated and the warning light will go out as pressure builds up.

(c) In conditions where hood misting is anticipated, the control wheel should be at HOT, the r.p.m. should be kept as high as practicable and the ventilators in the gallery pipes closed to give maximum flow of hot air to the windscreen.

(d) To reduce temperature at high altitudes, the control wheel should be moved to MIX or COLD, since movement to REDUCE may result in a reduction of cockpit pressure.

55. Management of the electrical system

(a) Push in the GROUND/FLIGHT switch before starting and check that the turn and slip indicator starts up. Then set the FLIGHT INST switch ON and check that the artificial horizon OFF flag disappears, that the Mk. 4F compass annunciates and that the magnetic indicator remains white.

Page 34
Para. 55
(b)
A.L.1

(b) After starting, when the generator is on line, check that auto-changeover occurs as shown by the magnetic indicator turning black. If the indicator reverts to white at any stage before becoming airborne, increase r.p.m. and if necessary press the reset pushbutton. With F.T.C. Mod. 101 fitted auto-changeover occurs before engine idling r.p.m. are reached. In this case if the indicator reverts to white the No. 1 inverter system is unserviceable.

WARNING.—Do not operate the button if auto-changeover occurs in flight.

(c) After stopping the engine and when the generator warning light comes on, pull out the GROUND/FLIGHT switch. This will ensure that all electrical services, including the generator warning lights are isolated from the battery.

56. **Use of ejection seat equipment**

Each occupant must:—

(a) Check that the safety pin is in position and that the firing cable, drogue gun and time delay mechanism trip rods are correctly secured. Check that the safety pin has been removed from the emergency oxygen cylinder and that the drogue gun quick-release pin has been withdrawn from the safety lock on the drogue gun. If the aircraft is to be flown solo, check that the instructor's harness is secured.

(b) Enter the cockpit and adjust the seat height for optimum position.

(c) Connect the survival pack to the life-saving waistcoat, ensuring that the quick release is below the parachute waist-belt.

(d) Fasten the safety harness lap-straps, and then, secure the leg restraining straps as follows:—

(i) Secure the leg restraint garters below the knees with the D-rings to the rear.

(ii) Pass the left nylon strap through the right-leg D-ring under the safety harness lap-straps and insert the right shoulder harness eye-piece through the loop on the strap. Secure the shoulder harness in the quick release box.

(iii) Repeat for the other strap passing the right strap through the left-leg D-ring and attach the loop to the left shoulder harness. Secure the harness.

(e) Connect the main oxygen and emergency oxygen supply tubes to the oxygen mask tube and the locating chain to the life-saving waistcoat. To prevent possible entanglement ensure that the emergency oxygen tube is connected under the seat safety harness ~~but above the parachute harness.~~ 2/1

(f) Connect the mic./tel. lead.

(g) Check that the firing handle can be reached with both hands together.

(h) Have the ejection seat safety pins removed and stowed.