

PART 1

Chapter 7 — GENERAL EQUIPMENT AND
CONTROLS

Contents

	Para
Canopy operation	1
Canopy jettisoning	2
Cockpit pressurisation, heating and demisting	3
Management of the pressurisation and flood flow system	4
Internal lighting	5
External lighting	6
Emergency equipment	7

1 Canopy operation

(a) The canopy, which is hinged at its rear edge, is electrohydraulically operated. Provision is also made for manual operation if electric or hydraulic failure occurs. An OPEN/off/CLOSED selector switch, spring-loaded to off, on the centre panel, is the normal operating control. When a selection is made there is a 3-5 second delay before the canopy moves and the selection must be held until the canopy completes its travel. A selection of OPEN will cause the canopy to open only when the battery master switch is off. If it is necessary to open the canopy when the battery master switch is on, a spring-loaded HOOD OVERRIDE switch, on the cockpit port wall, must be held at OPEN and at the same time the normal control selected OPEN. A warning horn sounds when CLOSED is selected. When the canopy closes and the locks engage, a green indicator light adjacent to the control switch comes on. This light goes out when the landing gear is raised. Two transparent inspection panels, one on each side wall of the cockpit can be used to check the position of the canopy lock jack. When the canopy is closed and locked a bolt on each forward side lock should align with a white dot on the transparent panel.

(b) The canopy may be lifted off from inside by removing a pip-pin, attached by a chain to the first-aid kit stowage, from the operating rod to isolate the canopy jettison gun and then operating a canopy release handle which is positioned centrally on the cockpit rear bulkhead (above the first-aid kit).

(c) The canopy may be opened or closed from outside by means of an OPEN/off/CLOSE switch in the nosewheel bay, provided that the battery master switch is off. A hydraulic accumulator, if fully charged, provides for the canopy to be opened and closed three times before the accumulator becomes exhausted of fluid. The accumulator can be charged externally by use of the handpump (but see Part 1, Chapter 5, para 11).

(d) A taxying strut, on the front of the canopy, allows the canopy to be left partially open for taxying. The strut is held in the extended position by a spring-loaded tube.

(i) To position the canopy in the partially open position, select canopy OPEN, pull backwards and down on the tube handle, then allow the spring to extend the strut and select canopy CLOSED.

(ii) To close the canopy fully, select canopy OPEN, pull the tube handle to retract the strut, then select canopy CLOSED.

NOTE: To open the canopy with the engine running the override switch must be used.

2 Canopy jettisoning

(a) The canopy is jettisoned by gas pressure from a jettison gun acting on two pistons which eject the canopy upwards and backwards. This action may be initiated by pulling the canopy jettison handle, at the rear of the centre pedestal.

(b) The canopy is also jettisoned automatically whenever either handle of either ejection seat is pulled.

(c) *External emergency release*

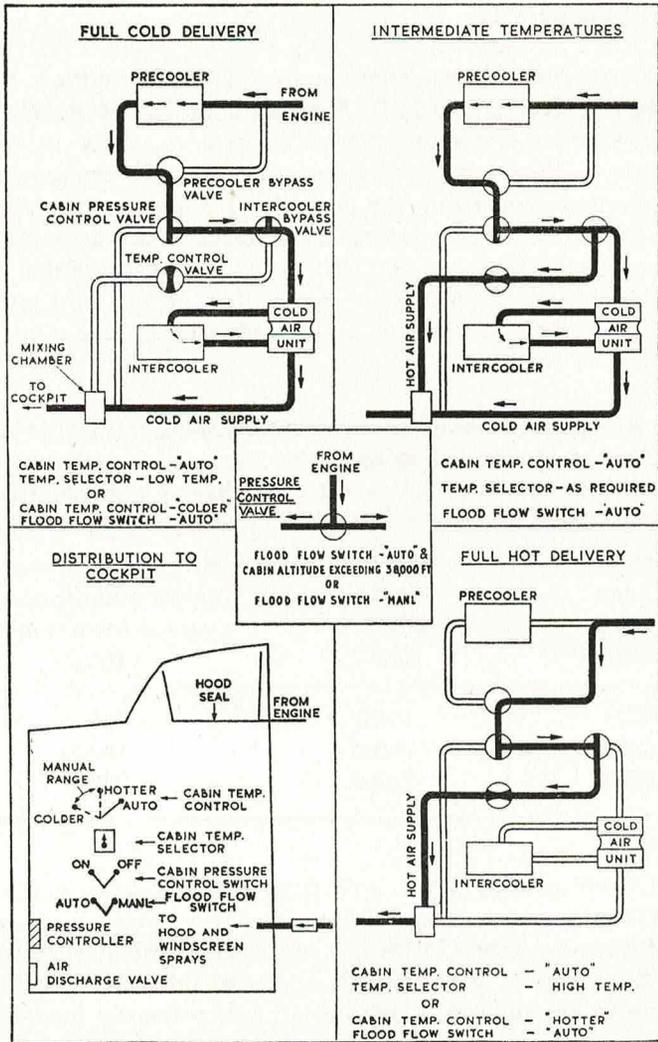
An external emergency release ring is inside a break panel on the port side of the fuselage. When the release ring is pulled the canopy is ejected by the jettison gun.

WARNING: If this method is used all personnel must be clear of the vicinity of the aircraft. After pulling the ring the operator must immediately stand clear.

3 Cockpit pressurisation, heating and demisting

NOTE: The system is inoperative whenever the canopy is open.

(a) Hot air under pressure is bled from the engine compressor to supply the heating, pressurisation and demisting system. The air supply to the cockpit terminates in spray pipes which provide for windscreen, side panels and canopy demisting.



Cockpit Pressurisation and Air Conditioning

(b) The controls are grouped at the aft end of the port shelf. Three ganged, COCKPIT PRESSURE — ON/OFF switches control air flow to the cockpit. When ON is selected air is supplied from the engine compressor; when they are OFF, ram air is supplied from an intake in the nose of the aircraft.

(c) A four-position temperature control lever is marked AUTO/COLDER/EMERGY/HOTTER. It is normally left at AUTO and a cockpit temperature selector control is used to select the desired temperature, a thermostat maintaining the selected temperature. If AUTO selection should fail, the controlling valve can be stopped by selecting EMERGY. Temperature can then be varied by inching the lever from EMERGY to COLDER or HOTTER until the desired temperature is reached; the lever should then be left at EMERGY. A change from full cold to full hot cockpit temperature takes about 35 seconds.

(d) The cockpit pressure altimeter, on the centre panel, should indicate in accordance with the following table. Should the cockpit pressure differential drop by more than $\frac{1}{2}$ PSI a red light on the centre panel comes on.

<i>Actual altitude (feet)</i>	<i>Cockpit altitude (feet)</i>	<i>Cockpit altitude at which warning lamp comes on (feet)</i>
20000	13000	13750
30000	16500	18000
40000	22500	24000

(e) A FLOOD AIR FLOW — AUTO/MANUAL switch is normally set at AUTO; in this position if loss of cockpit pressure causes the cockpit altitude to exceed 38000 feet, an altitude switch operates and supplies 'flood' air. If the switch is set to MANUAL, 'flood' air is supplied regardless of cockpit altitude; this is primarily intended for clearing transparency misting.

(f) A spring-loaded test switch, aft of the normal controls, simulates the automatic action of the altitude switch and allows the flood flow system and the cockpit pressure warning light to be tested.

4 Management of the pressurisation and flood flow system

(a) Pressurisation system

- (i) Before start up, check that the cockpit pressure warning light comes on by operating the cockpit pressure warning test switch to TEST.
- (ii) The cockpit pressurisation switch should be set as required for take-off. In conditions of high humidity, leave it off until at 5000 feet on the climb.

(b) Flood flow system

For all normal conditions of flight the FLOOD AIRFLOW switch should be at AUTO. To prevent windscreen misting MANUAL should be selected when necessary. During take-off the increase in airflow is considerable.

5 Internal lighting

(a) General

The main instrument lighting is provided by pillar and bridge lamps. In addition hooded red lamps are provided for the port and starboard shelves and cockpit walls. All dimmer switches are separately fused.

(b) Centre and port instrument panels

Two dimmer switches on each panel control the lights for that panel; each switch controls one of the lamps in each bridge light. Exceptions are the single lamps which illuminate the standby inverter MI and oil pressure gauge on the port instrument panel and the braking parachute switch on the centre instrument panel; these are controlled by one dimmer switch from each pair.

(c) Starboard instrument panel

A single dimmer switch controls the lamps on the instrument panel. The lamps are mounted in pairs with the exception of the lamps for the instructor's oxygen contents indicator and power control switches.

(d) Centre pedestal lamps

Two white pillar lamps on the centre pedestal are controlled by an adjacent ON/OFF switch.

(e) Side red flood lamps

Five lamps on the port side and two on the starboard side are controlled by two dimmer switches one on each side of the cockpit.

(f) E2B compass lamp

The compass lamp is controlled by a NORMAL/off/EMERGENCY switch, forward of the throttle box on the centre console. When set to NORMAL, power supply is from the busbar; when set to EMERGENCY, supply is from the emergency batteries. With the switch at NORMAL or EMERGENCY the degree of illumination is controlled by a dimmer switch forward of the throttle box.

(g) Emergency lamps

Two emergency lamps on the centre panel are controlled by an on/off switch below them and are supplied by the emergency batteries.

6 External lighting

The navigation lights are controlled by a FLASH/off/STEADY switch on the centre panel.

7 Emergency equipment

(a) A stowage for first-aid equipment is above the main fuse box on the bulkhead behind the ejection seats.

(b) Two stowages, each containing two survival packs, are accessible via external panels on the port and starboard sides of the canopy fairing. A screwdriver, for the removal of the access panels, is stowed in the cockpit below the first-aid kit, behind the ejection seats.

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LIGHTNING MK. 1
COVER PITOT HEAD
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