

Part I—Description and Management of Systems

Chapter 19—Armament and Operational Equipment

List of Contents

	<i>Para.</i>		<i>Para.</i>
General	1	NBS	6
Bomb-doors control and indicators	2	Green Satin and GPI	7
Bomb-doors emergency control	3	ECM equipment	8
Bomb release	4	Illustration	<i>Fig.</i>
Window launching equipment	5	Bomb-door operation	1

1 General

(a) There are two methods of bomb control in the aircraft, the NBS and the T4 bombsight. The NBS equipment is described in para. 6 below. The T4 bombsight and its associated equipment is at the bomb aimer's position. The associated pneumatic system is described in Chapter 9.

(b) Bomb bay heating is described in Chapter 11 and bomb door sealing in Chapter 9.

2 Bomb doors control and indicators

(a) The bomb doors are operated hydraulically after electrical selection by the NORMAL BOMB DOOR CONTROL (c/9) marked OPEN—AUTO—CLOSE on the bomb door control panel on the port console. With the control switch set to AUTO the bomb doors can be opened automatically by the NBS installation.

NOTE: When on the ground the access doors in the forward ends of the bomb doors must be closed before the airbrakes are selected open.

(b) A BOMB DOOR indicator (A/20) at the top of the engine instrument panel shows black when the doors are closed and white when they are in any position other than fully closed.

(c) Bomb release safety-lock

A bomb release safety-lock, to prevent inadvertent weapon release, is controlled by a guarded wire-locked switch on the port console. The switch is marked LOCK-UNLOCK and has an amber light at the UNLOCK position, which comes on if the safety-lock is released, and a green light at the LOCK position, to show when the lock is engaged.

(d) The bomb doors are locked in the closed position by door locking struts, which are unlocked hydraulically pre-Mod. 1236, but are mechanically extended and closed to the locked position by operation of the doors. When Mod. 1236 is embodied the hydraulic locking devices on the bomb door struts are deleted.

(e) Opening and closing the bomb doors (Pre-Mod. 1236)

(i) When the normal bomb door control is used, fluid is directed from the main supply to the jacks through selector valves on the port side of the bomb bay. When the emergency bomb door control is used, fluid is supplied from the power pack through its associated selector valve on the starboard side of the bay.

Shuttle-valves which form part of the door locking strut assembly move according to the source of supply selected.

(ii) The shuttle valves operate only on the bomb door opening cycle. Should a shuttle-valve jam in the normal position, then when a subsequent opening selection is made on the EMERGENCY BOMB DOOR CONTROL the associated locking strut will fail to release, although the bomb door operating jacks will operate. Similarly should a shuttle valve jam in the emergency position, then when a subsequent opening selection is made on the NORMAL BOMB DOOR CONTROL the associated locking strut will fail to release, although the bomb door operating jacks will operate. In either event damage to the service lines and flying control runs within the bomb bay may result as well as distortion to the bomb doors.

(iii) To ensure that these circumstances do not arise in flight, and that the shuttle valves are in the correct position i.e. normal, it is imperative that the bomb doors are operated before flight one complete cycle on the normal system from CLOSE to OPEN and OPEN to CLOSE on the NORMAL BOMB DOOR CONTROL. When Mod. 1236 is embodied this check is not necessary.

3 Bomb doors emergency control

(a) The bomb doors may be operated on the ground or in emergency by the EMERGENCY BOMB DOOR CONTROL (c/8) adjacent to the NORMAL switch. In this case the bomb doors are operated by hydraulic supply from the power pack. The switch is inoperative if the power pack is being used to charge the brakes accumulators.

(b) A removable guard which may be fitted to the bomb door switches, when the bomb door emergency switch is set to NORMAL and the bomb door selector switch is set to OPEN, is provided in order to prevent inadvertent operation of the bomb doors when personnel are in the vicinity of them. When not in use the

guard is stowed on the starboard side of the cabin above the entrance door.

(c) To avoid damage to the bomb door linkages, when using the emergency control, a pause of at least 3 seconds must be made whenever the switch is returned to the centre (normal) position before a further inching movement or an opposite selection is made. This is to allow the shuttle valves to take up the correct position. When the emergency selector is used, make the same selection on the normal control before returning the emergency selector to NORMAL.

4 Bomb release

(a) Normal release

The bombs are normally released from either the nav/radar's or the bomb aimer's position, depending on the bombing method in use.

(b) Jettison

(i) Operation of the EMERGENCY BOMB JETTISON—JETTISON—OVERRIDE switch (c/10) to the JETTISON (rearward) position will cause the bomb doors to open fully, the bomb load to be jettisoned safe and the doors to close. Operation to the OVERRIDE (forward) position cancels jettison, and closes the bomb doors. Jettisoning of the bombs can only be cancelled if the OVERRIDE position is selected before the bomb doors open fully. In the nuclear role and when practice carriers are fitted, the EMERGENCY BOMB JETTISON OVERRIDE switch is made inoperative.

(ii) The bomb aimer's LIVE JETTISON single-pole three-position switch is on the oxygen panel.

5 Window launching equipment

(a) Twin installations are fitted and are operated from the rear crew stations. The installation comprises:

- (i) The forward port and starboard container magazine with their associated stripper units attached, and the two detachable chutes.
- (ii) The aft combined port and starboard container magazine with the two stripper units and the common chute attached.

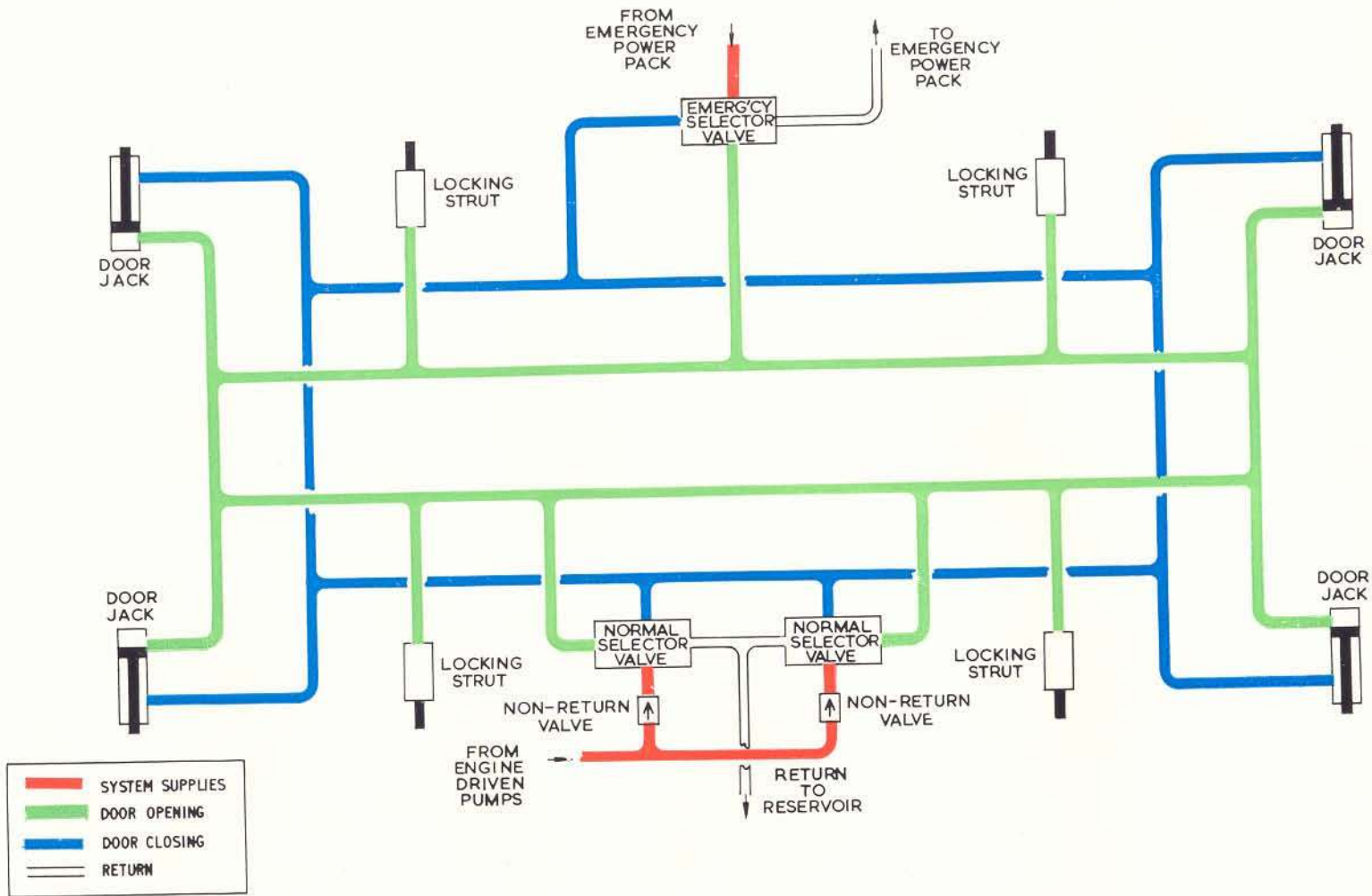


Fig 1 Bombdoor operation

(b) Two control units are mounted at the AEO's station. Each unit provides the selection, ON—OFF switching, and variable control of two stripper units. The control unit on the left facing the panel operates the starboard forward and aft units, that on the right operates the port and aft units.

(c) The four stripper units are located as follows: —

(i) The two forward units, in compartments immediately aft of the port and starboard undercarriage bays, each has a separate container magazine and ejects through a separate outlet.

(ii) The two aft units, in a compartment below the electrical power compartment; they are attached to a double container magazine and eject through a common outlet.

6 NBS

(a) The NBS comprises a navigation and ballistic computer (NBC Mk. 2) and range finding radar (H2S), and is designed for use when operating beyond the range of ground-based aids. When the system is in operation the aircraft can be under manual control or autopilot control according to requirements.

(b) Cooling air from the cabin air conditioning system is supplied to the operating units of the system to prevent overheating. Air is ducted from the starboard air intake for cooling the equipment in the nose-wheel bay radar crate.

(c) Air is supplied to the H2S scanner at a controlled pressure of 15 PSI absolute from a storage cylinder. (See Chap. 9.)

(d) Three control switches for the equipment are provided, one on the AC control panel and two on a panel on the starboard side of the cabin at the nav/radar's station. The H2S switch on the AC controls panel acts as a master switch for all four power supplies.

(e) Power supply for the NBS are 115-volts, 400 CPS and 1,600 CPS AC from No. 1 inverter. An alternative supply is available from the No. 2 inverter in the event of failure of No. 1 inverter. The AC supply is taken from a fuse on the AC controls panel.

(f) Power supplies for the H2S is provided at four values, 28-volt DC, 112-volt DC, 115-volts, 400 and 1,600 CPS AC, the latter being from No. 1 inverter. An alternative supply is available from No. 2 inverter in the event of failure of No. 1 inverter. The 112-volt DC supply is from fuses in the 112-volt distribution panel and the other supplies are taken from the relevant fuses in the AC supplies panel.

7 Green Satin and GPI

(a) Green Satin Mk. 1 is installed. The control unit and associated GPI Mk. 4 are at the nav/plotter's station.

(b) In turbulence between $\pm 0.25G$ and $\pm 0.5G$ the performance of the equipment deteriorates and it frequently unlocks.

(c) Power supplies are 28-volt DC and 115-volt, 400 CPS AC, the latter being from No. 5 inverter. The DC supply is taken from a fuse on the panel on the port side of the cabin and the AC supply is taken from a fuse in the AC supplies panel.

8 ECM equipment

For details of this equipment (see Chap. 21) of this Part.

This file was downloaded
from the RTFM Library.

Link: www.scottbouch.com/rtfm

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

