PART 2

CHAPTER 4 — DOORS, ACCESS PANELS AND EMERGENCY EXITS

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Contents

DESCRIPTION

General

1. The aircraft is provided with doors, for passenger and crew entrance, galley servicing and access to the freight holds. Emergency exits are provided to assist evacuation of the passengers in an emergency.

2. Two DV sliding panels one on each side of the flight deck can, with the aid of escape ropes, be used as emergency exits.

3. There are two entrance doors in the left side of the aircraft, one forward and one aft.

4. Two service doors are on the right side of the aircraft, one forward and one aft.

5. Four cargo doors are provided; a forward freight hold door on the right side of the aircraft, an aft freight hold door on the left side of the aircraft, a ventral door on the centre line of the aircraft giving access to the rear end of the aft freight hold and a large freight door on the left of the aircraft giving access to the passenger cabin.

6. Two overwing emergency exits, approximately 36 inches by 20 inches, on each side of the fuselage give direct access from the passenger cabin to the upper surface of each mainplane.

7. Two large access panels on the underside of the fuselage give access to the underfloor compartment below the flight deck and to the radio and electrical equipment bay.

8. Two small servicing panels on the undersurface of the fuselage, almost in line with the wing root, are for the water filling and ground-conditioning connections and the water-draining connection.

9. All the above doors and access panels are fitted with pressure seals and, with the execption of the over-wing emergency exits, the DV sliding panels and the water-draining panel, are connected into an electrical door-warning system. Each door has an individual indicator light on the door-warning panel, adjacent to the engine starting panel, at the forward end of the engineer's table.

10. *Controls and Indicators — Doors and Access Panels.* (See **Table 1**).

Table 1 — Doors and Indicators — Doors and Access Panels

Item	*Location*	*Marking/Description*
Forward and aft entrance door position warning lights	Flight engineer's door warning panel	FRONT PASS/REAR PASS (red)
Forward and aft service door position warning lights		FRONT SERVICE/REAR SERVICE (red)
Forward and aft freight hold door position warning lights		FRONT HOLD/REAR HOLD (red)
Forward access panel and aft freight hold ventral door position warning lights		NOSE ACCESS/REAR VENTRAL (red)
Equipment bay access panel and water filling and ground conditioning access panel position warning lights		ELECT BAY/WATER FILL (red)
Cabin freight door warning light and cabin freight door positive lock warning light		CABIN FREIGHT/POSITIVE LOCK (red)
Door warning lights test switch		PUSH TO TEST
Cabin freight door switch	In external hydraulic service box	DOOR OPEN/DOOR CLOSED. Spring-loaded to centre off
Cabin freight door open warning light		DOOR OPEN (red)
Positive lock mechanism and nuisance bar control lever		Up to disengage, down to engage
Cabin freight door switch	On panel at top of forward door surround	DOOR OPEN/DOOR CLOSED. Spring-loaded to centre off
Positive lock mechanism and nuisance bar control lever	On panel at top of forward door surround	Up to disengage, down to engage
Shoot bolt lights (two)	Cabin freight door locks test panel	AFT SHOOT BOLT (1) FWD SHOOT BOLT (1) (both amber press-to-test)
Hook lock lights (seven)		7 to 1 (amber—press-to-test)
Cabin freight door circuit arming switch	Rear roof panel	FREIGHT DOOR ARM push/pull switch; push to arm the circuit. Light in top of switch comes on when switch is pushed in (amber)
Manual selector	In external hydraulic service Box	OPEN/NORMAL/CLOSE—PULL AND TURN

Door Sealing

11. The door seals of the passenger, crew, service and freight hold doors consist of an endless rubber tube secured in position around the periphery of each door. A number of holes in the tube allow cabin pressure to enter the tube, thus ensuring a seal when the door is closed and the cabin pressurised.

12. The seals of the other access panels are endless solid rubber.

13. The passenger cabin freight door has both an inflatable and a solid seal.

Entrance Doors

14. Both entrance doors are of the 'plug' type with lugs on the side of the door engaging behind similar lugs on the doorway frame. Four guide pins, one on each corner of each door, engage in guides fixed to the doorway frame. One guide pin on each door operates a microswitch to give an indication of the door position on a door warning panel.

15. Each door is opened by operating a handle which lifts the door approximately three inches, to allow the lugs on the door to be raised sufficiently to clear the lugs on the doorway frame.

16. The door then hinges outward on a parallel hinge mechanism. Upon the initial opening a latch engages to retain the door in the raised position. In the fully open position the door is automatically latched.

17. A safety latch, painted yellow, is incorporated with the lifting mechanism to ensure that the door cannot be raised without the initial movement of the door handle. The safety latch, which is also known as an anti-g lock, is visible through a small window adjacent to the inner door handle.

18. A recessed outer handle can be used to open the door from the outside.

19. Indication of door position is given by the FRONT PASS/REAR PASS warning lights on the door warning panel (para 57).

20. The doors are used as emergency exits and have escape rope and chute facilities.

Service Doors

21. The two service doors on the right side of the aircraft are similar to the entrance doors but are slightly narrower; the method of operation is the same as for the entrance doors but the hinge mechanisms and handles are opposite-handed. The doors are also used as emergency exits and have escape rope and chute facilities. Indication of door position is given by the FRONT SERVICE/REAR SERVICE warning lights on the door warning panel (para 57).

Overwing Emergency Exits

22. Four overwing emergency exit hatches, two on each side, are retained in position by two spigots at the base and a release mechanism at the top. A pushbutton on the outer surface allows a hatch to be released from the outside of the aircraft. A handle, covered by a tear-off strip, is formed in the outer surface of the hatch. When released, the hatches are free to move inward, free from the fuselage structure. Liferaft boarding ropes are fitted in the fuselage surround above each exit. No indication of the state of the hatches is given on the flight deck. (See also Chapter 6.)

Freight Hold Doors

23. The forward freight hold has a door on the right side and the rear freight hold has one on the left side of the aircraft.

24. Both doors are similar and are of the 'plug' type, connected by a parallel linkage to a trolley mounted on rails attached to the freight hold. The doors are held in the closed position by four locking plungers.

25. The doors, when unlocked and pushed in on the parallel linkages, slide forward on the respective trolleys to leave the door aperture unobstructed.

26. Interlock mechanisms are provided to ensure that door handle movement, door movement and trolley movement are correctly sequenced.

27. Indication of both door positions is provided by the FRONT HOLD/REAR HOLD warning lights on the door warning panel (para 57) which are operated by locking plunger/microswitch action in the door frame.

Rear Ventral Freight Door

28. This door is of the 'plug' type, hinged at the rear, and is secured in the closed position by two locking plungers, one forward and one aft. The locking plungers are operated by rotating a spring-loaded handle which is flush fitting with the door

skin when stowed. Indication of the door position is given by the REAR VENTRAL warning light on the door warning panel (para 57).

Cabin Freight Door

29. The passenger cabin freight door, in the left side of the fuselage forward of the wing, is hinged at the top and opens outwards and upwards. The door is operated by hydraulic power from an independent hydraulic system. The hydraulic system, which may be pressurised by either an AC motor-driven pump or a hand pump, draws its fluid from a reservoir which is located on the left-hand side of the forward freight hold. The hand pump, which is behind an external panel below the freight door, has its handle stowed behind a panel under the forward right-hand side of the centre section. In the event of hydraulic power failure, the door locks can be released mechanically and the door operated by external mechanical means.

30. The door contains six of the cabin window assemblies. Each assembly consists of an inner and outer elliptical shaped panel located in a surround in the door structure. The air space in between the panels is connected to ambient pressure through a desiccator common to the six windows. The desiccator is fitted in the door.

31. A perforated seal, which is inflated by cabin air pressure, and a solid rubber seal are fitted to the door.

32. Operation of the door is controlled from a switch/manual selector on the external control panel located below the forward end of the door, or from a switch on a panel in the cabin, forward of the door, at the top of the door surround.

Note: The door is not to be operated during taxying or towing. The door must be closed when taxying, towing or jacking the aircraft. It is recommended that if the door is to be opened, following taxying or towing, the aircraft is brought to rest with the nosewheels central, ie fore-and-aft. For operation of the door when the aircraft is on jacks, refer to AP 101B-0201-1A Book 1, Chapter 7.

33. The door, when in the fully open (vertical) position, remains in that position. When the door is in a position other than fully closed or fully open it is necessary to fit the jury strut which is normally stowed aft in the forward hold.

34. The door is held in the locked position by seven hooks fitted to a torque shaft which engage on seven lugs fitted to the lower edge of the door, and four shoot bolts, a pair each side of the door. The shoot bolts protrude from the door surround and engage in the door after the hooks and lugs have locked; they withdraw before the hooks and lugs disengage.

35. A door locks test panel on the inside of the door has nine press-to-test push switches, each with an integral amber warning light, one for each hook (seven), one for the aft shoot bolts and one for the forward shoot bolts. Pressing a switch, tests the serviceability of the light and if it remains on after the switch is released, it indicates that the appropriate hook or shoot bolt is disengaged. When pressure on a light is released, the warning circuit is rearmed so that a subsequent warning of an insecure hook or bolt is given by the CABIN FREIGHT door warning light at the engineer's station coming on.

36. A positive lock mechanism to prevent torque shaft rotation is fitted on the torque shaft assembly. The mechanism is operated by a cable, controlled from a lever on the external control panel, or from a lever on the panel in the cabin. Each lever also operates a nuisance bar which prevents the freight door switches being set to DOOR OPEN until the positive lock mechanism has been withdrawn. Indication that the positive lock is not fully engaged is given by the POSITIVE LOCK and CABIN FREIGHT warning lights at the engineer's station coming on (para 37).

37. Indication that the door is locked or unlocked is given by the CABIN FREIGHT door warning light and a POSITIVE LOCK warning light at the engineer's station (para 57). The lights go out when the door is locked but both lights are on when the positive lock is not engaged; only the CABIN FREIGHT door light comes on if a shoot bolt or hook is disengaged. A red light on the external control panel also comes on when the door is unlocked.

Cabin Freight Door Hydraulic System

38. When the system is pressurised by the AC motor-driven pump, the opening and closing of the door is controlled by a four-way solenoid selector which in turn is controlled by either of two door selector switches. One selector switch is on the internal control panel on the cabin wall, forward of the door, the other on the external control panel.

39. When the system is pressurised by the hand pump, the opening and closing of the door is controlled by an OPEN/NORMAL/CLOSE—PULL TO TURN manual selector at the external control panel. The selector must be pulled out from the recessed NORMAL setting before either OPEN or CLOSE can be selected.

40. Two pipelines which serve as either pressure or return lines according to whether 'door open' or

'door close' is selected, connect both selectors to the lock jack and to the door operating jack. The two lines to the door jacks are flexible to allow for jack movement during operation of the door.

41. Two sequence valves (one in each line to the door jack) ensure that the lock jack operates before the door jack when 'door open' is selected, and after the door jack when 'door close' is selected.

Electrical Supplies

42. A three-phase AC supply from No 1 generator is fed via a contactor to the motor-driven pump. The contactor, which is below the cabin floor at station 379, is energised by a 28-volt DC supply from No 1 Essential Busbar.

43. A push-pull FREIGHT DOOR ARM switch on panel EA controls the electrical supply to the freight door. Pushing the switch in provides electrical power to the two door selector switches and causes an amber light in the FREIGHT DOOR ARM switch to come on.

Cabin Freight Door Operation

44. Before the door can be opened by electrical selection:

a. No 1 Generator Busbar must be energised.

b. A small section of the hat rack at the rear of the door must be removed.

45. To open or close the door by electrical selection, the positive lock lever and nuisance bar must first be located in the disengaged position. The FREIGHT DOOR ARM pushbutton switch on the rear roof panel is then pressed in to arm the circuit electrically; this is indicated by illumination of the integral amber light.

46. A door open or door closed selection may then be made using the spring-loaded cabin freight door switch on the door control panel inside the aircraft, or on the external control panel.

47. Operation of either switch energises the appropriate solenoid on the four-way selector and the supply contactor for the AC motor-driven pump. The pump should then run and supply fluid under pressure to the door open or closed lines as selected by the four-way selector.

48. When the freight door is closed and locked, the red light on the external control panel and the positive lock and cabin freight door warning light (para 59) should go out when the positive lock lever is re-engaged. The freight door arm pushbutton on panel EA should then be pulled out, when the amber light in the switch should go out.

49. To open the door by hand pump, fit the handle to the pump, disengage the positive lock and select OPEN on the manual selector at the external control panel. Approximately one hundred double strokes should raise the door. When the door is open select NORMAL on the manual selector.

50. To close the door by hand pump, select CLOSE on the manual selector; approximately thirty-five strokes should close the door. When the door is closed, select NORMAL on the manual selector and re-engage the positive lock.

Access Panels

51. The forward access panel, giving access to the underfloor compartment below the flight deck, is an elliptical panel held in the closed position by four locking plungers.

52. The plungers are released by rotating a spring-loaded handle which, when stowed, is flush with the outer skin of the panel.

53. The radio and electrical bay access panel consists of an inner and outer panel. The inner panel is of the 'plug' type with a pressure seal and is secured by four locking plungers. The outer panel is hinged to close flush with the aircraft skin. It is secured in the closed position by quick-release fasteners.

54. The water-filling and ground conditioning panel is a sliding panel secured in the closed position by four locking plungers.

55. Indication of door position is given by the NOSE ACCESS, WATER FILL and ELEC BAY warning lights on the door warning panel (para 57).

56. The water draining access is a bayonet-type plug with a flush fitting operating handle. The handle cannot be stowed until the plug is correctly closed. No indication of the state of this panel is given on the flight deck.

Door Position Warning Lights

57. Indication of door locking is given on six dual indicators on a panel at the forward end of the engineer's table. Each indicator has two red warning lights.

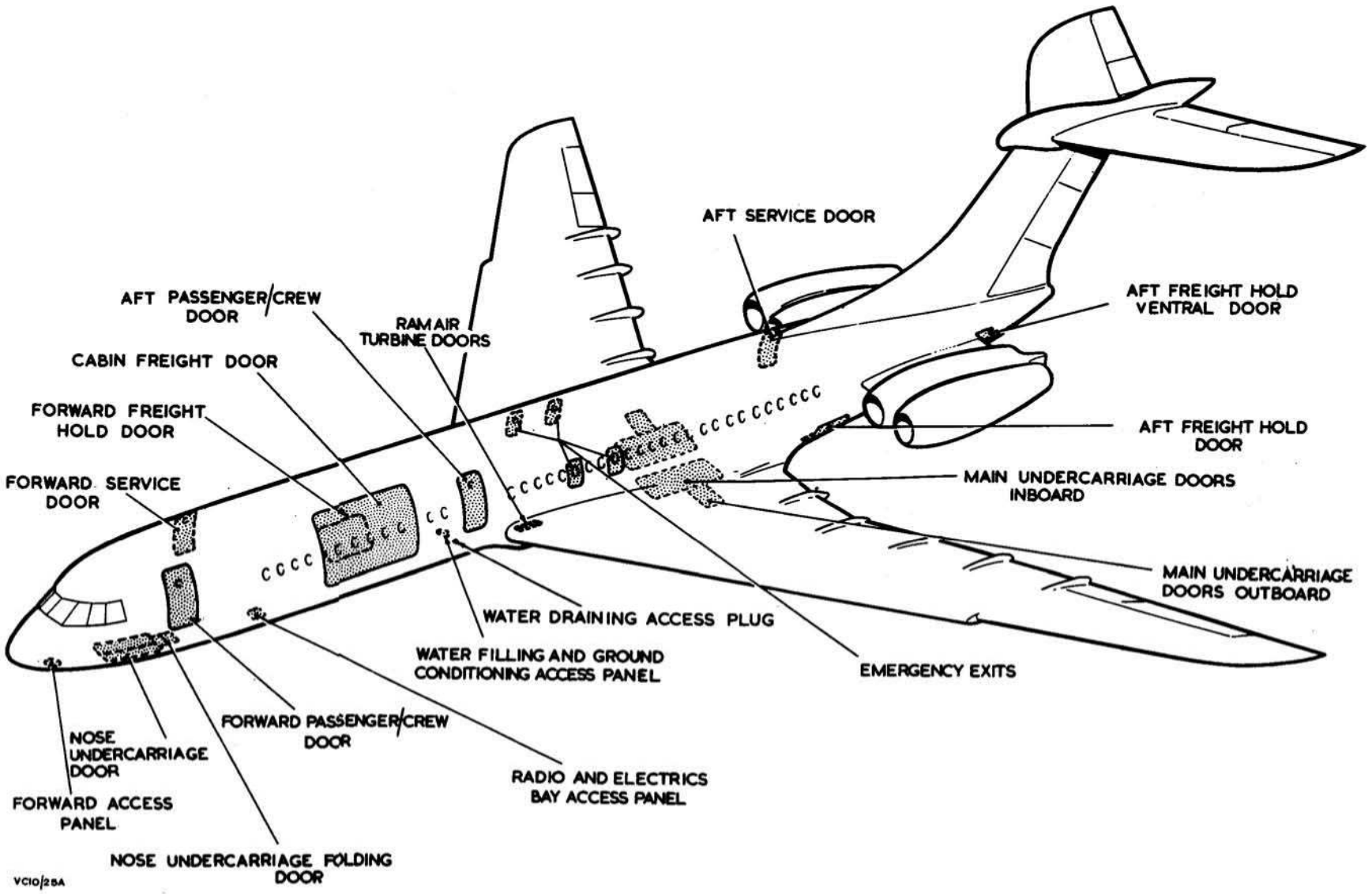
58. Five of the indicators each have a separate warning light for two different doors, the designation of the door being marked on the red glass covering the light. When a door is open, its warning light is on; when a door is closed, its warning light is out.

59. The sixth indicator is for the cabin freight door; one light is marked CABIN FREIGHT, the other is marked POSITIVE LOCK. Both lights are on whenever the positive lock lever is not engaged. With the positive lock lever engaged, the CABIN FREIGHT light comes on whenever the door is not fully locked in the closed position.

60. A warning light filament TEST switch adjacent to the warning lights, when pressed, causes all twelve

lights, and also the warning light on the cabin freight door external control panel, to come on. Pressing the test switch also transfers any warning from the door locks test panel back to the CABIN FREIGHT warning light on the door warning panel.

61. The FREIGHT DOOR ARMED warning light on the rear roof panel comes on when the ARM button is pressed in. No indication is given in respect of the state of the water drainage access panel and the emergency overwing exits.



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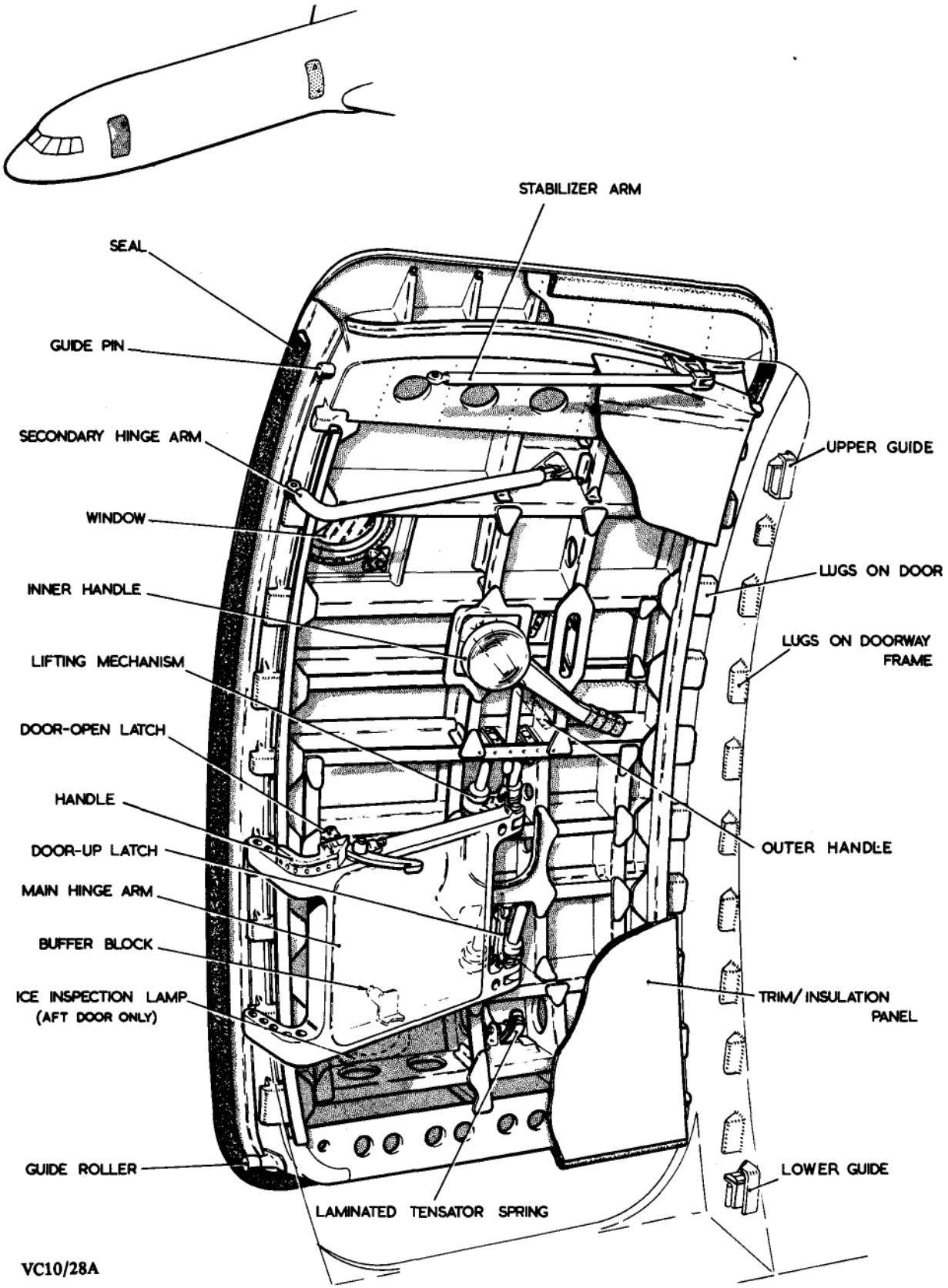
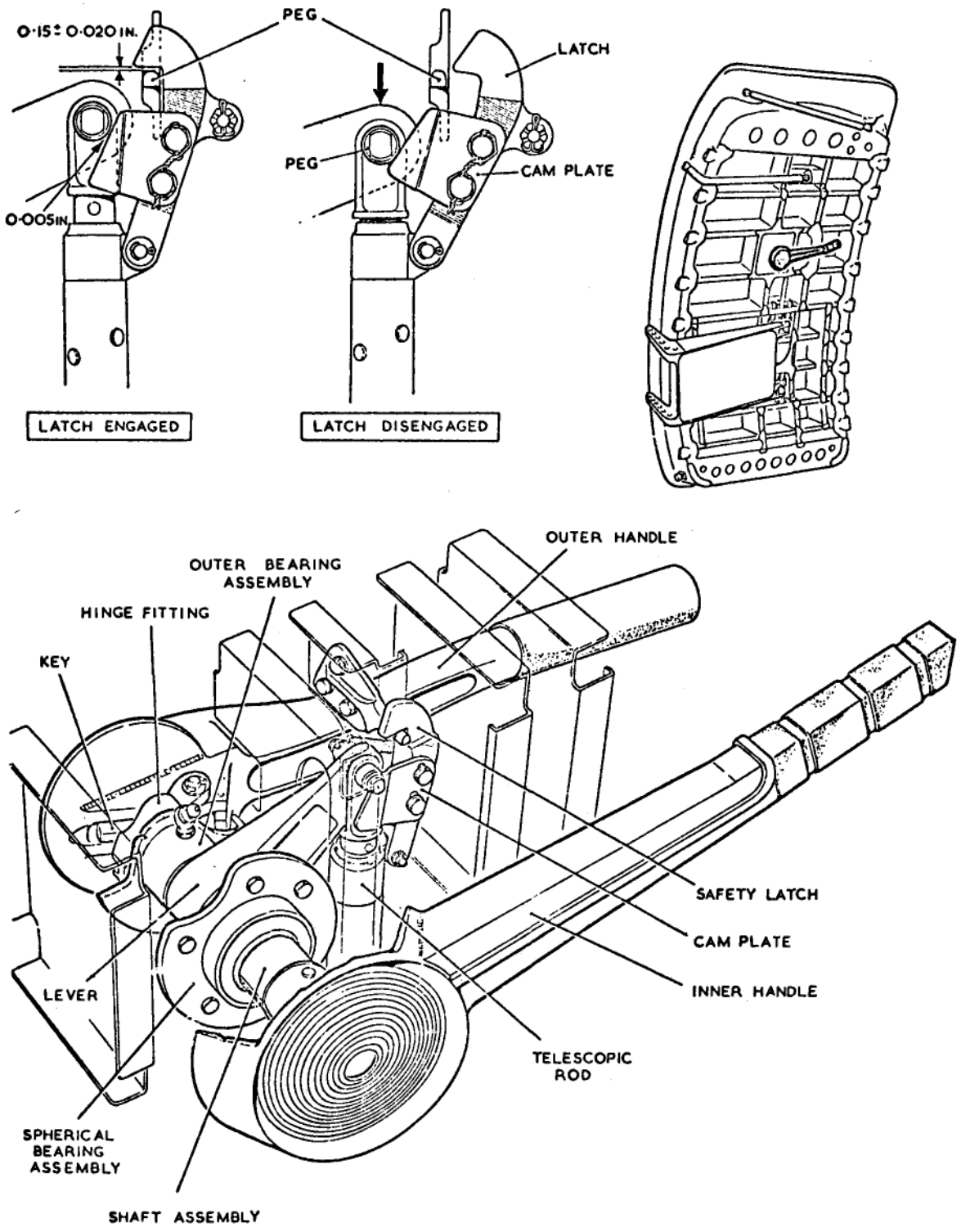
2–4 Fig 1 Doors – General Arrangement



2–4 Fig 2 Passenger Cabin Door



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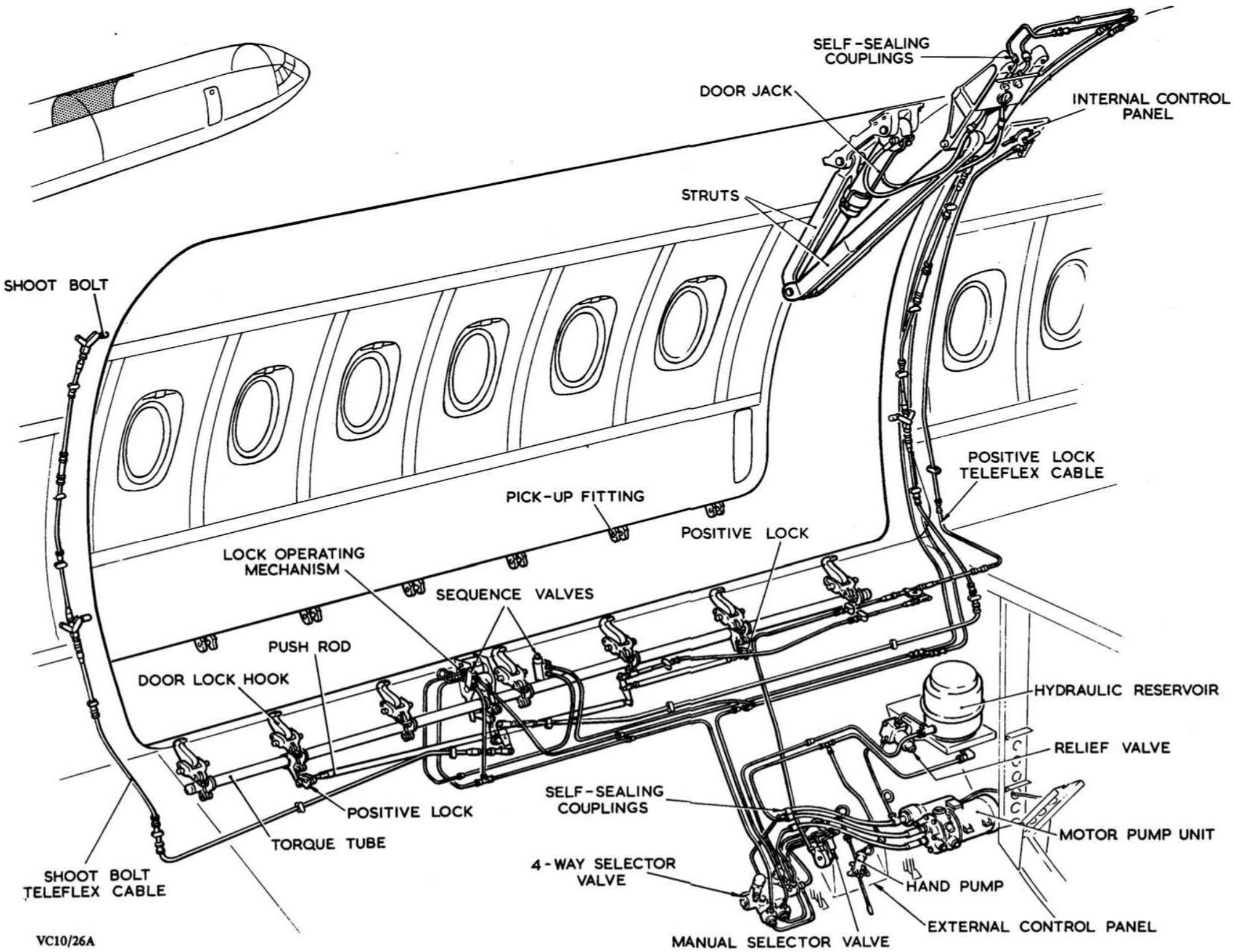
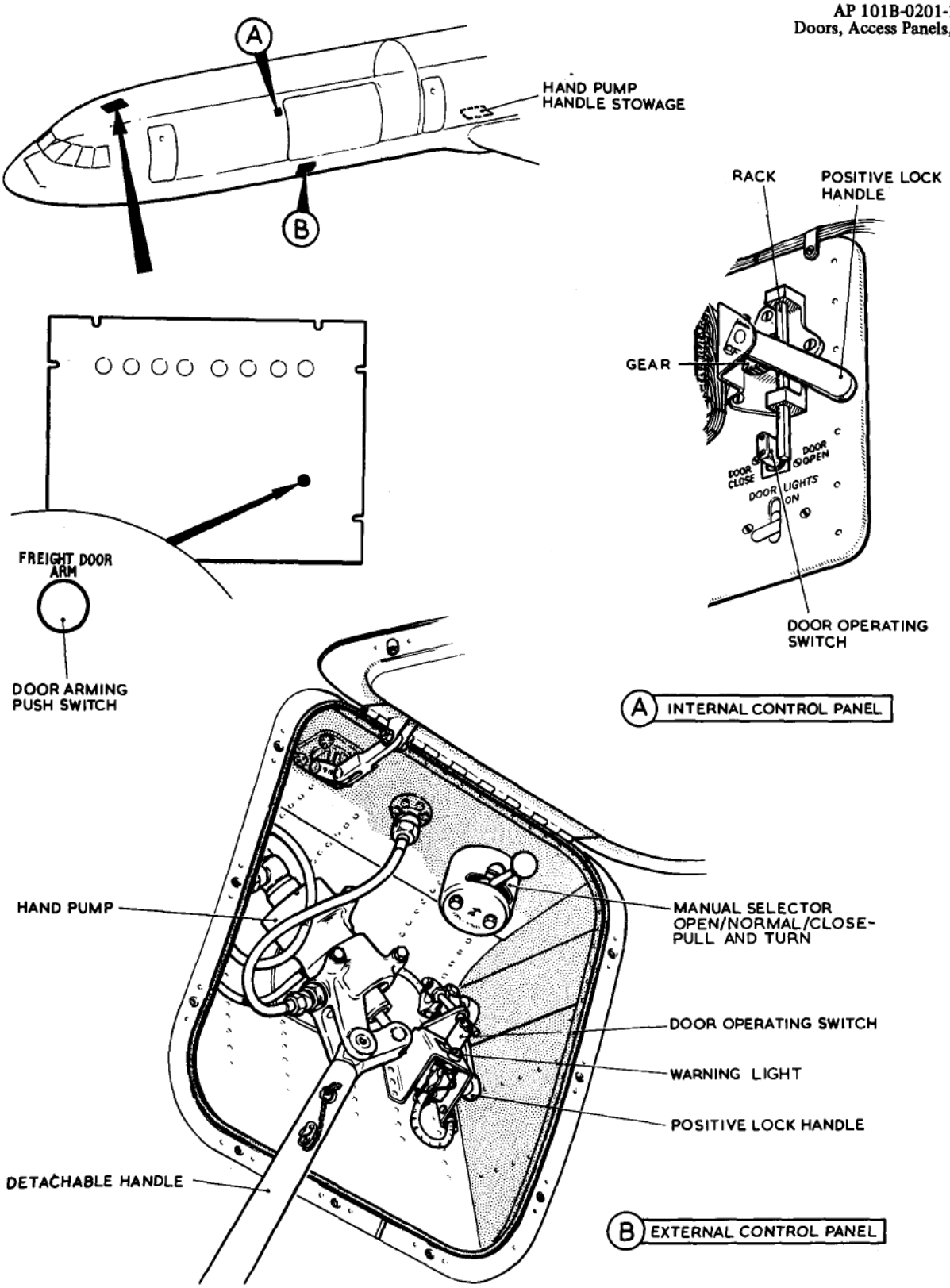
2–4 Fig 3 Passenger/Service Door Handle



2–4 Fig 4 Cabin Freight Door Installation



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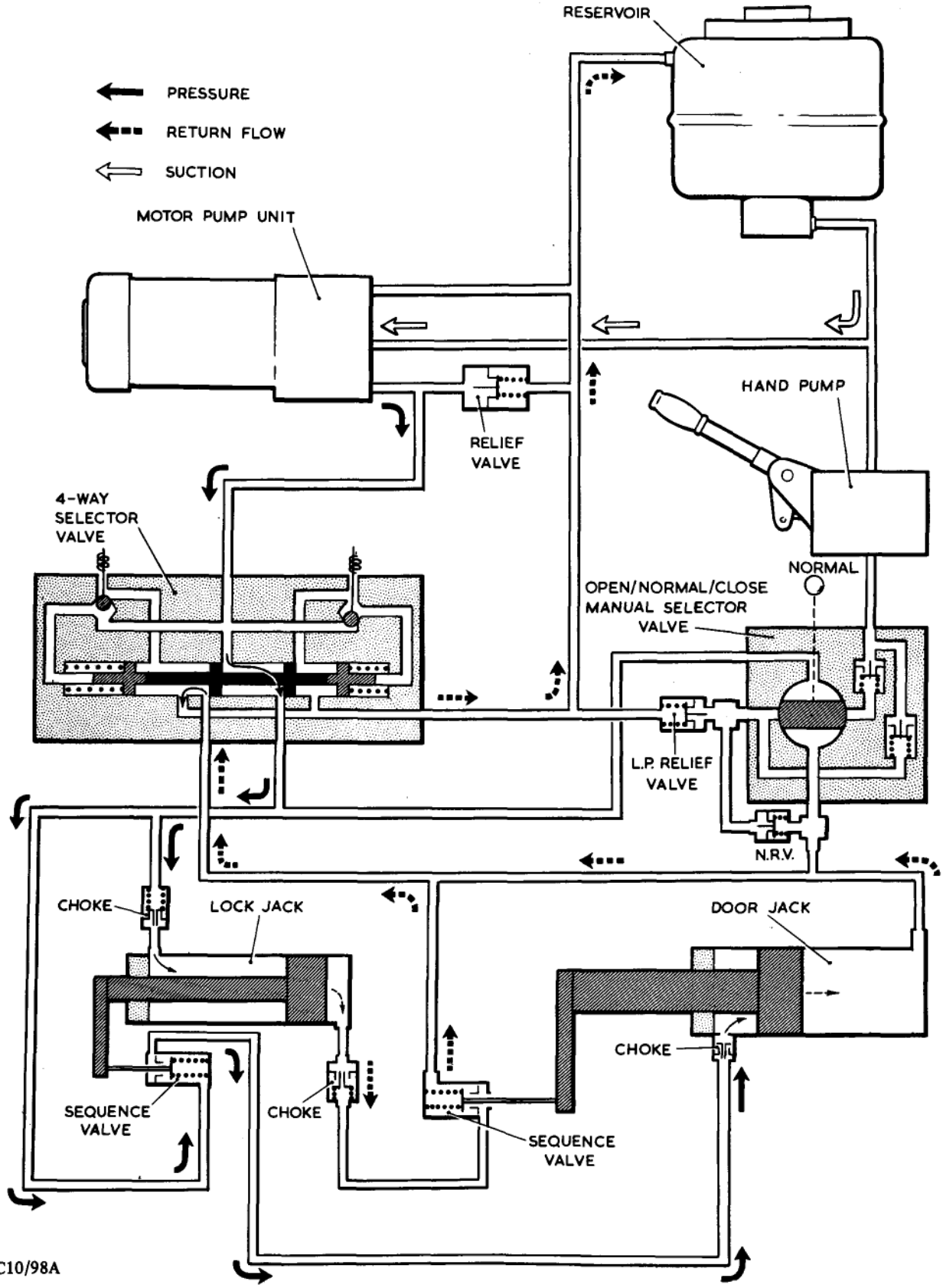
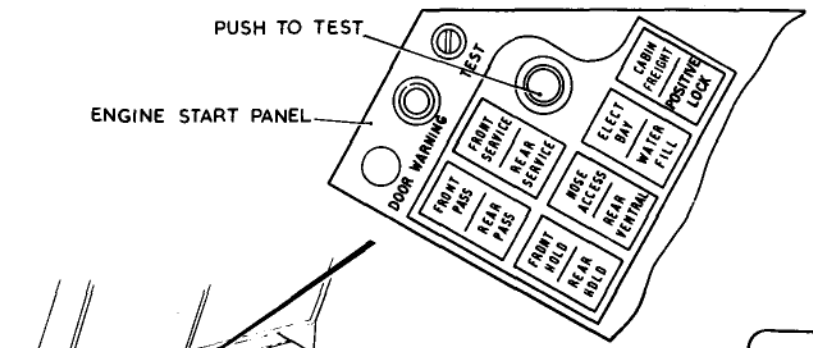
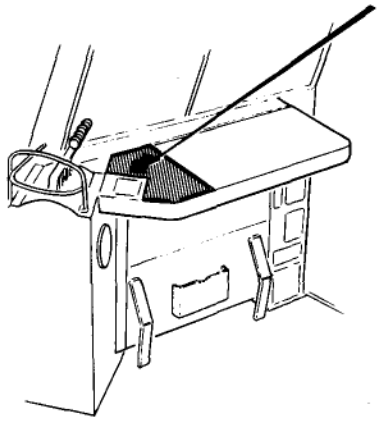
2–4 Fig 5 Cabin Freight Door Controls

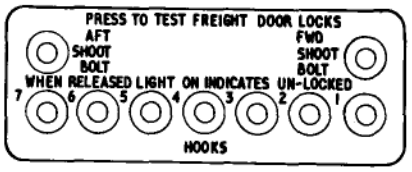


2–4 Fig 6 Cabin Freight Door Hydraulic System

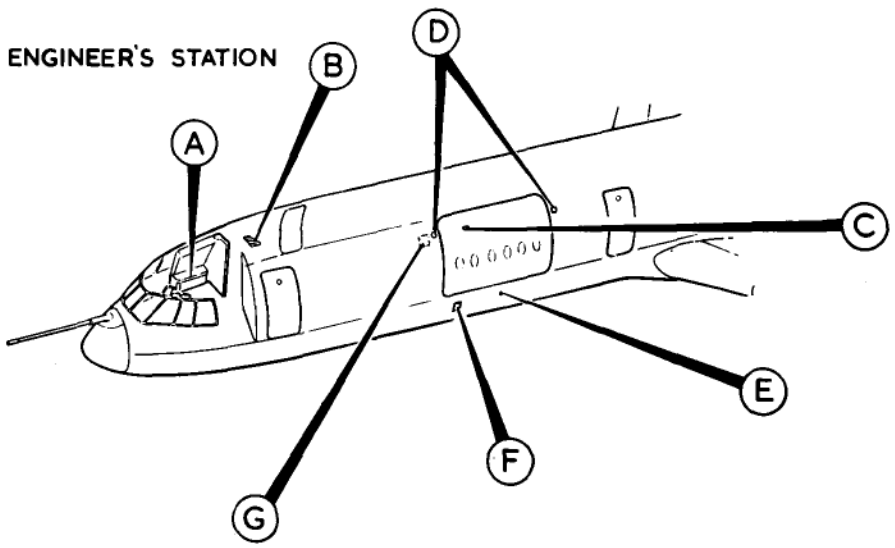


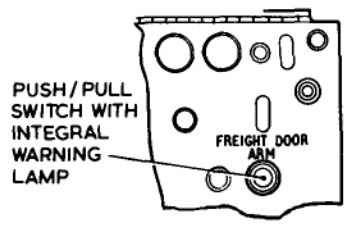


(A) AIR ENGINEER'S STATION

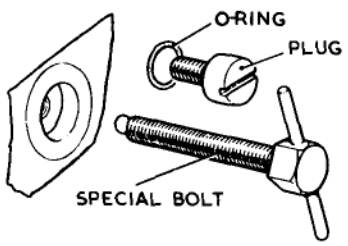


(C) TEST PANEL DOOR LOCKS

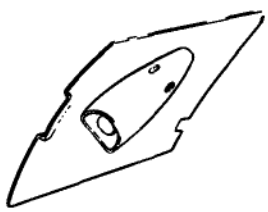




(B) PANEL EA



(E) MANUAL RELEASE COMPONENTS



(D) DOOR LIGHTS

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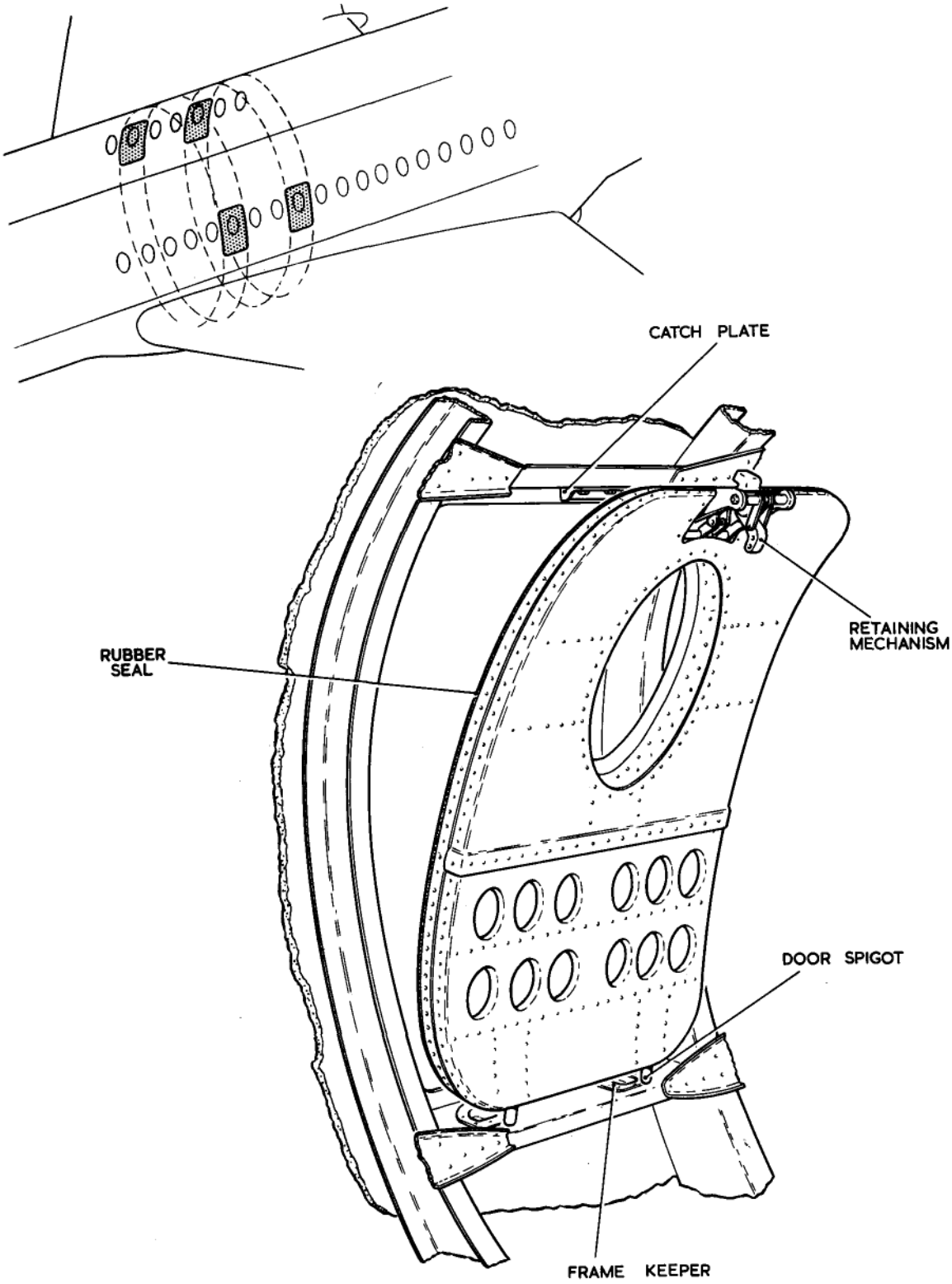
2–4 Fig 7 Door Position Warning Lights



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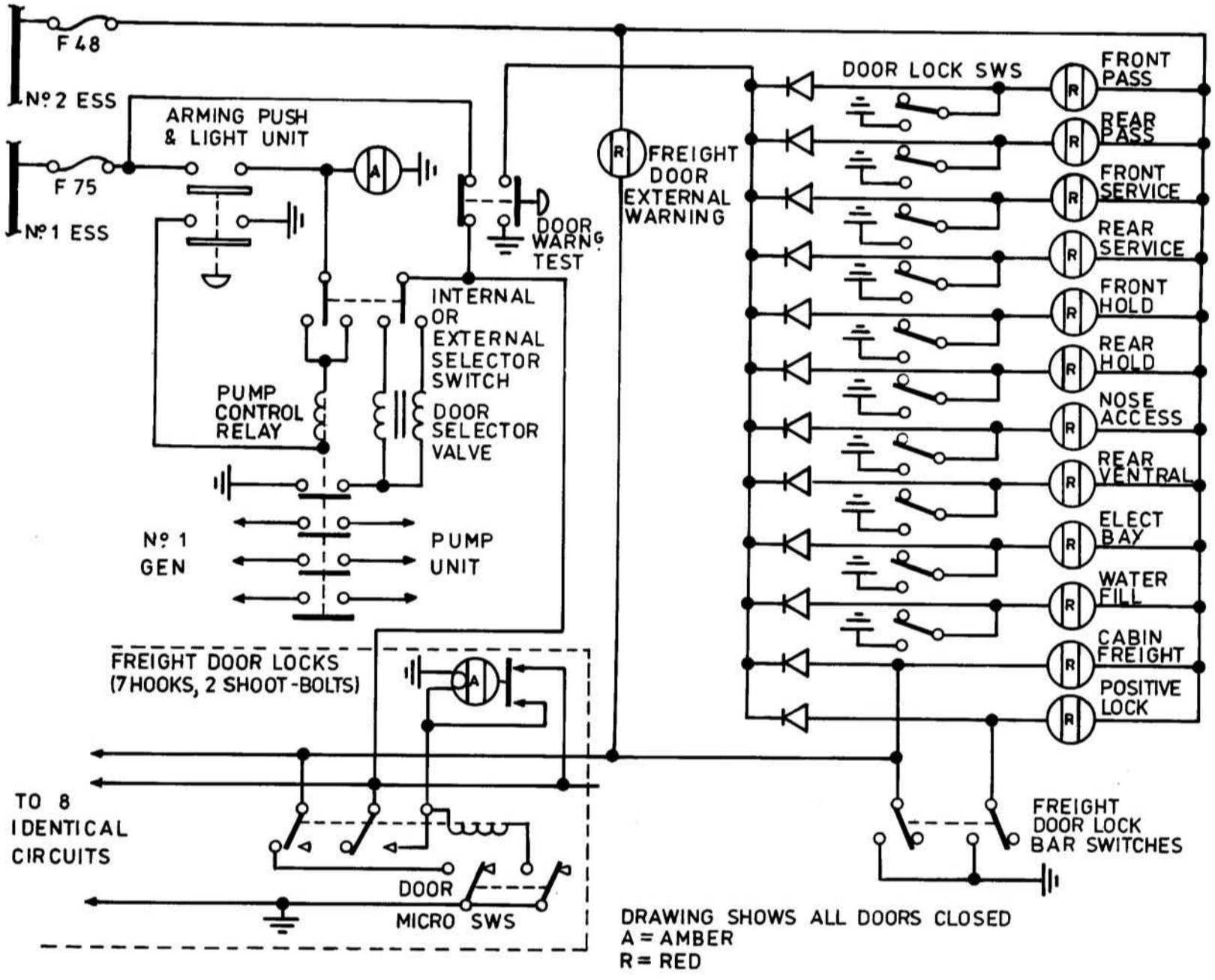
2–4 Fig 8 Overwing Emergency Exits



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◀ 2–4 Fig 9 Door Position Warning Light Diagram ▶