Group 2—COMMON EQUIPMENT

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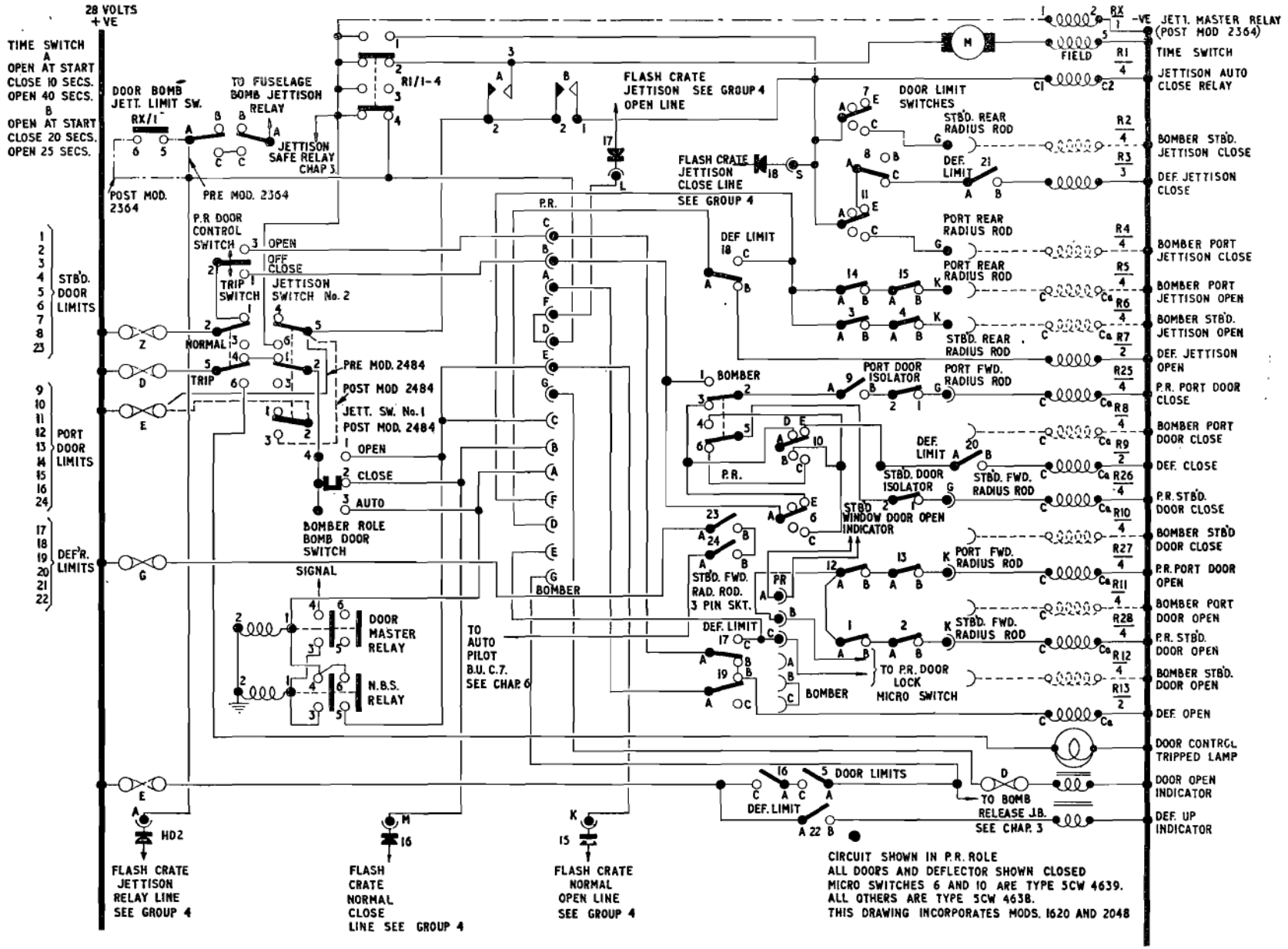

Fig. 1. Bomb door control—master (pre.-Mod. 1520)

BOMB BAY DOOR AND LOCK CONTROL (*fig.* 1, 2, 3 *and* 4)

1. These doors are not operated in flight and are for ground servicing purposes only. The operation of the doors is similar to that of the B.Mk. 1 bomb doors except that they are locked in the closed position and are sequenced. On closing, the starboard door closes first, followed by the port door, then the deflector and then the lock is closed. On opening, after the deflector is raised the doors cannot be opened until the door lock is disengaged. The doors are not operated by the bomb door control switch in the cabin, but by a switch operated externally at the external electrical supplies panel. The lock is controlled by a switch in the starboard door.

Warning

The operator controlling the opening of the bomb bay doors must allow the control switch to return to the off position before the door lock switch is placed to ' unlock '. Ensure that the bomb jettison switch on the control pedestal is at ' normal ' before attempting to select P.R. bomb bay doors switch to ' open '.

2. The bomb bay doors are controlled by the OPEN/CLOSE switch, spring loaded to the OFF position. Access to the switch is from the external electrical supply point.

Note . . .

Mod. 1520 *introduces micro switches Ref. No.* 5*CW*/4639 *in lieu of Ref. No.* 5*CW*/4638 *at all fuselage bomb door and air deflector positions and introduces additional micro switches in series with existing micro switches* 6, 8, 10, 11, 17 *and* 18.

Before Mod. 2692 *can be carried out Mod.* 2484 *must be incorporated to enable terminal AN*1 *on the starboard console panel ' B ' to be linked to terminal N*8 *on the port console panel ' C '.*

OPERATION

Each door motor has a brake unit operated by either one of two solenoids. Under normal operation, one solenoid is used when opening the doors and the other when closing the doors. Under jettison conditions (not applicable in the P.R. roles) the solenoid connections are reversed and the solenoid used for normal open is now used for jettison close.

Open

3. To open the bomb doors the control switch is selected to OPEN and held until the deflector is raised (*fig.* 1 *or* 2), a supply is then connected from panel Z, via the BOMB DOOR TRIP switch at NORMAL, through deflector limit switch 17 (made A-B) to the coil R13 of the deflector normal *open* relay.

4. This relay operates to connect, R13/1-2, two supplies from panel Z to the *open* coils R 16 (*fig.* 3) of the two deflector motor reversing relays which will then connect, R16/1-3, 112-volt supplies from panel J to the motors and their brake solenoids (*fig.* 4).

5. The *open* relay and the reversing relays will be tripped when the deflector reaches the up position and has operated limit switches 17-22 (*fig.* 1 *or* 2). The motors are thus disconnected and their brakes applied.

6. Deflector limit switch 17 will now be made across A-C and will connect the control supply to the lock micro switch in the starboard door, the contacts of which are open until the lock is disengaged (*fig.* 3).

7. Before the doors can be opened, the lock must be disengaged. This is controlled by a switch in the starboard door, access to which is obtained by lifting a flap at the forward end of the door. The door control switch must now be allowed to return to its OFF position and the LOCK switch moved to LOCK OUT. In this position, the switch connects its supply from panel Z (starboard camera window door supply) and a 5-amp fuse in the door near the switch to the ' unlock ' field of the actuator, through its armature to a 5-ohm, 30-watt resistance and thence to earth (*fig.* 3). The actuator then removes the lock, built-in limit switches stopping it at the end of its travel. The 30-watt series resistance is provided to slow down the speed of travel of the actuator.

8. When the lock is fully disengaged, the associated micro switch is made across A-C to connect the circuit from the deflector limit switch 17 (terminal C) through the starboard door limit switches 1 and 2 and the port door limit switches 12 and 13 to the door *open* relays (*fig.* 1 *or* 2).

9. The door control switch can now be re-selected OPEN and held, its supply will be connected via deflector limit switch 17, the lock micro switch, and door limit switches 1, 2, and 12, 13 to the coils R27 and R28 of the port and starboard door *open* relays (*fig.* 1 *or* 2 *and* 3) (there are only two motors to each door instead of three as for the bomber role doors).

10. These relays operate, R28/1-4 and R27/1-4, to connect 28-volt supplies from panel Z to the *open* coils R30 of the two door motor reversing relays to the *open* ratchet solenoids and to one set of the duplicated brake solenoids (*fig.* 3).

11. All the reversing relays operate together to connect, R30/1-3, 112-volt supplies from panel J to their respective motors (*fig.* 4). The *open* relays, reversing relays, *open* ratchet solenoids and brake solenoids are all tripped when the doors have opened and have operated the limit switches 1, 2, 12 and 13 (*fig.* 1 *or* 2). The motors are then disconnected and will stop as the brakes are applied. The door control switch can now be allowed to return to OFF.

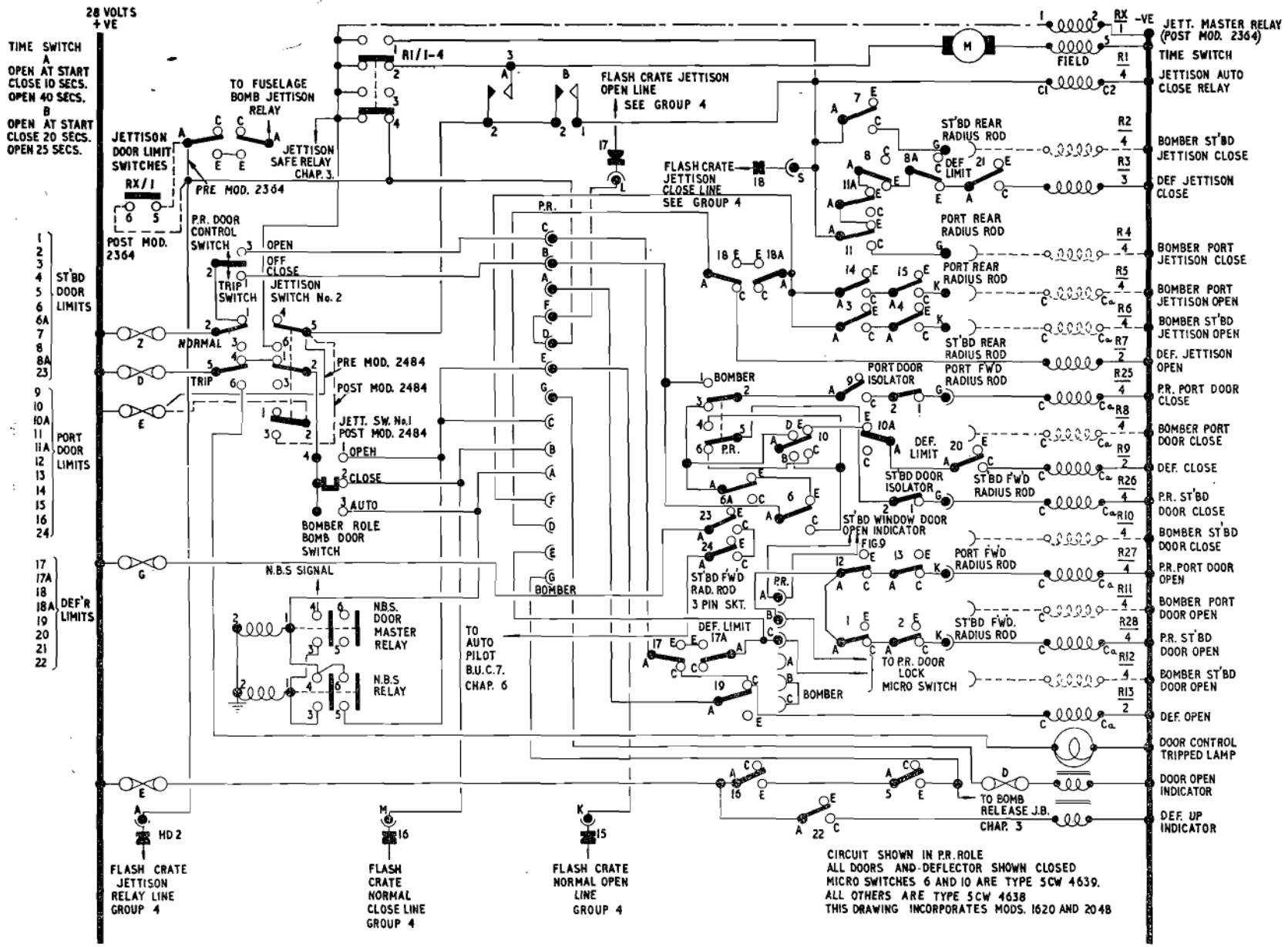

Fig. 2. Bomb door control—master (post Mod. 1520)

Close

12. When the doors are to be closed, the switch is selected to CLOSE and held. A supply from a fuse on panel Z, via pole 1, 2, 3 of the BOMB DOOR TRIP switch at NORMAL, is connected by the switch (*fig.* 1 *or* 2) through the door change-of-role plug and socket pin B, the starboard door limit switch 6 (made B-C), the port door limit switch 10 (made B-C), the change-of-role switch at P.R. and the starboard door ISOLATE switch at NORMAL to the coil R26 of the starboard door *close* relay, Type S4, mounted in the starboard door.

13. When the starboard *close* relay operates, it connects, R26/1-4, 28-volt supplies from panel Z to the *close* coils R29 of the two door motor reversing relays, in the door, and to the *close* ratchet solenoids and the other set of duplicated brake solenoids (*fig.* 3).

14. Both the reversing relays operate together, connecting, R29/1-3, 112-volt supplies from panel J to their respective motors (*fig.* 4). The *close* relays, reversing relays, *close* ratchet solenoids and *close* brake solenoids are all tripped when the door reaches the closed position and has operated limit switch 6 (*fig.* 1 *or* 2). The motors are thus disconnected and their brakes applied.

15. Starboard door limit switch 6 (*fig.* 1 *or* 2) will now be made across D-E and will connect the control supply through the change-of-role switch at P.R., port door limit switch 9 (made A-B) and the port door ISOLATE switch at NORMAL to the coil R25 of the port door *close* relay.

16. This relay operates to connect, R25/1-4, two supplies from panel Z to the *close* coils R29 of the two door motor reversing relays, in the door, and to the *close* ratchet solenoids and the *close* brake solenoids (*fig.* 3).

17. Both the reversing relays operate together, connecting, R29/1-3, the 112-volt supplies to their respective motors (*fig.* 4). The *close* relays, reversing relays, *close* ratchet solenoids and *close* brake solenoids are all tripped when the door reaches the closed position and has operated limit switch 9 (*fig.* 1 *or* 2). The motors are thus disconnected and their brakes applied.

18. Port door limit switch 10 (and 10A post Mod. 1520) will now be made across A-D-E and will connect the control supply through deflector limit switch 20 to the coil R9 of the deflector normal *close* relay.

19. This relay operates to connect, R9/1-2, two supplies from panel Z to the *close* coils R17 of the two deflector motor reversing relays which will then connect, R17/1-3, 112-volt supplies to the motors and their brake solenoids (*fig.* 4).

20. The *close* relay and reversing relays will be tripped when the deflector reaches the down position and has operated limit switch 20 (*fig.* 1 *or* 2). The motors are thus disconnected and their brakes applied.

21. Once the doors are closed the lock must be engaged. This is controlled by the switch in the starboard door.

22. When the switch is placed to LOCK IN, a supply, from panel Z (starboard camera window door supply) and the 5-amp. fuse near the switch, is connected to the *lock* field of the lock actuator and then through the armature and brake solenoid to a 5-ohm, 30-watt resistance and thence to earth (*fig.* 3). The actuator then engages the lock, built-in limit switches stopping the actuator at the end of its travel. As the actuator starts to operate, the associated micro switch contacts are opened (A-B). The 3-watt series resistance is provided to slow down the speed of travel of the actuator.

Indicators

23. Since the bomb bay doors are not used in flight and are controlled from outside the aircraft, it is not necessary for the door position indicator to operate. When the change-of-role plug is moved to the P.R. position, this indicator circuit is broken by pin G. The main purpose of this is to prevent feedback signals from the night role flash crate door indicator circuit energizing the bomb bay door indicator when the flash crate doors are opened. This would happen, otherwise, since the two circuits are joined at the fusing protective relay unit pin E (panel K connector BH2) so that either can provide the doors open signal to the fusing equipment.

24. The deflector limit switch 22 (*fig.* 1 *or* 2) controls the deflector position magnetic indicator. This switch is made across A-B, when the deflector is up, to connect the door indicator supply from panel E to energize the deflector indicator which now changes from black to white. The indicator is mounted on the control pedestal.

Safety switches

25. The TRIP and ISOLATE switches are included in the door circuits and operate as for the bomber role. However, due to the sequencing of the doors and the fact that it is not permissible to stand on the P.R. role doors, when it is required to gain access through the bomb bay side walls, the doors will have to be lowered to the ground servicing position. In any event, it is not possible to have the starboard door up and the port door down since the port door cannot close until the starboard door is closed. In order to get the doors into the ground servicing position proceed as follows:—

(1) Open the doors by selecting the control switch to OPEN until the deflector is raised, removing the door lock and then re-selecting the control switch to OPEN.

(2) Select the port ISOLATE switch to ISOLATE.

(3) Select the control switch to CLOSE, the starboard door only closes. Disconnect the starboard door radius rods and lower the door to its ground servicing position.

(4) Select the port isolate switch to NORMAL.

(5) Re-select the control switch to CLOSE

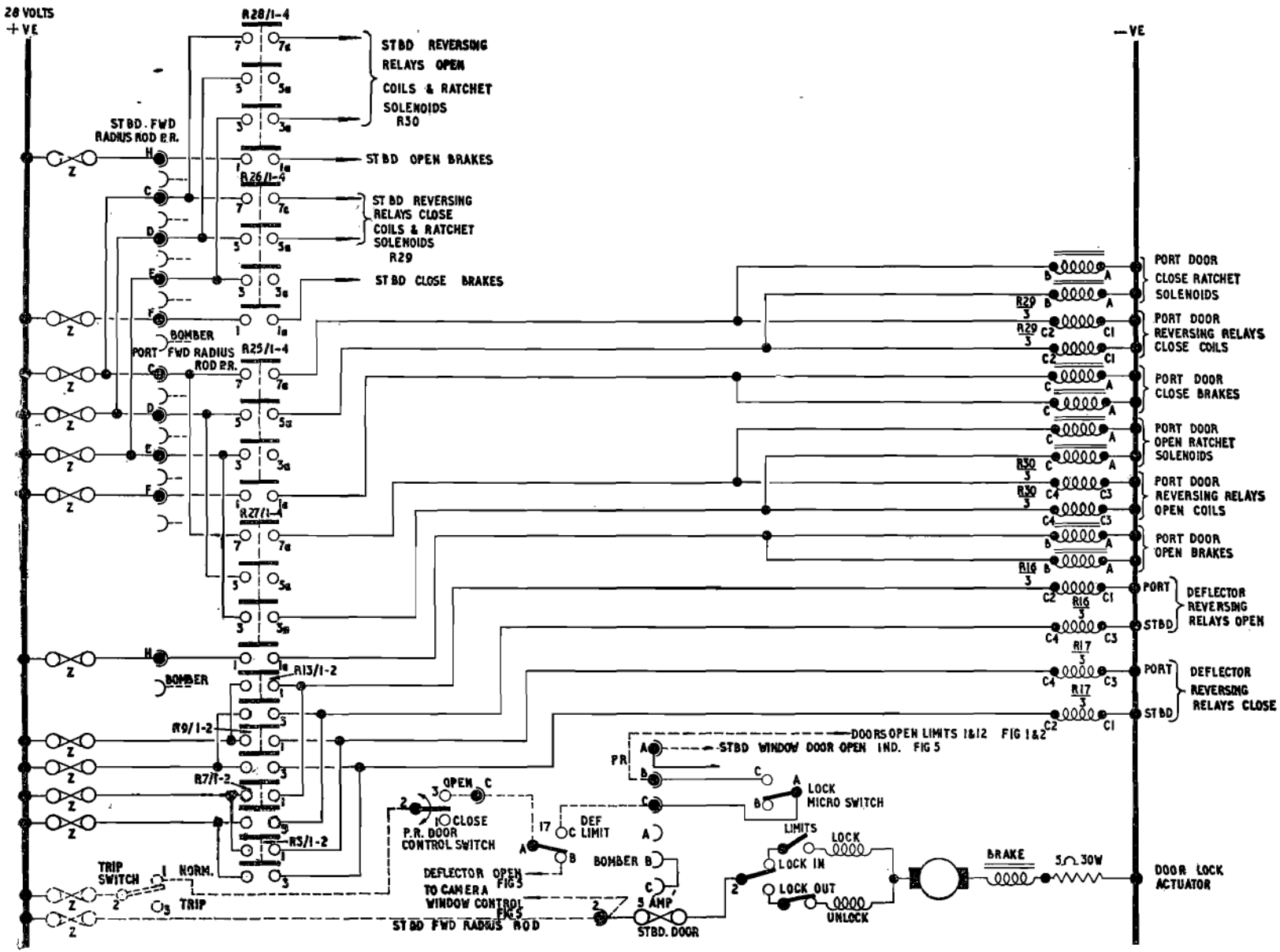

Fig. 3. Bomb door control—intermediate

until the port door and deflector are closed.
(6) Disconnect the port door radius rods and lower the door to its ground servicing position.
(7) Reverse this procedure to bring the doors back into the normal configuration.

CAMERA WINDOW DOORS

CONTROL (*fig.* 5)

26. The main camera window doors are controlled simultaneously with the oblique and survey camera window doors. The circuits are interlocked with the camera control circuits so that the cameras cannot operate unless the doors are open.

27. The window door control switches also control the day role camera master relay and the camera supply circuit-breaker (connecting the 28-volt supply to the day role control panel bus-bar). All the night role circuits are fed from the camera supply circuit-breaker and are thereby interlocked with the window door control switches.

28. The doors are controlled by either one of two paralleled switches, one on the day or night role control panel and one on the visual bomb aimer's P.R. panel. Each switch has two positions OPEN and CLOSE and its spring returned to the central position.

Open

29. When either switch is selected OPEN and held, it connects a supply from panel G to the two DOORS SELECTED OPEN AND POWER ON indicators on the control panels, to the camera master relay and through normally closed contacts R1/1 of relay E (day role) or relay B (night role) (Type Q3 behind either control panel), to the coil R2 of the door master relay (Ref. No. 5D/1397, mounted in the radio crate) and thence through a resistance to earth.

30. The relay closes its two contacts to connect, R2/1-2, the supply from panel G to its coil as a hold-in supply and to the coil R3 of the main window doors relay (Type S2 in the battery bay) and to the coil R4 of the rear window doors relay (Type S3 in the rear camera junction box at the aft end of the bomb bay).

31. The control switch can now be released, the relays being held in via the now closed contacts R2/1-2 of the doors master relay. The supply to the camera master relay and the DOORS SELECTED OPEN AND POWER ON indicators is maintained via the closed contact R1/1 of relay E or B.

32. The main window doors relay breaks its contacts R3/4 and makes its contacts R3/1, R3/3 to connect supplies from circuit-breakers 15 and 16 on the change-of-role bus-bar panel through the respective door *open* limit micro switches (made A-B) to the *open* coils R5 of the reversing relays (Rotax Type F.1302, one in each bomb bay door).

33. The reversing relays operate to connect, R5/1, supplies from panel Z to their respective actuator fields (terminal 4) and to the actuator brake solenoids in series with the armatures (terminal 3), and to break the negative line from the *close* coil R6. The actuators now open the window doors via rack and pinion drives. On leaving the closed position, the *close* limit micro switches are operated to make on A-B ready for closing the doors.

34. On reaching the open position, the *open* limit micro switches are operated to break from A-B to disconnect the supplies to the reversing relays and hence disconnect the actuators, and to make on A-C to connect their supplies to energize the port and starboard MAIN DOORS OPEN indicators on the control panel.

35. The rear doors relay operates simultaneously with the main window doors relay to break its contacts R4/2, R4/4, and R4/6 and to make its contacts R4/1, R4/3 and R4/5 to connect three supplies from fuses on the change-of-role bus-bar panel through the *open* limit switches and *open* fields to the armatures and brake solenoids of the rear camera door actuators (port oblique, starboard oblique and survey). The actuators now open the window doors via rack and pinion drives. On leaving the closed position, the actuator *close* limit switches are closed ready for closing the doors.

36. On reaching the open position, the actuator *open* limit switches are operated to break the supplies to the actuators and to connect them to their respective rear door *open* indicators on the control panel.

Note . . .

Mod. 2602 *introduces a Weston actuator in lieu of the original Plessey actuator; external limit switches have also been fitted. Circuit operation is the same as the pre-Mod.* 2602 *condition.*

Close

37. When either switch is selected CLOSE and held, the supply is connected from panel G to the coil R1 of relay E (day role) or relay B (night role) (Type Q3 behind the respective control panel) and to the negative side of the coil R2 of the door master relay (terminal 5); the resistance between this point and earth prevents a short-circuit of the supply.

38. Contacts R1/1 of relay E (or relay B) open to break the supply to the doors selected open indicator and to the camera master relay which thus drops out. The door master relay is simultaneously de-energized since the potential at both ends of its coils is the same. The contacts R2/1-2 of the door master relay are thus broken to interrupt the hold-in supply to their coil R2 and to break the supply to the main window doors relay coil R3 and the rear doors relay R4. The control switch can be released once the master relay has tripped.

39. The main window doors relay resets, breaking its contacts R3/1 and R3/3 in the main doors reversing relay *open* line and making its contacts R3/2 and R3/4 to connect the supplies from circuit-breakers 15 and 16 on the change-of-role bus-bar

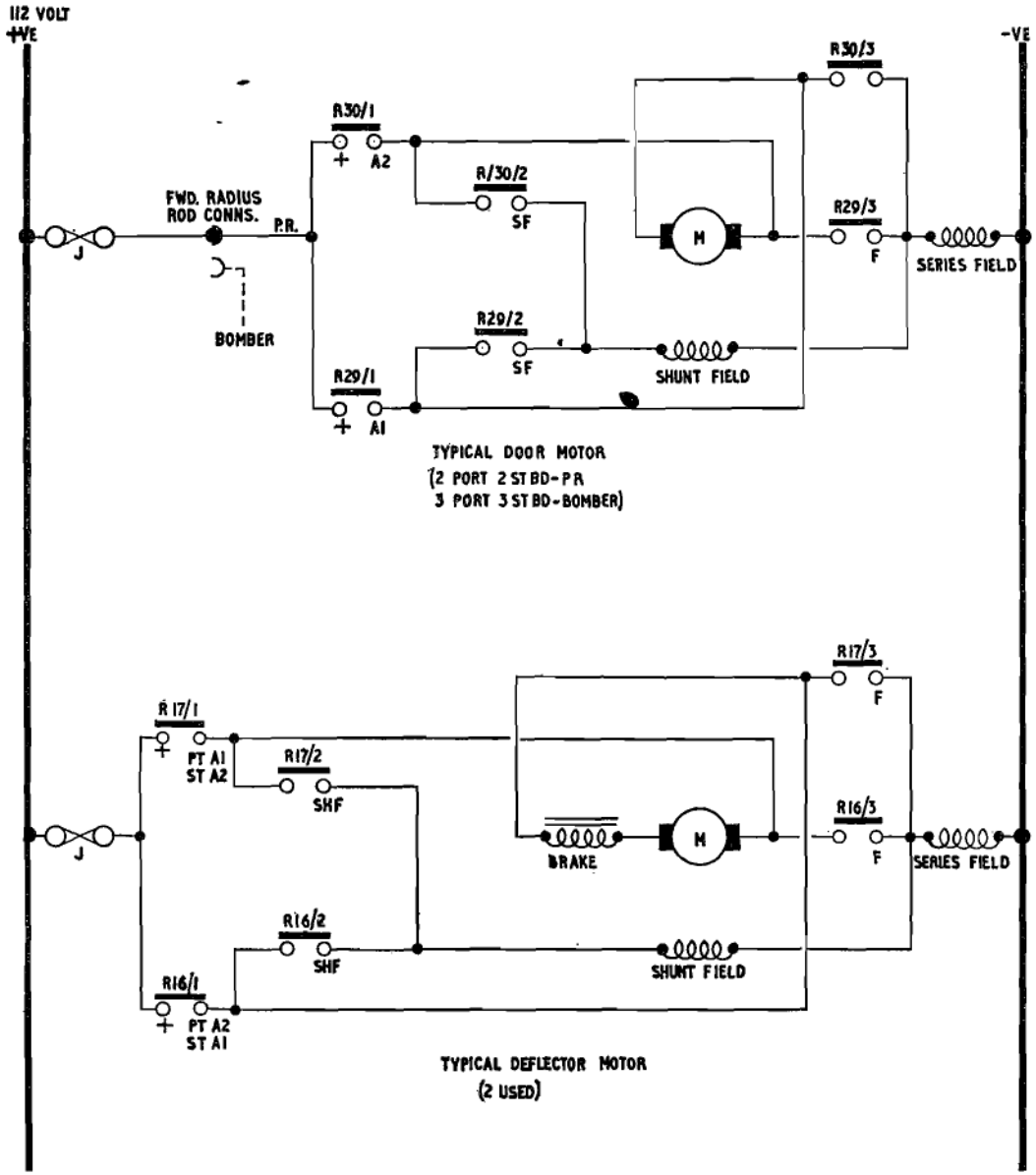

Fig. 4. Bomb door control—final

through the doors *close* limit micro switches (made on A-B when the doors left the closed position) to the *close* coils R6 of the doors reversing relays.

40. The reversing relays operate R6/1 to connect their 28-volt supplies from panel Z to their respective actuator fields (terminal 1) and brake solenoids in series with the armatures (terminal 3), and to break the negative line from the *open* coil R5. The actuators now close the window doors via the rack and pinion drives. On leaving the open position, the *open* limit micro switches are operated to make on A-B ready for opening the doors, and to break the supplies to the MAIN DOORS OPEN indicators.

41. On reaching the closed position, the *close* limit micro switches are operated to break from A-B to disconnect the supplies to the reversing relays and hence disconnect the actuators.

42. The rear doors relay trips simultaneously with the main window doors relay, breaking its contacts R4/1, R4/3 and R4/5 in the actuator *open* lines and making its contacts R4/2, R4/4 and R4/6 to connect the supplies from the change-of-role bus-bar panel through the *close* limit switches and *close* fields to the armatures and brake solenoids of the rear camera door actuators (port oblique, starboard oblique and survey). The actuators now close the window doors via the rack and pinion drives. On leaving the open position, the actuator *open* limit switches are operated to break the supplies to their respective *open* indicators and to make the line to the *open* fields for opening the doors.

43. On reaching the closed position, the actuator *close* limit switches are operated to break the supplies to the actuators.

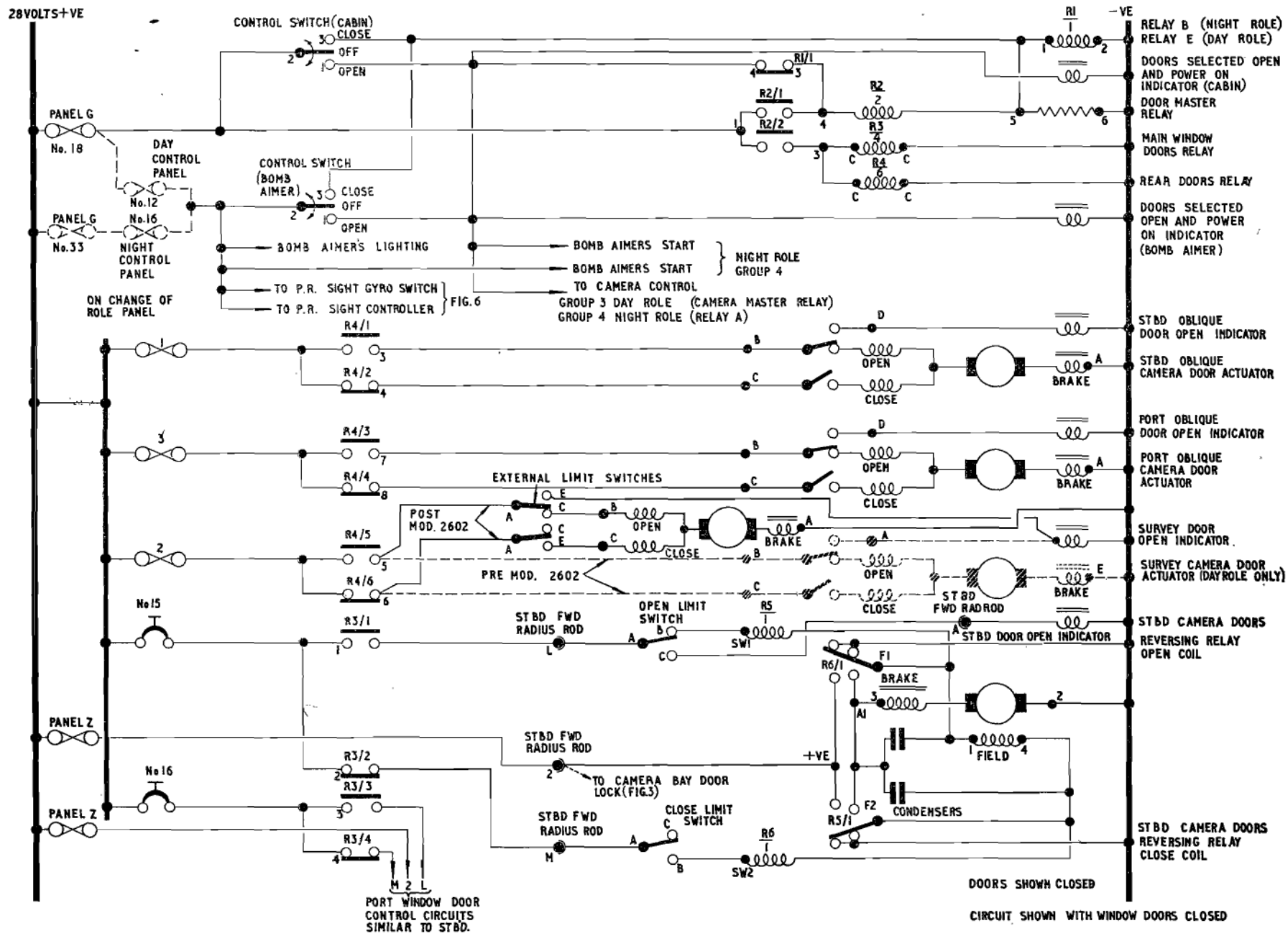

Fig. 5. Camera window doors control

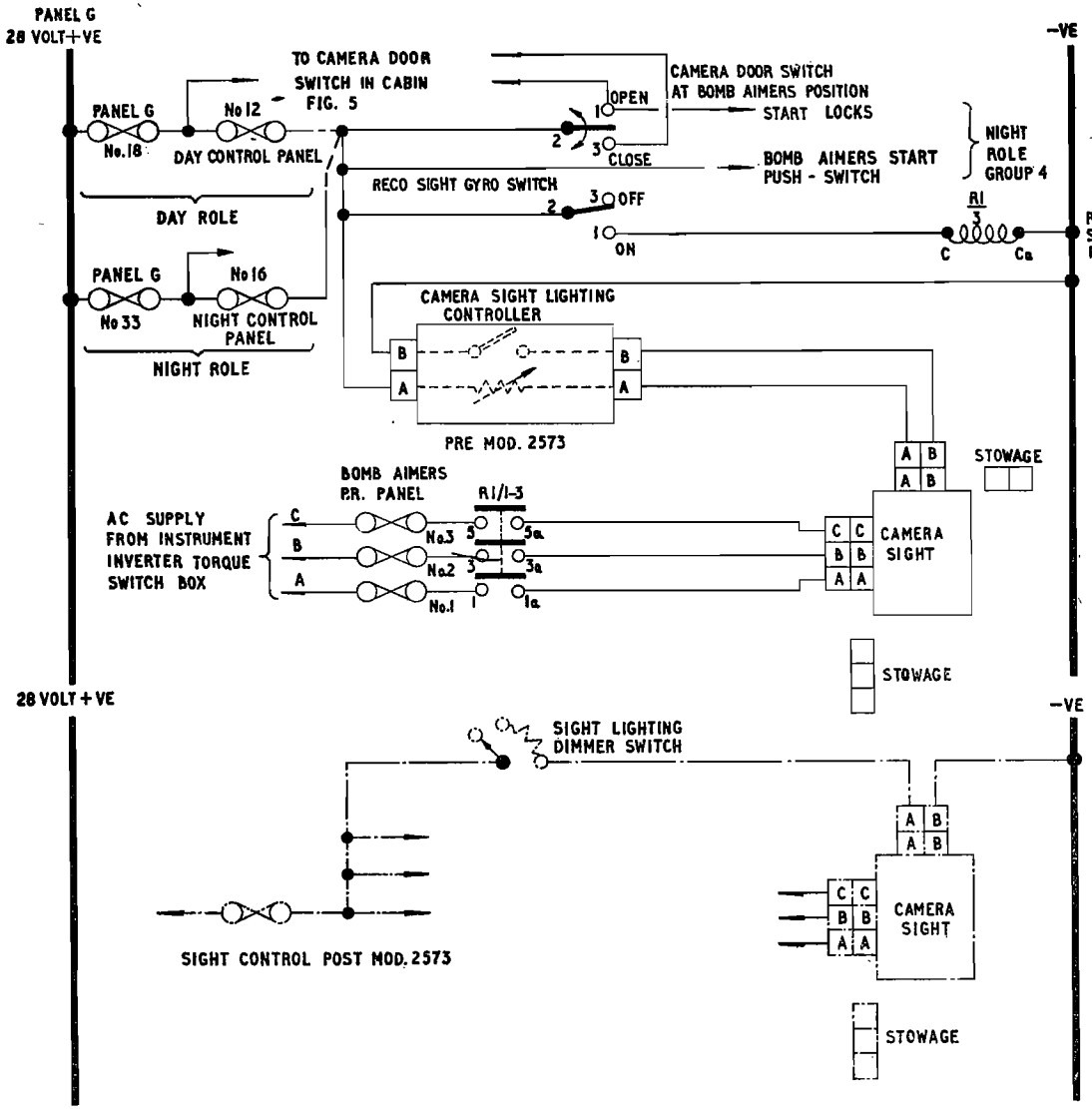

Fig. 6. P.R. camera sight control

Indicators

44. Two sets of indicators are provided, DOORS SELECTED OPEN AND POWER ON indicators and individual DOORS OPEN indicators. All are magnetic indicators 5CZ/4361. The two DOORS SELECTED OPEN AND POWER ON indicators, one on the control panel and the other on the visual bomb aimer's P.R. panel, are energized to show WHITE, from a supply from panel G when either door control switch is selected OPEN. When the control switch is allowed to return to the central position, the supply to the indicators is maintained via the closed contacts R1/1 of relay E or relay B, Type Q3 behind the day or night role control panel respectively.

45. The main camera window doors *open* indicators on the control panel are energized to show white by the door reversing relay control supply when the door *open* limit switches are made across A-C as the doors reach the open position.

46. The rear window doors *open* indicators on the control panel are energized to show white by the door actuator supplies when the actuator *open* limit switches are operated as the doors reach the open position.

47. The doors selected *open* indicators are de-energized when the doors control switch is selected CLOSE. The doors *open* indicators are de-energized when the doors leave the fully open position.

P.R. CAMERA SIGHT CONTROL
(*fig.* 6)

48. The gyro stabilized sighting head, Mk. 2, is fitted at the bomb aimer's visual position, the control unit being mounted on the bomb aimer's P.R. panel. A supply from panel G (camera window door supply fuse) is fed to the gyro switch on the bomb aimer's P.R. panel and to the control unit. When the gyro switch is selected ON, its supply is connected to the coil R1 of the reco. sight relay (Type S4 mounted behind the bomb aimer's P.R. panel). The relay closes its contacts R1/1-3, to connect a

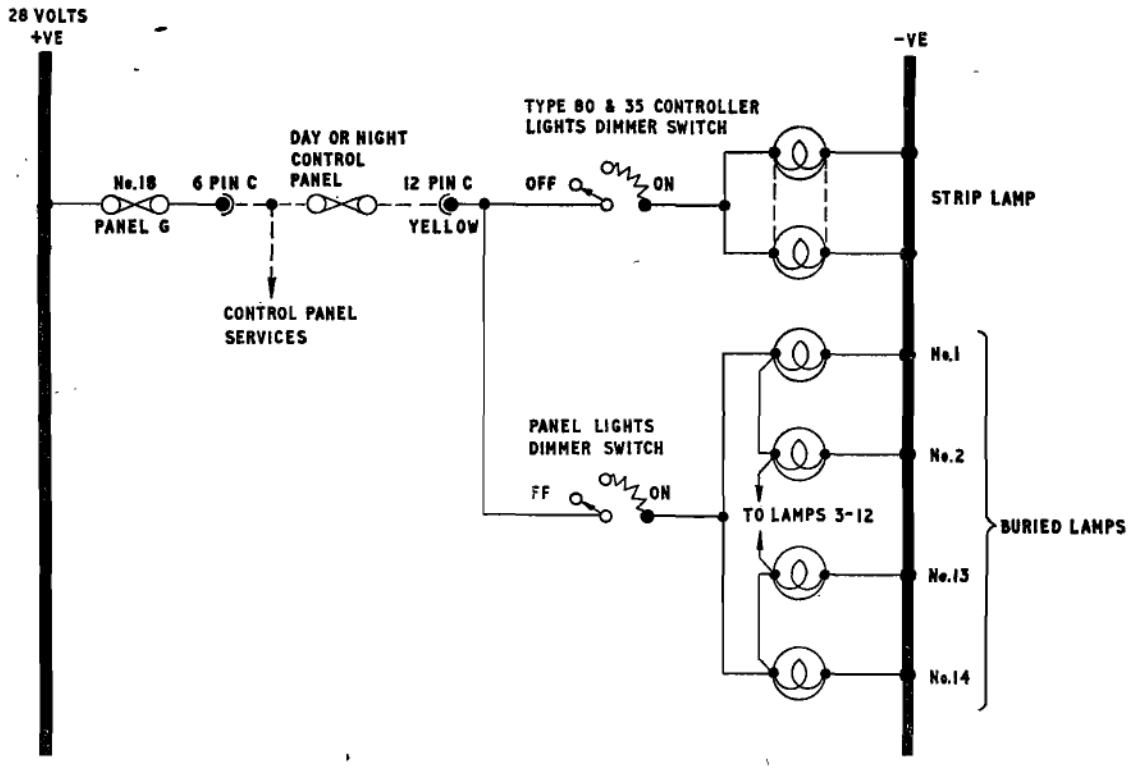

Fig. 7. Bomb aimer's panel lighting (post Mod. 2573)

three-phase supply from the instrument inverter Type 100A via the inverter torque switch box, through three fuses on the P.R. panel to the sighting head gyro circuits. In the event of failure of the Type 100A inverter, the supply is maintained by the No. 2 radar inverter Type 350 (*see Chap.* 1).

COMPASS REPEATER (*fig.* 22)

49. The compass repeater at the bomb aimer's visual position is fed continuously with signals from the compass master indicator via the master indicator junction box in the radio crate. There are no means of isolating the repeater compass.

BOMB AIMER'S PANEL LIGHTING, POST MOD. 2573 (*fig.* 7)

50. The bomb aimer's panel pre-Mod. 2573 is not provided with any illumination. The post Mod. 2573 panel is illuminated by 14 edge-lighting lamps buried in the 'Cobex' outer panel. The caps of six of these lamps are used to secure the smaller, day or night, camera pulsing indicator lamp panel to the main panel. The lamps are connected in parallel on the ring main system and are fitted with 1-watt P-type filaments (Ref. No. 5L/9959118). The circuit is supplied from a fuse on panel G (No. 18—day role, No. 33—night role) and a fuse on the control panel (No. 12—day role, No. 16—night role) and is controlled by a dimmer switch on a bracket secured to the starboard side of the main panel.

51. In addition to the main panel lighting, an adjustable strip lamp unit is mounted near the top of the panel for illuminating the day role type 80 and type 35 controllers. This lamp unit consists of a metal tube with a longitudinal slot and a lamp holder (Ref. No. 5C/2680) fitted at each end. The two filaments (Ref. No. 5L/9953273) are connected in parallel and are fed from the same supply as the edge lamps (*para.* 50). The circuit is controlled by a dimmer switch mounted on the bracket to the starboard side of the main panel.

P.R. CAMERA SIGHT LIGHTING (*fig.* 6)

52. The camera sight internal lamp is controlled pre-Mod. 2573 by a controller (9/4533) mounted on the bomb aimer's panel. This controller consists of a dimmer and an on/off switch. The circuit is fed from a fuse on panel G (fuse 18—day role, fuse 33—night role), or the control panel (fuse 12—day role, fuse 16—night role). Post Mod. 2573 the controller is not fitted, the lamp now being controlled by a dimmer switch (Berco 25-ohm—L.50) mounted on the panel. The supply is the same as pre-Mod. 2573.

Warning

Voltages in excess of 100 volts, either a.c. or d.c., can be dangerous under certain circumstances. Personnel should therefore ensure that the electrical system is electrically safe before any servicing is attempted. Where it is essential that tests or adjustments be made with the electrical power switched on, the greatest care must be exercised.

INTRODUCTION

53. Reference should be made to the General Information Group at the front of this Section (*see Book* 2) for the general principles of servicing and fault finding, for information on the care of equipment and for precautionary measures. For setting instructions for the bomb bay door micro switches refer to Book 1, Sect. 3, Chap. 1.

54. The following notes are intended to assist in the servicing of equipment and are not intended to provide a complete fault finding analysis. If a circuit goes unserviceable, the routine fault finding procedures should be adopted to locate the fault.

BOMB BAY DOORS AND LOCK CONTROL

Note . . .

Personnel must on no account walk on the P.R. doors even when closed and locked.

55. The method of testing the bomb bay door circuitry with the aid of the test box Ref. No. 26SR/95293 in either the Bomber or P.R. roles is given in Chapter 2, Group 5 with the following supplementary instructions.

(1) To check the control circuits for the bomber role doors but with P.R. role doors fitted, set the BOMBER/P.R.U. switch to BOMBER, disconnect the 3-pin plug and socket at the forward, starboard, bomb door radius rod and connect the socket to the stowage on the radius rod (this stowage is internally linked between pins B and C and provides a means of short-circuiting the door lock circuit) and then proceed as for the normal bomber circuits. On completion of the checks, return the BOMBER/P.R.U. switch to P.R.U. and re-connect the 3-pin plug and socket for the door lock circuit.

(2) To check the control circuits for the P.R. role doors, ascertain that the BOMBER/P.R.U. switch is at P.R.U., disconnect the 3-pin plug and socket at the forward, starboard, radius rod and connect the socket to the stowage on the radius rod (this provides a means of short-circuiting the door lock circuit). OPEN and CLOSE selections are made by the switch at the external supply panel of the aircraft instead of by the switch on the control pedestal. Proceed otherwise for the bomber bomb door checks but note that as the doors close in sequence, it will be necessary to operate the starboard door limit switch 6 (and 6A if Mod. 1520 is fitted) to the door closed position during the test in order to complete the cycle. Fuse 75 on panel Z should be removed during the test and the test lamps should go out and should come on again when the fuse is replaced. On completion of the checks, the 3-pin plug and socket for the lock circuit should be remade.

56. To function the doors, proceed as follows:—

(1) Connect both 112-volt and 28-volt external supplies.

(2) Select the switch at the external supply panel to OPEN.

(3) Check that the deflector is raised and the deflector indicator on the control pedestal shows WHITE. Release the switch.

(4) Ensuring that the door control switch is at its central (off) position, gain access through the starboard door (forward end) to the LOCK SWITCH and select LOCKS OUT.

(5) Check that the lock actuator can be heard to operate. Release the switch.

(6) Return to the door control switch and re-select OPEN.

(7) Check that both doors open together and when fully open, release the control switch.

Note . . .

The DOORS OPEN *indicator on the control pedestal should remain black as it is not connected in the P.R. role.*

(8) Select the TRIP switch to TRIP; select the control switch to CLOSE and check that the doors do not move.

(9) Release the control switch and select the TRIP switch to NORMAL.

(10) Re-select the control switch to CLOSE and check that the starboard door closes first, followed by the port door and then the deflector. DO NOT engage the lock. Check that the deflector indicator goes black.

(11) Re-open the doors (*items* 1-6).

(12) Select the ISOLATE switches to ISOLATE and select doors CLOSE.

(13) Check that both doors remain open and then release the control switch.

(14) Select the ISOLATE switches to NORMAL and re-select doors CLOSE.

(15) Engage the door lock, by selecting LOCK IN on the LOCK SWITCH in the starboard door.

(16) Disconnect external supplies.

DOOR LOCK CONTROL

57. To check the function of the door lock control system proceed as follows:—

(1) Connect the 28-volt external supply.

(2) Select the LOCK SWITCH to UNLOCK.

(3) Check that the lock indicator pin showing through the starboard door adjacent to the switch moves from LOCKED to UNLOCKED positions.

(4) Select the LOCK SWITCH to LOCK and check that the indicator pin moves back to LOCKED.

(5) Disconnect external supply.

58. To check the function of the lock after replacement of an actuator it will be necessary to close the doors after selecting the

port door isolate switch to ISOLATE. The starboard door will then be closed and the port door open. The function of the actuator should then be checked as described in para. 54. A check should be carried out at the same time on the setting of the lock micro switch. Setting-up instructions for this micro switch are given in Book 1, Sect. 2, Chap. 5, with the lock out the micro switch should be made across A-C and with the lock in the micro switch should be made across A-B; these contacts positions should be checked with a lamp and battery after disconnecting the 3-pin plug and socket on the starboard forward radius rod.

59. On completion of the function tests after replacement of an actuator, the 3-pin plug and socket on the radius rod should be re-connected, the lock should be selected OUT, the door control selected to OPEN until the starboard door is fully open and the port door ISOLATE switch returned to NORMAL. If required, the doors may then be closed and locked and the external supply removed.

CAMERA WINDOW DOORS CONTROL

60. The camera window doors should be functioned in turn by both the control switches, one on the bomb aimer's P.R. panel and the other on the day or night role control panel. The doors should not be functioned with the P.R. role bomb doors in any other position than closed and locked. The doors should be functioned as follows:—

(1) Connect up the 28-volt external supply.

(2) Select either control switch to OPEN, check that both the DOORS SELECTED OPEN AND POWER ON indicators change from BLACK to WHITE.

(3) The switch may be released almost immediately after selection, the indicators should stay white. If the indicators change back to black, after releasing the switch, either the switch was released too quickly or the door master relay (*fig.* 5, *R*2) has not held in.

(4) Check that all the main door windows and the survey and oblique camera windows have opened. Check that all the five DOOR OPEN indicators have changed from BLACK to WHITE.

(5) Select the control switch to CLOSE, and release the switch as soon as the DOORS SELECTED OPEN AND POWER ON indicators go black. Check that all the individual DOOR OPEN indicators go black as soon as the doors leave the fully open position. Check that all doors close satisfactorily.

(6) Repeat the sequence using the alternative door control switch.

(7) Ensure that all switches return to the OFF position and disconnect the external supply.

61. Instructions for setting the door limit micro switches are given in Book 1, Sect. 2, Chap. 5. The window doors may be operated with the P.R. role bomb bay doors in the open position when setting up these micro switches.

CAMERA WINDOW DOOR MASTER RELAY (*fig.* 8)

62. It is important to note that whenever it is necessary to replace the camera window door master relay (relay resistance unit, Type C, 5D/1397, the replacement must conform to the following requirements:—

(1) The value of resistance MUST NOT be less than 50 ohms (otherwise it will be overheated if the relay is held in for more than 2 secs.).

(2) The drop-out voltage measured across the coil, when the negative end of the coil is biased to +ve, as when unlatching the relay, MUST NOT be less than 2 volts (otherwise the relay will not unlatch).

The test circuit shown is recommended for checking item 2. If the unit does not conform to the above requirements, it must not be fitted to the aircraft.

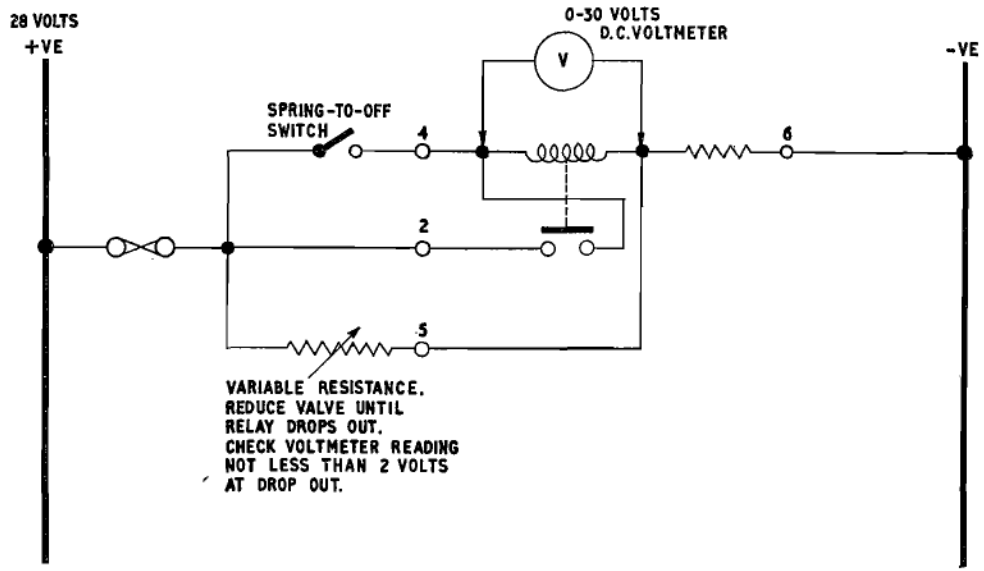

Fig. 8. Test circuit for relay resistor unit Type C

P.R. CAMERA SIGHT

63. For in-situ servicing of the sight and its controller, reference should be made to the appropriate Air Publication. The power supply may be checked as follows:—

(1) Connect up the external 28-volt supply.

(2) Select the INSTRUMENT MASTER switch ON.

(3) Disconnect the 3-pin plug from the sighting head.

(4) Select the RECO. SIGHT GYRO switch on the bomb aimer's P.R. panel to ON.

(5) Check that there is a 115-volt supply at the pins of the 3-pin plug (pin B is neutral and is connected to earth at the inverter torque switch box). If there is no supply the reco. sight relay, Type S4, should be checked for satisfactory operation.

(6) Select the sight switch OFF and reconnect the 3-pin plug.

(7) Select the INSTRUMENT MASTER switch OFF.

(8) Disconnect the external supply.

COMPASS REPEATER

64. This should be checked when the G4B compass installation is checked (*Chap.* 6, *Group* 3). At all times the repeater should give the same indications as the G4B master indicator.

BOMB AIMER'S PANEL LIGHTING (POST MOD. 2573)

65. Select the dimmer switches to ON after connecting a 28-volt external supply and check that all lamps come on. Change filaments where necessary and then check that there is sufficient control of the brightness by turning the dimmer through its full range. Adjust the strip lamp unit as required for satisfactory illumination, in the day role case, of the Type 80 and Type 35 controllers.

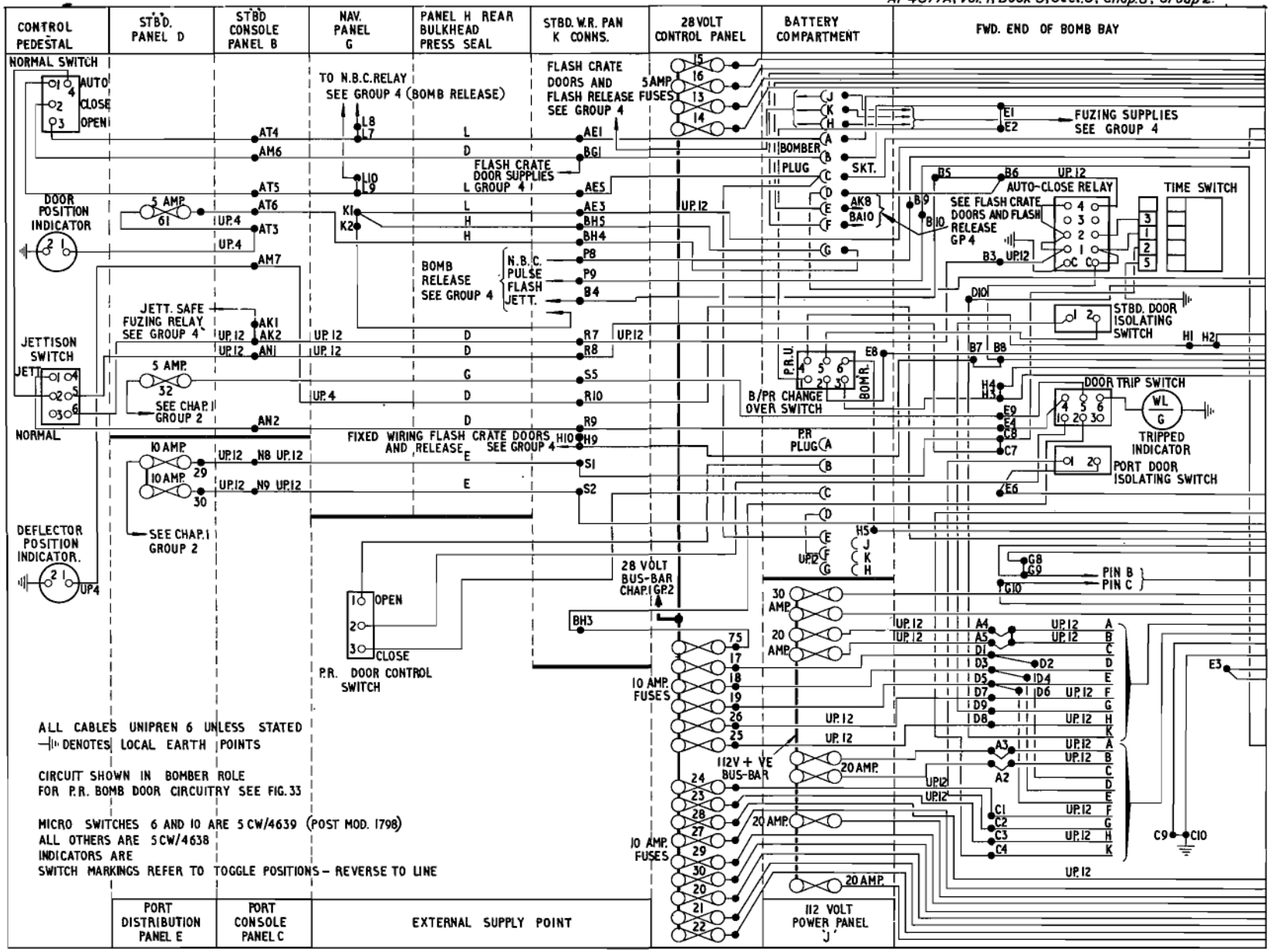

Fig. 10 (1) Bomb bay door control (pre Mod. 1520, 2364 and 2484) (B/PR MK I Aircraft only) (A.L.8 NOV. '59)

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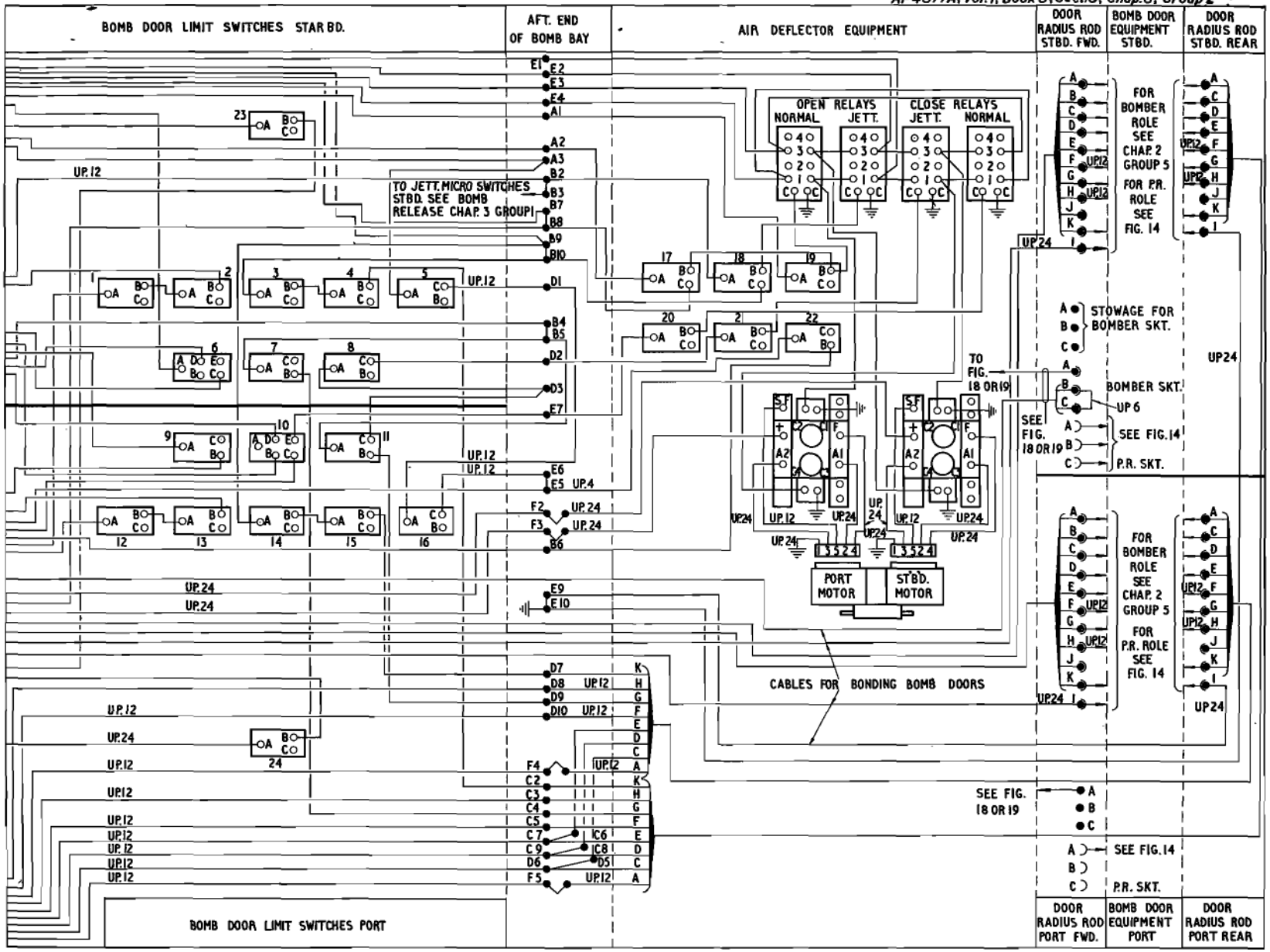

Fig. 10(2) Bomb bay door control (pre Mod 1520, 2364 and 2484) (B/PR MK.I Aircraft only)

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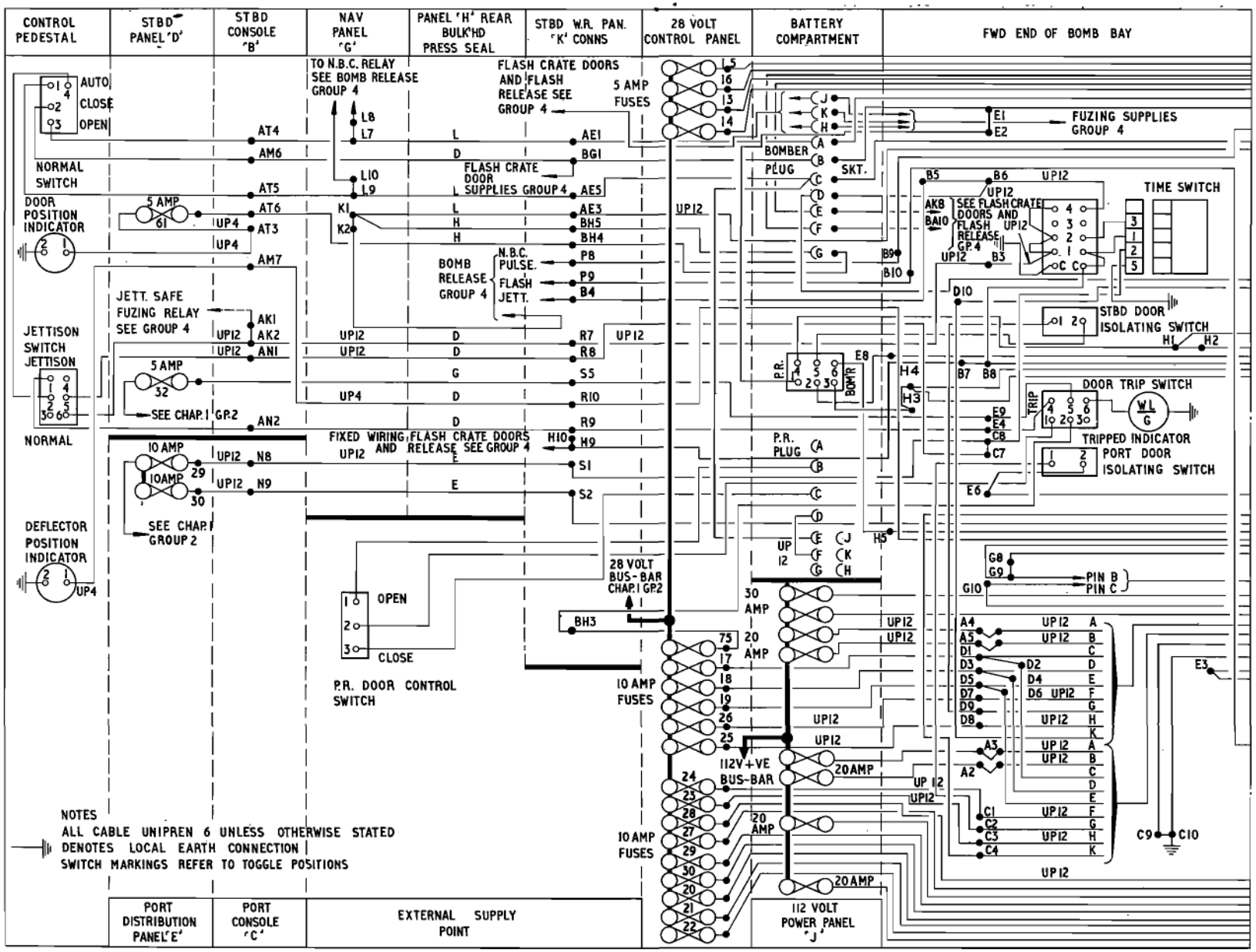

Fig. 11 (1) Bomb bay door control (post Mod. 1520, pre Mod. 2364 and 2484)
(B/PR MK.1 Aircraft only)

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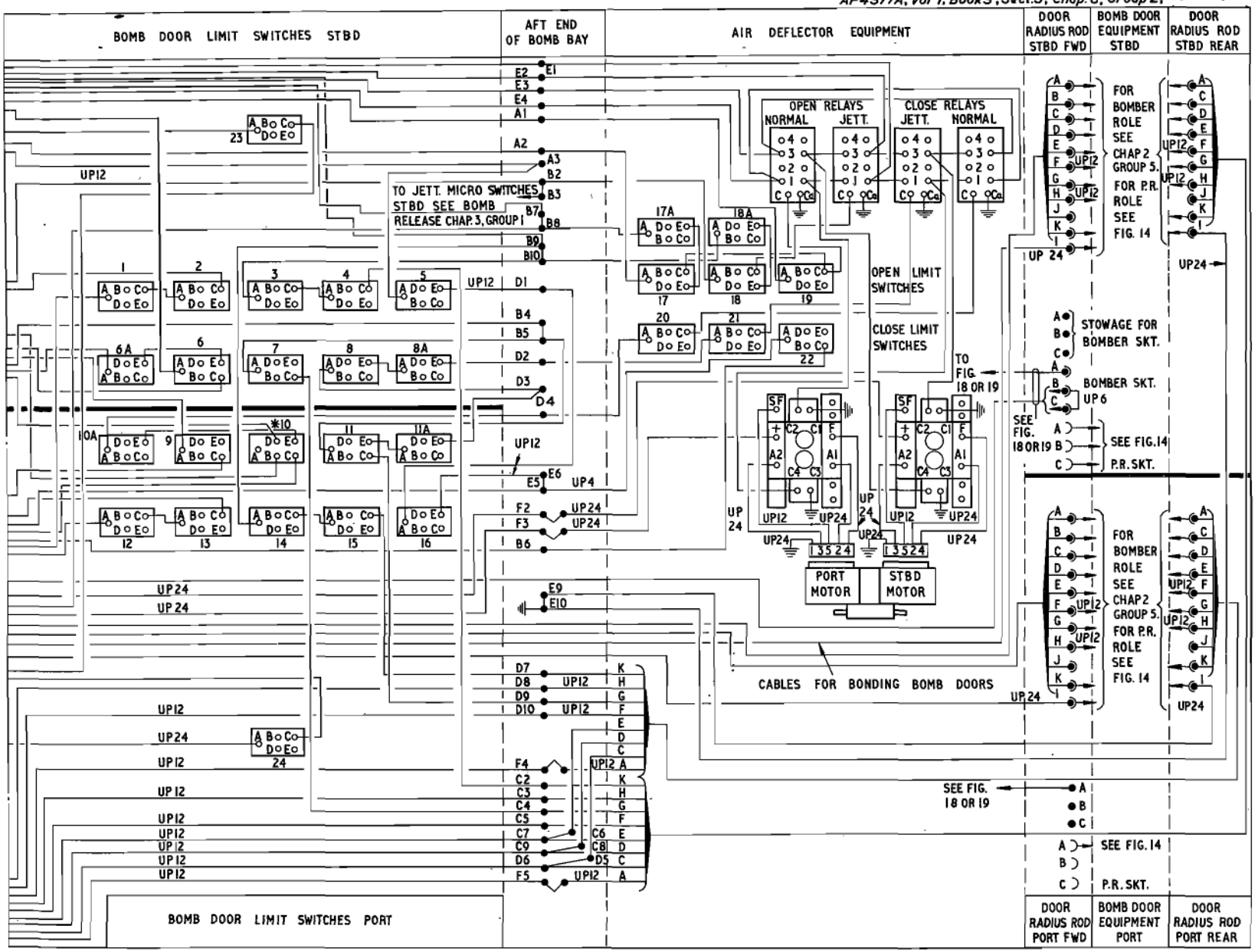

Fig. 11 (2) Bomb bay door control (post Mod. 1520, pre Mod. 2364 and 2484) (B/PR MK.1 Aircraft only) (A.L.8 NOV. '59)

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71036 SHT 143-X

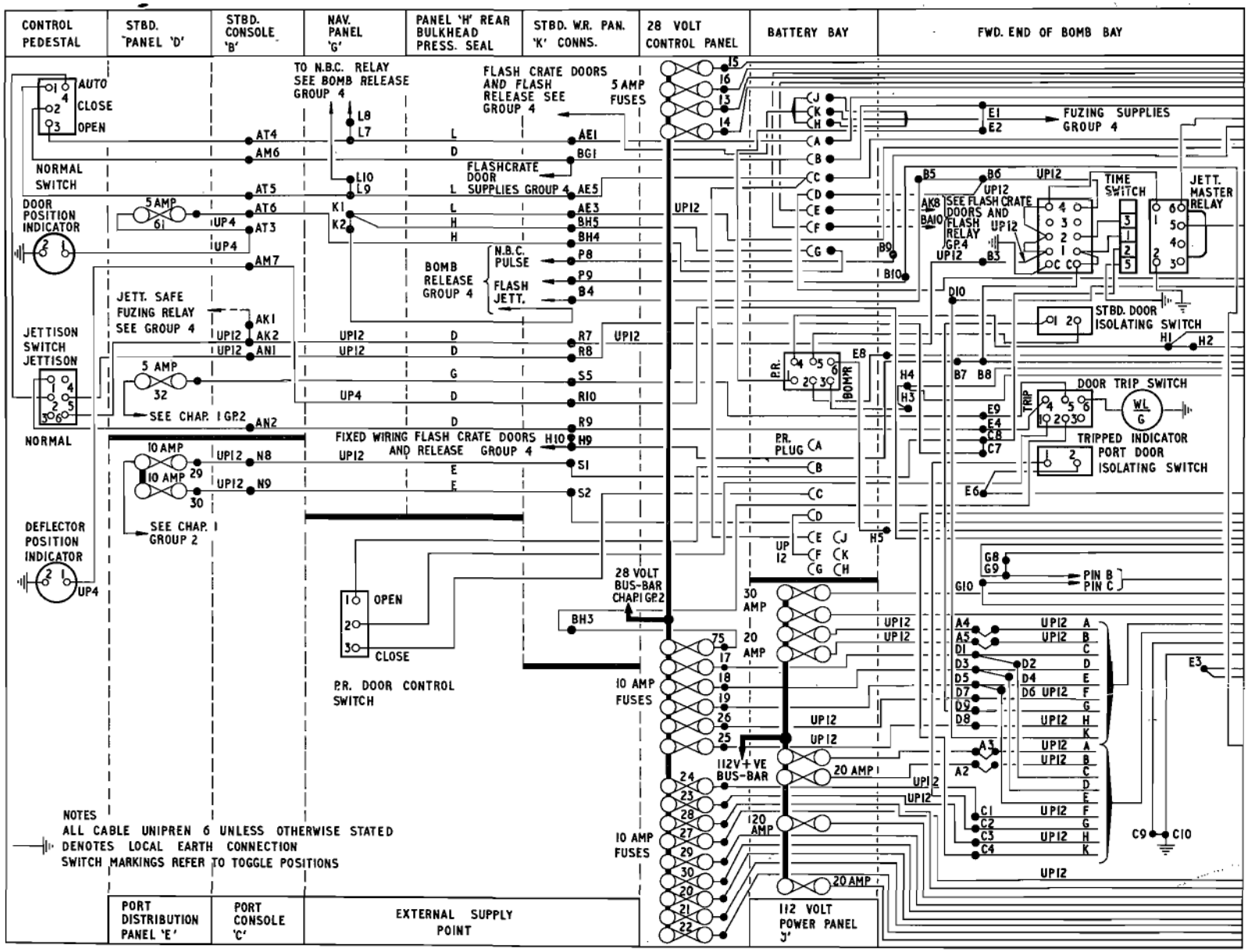

Fig. 12 (1) Bomb bay door control (post Mods. 1520 and 2364, pre Mod. 2484)
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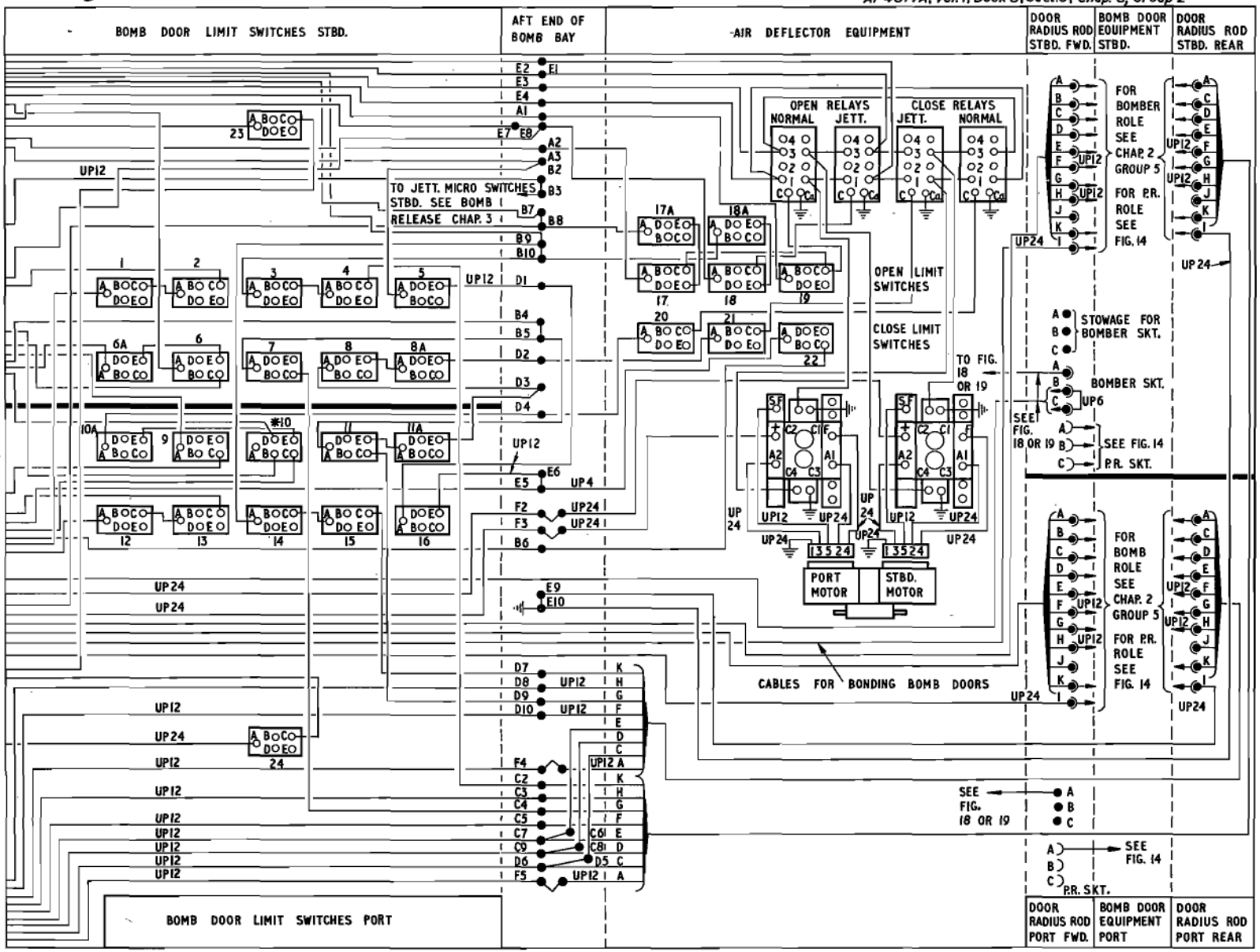

Fig. 12 (2) Bomb bay door control (post Mods. 1520 and 2364, pre Mod. 2484)

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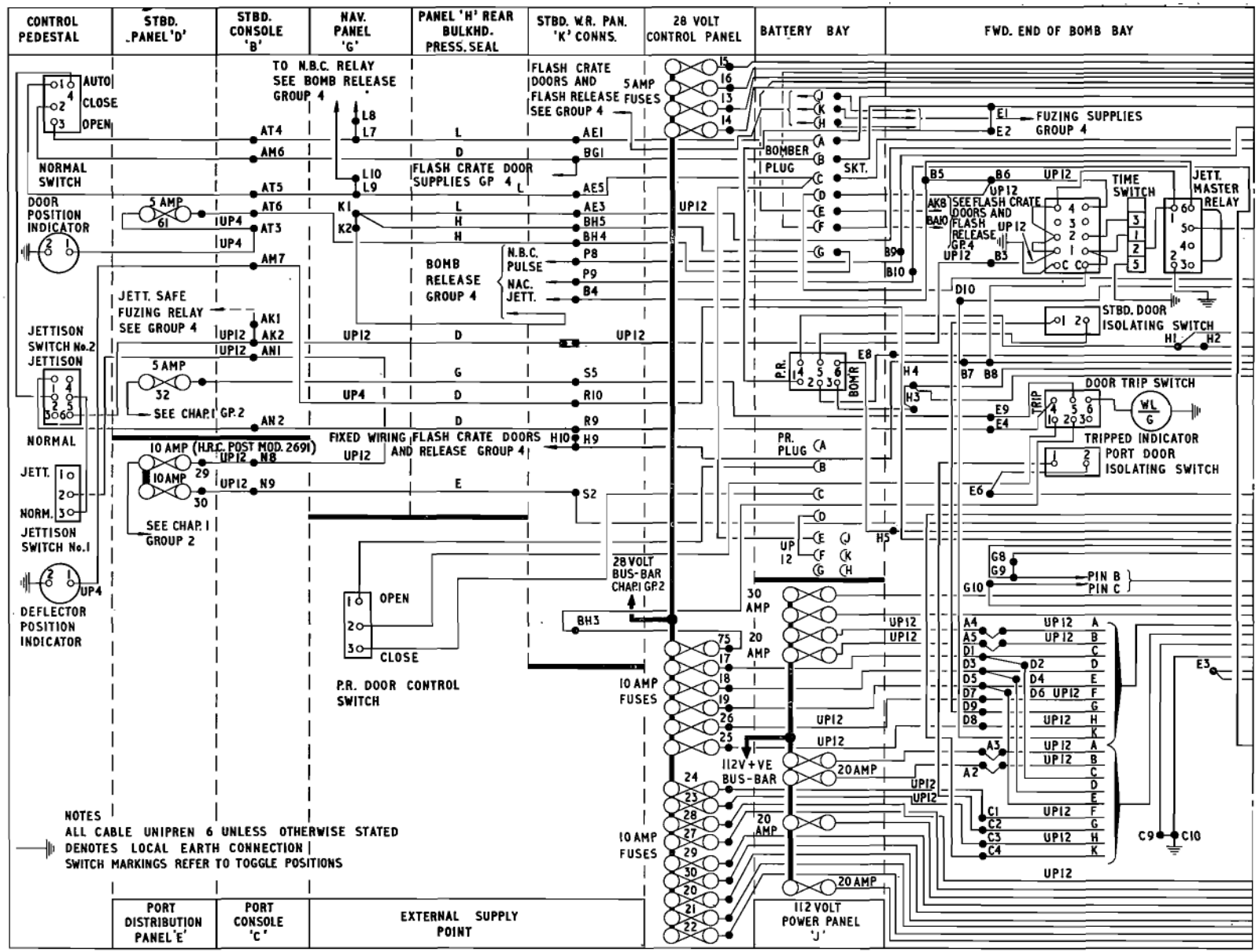

Fig. 13 (1) Bomb bay door control (post Mods. 1520, 2364 and 2484)

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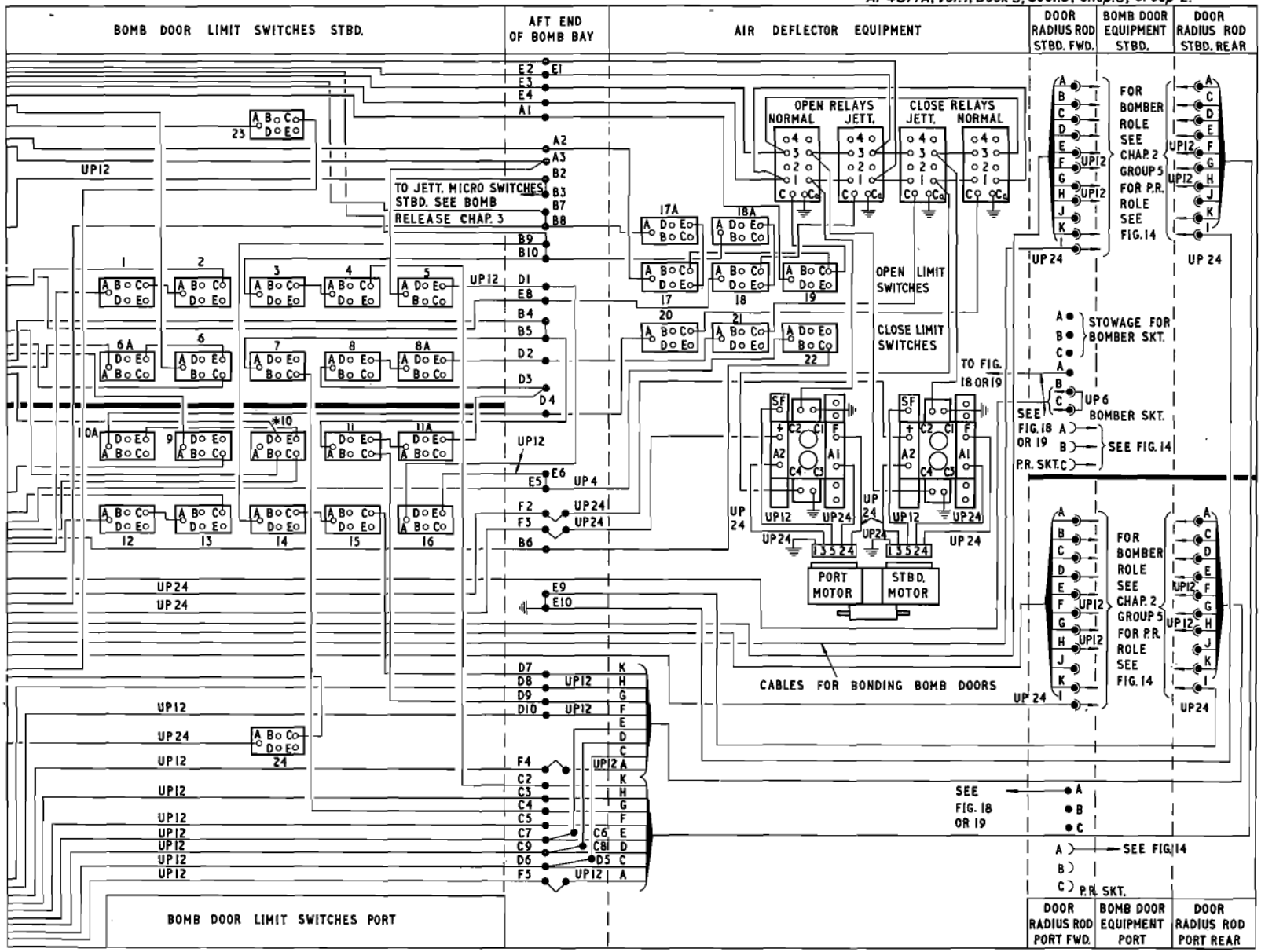

Fig. 13 (2) Bomb bay door control (post Mods 1520, 2364 and 2484)

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(A.L.8 NOV. '59)

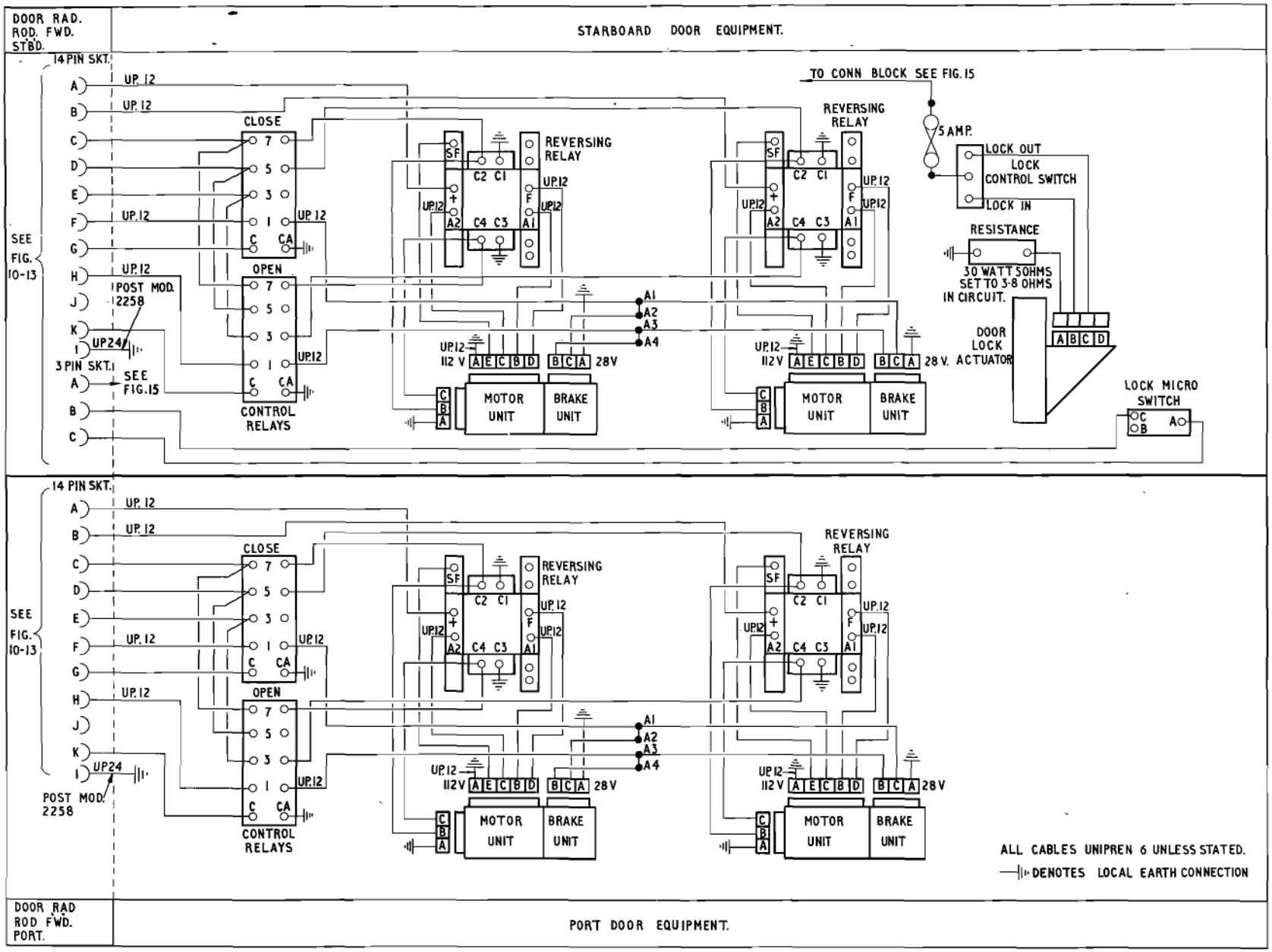

Fig. 14 P.R. Bomb bay door actuators and lock.

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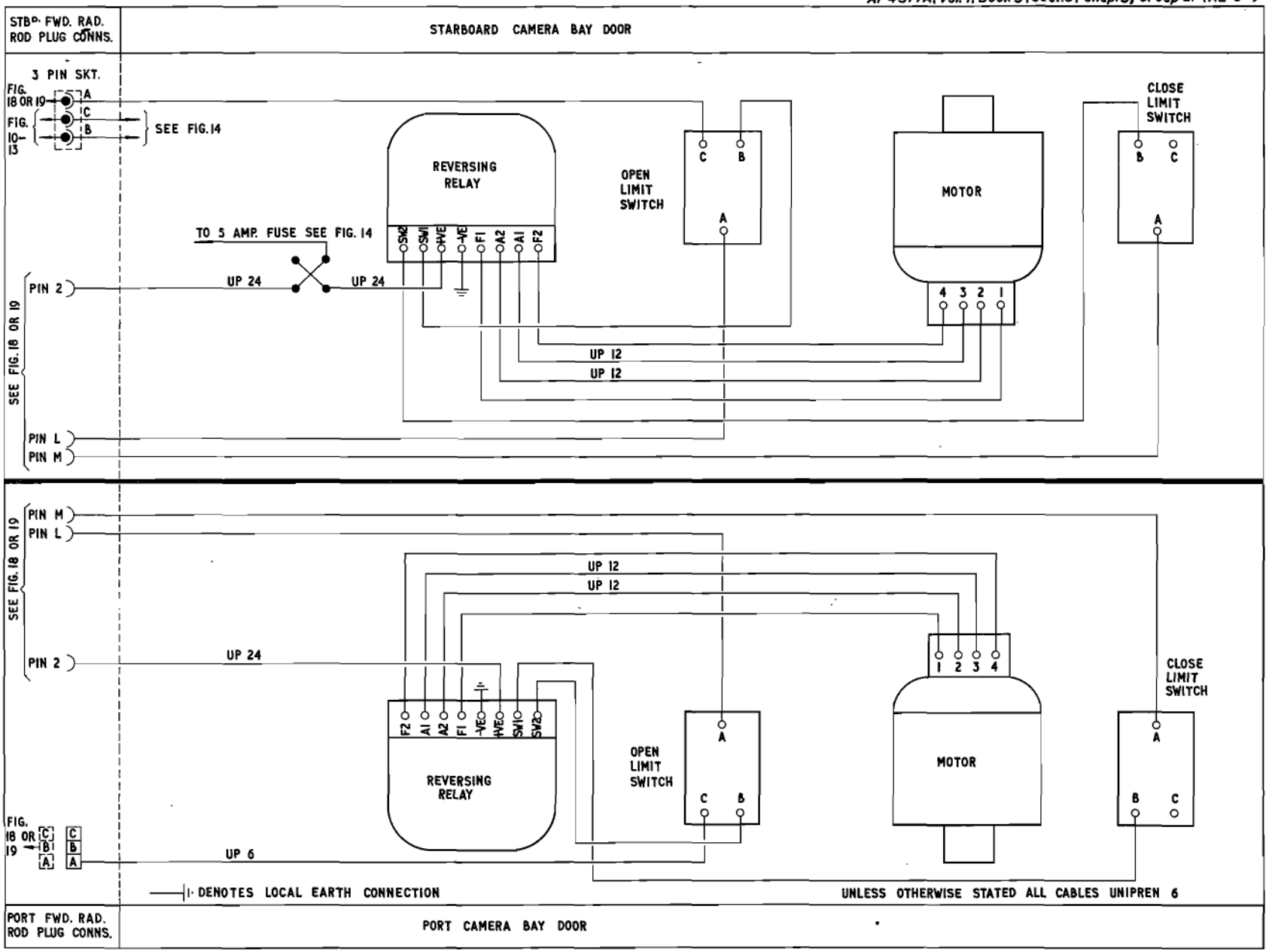

Fig. 15 Camera window doors

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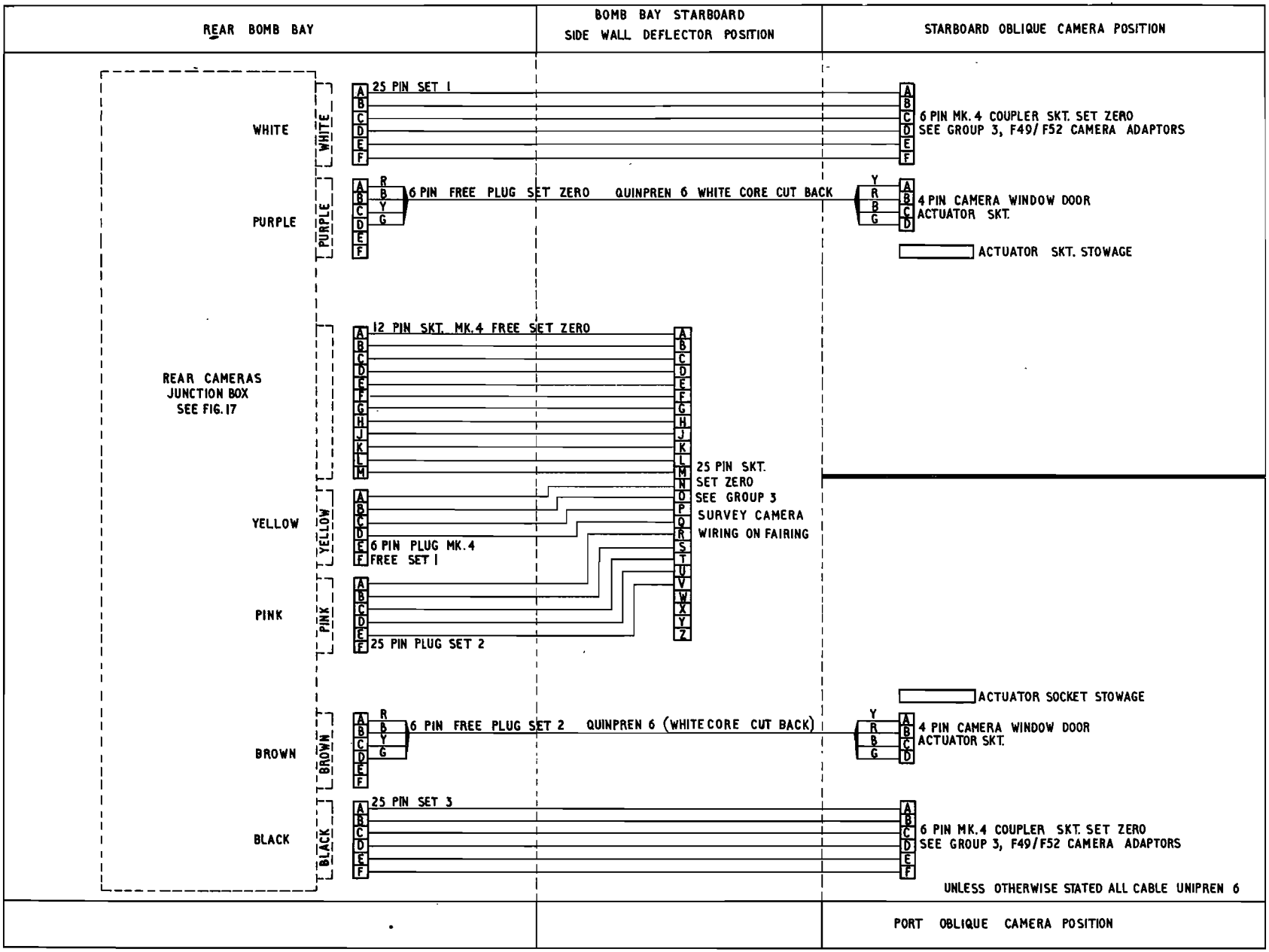

Fig. 16 Oblique cameras and window doors (Mod 1882)

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71036 SHT. 158 C-H

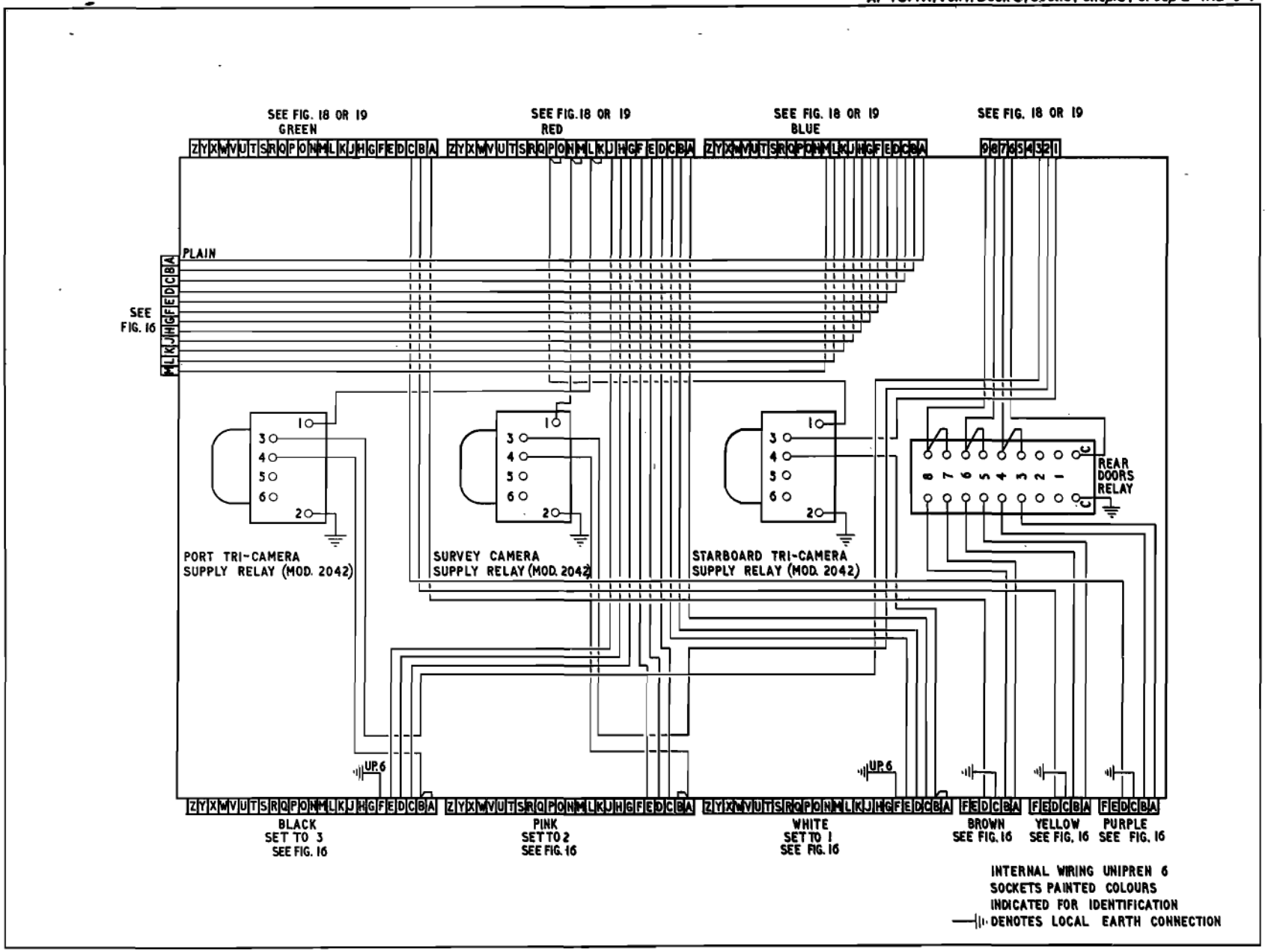

Fig. 17 Rear cameras junction box.

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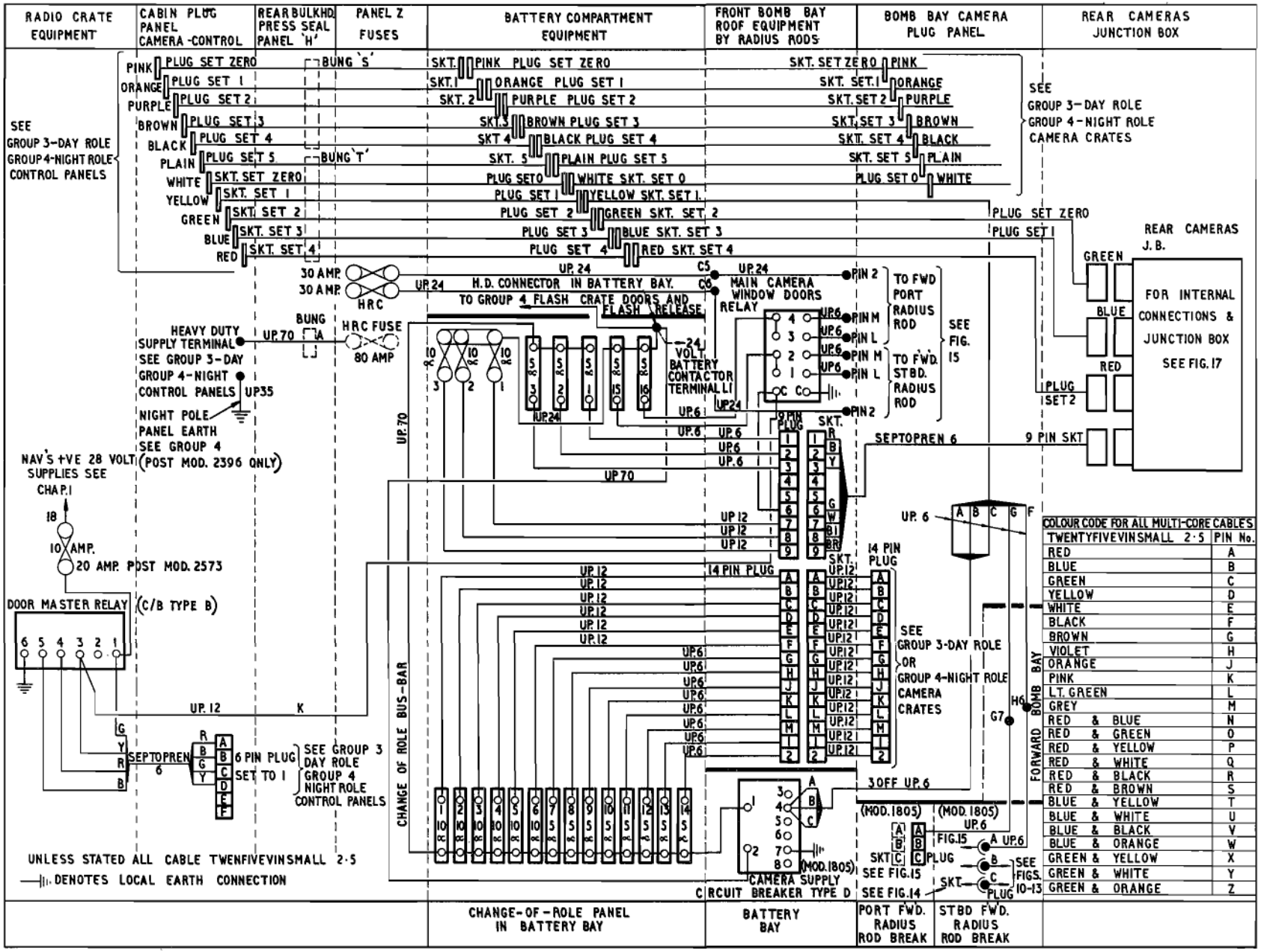

Fig. 18. Common, fixed, wiring in bomb bay (pre Mod. 2691)

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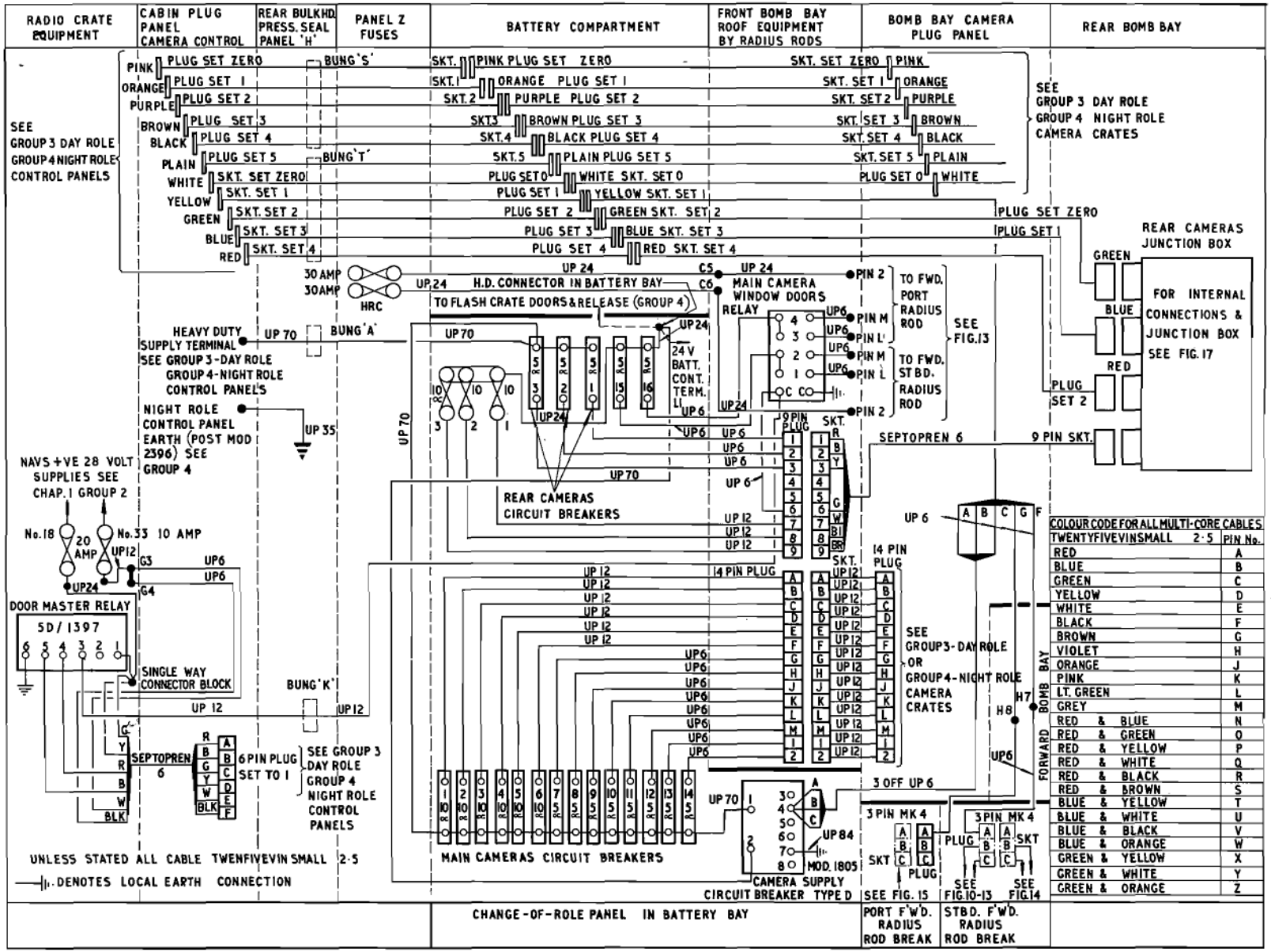

Fig. 19 Common, fixed, wiring in bomb bay (post Mod 2691)

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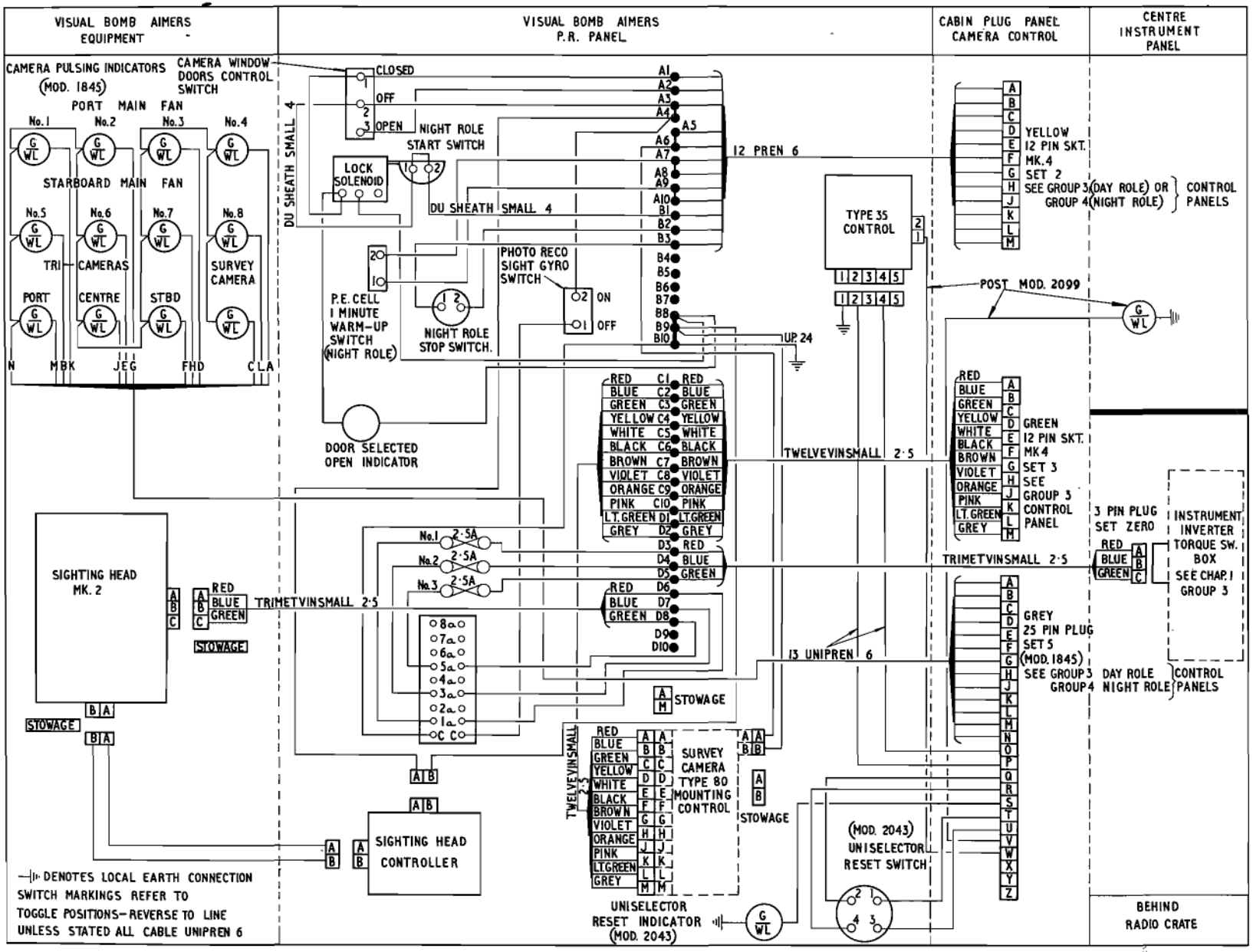

Fig. 20 Bomb aimers controls (post Mod. 2043, pre Mod. 2573)

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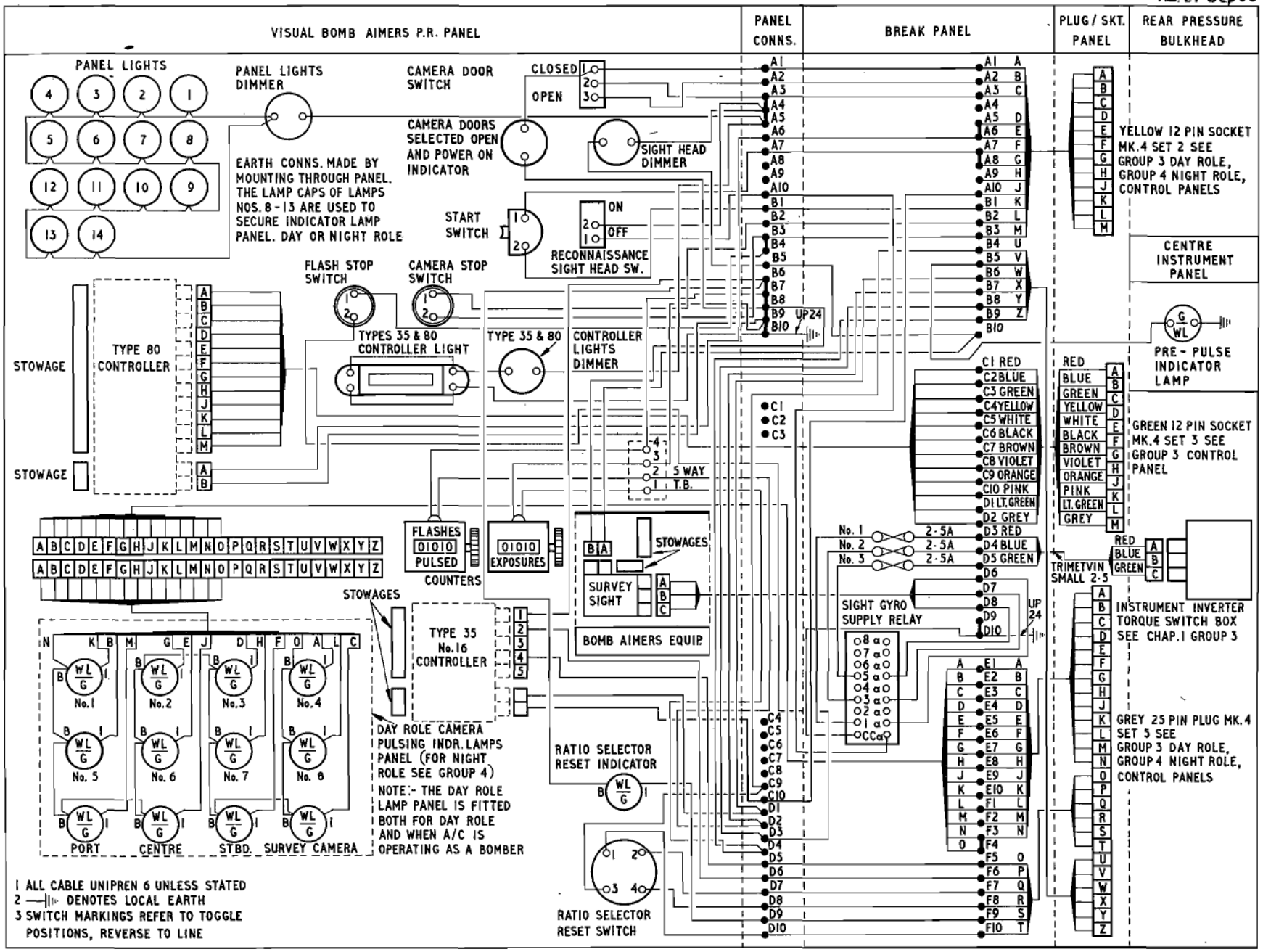

Fig. 21 Bomb aimers controls (post Mod. 2573 and 2935)

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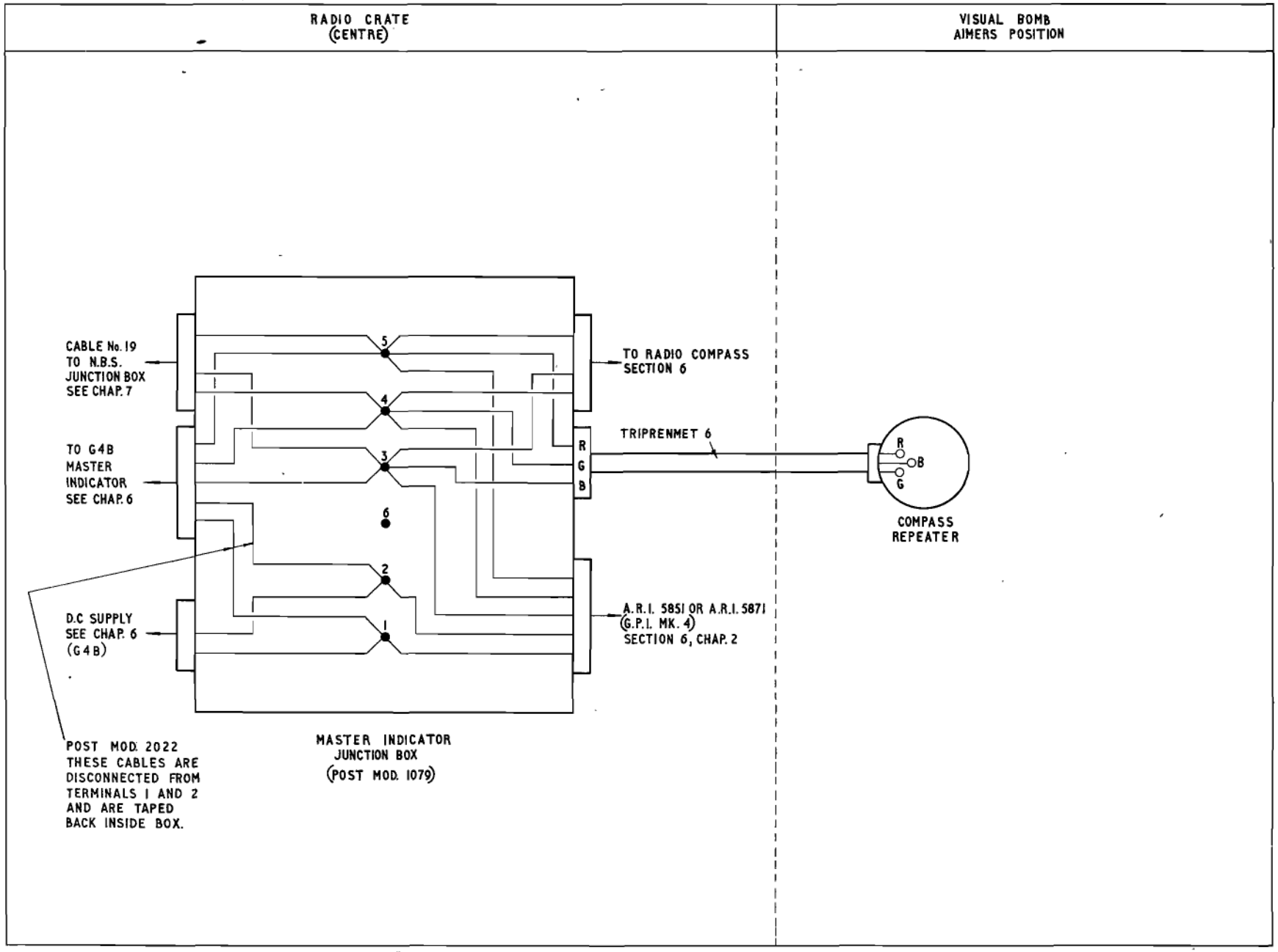

Fig. 22 Compass repeater

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71036 SHT. 149-F

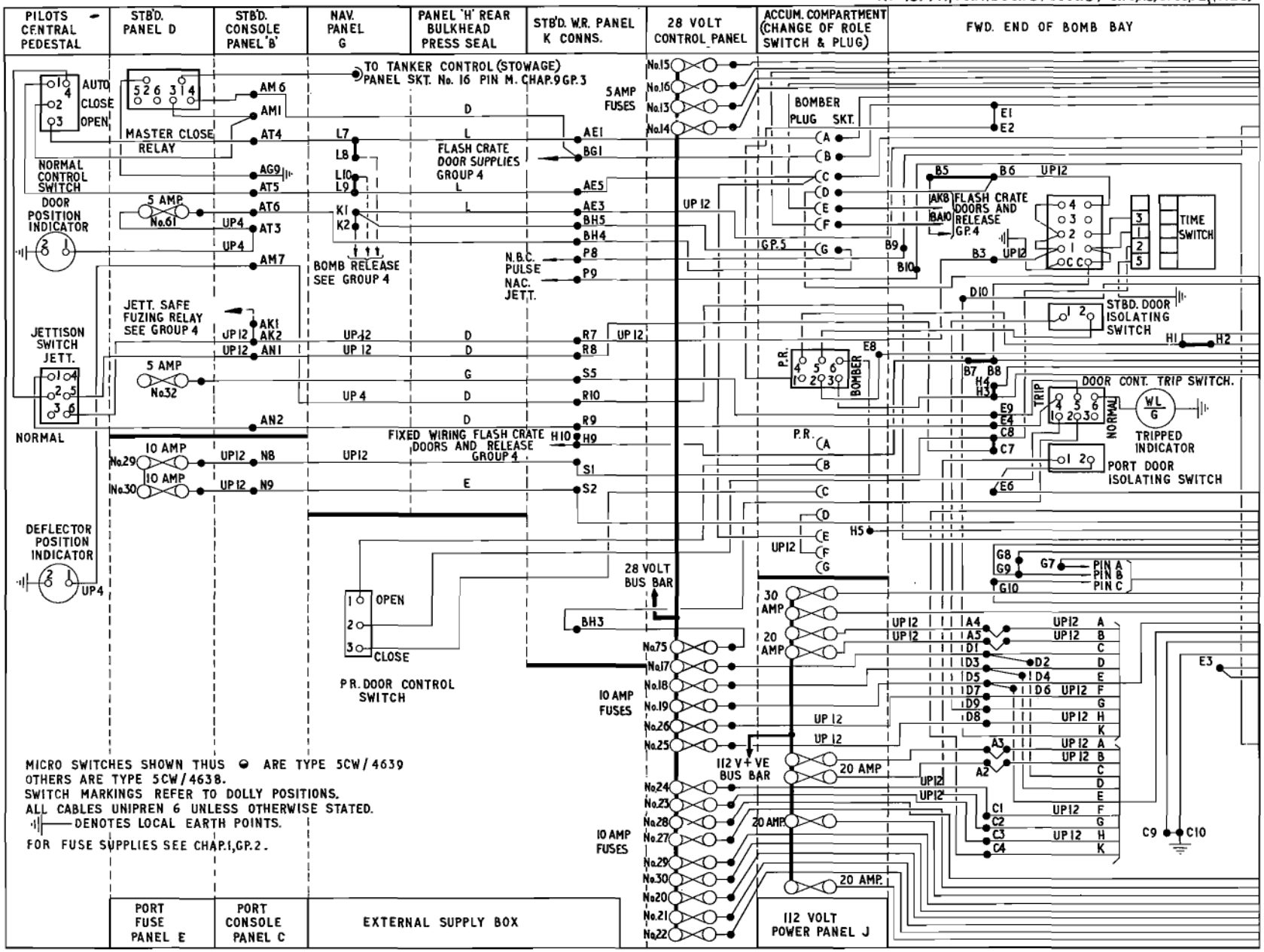

Fig. 23(1) Bomb bay door control (pre-Mod. 1520) B/K/PR MK. 1 Aircraft only

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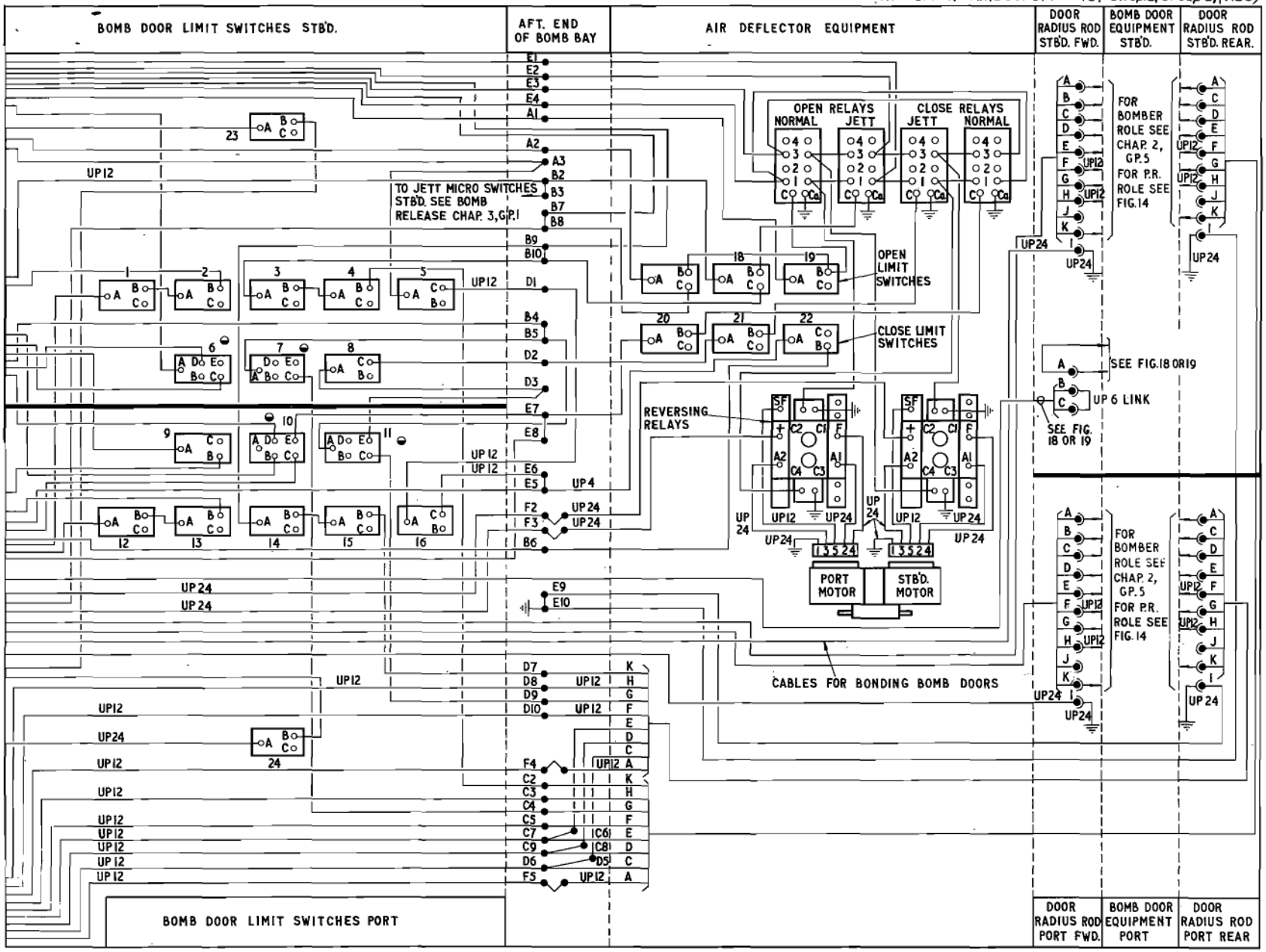

Fig.23(2)Bomb bay door control (pre-Mod 1520)B/K/PR MK.1 Aircraft only

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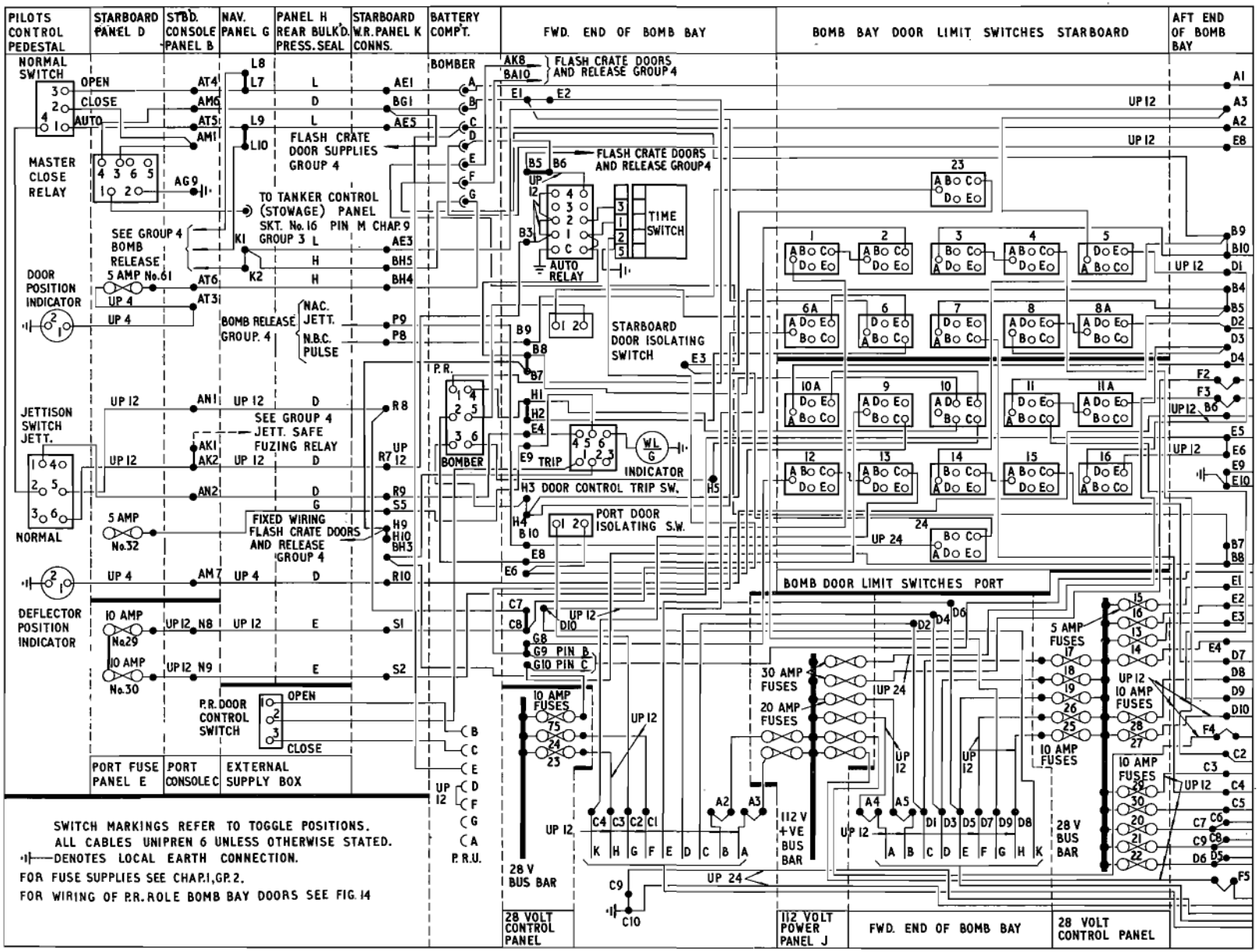

Fig. 24 (1) Bomb bay door control (post Mod 1520 pre Mod 2364)

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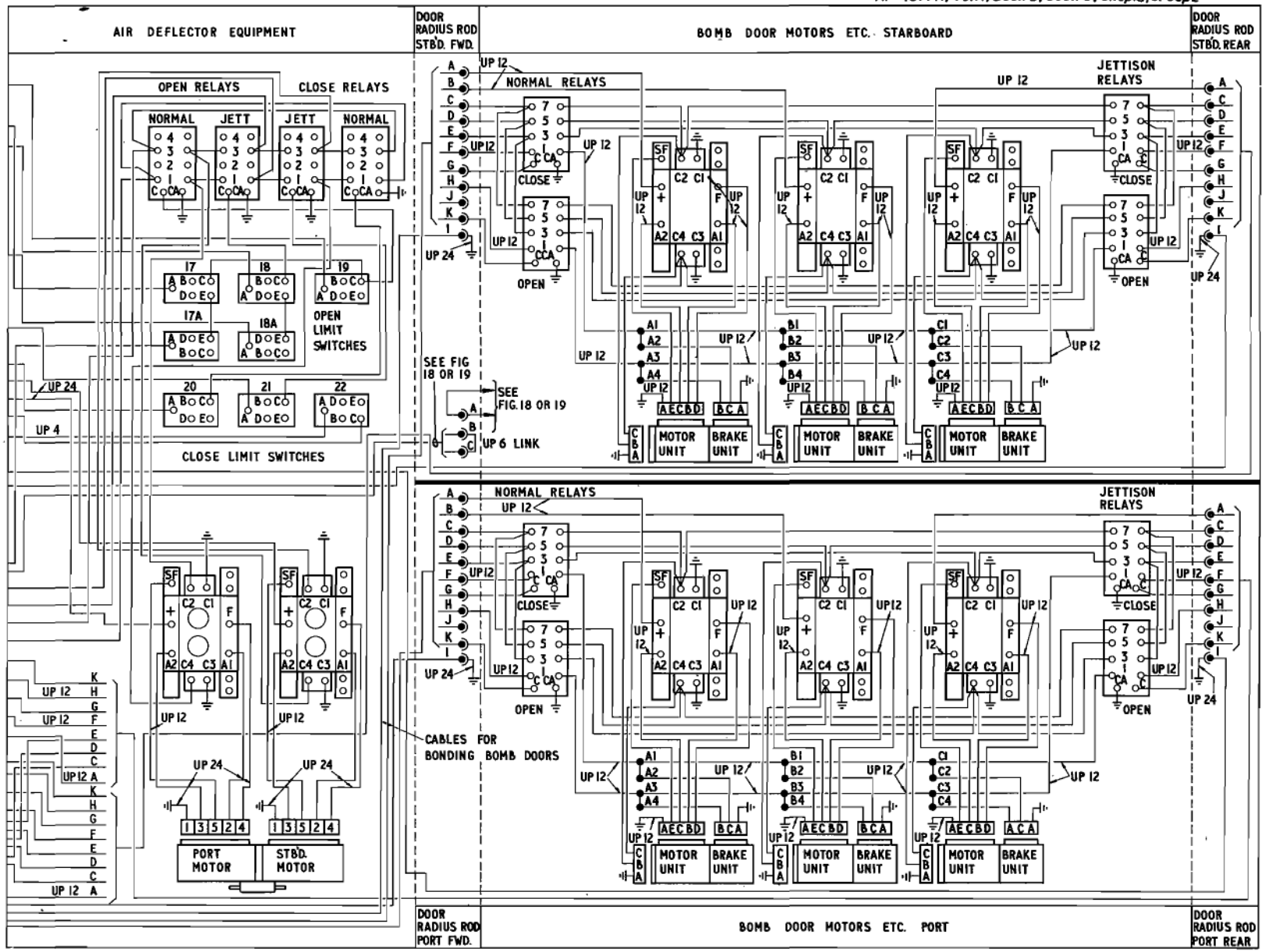

Fig. 24 (2) Bomb bay door control (post Mod. 1520 pre Mod 2364)

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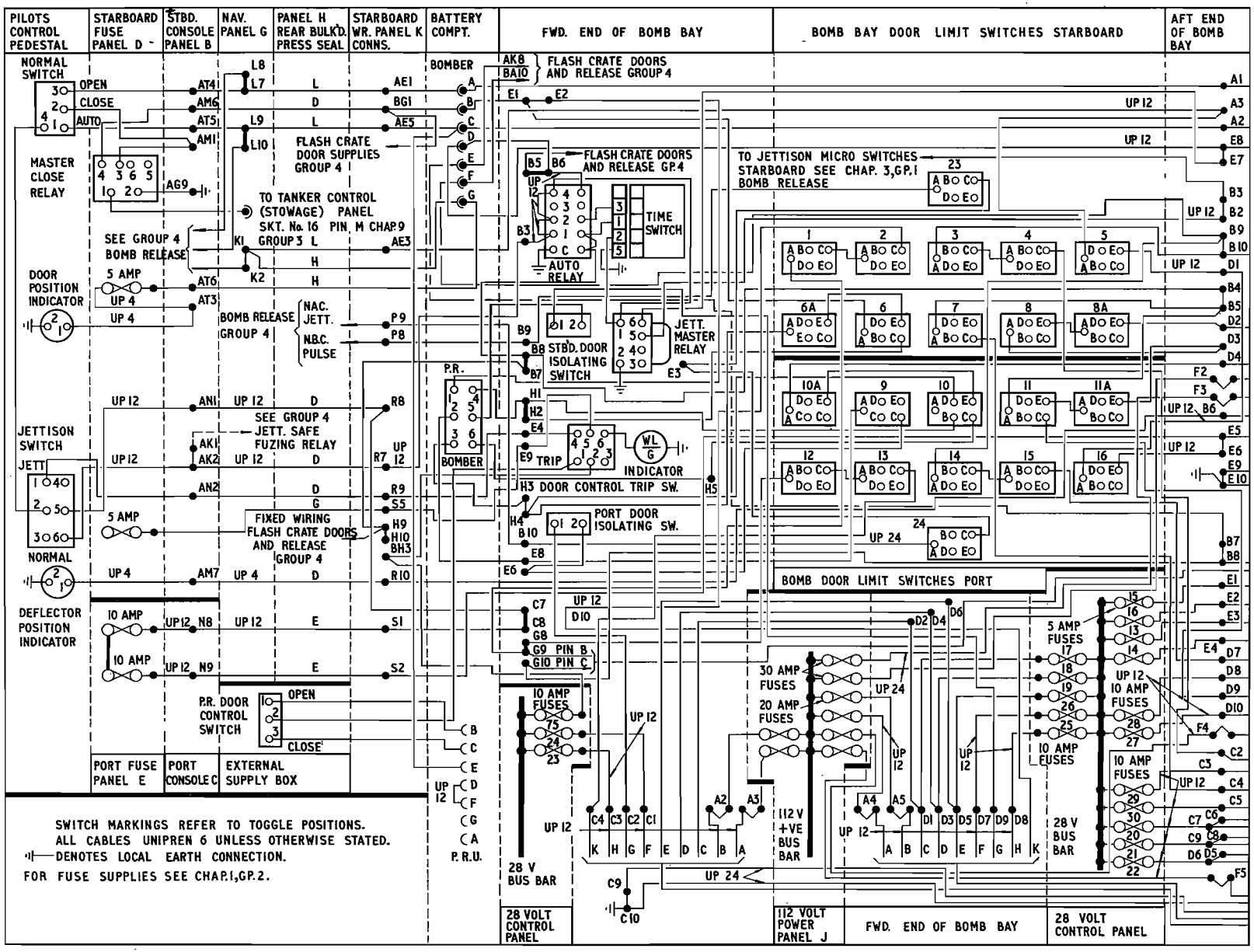

Fig. 25 (1) Bomb bay door control (post Mod 2364, pre Mod 2484)

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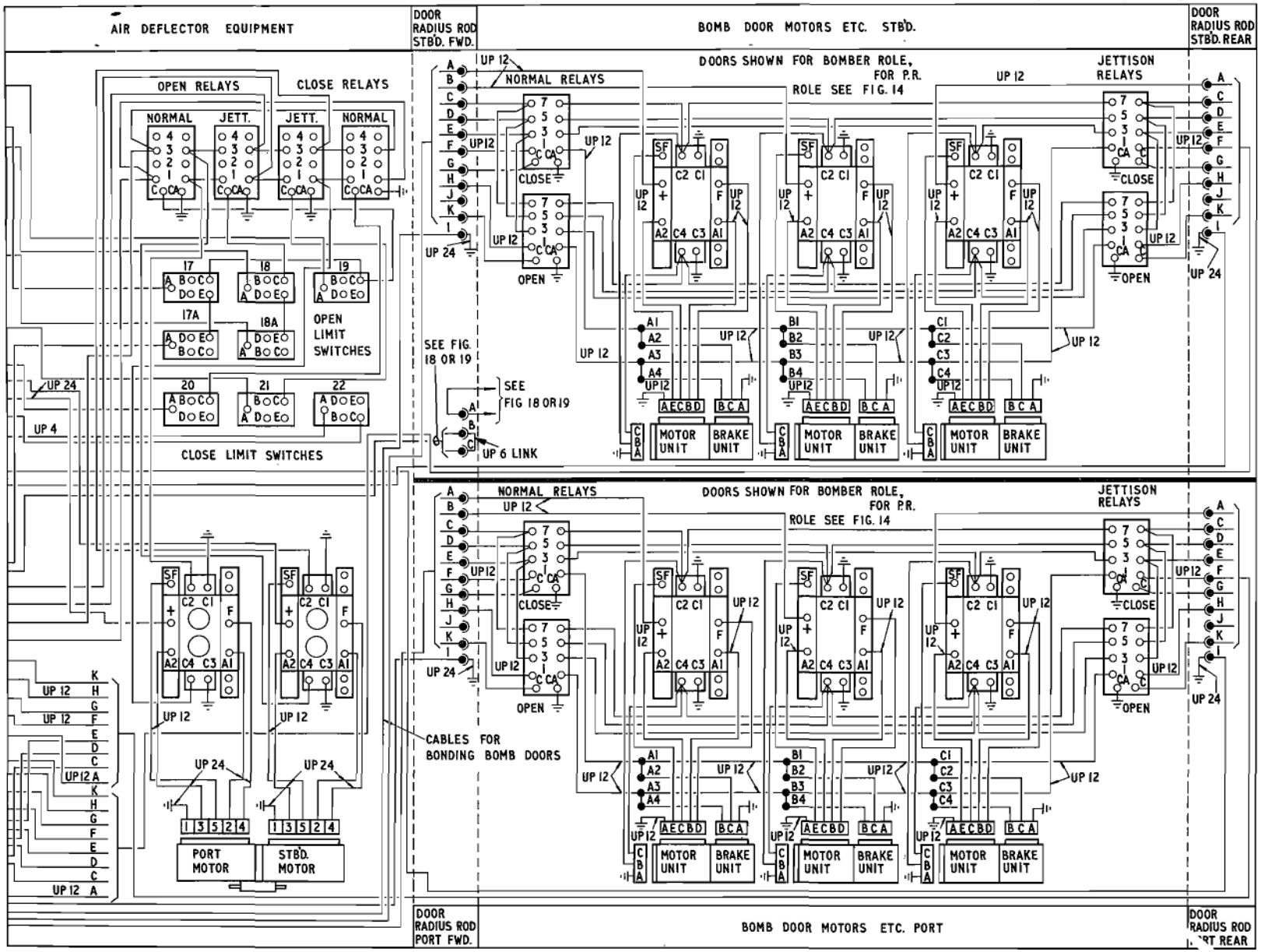

Fig. 25 (2) Bomb bay door control (post Mod 2364, pre Mod 2484)

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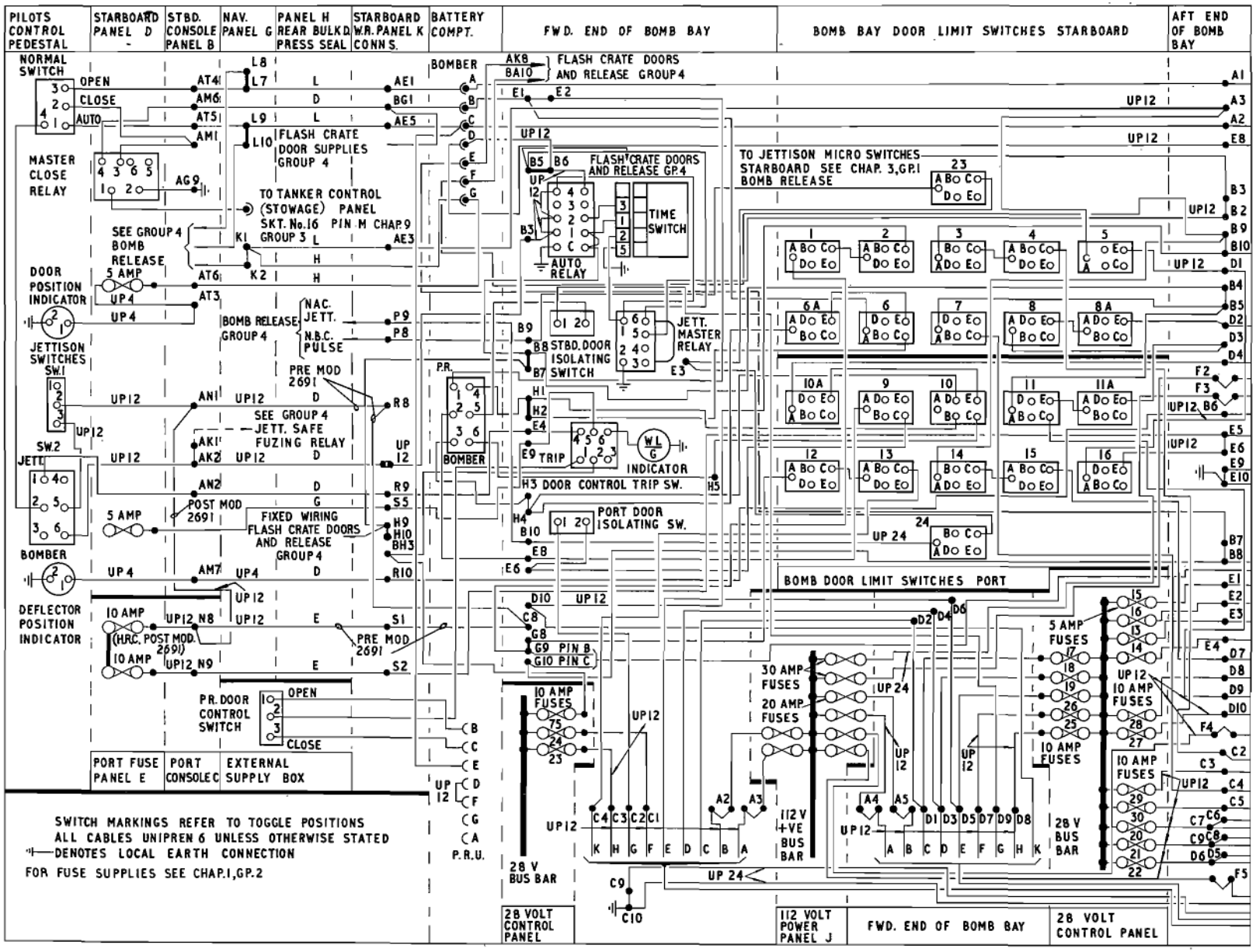

Fig 26 (1) Bomb bay door control (post Mod. 2484)

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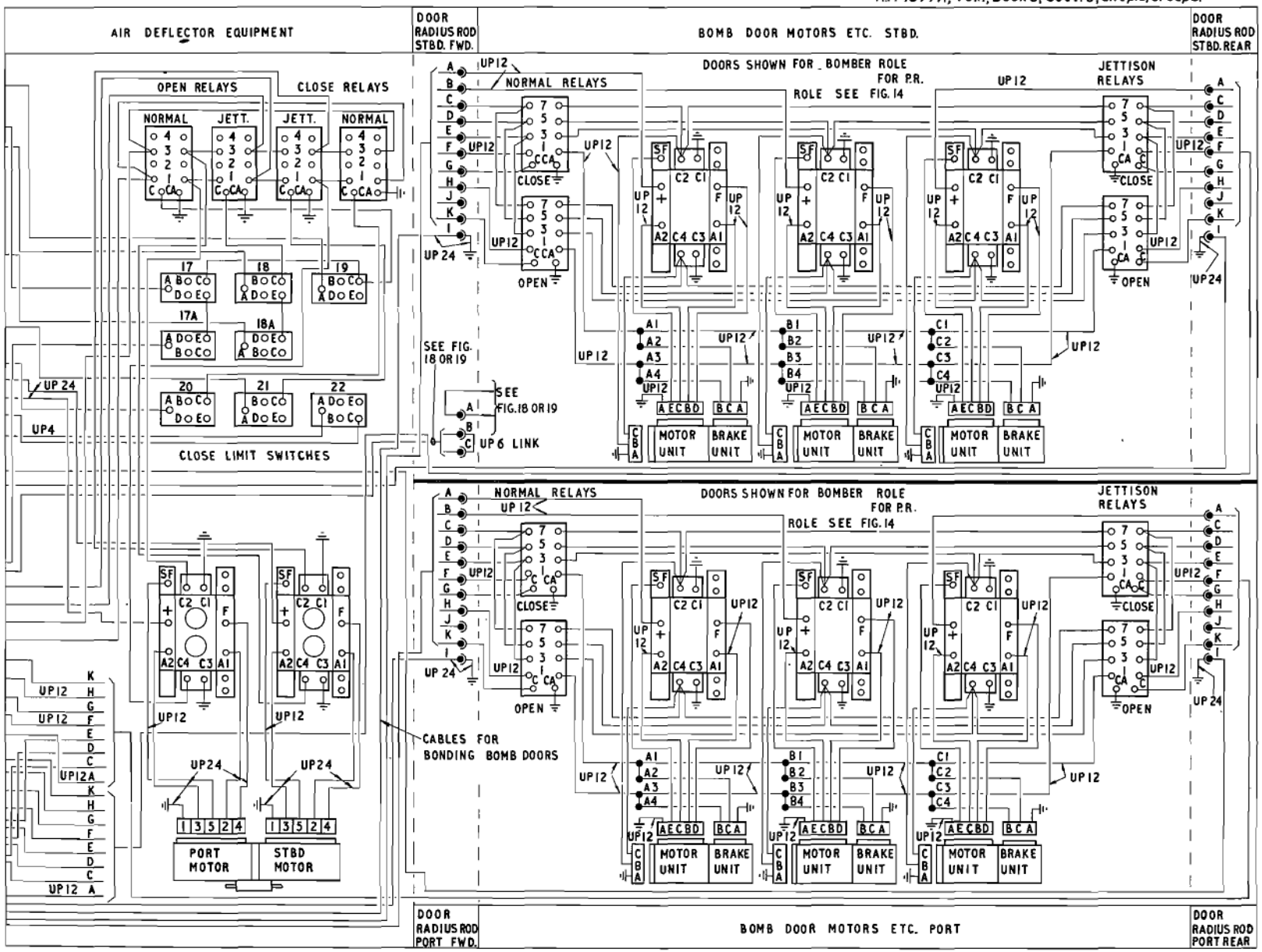

Fig. 26 (2) Bomb bay door control (post Mod. 2484)

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(A.L.8 NOV. '59)

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