Appendix 4

BOMB DOORS AND AIR DEFLECTOR TEST BOX

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DESCRIPTION AND OPERATION

Introduction

1. The bomb doors and air deflector test box is provided to facilitate the testing and servicing of the bomb doors and air deflector circuits, thereby simplifying fault tracing. The test box only enables the circuit wiring to be tested for continuity. No provision is made in the test box for functioning the bomb doors and air deflector.

Description

2. All the equipment required to carry out a complete continuity test of the bomb door and air deflector circuit wiring is contained in the box. There are eight sets of lamps mounted on the face of the box. Two sets represent the two deflector motors and the remaining six sets, the bomb door motor units. Each set of bomb door motor unit lamps consists of eight lamps, four for the motor circuits, two for the ratchet solenoids and two for the brake units. Each set of lamps is provided with a SERIES FIELD switch to connect a supply to the connection point of the negative side of the motor armature, thereby proving the series field circuit from the motor armature negative, through the series field contacts of the associated reversing relay.

Operation

3. When testing the bomb doors and air deflector circuitry the aircraft wiring is disconnected from the bomb door motor units and deflector motors and connected to the test box via the test looms. During this test no supplies are distributed from the test box, therefore the aircraft bus-bars must be energized. All bomb doors and air deflector function selections are made from the control switches in the aircraft cockpit and when made, together with the operation of various bomb door or air deflector limit micro-switches, will light lamps representing the various motor, ratchet solenoid and brake unit circuits.

B. Mk. 1. Testing the bomb doors and air deflector circuits

Procedure before testing

4. (1) Set the bomb doors in the ' servicing ' position and the air deflector in the ' half closed ' position. When in the ' servicing ' position connect the looms provided between the radius rod plugs and sockets.

(2) Release the following micro switches at the bottom of the bomb door racks. (The micro switches can be released by removing two fixing bolts of the micro switch bracket and slackening off the other bolt). Nos. 6, 6a, 7, 8, 8a, 9, 10, 10a, 11 and 11a.

Note . . .

Micro switches Nos. 6a, 8*a*, 10*a and* 11*a are post Mod.* 1520 *only.*

(3) Disconnect the aircraft looms from the motor units to be tested and connect the aircraft looms to the test box looms as detailed in Table 1.

(4) Check the following fuses:—

Panel D.	Nos. 32, 61.
Panel E.	Nos. 29, 30.
Panel Z.	Nos. 13 to 30 inclusive.
Panel Z.	No. 75 (P.R.U. only).
Panel J.	20-amp. H.R.C. (6 off).
Panel J.	30-amp. H.R.C. (2 off).

(5) Connect 112-volt and 28-volt d.c. supplies to the aircraft external supply connections.

To set the bomb doors in the servicing position

5. The procedure for setting the bomb doors in the servicing position is as follows:—

(1) Open the bomb doors.

(2) Select the starboard door isolator switch to ISOLATE.

(3) Select the control switch to CLOSE.

(4) Disconnect the plug and socket connections on the starboard radius rods. Remove the radius rods quick release pins and lower the door.

(5) Select the door trip switch to TRIP.

(6) Select the port door isolator switch to NORMAL.

(7) Select the door trip switch to NORMAL.

Note . . .

As soon as the port door reaches the fully closed position, and before the deflector starts to close, select the door trip switch to TRIP.

(8) Disconnect the plug and socket connections on the port door radius rods. Remove the radius rods quick release pins and lower the door.

(9) Using the door trip switch inch the deflector to the ' half closed ' position.

TABLE 1

Connections for testing the bomb doors and air deflector circuits

Loom Part No.	Test box connection	Aircraft connection
R	Socket No. 1	Starboard front motor
S	Socket No. 2	Starboard centre motor
T	Socket No. 3	Starboard rear motor
U	Socket No. 4	Port front motor
V	Socket No. 5	Port centre motor
W	Socket No. 6	Port rear motor
A.C.	Socket No. 7	Air deflector motors

Testing

6. Where reference is made, in the following instructions to the removal of any fuses proceed as follows:—

(1) Disconnect the external supply from the aircraft.

(2) Remove the fuse.

(3) Connect the external supply to the aircraft and check that the test box indication is correct.

(4) Disconnect the external supply from the aircraft and put back the fuse.

(5) Reconnect the external supply to the aircraft and check that the test box indication is correct.

Table 2

Bomb doors open

Location	Operation	Test box indication	Check
Control pedestal	Select NORMAL on the JETTISON/NORMAL switch		
Battery bay	Select DOOR TRIP switch to TRIP	(Green indicator lamp in the battery bay comes on)	
Battery bay	Select port and starboard door ISOLATOR switches to ISOLATE and ensure the time switch is connected in the circuit		
Control pedestal	Select the DOOR CONTROL switch to OPEN		
Battery bay	Select the DOOR TRIP switch to NORMAL	Deflectors Nos. 1 and 2 OPEN and SHUNT FIELD lamps on	Deflector normal open relay operates to energize deflector reversing relay OPEN coils
Test box	Select deflectors Nos. 1 and 2 SERIES FIELD switches	All deflectors Nos. 1 and 2 lamps on	
Panel D.	Break and make circuit with fuse No. 32	All deflectors Nos. 1 and 2 lamps go out and come on again	Main 28-volt supply to the DOOR CONTROL switch
Panel J.	Break and make circuit with both 30 amp. H.R.C. deflector fuses	Deflectors Nos. 1 and 2 lamps go out and come on again for associated fuse	
Panel Z.	Break and make circuit with fuse No. 13	Deflector No. 1 lamps go out and come on again	Main 28-volt supply to the port deflector reversing relay OPEN coil
Panel Z	Break and make circuit with fuse No. 14	Deflector No. 2 lamps go out and come on again	Main 28-volt supply to the starboard deflector reversing relay OPEN coil
Deflector beam	Operate NORMAL OPEN limit switch No. 17 and keep closed	Deflector Nos. 1 and 2 lamps go out	Deflector normal open relay coil de-energized
Deflector beam	Operate NORMAL OPEN limit micro switch No. 17A and keep closed	Lamps Nos. 1, 4, 5 and 7 in all bomb door motor positions come on	Bomb door port and starboard normal open relays operate to connect supplies to ratchet solenoids and reversing relay OPEN coils

Table 2—*continued*

Location	Operation	Test box indication	Check
Test box	Select deflector Nos. 1 and 2 SERIES FIELD switches OFF		
Test box	Select all bomb door SERIES FIELD switches	Lamps Nos. 1 to 5 and 7 in all bomb door motor positions on	
Panel D	Break and make circuit with fuse No. 32	All bomb door lamps go out and come on again	Main 28-volt supply to the DOOR CONTROL switch
Panel Z	Break and make circuit with fuse No. 17	Port and starboard forward bomb door lamps 1 to 5 go out and come on again	Main 28-volt supply to forward reversing relays OPEN coils and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 18	Port and starboard centre bomb door lamps 1 to 5 go out and come on again	Main 28-volt supply to centre reversing relays OPEN coils and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 19	Port and starboard rear bomb door lamps 1 to 5 go out and come on again	Main 28-volt supply to rear reversing relays OPEN coils and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 23	Port bomb door lamps No. 7 go out and come on again	Main 28-volt supply to port brakes
Panel Z	Break and make circuit with fuse No. 25	Starboard bomb door lamps No. 7 go out and come on again	Main 28-volt supply to starboard brakes
Panel J	Break and make circuit with each of the six bomb door motor 20 amp. H.R.C. fuses	All bomb door lamps 1 to 4 at each position go out and come on again for associated fuse	
Bomb bay	Operate port rear NORMAL UP micro switch No. 13 and release	All port bomb door lamps 1 to 5 and 7 go out and come on again	Port normal OPEN relay operates to break and make supplies to the brakes, ratchet solenoids and reversing relay relay OPEN coils
Bomb bay	Operate starboard rear NORMAL UP micro switch No. 2 and release	All starboard bomb door lamps 1 to 5 and 7 go out and come on again	Starboard normal OPEN relay operates to break and make supplies to brakes, ratchet solenoids and reversing relay OPEN coils
Bomb bay	Operate port front NORMAL UP micro switch No. 12 and release	All port bomb door lamps 1 to 5 and 7 go out and come on again	Port normal OPEN relay operates to break and make the supplies to the brakes. ratchet solenoids and reversing relay OPEN coils
Bomb bay	Operate starboard front NORMAL UP micro switch No. 1 and release	All starboard bomb door lamps 1 to 5 and 7 go out and come on again	Starboard normal OPEN relay operates to break and make supplies to brakes ratchet solenoids and reversing relay OPEN coils
Bomb bay	Select DOOR TRIP switch to TRIP	All bomb door lamps go out. (Green indicating lamp in the battery bay comes on)	
Bomb bay	Release NORMAL OPEN micro switches No. 17 and 17a		

Table 3

Bomb doors close

Location	Operation	Test box indication	Check
Control pedestal	Select the DOOR CONTROL switch to CLOSE		
Battery bay	Select DOOR TRIP switch to NORMAL	(Green indicating lamp in the battery bay goes out)	
Battery bay	Select port door ISOLATOR switch to NORMAL	Port bomb door lamps 2, 4, 6 and 8 come on	Port door CLOSE relay operates to connect supplies to brakes, ratchet solenoids and reversing relay CLOSE coils
Battery bay	Select starboard door ISOLATOR switch to NORMAL	Starboard bomb door lamps 2, 4, 6 and 8 come on	Starboard door CLOSE relay operates to connect supplies to brakes, ratchet solenoids and reversing relay CLOSE coils
Test box	Select all bomb door SERIES FIELD switches	Lamps Nos. 1 to 4, 6 and 8 come on at all positions	
Panel D	Break and make circuit with fuse No. 32	All bomb door lamps go out and come on again	Main 28-volt supply to DOOR CONTROL switch
Panel Z	Break and make circuit with fuse No. 17	Port and starboard forward bomb door lamps 1 to 4 and 6 go out and Come on again	Main 28-volt supply for forward reversing relays CLOSE coils and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 18	Port and starboard centre bomb door lamps 1 to 4 and 6 go out and come on again	Main 28-volt supply to centre reversing relays CLOSE coils and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 19	Port and starboard rear bomb door lamps 1 to 4 and 6 go out and come on again	Main 28-volt supply to rear reversing relays CLOSE coils and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 24	All port bomb door lamps No. 8 go out and come on again	Main 28-volt supply to port brakes
Panel Z	Break and make circuit with fuse No. 26	All starboard bomb door lamps No. 8 go out and come on again	Main 28-volt supply to starboard brakes
Panel J.	Break and make circuit with each of the six bomb door motor 20 amp. H.R.C. fuses	Bomb door lamps 1 to 4 at each position go out and come on again for associated fuse	
Bomb bay	Operate port NORMAL DOWN micro switch No. 9 and release	Port bomb door lamps 1 to 4, 6 and 8 go out and come on again	Port normal CLOSE relay operates to break and make supplies to brakes, ratchet solenoids and reversing relay CLOSE coils
Bomb bay	Operate starboard NORMAL DOWN micro switch No. 6 and hold closed	Starboard bomb door lamps 1 to 4, 6 and 8 go out	Starboard normal CLOSE relay coil de-energized and breaks supplies to brakes, ratchet solenoids and reversing relay CLOSE coils

Table 3—*continued*

Location	Operation	Test box indication	Check
Bomb bay	Operate starboard NORMAL DOWN micro switch No. 6A and hold closed		
Bomb bay	Operate deflector control NORMAL limit micro switch No. 10 and hold closed		
Bomb bay	Operate deflector control NORMAL limit micro switch No. 10A and hold closed	Deflectors Nos. 1 and 2 CLOSED and SHUNT FIELD lamps come on	Deflector CLOSE relay coil energized and connects supplies to reversing relays CLOSE coils
Bomb bay	Release NORMAL DOWN limit micro switch No. 6A and then re-close	Deflectors Nos. 1 and 2 CLOSED and SHUNT FIELD lamps go out and come on again	Deflector CLOSE relay operates to break and make supplies to reversing relay CLOSE coils
Bomb bay	Release deflector control NORMAL limit switch No. 10 and then reclose	Deflectors Nos. 1 and 2 CLOSED and SHUNT FIELD lamps go out and come on again	Deflector CLOSE relay operates to break and make supplies to reversing relay CLOSE coils
Bomb bay	Release deflector control NORMAL limit micro switch No. 10A and then reclose	Deflectors Nos. 1 and 2 CLOSED and SHUNT FIELD lamps go out and come on again	Deflector CLOSE relay operates to break and make supplies to reversing relay CLOSE coils
Bomb bay	Release starboard NORMAL DOWN limit micro switch No. 6 and then reclose	Deflectors Nos. 1 and 2 CLOSED and SHUNT FIELD lamps go out and come on again. All starboard bomb door lamps 1 to 4, 6 and 8 come on and go out again	Deflector CLOSE relay operates to break and make supplies to reversing relay CLOSE coils When micro switch is released the starboard normal CLOSE relay coil is energized
Test box	Return all bomb door SERIES FIELD switches to OFF		
Test box	Select deflectors Nos. 1 and 2 SERIES FIELD switches	All deflectors Nos. 1 and 2 lamps on	
Deflector beam	Operate NORMAL DOWN limit micro switch No. 20 and then release	All deflector lamps go out and come on again	Deflector CLOSE relay operates to break and make supplies to reversing relay CLOSE coils
Panel Z	Break and make circuit with fuse No. 13	All deflector No. 1 lamps go out and come on again	Main 28-volt supply to port reversing relay CLOSE coil
Panel Z	Break and make circuit with fuse No. 14	All deflector No. 2 lamps go out and come on again	Main 28-volt supply to starboard reversing relay CLOSE coil
Panel J	Break and make circuit with both deflector motor 30 amp. H.R.C. fuses	Associated deflector lamps go out and come on again	
Panel D	Break and make circuit with fuse No. 32	Deflector Nos. 1 and 2 lamps go out and come on again	Main 28-volt supply to DOOR CONTROL switch
Battery bay	Select DOOR TRIP switch to TRIP	All deflector lamps go out. (Green indicating lamp in battery bay comes on)	
Battery bay	Select port and starboard door ISOLATOR switches to ISOLATE		
Test box	Select the deflector SERIES FIELD switches to OFF		
Bomb bay	Release all micro switches previously made		

Table 4

Auto (deflector)

Location	Operation	Test box indication	Check
Control pedestal	Select the DOOR CONTROL switch to AUTO.		
Battery bay	Select DOOR TRIP switch to NORMAL	Deflector Nos. 1 and 2 OPEN and SHUNT FIELD lamps come on. (Green indicating lamp in the battery bay goes out)	Deflector OPEN relay operates to connect supplies to the reversing relay OPEN coils
Test box	Select deflector Nos. 1 and 2 SERIES FIELD switches	All deflector Nos. 1 and 2 lamps come on	
Bomb bay	Operate NORMAL UP limit micro switch No. 19 and release	All deflector lamps go out and come on again (Bomb door open lamps should not come on)	Deflector OPEN relay operates to break and make the supplies to the reversing relay OPEN coils
Panel Z	Break and make circuit with fuse No. 13	Deflector No. 1 lamps go out and come on again	Main 28-volt supply to port reversing relay OPEN coil
Panel Z	Break and make circuit with fuse No. 14	Deflector No. 2 lamps go out and come on again	Main 28-volt supply to starboard reversing relay OPEN coil
Panel J	Break and make circuit with both deflector motor 30 amp. H.R.C. fuses	Deflector Nos. 1 and 2 lamps go out and come on again for associated fuse	
Panel D	Break and make circuit with fuse No. 32	Deflector Nos. 1 and 2 lamps go out and come on again	Main 28-volt supply to DOOR CONTROL switch
Battery bay	Select DOOR TRIP switch to TRIP	All deflector lamps go out. (Green indicating lamp in battery bay comes on)	
Test box	Select deflector Nos. 1 and 2 SERIES FIELD switches to OFF		
Control pedestal	Select the DOOR CONTROL switch to CLOSE		

Table 5

Jettison open

Note . . . *Remove the plug from the time switch.*

Location	Operation	Test box indication	Check
Control pedestal	Select JETTISON on the JETTISON /NORMAL switch	Deflector Nos. 1 and 2 OPEN and SHUNT FIELD lamps come on	Deflector JETT. OPEN relay operates to connect supplies to reversing relay OPEN coils
Test box	Select deflector Nos. 1 and 2 SERIES FIELD switches	All deflector Nos. 1 and 2 lamps come on	
Bomb bay	Operate deflector JETT. OPEN micro switch No. 18 and release	Deflector Nos. 1 and 2 lamps go out and come on again	Deflector JETT. OPEN relay operates to break and make circuit to reversing relay OPEN coils
Panel E	Break and make circuit with fuse No. 29	Deflector Nos. 1 and 2 lamps go out and come on again	Main 28-volt supply to JETT/NORMAL switch
Panel Z	Break and make circuit with fuse No. 15	Deflector No. 2 lamps go out and come on again	Main 28-volt supply to starboard reversing relay OPEN coil
Panel Z	Break and make circuit with fuse No. 16	Deflector No. 1 lamps go out and come on again	Main 28-volt supply to port reversing relay OPEN coil
Panel J	Break and make circuit with both deflector motor 30 amp. H.R.C. fuses	Deflector Nos. 1 and 2 lamps go out and come on again with associated fuse	
Bomb bay	Operate deflector JETT. OPEN micro switch No. 18 and hold closed	Deflector Nos 1 and 2 lamps go out	Deflector JETT. OPEN relay coil de-energized disconnecting supplies to reversing relay OPEN coils
Bomb bay	Operate deflector JETT. OPEN micro switch No. 18A and hold closed	All bomb door lamps 1, 4, 5 and 8 come on	JETT. OPEN relay coils energized connecting supplies to reversing relay OPEN coils, ratchet solenoids and brakes
Test box	Select deflector Nos. 1 and 2 SERIES FIELD switches to OFF		
Test box	Select all bomb door SERIES FIELD switches	All bomb door lamps 1 to 5 and 8 come on	
Bomb bay	Operate port rear JETT. UP micro switch No. 15 and release	All port bomb door lamps 1 to 5 and 8 go out and come on again	Port JETT. OPEN relay operates to break and make supplies to reversing relays OPEN coils, ratchet solenoids and brakes

TABLE 5—*continued*

Location	Operation	Test box indication	Check
Bomb bay	Operate starboard rear JETT. UP micro switch No. 4 and release	All starboard bomb door lamps 1 to 5 and 8 go out and come on again	Starboard JETT. OPEN relay operates to break and make supplies to reversing relays OPEN coils ratchet solenoids and brakes
Bomb bay	Operate port front JETT. UP micro switch No. 14 and release	All port bomb door lamps 1 to 5 and 8 go out and come on again	Port JETT. OPEN relay operates to break and make supplies to reversing relays OPEN coils ratchet solenoids and brakes
Bomb bay	Operate starboard front JETT. UP micro switch No. 3 and release	All starboard bomb door lamps 1 to 5 and 8 go out and come on again	Starboard JETT. OPEN relay operates to break and make supplies to reversing relays OPEN coils, ratchet solenoids and brakes
Panel Z	Break and make circuit with fuse No. 20	All port and starboard rear bomb door lamps 1 to 5 go out and come on again	Main 28-volt supply to reversing relays and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 21	All port and starboard centre bomb door lamps 1 to 5 go out and come on again	Main 28-volt supply to reversing relays and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 22	All port and starboard forward lamps 1 to 5 go out and come on again	Main 28-volt supply to reversing relays and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 29	All starboard bomb door lamps No. 8 go out and come on again	Main 28-volt supply to brakes
Panel Z	Break and make circuit with fuse No. 28	All port bomb door lamps No. 8 go out and come on again.	Main 28-volt supply to brakes
Panel J	Break and make circuit with six bomb door motor 20 amp. H.R.C. fuses	1 to 4 bomb door lamps go out and come on again with associated fuse	
Panel E	Break and make circuit with fuse No. 29	All bomb door lamps 1 to 5 and 8 go out and come on again	
Test box	Select all SERIES FIELD switches to OFF		

Table 6

Jettison close

Location	Operation	Test box indication	Check
	NOTE:—Connect the time switch into the circuit and allow the clock to complete its cycle	Bomb door lamps 2, 4, 6 and 7 come on at all positions	Port and starboard JETT. CLOSE relay coils energized connecting supplies to the reversing relays CLOSE coils, ratchet solenoids and brakes
Test box	Select bomb door SERIES FIELD switches	Bomb door lamps 1 to 4, 6 and 7 come on at all positions	
Bomb bay	Operate port bomb door JETT. limit micro switch No. 11 and release	All port bomb door lamps 1 to 4, 6 and 7 go out and come on again	Port JETT. CLOSE relay operates to break and make supplies to reversing relay CLOSE coils, ratchet solenoids and brakes
Bomb bay	Operate starboard bomb door JETT. DOWN limit switch No. 7 and release	All starboard bomb door lamps 1 to 4, 6 and 7 go out and come on again	Starboard JETT. CLOSE relay operates to break and make supplies to reversing relay CLOSE coils, ratchet solenoids and brakes
Battery bay	Operate DOOR TRIP switch to TRIP and return to NORMAL	All port and starboard bomb door lamps STAY ON. (Green indicating lamp in battery bay comes on and goes out)	DOOR TRIP switch not in JETTISON circuit
Battery bay	Operate port and starboard bomb door ISOLATOR switches to ISOLATE	All port and starboard bomb door lamps STAY ON	Switches not in JETTISON circuit
Panel Z	Break and make circuit with fuse No. 20	All port and starboard rear bomb door lamps 1 to 4 and 6 go out and come on again	Main 28-volt supply to reversing relay CLOSE coils and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 21	All port and starboard centre bomb door lamps 1 to 4 and 6 go out and come on again	Main 28-volt supply to reversing relay CLOSE coils and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 22	All port and starboard forward bomb door lamps 1 to 4 and 6 go out and come on again	Main 28-volt supply to reversing relay CLOSE coils and ratchet solenoids
Panel Z	Break and make circuit with fuse No. 27	All port bomb door lamps No. 7 go out and come on again	Main 28-volt supply to brakes
Panel Z	Break and make circuit with fuse No. 30	All starboard bomb door lamps No. 7 go out and come on again	Main 28-volt supply to brakes

TABLE 6—*continued*

Location	Operation	Test box indication	Check
Panel E.	Break and make circuit with fuse No. 29	All port and starboard bomb door lamps 1 to 4, 6 and 7 go out and come on again when time switch has completed its full cycle (i.e. 40 secs). (Lamps Nos. 1 to 5 and 8 will come on during cycle)	Main 28-volt supply to JETTISON switch Only if micro switches Nos. 18 and 18A are held closed
Test box	Select all bomb door SERIES FIELD switches to OFF	All bomb door lamps 1 and 3 go out	
Bomb bay	Operate port bomb door JETT. DOWN limit micro switch No. 11 and hold closed	All port bomb door lamps 2, 4, 6 and 7 go out	Port JETT. CLOSE relay coil de-energized disconnecting supplies to reversing relay CLOSE coils, ratchet solenoids and brakes
Bomb bay	Operate JETT. DOWN limit micro switch No. 11A and hold closed		
Bomb bay	Operate starboard bomb door JETT. DOWN limit micro switch No. 7 and hold closed	All starboard bomb door lamps 2, 4, 6 and 7 go out	Starboard JETT. CLOSE relay coil de-energized disconnecting supplies to reversing relay CLOSE coils, ratchet solenoids and brakes
Bomb bay	Operate deflector control limit micro switch No. 8 and hold closed		
Bomb bay	Operate deflector control limit micro switch No. 8A and hold closed	Deflector Nos. 1 and 2 CLOSED and SHUNT FIELD lamps come on	Deflector JETT. CLOSE relay coil energized and connects supplies to reversing relay CLOSE coils
Test box	Select deflector Nos. 1 and 2 SERIES FIELD switches	All deflector Nos. 1 and 2 lamps come on	
Bomb bay	Release and remake deflector control limit micro switch No. 8A	All deflector lamps go out and come on again	Deflector JETT. CLOSE relay coil operates to break and make supplies to reversing relay CLOSE coils
Bomb bay	Release and remake deflector control limit micro switch No. 8	All deflector lamps go out and come on again	Deflector JETT. CLOSE relay coil operates to break and make supplies to reversing relay CLOSE coils
Bomb bay	Release and remake JETT. DOWN limit micro switch No. 11	All deflector lamps go out and come on again. Port bomb door lamps 2, 4, 6 and 7 come on and go out again	Deflector JETT. CLOSE relay operates to break and make supplies to reversing relay CLOSE coils. When the micro switch is operated a supply is connected to the port JETT. CLOSE relay coil
Panel E	Break and make circuit with fuse No. 29	All deflector Nos. 1 and 2 lamps go out and come on again (All bomb door lamps 1, 4, 5 and 8 come on and remain on until time switch has completed its cycle (i.e. 40 secs).)	Main 28-volt supply to JETTISON switch Only if micro switches Nos. 18 and 18A are held closed

TABLE 6—*continued*

Location	Operation	Test box indication	Check
Panel Z	Brake and make circuit with fuse No. 15	All deflector No. 2 lamps go out and come on again	Main 28-volt supply to reversing relay CLOSE coils
Panel Z	Break and make circuit with fuse No. 16	All deflector No. 1 lamps go out and come on again	Main 28-volt supply to reversing relay CLOSE coils
Panel J	Break and make circuit with both deflector 30 amp. H.R.C. fuses	Deflector Nos. 1 and 2 lamps go out and come on again with associated fuse	
Deflector beam	Operate JETT. DOWN limit micro switch No. 21	Deflector Nos. 1 and 2 lamps go out and come on again	Deflector JETT. CLOSE relay operates to break and make supply to reversing relay CLOSE coils
Battery bay	Select the DOOR TRIP switch to TRIP	(Green indicating lamp in battery bay comes on)	
Control pedestal	Select the JETT/NORM. switch to NORMAL	All deflector lamps go out	
Test box	Select all SERIES FIELD switches to OFF		

Procedure after testing

7. After testing the bomb door and air deflector circuits perform the following operations:—

(1) Disconnect the 112-volt and 28-volt external supplies from the aircraft.

(2) Disconnect the test box looms from the aircraft equipment and reconnect the aircraft looms to their associated equipment.

(3) Return all micro switches to their normal position and re-adjust where necessary (*Book* 1, *Sect.* 3, *Chap.* 1).

B/PR and B/K/PR aircraft

In bomber role

8. To test the normal bomb door circuit proceed as follows:—

(1) Select the BOMBER/P.R.U. switch, mounted in the battery bay, to BOMBER.

(2) When the doors are in the ' servicing ' position the 3-pin socket on the forward starboard radius rod is to be connected to the stowed 3-pin plug (the stowed plug has pins B and C linked).

(3) Proceed as for B. Mk. 1 aircraft.

In P.R. role

9. To test the P.R.U. circuit proceed as follows:—

(1) Select the BOMBER/P.R.U. switch, mounted in the battery bay to P.R.U.

(2) When the doors are in the servicing position, the 3-pin socket on the forward starboard radius rod is to be connected to the stowed 3-pin plug (the stowed plug has pins B and C linked).

(3) Proceed as for B. Mk. 1 aircraft.

Note . . .

(1) *Selection of operation is made from the switch in the external supply panel of the aircraft.*

(2) *As the doors operate in sequence it is necessary to set the bomb door limit micro switches during test to complete the cycle.*

(3) *Fuse No. 75 on panel Z must be removed and replaced during the test to cause the test box lamps to go out and come on again thereby proving the main supply to the DOOR TRIP switch.*

In tanker role

10. All B/K Mk. 1 and B/K/PR Mk. 1 aircraft have a door close master relay connected into the bomb door circuit which must be tested.

11. During BOMB DOORS CLOSE test all test box lamps should go out when the relay coil is energized from the tanker control panel or from SOCKET No. 16 PIN ' M ' on the tanker control panel stowage.

SERVICING

Care and maintenance

12. The test box should be handled carefully to prevent damage to the filaments of the indicating lamps and other equipment contained in the test box. Distortion of the test loom sockets and damage to the threads of the sockets, resulting in difficulty in connecting the test looms to the test box and aircraft plugs, can be avoided by fitting the blanking caps to the sockets when the test looms are not being used. The long test looms should be supported, when connected, to avoid undue strain on the aircraft connections.

13. Frequent continuity and insulation checks should be carried out on the test box wiring and all the indicating lamp filaments should be tested for serviceability. At the same time pin to pin insulation and continuity tests should be carried out on the test looms.

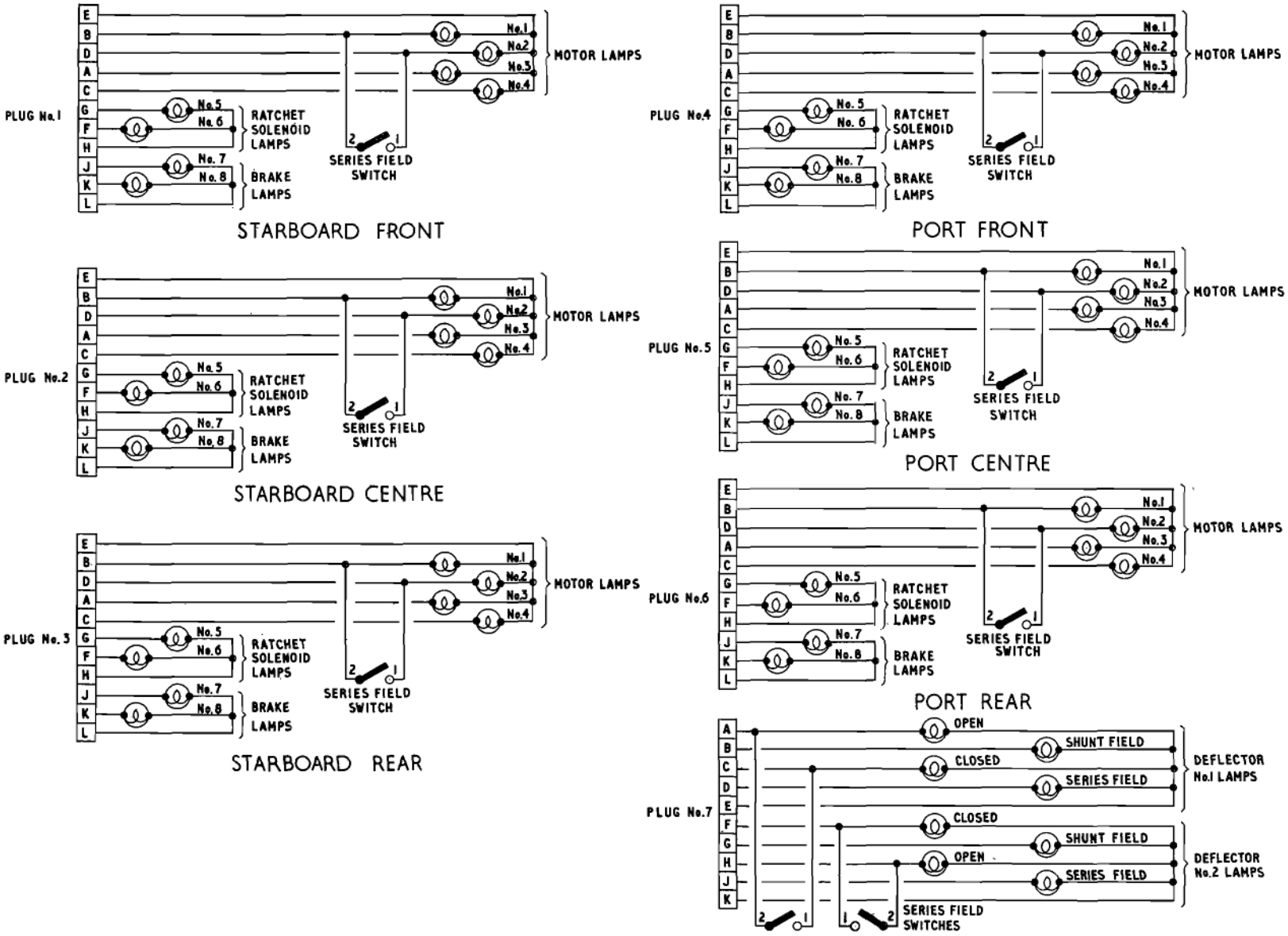

Fig. 1 Bomb doors and air deflector test box

RESTRICTED

8436 460130 1/60 631 C.B.&S.Ltd. GP924

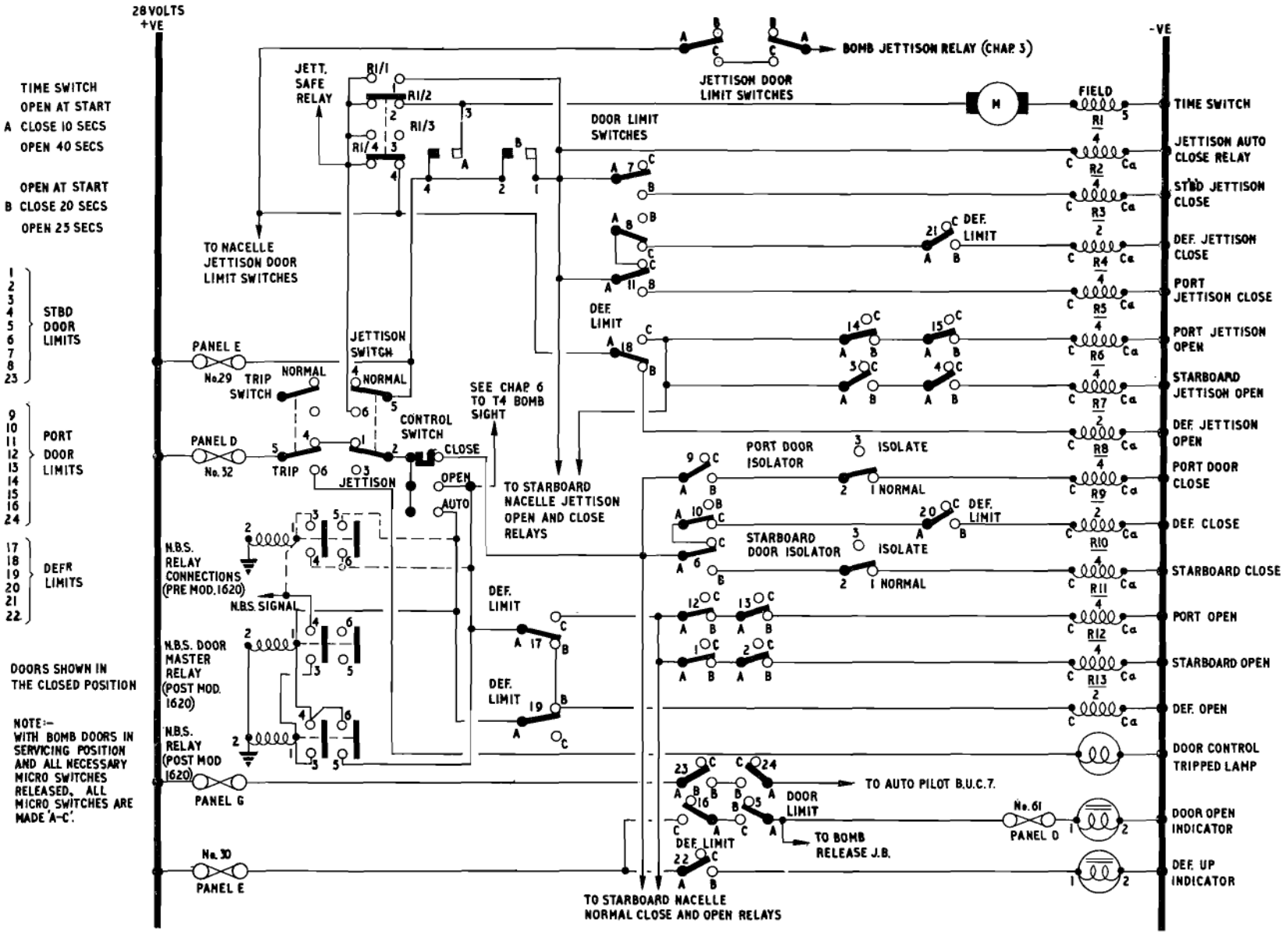

Fig. 2. Bomb bay door control (1) (pre Mod 1520) (Circuitry check)

RESTRICTED

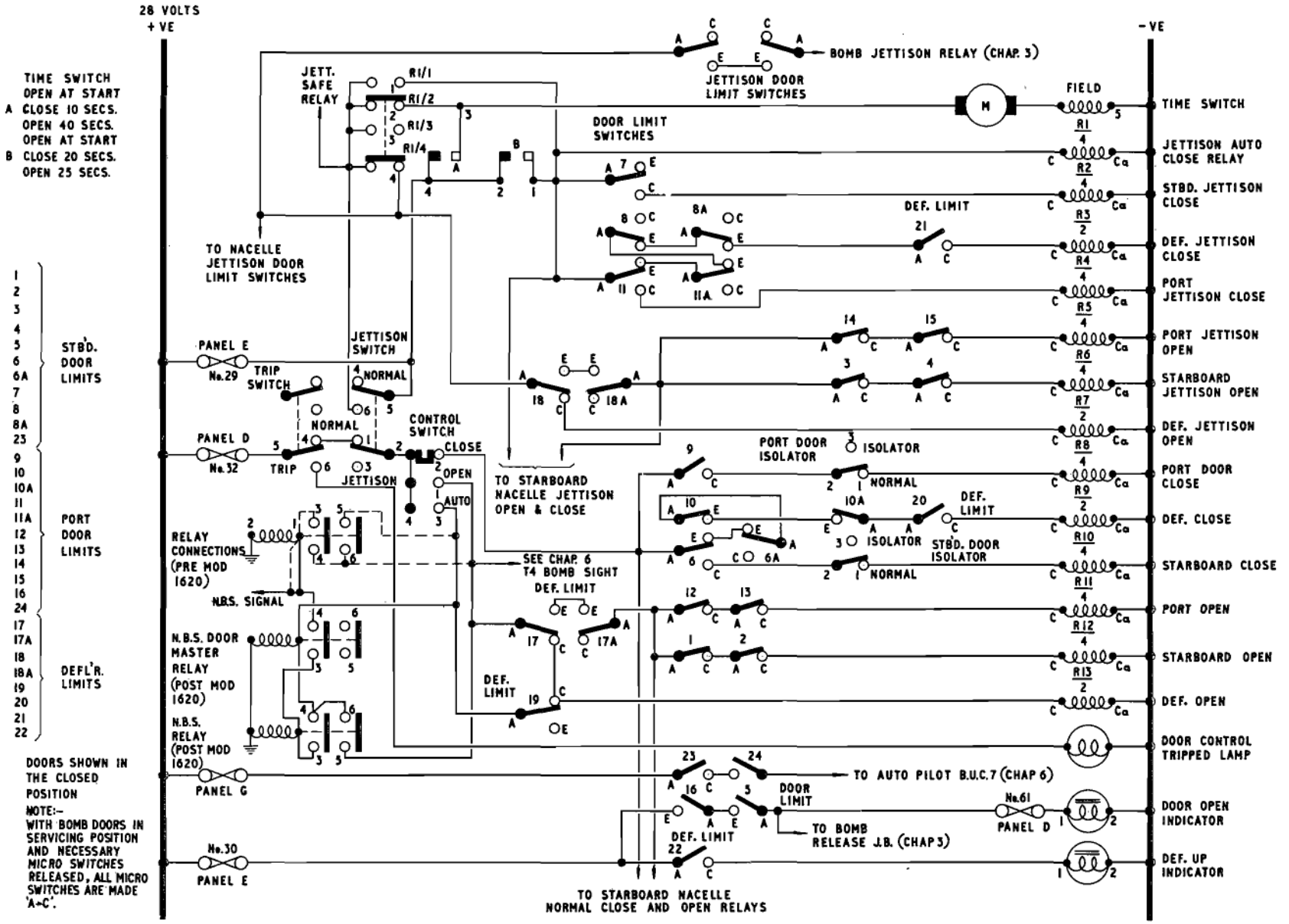

Fig. 3 Bomb bay door control (1) (post Mod. 1520, pre Mods. 2364 and 2484) (Circuitry check)

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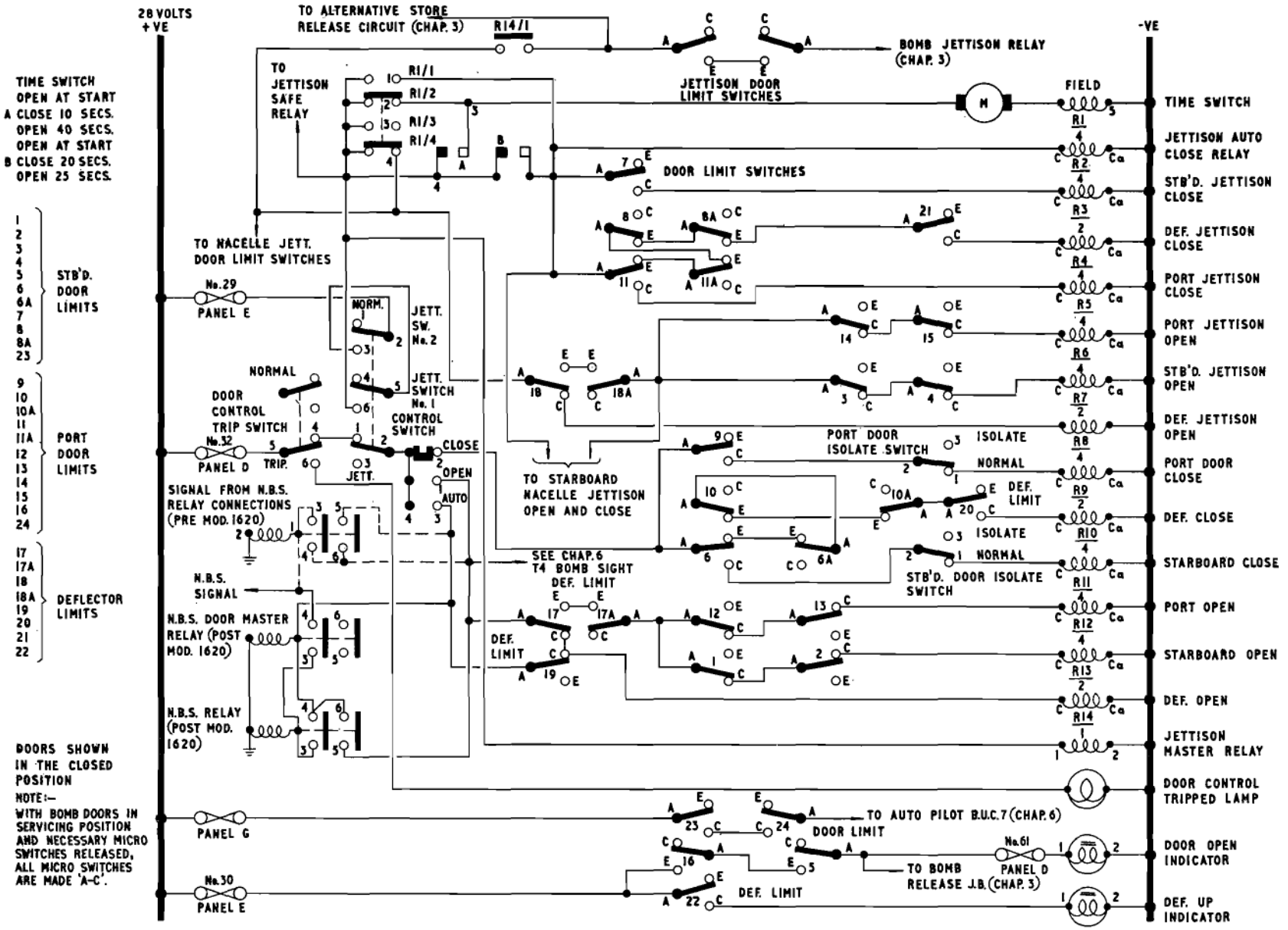

Fig. 4 Bomb bay door control (1) (post Mods. 1520, 2364 and 2484) (Circuitry check)

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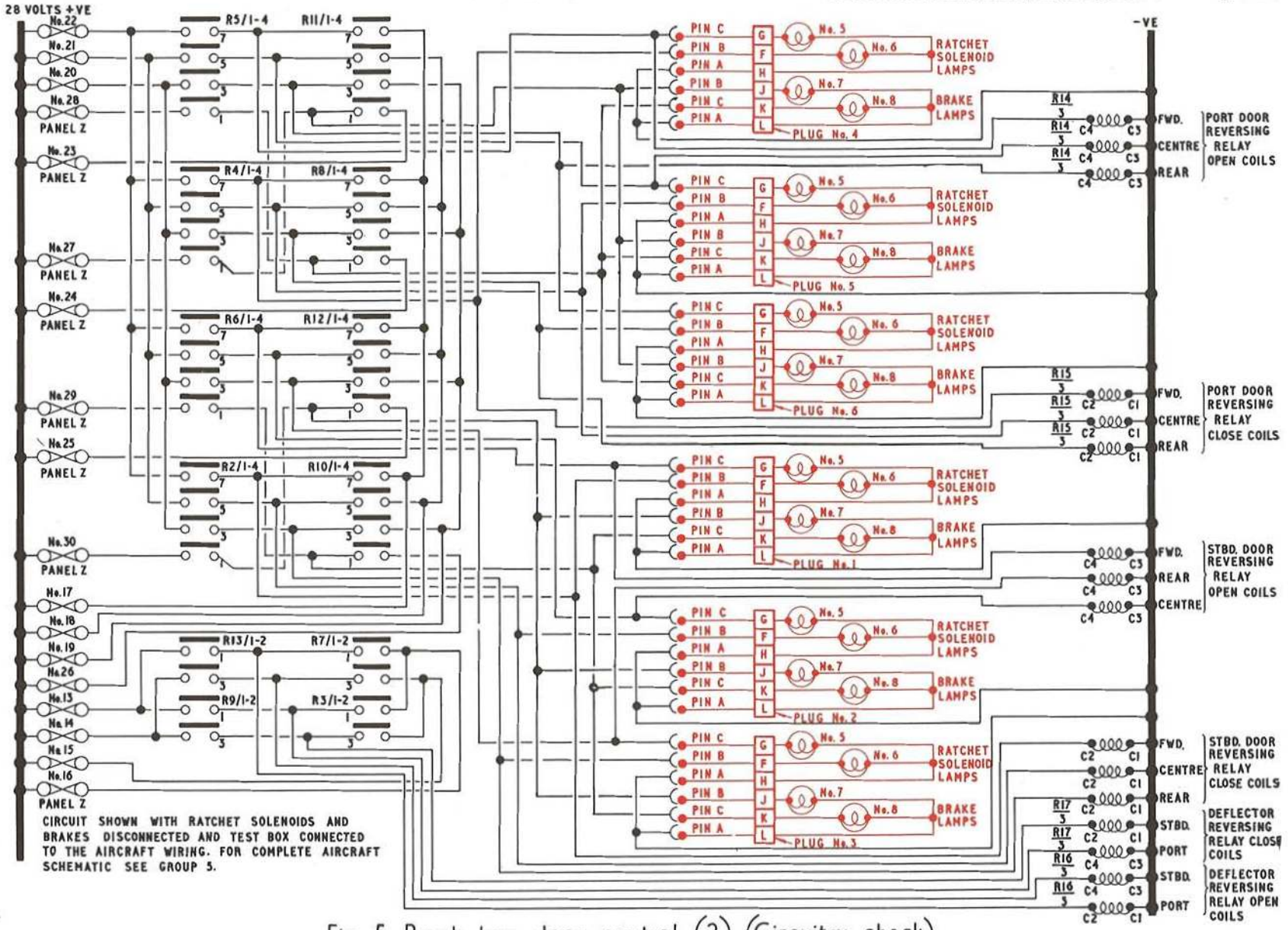

Fig. 5 Bomb bay door control (2) (Circuitry check)

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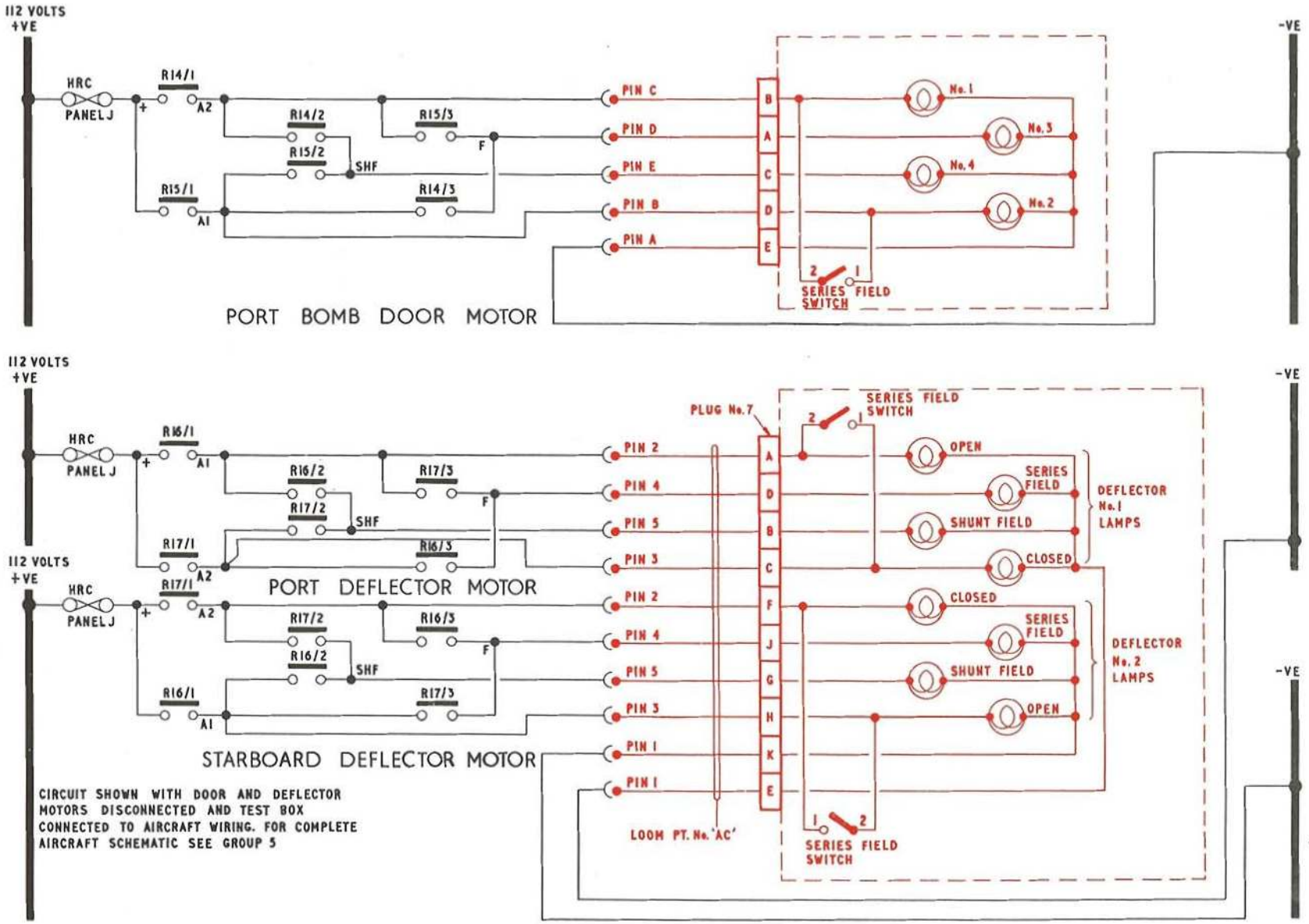

Fig. 6 Bomb bay door control (3) (Circuitry check)

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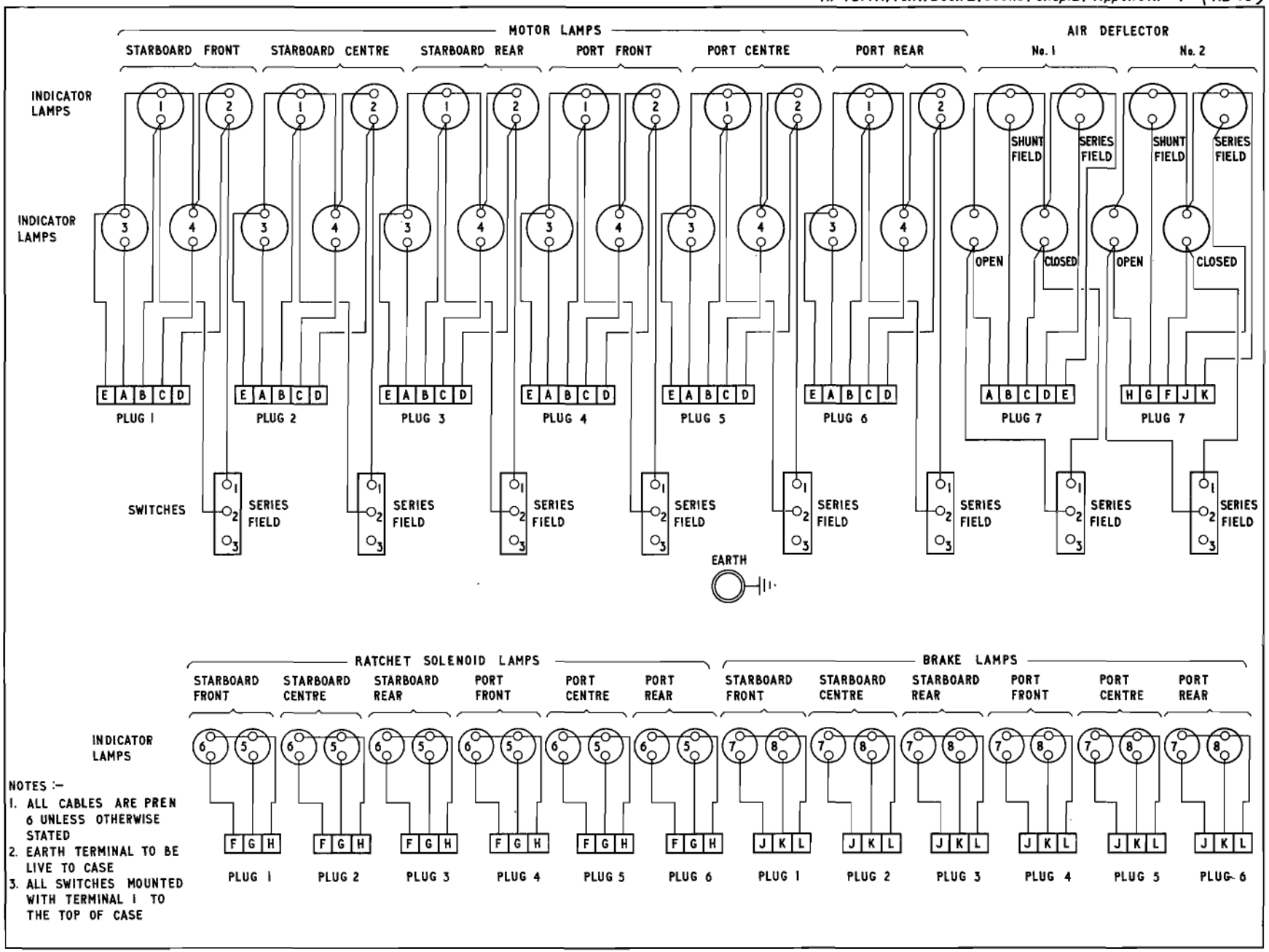

Fig. 7 Bomb doors and air deflector test box

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FROM			LENGTH	TO		
PT. No.	END FITTINGS	EQUIPMENT		EQUIPMENT	END FITTINGS	CABLE SIZE
R	(No. 1) 5X/6089 5X/320 67479 PT. 6387 5X/3148	TEST BOX SKT. PIN A RED " " " " B BLUE " " " " C YELLOW " " " " D GREEN " " " " E WHITE	55'-0"	STBD. FRONT M PIN D RED " " " " C BLUE " " " " E YELLOW " " " " B GREEN " " " " A WHITE	5X/6016 5X/6293 5X/3152 5X/240 67479 PT. 6373 5X/3148	QUINPREN 6
		" " " " F RED " " " " G BLUE " " " " H YELLOW	55'-0"	" " S " B RED " " " " C BLUE " " " " A YELLOW	5X/6006 5X/6301 5X/3151 5X/1383 67479 PT. 6371 5X/3148	TRIPREN 6
		" " " " J RED " " " " K BLUE " " " " L YELLOW	55'-0"	" " B " B RED " " " " C BLUE " " " " A YELLOW	5X/6006 5X/6301 5X/3151 5X/1383 67479 PT. 6371 5X/3148	TRIPREN 6
S	(No. 2) 5X/6089 5X/320 67479 PT. 6387 5X/3148	TEST BOX SKT. PIN A RED " " " " B BLUE " " " " C YELLOW " " " " D GREEN " " " " E WHITE	40'-0"	STBD. CENTRE M PIN D RED " " " " C BLUE " " " " E YELLOW " " " " B GREEN " " " " A WHITE	5X/6016 5X/6293 5X/3152 5X/240 67479 PT. 6373 5X/3148	QUINPREN 6
		" " " " F RED " " " " G BLUE " " " " H YELLOW	40'-0"	" " S " B RED " " " " C BLUE " " " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6
		" " " " J RED " " " " K BLUE " " " " L YELLOW	40'-0"	" " B " B RED " " " " C BLUE " " " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6
T	(No. 3) 5X/6089 5X/320 67479 PT. 6387 5X/3148	TEST BOX SKT. PIN A RED " " " " B BLUE " " " " C YELLOW " " " " D GREEN " " " " E WHITE	25'-0"	STBD. REAR M PIN D RED " " " " C BLUE " " " " E YELLOW " " " " B GREEN " " " " A WHITE	5X/6016 5X/6293 5X/3152 5X/240 67479 PT. 6373 5X/3148	QUINPREN 6
		" " " " F RED " " " " G BLUE " " " " H YELLOW	25'-0"	" " S " B RED " " " " C BLUE " " " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6
		" " " " J RED " " " " K BLUE " " " " L YELLOW	25'-0"	" " B " B RED " " " " C BLUE " " " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6
U	(No. 4) 5X/6089 5X/320 67479 PT. 6387 5X/3148	TEST BOX SKT. PIN A RED " " " " B BLUE " " " " C YELLOW " " " " D GREEN " " " " E WHITE	55'-0"	PORT FRONT M PIN D RED " " " " C BLUE " " " " E YELLOW " " " " B GREEN " " " " A WHITE	5X/6016 5X/6293 5X/3152 5X/240 67479 PT. 6373 5X/3148	QUINPREN 6
		" " " " F RED " " " " G BLUE " " " " H YELLOW	55'-0"	" " S " B RED " " " " C BLUE " " " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6
		" " " " J RED " " " " K BLUE " " " " L YELLOW	55'-0"	" " B " B RED " " " " C BLUE " " " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6

Fig. 8(1) Cable looms

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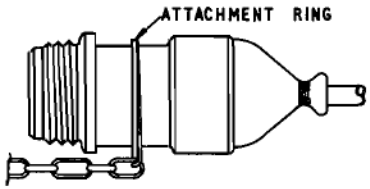
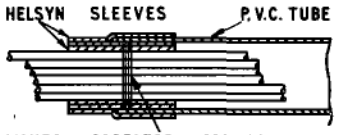
FROM			LENGTH	TO		
PT. No.	END FITTINGS	EQUIPMENT		EQUIPMENT	END FITTINGS	CABLE SIZE
V	(No. 5) 5X/6089 5X/320 67479 PT. 6387 5X/3148	TEST BOX SKT. PIN A RED " " " " B BLUE " " " " C YELLOW " " " " D GREEN " " " " E WHITE	40'- 0"	PORT CENTRE M PIN D RED " " " " C BLUE " " " " E YELLOW " " " " B GREEN " " " " A WHITE	5X/6016 5X/6293 5X/3152 5X/240 67479 PT. 6373 5X/3148	QUINPREN 6
		F RED G BLUE H YELLOW	40'- 0"	S B RED " " C BLUE " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6
		J RED K BLUE L YELLOW	40'- 0"	B B RED " " C BLUE " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6
W	(No. 6) 5X/6089 5X/320 67479 PT. 6387 5X/3148	TEST BOX SKT. PIN A RED " " " " B BLUE " " " " C YELLOW " " " " D GREEN " " " " E WHITE	25'- 0"	PORT REAR M PIN D RED " " " " C BLUE " " " " E YELLOW " " " " B GREEN " " " " A WHITE	5X/6016 5X/3148 5X/6293 5X/3152 5X/240 67479 PT 6373	QUINPREN 6
		F RED G BLUE H YELLOW	25'- 0"	S B RED " " C BLUE " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6
		J RED K BLUE L YELLOW	25'- 0"	B B RED " " C BLUE " " A YELLOW	5X/6006 5X/3148 5X/6301 5X/3151 5X/1383 67479 PT. 6371	TRIPREN 6
AC	(No. 7) 5X/6385 5X/242 67479 PT. 6387 5H/9400053	TEST BOX SKT. PIN A RED " " " " B BLUE " " " " C YELLOW	15'- 0"	AIR DEFLECTOR No. 1 PIN 2 RED " " " " 5 BLUE " " " " 3 YELLOW	5X/6061 5X/6294 5X/3090 5X/921 67479 PT. 6375	TRIPREN 24
		D RED E BLUE	15'- 0"	" " " " 4 RED " " " " 1 BLUE		DUPREN 24
		F RED G BLUE H YELLOW	15'- 0"	" " No. 2 PIN 2 RED " " " " 5 BLUE " " " " 3 YELLOW	5X/6061 5X/6294 5X/3090 5X/921 67479 PT. 6375	TRIPREN 24
		J RED K BLUE	15'- 0"	" " " " 4 RED " " " " 1 BLUE		DUPREN 24
AK	5K/1809	TEST BOX EARTH POINT	15'- 0"	EARTH	5K/1884	UNISHEATH GROUND 7



TYPICAL METHOD OF SECURING SOCKET BLANKING ASSY. TO SOCKET



TYPICAL METHOD OF SECURING CABLES IN CONDUIT

NOTES:-
1. CABLE ENDS CRIMPED, CABLE SLEEVE Z49397 USED AS REQUIRED.
2. SINGLE CORE LOOMS RUN IN P.V.C. SLEEVING TO SPEC. E & 1659 TO WITHIN 3FT. OF LOOSE ENDS AND BOUND TIGHTLY. LOOSE CABLES SECURED INSIDE P.V.C. CONDUIT BY MEANS OF HELSYN SLEEVES. (SEE DETAIL)
3. PLUG BLANKING ASSY. SECURED TO PLUG BY FIXING TAG UNDER ONE OF PLUG ASSY. BOLTS.
4. CABLES CLEARLY IDENTED BOTH ENDS-PLUG No. AT TEST BOX END.

Fig. 8(2) Cable looms

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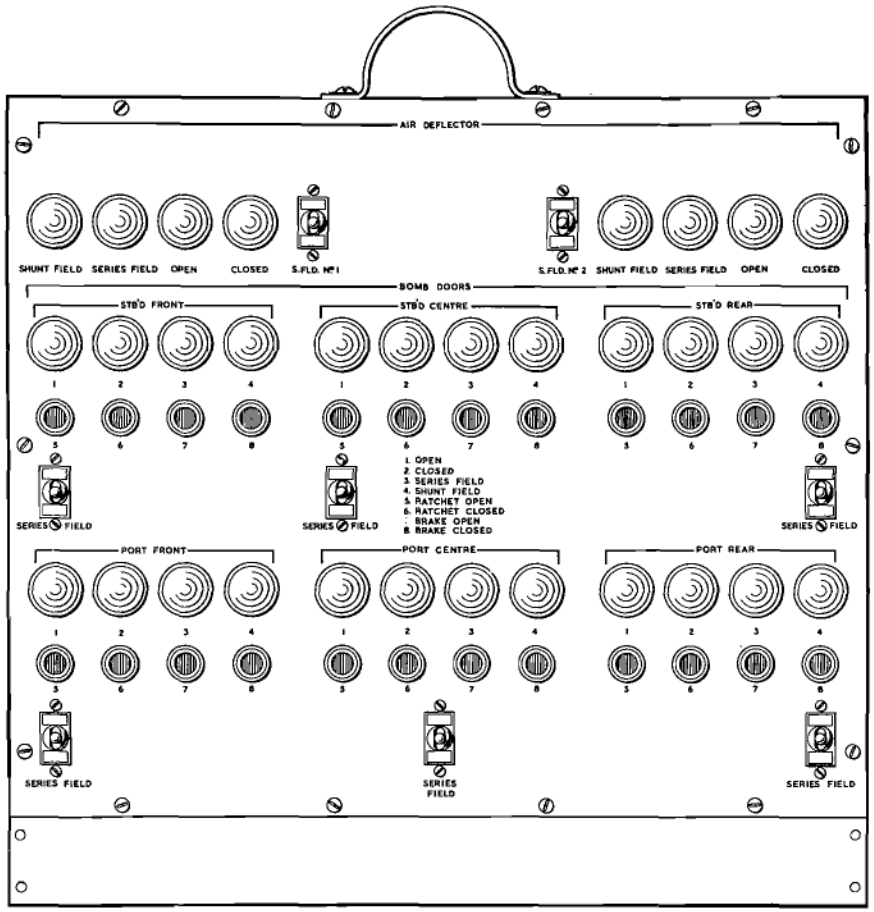

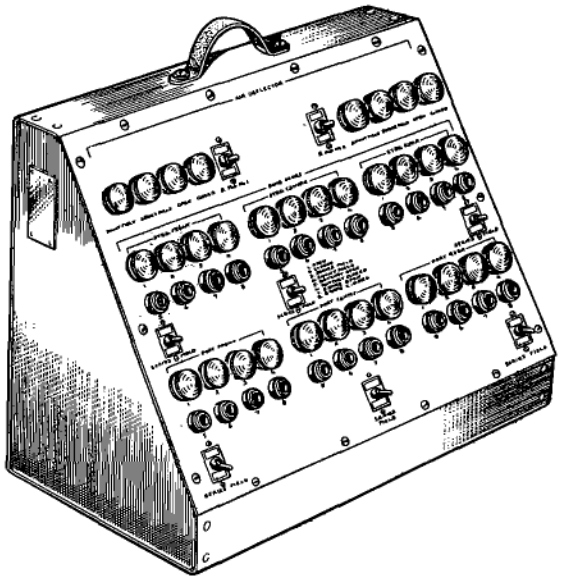

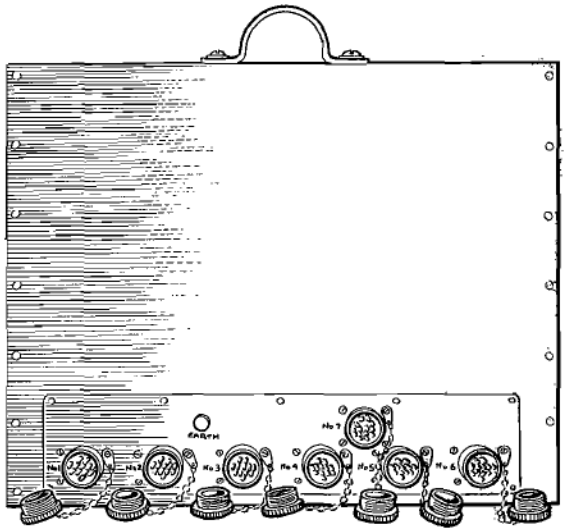

Fig. 9 Bomb doors and air deflector test box

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