

Note...

This chapter deals with aircraft fitted  
to Mod. 850 standard.

## Chapter I ELECTRICAL SYSTEM

(Completely Revised)

Note... A detailed list of contents appears at the beginning of each group.

## LIST OF GROUPS

	Group		Group		Group	
21-0501-1/2	GENERAL INFORMATION		Flowmeter (EF)		Formation lamps (LF)	
	ARMAMENT AND					
	PHOTOGRAPHIC ...	A and B	FLIGHT INSTRUMENTS ...	F	MISCELLANEOUS ...	M
	Gun firing (AA, AG)		Turn and slip indicator supply (FB)		Alighting gear lever lock (MU)	
	R.P. firing (AR)		GM4F compass supply (FC)			
	Gyro gun sight retractable		Artificial horizon supply (FH)		D.C. POWER SUPPLIES ...	P
	mounting (AS)		Pressure head heater (FP)		Battery supply (PE, PR, PS, PV)	
	G45 camera (BC)				Emergency battery	
			WING FOLDING ...	G	D.C. power supply (DV, PG, PL, PW)	
	CONTROL SURFACES ...	C	Wing-fold warning (GW)			
	Aileron tab control (CA)				FUEL SYSTEM ...	Q
			ENGINE CONTROL AND		Wing tip tank fuel jettison (QF)	
	MISCELLANEOUS		R.A.T.O. ...	J and K	Fuel pump (QP)	
	INSTRUMENTS ...	D	R.A.T.O. firing (JJ)			
	Cabin pressure warning (DC)		Engine relighting (JL)		WIRELESS AND RADAR	
Hydraulic flow failure warning (DH)		Engine starting (KE)		SUPPLIES ...	R and S	
Aileron tab position indicator (DT)				Wireless supplies (RV, RZ)		
Alighting gear position indicator (DU)				Radar supplies (SA, SC, SF, SX)		
		LIGHTING ...	L			
ENGINE INSTRUMENTS ...	E	Deck approach warning (LB)		WARNING AND EMERGENCY .	W	
Rear bearing thermocouple (EA)		Instrument, secondary lighting and		Oxygen demand indicator (WB)		
Exhaust gas thermometer (EJ)		emergency lamp (LC)		Fire warning and extinguisher		
Engine oil thermometer (EQ)		Inspection lamps and sockets (LG)		(WE, WF)		
Fuel pressure indicator (EX)		Identification lamp (LD)				
Fuel transfer indicator (QT)		Landing lamp (LL)		A.C. POWER SUPPLY ...	X	
Engine tachometer (ER)		Navigation lamps (LN)		A.C. power supply (XF, XG, XH, XP)		

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## INTRODUCTION

1. This chapter contains a description of the electrical system, also details of the servicing, testing and removal of equipment. Where information relating to items of equipment appears in a specialist Air Publication, such as A.P. 4343 or A.P. 1275, the appropriate cross-reference is given in the text.

2. The chapter is divided into groups, each of which bears an identification letter. Contained within each group is a number of circuits, each of which carries the group identification letter and an additional suffix letter which identifies that particular circuit. This coding is the S. B. A. C. Standard Identification Scheme.

3. Each group is sub-divided so that all the information appropriate to a particular circuit appears as close as possible to the wiring diagram of the circuit.

## POWER SUPPLIES

4. Power is supplied from two generators, Type 507, each having an output of 200 amps. at 28 volts, mounted on a gearbox assembly on top of the engine. Voltage regulator units maintain a constant voltage output irrespective of changes in load and engine speed. Also connected in the power distribution system is a 24-volt, 25 ampere-hour battery, mounted in a tray assembly in the gun bay.

5. A.C. power for the A.I. Mk. 21 radar equipment is provided by a Jack and Heintz Type F.46 inverter mounted in a tray assembly in the gun bay. The a.c. power for flight instruments is supplied from two inverters, Type 100A (A.P. 4343B, Vol. 1, Book 3, Sect. 16), each having a control Unit Type 12 (A.P. 4343B, Vol. 1, Book 2, Sect. 7).

## INTERPRETATION OF DIAGRAMS

### Location diagrams

6. These diagrams show the position of the electrical components, panels, and junction boxes and should be used in conjunction with the master electrical index (para. 33).

### Theoretical diagrams

7. In these diagrams the circuits are laid out in theoretical form to explain their function. They are only given where the complex nature of the circuit requires further explanation.

### Wiring diagrams

8. In most circuits the normal routing and theoretical diagrams are combined on a single wiring diagram. These diagrams are divided into vertical columns representing junction boxes, circuit pin references or panels, as indicated at the head of each column. Each cable rating is shown in abbreviated form (para. 21).

Method of reading the wiring diagrams  
9. As an example of the manner in

which a wiring diagram may be read, refer to the identification lamp circuit, group L. Commencing at fuse LD located in fuse block D in fusebox C a unipren 6 amp. cable passes to pin K of plug B11 to enter the junction box B. The cable passes through the junction box and leaves the box via pin F of plug B1. The cable continues to terminal 2 of switch Y on the cabin panel A. This switch has two positions in addition to the centre off position; there is a spring-loaded position, MORSE (terminal 1), the opposite selection being a STEADY (terminal 3). Terminals 1 and 3 are strapped and a unipren 6 amp. cable feeds out from the switch to pin E of plug B1 on the junction box B; through the box and out via a grommet to pin D of plug M5 on bulkhead 2, thence to terminal 1 of T.B. AK in the gun bay. The symbol used for plug M5 indicates that it is double-ended. The cable connections to the lamp are from terminal 1 on T.B. AK to terminal 1 on the lamp while the negative connection is from terminal 2 on T.B. AK and from there to the airframe earth connection at station 1, bulkhead 2.

## INSTALLATION DETAILS

### Wiring system

10. The general wiring throughout the aircraft services is in Pren cable, and the cable runs are conveniently broken down at a number of junction boxes; interconnections being contained in square paxolin conduits through-

TABLE 1  
Fuses in fusebox C

	Circuit	Rating (amp.)	Circuit code	Fuse block term. ref.
FUSE BLOCK A	-	-	-	A 1 - 2
	Flowmeter	2.5	EF	3 - 4
	I.F.F. Mk. 10 supply	5	SC	5 - 6
	A.Y.F. supply	10	SA	7 - 8
	V.H.F. supply	5	RVC	9 - 10
	Intercomm. supply	5	RZ	11 - 12
FUSE BLOCK B	I.F.F. Mk. 10 supply	5	SXC	B 1 - 2
	Deck approach warning	5	LB	3 - 4
				5 - 6
				7 - 8
				9 - 10 11 - 12
FUSE BLOCK C	Gun firing control	10	AG	C 1 - 2
	Gun firing control	10	AAD	3 - 4
	Gun firing control	10	AAC	5 - 6
	Gun firing control	10	AAB	7 - 8
	Gun firing control	10	AAA	9 - 10
	R. P. firing supply	10	AR	11 - 12
	Camera gun supply	10	BC	13 - 14
	Pylon fuel and jettison	10	QJ	15 - 16
	Pylon fuel and jettison	2.5	QDA	17 - 18
	Engine starting	10	JLA	19 - 20
	G.G.S. supply	5	AS	21 - 22 23 - 24
FUSE BLOCK D	Air temperature thermometer	5	DA	D 1 - 2
	Cabin pressure warning	5	DC	3 - 4
	Inspection lamps	5	LG	5 - 6
	Instrument panel lighting	5	LCA	7 - 8

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TABLE 1 - continued

Circuit	Rating (amp.)	Circuit code	Fuse block term. ref.
FUSE BLOCK D continued			
Cabin lighting	5	LCB	D 9 - 10
Cabin lighting	5	LCC	11 - 12
Hydraulic flow failure warning	5	DH	13 - 14
Cabin lighting	5	LCF	15 - 16
Landing lamp control	5	LLB	17 - 18
Landing lamp filament	20	LLA	19 - 20
Navigation lamps	5	LN	21 - 22
Downward ident. lamp	5	LD	23 - 24
FUSE BLOCK E			
A. I. Mk. 21 Inverter control	5	SFB	E 1 - 2
A. C. power supply control	10	PXB	3 - 4
A. C. power supply control	5	PXC	5 - 6
A. C. power supply control	10	PXA	7 - 8
Wingfold warning	5	GW	9 - 10
R. A. T. O. firing	20	JJA	11 - 12
Alighting gear indicator	10	DU	13 - 14
Alighting gear lever lock	5	MU	15 - 16
Pressure head heater	10	FP	17 - 18
Flap indicator	5	DF	19 - 20
Aileron trim control	5	DT	21 - 22
Oxygen demand indicator	5	WB	23 - 24
FUSE BLOCK F			
Oil thermometer	5	EQ	F 1 - 2
Fuel pressure indicator	5	EK	3 - 4
Engine starting	20	KE	5 - 6
Engine relighting	10	JL	7 - 8
Fuel contents system	5	DR	9 - 10
Fuel pump isolating solenoid	5	QC	11 - 12
Fuel transfer warning (port)	5	QTA	13 - 14
Fuel transfer warning (stbd)	5	QTB	15 - 16
Tip tank fuel jettison	10	QF	17 - 18
Turn and slip indicator	5	FBA	19 - 20
Turn and slip indicator	5	FBB	21 - 22

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TABLE 2  
Miscellaneous fuses

Circuit	Rating (amp.)	Circuit code	Fuse block term. ref.
<b>FUSE BLOCK E ON PANEL K; 115 volts 3 phase 400 c. p. s.</b>			
Gyro compass	2.5	FCA	E 1 - 2
Artificial horizon	2.5	FHA	3 - 4
Flowmeter	2.5	XEA	5 - 6
Flowmeter	2.5	XEC	7 - 8
Artificial horizon	2.5	FHC	9 - 10
Gyro compass	2.5	FCC	11 - 12
<b>FUSE BLOCK F ON PANEL K; 28 volts d. c.</b>			
Gyro compass (d. c. supply)	2.5	FCD	F 1 - 2
<b>FUSE BLOCK N ON BOX P</b>			
D. C. power supply (voltage test socket No. 1)	5	DVA	N 1 - 2
D. C. power supply (control unit No. 2)	5	PGN	3 - 4
D. C. power supply (voltage test socket No. 2)	5	DVB	5 - 6
D. C. power supply (reverse current c. b. No. 1)	5	PWC	7 - 8
D. C. power supply (reverse current c. b. No. 2)	5	PWD	9 - 10
D. C. power supply (control unit No. 1)	10	PGC	11 - 12
D. C. power supply (control unit No. 2)	10	PGD	13 - 14
D. C. power supply (control unit No. 1)	10	PGE	15 - 16
D. C. power supply (control unit No. 2)	10	PGF	17 - 18
D. C. power supply (control unit No. 1)	5	PGM	19 - 20
D. C. power supply (warning lamp No. 1)	2.5	PWA	21 - 22
D. C. power supply (warning lamp No. 2)	2.5	PWB	23 - 24
<b>FUSE BLOCK C ON PANEL N</b>			
Fire warning	5	WF	C 1 - 2
Fire extinguisher (port)	10	WEA	3 - 4
Battery (isolating relay)	5	PR	5 - 6
Battery (test socket)	5	PV	7 - 8
Fire extinguisher (stbd)	10	WEB	9 - 10
Battery	5	PRA	11 - 12
			13 - 14
			15 - 16
			17 - 18

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TABLE 2 - continued

Circuit	Rating (amp.)	Circuit code	Fuse block term. ref.	
FUSE BLOCK C ON PANEL N continued				
A.I. Mk.21 inverter control	5	SFC	C 19 - 20 21 - 22 23 - 24	
FUSE BLOCK G ON PANEL N				
V.H.F. cooling fans	5	RV	G 1 - 2	
V.H.F. supply (set No. 1)	20	RVA	3 - 4	
V.H.F. supply (set No. 2)	20	RVB	5 - 6	
FUSE BLOCK C ON PANEL DQ				
R.A.T.O.	5	JJB	C 1 - 2	
TABLE 3 Circuit breakers				
Circuit	Rating (amp.)	Identification letter	Location (panel ref.)	Circuit code
A.I. Mk.21 radar	200	B	N	SF, SX
A.I. Mk.21 radar	35	K.1	RC	SF, SX
A.I. Mk.21 radar	15	K.2	RC	SF, SX
A.I. Mk.21 radar	5	K.3	RC	SF, SX
A.I. Mk.21 radar	25	K.4	RC	SF, SX
A.I. Mk.21 radar	10	K.5	RC	SF, SX
Fuel pump	15	F	A	QP
A.C. supply (main inverter)	15	H	A	XPA
A.C. supply (stand-by inverter)	15	J	A	XPB
Aileron tab control	5	AF	A	CA
Pylon fuel and jettison	5	AJ	A	QDB
External lighting	25	G	A	LE
G.G.S. retraction unit	5	R	A	ASA
Generator system control	15	M	AM	PGH
Generator system control	15	L	AM	PGJ

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out the cabin and fuselage. These paxolin conduits are of the open type allowing air to circulate around the wiring, while the outer 'side' of the conduit can be detached to permit easy removal or replacement of cables. In other parts of the aircraft cables are housed in polyvinyl tubing wherever protection is required. On later installations, Nypren cables (fireproof) are used in those parts of the aircraft wiring adjacent to the engine.

11. Also included are cable loom assemblies consisting of multi-pole sockets with loose pre-n cables attached; these in general being used for distribution to components. All cable conduits, looms and panels are identified by labels attached to each item; the panels each have an adhesive alphabetical reference letter. The main junction box in the aircraft installation, is J.B. B. Breakdown points through multi-pole socket connections are arranged at the main-plane attachment to the fuselage. At the wing fold sections the electrical cables pass through terminal blocks, enabling easy disconnection for wing section removal.

12. Cable connections at the wing tips to navigation lamps and wing-tip tank fuel jettison cocks are taken through 4 way contact plates. The wing-tip tanks cannot be jettisoned but can be detached to give access to the plunger contacts which engage with their respective contacts on the 4 way plate

assembly in the wing. Where cables pass through pressure bulkheads, Hellerman pressure sealing bungs are used.

#### Method of cable coding

13. Secured around the end of each cable is a tape. The tape bears the reference LANDING LAMP - BG indicating that the left hand end of the cable connects to the landing lamp, the right hand end being connected to terminal block BG. Each core of the cable carries a marked sleeve. The centre core is marked LLB - BG.3. This shows that it is associated with sub-circuit B (the landing lamp actuator) of the circuit LL (the landing lamp circuit), and that it is connected to terminal 3 of terminal block BG. This example is typical of that employed throughout the aircraft.

#### Earthing system

14. Earth terminals in each junction box are inter-connected through the main conduits, and are supplemented by additional earth points at instrument panels, bulkheads, and wings. These are clearly marked on the wiring diagrams. The main earth connection is on bulkhead 4.

#### Fuses and circuit breakers

15. The general service fuses are located in fusebox C on the forward face of bulkhead 2 behind the pilot's seat and accessible from the cabin. The lid of the box is easily removed

by releasing the four small Oddie fasteners.

16. The fuses of certain circuits such as fire extinguisher and fire warning which are fed direct from the battery are contained in fuse block C of panel N. Other miscellaneous fuses are contained in fuse blocks E and F on panel K and fuse blocks G on panel N. Generator system fuses are found in fuse block N in junction box P.

17. Fuse numbers, service and rating are shown on the fusebox cover, and this information is also given in Tables 1 and 2. Details of circuit breakers appear in Table 3.

#### Junction boxes

18. The junction boxes are prefixed by the letters J.B. and are referenced alphabetically, e.g. J.B. B., J.B.K. They are indicated on the wiring diagrams, and their positions on the aircraft are shown in the location diagrams. Pre-n cable is used in the internal wiring of junction boxes and for conduit connection between boxes.

#### Terminal blocks

19. Terminal blocks have either single or double-letter references which are a part of the cable coding system (para.13). Each of these references which serve to identify the various terminal blocks, appear on the structure alongside the equipment.

**Bulkhead plugs**

20. These plugs are double-ended and are used to convey wiring through metal panels, bulkheads or into and out of junction boxes. When they are fitted on cabin bulkheads, provision is made to make them pressure proof, as the cabin can be pressurised for high altitude flight.

**Cable types and rating**

21. The following abbreviated cable references are used on the wiring diagrams.

Abbreviation	Cable
U	Unipren
D	Dupren
T	Tripren
Q	Quinpren
S	Septopren
UPM	Uniprenmet
DPM	Duprenmet
TPM	Triprenmet
DPS	Duprensheath
2 VMS	Duvinmetsmall
3 VMS	Trivinmetsmall
4 VMS	Quadravinmetsmall
6 VMS	Sextovinmetsmall
12 VMS	Twelvevinmetsmall
N	Nypren (Fireproof)
QSS	Quintosheathsmall
SM	Septomet
DSS	Dusheathsmall
UF	Unifire

22. The cable rating is printed on the cable at intervals along its length. On multi-core cables the rating is printed

on the blue core only. On the wiring diagrams this information is conveyed thus; U.6 denotes unipren 6 amp., T.12 denotes tripren 12 amp. and so on. Full details of pren cables are given in A.P.4343C, Vol. 1, Book 3, Sect. 5.

**Access to electrical panels and components**

23. Throughout the aircraft, access to electrical equipment is usually gained by removal of detachable panels or cowlings. These panels are shown in fig.4 and 5 and the items accessible through them are given in the master electrical index.

**Bonding**

24. All the metal parts of the aircraft are connected together to form an electrically continuous system of low and unvarying resistance, and also to provide a large and constant capacity for the radio earth. Efficient bonding also reduces the risk of fire by minimising the difference of potential between metallic components. Copper strips and braided copper flex are used where necessary to connect the metal structures.

25. The wings are bonded separately to the main fuselage strips which in turn are earthed through the nose wheel hub and tyre when the aircraft is on the ground.

26. Where flexible bonding is used, the length should be kept to a minimum and care taken to prevent inter-

mittent contact between metallic parts.

27. When bonding connections are being made, the contact faces should be scraped clean and the flux used when soldering connections must be acid free. All traces of flux must afterwards be removed.

28. The resistance between any selected point and the main earth strips must not exceed 0.05 ohms for a single bond and 0.025 ohms for a multiple bond.

29. The electrical conductivity of the nose wheel tyres should be checked periodically with a 250-volt insulation resistance tester; the resistance should not exceed 10 megohms.

**Preparation for insulation resistance testing**

30. Reference should be made to N.A.M.O. General/L47 which deals with those parts of the electrical wiring to which particular attention should be given when making an insulation test. Prior to insulation tests certain items of equipment should be disconnected and the cable ends insulated. Before making the test check that all closed circuits and all earth connections are disconnected. It is recommended that a series of regular insulation resistance tests be carried out and any marked changes in value should be investigated.

Emergency supply

31. A separate 24-volt battery is available for use in emergency only. This battery provides a supply to the two emergency cabin lamps and also to the turn and slip indicator. The current consumption under this emergency loading is small, and it is estimated that the capacity of the battery would allow a minimum of 30 minutes

use. The battery is not connected in the aircraft power system and particular attention should, therefore, be giving to checking its condition.

Rendering the aircraft electrically safe

32. Whenever electrical components are being serviced or changed it is

recommended that the aircraft electrical system be rendered safe by ensuring that the battery isolation switch is in the OFF position.

Note...

No external supply should be connected to the aircraft under these conditions.

TABLE 4

Terminal blocks  
(Terminals marked thus (8\*) are earth connections)

Group	Circuit	T. B.	Location
A & B	Gun firing (AA, AG)	H	Cabin floor, under pilot's seat
		AA	J. B. B.
		Z	J. B. B.
		Y	J. B. B.
		C(2*)	J. B. B.
		X	J. B. B.
	R. P. firing (AR)	DE	Gun bay roof (under hydraulic accumulator)
		H	Cabin floor, under pilot's seat
		Y	Cabin floor centre (adjacent to panel AF)
		AF(10*)	J. B. B.
	G. G. S. retractable mounting (AS)	AA	J. B. B.
		BW	Port wing (R. P. sockets)
		CW	Starboard wing (R. P. sockets)
		G	Panel E
G45 camera (BC)	EF	Bulkhead 2 centre forward face	
	AF(9*)	J. B. B.	
	AA	J. B. B.	
	AF(8*)	J. B. B.	
C	Aileron tab control (CA)	BU	Port wing (above camera pod)
		AU(11*)	Cabin, forward of pilot's seat
		J	Cabin, port side (under console panel X)

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TABLE 4 - continued

Group	Circuit	T. B.	Location
C	Aileron tab control (CA) continued	AQ	Bulkhead 2
		AK	Gun bay roof
		BAJ	Port wing
		EA	Bulkhead 2
		BAK	Port wing
		BX	Port wing root
		BAD	Port wing, adjacent to aileron actuator
D	Cabin pressure warning (DC) Hydraulic flow failure warning (DH)	AF(14*)	J. B. B.
		AU(12*)	Cabin, forward of pilot's seat
		EC	Bulkhead 4, aft face
	Aileron tab position indicator (DT)	AU	Cabin, forward of pilot's seat
		B	Panel G
		BAJ	Port Wing
	Alighting gear position indicator (DU)	BAK	Port Wing
		AJ	Nose wheel bay
		AA	J. B. B.
		AB	J. B. B.
		AE	J. B. B.
		CH	Starboard wheel bay
		BH	Port wheel bay
F	Turn and slip indicator supply (FB)  GM4F compass supply (FC) Artificial horizon supply (FH) Pressure head heater (FP)	X	J. B. B.
		AF(11*)	J. B. B.
		G(8*)	J. B. K.
		G(8*)	J. B. K.
		BQ	Port boom (forward end)
		BR	Port boom (aft end)
		BV	Port fin (top)
G	Wing-folding (GW)	J(13*)	Cabin, port side (under console panel X)
		AD	J. B. B.
		AQ	Cabin, forward face of bulkhead 2
		BX	Port wing root (rib 1)
		BY	Port wing fold joint
		CX	Starboard wing root (rib 1)
		CY	Starboard wing fold joint

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TABLE 4 - continued

Group	Circuit	T. B.	Location
L	Navigation and formation lamps continued	BQ BR(2*) BL CL BAJ BAK CAG CAH 2	Port boom (fwd) Port boom (aft) Port wing top (fwd) Starboard wing tip (fwd) Port wing Port wing Starboard wing Starboard wing J. B. B.
M	Alighting gear lever lock (MU)	AU J AA AF(19*) BH	Cabin floor forward of pilot's seat Cabin forward J. B. B. J. B. B. Port wheel bay
P	Battery circuit (PR, PS)	Z AE AA AB AF(2*, 12*, 13*) AH E D(1*) B	J. B. B. J. B. B. J. B. B. J. B. B. J. B. B. Bulkhead 2 Panel N Panel N Inverter beam
	D. C. power (PE, PG, PL, PX, PZ)	AE AF(12*) Q E 2(7*) H	J. B. B. J. B. B. J. B. P. Ammeter test J. B. B. Panel AM
	Distribution	A C AF AD X	J. B. B. J. B. B. J. B. B. J. B. B. J. B. B.

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TABLE 4 - continued

Group	Circuit	T. B.	Location
Q	Fuel jettison (QF)  Fuel pump (QP) Pylon fuel and jettison (QJ, QDA, QDB)	AU BL CL BAJ BAK CAG CAH AE ED EB(8*) AD(16*) AC BF BJ Y CF CJ	Cabin floor, forward of pilot's seat Port wing tip (forward edge) Starboard wing tip (forward edge) Port wing Port wing Starboard wing Starboard wing J. B. B. Starboard canopy rail Starboard canopy rail J. B. B. J. B. B. Port wing Port wing J. B. B. Starboard wing Starboard wing
R & S	Wireless supplies (RH, RV, RZ)  Radar supplies (SA, SB, SF, SX)	RU RQ AU AE AF(13*) D E AD(12*) RL AD(13*) RL J(14*) X EA DY DZ AD AE D(2*)	Cabin Panel RQ Cabin floor, forward of pilot's seat J. B. B. J. B. B. Panel N Panel N J. B. B. Cabin centre, forward face bulkhead 2 J. B. B. Cabin centre, forward face bulkhead 2 Cabin port side J. B. B. Bulkhead 2 stbd forward face Nose compartment Nose compartment J. B. B. J. B. B. Panel N

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TABLE 4 - continued

Group	Circuit	T. B.	Location
R & S	Radar supplies (SA, SB, SF, SX) continued	CH EG C	Starboard wheel bay Port Y bracing Main tank bay
W	Observer's oxygen indicator (WB)  Fire warning and extinguisher (WE, WF)	EB AA C(1*) AE E CX CE BX BE	Canopy rail starboard J. B. B. J. B. B. J. B. B. Panel N Starboard wing root (rib 1) Starboard wheel bay Port wing root (rib 1) Port wing root (adjacent fire bottle, rib 1)
X	A. C. power (XF, XG, XS)	G AE AF(3*, 4*) (5*, 6*) Y AD(11*, 20*) AC	J. B. K. Cabin, starboard side  J. B. B. J. B. B. J. B. B. J. B. B.

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Use of the index of electrical equipment

33. The index is a list of the major electrical components arranged under a system of groups identical to that employed in the layout of this chapter. The electrical equipment contained in the circuits of each group is listed in circuit order. Against each item, in column form, is given the location

diagram reference. In the adjacent column is given the access panel diagram reference and the numerical reference of the panel which has to be removed to gain access to that particular component. This information, used in conjunction with the wiring diagrams, provides a guide to the electrical layout of the aircraft system.

34. Items which are located in J. B. B are shown in fig. 6. Terminal blocks are listed separately at the end of the index. Electrical instruments and flight instruments are not included in the Index. Details of location and access to these items are given in Sect. 5, Chap. 2. Wireless and radar equipment is described in Section 6, Chapters 1 and 2 respectively.

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TABLE 5  
Index of electrical equipment

Group	Equipment	Item	Location diagram (fig.)	Access diagram (fig. - panel)
A & B	ARMAMENT AND PHOTOGRAPHIC			
	Control column firing switches	1	1	4 - 1
	Armament master switch	2	1	4 - 1
	Armament master relay	3	6	4 - 1
	Gun-firing relays	4	6	4 - 1
	Gun safety lock slug relay	5	2	5 - 5
	Gun firing units (Maxiflux)	6	2 & 3	5 - 5
	Gun safety lock solenoids	7	2 & 3	5 - 7
	R. P. auto-selector switch	8	2	4 - 1
	R. P. pairs/salvo switch	9	1	4 - 1
	R. P. control relay	10	6	4 - 1
	Relay and resistance unit, Type C	11	3	4 - 9
	G.45 camera	12	2	5 - 6
	Camera sunny/cloudy switch	13	1	4 - 1
	Camera master switch	14	1	4 - 1
	G. G. S. - radar switch	15	1	4 - 1
	Camera relay	16	6	4 - 1
	G. G. S. Mk. 5	17	1	4 - 1
	Control unit, Type S, Mk. 7	18	1	4 - 1
	Control unit, Type AL, Mk. 1	19	3	4 - 1
	Control unit, Type RA, Mk. 1	20	2	4 - 1
	Control unit, Type RM, Mk. 3	21	2	4 - 1
	Control unit, Type T1, Mk. 1	22	3	4 - 1
	Terminal box, Mk. 1	23	3	4 - 1
	Junction box, Type B, Mk. 11	24	2	4 - 1
	Voltage regulator, Type 22	25	2	4 - 1
	Voltage regulator, Type 22A	26	2	4 - 1
	Control unit, Type BL, Mk. 1	27	2	4 - 1
	Suppressor, Type F2	28	2	4 - 1
	Suppressor, Type F5	29	2	4 - 1
	G. G. S. retractable mounting switch	30	1	4 - 1
	G. G. S. retractable mounting circuit breaker	31	1	4 - 1
	G. G. S. emergency retraction micro switch	186	2	4 - 1
	G. G. S. test sockets	187	1	4 - 1

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TABLE 5 - continued

Group	Equipment	Item	Location diagram (fig.)	Access diagram (fig. - panel)
C	CONTROL SURFACES			
	Aileron tab actuator	32	3	5 - 12
	Aileron tab selector switch	33	1	4 - 1
	Aileron hydraulic pressure switch	34	2	5 - 3
	Aileron tab control micro switch	35	3	5 - 12
	Aileron tab control cut out switch	36	1	4 - 1
	Aileron tab control circuit breaker	37	1	4 - 1
	Aileron hydraulic power failure magnetic indicator	38	1	4 - 1
D	MISCELLANEOUS INSTRUMENTS			
	Cabin pressure switch	39	2	4 - 12
	Cabin pressure warning lamp	40	1	4 - 1
	Aileron tab neutral indicator lamp	41	1	4 - 1
	Alighting gear position indicator	42	1	4 - 1
	Alighting gear micro switches (nine)	43	2 & 3	5 - 3/14
	Alighting gear warning throttle-operated micro switch	44	3	4 - 9
	Alighting gear warning lamp	45	1	4 - 1
	Outside air temperature bulb	46	2	4 - 11
	Fuel contents gauge switch	47	1	4 - 1
	Fuel contents power unit	48	3	4 - 2
	Fuel contents adjuster box	49	2	5 - 5
	Fuel contents rectifier unit	50	2	5 - 5
	Hydraulic flow failure warning indicator	190	1	4 - 1
	Hydraulic flow failure micro switches	189	3	5 - 18
E	ENGINE INSTRUMENTS			
	Tachometer generator	52	3	4 - 9
	Exhaust gas temperature bulb	53	3	4 - 5
	Oil thermometer bulb	54	3	5 - 19
F	FLIGHT INSTRUMENTS			
	Turn and slip relay	57	6	4 - 1
	Turn and slip emergency switch	183	1	4 - 1
	Pressure head heater	58	3	4 - 6
	Pressure head heater switch	59	1	4 - 1

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TABLE 5 - continued

Group	Equipment	Item	Location diagram (fig.)	Access diagram (fig. - panel)
G	WING FOLDING			
	Wing fold warning indicators	60	1	4 - 1
	Wing fold external warning lamps (two)	61	2 & 3	4 - 3
	Wing fold micro switches (six)	62	2 & 3	5 - 7
J & K	ENGINE CONTROL AND R. A. T. O.			
	R. A. T. O. safety switch	63	1	4 - 1
	R. A. T. O. master switch	64	1	4 - 1
	R. A. T. O. selected warning lamp	65	1	4 - 1
	R. A. T. O. external warning lamp (two)	66	2 & 3	4 - 12/13
	R. A. T. O. inertia switch	67	3	4 - 1
	R. A. T. O. distribution and test box	68	2	4 - 1
	R. A. T. O. control relay	69	2	4 - 1
	R. A. T. O. slug relay	70	2	4 - 1
	R. A. T. O. firing switch	184	1	4 - 1
	Engine starting master switch	71	1	4 - 1
	Engine start and cartridge selector switch	72	1	4 - 1
	Time switch	73	2	4 - 1
	Relight circuit relay	74	6	4 - 1
	High-energy igniters (two)	75	2 & 3	4 - 9
Relight push-switch	76	1	4 - 1	
Turbo starter	181	2	4 - 9	
L	LIGHTING			
	Deck approach warning lamp (external)	77	2	5 - 2
	Hook down warning lamp	78	1	4 - 1
	Hook micro switch	79	3	5 - 18
	Deck approach circuit relay	80	6	4 - 1
	Carrier/shore-based switch	182	1	4 - 1
	Cabin lamps dimmer switches (pilot)	82	1	4 - 1
	Cabin lamps dimmer switch (observer)	83	1	4 - 1
	Radar console lights dimmer switch	84	1	4 - 1
	Cabin lamps (red) master switch	85	1	4 - 1
	Emergency lamp switch	86	1	4 - 1
Emergency battery	87	2	4 - 1	

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TABLE 5 - continued

Group	Equipment	Item	Location diagram (fig.)	Access diagram (fig. - panel)
L	LIGHTING (continued)			
	Identification lamp	88	3	5 - 4
	Identification lamp switch	89	1	4 - 1
	External lamp circuit breaker	90	1	4 - 1
	Inspection lamp (gun bay)	91	2	5 - 5
	Inspection lamp socket (cockpit)	92	1	4 - 1
	Landing lamp	93	3	5 - 13
	Landing lamp switch	94	1	4 - 1
	Formation lamps (wing-tip tanks) (two)	95	2 & 3	5 - 11
	Navigation lamps (wing-tip tanks) (two)	96	2 & 3	5 - 9
	Navigation lamp tail	97	3	4 - 7
	Navigation lamps switch (morse)	98	1	4 - 1
	Navigation lamps switch (bright/dim)	99	1	4 - 1
	Contact plates (navigation lamps) (two)	100	2 & 3	5 - 10
	Navigation lamps, circuit relay	101	6	4 - 1
	Navigation lamps, resistance units (two)	185	6	4 - 1
	Navigation lamps, flasher unit	191	1 & 2	4 - 1
	Formation lamps, switch	193	1	4 - 1
M	MISCELLANEOUS			
	Alighting gear lever lock solenoid	102	3	4 - 1
	Alighting gear lever lock micro switch	103	3	4 - 1
	Alighting gear lever lock oleo leg micro switch	104	3	5 - 14
	Alighting gear override switch	105	1	4 - 1
P	D. C. POWER			
	Battery	106	2	5 - 5
	Battery isolating switch	107	1	4 - 1
	External supply socket	108	3	5 - 1
	Hold-off relay (two)	109	6	4 - 1
	Battery isolating relay, Type R	110	3	4 - 10
	Battery voltage test socket	111	3	4 - 2
	Battery beam assembly	112	2 & 3	5 - 5
	Generators, Type 507 (two)	113	2 & 3	4 - 9
	Voltage regulators, Type 94 (two)	114	2 & 3	4 - 1

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TABLE 5 - continued

Group	Equipment	Item	Location diagram (fig.)	Access diagram (fig. - panel)
P	D. C. POWER (continued)			
	Control unit, Type LKF B2 (two)	115	3	4 - 1
	Main contactors (two)	116	2	4 - 1
	Main circuit breakers (two)	117	2	4 - 1
	Generator failure warning lamps (pilot)	118	1	4 - 1
	Generator failure warning lamps (navigator)	119	1	4 - 1
	Generator shunt resistors (positive) (two)	120	2	4 - 1
	Generator shunt resistors (negative) (two)	121	2 & 3	4 - 9
	Voltage test sockets (two)	122	3	4 - 1
	Voltage trimmer resistances (two)	123	3	4 - 1
	Test/flight change-over switches (two)	124	3	4 - 1
Q	FUEL SYSTEM			
	Fuel pump motor	125	2	5 - 5
	Fuel pump motor suppressor	126	2	5 - 5
	Fuel pump isolating solenoid	127	2	5 - 19
	Fuel pump test switch	128	1	4 - 1
	Fuel pump test socket	129	1	4 - 1
	Fuel pump switch	130	1	4 - 1
	Fuel pump emergency switch	131	1	4 - 1
	Fuel pump circuit breaker	132	1	4 - 1
	Wing-tip tank fuel jettison cock actuators	133	2 & 3	5 - 11
	Wing-tip tank fuel jettison switch	134	1	4 - 1
	Wing-tip tank circuit contact plates	135	2 & 3	5 - 10
	Fuel transfer warning indicators	136	1	4 - 1
	Fuel transfer pressure switches (two)	137	2 & 3	5 - 15
	Fuel pressure warning indicator	138	1	4 - 1
	Fuel pressure switch	139	2	5 - 19
	Fuel flowmeter integrator unit	192	3	4 - 1
R & S	WIRELESS AND RADAR			
	Radar, inverter, Type F46, and control unit	140	3	5 - 5
	Radar inverter circuit breaker, Type D	141	3	4 - 2
	Radar supply inverter switch	142	1	4 - 1
Radar circuit breakers K1, K2, etc.	143	1	4 - 1	

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TABLE 5 - continued

Group	Equipment	Item	Location diagram (fig.)	Access diagram (fig. - panel)
R & S	WIRELESS AND RADAR (continued)			
	Radar modulator switch	144	1	4 - 1
	Radar blower supply relay, Type P.1	145	2	4 - 12
	Radar blower suppressors, Type B4	146	2	4 - 12
	Radar blower micro switch	81	2	5 - 14
	Radar, I.F.F. Mk.10 a.c. control relay	161	6	4 - 1
	Radar supply test socket	166	1	4 - 1
W	WARNING AND EMERGENCY			
	Observer's oxygen demand indicator	147	1	4 - 1
	Fire warning and extinguisher push switch	148	1	4 - 1
	Fire detector switches (twelve)	149	2 & 3	4 - 8/9 5 - 17/19
	Fire extinguisher bottles (two)	150	2 & 3	5 - 16
X	A.C. POWER			
	Inverter, Type 100A and control unit (main)	151	2	5 - 4
	Inverter, Type 100A and control unit (stand-by)	152	2	4 - 1
	Main inverter circuit breaker	153	1	4 - 1
	Stand-by inverter circuit breaker	154	1	4 - 1
	Flight instrument switch	155	1	4 - 1
	Main inverter ground test switch	156	1	4 - 1
	Instrument inverter reset switch	170	1	4 - 1
	Torque switch	157	2	4 - 1
	Relays, change-over	158	2	4 - 1
	Main inverter failure warning indicator	159	1	4 - 1
	Relays, inverter supply (two)	160	6	4 - 1
	Relays inverter control (two)	163	6	4 - 1
	Main inverter suppressor	162	2	4 - 1
	Stand-by inverter suppressor	171	2	4 - 1
	JUNCTION BOXES			
	B Behind observer's seat	161	2	4 - 1
	K Cabin floor, starboard side	164	2	4 - 1
	F Cabin, starboard side	165	2	4 - 1
	P Bulkhead 2, forward face	187	2	4 - 1

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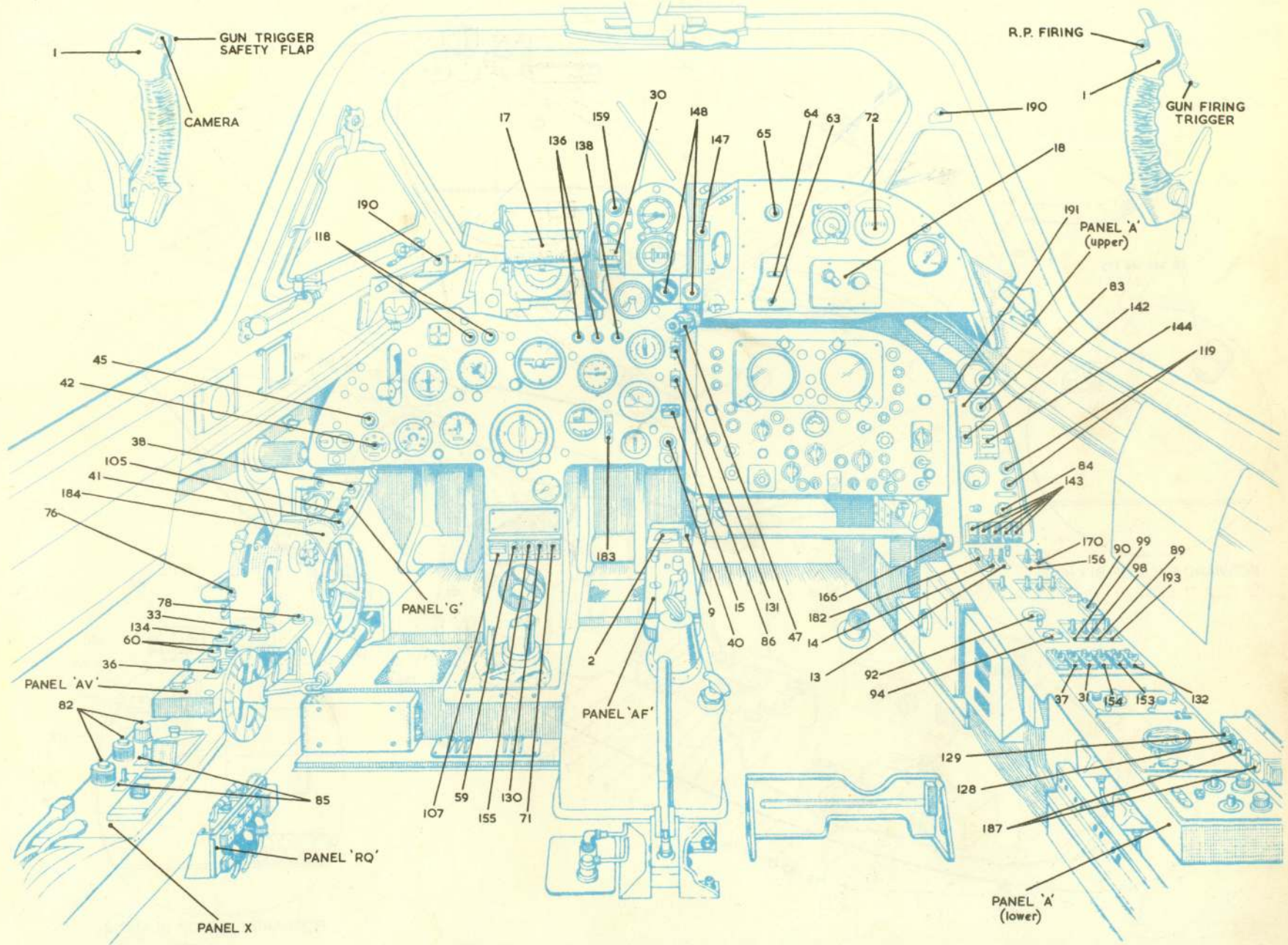
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TABLE 5 - continued

Group	Equipment	Item	Location diagram (fig.)	Access diagram (fig. - panel)
<b>PANELS</b>				
A	Cabin, starboard side		1	4 - 1
AF	Cabin, floor centre	167	1 & 2	4 - 1
AL	Cabin, canopy deck	168	2	4 - 1
AM	Cabin, canopy deck	169	2	4 - 1
AV	Cabin, port side		1	4 - 1
DQ	Bulkhead 2, forward face	172	2	4 - 1
E	Bulkhead 1, rear face	173	2	4 - 1
G	Cabin, port side		1	4 - 1
L	Bulkhead 1, forward face	175	2	4 - 12
M	Bulkhead 2, forward face	176	2	4 - 1
N	Bulkhead 2, rear face	177	3	4 - 2
RC	Cabin, starboard side		1	4 - 1
RQ	Cabin, port side		1	4 - 1
V	Cabin, forward starboard		1	4 - 1
X	Cabin, port side		1	4 - 1
<b>MAIN FUSEBOX</b>				
C	Bulkhead 2, forward face	188	2	4 - 1

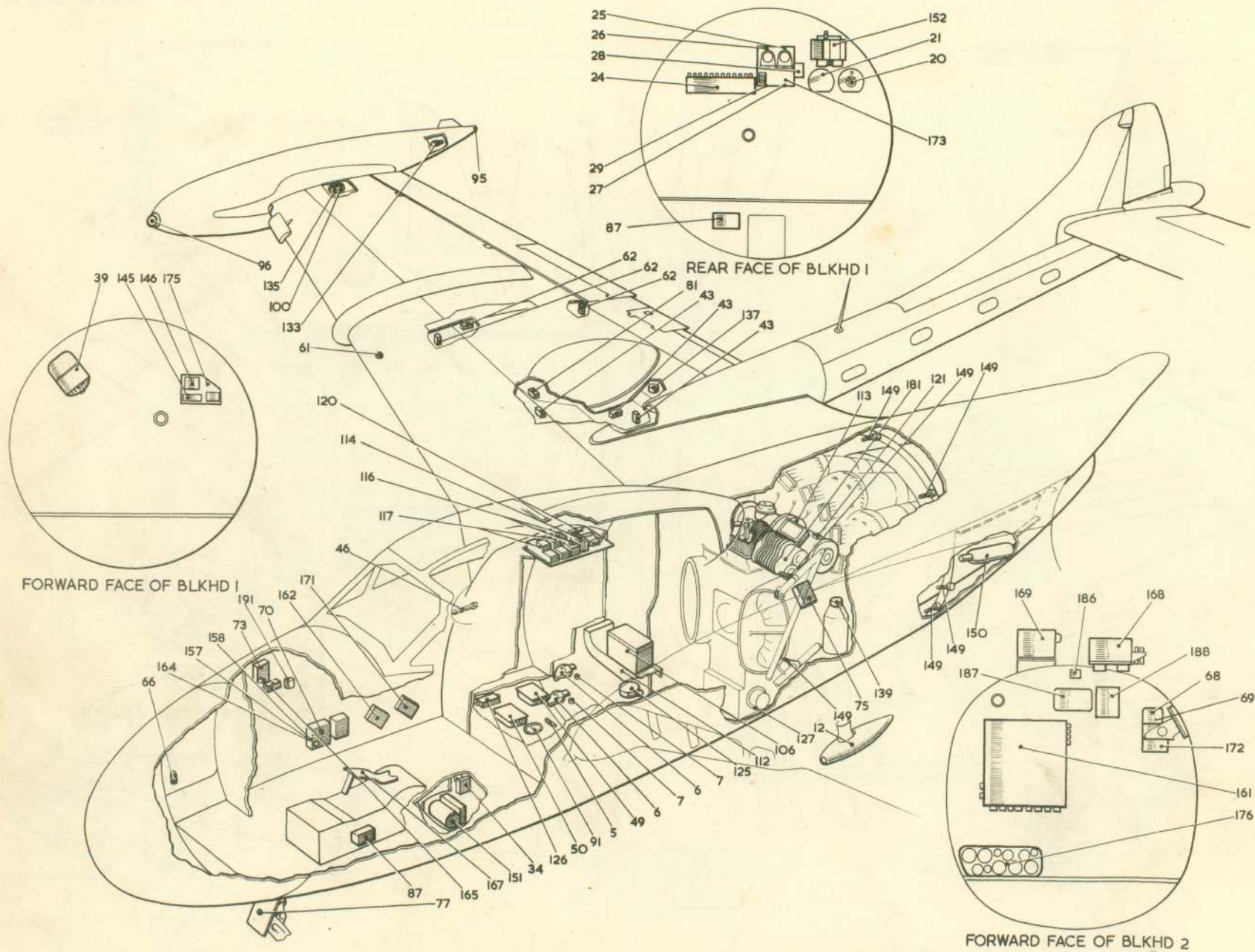
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Fig.1 Electrical equipment-cockpit  
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Fig.2. Location of equipment (I)

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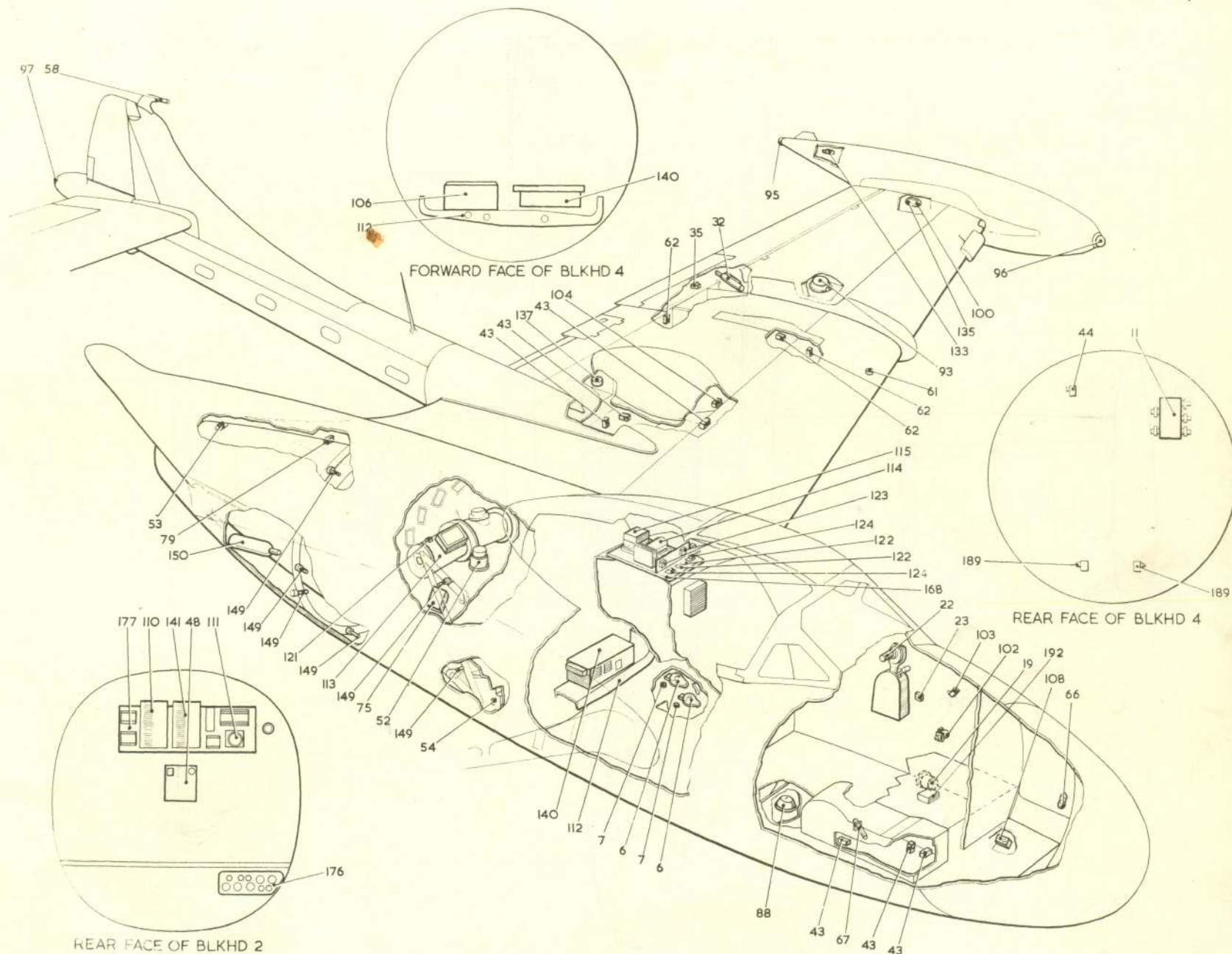
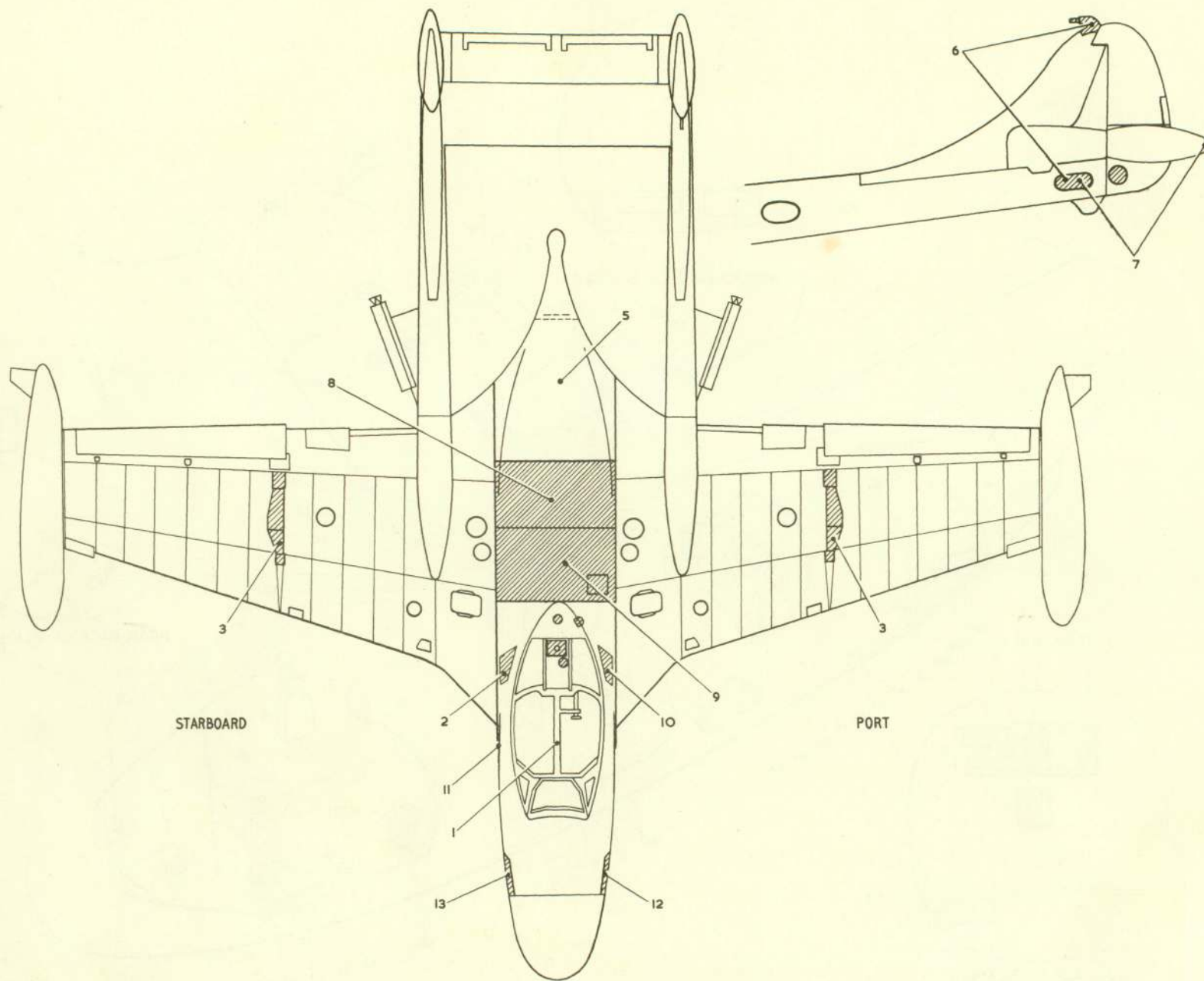


Fig.3. Location of equipment (2)

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Fig. 4. Access panels, upper surface  
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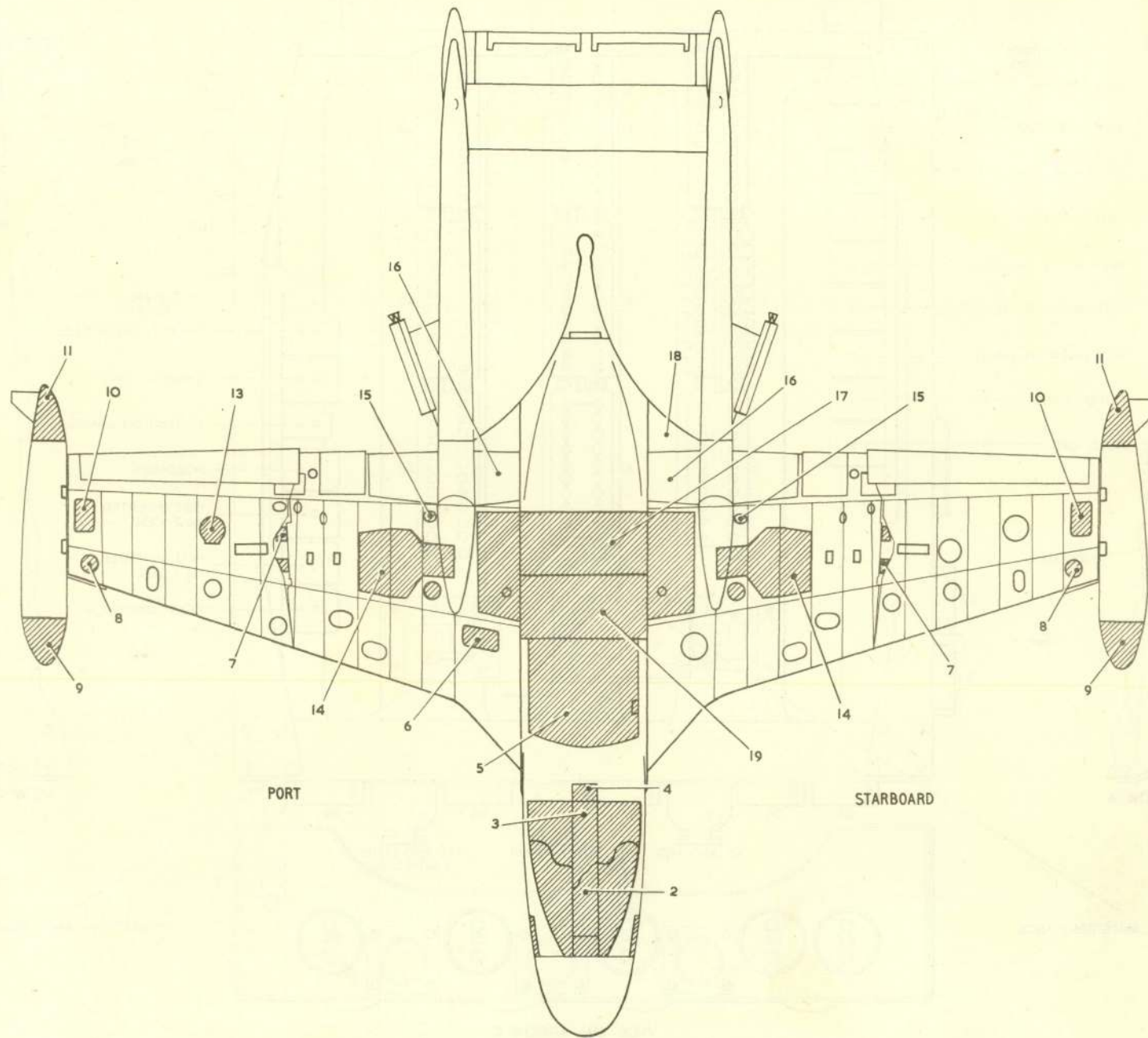
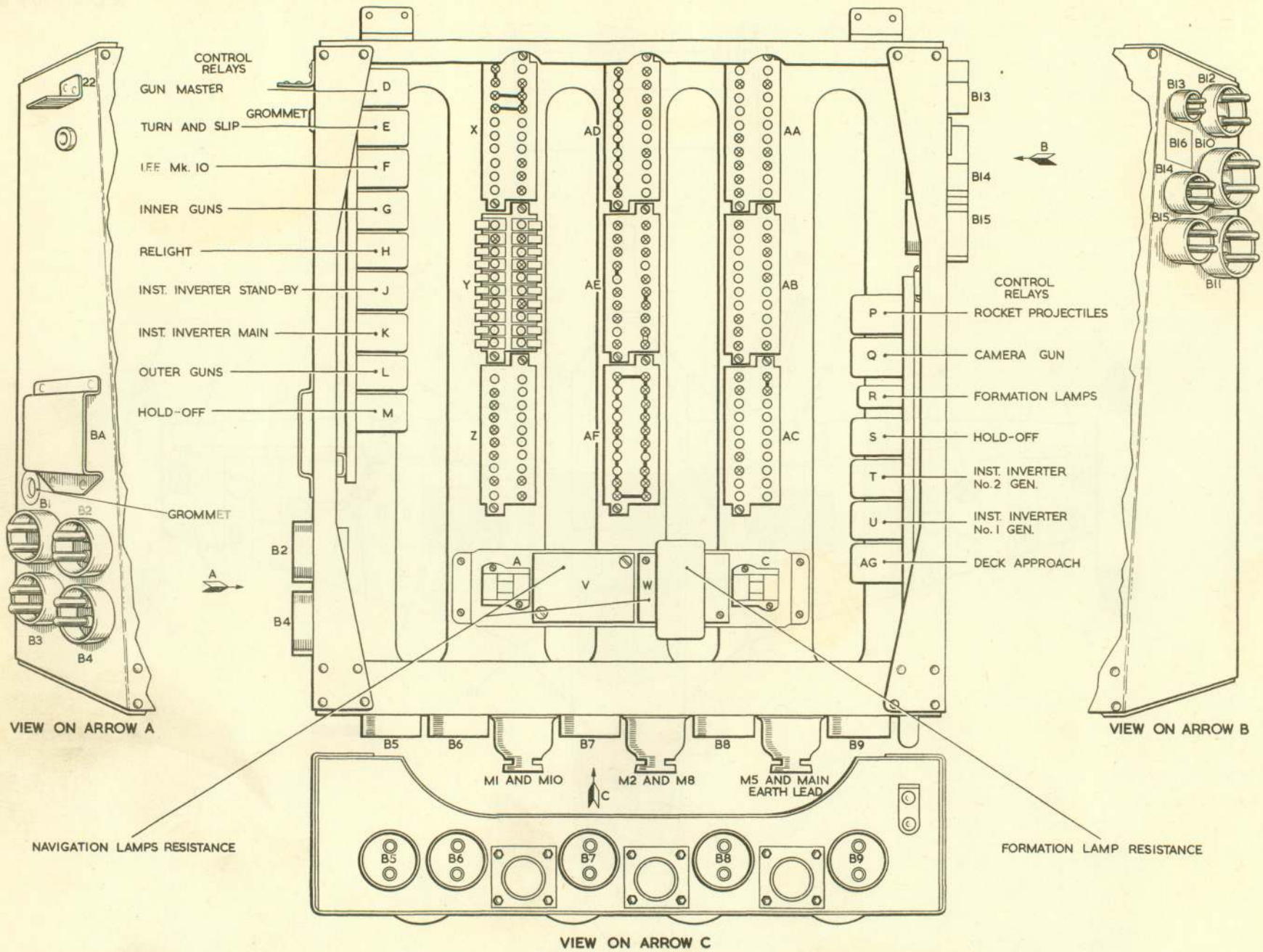


Fig. 5. Access panels, lower surface  
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Fig. 6 Junction box B  
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