Chapter 1

GENERAL INFORMATION

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Introduction

1. This section contains descriptive and servicing information for the various radar services. These services comprise six separate installations as follows:-

A.R.I.5878	A.R.I.18144
A.R.I.5848-C-2-P-7	A.R.I.5816
A.R.I.5885	A.R.I.5771

2. The power supplies to the equipment form part of the electrical system and are described in Book 2, Sect.6, Chap.2A, 2B and 2C of this publication. Table 1 lists the distribution fuses. The 28-volt d.c. supplies are fed from the main busbars, whilst the a.c. power for the installations is supplied as follows:-

A.R.I.5878	No.5 inverter No.6 inverter (No.7 in an emergency)
A.R.I.5848	No.6 inverter or No.7 inverter
A.R.I.5885	No.8 inverter
A.R.I.18144	No.5 inverter and 7.3 kVA altntr. (De-icing)
A.R.I.5816	No.7 inverter (No.6 in an emergency)
A.R.I.5771	No.6 inverter (No.7 in an emergency)

3. Location of the equipment is shown in fig.1. Routeing charts and descriptions of the various installations are contained in the respective chapters of this section.

Connectors

4. The majority of the multi-core connectors are manufactured from cable to specification D.E.F.10 but in some instances tersil and nyvin are used. Information on these types of cable is given in A.P.4343C, Vol.1, Book 3, Sect.5.

Plugs and sockets

5. Connection to the majority of items is via plugs and sockets of the Plessey Mk.4 and Mk.5 ranges. However, as most of the plugs and sockets are sealed to preveht ingress of moisture and arcing, little servicing is possible. Details of the Plessey connectors are given in A.P.4343C, Vol.1, Book 3, Sect.5, whilst notes on potting and sealing are contained in A.P.4343, Vol.1, Sect.12.

SERVICING

WARNING...

Voltages in excess of 100 volts a.c. or d.c. can be dangerous under certain conditions. 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.

Precautions

6. Due to the interconnections between the electrical supply panels and the various units employed in the radar systems, it is essential that full co-operation is maintained between the electrical and radar tradesmen. This will ensure that a high degree of serviceability is maintained and obviate repetition of functional tests etc., during servicing periods.

7. When carrying out functional tests, an external 28-volt d.c. supply must be connected to the aircraft.

8. Before switching on the transmitter of any service, ensure that the respective aerial is clear of any obstructions and that no tradesmen are working in the area. Any tradesman who is liable to be in the vicinity of the aerial, should be warned.

WARNING...

The areas referenced in the lethal warning notice at the front of this book should be marked out prior to servicing equipment concerned.

Test equipment supplies

9. Test sockets are provided at the radio crate in the nose section, the signaller's station and at the radio power panel to cater for powering test equipment with 28-volts d.c., and 115-volts, 1600 c/s a.c. For further details of these sockets, see Book 2, Sect.6, Chap.2C.

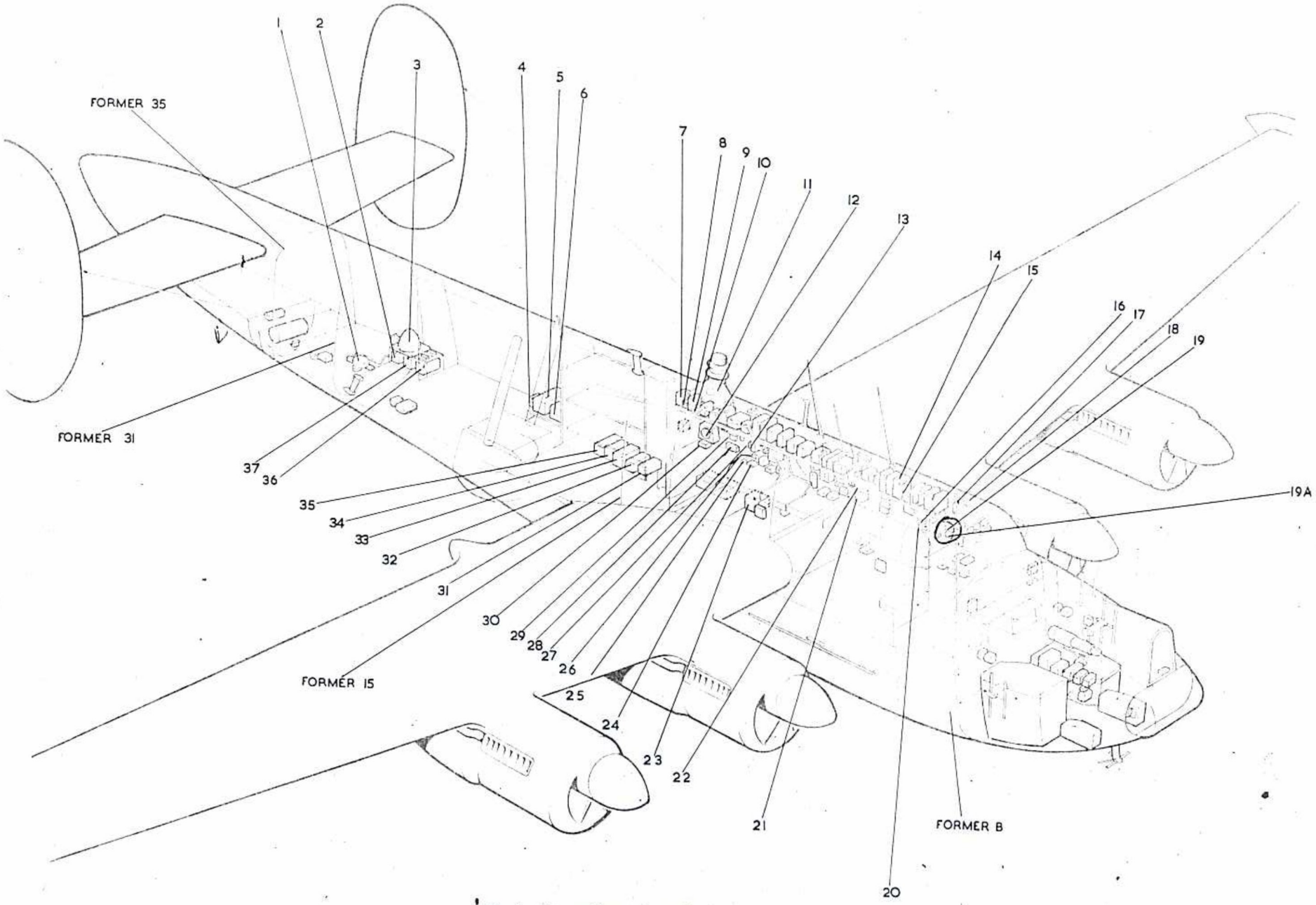

Fig.1. Location of radar equipment.

KEY TO FIG.1

Location of radar equipment

A.R.I.5878
5 WAVEFORM GENERATOR, TYPE 4621
6 POWER UNIT, TYPE 4624
12 INDICATOR, TYPE 4623
29 MARKER UNIT-BEARING, TYPE 12382
30 CONTROL UNIT, TYPE 4620

A.R.I.5848
19 CONTROL UNIT, TYPE 927
19A CONTROL UNIT, TYPE C1128/APX25
23 TRANSMITTER-RECEIVER, TYPE RT279/APX6A
28 S.I.F. CODER UNIT, TYPE KY95/APX25

A.R.I.5885
1 AERIAL, TYPE 4359
2 DISCRIMINATOR, TYPE 4357
3 TRANSMITTER-RECEIVER, TYPE 4364
4 JUNCTION BOX, TYPE 4832
16 INDICATOR COUNTER, TYPE 4355
20 INDICATOR ELECTRIC, TYPE 4366
36 AMPLIFIER, TYPE 4356
37 POWER UNIT, TYPE 4358

A.R.I.18144
7 AMPLIFIER, TYPE A7450
8 AMPLIFIER, TYPE 13049
9 OSCILLATOR, TYPE 9100, 9101 OR 9102
10 MIXER UNIT, TYPE 9098 OR 9099
11 AERIAL, TYPE 11030S, 11031C OR 11032X
13 INDICATOR, TYPE 16613
24 CONTROL UNIT, TYPE 9987
25 CONTROL UNIT, TYPE 7449
26 CONTROL UNIT TYPE 9103
27 VISOR STOWAGE
31 POWER UNIT, TYPE 9986
32 POWER UNIT, TYPE 7824
33 FILTER UNIT, TYPE 7496
34 POWER UNIT, TYPE 7495
35 RECEIVER, TYPE 9982

A.R.I.5816
14 RECEIVER, TYPE R3673
15 WAVEFORM GENERATOR, TYPE 72
18 J.B., TYPE 399
21 INDICATOR, TYPE 26

A.R.I.5771
17 LOADING UNIT, TYPE 52
22 RECEIVER-INDICATOR, TYPE R65

TABLE 1

Circuit breakers and fuses for radar services

Circuit breakers	Rating (amp.)	Service
	A.R.I.18144	
No.1 (d.c.)	15	Power unit, Type 7824 } Radio power panel
No.2 (d.c.)	15	Power unit, Type 7495 } Radio power panel

Fuse No.	Rating (amp.)	Service
No.15 (H.R.C.) (d.c.)	50	Supply to No.1 and No.2 circuit breakers
BK6 (d.c.)	5	Supply control switch
BK7 (d.c.)	5	Indicator, Type 11613 (Heating)
BK11 (d.c.)	2.5	Junction box, Type 11711
BK12 (d.c.)	10	Oscillator unit, Type 9100
BM5 (a.c. Rϕ)	5	Junction box, Type 11711 } No.5 inverter
BM6 (a.c. Bϕ)	5	Junction box, Type 11711 } No.5 inverter
BW1 (a.c. Rϕ)	7.5	Aerial de-icing } 7.3 kVA alternator
BW8 (a.c. Yϕ)	7.5	Aerial de-icing } 7.3 kVA alternator
BW11 (a.c. Bϕ)	7.5	Aerial de-icing } 7.3 kVA alternator
BW3 (a.c. Rϕ)	2.5	Aerial plinth de-icing } 7.3 kVA alternator
BW6 (a.c. Yϕ)	2.5	Aerial plinth de-icing } 7.3 kVA alternator
BW10 (a.c. Bϕ)	2.5	Aerial plinth de-icing } 7.3 kVA alternator
GG11 (d.c.)	5	7.3 kVA alternator ON-OFF-RESET switch
GG12 (d.c.)	5	De-icing control switch
	A.R.I.5816	
BJ7 (d.c.)	5	Main supply to control switch
BL9 (a.c. 1ϕ)	5	Main supply to control switch (No.7 inverter)
	A.R.I.5771	
BL2 (A.C. 1ϕ)	5	Main supply to control switch (No.6 inverter)

TABLE 1 (continued)

Fuse No.	Rating (amp.)	Service	
	A.R.I.5878		
BK4 (d.c.)	20	Main supply to control switch	
BL1 (a.c. 1ϕ)	20	Main supply (No.6 inverter)	
BM3 (a.c. Rϕ)	5	3-phase supply	No.5 inverter
BM4 (a.c. Bϕ)	5	3-phase supply	
	A.R.I.5848 C-2-P-7		
BK5 (d.c.)	5	Main supply	When No.6 or No.6 and 7 inverters are running
BL3 (a.c. 1ϕ)	5	Main supply	
BJ9 (d.c.)	5	Main supply	When No.7 inverter only is running
BL8 (a.c. 1ϕ)	5	Main supply	
	A.R.I.5885		
CD1 (a.c. Rϕ)	7.5	Main supply	No.8 inverter
CD2 (a.c. Yϕ)	7.5	Main supply	
CD3 (a.c. Bϕ)	7.5	Main supply	

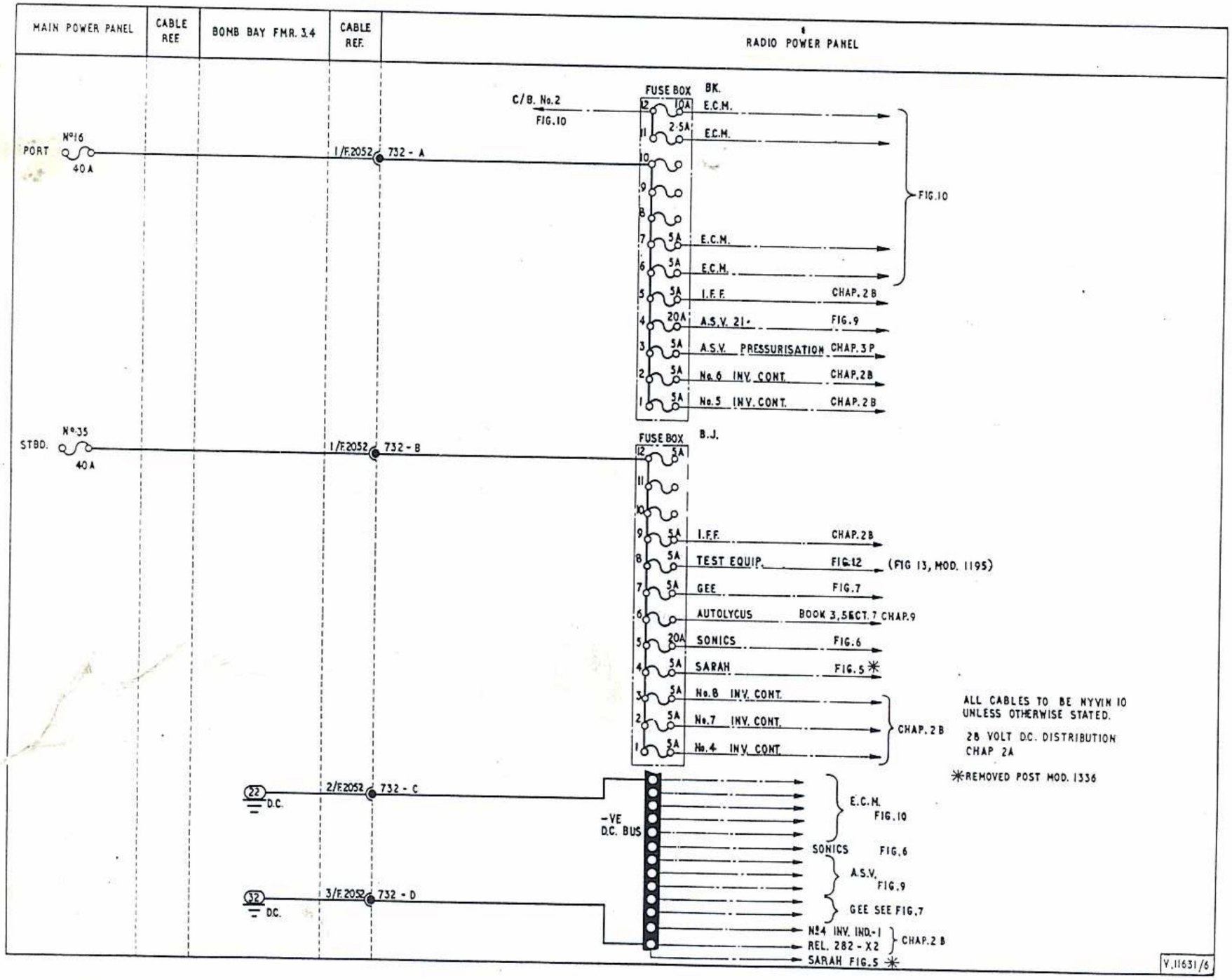

Fig. 4 Radio power panel d.c. supplies

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