Group Q FUEL SYSTEM

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INTRODUCTION

1. This group contains information relating to the fuel control circuits. The supply to the fuel transfer indicators (QT) and fuel pressure indicator (EK) are described and illustrated in Sect. 5, Chap. 2. For details of individual items of equipment refer to the following specialist Air Publications.

Equipment	Air Publication
Rotary actuator Type CZ54709/6	A.P.4343, Vol. 1, Sect. 17
Fuel-pump, Type BP3, Mk. 3	A.P.4343D, Vol. 1, Book 2, Sect. 7

WING TIP TANK FUEL JETTISON (QF)

OPERATION

2. The two wing tip fuel tanks cannot themselves be jettisoned but the fuel in the tanks is jettisonable. A fuel jettison cock at the rear of each wing tip tank is electrically operated by a split-field rotary actuator. Both actuators are controlled by the same double-pole switch, positioned on panel AV. The switch, protected by a guard against accidental operation, is marked CLOSED and JETTISON. The rotary actuators are fitted with integral limit switches.

SERVICING

3. The actuators and associated fuel cocks are accessible by removing the tail fairings of the wing tip tanks. Special attention should be given to the contact plates which form the electrical connection through the wing tip joints. Each comprises a four-way set of spring-loaded contact plungers which press on four fixed contact plates suitably insulated and mounted on the wing structure. When the wing tip tanks are removed, the surfaces of the contact plates should be checked for cleanliness and freedom from corrosion. Details of the servicing of the rotary actuators will be given in A.P.4343, Vol.1, Sect.17.

FUEL PUMP (QP)

OPERATION

4. A fuel booster pump driven by a totally enclosed motor is controlled, through a 15-amp. circuit breaker and a master switch on panel A.

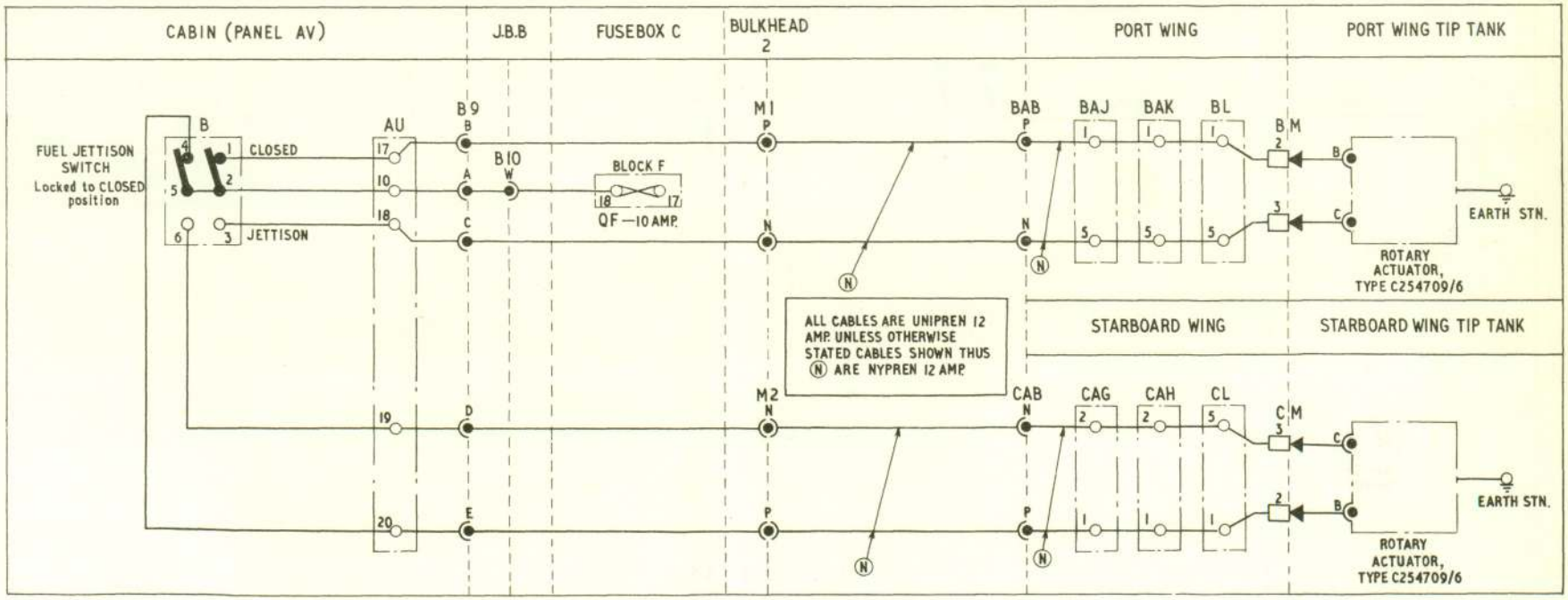

Fig.1 Wing tip tank fuel jettison

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SERVICING

5. A test of the efficiency of the pump and its circuit can be made with the low-pressure fuel cock ON and the high pressure fuel control OFF. If the pump is satisfactory the fuel pressure warning magnetic indicator will operate almost immediately after the pump is switched ON. The pump requires little servicing, but the vent gauze at the base of the pump should be kept clean to ensure ventilation of the pump. To enable the current consumption of the fuel pump motor to be tested, a test socket and test switch are provided on the starboard console panel A. The current consumption of the motor under load conditions should not exceed 8.25 amp.

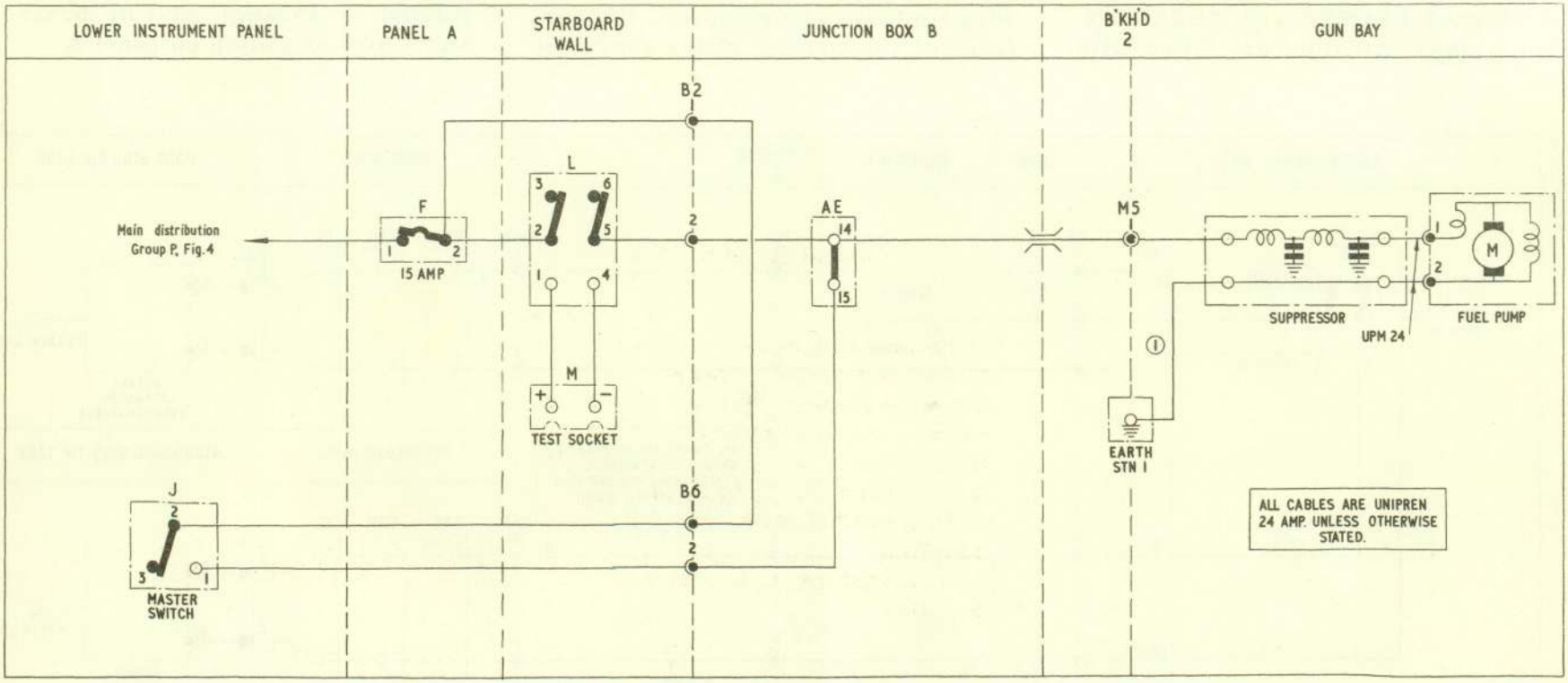

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Fig.2 Fuel pump

Group R & S WIRELESS AND RADAR SUPPLIES

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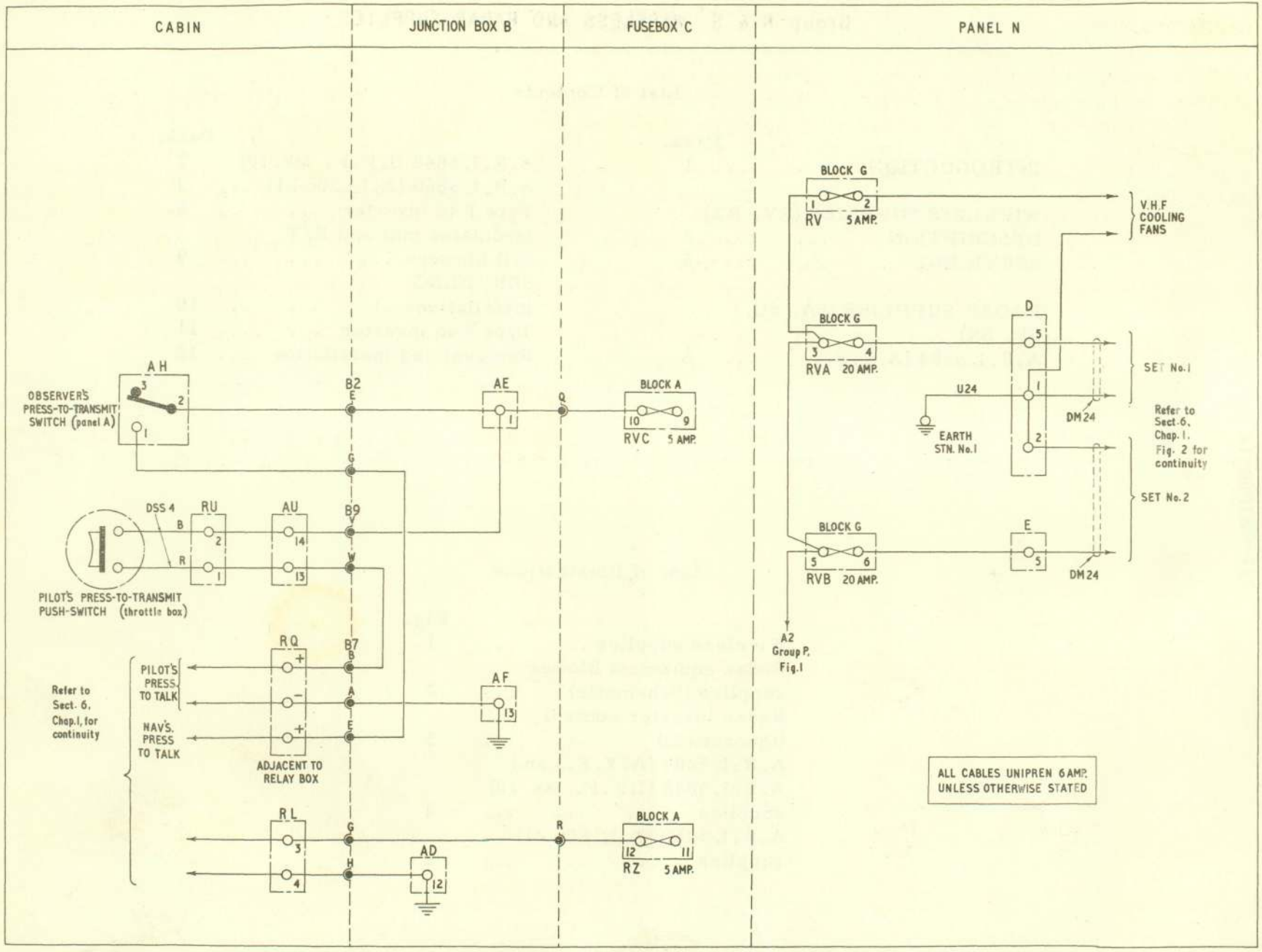

Fig. I. Wireless supplies – RH–RV–RZ

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INTRODUCTION

1. This group contains information relating to the wireless and radar a.c./d.c. supplies. Details of the equipment are given in Sect. 6, Chap. 1 and 2. For details of individual items of equipment refer to the following specialist Air Publications.

Equipment	Air Publication
Relay, Type S3	A.P.4343C, Vol.1, Book 2, Sect. 3
Relay, Type P1	A.P.4343C, Vol.1, Book 2, Sect. 3
Suppressor, Type B4	A.P.4343C, Vol.1, Book 3, Sect. 5
Circuit breaker, Type D1	A.P.4343B, Vol.1, Book 2, Sect.10

WIRELESS SUPPLIES (RV, RZ)

DESCRIPTION

2. The wireless equipment comprises A.R.I.5491 (T.R.1934-1935), and A1961 (Intercommunication) systems, which derive their supplies from two fuses located in fuse box C on the forward face of bulkhead 2 behind the pilot's seat, and two 20 amp. fuses RVA and RVB in fuse block G on panel N. A.R.I.18049 (V.H.F. Homing) derives its supply from A.R.I.5491 (V.H.F.) as described in Sect. 6, Chap. 1, Group B.

3. Mod.N.924 introduces secondary cooling in the radio compartment via two fans which receive their supply from the battery circuit breaker through a 5 amp. fuse RV on panel N, and a suppressor RS. This circuit gives uninterrupted running to the V.H.F. cooling fans as soon as the battery circuit breaker is made, or the ground supply connected.

4. The pilot's press-to-transmit switch in the V.H.F. system is mounted in the throttle handle and controls the transmit relay A in panel RQ,

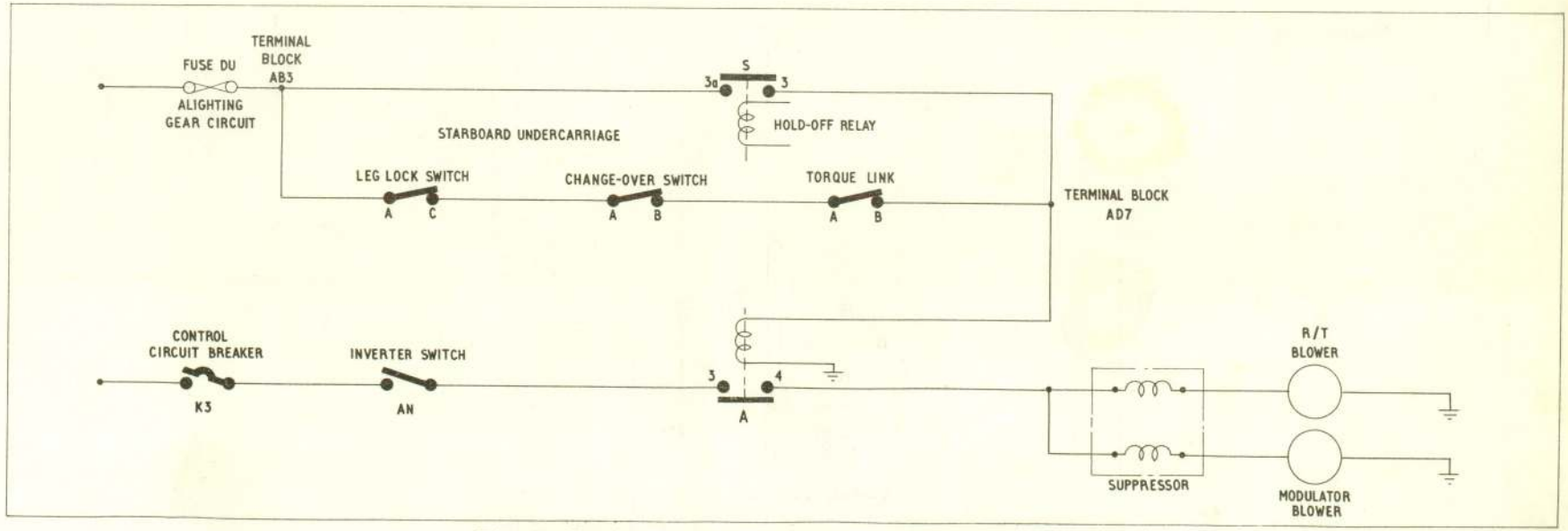

Fig. 2 Radar equipment blower supplies (schematic)

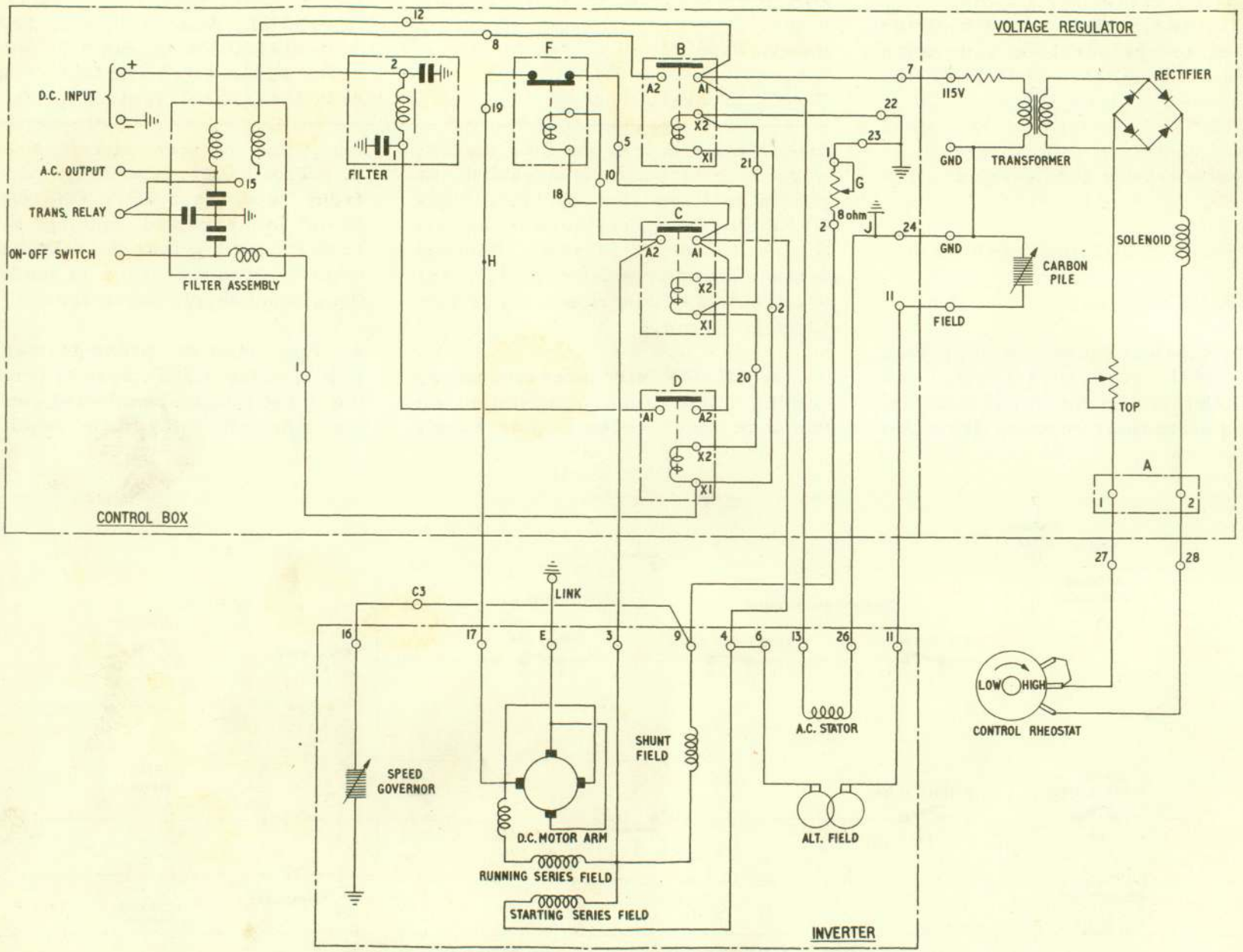

Fig. 3 Radar inverter control (theoretical)

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positioned under the pilot's seat. The navigator's transmitting switch is on the starboard panel A, and controls the transmit relays B and C in panel RQ.

SERVICING

5. Detailed information on the wireless circuits and equipment is given in Sect. 6, Chap. 1.

RADAR SUPPLIES (SA, SC, SF, SX)

A.R.I. 5284 (A.Y.F.)

6. The supply to the A.R.I. 5284 (A.Y.F.) is through a 10 amp. fuse SA in fuse block A, located in fuse box C on the forward face of bulkhead 2 behind the pilot's seat. The circuit is routed through JB.B. to the transmitter-receiver. Full details of the A.Y.F. equipment are given in Sect. 6, Chap. 2,

A.R.I. 5848 (I.F.F. Mk. 10)

7. The supply to the A.R.I. 5848 (I.F.F. Mk. 10) is derived from two 5 amp. fuses in fuse box C. The d.c. circuit is routed from fuse SC in fuse block A through JB.B. to the I.F.F. master switch AR on the starboard console panel A, then back through JB.B. to the transmitter-receiver. The a.c. supply is routed through fuse SXC in fuse block B and contacts 5-5a of relay F in JB.B. Relay F, type S3, is energized from the I.F.F. Mk. 10 control unit. Further details of the equipment are given in Sect. 6, Chap. 2.

A.R.I. 5860 (A.I. Mk. 21)

Type F46 inverter

8. The a.c. supplies to the A.R.I. 5860 (A.I. Mk. 21) and A.R.I. 5848 (I.F.F. Mk. 10) are provided from an American inverter, Type F46, positioned in the inverter and battery beam in the aft end of the gun bay. The input to the unit is 28 volts, 150 amp., d.c. supplied from the aircraft busbar and fed through a 200 amp., Type D, circuit breaker B on panel N. The control of this circuit breaker is through a 5 amp. circuit breaker K3 on the starboard console panel A, the inverter switch AN, and a 5 amp. fuse SFB in fuse block E located in fuse box C. The a.c. output from the inverter is 115 volts, single phase, 400 c.p.s. and is controlled through two circuit breakers, K4 (25 amp.) and K5 (10 amp.) on the starboard console panel A. The inverter is ram air cooled under flight conditions.

Note...

The radar inverter must NOT be running at the moment of engine ground starting.

Modulator unit and R/T unit blowers

9. The modulator and R/T units of the A.R.I. 5860 are positioned in the nose compartment of the aircraft, each unit being cooled by a blower motor mounted on the underside and operating ONLY when the system is under ground tests. During flight, the equipment is cooled by ram air. The supply to these blowers is by way of contacts 3 and 4 of relay A located on panel L. This relay is energized when the aircraft is on the ground from either of two parallel supplies, as shown in fig. 5. The supply in each instance is from a 10 amp. fuse DU in fuse block E located in fuse box C behind the pilot's seat. This fuse forms part of the alighting gear circuit, Group D. The first supply is through the starboard leg lock micro switch contacts A and C, the starboard leg change-over switch contacts A and B, and the starboard undercarriage torque link micro switch contacts A and B to energize the coil of relay A. The second supply is via contacts 3 and 3a of the hold-off relay S. This relay is only energized when the ground supply is plugged in and switched on. Under these conditions contacts 3 and 3a are made, completing the circuit to the coil of relay A. If the inverter switch is now closed the blower motors will operate, deriving their supply from circuit breaker K3. Refer also to fig. 3 for this circuit.

SERVICING

Installations

10. Servicing information relating to the A.R.I. 5860, A.R.I. 5284 and A.R.I. 5848 equipment is given in Sect. 6, Chap. 2.

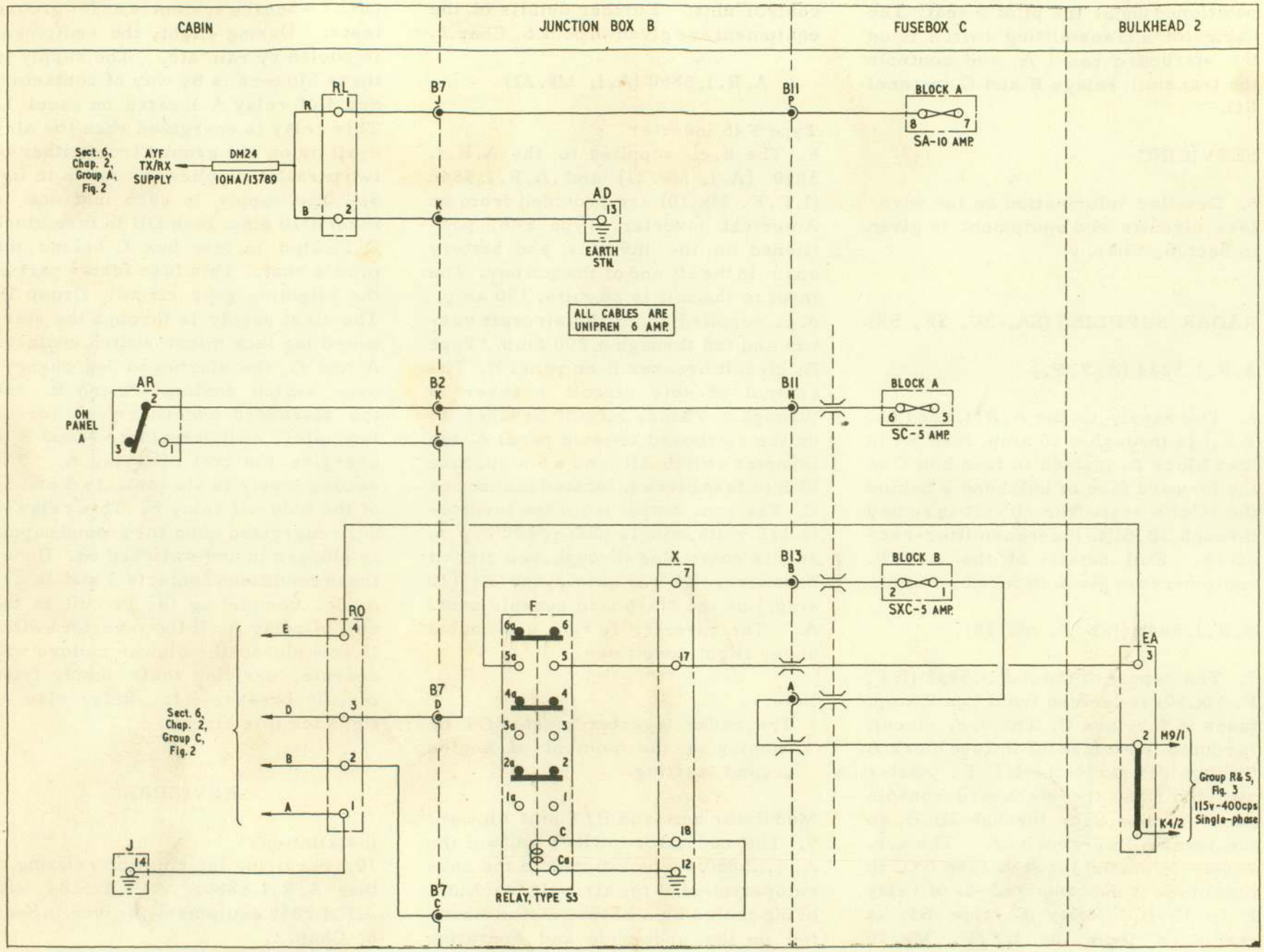

Fig. 4 A.R.I. 5284 (A.Y.F.) and A.R.I. 5848 (I.F.F. Mk.10) supplies

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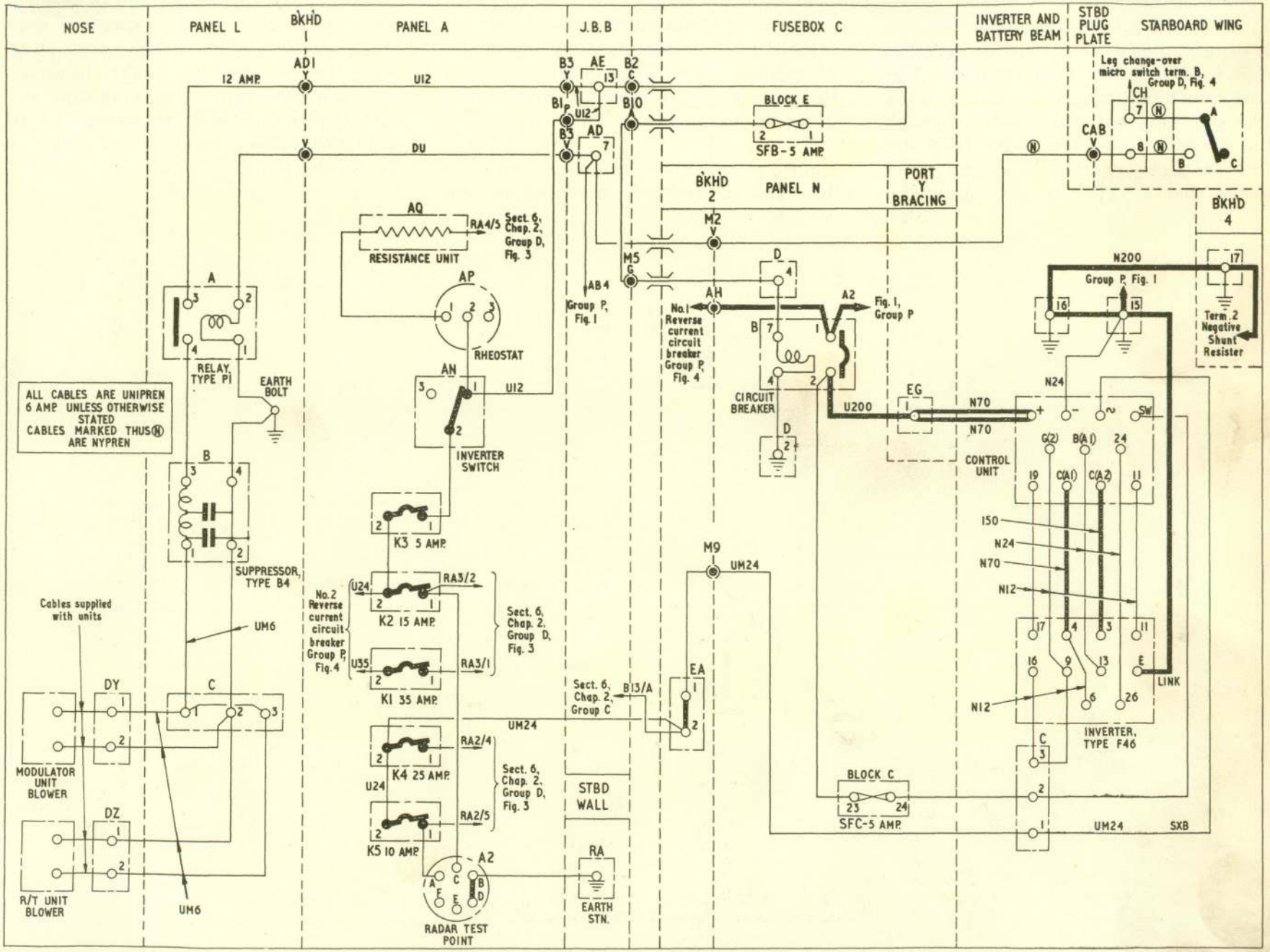

Fig. 5 A.R.I. 5860 (A.I. Mk. 21) supplies

Type F46 inverter

11. Full details of the servicing and testing of the inverter will be given in A.P.4343F, Vol.1 at a later date. The unit must be efficiently cooled. Ensure that the inlet and outlet ports through the gun bay doors are undamaged and free from obstruction. It is recommended that a separate air supply be provided for all ground running tests of the unit. Particular care should be taken to ensure satisfactory insulation of cables, especially those carrying the a.c. supplies. A schematic diagram is shown in fig. 4.

Removal and installation

12. The inverter is mounted on the battery beam in the aft end of the gun bay and is accessible when the tray is lowered. The beam assembly, with the battery and radar inverter forms a heavy unit requiring substantial support before removing. Full details of this operation are given in Group P, para. 8.