

Chapter 2

ELECTRICAL INSTALLATION — SERVICING

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Introduction

1. This chapter contains notes on the servicing of the electrical installations, a list of fuses and their respective circuits, a list of filament lamps, and diagrams showing the location of the electrical components and the wiring of the various circuits. For detailed information on the servicing of standard items of equipment, reference should be made to the List of Associated Publications given at the beginning of this book.

INTERPRETATION OF DIAGRAMS

Location diagram

2. This diagram (fig. 1) gives the positions of the electrical components and terminal

blocks, and the layout of the instrument panels. The location diagram will be of assistance if referred to when reading a routing chart.

Routing charts

3. The wiring of the various electrical circuits is laid out in the form of routing charts, which have vertical columns, each representing a part of the aircraft, as indicated at the top of the columns. The code letter for the circuit is given after the title.

Schematic diagrams

4. The schematic diagrams show the theoretical layout of the circuits and are issued with Chapter 1 of this section.

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INSTALLATION DETAILS

Fuses

5. The general service fuses are located in an eight-way fuse box on the switch panel in the front cockpit, and a three-way fuse box on a panel forward of the switch panel. Fuse numbers, rating and services are shown in the following table.

TABLE 1
List of fuses

Circuit	Circuit Code	Fuse size (amp)	Fuse No.
Radio supply	R	20	1
Taxying lamp	TL	5	2
Identification lamp	J	5	2
Pressure head heater	P	10	3
Spare	—	—	4
Cockpit lighting (forward)	MF	5	5
Cockpit lighting (aft)	MA	5	6
Oil thermometers	O	5	7
Navigation lamps	N	5	8
Generator main	G	20	9*
Test sockets {	A	20	10*
	A	20	11*

* Not numbered on aircraft

Filament lamps

6. A list of filament lamps used is given in the following table.

TABLE 2
List of filament lamps

Lamp	Ref. No.	Volt- age	Watt- age
Navigation: —			
Port and Stbd.	5L/9952431	28	24
Tail	5L/9952276	24	10
Taxying	5L/9952511	24	60
Identification	5L/9952404	24	30
Cockpit lighting	5L/9951263	24	2·8
Compass lighting	5L/9951263	24	2·8
Emergency lighting	5L/9951130	2·5	0·75
Warning	5L/9951110	6	0·24

Wiring

7. On inspection the electrical cables should be examined throughout their entire length for possible signs of damage, and all connections checked for security. Deterioration of cable insulation may be caused by excessive heat or the action of oil. Damage may also be caused by chafing at the fixed points. Metal-braided cables should be so clipped that intermittent contact with metallic parts of the aircraft is avoided.

Note . . .

Wiring is mainly of the Vin. type on pre-Mod. H105 aircraft, and pren type on later aircraft.

Tail wheel tyre conductivity

8. To check adequate static discharge from the aircraft frame to the ground, on touch-down, proceed as follows:—

(1) Place a damp metal plate under the tail wheel tyre.

(2) Using an insulation resistance tester, a reading not exceeding 10 megohms, must be obtained between the metal plate and the aircraft frame.

Bonding testing

9. Adequate bonding of the aircraft structure should be proved by using a bonding tester (A.P.4343, Vol. 1, Sect. 24). The resistance between any metal part and any earth point should not exceed 0·025 ohm. For further details reference should be made to A.P.1464, Vol. 1, Part 2, Sect. 1, Chap. 5.

Generator

10. General care and servicing of engine-driven generators is given in A.P.4343, Vol. 1, Sect. 2, and specific information for the generator, Type 500 is in A.P.4343A, Vol. 1, Sect. 3.

Voltage regulator and cut-out

11. The voltage regulator and cut-out Type C, is described in A.P.4343B, Vol. 1, Sect. 1. General notes on voltage regulators will be found in A.P.4343, Vol. 1, Sect. 6.

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A.P.4308A, Vol. 1, Part 2, Sect. 4, Chap. 2
A.L.55, Dec. 70

Batteries

12. The lead acid type of batteries are readily accessible for removal and servicing; information on their servicing is given in A.P.4343, Vol. 1, Sect. 3, and charging requirements are in A.P.4343, Vol. 1, Sect. 4.

Note . . .

The normal type of battery fixing is not used in this aircraft, special fixings having been embodied. In order to prevent inadvertent contact between the battery terminals and the fixing stirrup, the legs nearest to the terminals must be bound with insulating tape or covered with a piece of rubber tubing.

13. All components in the vicinity of the battery compartment must be carefully inspected for corrosion, particular attention being given to the metal parts of the drains and the flying control cables. Any corrosion must be neutralised and excessively corroded parts renewed as necessary. Wash the compartment walls and flush the drain pipes with distilled water. The polythene tubing is to be examined for distortion fracture or damage. All inside faces and joints in the compartment are initially treated with four coats of Plastic Hermetite 1310 (Ref. No. 33C/1326), re-application must not be excessive and a free passage for drainage of spilt acid to the two drain pipe inlets is essential.

14. Instructions for servicing the alkaline battery are given on a label attached to the side of the battery. Further information may be obtained from A.P.4343, Vol. 1, Sect. 3.

Ground/flight switch

15. When in the GROUND position, tests on the electrical services can be made only by connecting a supply to the external supply socket. At the appropriate inspection period the electrical connections at the switch should be checked for security and cleanliness.

External supply socket

16. This should require little servicing. After the external plug has been removed the spring-loaded cover should return smartly over the full extent of its travel. Details of the socket will be found in A.P.4343C, Vol. 1, Sect. 5.

Pressure head heater

17. This circuit is supplied from the generator, therefore, any in-situ functional test of the heater element should be effected when the engine is running. Do not leave the heater switched on after effective operation of the element has been proved. For pressure head servicing, including electrical serviceability test, refer to A.P.112G-0102-1. |

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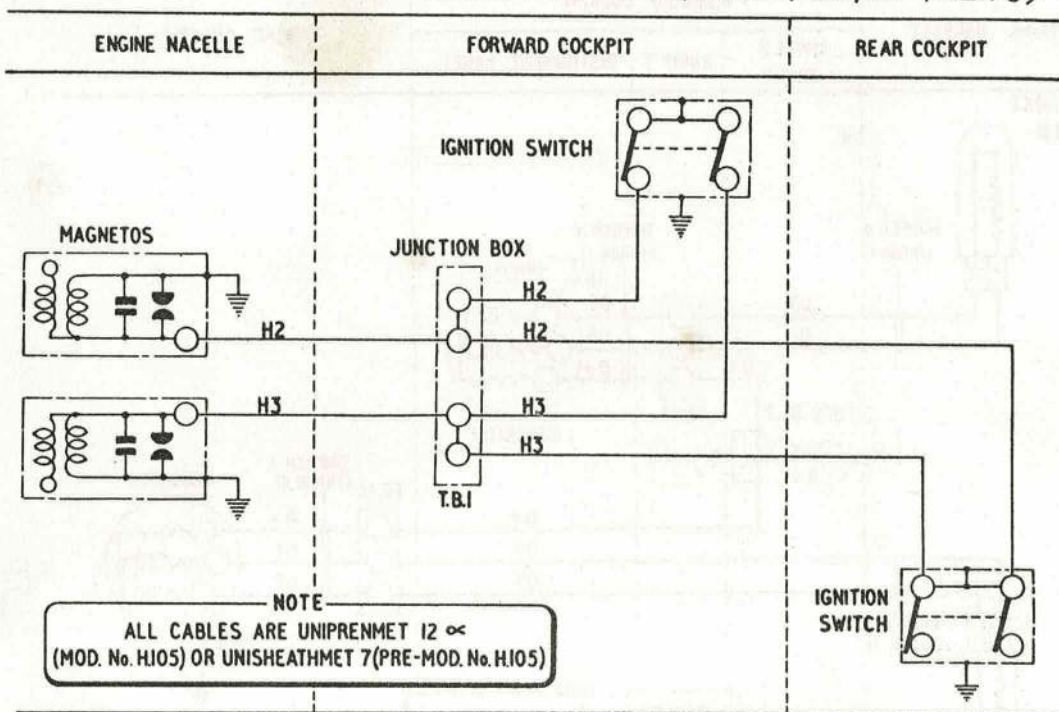


Fig. 3 Ignition-H

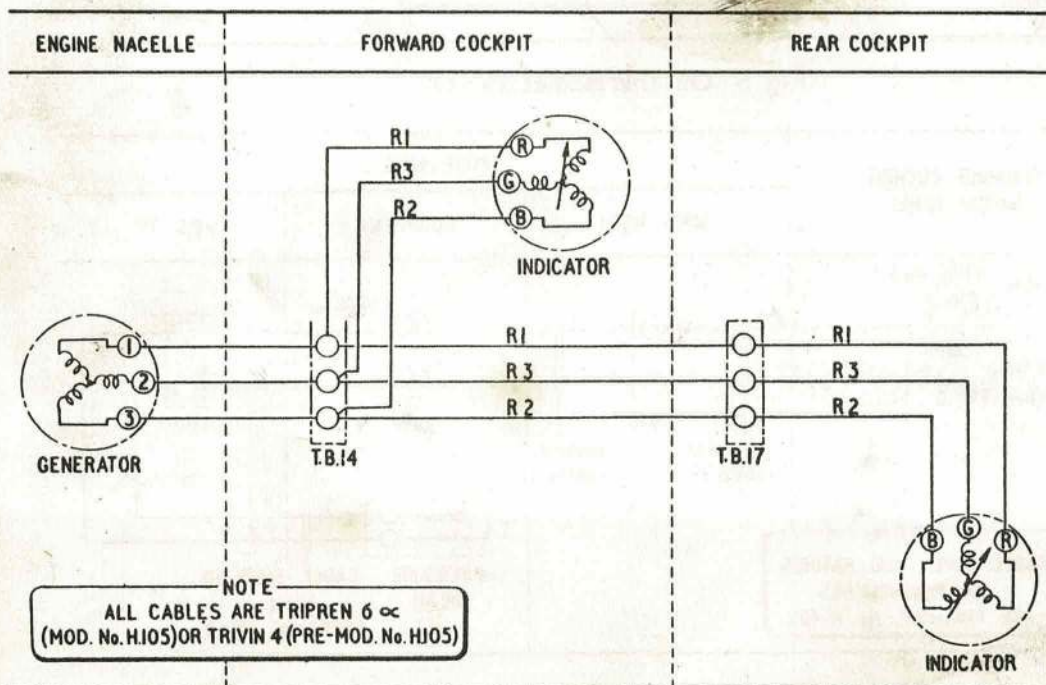


Fig. 4 Tachometers-R

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(A.L.48, Feb. 57)

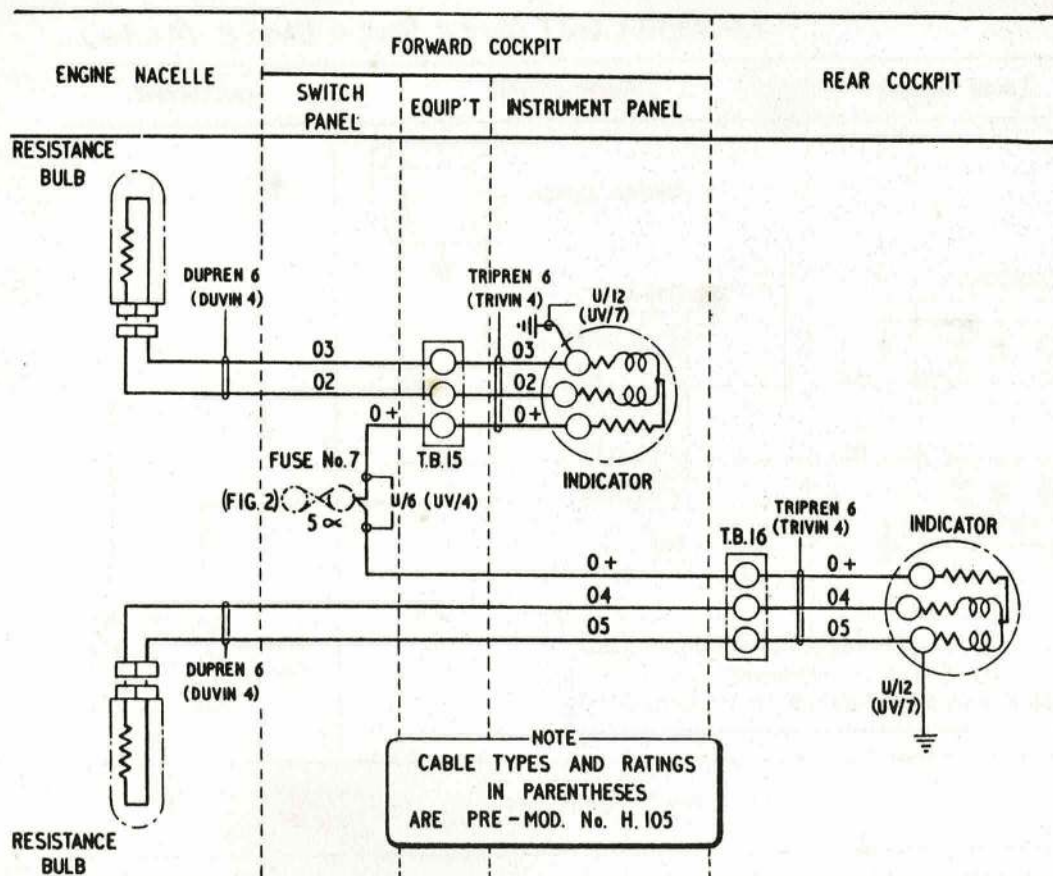


Fig. 5 Oil thermometers-O

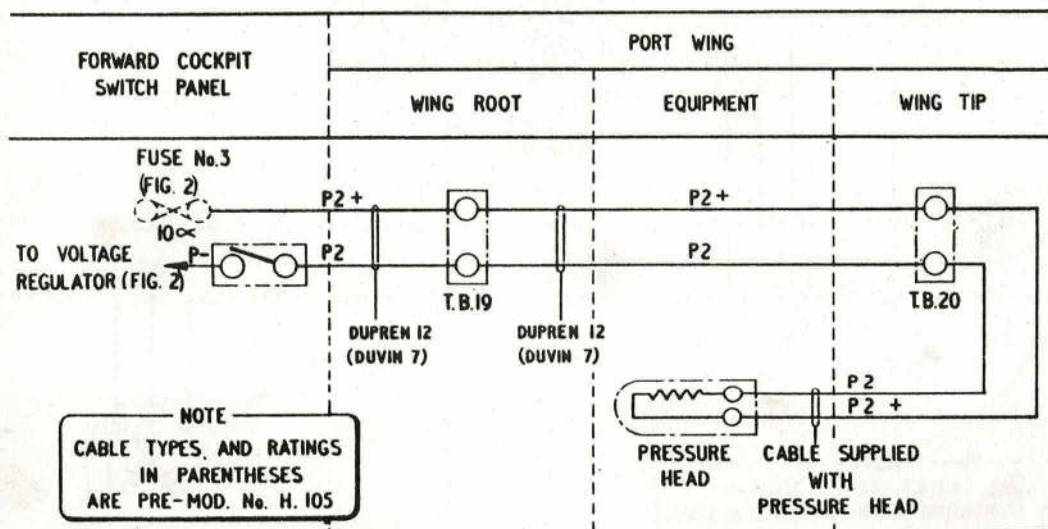


Fig. 6 Pressure head heating-P

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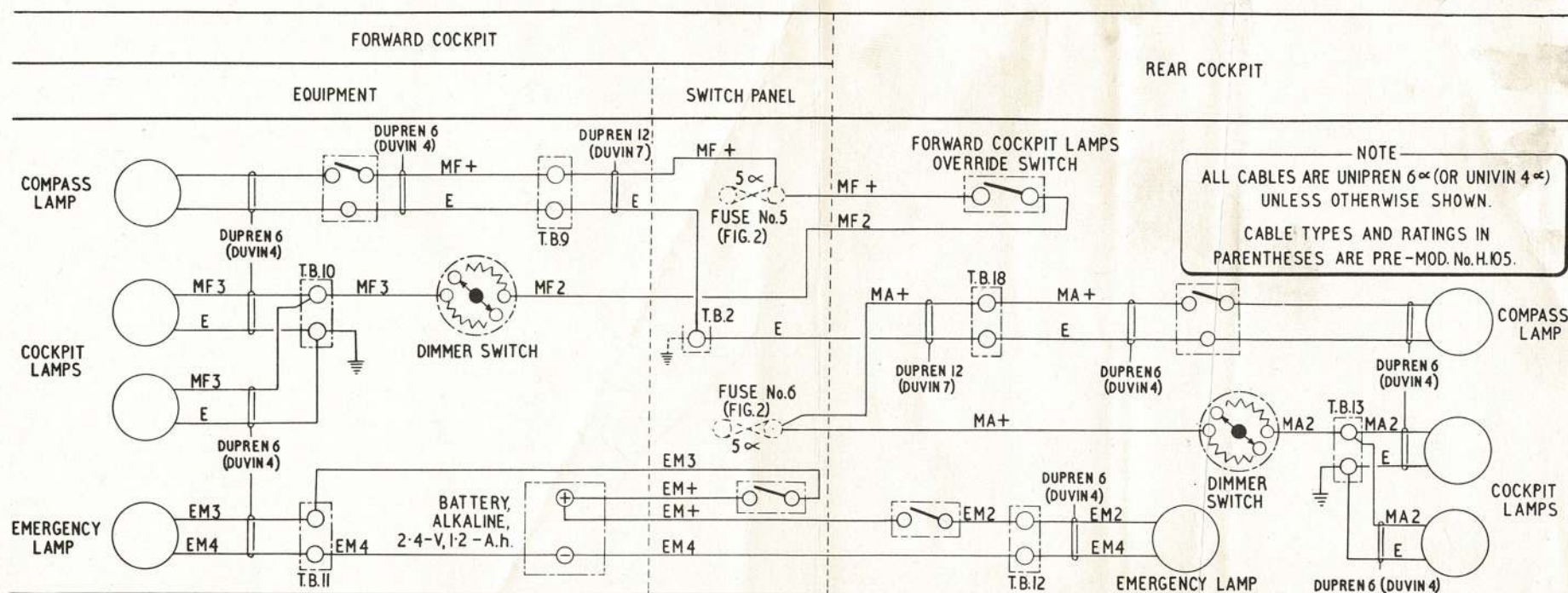


Fig.7 Cockpit-MA, MF, and emergency-EM, lamps

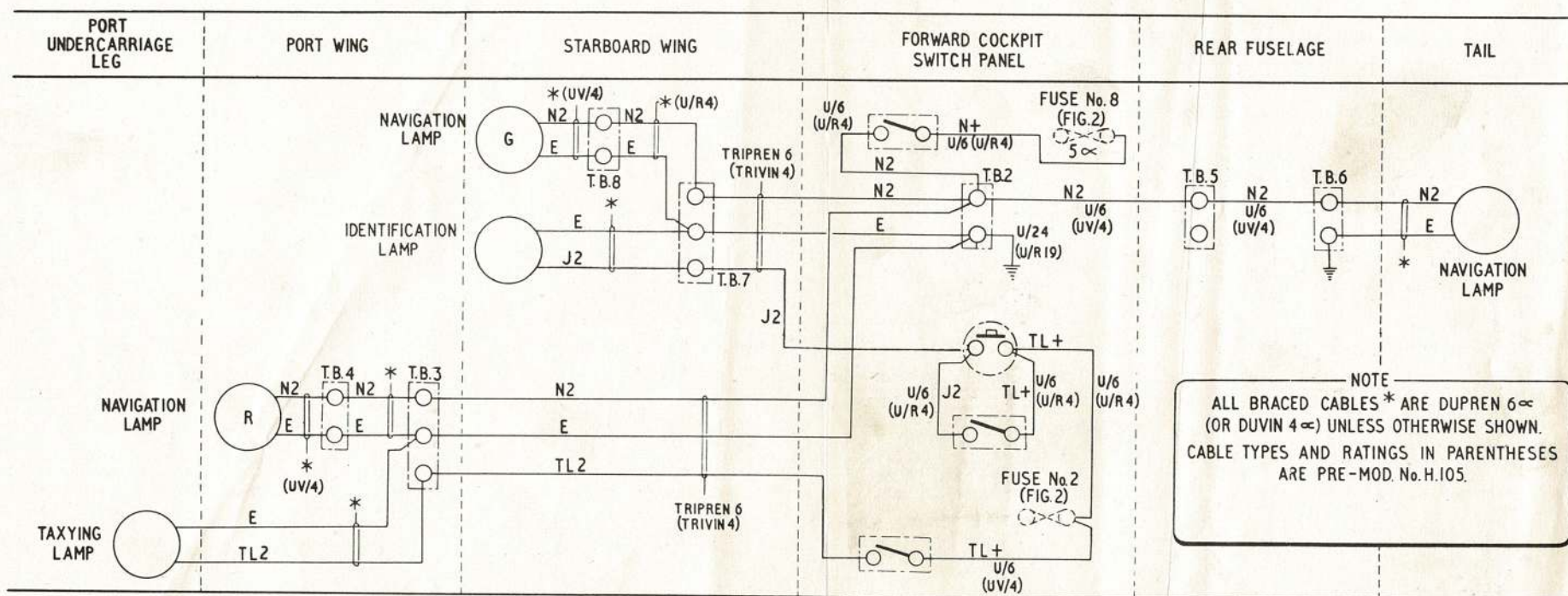


Fig.8 Identification-J, taxiing-TL, and navigation-N, lamps

Port wing identification lamp deleted

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