

Group F.1

CABIN LIGHTING (CODE M)

LIST OF CONTENTS

	Para.		Para.		Para.
<i>Introduction</i>	1	<i>Centre instrument panel</i>	4	<i>Standby compass lamp</i>	11
Description		<i>Pupils flying instrument panel</i>	5	Operation	12
<i>Cabin lighting</i>		<i>Starboard instrument panel</i>	6	Servicing	
<i>General</i>	2	<i>Cabin side lamps</i>	7	<i>General</i>	13
<i>Instrument panel lamps</i>		<i>Emergency lamps</i>	9	Removal and Assembly	
<i>General</i>	3	<i>Centre console lamps</i>	10	<i>General</i>	14

LIST OF ILLUSTRATIONS

	Fig.		Fig.
<i>Cabin lighting (theoretical)</i>	1	<i>Cabin lighting (routeing)</i>	2

TABLE

Table

<i>Equipment type and Air Publication reference</i>	1
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Introduction

1. This Group contains the description and operation of the aircraft's cabin lighting circuits, together with the information necessary to maintain the equipment in an efficient condition. Routeing and theoretical circuit diagrams are also included. For a general description of the aircraft's electrical system, reference should be made to Groups A.1, A.2 and A.3. Detailed information on the standard items of equipment used in the circuit will be found in the Air Publications listed in Table 1.

DESCRIPTION

Cabin lighting

General

2. The cabin lighting installation consists of eleven separately fused and controlled circuits supplying lamps to illuminate the instrument panels, cabin shelves, centre console and the standby compass. The lamps are grouped on the various panels and the circuits are described accordingly. Routeing and theoretical diagrams of the circuits are given in Fig.1, and 2.

Instrument panel lamps

General

3. The instruments, indicators and control switches on the centre, standby, port and starboard instrument panels are illuminated by groups of lamp filaments in Thorn pillar (*single filament*) and Thorn bridge (*multi-filament*) type lamp holders. These lamp holders are mounted on the panels adjacent to the components they serve. Each group of lamp filaments is separately fused and the filaments are wired in parallel, being switched on and dimmed, as required, by separate dimmer switches located on the panels.

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Centre instrument panel

4. The fuel contents indicators on the centre instrument panel are each provided with a bridge type lamp holder containing two lamps. The oxygen indicator, target reject switch, cabin altimeter and accelerometer on this panel are each illuminated by a pair of pillar type lamps. The oxygen regulator, navigation lights control switch, Tacan indicator and the booster pump control switches are each illuminated by a single pillar type lamp. Both lamps of each pair illuminating an instrument are separately fused and are wired in parallel in groups, each group being controlled by a separate dimmer switch on the panel. Thus should any lamps fail or the circuit fuse blow, the instruments will remain illuminated by the other set of lamps. The U.H.F. radio

and Tacan control unit each contain a pair of lamp filaments and these are connected into the centre instrument panel lighting circuit.

Pupil's flying instrument panel

5. All the flying instruments on the pupil's flying instrument panel are provided with bridge type lamp holders, which apart from the GM compass lamp holder, contain two lamps. The compass lamp holder incorporates a set of four lamps. The artificial horizon standby indicator at the top of the panel is illuminated by a single pillar type lamp. The oil pressure gauge, on the leg panel is also served by one pillar type lamp. All these lamps are wired in parallel in two groups, in a similar manner to that described in para.4, and are controlled by separate dimmer switches on the panel.

Starboard instrument panel

6. The airspeed indicator, machmeter, rate of climb indicator, turn and slip indicator, artificial horizon, altimeter and the compass repeater on the starboard instrument panel are each illuminated by two filaments in bridge type lamps. The oxygen indicator and the power control indicators, also located on this panel, are each served by one filament in a pillar type lamp. All these filaments are controlled by a dimmer switch mounted on the panel.

Cabin side lamps

7. Five hooded red lamps and one pillar type lamp, all controlled by a common dimmer switch are positioned on the port side of the cabin to illuminate the cabin port shelves and side walls. Two of the hooded lamps are attached to brackets on frame 11, another on frame 10 and the remaining two are located on the port coaming. The pillar type lamp is attached to the U.H.F. control switch panel, which is located below the windscreens platform. The lamps are switched on and dimmed, as required, by a dimmer switch mounted on a bracket located below the lamps on frame 11.

8. The cabin starboard shelf and side walls are illuminated by two hooded red lamps which are also controlled by a common dimmer switch. These lamps are located one on frame 10 and the other is mounted below the top longeron between frames 9 and 10. The dimmer switch, controlling these lamps, is mounted on the cabin starboard shelf.

TABLE 1

Equipment type and Air Publication reference

Equipment Type	Air Publication
Dimmer switches, Type R, 17, 75, 135 and 1,900 ohm.	
Emergency lamps switch, change-over centre off, (Ref.5CW11752)	
Emergency compass lamp switch, change-over centre off C.W.C. type XD.779 No.4	
Centre console lamp switch, Type 170	A.P. - Vol.1, Sect.-
Side and emergency lamps, Type D	
Panel and console lamps, Thorn bridge and pillar type	A.P.4343E, Vol.1, Book 1, Sect.7

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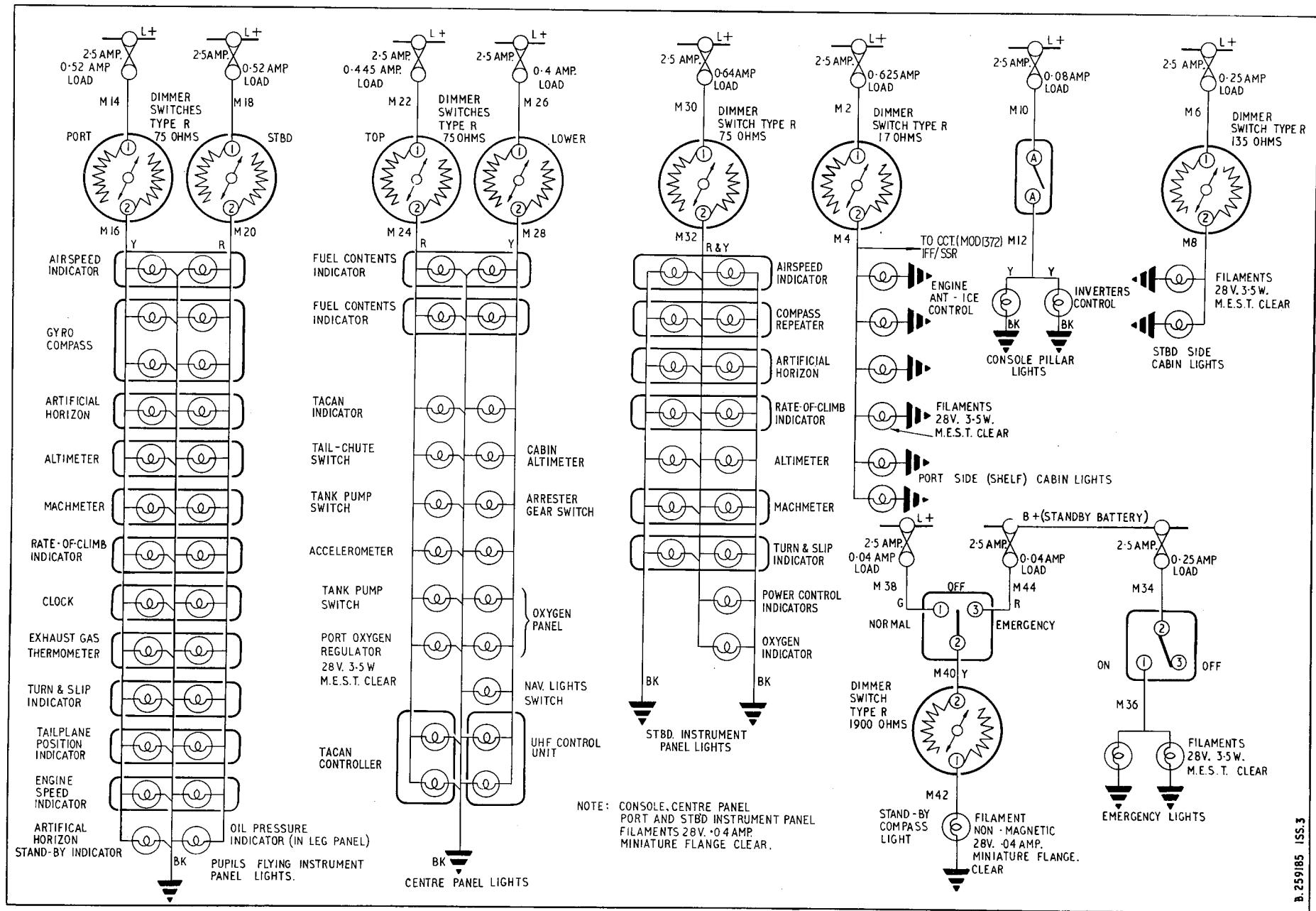


Fig.1 Cabin lighting (theoretical)
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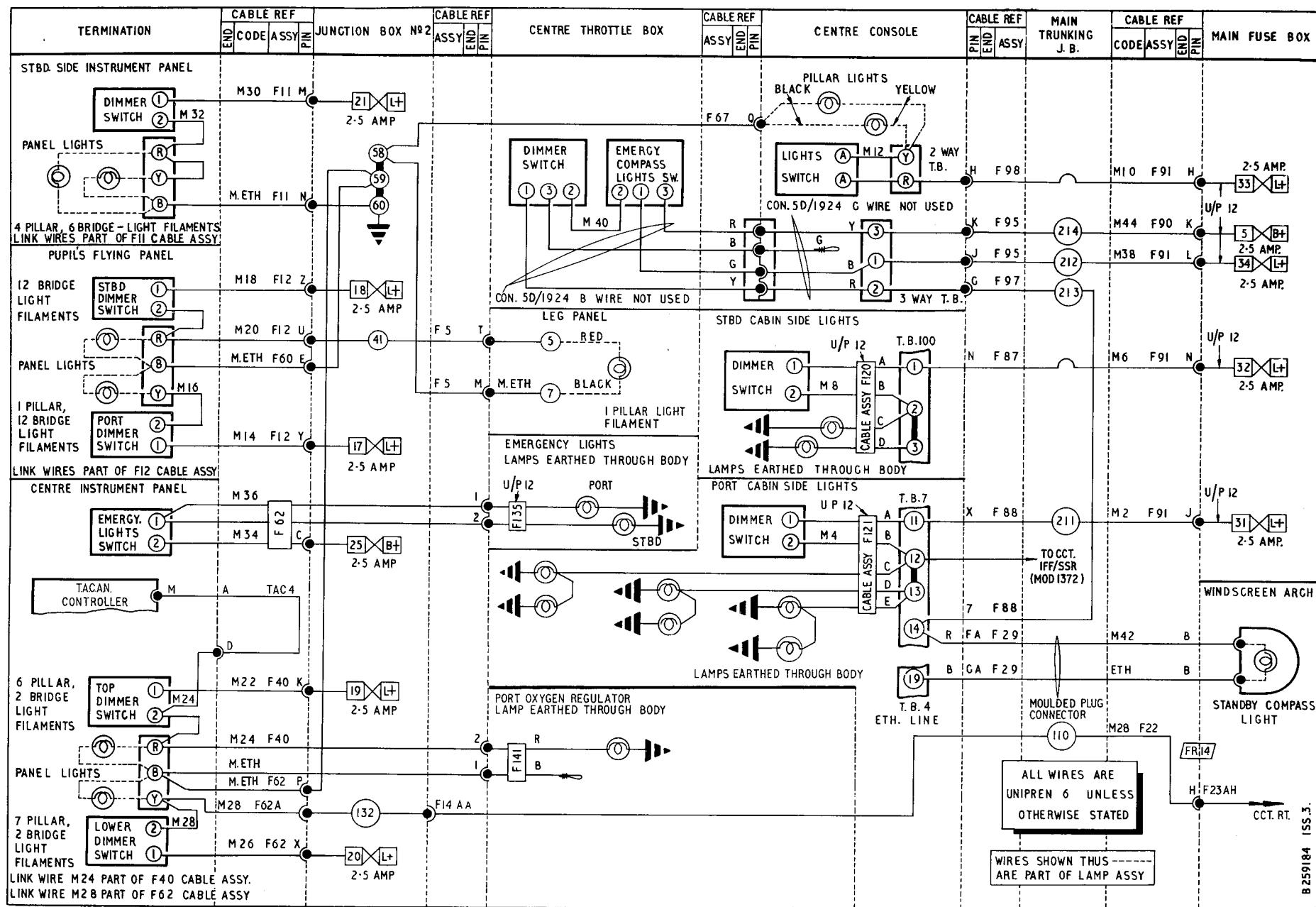


Fig.2 Cabin lighting (routeing)

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Emergency lamps

9. Should the normal cabin lighting fail, three hooded red lamps, located one below the port gun sight and two below the starboard gun sight, may be brought into use by operation of the EMERGENCY LIGHTS switch mounted on the centre instrument panel. These lamps are not connected to the normal electrical system but obtain their supply from a pair of standby batteries located in the radio bay (Group B.1)

Centre console lamps

10. The equipment on the centre console is illuminated by two pillar type lamps and one panel lamp. The two pillar lamps are located on the top face of the console just aft of the throttle box and the panel lamp is mounted on the inverter control panel on the rear face of the console. These lamps are not provided with a dimmer switch, but are controlled by a single-pole ON/OFF switch, mounted on the top of the console.

Standby compass lamp

11. The lamp incorporated in the standby compass is switched on by a centre-off change-over switch marked NORMAL, OFF and EMERGENCY, which is mounted on the forward end of the throttle box on the centre console. When this switch is in the NORMAL position, the lamp is supplied from the main supply line of the aircraft's electrical system, but when the switch is in the EMERGENCY position, the lamp is supplied from the standby batteries (Group B.1). The compass can then be illuminated should the aircraft's normal electrical system fail. The degree of compass illumination is controlled, in both positions of the switch, by a dimmer switch mounted just aft of the lamp control switch on the throttle box. It should be noted that the lamp in this compass is a special non-magnetic type.

Operation

12. The operation of the various cabin lamp circuits will be obvious when reference is made to the theoretical diagram given

in fig.1 of this group.

SERVICING**General**

13. For general servicing of the electrical system as a whole, reference should be made to Group A.1 of this chapter, which also contains a table giving the details of the lamps used in the cabin lighting circuits. Apart from keeping all the components clean and checking the lamps for serviceability, no further servicing should be necessary.

REMOVAL AND ASSEMBLY**General**

14. The removal and assembly of the components forming the cabin lighting circuits should present no unusual difficulties. The location and access to all the components is indicated in Group A.3 of this chapter. The removal of the instrument panels, which carry the majority of the cabin lamps, is fully described in Section 5, Chapter 2.

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