Chapter 86

FLASHER UNIT, TYPE A

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LIST OF ILLUSTRATIONS

LEADING PARTICULARS

Flasher unit, Type A	*Stores Ref. 5CZ/5448*
Operating voltage	*21·5—28·5 volts d.c.*
Nominal rating at maximum voltage	*80-watt lamp load*
Diameter of case	*2·54 in.*
Mounting flange	*3·11 in. square*
Overall length	*4·6 in.*
Weight	*1 lb.*

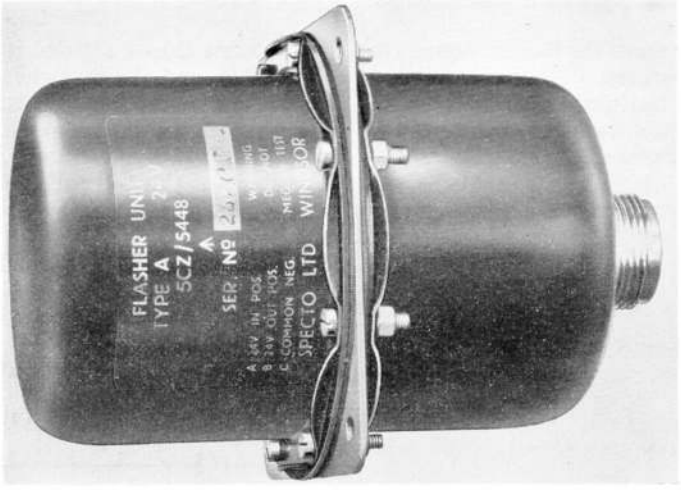

Fig. 1. Flasher unit, Type A

Introduction

1. The flasher unit, Type A (*fig.* 1) is used to make and break the circuit to aircraft wing tip and tail navigation lights at a frequency of between 80 and 120 cycles per minute. It is not suitable when flashing of fuselage lights on a separate circuit is required.

(A.L.97, Feb. 57)

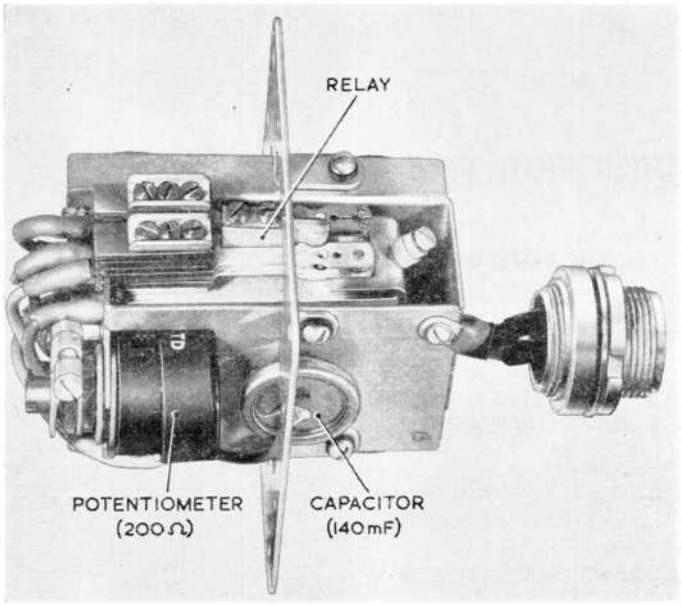

Fig. 2. View of mechanism

DESCRIPTION

2. The mechanism of the flasher (*fig.* 2) is contained in a sealed metal can, the square mounting flange being held between the flanged halves of the can. A 3-pole Mk. 4 miniature plug is secured to one end for making the external electrical connections.

3. A circuit diagram of the flasher is given in fig. 3. It incorporates a double-coil relay RLA/2, a 140 mF tantulum capacitor, and a number of capacitors and dust-cored chokes for suppression purposes. A 200-ohm potentiometer is connected in series with one winding of the relay, and is pre-set during manufacture to give the required frequency of operation.

4. The 24-volt d.c. positive supply enters the unit on pin A, pin C being the negative connection; the navigation lights to be controlled are connected in series with one pair of the relay contacts (contacts A/2), via pin B.

5. When the 24-volt d.c. supply is switched on, the navigation lights will be lit momentarily through contacts A/2; the relay will also be energized through contacts A/1. This will break both pairs of contacts, so switching off the navigation lights, and also allowing the 140 mF capacitor to be charged. When the voltage of the capacitor has built up to a certain value, after a period determined by the time constant of the capacitor, this voltage will counteract the magnetic effect of the voltage across the branch of the circuit containing the other relay coil, so causing the relay to become de-energized. Both pairs of contacts will close once more, and this sequence of operations will be repeated as long as the 24-volt supply remains switched on.

6. The 200-ohm potentiometer has been initially adjusted during manufacture so that with a supply of 21·5 volts, the frequency of switching will be 80 cycles per minute, and with a supply of 28·5 volts, the frequency will not be greater than 120 cycles. The OFF period has been set to lie within 0·2 and 0·6 of the complete cycle.

7. It will be noted that should the relay fail to operate, the unit will "fail safe", i.e., the navigation lights will remain ON.

SERVICING

8. Since this is a sealed item, no servicing is possible, and the unit should not be opened. It is important that the flasher should not be given an insulation resistance test with a standard 250-volt tester, since the working voltage of the 140 mF capacitor is 30 volts, and it would be damaged by the application of such a voltage.

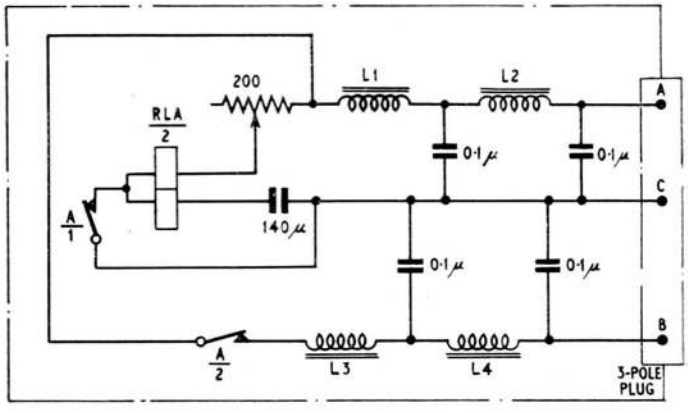

Fig. 3. Circuit diagram