

Chapter 3

REGULATOR AND CUT-OUT UNITS

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Introduction

1. This chapter gives general information on carbon pile voltage regulator and cut-out units. It also gives general information on the servicing of these units, but for details relevant to any particular type, reference must be made to the chapter on that unit given in A.P.4343B, Vol. 1.

DESCRIPTION

2. A general view of a typical voltage regulator and cut-out unit, the Type B, is given in fig. 1, and its circuit diagram, in fig. 2. It incorporates a regulator unit which is mounted on a base plate together with a cut-out and fuse box. The associated resistors for the regulator and cut-out are housed underneath the base plate.

3. The units may be designed for use with a single generator or with generators operating in parallel. The unit illustrated can be used in either installation, since the linkage device provides for a special compounding winding

with falling volts-load characteristic to be brought into circuit with parallel operation. Units used for single operation have a series compounding or current winding, which is connected in the battery charging circuit to control the charging current.

4. The operation of the carbon pile regulator follows the standard principle as described in Chap. 1 of this section, and follows the same general construction. General information on the construction and principle of operation of cut-outs will be found in Sect. 7.

INSTALLATION

5. The regulator and cut-out should be mounted in an upright position in the aircraft, with the terminals at the bottom. There should be sufficient space for the free circulation of air round the unit, to minimize the possibility of overheating. Reference may be made to the electrical section of the relevant Aircraft Handbook for details of a particular installation.

SERVICING

6. The servicing of these combined voltage regulator and cut-out units is, in effect, a combination of the procedure for voltage regulators and cut-outs; the individual

chapters on the units in A.P.4343B, Vol. 1 will give details of regulation and stability tests, with the appropriate test circuit diagram. Tables 1 and 2 below give various relevant data.

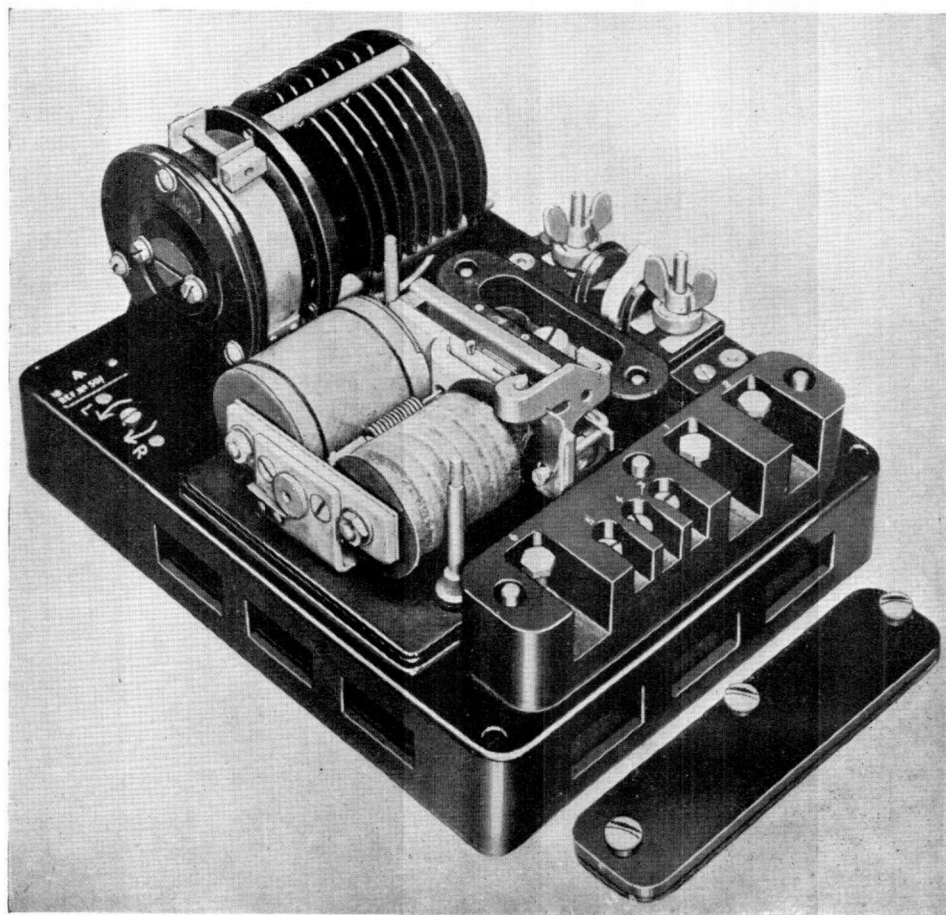


Fig. 1. Typical regulator and cut-out unit

TABLE 1
Data for regulator and cut-out units

Regulator Type	Stores Ref.	Voltage (nominal)	Pile range (ohms)	Coil current (amp.) at nominal voltage at room temperature
A (31)	5UC/2702	28	5—60	0.85—0.95
A2 (41)	5UC/3830			
B (42)	5UC/3880	28	5—50	0.85—0.95
B2 (42)	5UC/5823			
C	5UC/5084	28	3—65	0.53—0.57

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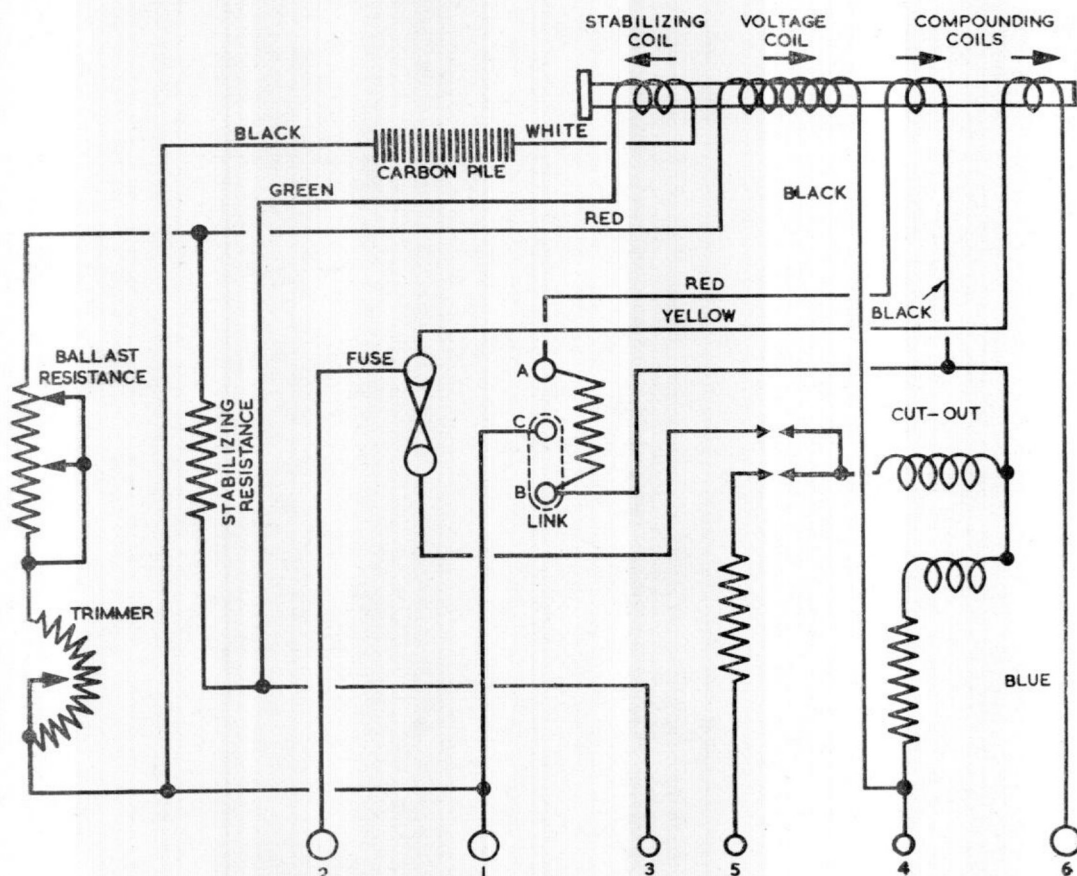


Fig. 2. Typical circuit diagram

Table 2
Data for carbon piles

Regulator Type	Ref. No. of pile	Pile length (in.)	No. of washers	* Dimensions of washers (mm.)
A (31) A2 (41) }	5UC/3367	2	50 (min.)	10.9 × 5 × 1
B (42) B2 (42) }	5UC/5062	2	44 2 }	{ 10.9 × 5 × 1 10.9 × 5 × 3
◀ C	5UC/6140	1.5	26 27 } (interleaved)	{ 10.9 × 5 × 0.5 10.9 × 5 × 1 ▶

* Outside diameter × inside diameter × thickness.

