Chapter 52

MANUALLY OPERATED SWITCH, TYPE 7B, No. 1 (ROTAX D3501)

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LIST OF ILLUSTRATIONS

LEADING PARTICULARS

Switch, manually operated, Type 7B, No. 1 ... ... Stores Ref. 5CW/1979

Introduction

1. This single-pole 3-way switch is used for controlling the automatic or manual pitch change of the Rotol propeller, and is used in conjunction with a double-pole single-throw switch, e.g. Type D.3601.

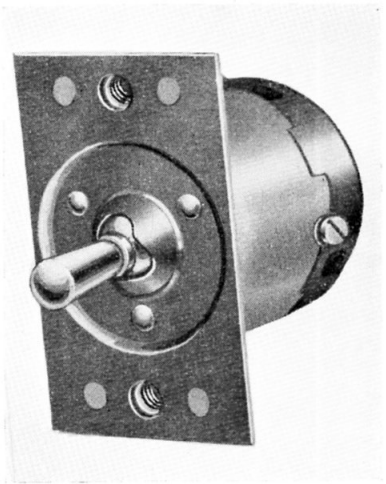

Fig. 1. Type 7B, No. 1 switch

2. In the OFF position the switch arm is central In the AUTOMATIC position the switch arm is pushed up and remains there until it is pushed off again. By the design of the centre fixed contact, spring and contact plate assembly, the switch arm is spring returned to the central position after switching to either INCREASED OR DECREASED r.p.m.

DESCRIPTION

3. The switch, which is illustrated in fig. 1 and 2, is 2·25 in. high, 1·375 in. wide, and weighs 4 oz. The cover and mounting plate are of aluminium, and riveted together by three brass rivets. The centre of the mounting plate is domed to allow for the switch's rotating movement. The centre of the domed portion has a clover leaf pattern cut out to enable the switch arm to engage the AUTOMATIC, INCREASED and DECREASED positions. The switch arm is of brass and incorporates the actuating whalebone fibre plunger, which is retained under pressure from a steel spiral spring. The moving contact plate assembly is of brass with silver contacts riveted to its extremities. The contact plate assembly is assembled so that the arm with the rounded head makes contact with the short terminals.

4. The base moulding is of Bakelite and contains the moulded-in silver tipped fixed contacts. The centre fixed contact is shaped to admit the contact plate assembly. Nos. 2

and 3 fixed contacts protrude more than No. 1 and when operated to contacts 2 and 3 the switch arm has to be held down. The four terminals are provided at the back of the moulded base and protected by a removable Bakelite cover which is secured to the base by two 6 B.A. brass countersunk screws.

5. The cover is slotted to fit on the base in its correct position, and is secured by three cup-head steel screws 6 B.A. x 0·187 in. long with steel spring washers screwed into brass inserts moulded in the base.

INSTALLATION

6. The switch is mounted on a panel in the cockpit within easy reach to the pilot and convenient for wiring. 2 B.A. Simmonds Anchor nuts are riveted to the mounting plate for fixing on the panel. Three grooves are cut in the back of the Bakelite base leading to the terminals which are numbered 1 to 4, and are to be connected to the external circuit as follows:—

Terminal No. 1 — AUTOMATIC	White cable to suppressor unit.
Terminal No. 2 — DECREASED r.p.m.	To feathering switch and blue cable to suppressor unit.
Terminal No. 3 — INCREASED r.p.m.	Yellow cable to suppressor unit.
Terminal No. 4 — Centre (spider contact)	To feathering switch NORMAL contact.

SERVICING

7. Normally no servicing is required, but during inspection, each contact, rocker, and base moulding assembly is to be checked with a dismantled body assembly. The minimum gap between pairs of contacts with the switch in the OFF position must not be less than 0·025 in. Contacts, if pitted or burned may be rubbed with fine emery cloth. On assembly, grease the inside of the centre contact on the base. The plunger spring must be lightly smeared with vaseline.

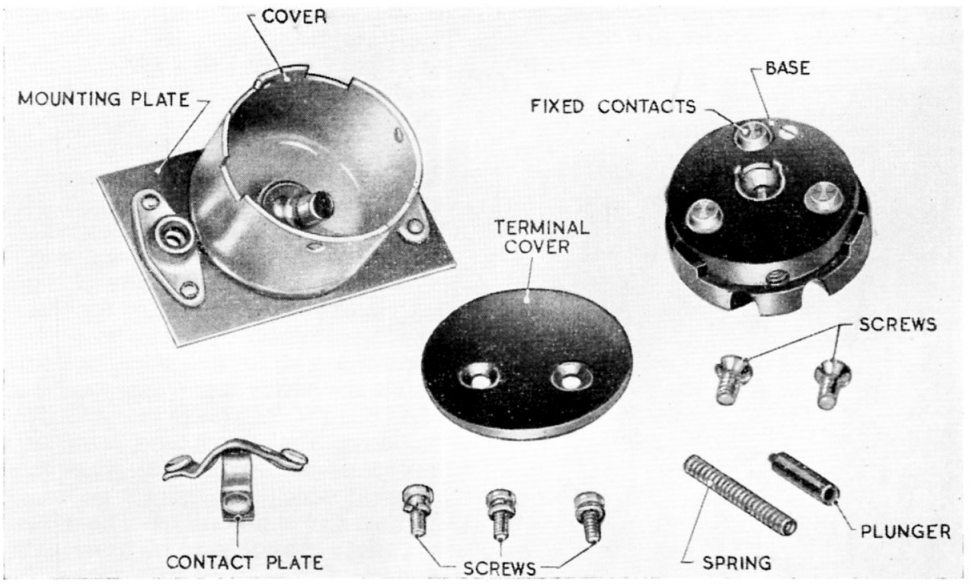

Fig. 2. Exploded view of 7B, No. 1 switch