

# FENNERS-PIKE PULSE BOX

## INSTRUCTIONS

The well-known principle of "PULSED" signals used with Fenners-Pike equipment is dependent on the fact that radio-control receivers act through a relay which is in effect a two-way switch. This allows current to flow in either part of the servo circuit—"right" or "left"—in response to signals "ON" or "OFF" dictated by the Pulse Box.

The Fenners-Pike Pulse Box determines the signals emitted by the transmitter, and has a **Control Lever**, which varies the ON-OFF ratio of the signals emitted—commonly known as the MARK-SPACE ratio.

A second control by **Press Button** changes the PULSE SPEED. Slow speed is required to cause the inertia-contactor on the Fenners-Pike Servo Unit to oscillate in resonance.

### CONTROL LEVER

The central or vertical position gives a 50/50 pulse—corresponding to a STRAIGHT RUDDER when used with the Fenners-Pike Servo Unit.

Deflection to the LEFT proportionately **reduces** the mark-space ratio, while deflection to the RIGHT increases it.

Full deflection of the control lever as far as the spring stop to the left gives 20:80 ratio, or to the right, 80:20 ratio, corresponding respectively to FULL LEFT RUDDER or FULL RIGHT RUDDER with the Fenners-Pike Servo Unit.

Deflection **beyond the spring stop to left or right gives FULL OFF or FULL ON signals respectively.** No current is consumed by the Servo Unit under these conditions.

### PRESS BUTTON

This gives **slow** pulse when depressed, **fast** when released.

### SPEED REGULATOR

A screw-driver slot is provided, flush with the box surface to avoid accidental disturbance. Turn left, or anti-clockwise, to reduce pulse speed; turn clockwise to increase speed, e.g., to compensate for battery running down.

### MOTOR SWITCH

This is in the form of a knurled thumb-screw, to obviate accidental operation. Unscrew for ON, screw in for OFF.

### CONNECTING UP

A 3-volt battery is required to drive the pulsing motor; use of a large battery (e.g., as for cycle lamp) is economical and obviates too frequent pulse speed adjustment. In many cases it may be found convenient to house the battery inside the transmitter box.

Fenners-Pike Pulse Boxes are provided with a 3-strand flex.

The RED and BLACK leads should be connected in place of the normal keying lead of the transmitter (red to H.T. positive).

The BLACK lead is a common one and is connected also to the negative of the 3-volt battery, the BLUE lead being connected to the positive of this battery.

## ADJUSTMENT AND MAINTENANCE

Units are factory-adjusted to give 50/50 pulse with vertical control lever. Should re-adjustment become necessary, loosen the grub-screw holding the spiral cam—not that on the control lever.

When using with Fenners-Pike Servo Unit, the SLOW pulse speed must be adjusted to suit the natural resonance of the contactor. See notes on inside back cover of the Servo Unit instruction book.

Contacts, both on the make-and-break and on the switches, should be cleaned from time to time.

An occasional **small** drop of oil is desirable, at the following points:— Motor bearings, rotating shaft bearings, gear-wheel teeth; also a slight smear of oil on the rotating cam face. If applied too liberally, oil will cause trouble by splashing on to the contacts.

4 RUBBER BAND