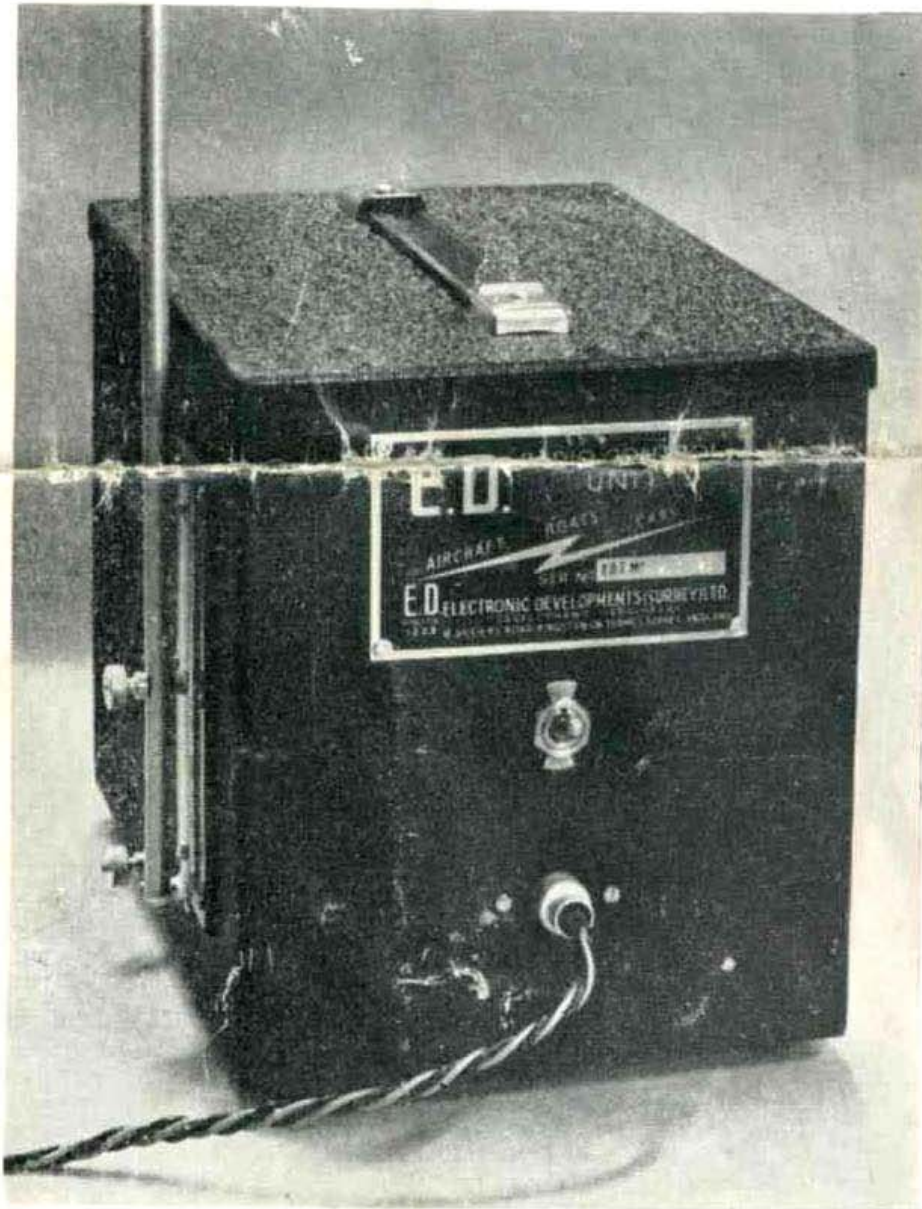


**E D**

## **Multiple Channel Tuned Reed Equipment**

**Mk. IV MINIATURE 3 Channel**  
**Mk. IV SENIOR 3 Channel**  
**Mk. V "EVEREST" 6 Channel**



**Electronic Developments (Surrey) Ltd.**

18 VILLIERS ROAD  
KINGSTON-UPON-THAMES  
SURREY

## Foreword

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In view of popular demand for Radio Control equipment which will enable the user to operate independently, more than one control, Electronic Developments Ltd. have pioneered this system of tuned reeds.

Long and exhaustive practical tests, culminating in the first crossings of the English Channel in September, 1951, with a model boat, and September, 1954, with a model plane, have proved in advance the reliability and ease of control of this system. There is a growing conviction amongst all of those concerned with models, that the tuned reed system is the final answer for accurate multiple control. One cannot say it compares with the radio control systems, ~~in fact there exists no other system, which can be compared with it.~~

Successes in competitions have amply proved to modellers that for realistic and fingertip control, E.D. Reed Systems lead the way and the world.

Our electronic engineer, Mr. G. Honnest-Redlich, has spent years of development work up to its present day standards, not only because of its versatility, but also because it is a foundation for things to come in industrial, as well as model applications.



*The only firm in the world to manufacture Models, Model  
Power Units and Remote Control Units*



# General

TRANSMITTER and RECEIVER are calibrated to operate on the 27 Mc/s Radio Control Band.

If alternative frequencies are used, they are clearly marked on Transmitter and Receiver.

On no account should Batteries be used with **Voltage** differing from those specified in this INSTRUCTION BOOK.

The operation and Tuning procedure is the same with all these types of Receiver. The Transmitter remains the same; only in the case of the SIX CHANNEL RECEIVER does the CONTROL BOX differ.

## Transmitter

Batteries: L.T. Ever Ready Alldry No. 1.

H.T. Ever Ready 120 Winner.

Valves: Modulator—Mullard DL 92 (bottom).

H.F. Oscillator—Mullard DCC90 (top).

Plug the special non-reversible plug into the L.T. battery. The black wanderplug to the negative H.T. battery socket and the red to the 120 v. socket. Ensure that the four aerial sections are well plugged together before fitting to the aerial bracket. Finally plug in the four pin connector of the control box to the socket on the front of the case, and the transmitter is ready for operation on switching on the on/off switch.

Battery consumptions are:—

H.T. 25 Ma. rising to 35 Ma. when operating signal is sent.

L.T. .3 A.

Close to the D.C.C. 90 Valve holder, a control with screwdriver adjustment slot is fitted. This control is to enable the range of frequencies of the control box to be changed within the limits of 200 to 500 cycles.

With equipment sent out complete (Transmitter, Receiver, Control Box) this is Factory pre-set to the required range.

Where, however, Units have been purchased separately, a re-adjustment may be required if any of the control box adjustments will not cover the Receiver reed frequencies. (See under "OPERATION").

# Receiver

Batteries: L.T. Ever Ready D18. 1.5 v.

H.T. Two Ever Ready B122 in series. 45 v.

These batteries are the smallest capacity sizes for normal use in model planes and will give the following continuous operation:—

L.T. 30 minutes.

H.T. 3 hours.

With normal intermittent operation and receiver switched on for approximately 5 minute periods, the battery life will be more than triple the given times. For planes which will carry the extra weight, or model boats, larger capacity batteries can be used, but not higher voltages.

Battery consumptions are:—

L.T. 150 Ma. (Mk. IV Senior).

L.T. 45 Ma. (Mk. IV Miniature and Everest 6 reed).

H.T. 3 Ma. dropping to approx. 1.5 Ma., on receipt of an operating signal. (Mk. IV Senior).

2 Ma. dropping to approx. 1.5 Ma. on receipt of an operating signal. (Miniature and 6 reed).

NOTE that the Relay operating current (approx. 3 M.A.) is also drawn from the common H.T. Battery.

Alternative Batteries are:—

L.T. Ever Ready D.9.

H.T. Two 22½ U. Ever Ready B 110 (45 v.);  
or One Ever Ready B 109 (45 v.).

For normal boat use, the D 9 and B 109 are suggested for the Mk. IV Senior, and the D 18 and B 109 for the Miniature and Six Reed Receivers.

Receiver Valves are:—

Mk. IV Senior: 1st and 2nd Mullard D.L.66, 3rd Mullard D.L.92.

Mk. IV Miniature: 1st and 2nd Mullard D.L.66, 3rd D.L.68.

6 Reed Receiver: 1st and 2nd Mullard D.L.66, 3rd Mullard D.L.68.

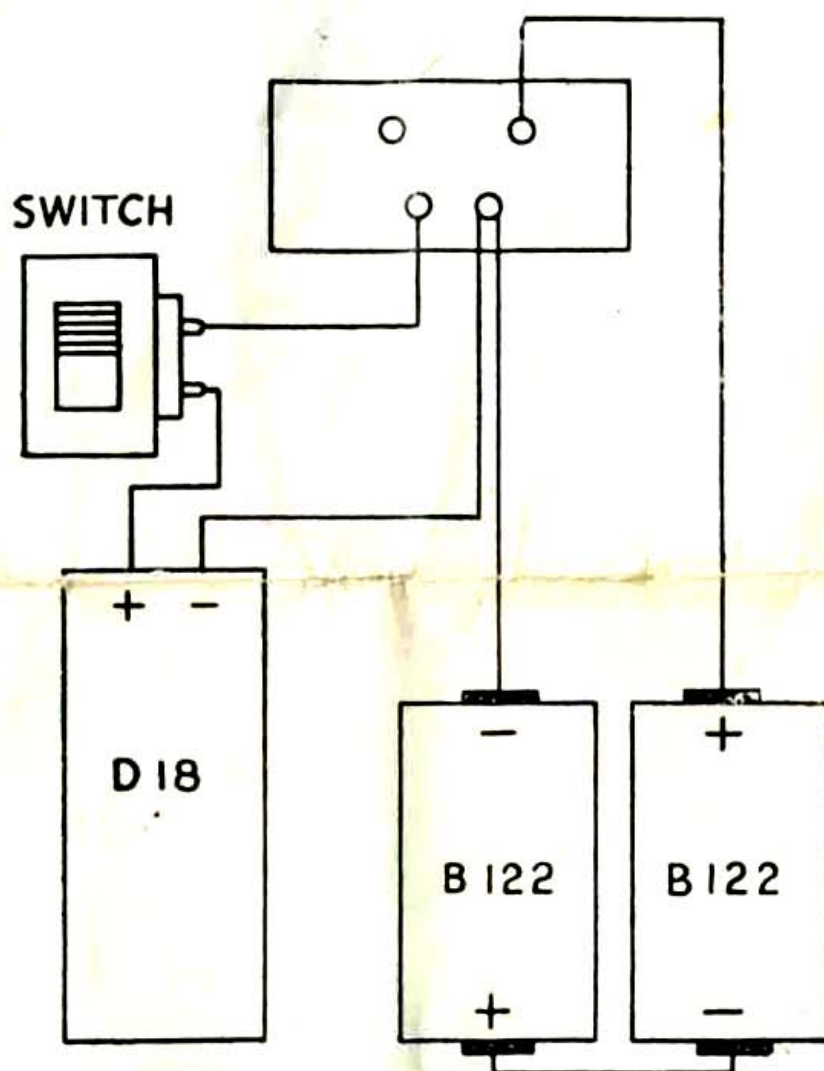


Wire up the batteries to the four pin socket according to the diagram (Fig. 1). Before plugging in the receiver cable plug, check that all connections are correct. It is advisable to use the same wire colour-coding as the receiver cable for the sake of clarity.

**Black:** L.T. —, H.T. —.

**Blue:** L.T. +; **Red:** H.T. +.

### FOUR PIN SOCKET UNDERSIDE



**Fig. 1.**

The Relay Contacts on the Senior Model are taken to tags on the panel. The armature connection is indicated by **Black**.

The back or "rest" contact **Blue**.

The forward or "Make" contact **Green**.

The Miniature and Six Reed Receiver relays are brought out by a cable of coloured wires.

**ARMATURE=BLACK.**

**BACK CONTACT=BLUE.**

**FORWARD CONTACT=GREEN.**

Two Circuits indicating the method of wiring servo equipment are shown in Fig. 2A and 2B.

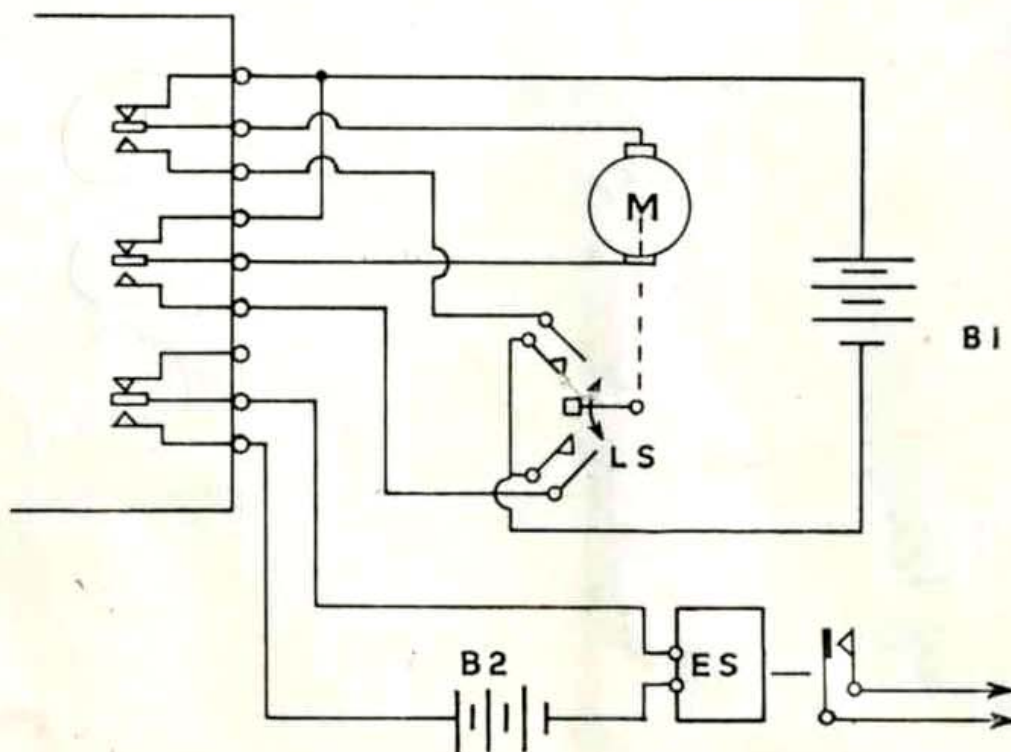


Fig. 2A.

M. Rudder motor.

LS. Limit switches operated from motor drive to rudder to open and stop motor at extreme rudder positions.

ES. Escapement operated switch for ignition engine speed control. Can also be electric motor geared to rotate timing lever. For boats ES can be a multi contact ratchet switch for electric propulsion motor and further controls.

B1 and B2 are the servo batteries. This can be combined as one to operate both servos.

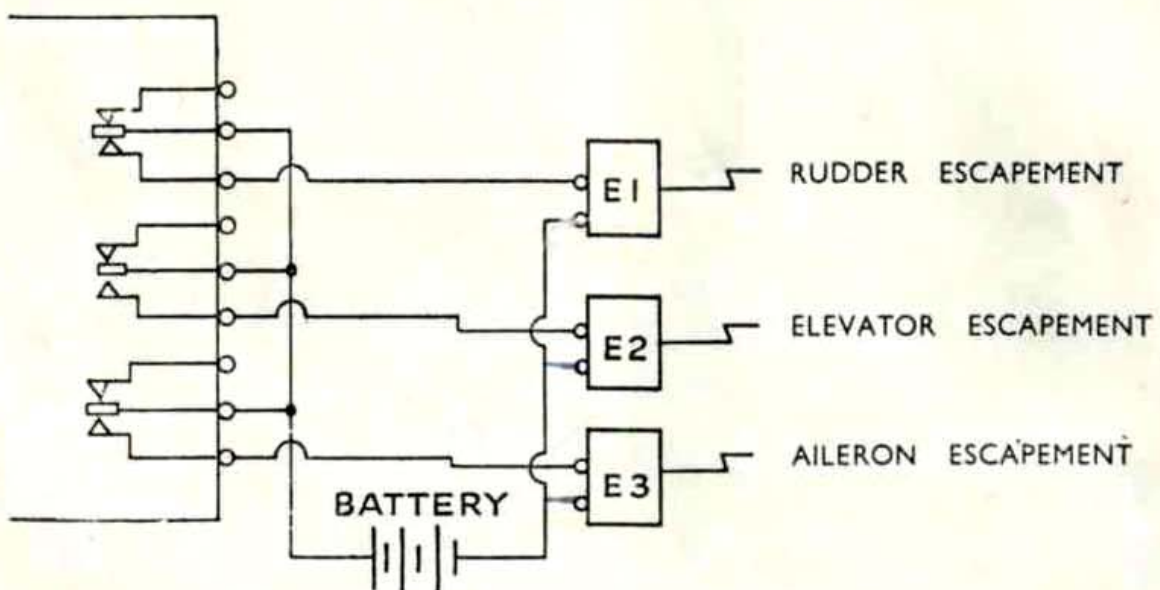
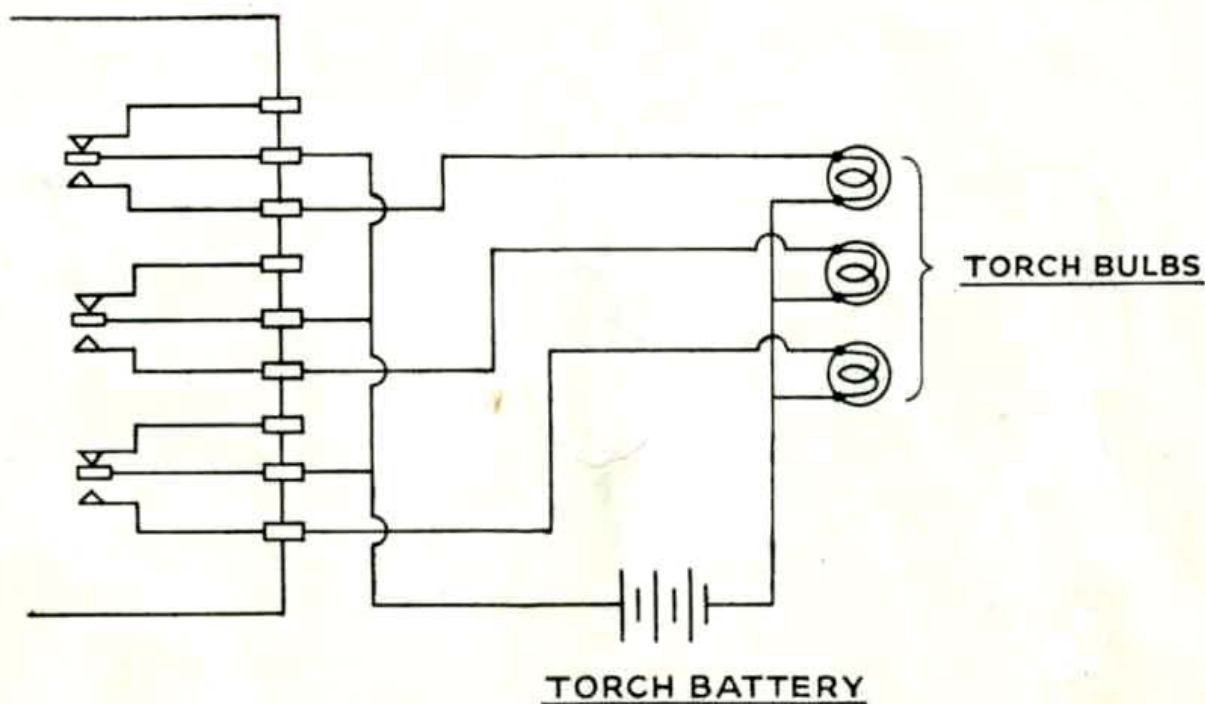


Fig. 2B.





## Operation

For ease of tuning and adjustment of the control frequencies, a simple test consisting of three torch bulbs and a battery should be used and connected to the Receiver as shown (Fig. 4).

Switch on both Transmitter and Receiver. Receivers are sent out pre-tuned to the Transmitter. Operate one of the control box controls, and adjust with a screwdriver the corresponding frequency trimmer until the Reeds vibrate visibly and audibly. The same procedure should be followed with the other controls, (adjusting the corresponding trimmers) which should tune to the other reeds. (This exact sequence of reeds and controls can, of course, be changed to individual requirements.).

An accurate adjustment of Receiver and channel frequency tuning should be made at a reasonable distance of not less than 15 yards from the Transmitter with full aerial. The three bulbs, which may be coloured, will enable this to be done without any difficulty. Once carefully adjusted, and provided that both Transmitter and Receiver aeriels are not altered, there is no necessity for any further tuning. Finally, the main Receiver tuning (white lever at side of Receiver box) should be readjusted—whilst operating one of the controls—to the centre of reception. It should be turned one way until reception ceases; note the position and turn it in the other direction again until reception ceases. Then return to the centre of the two positions.

A general check should be made to assure that all controls are functioning before releasing the model.

Variations of channel frequencies will only occur if the H.T. Transmitter voltage is changed, or with an old battery which drops radically during use. This should be replaced when it is lower than 100 Volts, tested when switched on and operated.

For general average use, the control box is fitted with a lever switch operating separate channels in either direction, and off in the centre position. These are generally used for rudder right and left. The third channel operated by the push button on the left, can be used for any auxiliary circuit.

The six channel control box has two lever switches and two push buttons.



*For use in conjunction with our Radio  
Control Units*

**Mark I.  
Escapement  
(Clockwork)**



**Mark III.  
Escapement  
(Current  
Saving Type)**



**Compact  
Escapement**

