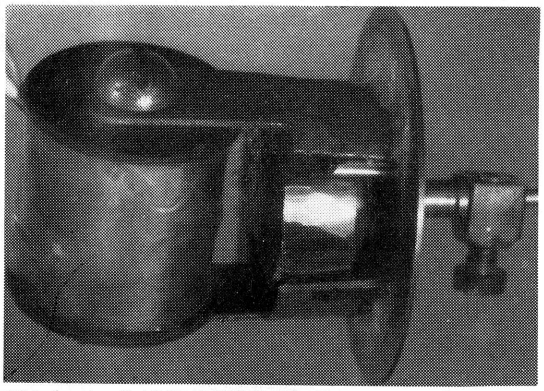


A SMALL MAGNETIC ACTUATOR

By— H. C. Purton

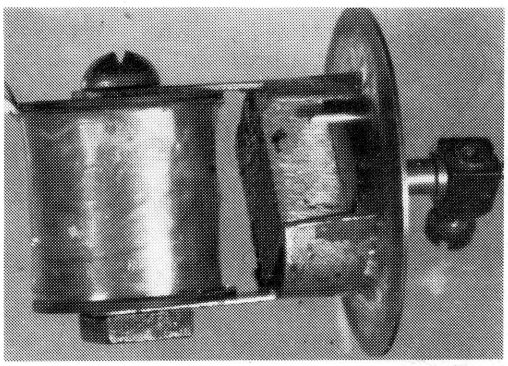
IN the April 1968 R.C.M.&E. there was a feature on magnetic actuators, so I thought readers might be interested in hearing about our experiences with home constructed units which we have been using in small models. These units have ample power for small models up to about 29 in. wing span, are easily constructed and cost practically nothing to make. They are most reliable and work well in a normal manual pulse system off a relayless receiver such as a *Cotswold* using a 4.8 volt DEAC battery. If the receiver works off a higher voltage, then use a two battery circuit as suggested for the *Tinytone* receiver in R.C.M.&E., November 1966.

The actuator shown draws about 200 mA when used with a Cotswold receiver using a 4.8v D.E.A.C. battery. Like the writer of the April feature, I think it is essential to use a DEAC battery for reliable operation. The actuator needs no return spring as it returns to the rest position due to the attraction of the magnet to the pole pieces. We set up the actuators to give left rudder and then only need to remember to pulse for right turn.

The photographs show two of the models used and two views of one of the actuators.

In this district there are about twelve radio control modellers and practically all the equipment is home made. There are three Digitrio sets, two Flight Links and a number of single channel units such as the Cotswold, made from instructions in the R.C.M.&E. After minor adjustments, mainly due to the use of unspecified transistors, all the sets have worked in a most satisfactory manner.

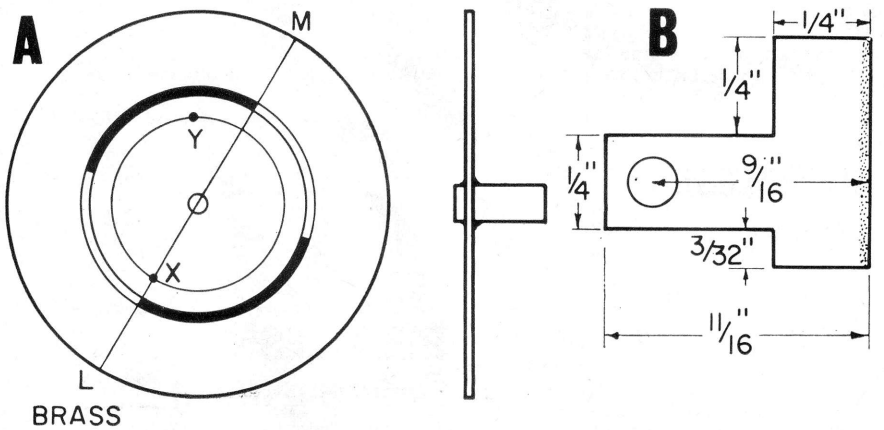
My own Cotswold receiver and Easytran transmitter are faultless at about half a mile range. I also have a single channel Digitrio superhet receiver which I later hope to convert to three channel proportional.



Out here in Australia manual pulse, using a M.M. motor is the most popular form of single channel systems; but a few use an O.S. Pixie outfit with a motor driven actuator. Although I have not tried it, I think this magnetic actuator would probably work quite well with a pulser on a transmitter.

Item A

Take a piece of brass about .015 in. thick and after marking the centre, scribe four circles on it of the following diameters – 1 in., $\frac{5}{8}$ in., 9/16 in. and 7/16 in. Also draw a line LM across the centre and where it cuts the inner circle mark spot X. Also mark spot Y $\frac{1}{8}$ in. from this line on the opposite side of the inner circle. Pierce two very fine holes at X and Y and bore a 3/32 in. hole at the centre and solder a small piece of brass tube about $\frac{1}{4}$ in. long into it, with about 1/32 in. projecting on the side of the scribed lines. Cut around the outer scribed line so that you are



Drawing twice full size