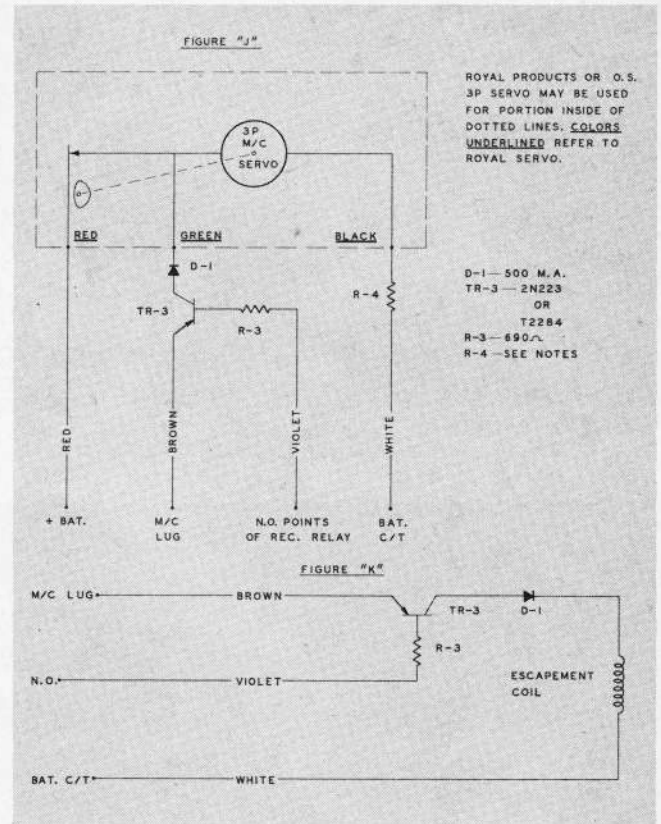
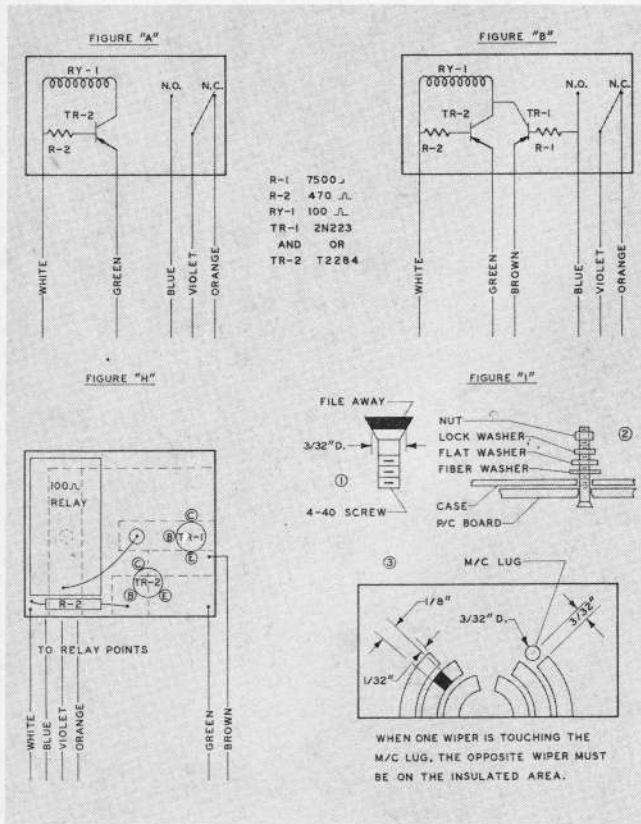


Selectron S/C Unit Revisited



By OWEN S. BLACK . . . ANOTHER VERY POPULAR ITEM WITH A NORMAL FOLLOW-ON TO MAKE IT EVEN MORE VERSATILE AND IMPROVE THE CONTROL POTENTIAL FOR RUDDER-ONLY.

► When Owen Black sent us his excellent 'Selectron' unit for Rudder-Only control employing a relay type multi-servo (Feb. 1965 M.A.N.), we could find only one fault.

Here was a unit that could give direct right or left control action without cycling through unwanted positions. It had the servo power to control big, contest style Class I ships from any relay type single-channel equipment. But big ships take big engines whose throttles require more power to operate than the marginal drive of rubber band escapements.

We wrote and asked Owen if he could revise the 'Selectron' system to provide switching for a 3-position motor control servo such as the Royal or O.S. The answer came in the form of revisions to the Duramite printed circuit board as illustrated.

For a bonus, Owen added several refinements, and also slapped our hand for a couple of goofs in the original article sketches.

Incidentally, Paul Runge of Ace Radio Control, immediately recognized the potential of this system and is offering the Selectron in kitted form. The addition of the M/C circuit does not affect the original unit since the changes occur on the P/C board only.

The revised Selectron eliminates the 10ufd capacitor C-1, the 1N93 diode D-1, and the RF choke, but adds a 470 ohm resistor and a 2N223 or T-2284 transistor. Two for three. We haven't tried this revision, and Owen hasn't indicated that it's any improvement over the original . . . just a different approach.

The revisions, additions, and corrections follow.

Figure A.

Delete C-1 (10 ufd cap.)

Delete D-1
Delete RFC
Add R-2 (470 ohm resistor)
Add Tr-2 (2N223 or T-2284)

Figure B.

Same changes as Fig. A.

Figure C.

Wiring remains unchanged, omit Motor Control wiring if new type is to be used.

Figure D.

Unchanged for use of old escapement M/C system.

Figure E.

Delete.

Figure F.

Remains the same. (See addition for M/C servo)

Figure G.

Remains the same (See addition for M/C servo)

Figure H.

Use same Printed circuit board, install components per new sketch "H".

Motor Control Lug

This is a simple way to obtain the desired switch for the M/C servo. Remove the top from the Bonner servo, mark position of M/C lug and drill hole through P/C board and top of case. Counterbore the aluminum case with a larger drill, allowing the P/C board to spring away from the case. This will insulate the M/C circuit from the servo case. Use a small countersunk head screw (4-40) approximately 1/2 inch long and file the head per sketch 1. Countersink the P/C board and insert the prepared screw, making sure it fits into the countersink and leaves a smooth path for the wiper to ride over. (Continued on page 52)

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Add the fiber washer, flat metal washer, lock washer, and nuts for assembly. Insulate the portions of the P/C board indicated on sketch I, plus the areas indicated for the type of operation chosen.

3P Motor Control Servo

This servo, when used in conjunction with the M/C lug, will change position when the Selectron is given three pulses and held for a short time. Components should be mounted on the servo and wired to the selectron wiring as indicated in figure J. The 500 m.a. diode is not needed for operation of the servo but it prevents a five m.a. current drain when the Selectron is in a neutral position. An O.S. or Royal Products 3-P M/C servo may be used, the dotted line box on figure J, shows the

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latter unit and its wire colors in relation to the transistor driver. The brown wire from the Royal servo is not used. If the servo tends to overrun on 2.4 volts, a resistor may be added in the black wire to reduce voltage.

M/C Lug/Escapement

Figure K shows a method of using the servo M/C lug with and escapement M/C. This also works on the three-pulse timing.

Corrections to the February article sketches

#1. The red and black wires from the battery pack to the servo were not shown connected to the servo in Fig. C.

#2. Note Number 2 on Fig. F should read, "Insulate the *dark* shaded area . . . etc." This is called out correctly farther back in the text. The reduced size of Fig. F makes it hard to see the change in shading. A clearer idea would be to use Fig. G and omit the two narrow insulation strips.

Note Figures C, F, and G above refer to the sketches in the February 1965 article.