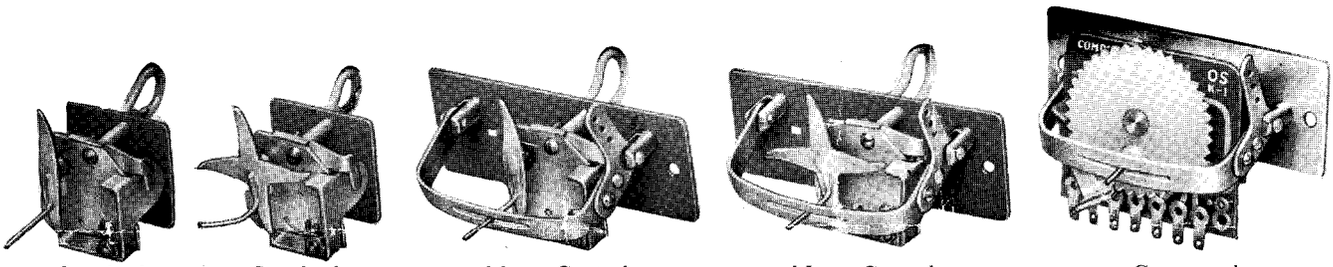
INSTRUCTIONS O.S. MINITRON ESCAPEMENT



Standard 2 Claw | Standard 4 Claw | Motor Control 2 Claw | Motor Control 4 Claw | Compound (K-1)

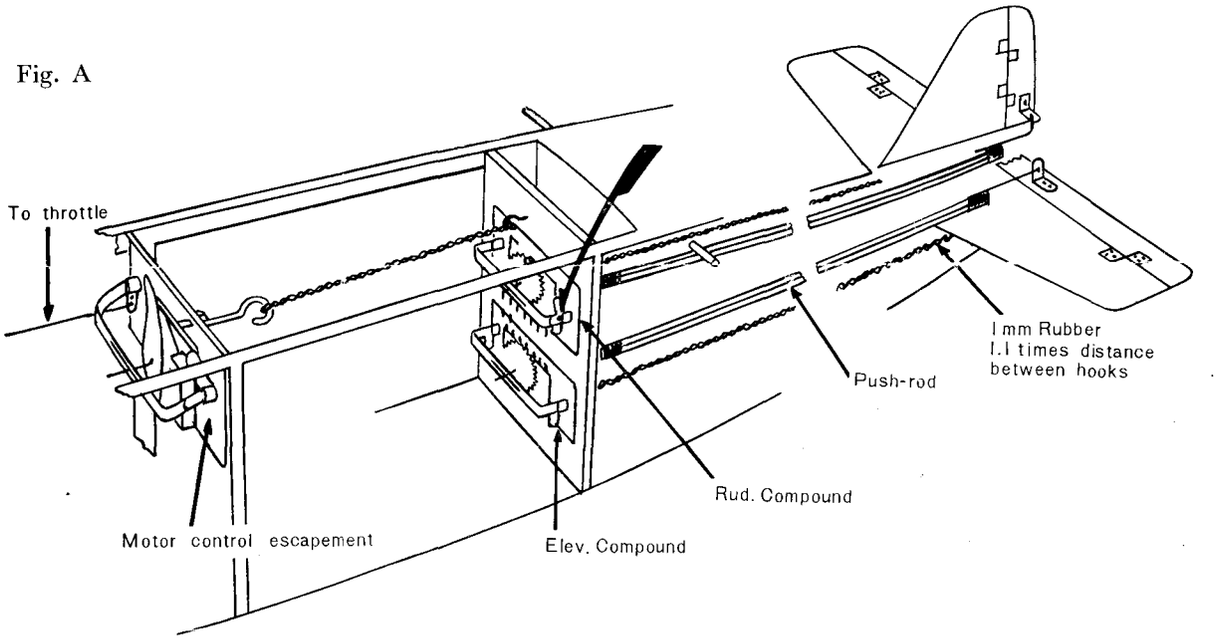
Adoption of the highest-quality electro-magnetic material and precise workmanship as well as the most careful quality control have resulted in unsurpassed reliability and superiority of the various types of OS escapements, which will certainly give you entire satisfaction.

COMPOUND ESCAPEMENT (K-1)

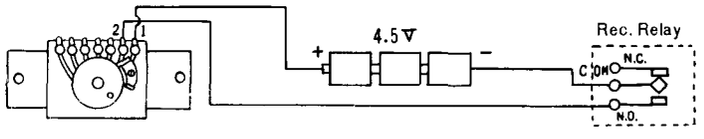
OS compound escapement (K-1) with a printed circuit board and a nylon gear has the following advantages in comparison with ordinary types.

- Precise design and assembling guarantee stronger mechanism.
- Longer life of governor & gear.
- Enables cascade connection, which is excellent for multi-control on a single channel radio.

Fig. A



1. Wiring for Rudder Only Control

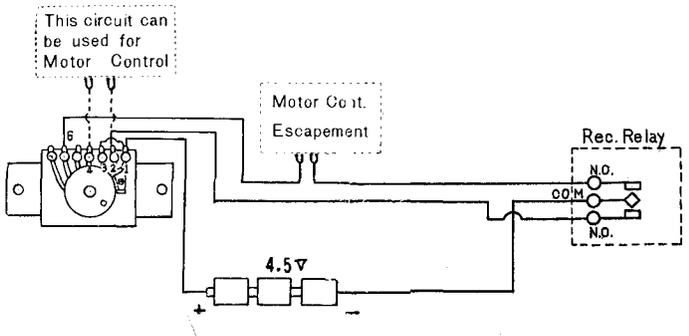


Signal

Rud. left ___ (Hold)

Rud. right _ _ (Press & Hold)

2. Wiring for Rud. & Eng. Control



With this wiring, motor control is done with Relay Counter Contact.
Motor control escapement operates when a flash signal is sent.
Also, with the circuit in dotted square, it works on _ _ ___ signal.

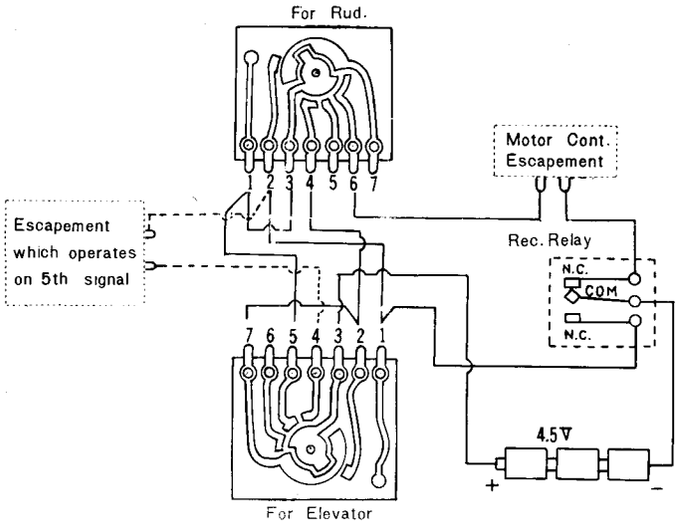
Signal

Rud. left ___ (Hold)

Rud. right _ _ (Press & Hold)

Eng. Cont. _ or _ _ ___ (Flash) (Press. Press & Hold)

3. Rudder, Elevator & Engine Control



With two Compound Escapements in shown wiring, upper & lower ones can be operated for Rudder & Elevator Control respectively. It is economical because there is no current on Rud. Escapement while Elevator Escapement is in operation.

Rud. left ——
Rud. right – ——
Elev. up – – ——
Elev. down – – – ——
5th Action – – – – ——
Eng. Cont. –

Note:

- Press signal timing varies in accordance with the strands and turns of rubber, to which attention is to be given, for proper timing.
- Disregard circuit provision 8 & 9 in the printed circuit board, as they are not electrically connected; they are for operation with relay-less receiver in the future.
- Push-rod mounting part can be fine-tuned (Rud. neutral position) by loosening the screw pointed by an arrow in Fig. A. Screw at a proper position.

PUSH-PULL TYPE 2 CLAW ESCAPEMENT & STANDARD 2 CLAW ESCAPEMENT

These are intended for motor control and suited for throttled engine speed control.

PUSH-PULL TYPE 4 CLAW ESCAPEMENT & STANDARD 4 CLAW ESCAPEMENT

With a throttled engine, three speed change can be done.
On a boat, they are suited for "forward", "reverse" and "stop" switch control of the main electric motor.

GENERAL INSTRUCTIONS

- **Power Rubber**

Four or six strands of 1mm rubber bands are recommended. Arrange the length of the loop about 1.1 times of the diatance between hooks that hold it.
The rubber loop must supply torque, or twisting effect, but as little tension as possible. Examples of the number and turns of the strands are shown in the table below.
Too many strands and turns can often cause improper operations.

Type	Length of rubber strand	Number of strand	Turn (approx.)
Compound	40 cm	6 strand ~~4 strand~~	250–300 ~~300–400~~
Motor Control	15 cm	4 strand	100–150
Standard	40 cm	4 strand	200–300

- **Batteries**

For two escapements of any types, use 3 1.5V batteries (4.5V) as per illustration.
It is suggested that you use as heavy duty batteries as the weight allows. If the total voltage goes below 3V when metered under load, replace with new ones.
Two 1.5V batteries (3V) are enough for separate operation of each escapement.

- **Installation**

Install your escapement properly, by fixing the plate in the balanced position in order that no strain may be caused.
Particularly, distortion of the push-rod movable crank of the compound escapement exerts a bad influence upon the operation.
Also, build action communicating mechanism and rudder hinge to operate as lightly as possible.

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