USER'S INSTRUCTIONS

for

MODEL 0-22

INSTRUCTIONS FOR 0-22 RECEIVER

OTARION ELECTRONICS INC.
OSSINING, N. Y.

Congratulations! You have purchased one of the finest pieces of miniature electronic equipment available today. The Otarion O-22 Receiver is made with the same high quality components and precise construction techniques that have made Otarion Electronics, Inc., a leader in the field of micro-miniature hearing aids.

Some of the outstanding features of the O-22 are:

- Extremely small size and very light weight.
- All transistor relayless tone circuit.
- Operates most magnetic actuators for full proportional control.
- Provides "quick blip" motor control with most compound escapements.
- Syncro-tuning indicator greatly simplifies tuning procedures.
- Fully temperature compensated from 0 degrees F. to 140 degrees F.
- High sensitivity.
- Printed circuit board of epoxy glass for strength and coated with polyurethane plastic to protect the printed wiring.

MOUNTING

The Model O-22 can be mounted in any position, although the recommended and most crash resistant mounting is with the printed circuit wiring facing the direction of flight. The simplest method of mounting is to cut the piece of 1/2" to 3/4" foam material and cement it to the bottom of the receiver chassis with contact cement (Weldwood, Bond, etc.).

DO NOT USE EPOXY BASE ADHESIVES OR STANDARD MODEL AIRCRAFT CEMENTS.

Another method of mounting is to wrap the receiver in a blanket of 1/2" foam and pack it into a suitable compartment in the aircraft.

WIRING

Wiring of the Model O-22 receiver is a simple operation if attention is paid to the color coding of the wire leads and the polarity of the batteries. Use a soldering iron of low voltage. A 35 watt iron will

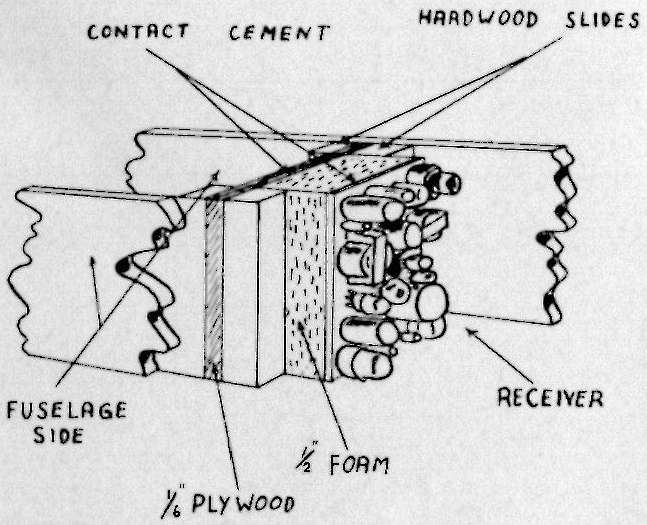

Figure 1

suffice for most applications. The basic wiring diagram for magnetic proportional actuators is shown in Fig. 2.

Alkaline batteries, such as Eveready E-91's, are

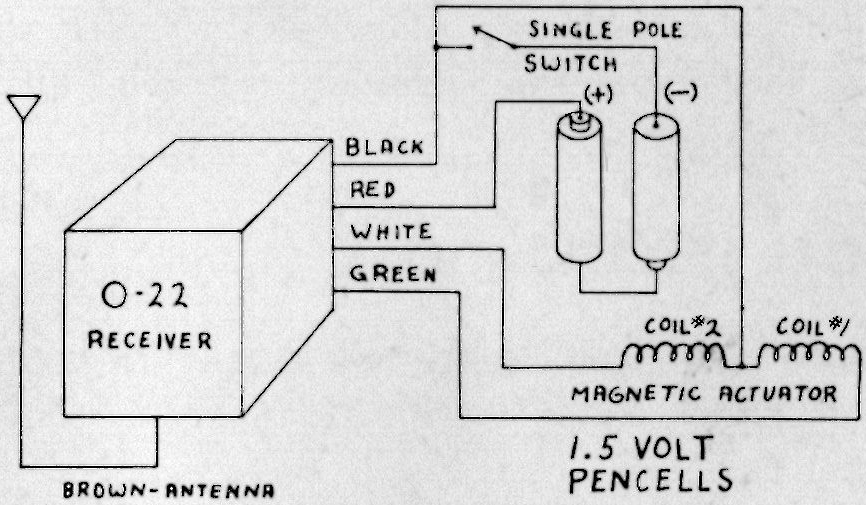

Figure 2

recommended since their life under these high drain conditions is much longer than ordinary pen cells.

Important. Observe battery polarity. If batteries are connected in reverse polarity, damage to the transistors can result.

If a battery box is not used and the leads are soldered directly to the batteries, a larger soldering

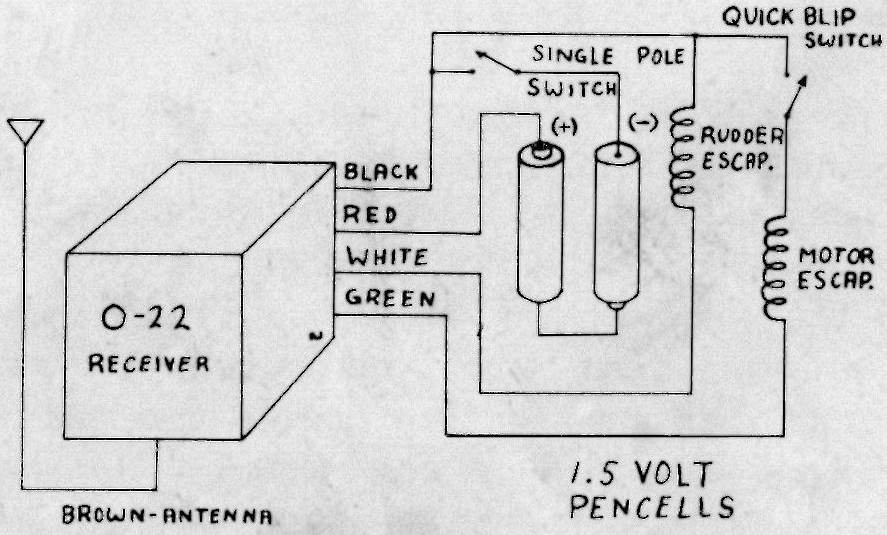

Figure 3

iron of 75 to 100 watts will be required. Be careful when soldering to the batteries that too much heat is not applied. Most of the new "leakproof" batteries must have the bottom cap removed (negative terminal). This can be accomplished by carefully cutting the paper around the bottom circumference of the battery.

The wiring diagram for "quick blip" motor control is shown in Fig. 3. When normal single escapement is desired, leave green lead unconnected.

TUNING

Each receiver is factory tuned to 27.255 mc and given a simulated range test. Because of the variance in lead lengths from installation to installation, it may be necessary to retune the receiver. A rough tuning check of the receiver can be accomplished by removing the antenna from your transmitter to simulate a weak signal. The transmitter should be placed approximately 6 inches from the receiver antenna. The key on the transmitter should be pushed and the Syncro tuning indicator should be light. If not, retuning is indicated.

To tune the receiver, a tuning wand (non-metallic screwdriver) is needed. If a tuning wand is not available, one can be made from a length of 1/8" wood dowel with the tip carved to the shape of a small screwdriver blade.

With the transmitter key depressed, the core in the tuning coil should be slowly rotated until the Syncro-tuning indicator lights. Proper tuning is indicated by maximum brilliance of the indicator.

For a finer or more exact tuning adjustment, the transmitter (with antenna attached) should be taken about 500 feet from the receiver and the tuning procedure followed again.

ELECTRICAL SPECIFICATIONS

Sensitivity sufficient to fly the largest model planes with most hand held transmitters, A.F. modulation required:

- 300 to 1000 cps with 600 cycles nominal at 90% to 100%.
- Temperature compensated from 0 degrees F. to 120 degrees F.
- **Actuator** — Operates any dual coil actuator with a coil resistance of no less than 10 ohms per coil.
- **Escapements** — Operates any standard escapements from 7 ohms up.
- **Idle current** — No carrier — 28 ma nominal. With carrier — 16 ma nominal.
- **Frequency range** — All 27 mc Citizen band

channels

- **Operating voltages** — 3.3 volts maximum, 2.2 volts minimum
- Provided with five 12 inch color coated wire leads.
- Printed circuit protected with Polyurethane seal.

TROUBLES

Your receiver was thoroughly checked before leaving our factory. If any problems occur, the procedure outlined below should be followed:

1. All solder joints should be carefully checked.
2. All wiring should be checked.
3. The battery polarity should be checked.
4. **Check the batteries under load.** Some escapements will not operate reliably once the battery voltage drops below 2.5 volts under load.

GUARANTEE

The Otarion Model O-22 Receiver is guaranteed for 90 days against any defects in material and workmenship. This guarantee is void if the receiver has been abused or any soldering done on the printed circuit board.

There will be a $2.50 minimum charge to cover shipping and handling on all receivers returned to the factory.

The Otarion Model O-22 Receivers should be returned to:—

OTARION *Electronics* Inc.

Micro-Miniature Controls Division

P. O. Box 711

Ossining, New York