

INSTRUCTIONS FOR OPERATION  
OF  
CITIZEN-SHIP SELECTIVE SUPERHETERODYNE  
MODEL SSTR RECEIVER

CITIZEN-SHIP RADIO CORPORATION  
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## INSTRUCTIONS FOR INSTALLATION AND OPERATION OF MODEL SSTR

Your CITIZEN-SHIP SSTR Receiver is a highly selective, high quality, super-heterodyne crystal controlled tone operated receiver, that will operate on any of the new FCC frequency assignments from 27.255 through 26.995 with no interference from a transmitter on any other of the five frequencies.

This receiver will operate only from a Tone Modulated transmitter tuned to the correct frequency. CITIZEN-SHIP Model CTX is especially designed to operate it and should be used. However, our REX or MST-8 may also be used when tuned up with the proper crystal (an on-off carrier transmitter will not operate this set).

The SSTR Receiver is shipped, adjusted and tuned for reception on the frequency which is stamped on the box and on the bottom of the case. The transmitter used must, of course, be tuned and adjusted to transmit on the frequency for which the receiver is operating.

Before you become alarmed at the frequency of the crystal in the receiver, the frequency of the receiver crystal is always 0.455mc lower than the frequency at which the transmitter operates. Example: If you have a receiver tuned for 27.145 the receiver crystal should read 26.690 (i. e.  $27.145 - .455 = 26.690$ .)

### CRYSTALS AND SELECTION OF OPERATING FREQUENCY OF RECEIVER

If you desire to select another of the available 27mc frequencies, you may ship this receiver and transmitter to CITIZEN-SHIP and we will exchange crystals and realign and retest the sets for \$2.50 per unit. No transmitters other than CITIZEN-SHIP manufactured will be adjusted.

You may wish to have more than one set of crystals so you can fly on more than one frequency. It is possible to change crystals yourself and recheck the receiver to see if it is properly tuned with the different crystal. See paragraph on Retuning and Adjusting. (Transmitter tuning instruction packed with transmitter.)

Warning! It is absolutely essential to buy crystals of the correct frequency and tolerance. Because of the selectivity of the receiver, the crystals must be ground to a tolerance of .0025%.

Crystals must be used in pairs as follows:

TRANSMITTER CRYSTAL FREQ.	RECEIVER CRYSTAL FREQ.
27.255	26.800
27.195	26.740
27.145	26.690
27.095	26.640
27.045	26.590
26.995	26.540

### RETUNING AND ADJUSTING

The set is tuned at the factory and no further tuning is necessary or recommended if receiver is used on the frequency marked on the box, and in conjunction with the proper transmitter also tuned to that frequency. To change frequency, remove cover on receiver and plug in desired crystal. Be sure transmitter is tuned and putting out at proper frequency. Connect phones from green wire to red wire on receiver. See Figure 1.

You should hear tone when transmitter operate button is pushed and antenna in place. If set has been working and you hear nothing, crystals are wrong or transmitter is not working. At this point keep in mind that no retuning may be necessary.

If tone is heard, remove transmitter antenna and bring transmitter close to antenna of receiver. Adjust antenna and RF coil with all bakelite screw driver or sharpened wood dowel. See Figure 1. These adjustments are non critical or broad. Set for middle position of loudest

tone. Now check tuning of IF coils in same manner. Never turn these cores more than 1/2 turn either way. Tune these for loudest signal moving transmitter away to get sharpest setting. Replace cover and recheck RF and antenna coils through holes. Oscillator Coil should not need tuning.

Distance check before flying.

### BATTERY REQUIREMENTS

Since the set is all transistorized, only one 9 Volt battery is required. Two types of 9 Volt batteries are currently available:

Eveready #216 or Equivalent  
Burgess #P6M or Equivalent

Weight 1 1/4 oz.  
Weight 1 3/4 oz.

Either style gives long life as they are designed for home receiver transistor radios drawing even more current than the SSSTR.

Furnished with the set is a battery clip to fit the #216 Eveready (Burgess 2V6.)

### MOUNTING

When mounting in a model plane, the preferred arrangement would be vertical with the bottom of the metal box toward the front. Glue the bottom of the box to a thick piece of sponge rubber which in turn is glued to a removable vertical partition. (See Figure 2.)

Batteries and receiver must be mounted to give proper balance to the plane but batteries should always be forward of receiver. If vertical mounting is used it is convenient to mount both receiver and batteries on a removable plywood board. Rubber cement does a good job.

There is ample room inside the receiver box for the receiver battery and also actuator batteries. Mounting batteries here cannot be recommended but if extreme care is exercised, extra battery space could well be saved. Be sure batteries are well insulated from both receiver base and the metal box.

The set can, of course, be mounted horizontally especially in boats where crash danger is minimized.

### OPERATION OF SERVOS AND MOTOR CONTROL UNITS

The wiring of Servos and Motor speed control units varies so greatly that the wiring for them is not shown. However, a diagram showing nomenclature of a relay is shown. See Figure 3. All CITIZEN-SHIP Servos and the CITIZEN-SHIP Motor speed control unit have their own complete wiring diagram showing how to connect them to a relay.

The Red wire in your Receiver is connected to the Common or Relay Armature contact. This wire also brings the plus 3 Volts to the Receiver itself.

Remember, a relay is nothing but a Double Pole Single Throw Spring Return Switch.

### ANTENNA

Several arrangements of antennae are possible. A stiff steel wire at least 18" long may be mounted vertically at any convenient point and the antenna lead from the receiver soldered directly to this. A wire may be stretched from the receiver to the top of the rudder fin. With a superheterodyne receiver the longer the antenna the better the operation. Use as long an antenna as possible. Leave some slack in the antenna lead into the receiver, but do not wind this lead in and around other wiring as range might be reduced.

## WARRANTY

Your CITIZEN-SHIP Model SSTR Receiver is warranted by the manufacturer to be free from defects in material and workmanship. However, the transistors are known to be operative from testing of the set and we cannot guarantee them against damage caused by incorrect voltage.

Any receiver failing to operate within 30 days after date of purchase will be repaired or replaced free of charge upon being returned to the factory. This warranty does not apply to failure of operation due to exhausted or improper batteries.

If your receiver is damaged in shipment, you should file a claim with the carrier immediately upon noting the damage.

This warranty does not apply if, in our judgement, the receiver has been tampered with or received abusive treatment beyond that encountered in normal usage.

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## WIRING DIAGRAMS

FIG. 1

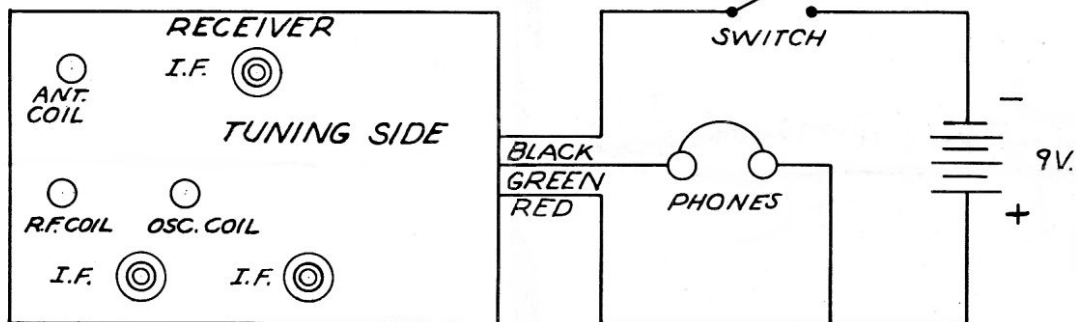


FIG. 2

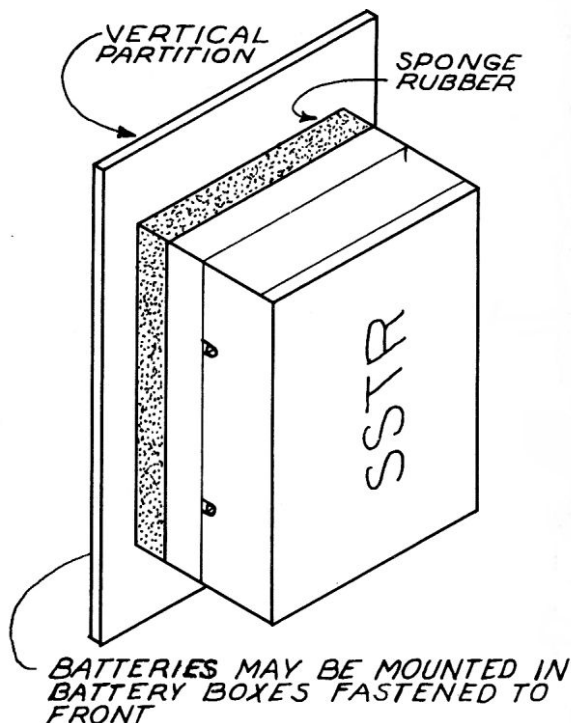


FIG. 3

