

INSTRUCTIONS FOR OPERATION  
OF  
CITIZEN-SHIP MODEL SL-6 MULTI TONE TRANSMITTER

CITIZEN-SHIP RADIO CORPORATION  
810 EAST 64TH STREET  
INDIANAPOLIS, INDIANA

INSTRUCTIONS FOR OPERATION  
OF  
CITIZEN-SHIP MODEL SL-6 MULTI TONE TRANSMITTER

Your CITIZEN-SHIP Model SL-6 Six Channel Transmitter is a high power output, all transistorized unit capable of transmitting 6 different audio tones that operate the CITIZEN-SHIP Model RL-6 Reed Receiver. These audio tones range from 400 to 600 cycles per second, and will operate all late model receivers with high tone reed banks.

The transmitter is crystal controlled and intended for use on all of the 27mc Citizens Band frequencies of operation. It may be used on any of the 6 following frequencies by inserting the desired frequency crystal. The legal frequencies for operation of radio control on the Citizens Band are as follow:

26.995mc	27.145mc
27.045mc	27.195mc
27.095mc	27.255mc

All RF tuning adjustments have been completed at the factory using the crystal with which the set is shipped, and it is doubtful if they need readjustment even if the crystal frequency is changed. However, tuning instructions are briefly described in the paragraph on retuning.

INSTRUCTIONS FOR PUTTING TRANSMITTER IN OPERATION

Unpack carefully and note that the antenna assembly is in two pieces: a short fixed length of antenna with a loading coil mounted on one end, and a collapsible antenna which is compressed to its shortest length as packed. Insert the fixed length of antenna through the rubber grommet in the top and screw onto the screw provided on the antenna mounting bracket. With the back cover off, this bracket is readily seen from the side. Then screw in the threaded end of the collapsible antenna into the fitting on the top of the loading coil. Part or all of the antenna assembly can be removed from the set for convenience in transportation, or it can be left in place with the antenna collapsed. When flying, the collapsible antenna must be extended to its full length.

BATTERY REQUIREMENTS

One of the advantages of this transmitter is the fact that it does not require an expensive power unit, but uses a 9 Volt battery. This battery voltage has been set up as a standard of the industry by transistor manufacturers.

The 9 Volt battery is selected in order to obtain from this transmitter a signal which is equal in strength to that radiated by proven tube transmitters. This strong signal insures no reduction in range or concern about loss of control at a distance. The drain from a 9 Volt battery is approximately 50 MA with tone on.

The recommended battery is Eveready #276 or Burgess #D6. Check battery voltage periodically. The transmitter is designed to work most efficiently at 9 Volts, but will continue to function to approximately 7 Volts and even lower, with of course, reduced output. Remember that the output of any transmitter is proportionate to the square of the voltage. That is, if the voltage drops to 1/2, the power output drops to 1/4. Do not take chances with extremely low battery voltages. It is recommended that battery be changed when voltage reaches 7½ to 8 Volts with the set turned on.

OPERATION WITH RECEIVER

The reeds in the receiver are very sharply tuned, and the audio tone from the transmitter must be extremely stable and not drift off frequency. The audio tone generators in this transmitter are temperature compensated by special capacitors and inductors to hold their frequency within about 1 cycle from freezing temperatures to 140° Fahrenheit.

At the top rear of the transmitter are 6 volume control shafts with screw driver slots visible through holes. These controls permit variation of the audio tones to match the individual reeds of the receiver. They are arranged for maximum convenience if the receiver is connected in accordance with the instructions packed with it, and are shown in the associated figure. Once set, they should rarely need to be retuned. If some other arrangement of connecting the reeds is used, the following chart identifies the control used with the 6 various audio tones:

## NORMAL CONTROLS

1. Right Rudder – Highest Tone
2. Left Rudder
3. High Motor
4. Low Motor
5. Down Elevator
6. Up Elevator – Lowest Tone

## ALTERNATE CONTROLS

Right Aileron  
Left Aileron  
Down Elevator Trim  
Up Elevator Trim

Action of the lever switches gives control as indicated by the printing on the front panel. An adjacent reed may sometimes be tuned in, so be sure the correct reed is vibrating by checking the servo or actuator motion associated with the control.

Tuning of controls to match reeds in the receiver is best and most accurately done beginning with control adjustment completely counter-clockwise. Push desired lever switch and begin to adjust associated control (see rear view drawing) clockwise. Note exact position of control as actuator jumps to control position. This will be a solid actuation (not chattery). Continue turning clockwise until actuator begins to chatter and goes to neutral. Note exact position of control where chattering starts. Set pot in center of the two noted positions.

## RETUNING THE RF SECTION OF THE TRANSMITTER

If the crystal frequency is changed, and for some reason a distance check does not show good range, or if range is limited for any other reason, it may be desired to check the tuning of the transmitter. This can be done if a good Field Strength Meter is available. The Field Strength Meter must be tuned to the same frequency as the crystal. When tuning, hold the transmitter in your hand, as you are the counterpoise antenna.

To the right of the crystal is a ceramic trimmer which tunes in the oscillator. The tuning is very broad, and it should be adjusted for best reading of the field strength meter. After setting oscillator trimmer, the transmitter should be switched off and on several times to be sure the oscillator starts reliably. Should the oscillator fail to start, the trimmer should be turned clockwise slightly and the oscillator checked again. On the right side (rear view) is another trimmer which tunes the coil output. This should be rotated right or left until the field strength meter reads maximum. All adjustments required to tune up the transmitter are now completed. A Milliammeter is not needed.

Don't make the following adjustments except as a last resort:

If a control adjustment fails to reach a reed frequency when in maximum clockwise or counter-clockwise position, it is possible to readjust the transformer air gap by means of the screw to bring it in. CAUTION: This will shift all six frequencies. Closing the air gap lowers the frequencies, increasing it raises the frequencies. A quarter turn of the screw is generally enough. If you adjust this, mark the screw so you can get back to where you started, as it is easy to get confused. This is normally a factory adjustment.

## WARRANTY

Your CITIZEN-SHIP SL-6 Transmitter is warranted by the manufacturer to be free from defects in material and workmanship. Any transmitter 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 transmitter 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 judgment, the transmitter has been tampered with or received abusive treatment beyond that encountered in normal usage.

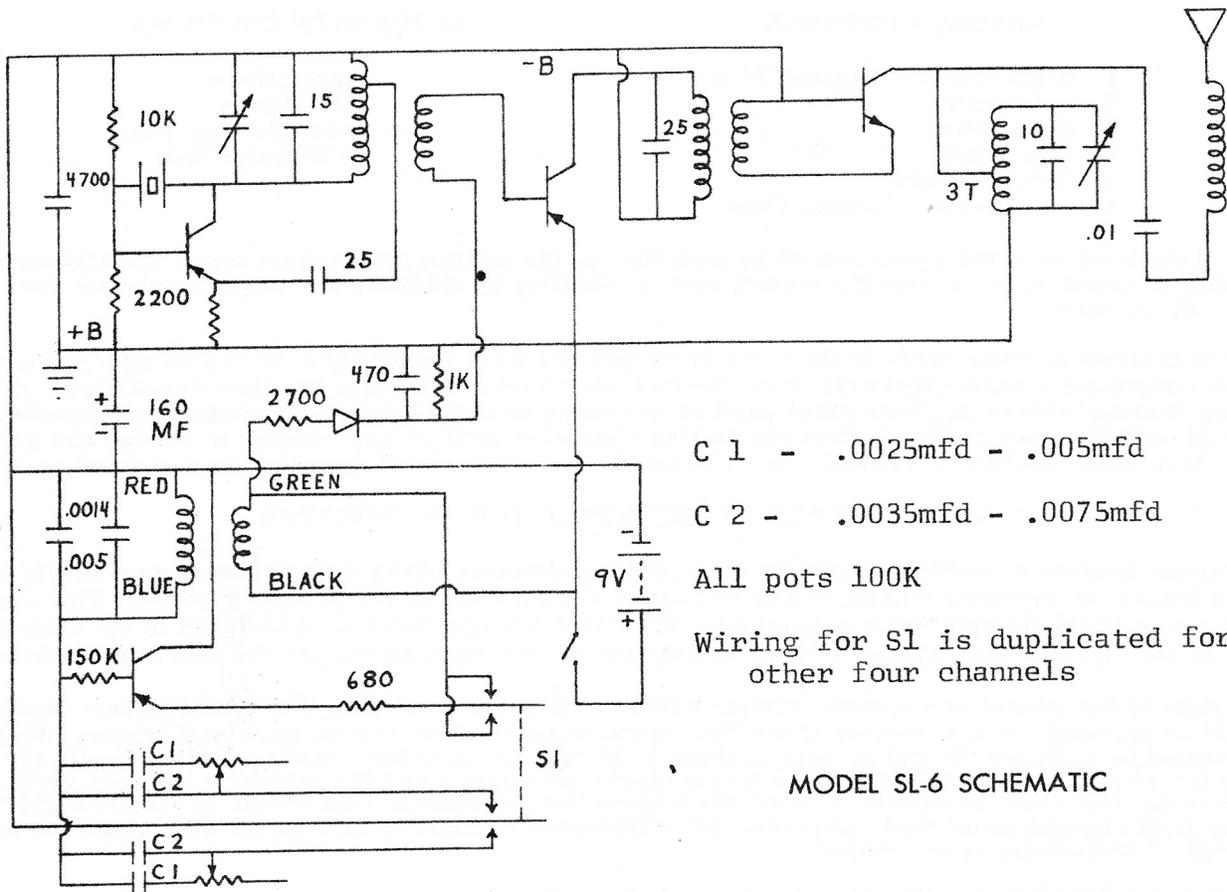
## LICENSING

CAUTION: Before this transmitter may be operated, it must be licensed as a Class C Station in the Citizens Radio Service.

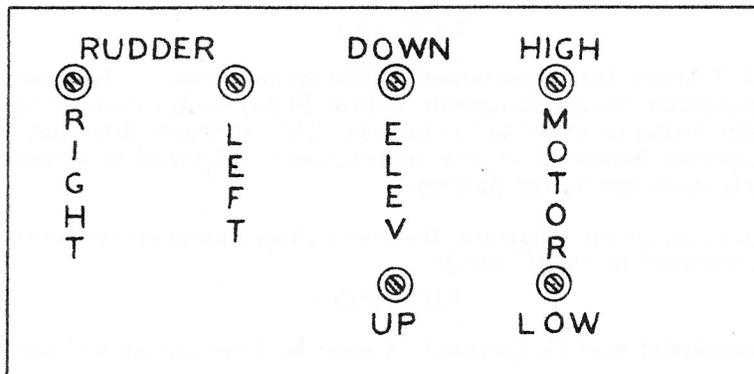
FCC Form #505 Application for Citizens Radio License is enclosed with this transmitter. Instructions on the front page are to be carefully followed in filling out the application.

In general, the only requirements for a Citizens Radio Station License with the CITIZEN-SHIP Transmitter are that the applicant be 12 years of age or older and a citizen of the United States. If some one under 12 wishes to purchase and use the transmitter, he may have his father or another adult file application for the license. After the Citizens Radio Station license has been obtained, anyone may operate the transmitter as long as the licensee assumes the responsibility for the proper operation of the station.

Do not operate your transmitter until you have received your Citizens Radio Station license.



### TONE ADJUSTMENTS



### REAR VIEW

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