

INSTRUCTIONS FOR OPERATION
OF
CITIZEN-SHIP MODEL SPX TONE TRANSMITTER

CITIZEN-SHIP RADIO CORPORATION
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OF
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The SPX is a miniaturized, all transistorized high power tone transmitter for use on the Citizens Band frequencies especially assigned for use of radio control of models. In spite of its small size and its low power drain, the use of a special silicon output transistor permits it to radiate energy in the same order of magnitude as that put out by conventional tube transmitters which have been tested and proven over several years experience. This transmitter will replace the normal tube transmitters and will do everything that they could do so far as controlling models at an extended range.

This transmitter will operate all of the CITIZEN-SHIP single channel tone receivers, such as Type LT "3", Citizen-Ship R/C Pak, 3VTR, MDL, and also the JSH single channel superhet receiver (frequencies of course must match between transmitter and this receiver). All of these receivers are shown in our current catalog.

This extreme output obtained in such a small package and with such low power is obtained by the efficient use of collector modulation and an externally loaded antenna which is packed and furnished with the transmitter.

PREPARING THE SPX FOR 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 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

The battery voltage on this transmitter is 9 Volts, which has been adopted as the standard by the transistor industry for maximum efficiency. Reliable operation of the transmitter may still be had with the voltage down to 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 volts. It is recommended that battery be changed when voltage reaches 7 - 7-1/2 with set turned on. Current drain from a 9 Volt battery is approximately 60 MA with tone on.

The recommended battery, which fits the space provided below the printed circuit board, is Eveready Type #276 or Burgess Type #D6. This battery is simply clipped on to the battery harness provided, and the set is ready to operate.

OPERATION

On the front of the SPX Transmitter are two switches. The one on the left labeled Carrier and ON stays either up or down when so placed. (This should always be OFF or down when the transmitter is not in use.)

The switch on the right labeled Operate is a Push Button type and always returns itself to the off position. To operate, push in.

READ THIS CAREFULLY. When the left hand or Carrier switch is placed in ON position, the Transmitter Carrier is being signaled all the time and the battery power is being used.

The right hand or Operate switch turns the transmitter on completely when pushed in (that is, both carrier and tone are turned on) regardless of the position of the left hand carrier switch.

THIS IS THE REASON for the two switch arrangement. Tone receivers are much less subject to interferences from Class D or voice transmitters if the carrier to which the receiver is tuned is on at all times. The carrier reduces sensitivity of the receiver to off frequency carriers from Class D stations.

Therefore, when flying in a remote location away from Class D or voice stations, leave the carrier switch off and use only the operate switch, thereby greatly prolonging the life of your transmitter battery.

If you should encounter interference, turn on the carrier switch and interference will be eliminated or greatly reduced, but there will be a constant drain on the battery. (Always turn off the carrier switch when the transmitter is not in use.)

CHANGING CRYSTALS

The crystal plugs into a socket and may be changed to any other of the assigned frequencies (26.995, 27.045, 27.095, 27.145, 27.195 and 27.255 mc).

All RF 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 next paragraph.

RETUNING

Retuning is accomplished by adjusting two compression trimmers -- the oscillator trimmer is to the right of the antenna mounting bracket looking into the back of the set, and the output trimmer is in the upper left hand corner. No adjustments of these trimmers should ever be made without the aid of a good Field Strength Meter tuned to the frequency of the crystal used in the transmitter. An M. A. meter is not needed in tuning this transmitter. When tuning hold the transmitter in your hand, as you are the counterpoise antenna. Both trimmers should be adjusted for maximum output on the field strength meter, tuning the oscillator trimmer first. This should be a rather broad tuning. Then tune the output trimmer to the best field strength reading.

WARRANTY

Your CITIZEN-SHIP SPX 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 battery. If your transmitter is damaged in shipment, you should file claim with the carrier immediately upon noting the damage.

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

LICENSING

CAUTION: Before this transmitter can 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 of the License Application 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.

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