

**INSTRUCTIONS FOR OPERATION OF CITIZEN-SHIP
PULSE PROPORTIONAL TRANSMITTER
MODEL NPT**

**CITIZEN-SHIP RADIO CORPORATION
810 East 64th Street
Indianapolis, Indiana 46220**

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NTP PROPORTIONAL TRANSMITTER

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1. DESCRIPTION OF NPT SYSTEM

The Citizen-Ship NPT is an advanced Galloping Ghost Pulse Transmitter with variable pulse rate for elevator, width for rudder and on-off tone motor control.

A. Rate Frequency

Neutral pulse rate can also be changed from **6.5 PPS** to **13.5 PPS** by moving switch inside transmitter from low to high. Place switch in low position (down) for use with Rand GG Pak. For Rand Dual Pak, use with switch in high position (up).

B. Width Control

Neutral width is 50% on and 50% off. Varying the width to more "off" time than "on" time (moving stick to left) causes the actuator to assume an average position toward left rudder. More "on" time than "off" provides right rudder.

C. Tone Frequency

Tone frequency has been factory-adjusted to 1000 CPS but is variable from 700 to 1400 CPS.

2. RECOMMENDED RECEIVER

Citizen-Ship receiver Model SSH (34.95) factory-wired and designed for pulse, should be used to assure a balanced system. Older model SSH receivers can be made completely satisfactory by cutting the printed circuit board and interchanging the dual electrolytic filter capacitor leads 90 uf and 25 uf. A new filter capacitor can be purchased from Citizen-Ship for \$1.50 or installed at the factory for \$4.00. Use of this special capacitor eliminates the need to cut the printed circuit board. The necessary part is a 90 & 10 uf dual section electrolytic with common positive.

3. RECOMMENDED ACTUATORS

Rand's transistorized GG Pak or Dual Pak should be used with the Citizen-Ship NPT transmitter and SSH receiver. This gives a complete system that has been field proven. Other makes of actuators and receivers may be used but results cannot be guaranteed. Actuator neutral positions and the amount of control could vary and may not be as satisfactory.

4. CHARGING INSTRUCTIONS

The charger that is built into the transmitter will charge batteries at a rate of 40-50 MA, depending upon the number of cells connected. This will allow 500 MAH and 600 MAH cells to be fully charged in approximately 14 hours. 1 amp hour cells, such as supplied with the Rand Dual Pak, must be charged 24 hours for full charge.

A wiring harness is provided to make the necessary connections between the charger in the transmitter and the Rand battery pack. Follow in listed order only:

1. Insert the round socket into the transmitter through the back.
2. Connect the flat plug into the Rand battery supply socket.
3. NOW—and only after completing steps 1 and 2, connect the standard 2-prong plug into a 110V 60-cycle AC outlet. CAUTION: Do not charge batteries with the back off the transmitter. A light bulb is installed in the transmitter and when the battery is charging, the light from this bulb can be observed through the trim lever slots in the transmitter case front.
4. Transmitter on-off switch must be in the "off" position while charging.

5. FREQUENCY OF TRANSMITTER

The NPT transmitter is crystal controlled and intended for use on all of the 27 mc Citizen Band frequencies for radio control operation. It may be used on any of the 6 legal frequencies by plugging in the desired crystal without any retuning.

Crystals must be used in pair as follows and must be ground to a tolerance of .0025% to insure proper operation and allow replacement without making retuning the transmitter necessary.

Replacement crystals may be obtained directly from Citizen-Ship for \$4.50 each, plus postage.

Transmitter Crystal Frequency

26.995MC
27.045MC
27.095MC
27.145MC
27.195MC
27.255MC

Receiver Crystal Frequency

26.540MC
26.590MC
26.640MC
26.690MC
26.740MC
26.800MC

6. PUTTING THE TRANSMITTER INTO OPERATION

A. Battery Requirement

An inexpensive 9V dry cell battery is required for the transmitter. Use Eveready Type 276 or Burgess D6. A snap-type harness is provided for ease in connecting the battery. Replace the battery when the voltage reaches 8V with the set turned on. This will give several months of normal operation.

B. The Antenna

The antenna is inserted through the rubber grommet in the top of the case and is screwed to a mounting bracket inside the case by rotating the antenna in a clockwise direction. If difficulty is encountered the first time in aligning the antenna, remove the case back so that the screw can be seen. The antenna must be fully extended for maximum output and range.

CAUTION: REPLACE CASE BACK BEFORE CHARGING

Also be sure back is on and screws tight before use as a loose back generates noise which is transmitted to the receiver.

7. TRANSMITTER ADJUSTMENTS

A. RATE: The low rate neutral has been set at 6.5 PPS (pulses per second) at the factory and should need no adjustment for use with the Rand GG Pak.

When using NPT transmitter with the Rand Dual Pak, the rate switch must be moved to the high (up) position. It may be necessary to make a small adjustment on the elevator stick pot to pulse elevator actuator at exact neutral. This is done by loosening the Allen set screw on the elevator stick mount, and turning the pot shaft while holding the stick stationary.

B. WIDTH: The width is set at a 50% on time neutral and should not need adjustment unless this transmitter is used with a receiver or actuator which tends to distort the 50% ratio of "on" time to "off" time.

C. TONE: The tone frequency is set to 1000 CPS. This should not be changed when using the SSH Receiver and will not need adjustment with most receivers. However, there are a few that work better with a slightly higher or lower tone. The tone can be changed

with the small knob marked "tone" inside the transmitter.
CAUTION: Under no circumstances should the two small unmarked pots at the lower right-hand corner of the printed circuit board be adjusted as they affect both rate and width.

D. RF: The RF section of your NPT has been carefully tuned and tested by experienced technicians at the factory and changing of these adjustments are not necessary and should not be attempted by the modeler under any circumstances. Should you feel there is a malfunction in the RF section of your NPT, it should be returned to the factory for alignment.

8. 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 the 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.

9. WARRANTY AND SERVICE

Your Citizen-Ship NPT is warranted by the manufacturer to be free from defects in material and workmanship. Any unit failing to operate within 30 days after date of purchase will be repaired or replaced free of charge upon being returned directly to the factory by the owner. DO NOT return the unit to the distributor or dealer for service. This warranty does not apply to failure of operation due to exhausted or improper batteries, or if in our judgment the equipment has been retuned, tampered with or re-

ceived abusive treatment beyond that encountered in normal usage. Minimum charges for units returned and not covered by Warranty will be \$2.50 plus parts for each individual item. Only pieces of equipment known to be defective need to be returned to the factory for service.

10. SCHEMATIC

