Royce 1-600A Owner's Manual

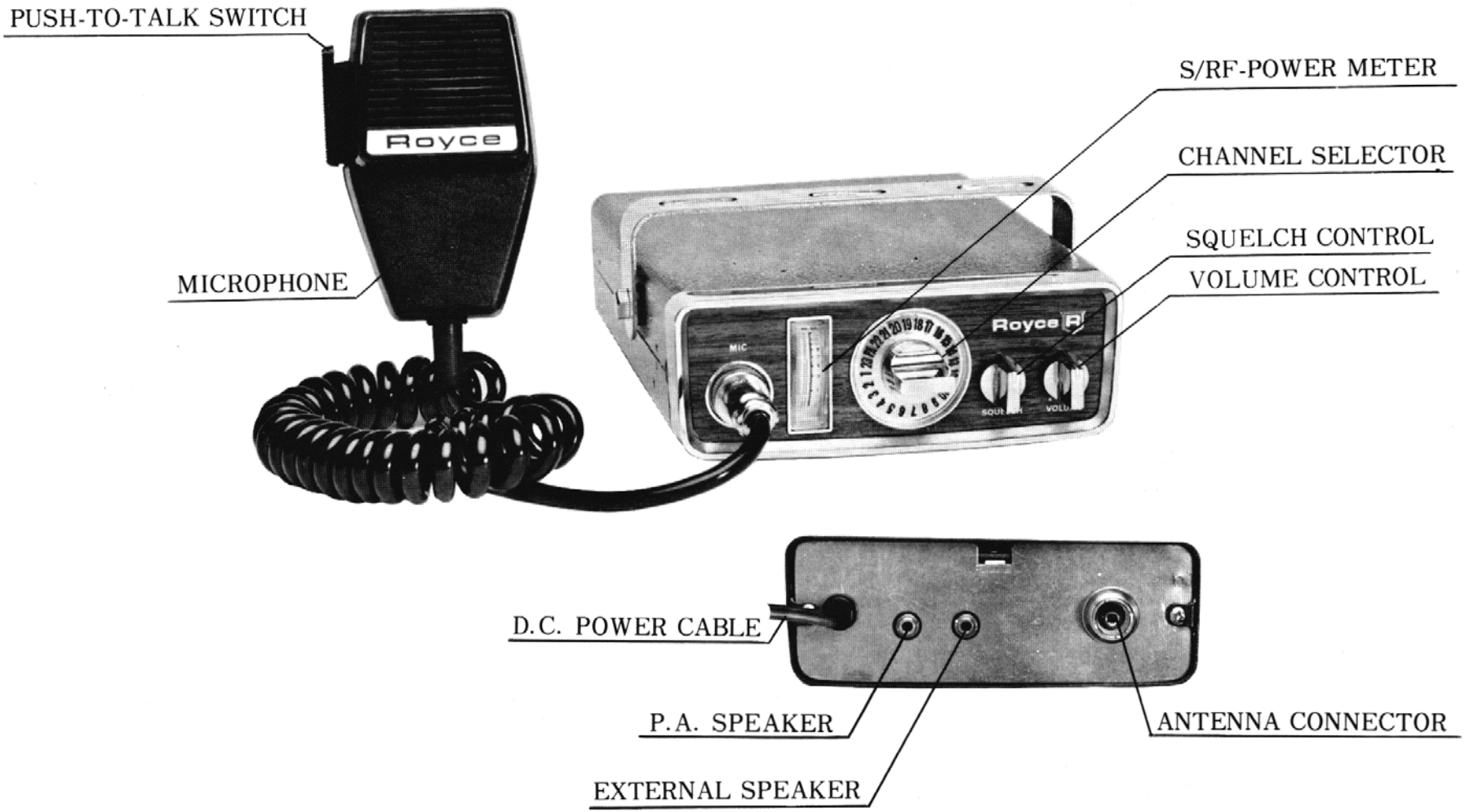
Royce
ELECTRONICS CORPORATION

Model 1-600 A

23-Channel Mobile Citizensband Transceiver

OWNER'S MANUAL

OPERATION OF CONTROLS



FUNCTION OF CONTROLS

VOLUME CONTROL AND OFF-ON SWITCH:

The volume control varies the sound output of the loudspeaker. It also functions as an "off-on" switch. Clockwise rotation increases volume.

CHANNEL SELECTOR SWITCH:

Tuning of the receiver and transmitter is done simultaneous by rotating the 23 channel selector switch. Set the switch to the desired channel 1 to 23 as indicated directly on switch knob.

SQUELCH CONTROL:

The squelch control is designed to reduce excessive noise (such as power line interference, ignition noise, etc.)
This control must be set when only noise, no signal is heard. Turn the control fully counterclockwise and increase the volume until noise or a signal is heard. When only noise is present, turn the squelch control clockwise until the noise is blanked out.

PUBLIC ADDRESS:

In the "PA" position on channel selector, your transceiver is converted to a public address system. A convenient pin jack on the back panel is provided for connection to any standard 8 ohm PA speaker. An optional speaker is required.

PRESS-TO-TALK MICROPHONE:

The receiver and transmitter are controlled by the press-to-talk switch on the microphone. Press in this switch and the transmitter is activated. Release this switch to receive. When transmitting, hold microphone 3 to 4 inches from mouth and speak clearly and in a normal voice.

SPECIFICATIONS

GENERAL

1. Semiconductors	; 18 Transistors and 9 Diodes
2. Self-contained Speaker	: 2-1/2 inch, 8 ohm voice coil
3. Microphone	: Dynamic microphone with push-to-talk switch 500 ohms.
4. Controls, Indicator and Connector	: Volume control with power on-off switch
	: Variable squelch control
	: Channel selector switch
	: Illuminated channel indicator
	: Illuminated S/RF power meter
	: Coaxial type antenna connector
	: External Speaker jack
	: Public Address Speaker jack
	: Mierophone connector
5. Power supply	: 13.8 Volts DC
6. Cabinet description	: Plastic front with chrome plating and Metal cabinet
7. Dimensions	: 7-5/16" (D) ×5-5/8" (W) ×2-1/8" (H)

RECEIVER

1. Frequency Range (MHz)	: 26.965-27.255
2. Sensitivity	: 0.5 uV for 10 db S/N
3. Selectivity	: 5 KHz minimum at 6 db down
4. Adj. Channel Rejection	: More than 45 db
5. Audio power output at 8 ohms	: More than 3-W at 10% distortion
6. Audio fidelity (1KHz=0db, 6db down)	: 400Hz-2,000Hz
7. A.G.C. figure of merit (Input 94 db for 10 db range)	: More than 80db
8. Squelch sensitivity (Threshold)	: Less than 0.5 uV
9. Spurious response	: More than 45 db

TRANSMITTER

1. Frequency Range (MHz)	: 26.965-27.255
2. RF output power	: More than 3-W
3. Modulation Capability	: More than 80%
4. Spurious suppression	: More than 50 db
5. Frequency tolerance	: ±0.005%

DESCRIPTION

RECEIVER:

Sensitive dual conversion circuit with crystals supplied for all 23-channel reception. One microvolt sensitivity, built-in controlled squelch circuit and noise limiting give noise-free operation. Active AGC circuit eliminates fading and over driving. Ceramic filter rejects unwanted signals.

TRANSMITTER:

Precision crystal-controlled oscillator circuit with all 23 Citizens Band channels built in. A full 5-watt RF input power is effectively converted into radiated output power with a minimum of loss for a stronger signal. A maximum of TVI filtering is employed. Pi-network matching for exact loading to any standard CB antenna.

SIGNAL-TRANSMIT POWER METER:

A combination meter on front panel provides a constant visual monitior of incoming "Signal Strength" and "Relative Output Power". The meter is normally white. Upon depressing the transmit button, it changes to red. The red varies in intensity to indicate modulation.

CONTROLS:

A full set of controls is employed, including volume ON-OFF switch, 23-channel selector switch, including P.A. position and full variable squelch.

PUBLIC ADDRESS SWITCH:

In the "PA" position, on the channel selector your transceiver is converted to a public address system. A convenient pin jack on the back panel is provided for connection to any standard 8 ohm PA speaker.

POWER SUPPLY:

Almost all cars and most trucks currently operating in the U.S. are negative ground. There are some large trucks and construction equipment which do operate on positive ground. Your Royce 1-600 will operate on either. In the negative ground systems the minus (-) pole of the battery is attached to the car body, engine block etc.

NEGATIVE GROUND HOOKUP:

Attach the red (fused) wire to the fuse block terminal or any convenient plus (+) lead. Devices operated by the ignition key such as the radio, light etc. are best since when you turn the ignition off, the unit will be turned off. Attach the black lead to the car body via any convenient method.

Note: Many newer cars use plastic dash pieces. Make sure the screw or contact you choose is attached to the metal framework of the car.

POSITIVE GROUND HOOKUP:

In the event that you do have a positive ground vehicle, the following hookup must be made. Attach the red (fused) lead to the car body via any convenient screw, bolt etc. Attach the black lead to the terminal block or any convenient wire which goes to the minus (−) pole of the battery.

FAILURE TO MAKE THE PROPER CONNECTION COULD RESULT IN UNIT DAMAGE.

ANTENNA REQUIREMENT:

This transceiver will operate with any standard 52 ohm ground-plane, vertical, mobile whip, long wire or other CB antenna. A standard SO 239 type connector is provided on the back panel for use with popular PL 259 antenna plug. An adjustable loading network is provided to match antenna impedance exactly.

FREQUENCY:

Each unit is completely equipped with crystals for operation on any of the 23 Citizens Band channels. It is not necessary to purchase any additional crystals for this unit. Refer to part 95 of the F.C.C. rules and regulations to determine which channels may be used for various kinds of communication.

GENERAL OPERATING INSTRUCTIONS

CAUTION:

Before operating this transceiver, you are required by law to read and thoroughly understand part 95 of the F.C.C. rules and regulations.

Check to see if the proper connections have been made on power cable, antenna system and microphone and that the correct cables have been used. Be sure that the transceiver is adequately grounded (if not mounted directly to a metal surface).

To transmit, press the push-to-talk switch and hold it down. Speak directly into microphone. Release this switch to receive. Actual receive and transmitting power should be monitored by watching the SIGNAL-TRANSMIT POWER METER and using the switch provided for this purpose.

Select the channel on which you wish to operate by rotating the Channel Selector Switch to the desired channel.

The microphone should be held approximately 3 to 4 inches away from your mouth. Use a normal speaking voice. Speak slowly and clearly. Talking louder does not increase transmitting power and only cause distortion. You will notice the SIGNAL-TRANSMIT POWER meter moving as you transmit. This indicates that you are transmitting. Always release the microphone switch when you complete your transmission.

For best receiving results, observe the "SIGNAL" meter.

NEVER OPERATE THE UNIT WITHOUT A ANTENNA OR DUMMY LOAD - IT COULD DAMAGE THE RF OUTPUT TRANSISTOR.

MOBILE INSTALLATIONS

A location in the car or truck should be chosen carefully for convenience of operation and non-interference with normal driving functions. Mounting may be under the dash or instrument panel or any place a secure installation can be made. The carrying handle again serves as the mounting bracket or additional perforated straps or brackets may be used as desired. The 12-volt cable may be connected to any convenient terminal but preferably to the ignition switch to prevent unauthorized persons from operation of your unit. With this method the unit will only operate when your key is turned on. Engine ignition interference should not be a problem and vehicles equipped with standard broadcast radios will have enough suppression to eliminate ignition interference. If interference is present, any skilled auto radio repairman should be able to eliminate it for you. A 1.0 mfd condenser connected between the generator armature post and ground will help greatly.

BASE STATION INSTALLATIONS

For base station use, the Royce model 2-050 power supply is recommended. When this power supply is used, simply connect the red (+) and black (−) terminals on the power supply to the (+) and (−) leads on your 1-600. Do not attempt to operate this transceiver by connecting directly to 110 Volts AC.

ANTENNA INSTALLATION

BASE STATION:

When the 1-600 is used as a base station, any Citizens Band beam, dipole, ground plane or vertical antenna may be used. A ground plane type will provide greater coverage and, since it is essentially non-directional, it is ideal in base station to mobile operation. From base station to base station, or point to point operation, a directional beam will give greater distance even under adverse condition. The range of the transceiver depends basically on the height of the antenna and, whenever possible, select the highest location within F.C.C. limits. (These regulations limit the antenna height to 20 feet above an existing structure). Generally a maximum of 26 feet of lead-in cable should be used due to line losses. However, a desirable antenna location may justify the loss in extra lead-in length.