

Operating the BC-611 Walkie-Talkie

BC-611's are now available and are very useful for short-haul communications and locating sources of interference.

The BC-611 is a press-to-talk portable radiotelephone designed to transmit and receive signals over the frequency range 3.5-6.0 MHz. Its range is short because of its low power ($\frac{1}{2}$ watt output), and could be anything from 100 feet to one mile. Over salt water, a three mile range might be obtained. These units are currently available and are being used for short haul work in the MARS circuits.

Power requirements are 1.5 Vdc for the filaments and 103.5 Vdc for the B plus. Originally, the batteries were designated as BA-37 (1.5V) and BA-38 (103.5V). Either the Burgess XX69 or the Eveready W361 are commercial equivalent B batteries but the 1.5 volts may be obtained from two flashlight C cells in parallel and an FT-501 adapter.

Extension of the telescopic antenna to its full length actuates a toggle switch to energize the unit. The receiver is a superhet circuit and contains a crystal controlled local oscillator. The transmitter section consists of a crystal oscillator, power amplifier, speech amplifier, and plate modulator. All of the tubes except one serve double purposes. Tube VI (3S4) serves as the rf amplifier in the receiver and as the power amplifier in the transmitter, tube V2 (1R5) functions as the converter-oscillator in the receiver and as the oscillator in the transmitter, tube V4 (1S5) operates as the second detector-avc-af amplifier in the receiver and as the microphone amplifier in the transmitter, and tube V5 (3S4) serves as the output amplifier in the receiver and as the modulator in the transmitter. Tube V3 (1T4) operates as the *if* amplifier in the receiver.

The push-to-talk switch is a 7-section, double-pole, double-throw switch. Some of the surplus units may be received with broken switch handles. It is possible to fashion a new switch handle made from a piece of plastic.

The transmitting frequency is determined by the particular crystal used; to receive stations operating on the same frequency it is necessary to use a receiver crystal 455 kHz higher than the transmitting crystal frequency.

To tune the receiver for maximum performance on a specific frequency, adjust C7 and L2 for best reception of a received signal. There are two methods for tuning the transmitter's output. The best way is to use a field strength meter and adjust C12 for maximum meter deflection. The second method is to insert a milliammeter in the plate circuit of the rf power amplifier (remove jumper inside bottom cover and insert meter) and adjust C12 for maximum meter deflection (dip).

The BC-611 is part of Radio Set SCR-536-A, -B, -C, -D, -E, and -F and the technical manual is TM 11-235. The test set for the SCR-536 is designated as Test Unit I-135. Loop antenna AN-190 (not supplied with the unit) is a directional loop antenna with a built-in sensing device and can be used for homing purposes in conjunction with the BC-611. When equipped with the loop antenna the BC-611 should make an excellent unit for tracing down local interference sources and should appeal to amateurs possessing fixed direction finding equipment.

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