# OPERATION

NOTE: IT IS NECESSARY TO HAVE AN AMATEUR RADIO OPERATOR AND STATION LICENSE (GENERAL CLASS PRIVILEGES) TO PLACE THIS TRANSCEIVER ON THE AIR. Information regarding licensing and amateur frequency allocations may be obtained from publications of the Federal Communications Commission or the American Radio Relay League.

## FUNCTION OF OPERATING CONTROLS

Figure 4-4 contains a brief description of the function of each control. Read the control descriptions carefully, then proceed with the following information.

## VFO

Tune the VFO for the most natural sounding voice when receiving. Since they are already locked together in frequency, it is not necessary to zero beat the receiver frequency with the transmitter. Therefore, be careful not to disturb the VFO dial during a contact, or your transmitted signal frequency will change.

## SIDEBAND SELECTION

The lower sideband (LSB) is generally used on the 40-meter band, although the upper sideband (USB) may be used in some locations. Shifting from the lower to the upper sideband (USB) causes a shift in the operating frequency of 3.4 kHz. This makes it necessary to retune the VFO to get back on the same operating frequency. The dial will read 3.4 kHz high in the USB position.

## RECEIVING

The Transceiver is quite simple to operate since there is little tuning to do after it is aligned. Turn the Transceiver on by placing the FUNCTION switch in the PTT position. After a short warmup period, stations should be heard by tuning the VFO dial. The volume is adjusted by the RF ATTN and AF VOL controls.

With the Meter switch in the OPERATE TUNE position and the RF ATTN control at the maximum clockwise position, the meter will indicate received signal strength in "S" units, and db over S9. Normally, the RF ATTN control is operated at this maximum clockwise position. If signals are extremely strong, the RF ATTN control can be reduced to give the desired volume level, but the S METER reading will be reduced, since this control can attenuate the input signal by as much as 30 db.

## TRANSMITTING

After an operating frequency has been selected by tuning the VFO dial, turn on the transmitter by placing the FUNCTION switch in the TUNE position. Then change the Meter switch to OPERATE TUNE and adjust the FINAL TUNE control for a maximum indication on the meter. This indicates proper tuning and maximum output power. Now put the transmitter "on the air" by placing the FUNCTION switch in the PTT or VOX position.

The meter will indicate ALC voltage while you are transmitting, when the Meter is set to OPERATE TUNE. As the operator talks, the meter should deflect a couple of S units, indicating maximum output peaks. The meter may rest above or below the zero mark while transmitting without harm. (The Heath Monitorscope can also be used with the Transceiver in fixed-station operation to provide a visual display of transmitter output.)

If the Meter switch is placed in the BIAS SET position while you transmit, the meter will indicate plate current variations of the final RF amplifiers. Normal talking should produce peaks at about S6 on the meter, with loud steady tones resulting in full-scale peaks. If the peaks of average talking levels are above S9, the MIC GAIN is set too high, and should be reduced to where the S6 level peaks are produced.

To keep the transmitter in peak operating condition, it should be adjusted periodically as directed in the Alignment and Adjustments section of the Manual. The BIAS ADJ control setting should also be checked and adjusted whenever power supplies are changed. After alignment has been completed and the carrier properly nulled, the bias level can be checked and adjusted anytime by observing the meter in the BIAS SET position when the PTT button is pressed, with no modulation.