TRANSMIT

In the TRANSMIT position, (e.g., when the push-to-talk switch on the microphone is pressed or when the Function switch is moved to "TRANSMIT"), the transmitter generates a single sideband signal at the same frequency being received. (See Fig. 1 and the Schematic Diagram, Figure 8.) The 5173.5 kc carrier is generated by V13, the Crystal Carrier Oscillator. This stage is a dual function oscillator-isolation amplifier. The triode of the 6U8A operates as a Pierce Oscillator, with the crystal in parallel resonance and operates on both receive and transmit. The pentode section of the tube is an untuned isolation amplifier which is biased to cutoff in the receive position. When transmitting, the RF output of the isolation amplifier is injected into the control grid of the balanced modulator, V9. Audio from the Mic. Amp. V11, a 12AU7, is coupled to the beam deflection plates of the balanced modulator. The output of the balanced modulator, thus contains both upper and lower sidebands, but with the carrier suppressed. The two sidebands are then coupled through the crystal lattice filter, FL-1, which suppresses the lower sideband, and feeds the upper sideband signal to the first IF Amplifier, V7. The output of the IF Amplifier is fed to the signal grid of the Transmitter Mixer, V3, where it is mixed with the output of the VFO, V4. The output of the mixer and the output of the Driver, V2, are gang-tuned by the Exciter Tuning control, and the output of the Driver excites the grid of the Power Amplifier, V1. The output of the Power Amplifier is tuned through the Pi-network, and loading accomplished through the PA Load control, C11. During transmit, all other tubes are biased to cutoff through K1, which is energized through the Function Switch, or Push-to-talk.

RECEIVE

In RECEIVE position, the output pi-network, L1-C107-C102 forms the input to the receiver RF Amplifier, V5. In receiving, K1 is de-energized, and applies cutoff bias to all tubes normally used only in transmit. See Figure 2. The plate circuit of the Transmitter driver is used as the plate circuit of the RF amplifier, one or the other being biased to cutoff through K1. The received SSB signal, amplified through V5, is