

I MODEL 350 TRANSCEIVER

B. Installation (Cont)

MOBILE ANTENNA

Mobile antenna installations are critical, since any mobile antenna for use on the high frequency bands represents a series of compromises. Many amateurs lose the efficiency of their antenna through improper tuning. Points to remember about the mobile antenna used with the Swan 350 are:

1. The "Q" of the antenna must be as high as possible. The radiation resistance of a center or base loaded antenna will seldom exceed 20 ohms. To keep the highest "Q" possible, the loading coil must provide the required inductance with the lowest resistance. There are several commercial models which use high "Q" coils.
2. The loading coil must be capable of handling the power of the Model 350 with no over heating. In TUNE position, the power output of the transceiver can exceed 240 watts. Wide spaced, heavy wire loading coils are essential.

3. The simple field strength meter is much better for tuning the antenna than a reflected power meter or SWR bridge. The feedpoint impedance of the antenna will usually be approximately 20 ohms, or less at resonance. When fed with 50 ohm coaxial cable the mismatch will be at least 2:1, and this condition cannot be rectified through use of the SWR bridge. In fact, it is possible to tune the antenna off resonance if the only criterion used is the standing wave ratio. This lowers the efficiency of the antenna to the point of uselessness.
4. Use a grid dip meter or field strength meter to resonate the antenna at the desired operating frequency. Then tune the transmitter for maximum field strength indication, in respect of standing wave ratio or reflected power. The overall efficiency of the antenna system will be optimum with these adjustments.

CONTROL FUNCTIONS

ON-OFF SWITCH (On AF Gain Knob)	Controls main power to the transceiver.	AF GAIN	Controls potentiometer R1201 in grid circuit of V12 AF Output, and varies the gain of the final audio output amplifier.
REC-TUNE-CW		MAIN TUNING	Controls C1706 in frequency determining tank circuit of VFO.
Receive	All voltages are applied to transceiver.	PA GRID	Controls C1A and C1B in plate tanks of transmitter mixer and driver.
Transmit (Push-to-Talk)	12 volt dc circuit through relay K1 and K2 is completed, and all tubes used only in receive are biased to cutoff.	PA TUNE	Controls C417 in pi-network to tune final power amplifier plate to resonance.
Tune - CW	All circuits for transmit are energized, as above, but one deflection plate of the balanced modulator is grounded, capacitor C1401 in the carrier oscillator is removed from ground.	PA LOAD, Fine	Controls C120 in pi network to match impedance of output load. Tunes input to Receiver RF Amplifier.
MIC. GAIN	Controls potentiometer R1503 in the grid of V15A and controls amount of audio to the balanced modulator.	PA LOAD, Coarse	Switches in progressively more capacitance in parallel with PA Load, Fine.
CAR. BALANCE	Controls potentiometer R1305 in the balanced modulator deflection plate circuit, and permits balancing of the carrier.	MAIN BANDSWITCH	Switches, plate coils, and associated capacitors of VFO, VFO Amplifier, V1, Transmitter Mixer, V2, and Driver, V3. Also switches tank coil of pi-coupling system and associated capacitors in PA output tank.
RF GAIN	Controls variable resistor R609, common in the cathodes of V6, RF Amplifier, V8 and V9 IF Amplifiers.		