

# NC-300 REVISIONS

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The summer months of the year occasionally bring reports of calibration errors and ineffective crystal filter action in the NC-300, particularly in areas of high humidity. This is due to the second conversion oscillator drifting off its normal frequency of 2295 kc. This situation is evidenced by calibration errors on the dial in one direction on the high frequency ranges and in the opposite direction on the low frequency ranges and also by erratic operation of the crystal filter.

It is a simple matter to crystal control the second converter oscillator which effectively eliminates these problems.

The crystal and its associated components may be mounted in the shield can which formerly housed L5 the second conversion oscillator coil.

It should be remembered that there are two crystals in the circuit which must be properly coordinated if the receiver is to work at maximum efficiency. Normal production tolerances in the grinding of the crystals may allow a situation to exist where the difference in frequency of the crystal in the filter (22.15 kc) and the crystal in the second conversion oscillator (2295 kc) is not exactly 80 kc (second IF). If this is so the second IF stage must be adjusted accordingly, either slightly higher or slightly lower in frequency to compensate.

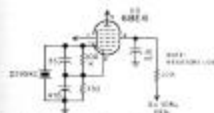


Fig. 1—Crystal-controlled second converter.

## Improved Audio

An audio change that will improve the phone quality is shown in Fig. 2. It consists of a 1 megohm resistor connected between the plate of the output tube and the plate of the preceding audio stage. This has a tendency to drop the audio level which can be restored by bypassing the cathode of V9, R4E with a 20 mf, 50 volt capacitor to chassis ground.

## Dial Verrier

On the front panel of the NC-300 there is a plug button to the lower left of the main tuning dial. This originally was designed for removal of the bandswitch shaft without the necessity of dismantling the entire receiver. A verrier for the main tuning dial may be mounted in this spot if it is so desired by enlarging the hole to 1/2" and inserting a National SB bushing. A neoprene or rubber washer centered to the under surface of an NR or similar knob with a 1/8" shaft going into the SB bushing will do it beautifully. A Atwater Kent Model 40 shade of 1928. Stick a cotter pin through the shaft so that it won't keep pulling out.

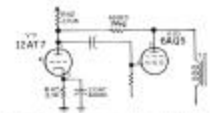


Fig. 2—Two new components improve audio.