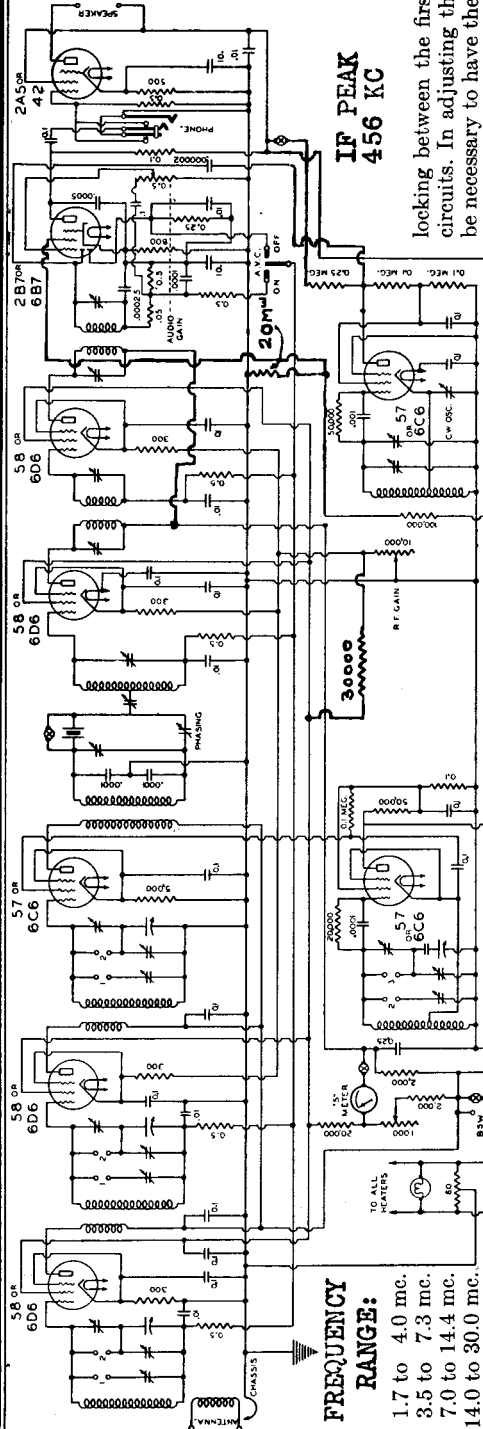
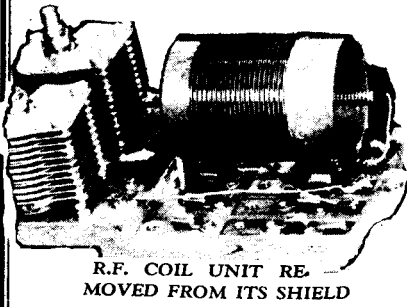


NATIONAL COMPANY, INC.

MODEL HRO
Schematic, Socket
Trimmers, Alignment



locking between the first detector and oscillator circuits. In adjusting the No. 2 trimmer, it will be necessary to have the antenna connected with some signal or noise input.

Band-Spread Adjustment

The four screws must be shifted to the right-hand terminal blocks, as outlined under "Coil Ranges" in the preceding section. The tuning dial is set at 450 and a test oscillator adjusted to the exact high-frequency edge of the proper amateur band. Trimmer No. 7 (of the layout diagram) is adjusted until the signal is picked up. Trimmers Nos. 1, 3 and 5 are then adjusted for maximum sensitivity. The dial is then rotated to the low-frequency end of the band; that is, to 50; and the left-hand calibration curve should be checked. If found incorrect, it will be necessary to adjust the band-spread series padding condenser, mounted inside the oscillator coil and adjustable from the rear by means of a socket wrench. If the low-frequency end of the band is tuned in at any dial reading above 50, the capacity of this series padding condenser must be decreased.

Tracking of the two R. F. and first detector circuits may then be checked by tuning to the low-frequency end of the band and checking the adjustment of the Nos. 1, 3 and 5 trimmers. If more capacity is needed for best sensitivity (as indicated by improved signal strength when the trimmer is rotated clockwise), the series padding condenser of the coil being adjusted must have more capacity. If any of the Nos. 1, 3 or 5 trimmers require less capacity, a corresponding decrease must be made in the capacity of the series padding condenser. After the series padding condenser has been adjusted for trial, the dial is returned to 450 and the procedure repeated.

The coil panel screws must be in the left-hand terminal blocks to give the full coverage range.

The tuning dial is turned to approximately 490 and a frequency meter, or accurate test oscillator, is set to the frequency indicated by the general coverage calibration chart.

The oscillator coil trimmer, shown on the layout diagram of the receiver as No. 8, is then adjusted so that the dial reading checks the calibration curve. Trimmers Nos. 2, 4 and 6 are then adjusted for maximum sensitivity.

The ganging is checked by pressing the outside rotor plate of the oscillator condenser sideways toward the stator.

If sensitivity increases, the oscillator coil inductive trimmer must be adjusted to decrease inductance. In the case of the 14 to 30 megacycle coils, inductive trimming is accomplished by moving a loop of wire around the end of the oscillator coil. Bending this loop from right to left across the end of the coil form will increase inductance. After any change in the oscillator coil inductance has been made, it will be necessary to tune back to the high-frequency end of the range in order to readjust the No. 8 trimmer condenser.

In the case of the 14 to 30 megacycle coils, special care must be exercised to see that the oscillator is operating on the high-frequency side of the signal. Two points will be found when adjusting the No. 8 trimmer and of these, the correct one is on the counter-clockwise side. Furthermore, in adjusting the No. 6 trimmer of this coil assembly, there will be some interaction or inter-

