

GENERAL DATA:

Circuit:—Dual Wave, 7 tube, superheterodyne with pre-selector and full Automatic Volume Control.

Frequency:—1,750-525 K.C. and 18,000 to 5,650 K.C.

Intermediate Frequency:—450 K.C.

Undistorted Power Output:—Model 66, 3.2 Watts; Models 67 and 68, 3.3 Watts.

Maximum Power Output:—Model 66, 4.5 Watts; Models 67 and 68, 5.4 Watts.

Sensitivity in Microvolts for 0.5 Watt output:—

Model 66, Long Wave—3.5 Mv. Short Wave—7 Mv.

Models 67 and 68, Long Wave, High Sensitivity—1 Mv. High Selectivity—3.5 Mv.

Models 67 and 68, Short Wave, High Sensitivity—3.5 Mv.

Selectivity, Model 66:—28 K.C. at 1,000 times input.

Models 67 and 68, High Selectivity—24 K.C. High Sensitivity—38 K.C.

Image Ratio:—Better than 20,000/1 at 1,000 K.C.

Power Rating:—115v. A.C.: 60 cy., 72 Watts; 25 cy., 74 Watts.

Short Wave Circuit—A six-pole, double throw switch is used to substitute short wave coils for the broadcast band coils, the circuit arrangement remaining unchanged. Individual trimmers are provided for each secondary winding and padding condensers are provided for both the long and short wave oscillator coils.

Second Detector:—The 6B7 acts as a diode detector and 1st audio amplifier and supplies A.V.C. to the R.F., Converter and I.F. grids. Note that the I.F. is controlled to a lesser extent than the others due to its grid return being connected to a lower point on the A.V.C. potential divider (R14, R13, R12). The I.F. signal is applied to both diode plates of the 6B7, where it is rectified and the resulting audio frequency appears across R14 and R15, a portion of it being tapped off by the arm of the volume control and applied to the control grid of the 6B7, where it is amplified and passed on to the 42 Power tube.

Selectivity Switch (Models 67 and 68 only):—This switch is used to cut in either of two I.F. transformers between the 1st Detector and the I.F. Amplifier tube. One of these (No. 45513) is designed to give normal selectivity and full tone quality with maximum sensitivity. The other (45511) is designed to give high selectivity as an aid in separating stations when interference is experienced from stations in adjacent channels. A slight loss in sensitivity and fidelity occurs when this transformer is used. Always use High Sensitivity position when tuning for short wave stations.

Overload Indicator (Model 68 only):—A neon glow lamp is connected across a portion of the primary winding of the output transformer. When the audio voltage across this portion of the winding rises to approximately 70 volts, the lamp will glow. This corresponds to a power output of approximately 1.5 watts. As the volume is raised, the brilliancy increases and indicates that satisfactory tone quality cannot be expected.

Vernier Drive:—These models are fitted with an improved type of planetary ball type vernier and silent gear type condenser drive. A hardened drive spindle is used which should give a minimum amount of trouble. The spindle and drive shaft may be disassembled by removing the split washer under the pinion gear inside the condenser frame.

ALIGNMENT

I.F. Trimmers:—Connect a 450 K.C. Test Oscillator to the grid clip of the 6A7 tube and to chassis, leaving the grid clip in place. A .1 Mf. blocking condenser should be used in the lead from the Test Oscillator.

Model 66 only:—Adjust, in order, C29, C28, C40, C41.

Models 67 and 68:—With switch in "High Selectivity" position, adjust, in order, C29, C28, C27, C26, then turn to "High Sensitivity" and adjust C40 and C41.

Caution:—I.F. alignment is made at the factory using cathode ray oscilloscopes, and, as these circuits are very stable, it is inadvisable to attempt realignment unless you are certain it is neces-

sary. This is particularly important in Models 67 and 68 where it may be difficult to obtain correct I.F. adjustment unless the visual method of alignment is used.

Broadcast Band Trimmers:—With the gang condenser set at minimum capacity (plates out of mesh), the dial pointer should be set to point between the letters "G" and "A" of the word "Mega." Connect the Test Oscillator to the "A" and "G" terminals and supply a 1,600 K.C. modulated signal. Rotate the condenser until the dial pointer is at 160 and adjust, in order, C5, C3, C1.

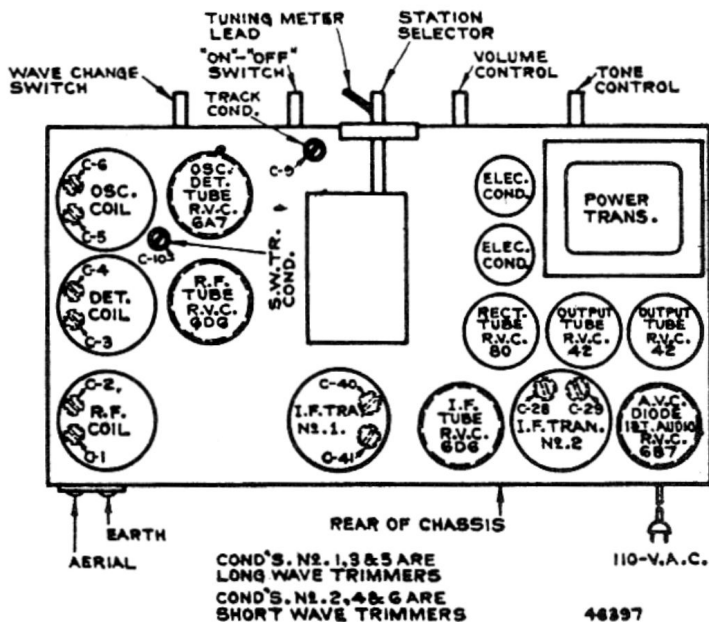
Supply a 580 K.C. signal and set pointer to 58. Adjust oscillator tracking condenser C9 while rocking the dial slightly.

Holes are provided in the tops of R.F., Det. and Osc. shield cans to permits the insertion of a tuning wand. This device permits checking to correctness of the alignment without varying the trimmer adjustment.

Short Wave Trimmers:—If correct short wave alignment is to be obtained it is imperative to use a test oscillator that will supply the necessary test frequency as fundamentals and that will attenuate the signal so that a very low output is obtained from the receiver. An output meter is, of course, also essential. Connect the T.O. to the "A" and "G" terminals using a 250 mmf. condenser in series with the aerial lead and adjust it to supply a 16,000 K.C. signal. Rotate the gang condenser until the pointer is at 1,520 K.C. (equivalent to 16 M.C.) and tune in the 16 M.C. signal by adjusting C2, C4 and C6. To obtain exact trimming the detector trimmer (C4) should be varied while rocking the gang condenser back and forth until maximum output is obtained.

Rotate the gang till the pointer is at approximately 58 and supply a 6,000 K.C. signal. Adjust S/W tracking condenser C10 while rocking the dial slightly to obtain maximum output.

Note:—Models 67 and 68 wiring diagrams are identical except for the neon lamp overload indicator which is used on Model 68 only.



Model 66

Marconi Model 66