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**Resources**

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Model 12 Superheterodyne

CIRCUIT DESCRIPTION

The Echophone Model 12 is a 5-tube Superheterodyne employing the new types 57 and 58 tubes. The circuit consists of a pre-selector; combined first detector and oscillator, employing a type 57 tube; a 175 KC I.F. stage employing a type 58 tube; a second detector employing a type 57 tube; an output stage employing a type 247 tube and a rectifier and filter system employing a type 280 tube.

The oscillator is tuned by a special section of the three gang condenser and no series padding condenser is used. The I.F. stage is single tuned, the plate coil being made self resonant at 175 KC. The second detector is a resistance coupled power detector obtaining its screen grid voltage from its plate thru a 1 Meg. resistor.

The filter circuit consists of an 8 MF and a 4 MF electrolytic condenser and the speaker field. Part of the drop across the field, which is in the negative side of the filter circuit, is used to bias the grid of the 247 tube.

The volume control operates by varying the bias on the 58 tube and by limiting the antenna input to the pre-selector.

VOLTAGE TESTS

All D.C. voltages given were tested on 250V scale of a 1000 ohms per volt meter with volume on full and no signal in the receiver, line voltage 115.

- Fil. 280 tube to ground: 240-250V
- Plate oscillator and I.F. tubes to ground: 240-250V
- Screen oscillator and I.F. tubes to ground: 90-100
- Cathode I.F. tube to ground: 2-3
- Cathode oscillator tube to ground: 4-10
- Plate of second detector to ground: 30-45
- Screen of second detector to ground: 20-30
- Cathode of second detector to ground: 5-10
- Across speaker field: 90-100
- Plates 280 to center tap of high voltage: 350-370V AC
- All heaters: 2.4-2.6V AC
- Fil. 280 tube: 4.9-5.1V AC