



Circuit

No. 62-99 AND 62-97

Voltages at Sockets

Line Voltage 115—Volume Control at Maximum

Type of Tube	Position of Tube	Function	"A" Volts	"B" Volts	Control Grid "C" Volts	Screen Grid Volts	Screen Current MA	Plate Current MA	Cathode Volts
56	1	Osc.	2.3	110	15-30 ⁽¹⁾	3-3.4 ⁽¹⁾	0
58	2	R. F.	2.3	260	2.0 ⁽²⁾	90 ⁽³⁾	1.2	4.8	0
58	3	1st Det.	2.3	260	2.0 ⁽²⁾	90 ⁽³⁾	1.3	5.4	0
58	4	I. F.	2.3	260	2.0 ⁽²⁾	90 ⁽³⁾	1.2	4.6	0
55	5	2nd Det. AVC-1st Audio	2.3	Diode 1-0 Diode 2-3 Triode 135	2.0 ⁽⁵⁾ 3.0 ⁽⁶⁾	260	...	4.6	12
2A5	6	Power	2.3	255	...	...	...	26 Per Plate	0
80	7	Rectifier	4.8	...	...	...	...	...	...

(1)Varies with frequency approximately as shown.

(2)Voltage as read with 60,000 ohm meter—across 90 ohm section of R-11—50 volts.

(3)Voltage as read with 600,000 ohm meter.

(4)Not actual voltage due to resistance in circuit—tone voltage—17 volts.

(5)Voltage as read with 60,000 ohm meter—across 4000 ohm section of R-11—12 volts.

(6)Voltage as read with 60,000 ohm meter—across 300 and 90 ohm section of R-11—22 volts.

The complete circuit consists of a type 58 tube functioning as an R. F. Amplifier, followed by another type 58 tube operating as a 1st detector, or mixer tube. A type 56 tube is used as an oscillator.

The I. F. amplifier utilizes a type 58 tube and is followed by the type 55 tube described above, functioning as a second detector, A. V. C. and first audio amplifier. A type 2A5 is used in the power audio stage.

The 58 R. F. Amplifier Tube is inductively coupled to the antenna by means of the antenna transformer, L-1, L-2, the secondary of which is tuned by one section of the three gang Tuning Condenser.

The second R. F. or first detector transformer provides inductive coupling between the plate circuit of the 58 R. F. Tube and grid circuit of the 58 1st Detector Tube. The secondary of this transformer is tuned by the second section of the three gang Tuning Condenser.

The stage of R. F. amplification consisting of the 58 R. F. Tube, together with its associated R. F. Transformers serves the double purpose of increasing the sensitivity and selectivity of the receiver as well as practically eliminating image or double frequency response.

Grid bias for the 58 R. F. Tube is variable and is controlled by the A. V. C. diode in accordance with the strength of the incoming signal.

A type 58 Tube is used as a first detector or mixer which is of the bias type. The grid bias of this tube is also controlled by the A. V. C.

The oscillator is of the tuned grid type and is tuned by the third section of the three gang Tuning Condenser.

The oscillator frequency is exactly 262 K. C. above the frequency of the received signal. To provide that the oscillator shall track accurately it is provided with a 675 Mmf. Series Padder Condenser, C-17, and also a shunt trimmer condenser which allows accurate alignment at high frequencies.