

**RESISTANCE TABLE**

| ITEM | PRIMARY OHMS | SECONDARY OHMS | REMARKS                 |
|------|--------------|----------------|-------------------------|
| 1    |              | 8              |                         |
| 22   | 7            |                |                         |
| 28A  | 50           |                |                         |
| 80   | 27           | 88             |                         |
| 81   | 27           | 23             | VOICE COIL DISCONNECTED |
| 47   |              | 8.95           | VOICE COIL DISCONNECTED |
| 48   | 375          | 1/4            | VOICE COIL DISCONNECTED |

INTERMEDIATE FREQUENCY : 455 KC

**VOLTAGE AND CURRENT TABLE**  
ALL VOLTAGES ARE MEASURED FROM THE NEGATIVE SIDE OF THE DUAL FILTER CAPACITOR USING A 20,000 OHMS PER VOLY METER. LINE VOLTAGE IS 117 V.A.C. SIGNAL VOLTAGE IS ZERO.

| TUBE  | SOCKET TERMINAL |    |     | I <sub>K</sub> mA |
|-------|-----------------|----|-----|-------------------|
|       | K               | 9B | P   |                   |
| 12SK7 | ZERO            | 70 | 51  |                   |
| 12SA7 | ZERO            | 70 | 69  |                   |
| 12BF7 | ZERO            | 70 | 69  |                   |
| 12SJ7 | ZERO            | 19 | 26  | 0.5               |
| 35ZB1 | 4.26            | 70 | 115 | 24.0              |
| 35ZB2 | 12.2            |    |     | 32.0              |

READINGS SHOULD APPROXIMATE THE ABOVE WITHIN 20 PERCENT.

**Loudspeaker:**

Power Output: Undistorted ..... 0.85 watt  
Maximum ..... 1.25 watts  
Type ..... 5" dia. P.M. dynamic  
V.C. Impedance ..... 3.2 ohms at 400 cps

## WESTINGHOUSE ELECTRIC CORP.

to 1615 kc. Tune the receiver tuning condenser to minimum. Adjust the trimmer on the oscillator section of the main tuning condenser for maximum reading on the output meter.

- Adjust the signal generator to 1400 kc. Bring the output lead near the receiver input but do not make an actual connection. Tune in the test signal on the receiver dial and adjust the antenna trimmer for maximum output as read on the output meter.

The foregoing alignment procedure is condensed in the following table as a convenience for the service technician:

| Steps | Connect Signal Generator to—                         | Adjust Signal Generator to— | Tune Radio Dial to—       | Adjust for Maximum Output                       |
|-------|--|-----------------------------|---------------------------|---|
| 1     | 12SF7 grid in series with a .01 mfd. capacitor       | 455 kc                      | quiet point near 1600 kc. | primary and secondary 2nd i-f transformer       |
| 2     | 12SA7 grid in series with a .01 mfd. capacitor       | 455 kc                      | quiet point near 1600 kc. | primary and secondary 1st i-f transformer       |
| 3     | 12SA7 grid in series with a .01 mfd. capacitor       | 455 kc                      | quiet point near 1600 kc. | repeat 1 and 2                                  |
| 4     | antenna terminal                                     | 455 kc                      | 600 kc                    | adjust i-f rejection trimmer for minimum output |
| 5     | antenna terminal in series with a 50 mmfd. capacitor | 1615 kc                     | gating at minimum         | oscillator trimmer                              |
| 6     | radiated signal from signal generator                | 1400 kc                     | 1400 kc                   | adjust antenna trimmer                          |

#### Power Supply Polarity:

When the receiver is operated on 110 volts 60 cycles a.c., a slight hum may be heard if the power plug is inserted in such a manner that the "hot" side of the supply line is connected nearest to the chassis. To eliminate this trouble, reverse the supply plug in the convenience outlet.

When operated on direct current, the set will not function at all, if the power plug polarity is reversed with respect to the line voltage. If it does not operate within one minute after it is turned on, reverse the plug in the convenience outlet.

#### Tube Replacement:

When replacing tubes this procedure must be followed to prevent damage to the loop and other delicate parts:

- Disconnect the power plug from the 110-volt service outlet.
- Pull the knobs and remove the Phillips head screw from the right-hand plastic cover.
- Carefully remove the plastic cover and handle.
- Lift the loop assembly and tilt it forward until the tubes are accessible.
- Turn the tuning dial to 550 kc to avoid damage to the rotor plates of the tuning condenser.

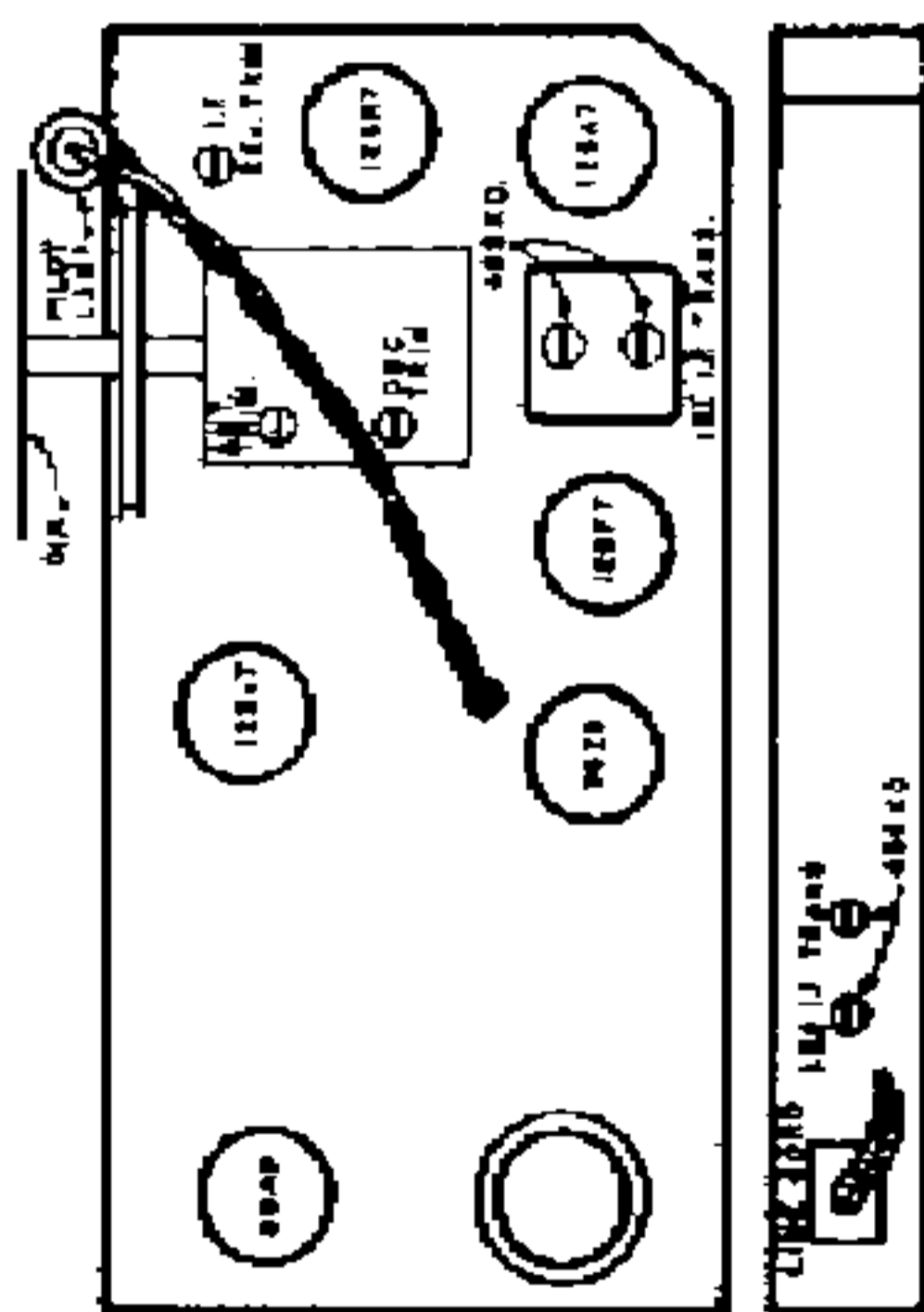


Fig. 1

#### Alignment Procedure (Refer to Fig. 1):

The overall sensitivity and selectivity of the Little Jewel are affected to a great extent by the alignment of the i-f and r-f circuits. In general, a complete realignment of both circuits is unnecessary. If realignment is required, however, the following procedure is recommended:

- Remove the knobs, the plastic cover, and the loop as outlined above.
- Remove the Allen head screw from the left-hand plastic cover and carefully lift off the cover.
- Turn on the receiver and tune to a quiet spot near 1600 kc.
- Connect an a-c output meter across the speaker voice coil. Turn the meter range switch to a high-voltage position.
- Connect the outer conductor of the signal generator test lead to the common negative (this is the metal can enclosing the filter capacitors). Reduce the output of the signal generator to prevent a.v.c. action during the alignment procedure.
- Connect the inner conductor of the signal generator test lead to the 12SF7 i-f amplifier control grid through a capacitance of 0.01-mfd. Adjust the signal generator frequency to 455 kc.
- With an insulated screwdriver or neutralizing tool, adjust the second i-f transformer secondary trimmer for maximum reading on the output meter. Use the lowest practicable scale on the meter and, as the circuits come into alignment, reduce the signal generator output to prevent a.v.c. action.
- Repeat operation 7, this time adjusting the second i-f transformer primary trimmer.
- Connect the signal generator output, through the 0.01 mfd. capacitor, to the control grid of the 12SA7 converter tube. Repeat operations 7 and 8, this time adjusting the secondary and primary trimmers of the first i-f transformer.
- Connect the signal generator output, adjusted to 455 kc, to the antenna terminal at the bottom of the cabinet. Tune the radio dial to 600 kc. Adjust the i-f rejection trimmer for minimum reading on the output meter.
- Connect the test oscillator output through a capacitance of 50 mmfd to the antenna terminal at the bottom of the cabinet. Adjust the signal generator frequency