



Radio Service Bulletin—No. 13

Models 77 and 77A Receivers

Model 77 Receivers are for operation on 110-120 volt, 50-60 cycle AC lines
 Model 77A Receivers are for operation on 110-120 volt, 25-60 cycle AC lines

Table 1—Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

| TUBE | | FILAMENT VOLTS | PLATE VOLTS | SCREEN GRID VOLTS | CONTROL GRID VOLTS | CATHODE VOLTS | PLATE MILLI-AMPERES |
|------|-----------|----------------|-------------|-------------------|--------------------|---------------|---------------------|
| TYPE | CIRCUIT | | | | | | |
| 24 | 1st R. F. | 2.3 | 145 | 90 | 3 | 13 | 3.5 |
| 24 | 2d R. F. | 2.3 | 145 | 90 | 3 | 13 | 3.5 |
| 24 | Detector | 2.3 | 36* | 30† | 1.4 | 12 | 0 |
| 27 | 1st A. F. | 2.3 | 140 | | 1 | 10 | 3 |
| 45 | 2d A. F. | 2.2 | 230 | | 46 | | 30 |
| 45 | 2d A. F. | 2.2 | 230 | | 46 | | 30 |
| 80 | Rectifier | 4.5 | | | | | 50/Plate |

All readings taken with antenna disconnected and ground on. Volume control on full.
 *Read with a 250,000-ohm voltmeter. †Read with a 100,000-ohm voltmeter.

Table 2—Power Transformer Voltages

| TERMINALS | A.C. VOLTS | |
|---------------------|------------|---|
| 1-2 | | Primary Center Tap for 80 Plate Center Tap for 45 Tubes Heaters of 24 and 27 Tubes Filaments of 45 Tubes Filament of 80 Tube Plate of 80 Tube Center Tap for 24 and 27 Tubes |
| 3 | | |
| 4 | | |
| 5-6 | 2.67 | |
| 7-8 | 2.68 | |
| 10-11 | 5.00 | |
| 9-12 | 750 | |
| Rubber Covered Lead | | |

Table 3—RESISTOR DATA

| No. on Figs. 3 and 4 | Terminal | Resistance | Color |
|----------------------|----------|------------|-----------------|
| 30 | 1-2 | 1,400 | Long Tubular |
| | 2-3 | 1,500 | |
| | 3-4 | 2,000 | |
| 26 | 1-2 | 250 | Short Tubular |
| | 3-4 | 800 | |
| 12 | 18 | 100,000 | Silver Gray |
| 15 | | 250,000 | White |
| 17 | 20 | 500,000 | Battleship Gray |
| 29 | | 85 | Flatwire wound |

Table 4—CONDENSER DATA
 (Other Than Filter Block)

| No. on Figs. 3 and 4 | Capacity MFD | Volts D.C. With Receiver Turned On |
|----------------------|--------------|---|
| 7 | .25 | { 95 on Screen Grid Cond. 15 on Cathode Cond. |
| 11 | .05 | 150 |
| 13 | .5 | 12 |
| 14 | .25 | { 95 Plate Resistor Cond. 40 Screen Grid Cond. |
| 16 | .00025 | 40 |
| 19 | .01 | 25 |

Model 77 Condenser Block Part No. 3870

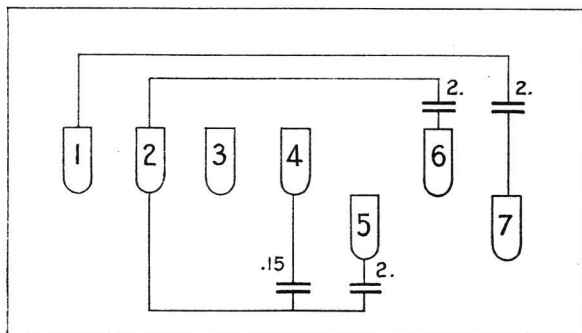


Fig. 1

Model 77A Condenser Block Part No. 3871

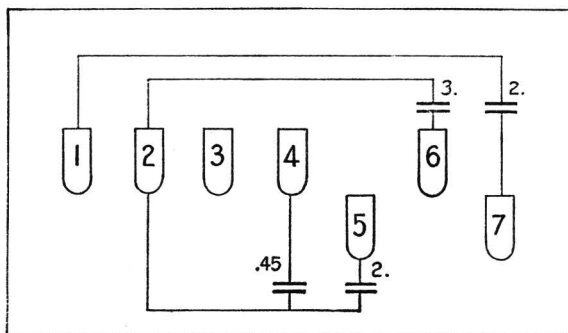


Fig. 2

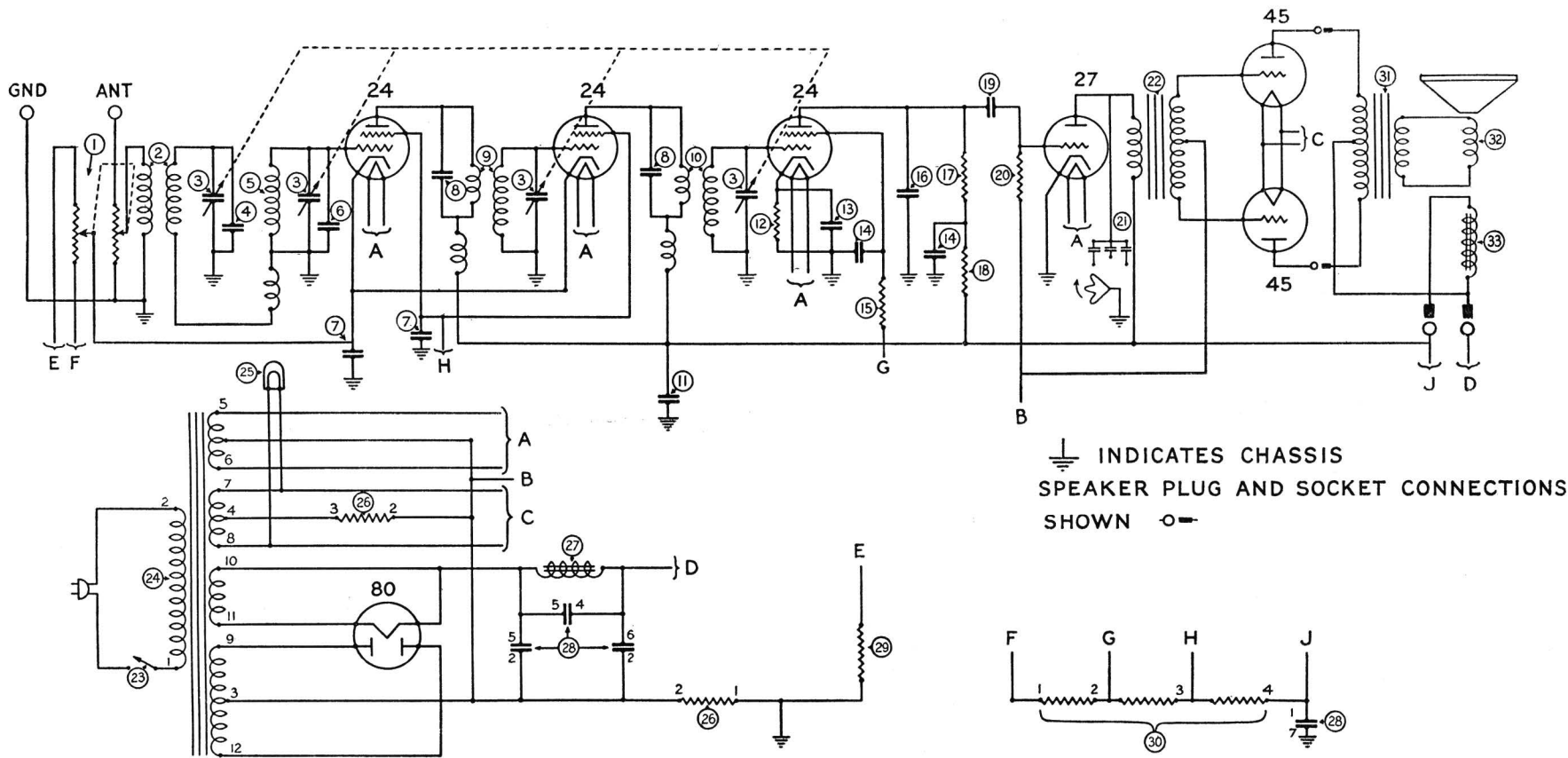


Fig. 3

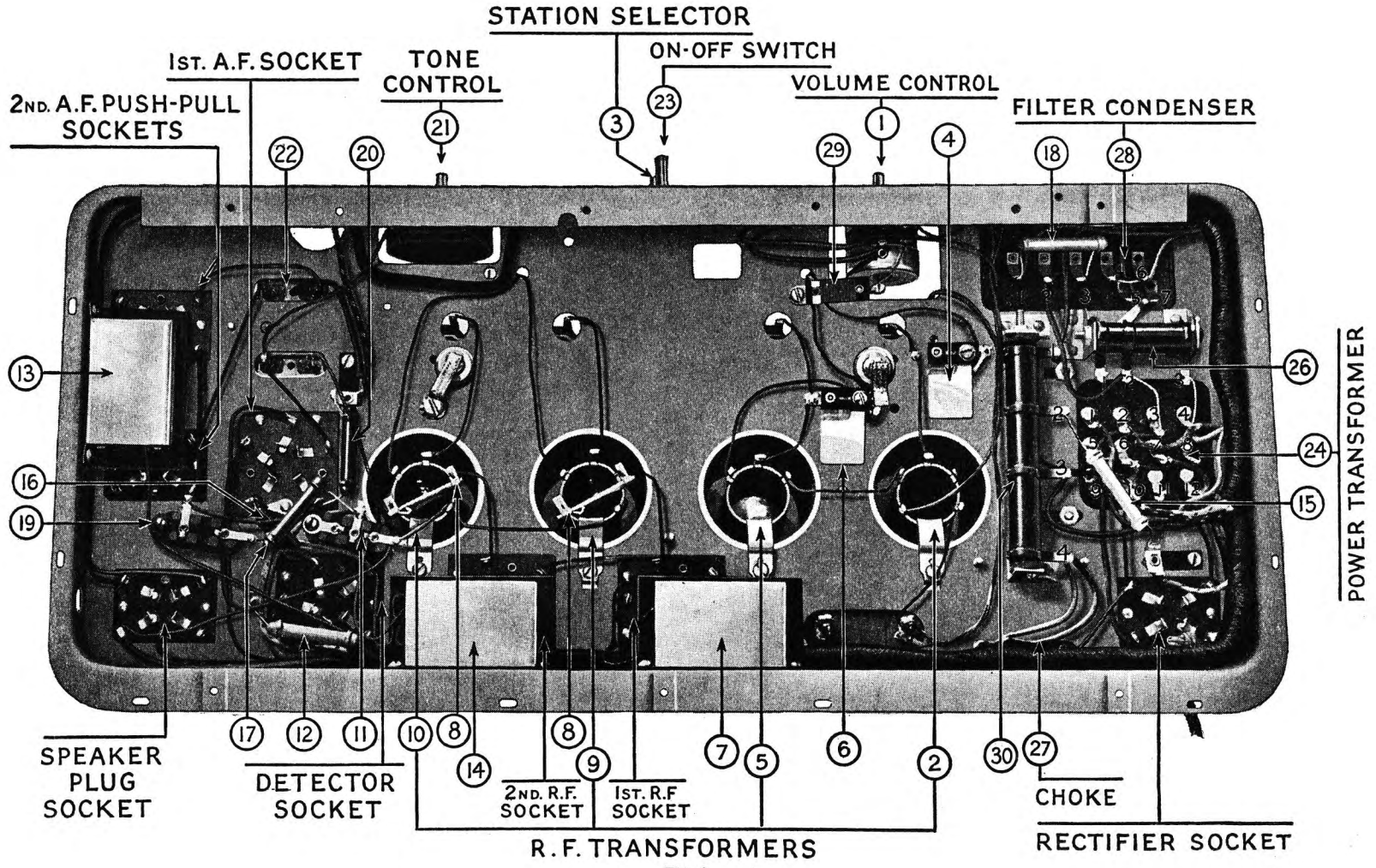


Fig. 4



COMPENSATING

Always use an oscillator signal when adjusting compensating condensers. With the Receiver set up for operation, adjust the oscillator and Receiver so the signal is turned in between 120 and 140 on the tuning scale. Have the Receiver volume control turned on full. Adjust the oscillator so that the received signal is very weak. Using a fibre wrench turn down on the adjusting nut of the first compensating condenser until it is quite tight. This purposely throws the first stage out of balance while adjusting the second stage.

After tightening this first adjusting nut compensate the second condenser in the usual manner, that is, tune the Receiver very carefully to the oscillator signal and adjust the compensating condenser for the maximum signal. After this adjustment has been made, adjust the first compensating condenser in the same manner.

NEW TUNING SCALE ILLUMINATION

The tuning scale used in the Models 77 and 77-A is translucent and is illuminated by means of a pilot lamp placed inside the drum of the tuning condenser. In case it is necessary to replace the pilot lamp, remove the screw fastening the lamp bracket to the condenser housing and bring the bracket out over the top of the condenser. Replace the lamp and fasten the bracket in place again. This can be done without removing the chassis from the cabinet.

REPLACEMENT PARTS

| No. on Figs. 3 and 4 | Description | Part No. | No. on Figs. 3 and 4 | Description | Part No. |
|-------------------------|---------------------------------|----------|-------------------------|-----------------------------------|----------|
| ① | Volume Control | 4094 | ②② | Input Transformer | 3872 |
| ② | First RF Transformer | 3884-A | ②③ | On-Off Switch | 4095 |
| ③ | Tuning Condenser | 4000-B | ②④ | Power Transformer (60 Cycles) | 3868 |
| ④ | First Compensating Condenser . | 3968-A | | Power Transformer (25 Cycles) | 3869 |
| ⑤ | Second RF Transformer | 3884-B | ②⑤ | Pilot Lamp | 3463 |
| ⑥ | Second Compensating Condenser | 3772-A | ②⑥ | BC Resistor | 3864 |
| ⑦ | By-Pass Condenser | 3557 | ②⑦ | Choke | 3422 |
| ⑧ | Coupling Condenser | 3892-A | ②⑧ | Filter Condenser (60 Cycles) | 3870 |
| ⑨ | Third RF Transformer | 3884-C | | Filter Condenser (25 Cycles) | 3871 |
| ⑩ | Fourth RF Transformer | 3884-C | ②⑨ | C Resistor | 4121 |
| ⑪ | By-Pass Condenser | 3615-D | ③⑩ | BC Resistor | 3865 |
| ⑫ | Resistor | 3767 | ③① | Output Transformer | 2848 |
| ⑬ | By-Pass Condenser | 3583 | ③② | Voice Coil and Cone | 2794-B |
| ⑭ | By-Pass Condenser | 3557 | ③③ | Field Coil | 2850 |
| ⑮ | Resistor | 3768 | | Knob (Volume Control) | 3579-A |
| ⑯ | By-Pass Condenser | 3082 | | Knob (Tuning Condenser) | 3580-A |
| ⑰ | Resistor | 3769 | | Knob (On-Off Switch) | 3676-A |
| ⑱ | Resistor | 3767 | | Dial Indicator | 4006 |
| ⑲ | Condenser | 3903-F | | Scale | 4118 |
| ⑳ | Resistor | 3769 | | Speaker Plug and Cable (Short) | L-1101-A |
| ㉑ | Tone Control | 4037-A | | Speaker Plug and Cable (Long) | L-1102-A |

PHILADELPHIA STORAGE BATTERY COMPANY

Ontario and C Streets, Philadelphia, Pa.