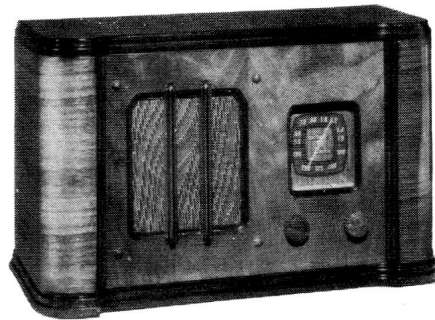


# Model 542

## A-C Universal Radio Receiver



### Specifications

#### Frequency Range:

Broadcast only 540 to 1720 K.C.

#### I.F.:

470 K.C.

#### Tubes:

| Type   | Position               |
|--------|------------------------|
| 12A8GT | Converter              |
| 12K7GT | I.F.                   |
| 12SQ7  | 2nd Det. AVC and Audio |
| 35L6GT | Output                 |
| 35Z5GT | Power Rectifier        |

#### Power Supply:

110-125 Volts, 25-60 cycle

110-125 Volts, D.C.

Consumption: 27 watts

#### A.V.C.:

On 12K7GT I.F. and 12A8GT Converter

#### Controls:

Two; A (left) Volume and On-Off Switch, B (right) Tuning.

#### Power Output:

1.5 watts

#### Loudspeaker:

5" E.D.

#### Dial:

Rectangular metal; four colours, double-end pointer, scale directly illuminated.

#### Cabinet:

Length 14-5/8"; Height 9-1/4"; Depth 7" walnut; speaker grille on front panel.

#### Audio System:

35L6GT single pentode, resistance capacitance coupled.

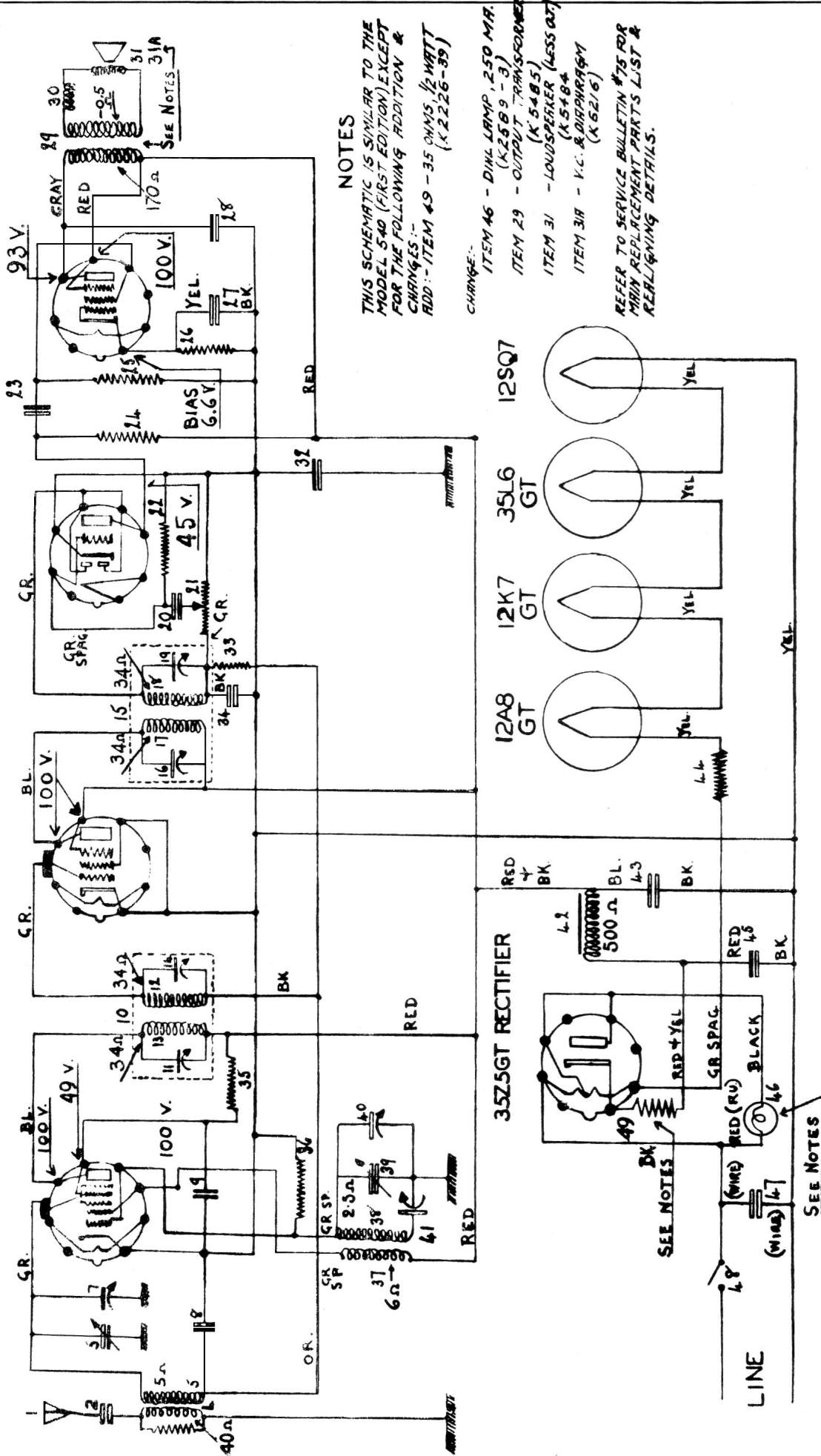
#### Chassis Dimensions:

8-1/4" x 3-5/8" x 11-15/32"

#### Antenna:

25' Insulated wire permanently connected.

12A8GT CONVERTER  
12K7GT I.F. AMPLIFIER  
12SQT 2ND DET. AVC -  
P.A. F. AMPLIFIER  
35L6GT OUTPUT AMP



NOTES

THIS SCHEMATIC IS SIMILAR TO THE MODEL 540 (FIRST EDITION) EXCEPT FOR THE FOLLOWING ADDITION & CHANGES:-  
ADD:- ITEM 49 - 35 OHMS 1/2 WATT (K2226-39)

CHANGE:-

- ITEM 46 - DIODE LAMP, 250 MA. (K2509-3)
- ITEM 29 - OUTPUT TRANSFORMER (K5485)
- ITEM 31 - LOUDSPEAKER (LESS OUT) (K5484)
- ITEM 31A - V.C. & DIAPHRAGM (K6216)

REFER TO SERVICE BULLETIN #75 FOR MAIN REPLACEMENT PARTS LIST & REALIGNING DETAILS.

SCHEMATIC DIAGRAM MODEL 540 AC-UNIVERSAL  
(SECOND EDITION) AND MODEL 542 AC-UNIVERSAL

# MODEL 542 RADIO RECEIVER

## REPLACEMENT PARTS LIST

| Item  | Description                                | Part No.  | Item                  | Description                       | Part No.       |
|-------|--------------------------------------------|-----------|-----------------------|-----------------------------------|----------------|
| 1     | Antenna wire (25' #23 flex.)               | K-5047    | 34                    | Capacitor: mica 400 mmf.          | K-1611-24      |
| 2     | Capacitor .002 mf. 400 volt                | K-2228-2  | 35                    | Resistor: 25,000 ohms, 1/2 W.     | K-2226-7       |
| 3     | Resistor, 20,000 ohms 1/2 W.               | K-2226-8  | 36                    | Resistor: 50,000 ohms, 1/2 W.     | K-2226-6       |
| 4     | Antenna transformer primary                | K-4948    | 37                    | Oscillator plate coil             | K-4949         |
| 5     | Antenna transformer sec.                   | Part of   | 38                    | Oscillator grid coil              |                |
| 6     | Antenna sect. tuning gang                  |           | 39                    | Oscillator Sect. Tuning Gang      | Part of        |
| 7     | Antenna sect. trimmer                      | K-4950    | 40                    | Oscillator Trimmer                | K-4950         |
| 8     | Capacitor, .05 mf. 200 volts               | K-2227-8  | 41                    | Oscillator pad. cap.              | K-3860-8       |
| 9     | Capacitor, .05 mf. 200 volts               | K-2227-8  |                       | 300-625 mmf.                      |                |
| 10    | 1st I-F Transformer assembly, complete     | K-4951    | 42                    | Loudspeaker field - 500 ohms      | Part of        |
| 11-14 | 1st I-F trimmers                           | K-5688    | 43                    | Filter cap. 40 mf. 150 volts      | Part of        |
| 12-13 | 1st I-F coil only                          | K-4972    |                       |                                   | K-4994         |
| 15    | 2nd I-F transformer assembly, complete     | K-4952    | 44                    | Resistor W/W 50 ohm (2 watt)      | K-4990-1       |
| 16-19 | 2nd I-F trimmers                           | K-5688    | 45                    | Filter cap. 40 mf. 150 volts      | Part of        |
| 17-18 | 2nd I-F coil only                          | K-4973    |                       |                                   | K-4994         |
| 20    | Capacitor .01 mf. 200 volts                | K-2227-6  | 46                    | Dial lamp 6.3 V. 250 ma.          | K-2589-3       |
| 21    | Volume control (with switch) (.5 meg.)     | K-4991    | 47                    | Capacitor: .03 mf.                | K-2228-18      |
| 22    | Resistor: 10 meg. 1/2 W.                   | K-2226-74 | 48                    | On-Off Switch                     | Part of K-4991 |
| 23    | Capacitor: .01 mf. 200 volts               | K-2227-6  | 49                    | Resistor 33 ohms, 1/2 watt        | K-5975-32B     |
| 24    | Resistor: .25 meg. 1/2 W.                  | K-2226-4  | <b>MISCELLANEOUS:</b> |                                   |                |
| 25    | Resistor: .5 meg. 1/2 W.                   | K-2226-3  |                       | Cabinet back cover                | K-4970-2       |
| 26    | Resistor: 220 ohm. 1/2 W.                  | K-2226-80 |                       | Sockets (Octal base - small size) | K-4944         |
| 27    | Capacitor: 20 mf. 25 volts                 | Part of   |                       | Dial Pulley                       | K-4976         |
|       |                                            | K-4994    |                       | Dial Indicator                    | K-4977         |
| 28    | Capacitor: .05 mf. 200 volts               | K-2227-8  |                       | Dial Cord (10") (Order by feet)   | K-4636         |
| 29    | Output transformer                         | K-5008    |                       | Dial Spring                       | K-4487         |
| 30    | Hum coil (not replaceable: part of K-5002) | -         |                       | Lamp Socket                       | K-5003         |
| 31    | Loudspeaker assembly                       | K-5002    |                       | Drive Shaft                       | K-4489-4       |
| 32    | Capacitor: .25 mf. 400 volts               | K-2228-10 |                       | Dial Scale                        | K-4947         |
| 33    | Resistor: 2 meg. 1/2 W.                    | K-2226-1  |                       | Grid Clip                         | K-3030-2       |
|       |                                            |           |                       | Antenna Spool                     | K-5046         |
|       |                                            |           |                       | Knobs                             | K-4989         |
|       |                                            |           |                       | Single Stand-off                  | K-2594         |
|       |                                            |           |                       | Dial Cover (Cellulose)            | K-4998-2       |

## D.C. RESISTANCE OF COILS (OHMS)

| Item   | Description                  | Resistance    |
|--------|------------------------------|---------------|
| 4      | Ant. Coil Primary            | 40.0          |
| 5      | Ant. Coil Secondary          | 5.0           |
| 37     | Oscillator Plate Coil        | 6.0           |
| 38     | Oscillator Grid Coil         | 2.5           |
| 29 (A) | Output Transformer Primary   | 170.0         |
| 29 (B) | Output Transformer Secondary | Less than 0.5 |
| 42     | Field                        | 500.0         |
| 13     | 1st I-F Primary              | 34.0          |
| 12     | 1st I-F Secondary            | 34.0          |
| 17     | 2nd I-F Primary              | 34.0          |
| 18     | 2nd I-F Secondary            | 34.0          |

## MODEL 542 RADIO RECEIVER

### REALIGNING DETAILS

- I.F.: With .1 mf. capacitor in signal generator lead, set to 470 K.C.; connect to 12A8GT converter grid, adjust trimmers, item 11, 14, 16 and 19.
- R.F.: Set dial at gang "full open" position. With 100 mmf. capacitor in signal generator lead, set to 1712 K.C.; align oscillator trimmer item 40 (rear trimmer on gang); set generator and receiver to 1600 K.C.; align antenna trimmer item 7 (front trimmer on gang), rocking tuning gang while doing so. Set signal generator and receiver to 600 K.C.; align oscillator pad item 41 (on oscillator coil underneath chassis), rocking tuning gang while doing so. Recheck high frequency end of dial.

### IMPORTANT NOTES:-

The lower trimmer on the antenna tuning portion of the gang (a duplicate of item 7) has been left in place but screwed up tightly to maximum capacity before the set left the factory. It is most essential that this trimmer remain in this position.

In all alignment work on this receiver, return lead of signal generator, normally the "ground lead", must be connected to 12A8, 12K7, or 12SQ7 cathodes. It must not be connected to chassis or to 35L6GT cathode.

### SOCKET VOLTAGES (117 VOLT LINE A.C.)

|        | Plate | Screen    | Anode<br>Plate | Grid |
|--------|-------|-----------|----------------|------|
| 12A8GT | 100   | 49        | 100            | -    |
| 12K7GT | 100   | 100       | -              | -    |
| 12SQ7  | 45    | -         | -              | -    |
| 35L6GT | 93    | 100       | -              | 6.6  |
| 35Z5GT |       | 100 Volts |                |      |