

# AMBASSADOR

# Model 4756

**General Description :** Five-valve (including rectifier) six-waveband superheterodyne receiver with electrical band-spread on short-wave ranges. Released April 1947.

**Power Supplies :** A.C. mains, 100–250 volts. (Also A.C./D.C. version.)

**Intermediate Frequency :** 452 kc/s.

**Valves :** (V<sub>1</sub>) ECH<sub>35</sub>; (V<sub>2</sub>) EF<sub>39</sub>; (V<sub>3</sub>) EBC<sub>33</sub>; (V<sub>4</sub>) EL<sub>33</sub>; (V<sub>5</sub>) EZ<sub>35</sub>.

**General Notes :** This chassis appeared in three versions: A.C. with choke smoothing; A.C. with resistance smoothing; A.C./D.C. with choke smoothing.

On all models alignment may present difficulties. The coil pack contains all relevant coils, trimmers and switch. On the S.W. bands it is necessary to readjust the aerial coils and trimmers several times, as there is considerable pulling. The last band (11–13 m.) employs an oscillator frequency lower than the signal; the second channel interference thus comes in on the high-frequency side of the signal.

The hum level of this chassis is due to the transformer field, and cannot be reduced by additional smoothing. The simplest plan is to connect a 6.3-volt bulb across the secondary of the output transformer.

In some models the tone switch becomes noisy, replacement of the switch then being essential.

Chassis employing resistance smoothing use a tapped output transformer and a 16 + 16- $\mu$ F. smoothing electrolytic. The feedback in this case is taken from a tertiary winding.

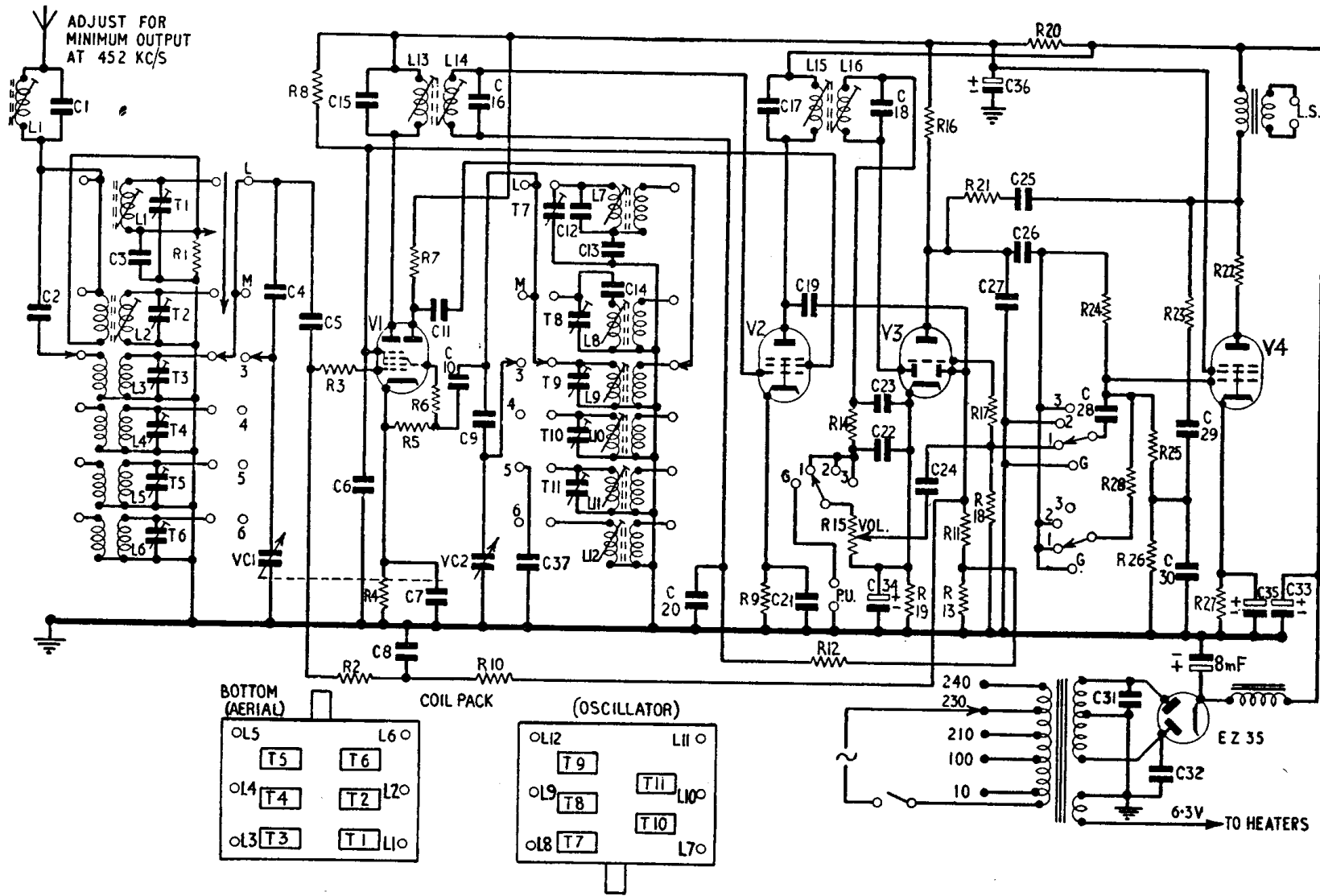
In the A.C./D.C. chassis the dial lamps are connected in series with the negative mains lead. To prevent excessive flicker of the lights on heavy output, the reservoir negative lead is taken direct to the mains side of the dial lamps. The case of this capacitor must be well isolated.

Should the output from the set be very weak and distorted, the anode load of the triode may have developed a high resistance.

## Alignment Procedure :

|       | <i>Apply Signal</i> |                     | <i>Tune Receiver to</i> | <i>Trim in Order Stated</i>   |
|-------|---------------------|---------------------|-------------------------|---|
| L.W.1 | 452 kc/s.           | V <sub>1</sub> grid | —                       | Cores L <sub>16</sub> , L <sub>15</sub> , L <sub>14</sub> , L <sub>13</sub> |
|       | 166.6 kc/s.         | Aerial              | 1800 m.                 | Cores L <sub>7</sub> , L <sub>1</sub>                                       |
| M.W.2 | 250 kc/s.           | Aerial              | 1200 m.                 | Trimmers T <sub>7</sub> , T <sub>1</sub>                                    |
|       | 600 kc/s.           | Aerial              | 500 m.                  | Cores L <sub>8</sub> , L <sub>2</sub>                                       |
| S.W.3 | 1333.3 kc/s.        | Aerial              | 225 m.                  | Trimmers T <sub>8</sub> , T <sub>2</sub>                                    |
|       | 6 Mc/s.             | Aerial              | 6 Mc/s.                 | Cores L <sub>9</sub> , L <sub>3</sub>                                       |
| S.W.4 | 8 Mc/s.             | Aerial              | 8 Mc/s.                 | Adjust T <sub>9</sub> , T <sub>3</sub>                                      |
|       | 9.5 Mc/s.           | Aerial              | 9.5 Mc/s.               | Adjust L <sub>10</sub> , L <sub>4</sub>                                     |
| S.W.5 | 13 Mc/s.            | Aerial              | 13 Mc/s.                | Adjust T <sub>10</sub> , T <sub>4</sub>                                     |
|       | 15 Mc/s.            | Aerial              | 15 Mc/s.                | Adjust L <sub>11</sub> , L <sub>5</sub>                                     |
| S.W.6 | 18 Mc/s.            | Aerial              | 18 Mc/s.                | Adjust T <sub>11</sub> , T <sub>5</sub>                                     |
|       | 21.5 Mc/s.          | Aerial              | 21.5 Mc/s.              | Adjust L <sub>12</sub> , L <sub>6</sub>                                     |
|       | 26 Mc/s.            | Aerial              | 26 Mc/s.                | Adjust T <sub>6</sub>   |

No oscillator trimmer is fitted on range 6, and oscillator frequency is lower than signal frequency. Alignment carried out with tone switch in position 2.



Capacitors.

|    |          |
|----|----------|
| C1 | 500 pF.  |
| C2 | 100 pF.  |
| C3 | 2400 pF. |
| C4 | 60 pF.   |
| C5 | 120 pF.  |
| C6 | 0.1      |
| C7 | 0.05     |

|     |         |
|-----|---------|
| C8  | 0.1     |
| C9  | 60 pF.  |
| C10 | 120 pF. |
| C11 | 120 pF. |
| C12 | 100 pF. |
| C13 | 220 pF. |

|     |         |
|-----|---------|
| C14 | 625 pF. |
| C15 | 100 pF. |
| C16 | 100 pF. |
| C17 | 140 pF. |
| C18 | 140 pF. |
| C19 | 15 pF.  |

|     |         |
|-----|---------|
| C20 | 0.1     |
| C21 | 0.05    |
| C22 | 120 pF. |
| C23 | 120 pF. |
| C24 | 0.02    |
| C25 | 60 pF.  |

|     |         |
|-----|---------|
| C26 | 0.04    |
| C27 | 300 pF. |
| C28 | 500 pF. |
| C29 | 0.004   |
| C30 | 0.01    |
| C31 | 0.005   |

|     |        |
|-----|--------|
| C32 | 0.005  |
| C33 | 8      |
| C34 | 50     |
| C35 | 25     |
| C36 | 8      |
| C37 | 30 pF. |

Resistors.

|     |             |
|-----|-------------|
| R1  | 100k        |
| R2  | 0.47M       |
| R3  | 33          |
| R4  | 180         |
| R5  | 47k         |
| R6  | 33          |
| R7  | 22k (1 W.)  |
| R8  | 22k (1 W.)  |
| R9  | 270         |
| R10 | 2.2M        |
| R11 | 0.33M       |
| R12 | 680k        |
| R13 | 680k        |
| R14 | 47k         |
| R15 | 0.5M (Pot.) |
| R16 | 150k        |
| R17 | 47k         |
| R18 | 4.7M        |
| R19 | 1k          |
| R20 | 3.3k (1 W.) |
| R21 | 150k        |
| R22 | 47          |
| R23 | 39k         |
| R24 | 220k        |
| R25 | 470k        |
| R26 | 22k         |
| R27 | 180         |
| R28 | 47k         |

# AMBASSADOR RECEIVERS

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## GENERAL NOTES

**Manufacturers :** R. N. Fitton, Ltd., Princess Works, Brighouse, Yorkshire.

### **Removal of Chassis :**

(a) *Table Models.* Lie receiver on back and unscrew chassis-retaining bolts on underside of cabinet. Stand receiver upright and remove back panel and loudspeaker plugs, etc. Remove knobs (clip-on knobs which are stiff can be removed by pressing string underneath them) and withdraw chassis from cabinet.

(b) This system also applies to *Table Radiograms* and *Consoles*. Large radiograms employ various methods, but no difficulty should be experienced, as fitting has always been kept as simple as possible.

**I.F. Alignment :** Except on Models 4756, 548, 849 and 650H, all alignment is carried out in the normal manner, *i.e.*, adjustment of each I.F. trimmer, in turn, for maximum output. On the chassis types 4756, 548 and 849 a damping stick is necessary. This takes the form of a 22k resistor in series with a 0.01- $\mu$ F. capacitor. In use, the 0.01- $\mu$ F. capacitor is clipped on to the chassis and the free end of the 22k resistor is connected to the live end of one winding; the other winding of the same transformer is then adjusted for maximum output. The 22k resistor is then transferred to this winding and the first winding adjusted. This alignment method gives a broad and flat I.F. response, with a consequent improvement in reproduction.

In the 650 receiver it is necessary to supply external bias from a battery during alignment. The positive terminal of a 9-volt battery is connected to chassis, and the 6-volt terminal to the A.V.C. end of the I.F. valve grid coil. The signal generator earthy lead is connected to -4.5 volts. Alignment of the second I.F. is then carried out with damping, as above. The first I.F. is then adjusted for maximum output, without damping. The primary and secondary adjustments must be carried out two or three times. The resultant I.F. response has a main peak at 420 kc/s., and should not fall below -4 db. until the generator output is varied beyond 8 kc/s. to one side of 420 kc/s. On the other side of 420 kc/s. it should be sharply attenuated.

A non-metallic trimming tool must be used for aligning the 849 and later models.

On A.C./D.C. table models produced before 1948, a 0.01- $\mu$ F. capacitor is used to isolate the pick-up from chassis. If it is desired to use a record player, a crystal pick-up can be employed without alteration. If it is desired to use a magnetic pick-up the isolation capacitor must be shorted out. It would be wiser in this case to use a pick-up which has its windings isolated from the player board, so that the latter can be earthed.

L. B.