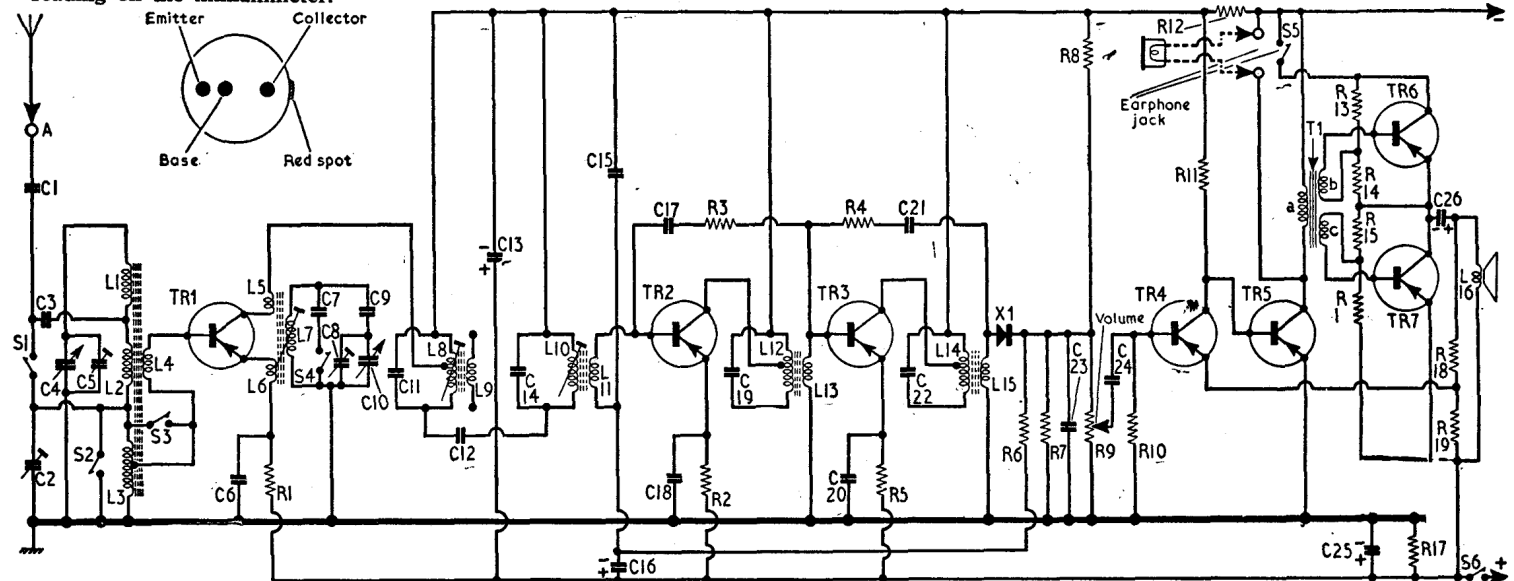


# PERDIO - SUPER 7

## CIRCUIT ALIGNMENT

**Equipment Required.**—An accurately calibrated signal generator with an output impedance of  $37\Omega$ , modulated 30 per cent at 400c/s; a 0-50mA or 0-100mA meter; a 12-inch length of insulated wire; a  $0.05\mu\text{F}$  capacitor and a non-metallic trimming tool.

- 1.—Remove chassis from cabinet as described under "Dismantling" (Col. 3). Employing the 12-inch length of insulated wire to form a coupling loop, wind a single turn over L4 (B1), and connect signal generator, via the  $0.05\mu\text{F}$  capacitor in its earthy lead, to the ends of the coupling loop. Connect the milliammeter in series with the battery supply. Switch receiver to M.W., turn gang to minimum capacitance and set volume control to maximum.
- 2.—Feed in a 470kc/s signal and adjust the cores of L14, L12, L10 and L8 (location references D4, E4), in that order for maximum output as indicated by maximum reading on the milliammeter.



- 3.—Turn gang to maximum capacitance. Feed in a 525kc/s signal and adjust the core of L7 (E4) for maximum output.
- 4.—Turn gang to minimum capacitance. Feed in a 1,570kc/s signal and adjust C8 (A1) for maximum output.
- 5.—Repeat operation 3.
- 6.—Feed in a 540kc/s signal and tune it in on the receiver, then slide the former of L1 (A1) along the ferrite rod for maximum output.
- 7.—Feed in a 1,450kc/s signal, tune it in on the receiver and adjust C5 (A1) for maximum output.
- 8.—Switch receiver to L.W. Feed in a 180kc/s signal and tune it in on the receiver, then slide the former of L3 (C1) along the ferrite rod for maximum output while rocking the tuning gang.
- 9.—Feed in a 270kc/s signal, tune it in on

### Resistors

|     |                      |    |
|-----|----------------------|----|
| R1  | 3.3k $\Omega$        | A2 |
| R2  | 1k $\Omega$          | B2 |
| R3  | 1.2k $\Omega$        | B2 |
| R4  | $\dagger 3.9k\Omega$ | B2 |
| R5  | 1k $\Omega$          | B2 |
| R6  | 5.6k $\Omega$        | E4 |
| R7  | $\dagger 4.7k\Omega$ | B2 |
| R8  | 100k $\Omega$        | B2 |
| R9  | 5k $\Omega$          | B1 |
| R10 | 10k $\Omega$         | C1 |
| R11 | 6.8k $\Omega$        | C1 |
| R12 | 470 $\Omega$         | C2 |
| R13 | $\dagger 2.7k\Omega$ | C2 |
| R14 | $\dagger 100\Omega$  | C2 |
| R15 | $\dagger 2.7k\Omega$ | C2 |
| R16 | $\dagger 100\Omega$  | C2 |
| R17 | 470 $\Omega$         | C2 |
| R18 | 100k $\Omega$        | C2 |
| R19 | 1k $\Omega$          | C1 |

### Capacitors

|    |                     |    |
|----|---------------------|----|
| C1 | 18pF                | A1 |
| C2 | 40pF                | A1 |
| C3 | 0.001 $\mu\text{F}$ | A1 |
| C4 | —                   | A1 |
| C5 | —                   | A1 |

### Coils\*

|     |                        |    |
|-----|------------------------|----|
| C6  | 0.01 $\mu\text{F}$     | A2 |
| C7  | $\dagger 180\text{pF}$ | A2 |
| C8  | —                      | A1 |
| C9  | $\dagger 250\text{pF}$ | A2 |
| C10 | —                      | A1 |
| C11 | —                      | A2 |
| C12 | 4.7pF                  | A2 |
| C13 | 50 $\mu\text{F}$       | A2 |
| C14 | —                      | B2 |
| C15 | 0.04 $\mu\text{F}$     | B2 |
| C16 | 10 $\mu\text{F}$       | B2 |
| C17 | $\dagger 56\text{pF}$  | B2 |
| C18 | 0.1 $\mu\text{F}$      | B2 |
| C19 | —                      | B2 |
| C20 | 0.1 $\mu\text{F}$      | B2 |
| C21 | $\dagger 18\text{pF}$  | B2 |
| C22 | —                      | B2 |
| C23 | 0.04 $\mu\text{F}$     | B2 |
| C24 | 0.1 $\mu\text{F}$      | C1 |
| C25 | 100 $\mu\text{F}$      | B2 |
| C26 | 100 $\mu\text{F}$      | B2 |

### Miscellaneous\*

|     |      |    |
|-----|------|----|
| L5  | 0.75 | A2 |
| L6  | —    | A2 |
| L7  | 4.0  | A2 |
| L8  | 3.9  | A2 |
| L9  | 0.7  | A2 |
| L10 | 4.0  | B2 |
| L11 | 0.4  | B2 |
| L12 | 4.0  | B2 |
| L13 | 0.4  | B2 |
| L14 | 3.9  | B2 |
| L15 | 0.7  | B2 |
| L16 | 26.0 | —  |

\*Approximate D.C. resistance in ohms.  
 $\dagger \pm 5$  per cent.  
 $\ddagger \pm 2$  per cent.

- 10.—Repeat operation 8.
- 11.—Switch the receiver to M.W. and repeat operation 6. Seal the formers of L1 and L3 to the ferrite rod with an adhesive.

## TRANSISTOR ANALYSIS

Transistor voltages given in the table below are those derived from the manufacturers' information. The voltages were measured on the 2.5V and 10V ranges of a Model 8 Avometer, the positive terminal being connected to the positive battery terminal in every case. The receiver was switched to M.W. with the volume control and tuning gang turned to minimum. The total battery current was 7.5-8.0mA.

| Transistor | Emitter (V) | Base (V)          | Collector (V)    |
|------------|-------------|-------------------|------------------|
| TR1 OC44   | 1.0         | 1.05 <sup>1</sup> | 7.3              |
| TR2 OC45   | 1.0         | 1.05 <sup>1</sup> | 7.3              |
| TR3 OC45   | 1.0         | 1.05 <sup>1</sup> | 7.3              |
| TR4 OC71   | 0.8         | 1.05 <sup>1</sup> | 1.3              |
| TR5 OC78D  | 1.05        | 1.3               | 8.3              |
| TR6 OC78   | 4.5         | $\dagger$         | 9.0 <sup>2</sup> |
| TR7 OC78   | —           | *                 | 4.5              |

<sup>1</sup>Measured across R17 (C1).

<sup>2</sup>Quiescent collector current 1.5-2.0mA.

$\dagger$ No reading quoted.

\*Very low reading.