# DECCA AW10

*Five - valve, plus rectifier and tuning indicator, three-waveband table model superhet with mechanically operated tuning system, incorporating muting, and parallel output pentodes. For 200–250v. A.C. supplies. Made by Decca Radio and Television, Ltd., 1–3, Brixton Road, London, S.W.9.*

**Circuit.**—Across the aerial is an I.F. rejector circuit, L1, C1. The aerial input is via C2 to transformers on each of the three bands, L2 being a common primary for M. and L.W. In the L.W. position, L3 is put in series with the M.W. coil, L4.

V1 is the frequency-changer and the oscillator section is tuned grid with anode reaction windings, there being a common winding for M. and L.W. Padding is fixed on each band.

Coupling between V1 and V2 and between V2 and V3 is by trimmer tuned I.F. transformer in each case. V3 is the double-diode triode. R11, the signal demodulation diode, passes the L.F. via R10–C17, an I.F. filter, through C15, a bias isolater, to R12, the volume control.

The A.V.C. diode is energised via C21, the control being developed across R20 and passed on to both V1 and V2. V4 is a cathode-ray tuning indicator, operated by the demodulation diode.

The triode section of V3 resistance-capacity feeds V5 and V6, a pair of pentodes in parallel. These are biased by a common resistance, R24, and feed a single output transformer. Across the valves is a tone control circuit.

The anode current of these valves is also used in connection with the automatic clutch, which disengages the manual slow-motion tuning arrangements during push-button operation. Normally, the switch is in the position shown in the circuit and the relay coil is shorted out.

When a P.B. is operated, a mechanical link pushes over the switch, shorting the secondary of the output transformer and passing the anode current of V5 and V6 through the relay coil.

H.T. current for the set is obtained from V7, a full-wave rectifier, and is smoothed in the usual way.

**Extension Speaker.**—This should be fitted with a 7,000—10,000 ohm transformer.

## GANGING

**I.F. Circuits.**—Inject 465 kcs. to V1 grid and adjust I.F. trimmers for maximum keeping signal below A.V.C. level.

**M.W. Band.**—Inject 1,200 kcs., tune to 250 m. and adjust T1 and T2. Padding is fixed, but compensate with trimming if necessary.

**L.W. Band.**—Inject 230.7 kcs., tune to 1,300 m. and adjust T3 and T4. Padding is fixed.

**S.W. Band.**—Inject 18 mcs., tune to 16.6 m. and adjust T5 and T6. Padding is fixed.

**I.F. Rejector.**—Inject 465 kcs. to aerial and adjust L1 for minimum.

## PUSH BUTTONS

Tune manually to required station. Slacken off selected button, push fully in and then tighten button.

## VALVE READINGS

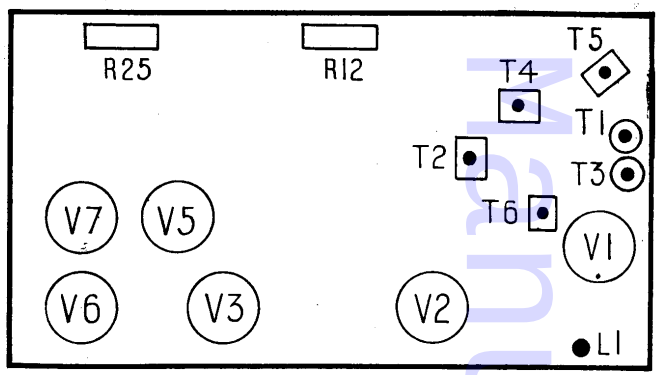
| V. | Type | Electrode | Volts | Ma. |
|---|---|---|---|---|
| 1 | TH62 | Anode | 265 | 3 |
| | | Screen | 100 | 2.5 |
| | | Osc. anode | 115 | 4.5 |
| 2 | 6U7G | Anode | 265 | 8.5 |
| | | Screen | 100 | 2.5 |
| 3 | 6A7G | Anode | 150 | .45 |
| 4 | EM4 | Target | 265 | .5 |
| 5 & 6 | V6G | Anodes | 240 | 40 |
| 6 | | Screens | 265 | 5 |
| 7 | 5Z4G | Anodes | 325 A.C. | — |

*Pilot lamps: 6v., .5 amp., M.E.S.*

## WINDINGS

| L | Ohms. | L | Ohms. |
|---|---|---|---|
| 1 | 8.5 | 6 | 2.5 |
| 2 | 15 | 7 | 400 |
| 3 | 20 | 8 | 300 |
| 4 | 3.5 | 9 | 35 |
| 5 | 5.5 | 10 | 380 |

**Trimmers are under the Decca chassis. This diagram locates them and also identifies the valve-holders.**




## RESISTANCES

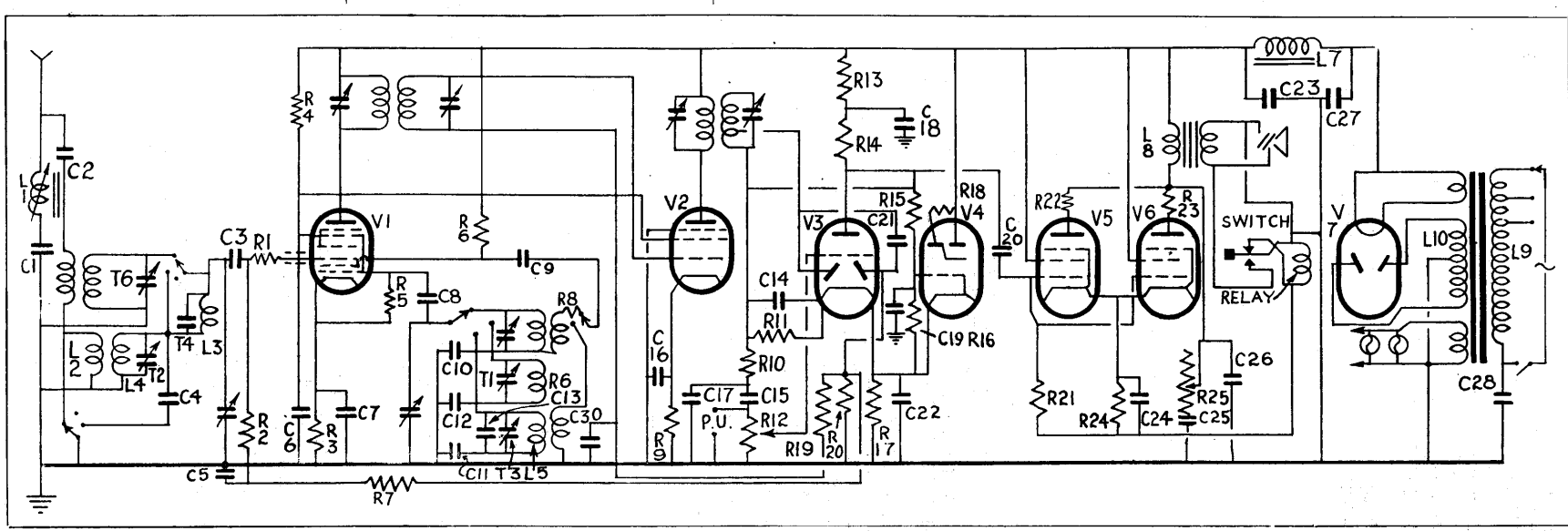
| R | Ohms. | R | Ohms. |
|---|---|---|---|
| 1 | 40 | 14 | 100,000 |
| 2 | .5 meg. | 15 | 1 meg. |
| 3 | 250 | 16 | 1 meg. |
| 4 | 35,000 | 17 | 3,000 |
| 5 | 50,000 | 18 | 2 meg. |
| 6 | 35,000 | 19 | .5 meg. |
| 7 | .5 meg. | 20 | .5 meg. |
| 8 | 75 | 21 | .25 meg. |
| 9 | 250 | 22 | 100 |
| 10 | 70,000 | 23 | 100 |
| 11 | 300,000 | 24 | 140 |
| 12 | .5 meg. | 25 | 50,000 |
| 13 | 25,000 | | |

## CONDENSERS

| C | Mfds. | C | Mfds. |
|---|---|---|---|
| 1 | 60 mmfds. | 6 | .1 |
| 2 | .0004 | 7 | .1 |
| 3 | .0001 | 8 | .0001 |
| 4 | .00125 | 9 | .0002 |
| 5 | .02 | 10 | .003 |

## CONDENSERS—*Contd.*

| C | Mfds. | C | Mfds. |
|---|---|---|---|
| 11 | 385 mmfds. | 20 | .01 |
| 12 | 180 mmfds. | 21 | .0001 |
| 13 | 45 mmfds. | 22 | 50 |
| 14 | .0001 | 23 | 10 |
| 15 | .02 | 24 | 50 |
| 16 | .1 | 25 | .05 |
| 17 | .0001 | 26 | .006 |
| 18 | 4 | 27 | 10 |
| 19 | .01 | 28 | .006 |




## Concise Mathematics

"ELEMENTARY Mathematics for Wireless Operators," by W. E. Crook, will interest many service engineers who wish to improve their understanding of mathematical expressions encountered in technical articles. An adjunct to R.A.F. training classes, in itself the book is by no means a complete mathematical course. It is, however, a remarkably concise exposition of logarithms, algebra, geometry and trigonometry, graphs and mechanics. The essential contributions of all these to radio science are covered in some 60 pages. The book is published by Pitman's at 3s. 6d.

**An unusual feature is twin output pentodes, not in push-pull, but in parallel. A relay disconnects the manual drive during push-button operation and an associated switch mutes the speaker.**