

DOUBLE DECCA MODEL MB5

Four valve, plus rectifier, three waveband portable receiver for operation from all-dry batteries or A.C. or D.C. mains of 200-250 volts. Made by Decca Radio and Television, Ltd., 1-3, Brixton Road, London, S.W.9.

Circuit.—There are frame aerial windings for medium and long waves. These, and a S.W. grid coil, are all in

series, trimmers being between the four "output" wires. A connection for an outside aerial leads to a S.W. coupling coil and then through C1 to a frame winding inductively coupled to the M. and L.W. windings.

On L.W. all three grid coils are in circuit. On M.W. one frame is shorted, and on S.W. both frames are shorted.

The lead to V1, the frequency-changer, includes a D.C. "stopper," C3, A.V.C. being applied via R1.

The oscillator section is straightforward tuned grid, the M. and L.W. coils having a common anode reaction coil. There is no S.W. oscillator trimmer. In the M.W. position the L.W. coil is short-circuited to prevent absorption. Padding is fixed on each band, the padders being C6 (L.W.), C7 (M.W.) and C10 (S.W.).

The first I.F. coupling is a single-tuned circuit with close coupled primary.

V2, the I.F. amplifier, like V1 is A.V.C. fed from the load (the volume control) of the single diode.

V3, the diode-triode, is energised by a conventional I.F. transformer. C13 and R6 form an H.F. filter. The triode grid is isolated from the steady demodulation voltage produced by the carrier by C14 and biases itself via R8.

Resistance-capacity coupling with a high anode load feeds V4, the output pentode, which is biased due to the filament being above H.T.

Current supply is by A.C. or D.C. mains or by all-dry battery. The arrangements for mains input follow the usual half-wave rectifier style. The H.T. current is obtained from the cathode of V5 through a smoothing choke. V4 anode is fed from this point, but R12 breaks down the voltage further for the other valves.

The filaments are also fed from the H.T. supply, the voltage being reduced by R13. V1, V2 and V3 are run in a series-parallel arrangement. V5 has its own series resistor.

On battery operation the mains section is disconnected. The H.T. battery is switched to the H.T. line, R12 being shorted out. The L.T. section feeds all the filaments in parallel. R14 and R15 bias V4.

Modifications.—These service notes apply to the original Double Decca, the model MB5. Later models are considerably different.

In models of the MB5 using a IC5GT instead of a 1Q5GT output valve, R14 is 800 ohms and R15 43 ohms.

GANGING

I.F. Circuits.—Inject 380 kc. to the grid of V1 and adjust the I.F. trimmers reducing the input as the circuits come

into line to keep below the A.V.C. level.
S.W. Band.—Inject 19 metres through a S.W. dummy aerial to the aerial socket. There is no oscillator trimmer, so adjust the coil on the dial for calibration and then adjust T1 for maximum. Padding is fixed.

M.W. Band.—Inject 250 metres by means of a loop of wire loosely coupled to the frame aerials. Adjust T2 and T3 for maximum; padding is fixed.

L.W. Band.—Inject 1,200 metres and adjust T4 and T5 for maximum. Padding is fixed.

VALVE READINGS

V	Type	Electrode	Volts
1	1A7GT	Anode	90
		Screen	40
		Osc. anode	90
2	1N7GT	Anode	90
		Screen	90
3	1H5GT	Anode	V. low*
4	1Q5GT or 1C5GT	Anode	86
		Screen	90
5	25Z6	Cathode	110

* Due to high anode resistance.

RESISTANCES

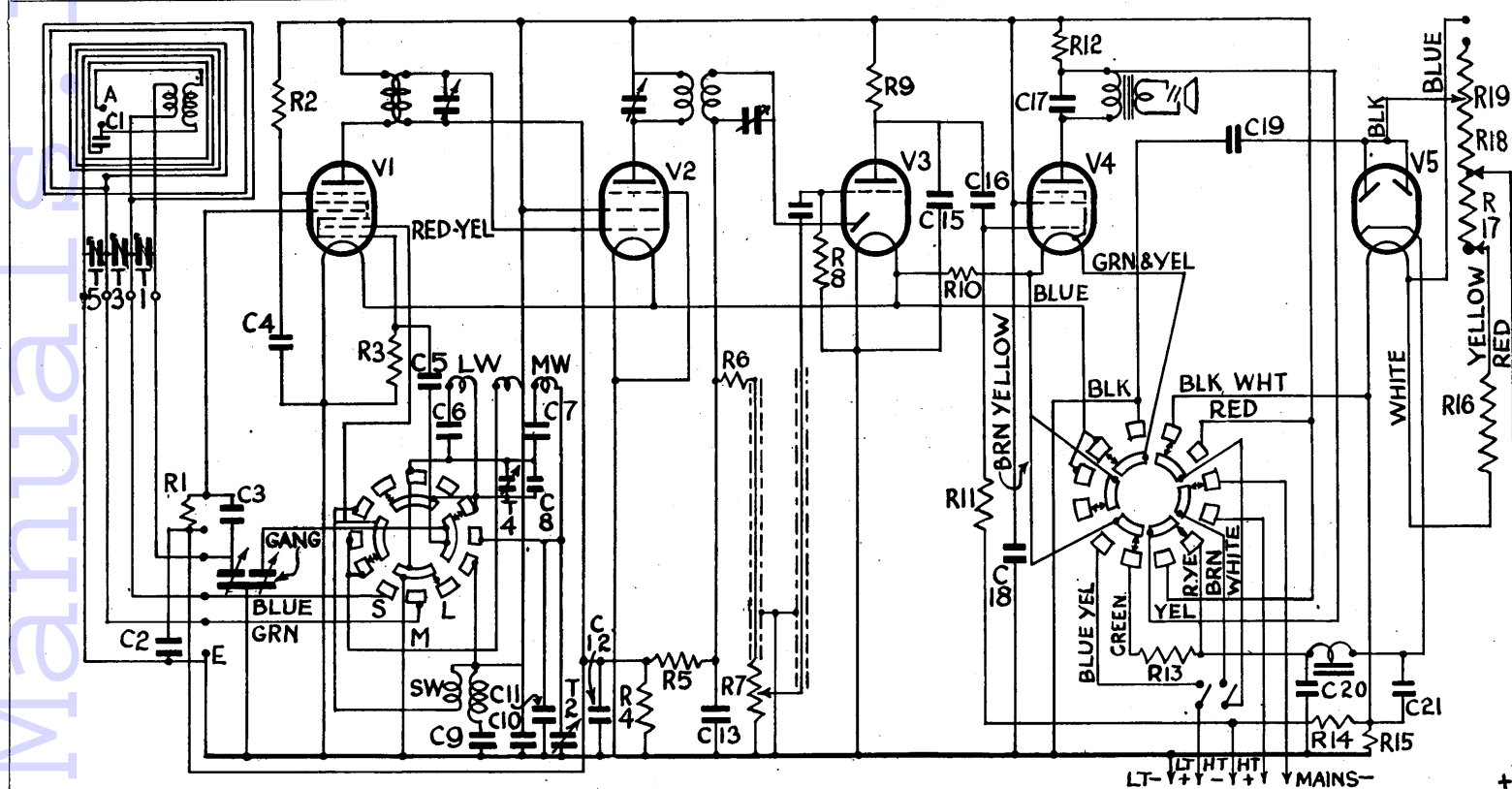
R	Ohms	R	Ohms
1	.5 meg.	11	2 meg.
2	75,000	12	3,000
3	.25 meg.	13	700
4	3 meg.	14	400
5	10 meg.	15	22
6	25,000	16	620
7	.5 meg.	17	80
8	10 meg.	18	135
9	1 meg.	19	100
10	30		

CONDENSERS

C	Mfds.	C	Mfds.
1	.01	12	.02
2	.1	13	.0001
3	.0001	14	.001
4	.1	15	.0001
5	.0001	16	.01
6	385 mmfds.	17	.001
7	821 mmfds.	18	8
8	200 mmfds.	19	.01
9	.005	20	100
10	.01	21	16
11	30 mmfds.		

Indicator Follows Music

IN the Philips range of receivers, models 797 and similar, where the earlier type of tuning indicator, consisting of a movable needle in a vertical scale, is fitted, there are times when it will be perceived that the indicating needle has a tendency to follow the heavier modulated passages of the programme. This effect may or may not be accompanied by a mains hum. Replacement of the second smoothing condenser invariably corrects the effect.—A. R. T.



This circuit applies only to the original MB5 model. The switches are in the long wave and the mains positions respectively. The valve voltages will vary considerably according to the mains or battery, but the table in end column gives an idea of relative values.