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Supplement to Wireless & Electrical Trader, 12 *January* 1957

"TRADER" SERVICE SHEET

1283

REGENTONE DW1 & DP2

2-band A.C./D.C. Transportable Receivers

EMPLOYING a ferrite rod internal aerial, the Regentone DW1 is a 2-band A.C./D.C. transportable table receiver housed in a wooden cabinet. The waveband ranges covered are 187-570 m and 1,150-2,000 m.

Model DP2 employs the same chassis as the DW1, but it is housed in a cream or maroon plastics cabinet.

Release date and original price, both models: June 1956, £9 7*s* 4*d*. *Purchase-tax extra.*

CIRCUIT DESCRIPTION

Tuned internal aerial circuits **L1, C3** (M.W.) and **L1, L2, C3** (L.W.) precede triode heptode valve **V1** which operates as frequency changer with external coupling.

Oscillator grid coil **L5** is tuned by **C11** for both M.W. and L.W. operation. Parallel trimming by **C12** (M.W.) and **C13, C14** (L.W.); series tracking by **C10** (M.W. and L.W.). Reaction coupling from oscillator anode by **L6.**

V2 is a double-diode variable-mu R.F. pentode, its pentode section operating as intermediate frequency amplifier with tuned transformer couplings **L3, L4** and **L7, L8.**

Intermediate frequency 470 kc/s.

Signal detector is formed by one diode section of **V2.** Audio frequency component in its rectified output is developed **R8,** and is passed via **C20,** volume control **R9,** and **C22** to triode section **a** of triode pentode valve **V3.** I.F. filtering by **C19, R7, C21.**

D.C. potential developed across **R7, R8** is fed back as bias via **R6** to **V1** and **V2,** giving automatic gain control. Contact potential developed at the anode of the second diode section of **V2** is employed as standing bias for **V1** and **V2** by connecting the diode anode to the A.G.C. line.

Resistance-capacitance coupling via **R11, C23** and **R12** between **V3a** and pentode output valve **V3b.** Tone correction by

(*Continued col.* 1 *overleaf*)

COMPONENTS AND VALUES

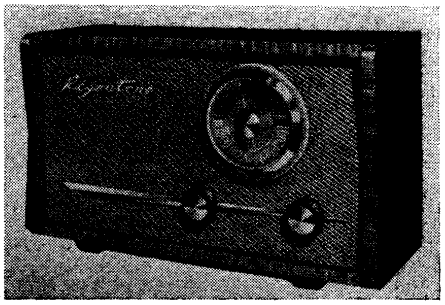
	RESISTORS	Values	Locations
R1	V1 C.G.	680kΩ	F4
R2	V1 S.G. feed ...	18kΩ	F4
R3	V1 osc. C.G. ...	47kΩ	F3
R4	V1 osc. anode feed	18kΩ	F3
R5	V2 S.G. feed ...	68kΩ	F4
R6	A.G.C. decoup. ...	1·8MΩ	F3
R7	I.F. stopper ...	100kΩ	E4
R8	Diode load ...	220kΩ	E3
R9	Volume control ...	500kΩ	B2
R10	V3a C.G.	5·6MΩ	E4
R11	V3a anode load ...	120kΩ	D4
R12	V3b C.G.	470kΩ	D4
R13	H.T. smoothing ...	2·2kΩ	C1
R14	V3b G.B. ...	270Ω	D4
R15	Heater ballast ...	980Ω	C2
R16	V4 surge limiter ...	150Ω	C2
R17	Voltage adj. ...	140Ω	C2

	CAPACITORS	Values	Locations
C1	L.W. aerial trim....	200pF	A1
C2	M.W. aerial trim....	—	F3
C3	Aerial tuning ...	—	A1
C4	V1 C.G.	100pF	A2
C5	V1 S.G. decoup. ...	0·01μF	F3
C6	1st I.F.T. tuning ...	100pF	A2
C7	1st I.F.T. tuning ...	100pF	A2
C8	A.G.C. decoupling	0·04μF	F3
C9	V1 osc. C.G. ...	100pF	A1
C10	Osc. tracker ...	585pF	A2
C11	Osc. tuning ...	—	A2
C12	M.W. osc. trim. ...	—	F3
C13	L.W. osc. trimmers	—	F3
C14	L.W. osc. trimmers	550pF	A1
C15	Osc. anode coup....	0·001μF	A1
C16	V2 S.G. decoup.	0·01μF	F4
C17	2nd I.F.T. tuning...	100pF	B2
C18	2nd I.F.T. tuning...	100pF	B2
C19	I.F. by-pass ...	100pF	B2
C20	A.F. coupling ...	0·01μF	E3
C21	I.F. by-pass ...	100pF	E4
C22	A.F. couplings ...	0·01μF	B2
C23	A.F. couplings ...	0·01μF	E4
C24	H.T. smoothing ...	32μF	B2
C25	H.T. smoothing ...	32μF	B2
C26	Tone corrector ...	0·01μF	D4
C27*	Mains R.F. by-pass	0·02μF	E3
C28	Mains R.F. by-pass	0·03μF	B2

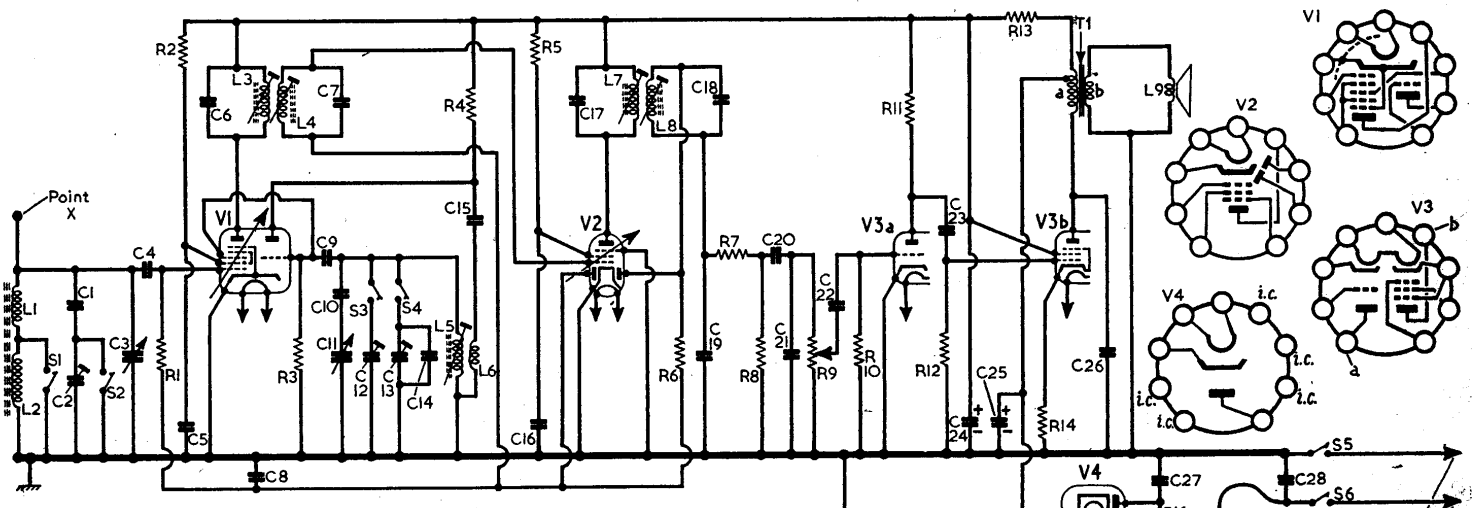
**May be* 0·03μF.

	MISCELLANEOUS	Approx. Values (ohms)	Locations
L1	Internal aerials ...	1·0	A1
L2	Internal aerials ...	3·5	B1
L3	1st I.F.T. Pri. ...	21·0	A2
L4	1st I.F.T. Sec. ...	19·0	A2
L5	Osc. tuning coil ...	3·0	A1
L6	Osc. anode coup. ...	2·5	A1
L7	2nd I.F.T. Pri. ...	19·0	B2
L8	2nd I.F.T. Sec. ...	19·0	B2
L9	Speech coil ...	3·0	C1
T1	O.P. trans a* ...	380·0	C1
T1	O.P. trans b ...	—	
S1-S4	Band switch ...	—	A2
S5, S6	Mains sw., g'd R9...	—	B2

* *Tapped at* 12Ω *from R*13.

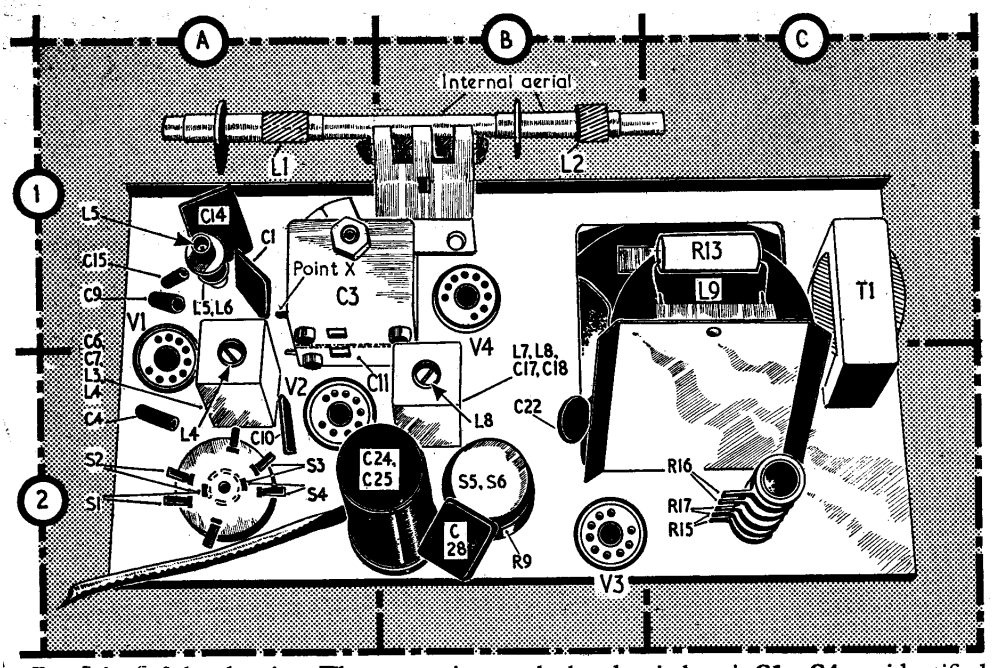


Appearance of the Regentone DW1



Circuit diagram of the Regentone DW1. Aerial tuning coils **L1, L2** are mounted on a length of ferrite rod to form the internal aerial. Negative feed-back is introduced in **V3b** cathode circuit across **R14** which is not by-passed.

BVWS Trader Sheet CD-Rom



Rear view of the chassis. The connections to the band switch unit **S1—S4** are identified in location reference A2.

Circuit Description—*continued.*

C26 in **V3b** anode circuit and by the negative feed-back voltage developed across **R14** in **V3b** cathode circuit.

H.T. current is supplied by I.H.C. half-wave rectifying valve **V4.**

H.T. smoothing by **R13** and electrolytic capacitors **C24, C25.** Residual hum is neutralized by passing H.T. current through a section of **T1** primary winding **a.**

GENERAL NOTES

Switches.—**S1-S4** are the band switches ganged in a single rotary unit on the chassis deck. This unit is indicated at A2 in the rear illustration of the chassis where the switch tags are identified. With the band switch control set anti-clockwise for L.W. operation, switches **S2** and **S4** close. For M.W. operation switches **S1, S3** close.

Internal Aerial.—This is formed by the M.W. and L.W. aerial tuning coils **L1, L2** which are mounted at opposite ends of a length of ferrite rod. The chassis should never be lifted up by means of the ferrite rod aerial, as the rod may fracture if pressure is put on it.

Cabinet.—The decorative metalwork on the cabinet is coated with a protective lacquer to ensure that it remains bright without polishing. As most metal cleaning agents would attack this protective coating, it is recommended that it is cleaned merely by dusting with a soft cloth.

CIRCUIT ALIGNMENT

1.—Switch receiver to M.W. and turn gang to maximum. Connect output of signal generator, via an 0.1 μF isolating capacitor in each lead, between chassis and control grid (pin 2) of **V2.**

2.—Feed in a 470 kc/s signal and adjust the cores of **L8** (B2) and **L7** (E4) for maximum output. Transfer signal generator live lead to point X (A1). Feeding in a 470 kc/s signal, adjust the cores of **L4** (A1) and **L3** (F4) for maximum output. Do not re-adjust the cores of **L7, L8.**

3.—Connect a 1 pF capacitor as dummy aerial between the signal generator live lead and point X. Check that with gang at maximum capacitance, the cursor coincides with the high wavelength ends of the tuning scales.

4.—Tune receiver to the 521.7 m calibration mark on the inner edge of the tuning scale, feed in a 575 kc/s signal and adjust the core of **L5** (A1) for maximum output, choosing the second peak in from the adjusting end.

5.—At the same frequency, adjust the inductance of **L1** (A1) for maximum output by sliding the coil along its ferrite rod.

6.—Tune receiver to 200 m calibration mark on scale, feed in a 1,500 kc/s signal and adjust **C12** (F3) and **C2** (F3) for maximum output.

7.—Repeat the adjustments in operations 4, 5 and 6.

8.—Switch the receiver to L.W. and tune it to the 1,333 m calibration mark on the outer edge of the tuning scale. Feed in a 225 kc/s signal and adjust **C13** (F3) for maximum output. Adjust the inductance of **L2** (B1) for maximum output at this frequency by sliding the coil along its ferrite rod.

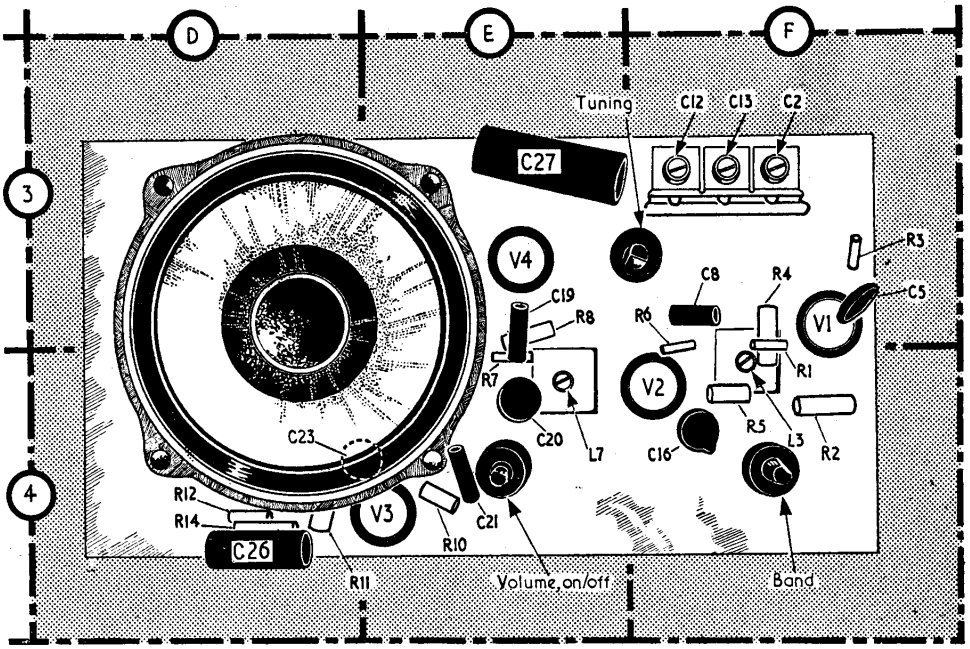
VALVE ANALYSIS

Valve voltages and currents given in the table below are those derived from the manufacturers' information. They were measured with the receiver operating from A.C. mains of 212 V, and with the voltage adjustment set to the 200-225 V tapping. The receiver was tuned to the high wavelength end of M.W., but there was no signal input.

Voltages were measured with a Model 8 Avometer, chassis being the negative connection in every case.

Valve	Anode		Screen		Cath.
	V	mA	V	mA	V
V1 UCH81 ...	168 (Oscillator)	2·0	70	5·6	—
	85	4·5			
V2 UBF80 ...	168	4·2	62	1·65	—
V3 UCL83 a	100	0·6	—	—	—
V3 UCL83 b	210	27·5	168	4·9	9·5
V4 UY85 ...	204*	—	—	—	220·0

* *A.C. reading.*



Front illustration of the chassis. The tuning, volume and band control spindles are insulated by means of push-on plastics extensions.

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