

"TRADER" SERVICE SHEET
1215

VIDOR CN430

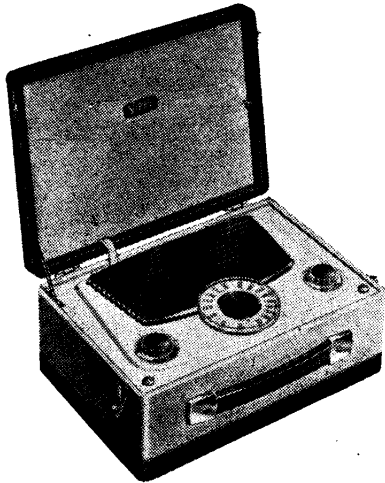
"Lady Anne" A.C./A.D. Portable

(M.W.) and C8, C32, C34 (L.W.). Reaction coupling via L6 (M.W.) and L7 (L.W.).

Second valve (V2, Mullard DF96) is a variable- μ R.F. pentode operating as intermediate frequency amplifier with tuned transformer couplings C4, L3, L9, C5 and C13, L10, L11, C14. Anode to grid inter-electrode capacitance of V2 is neutralized by C12.

Intermediate frequency 470 kc/s. Diode signal detector is part of diode pentode valve (V3, Mullard DAF96). Audio frequency

(Continued col. 1 overleaf)



Appearance of the Vidor CN430.

EMPLYING low consumption 25mA valves, the Vidor "Lady Anne" CN430 is a 2-band attaché case portable designed to operate from an all-dry combined H.T. and L.T. battery, or from A.C. mains of 200-250V, 40-100 c/s. The waveband ranges covered are, 187-550m and 1,052-2,000m.

Release date and original price: January, 1955, £14 14s 2d. Purchase tax and batteries extra.

CIRCUIT DESCRIPTION

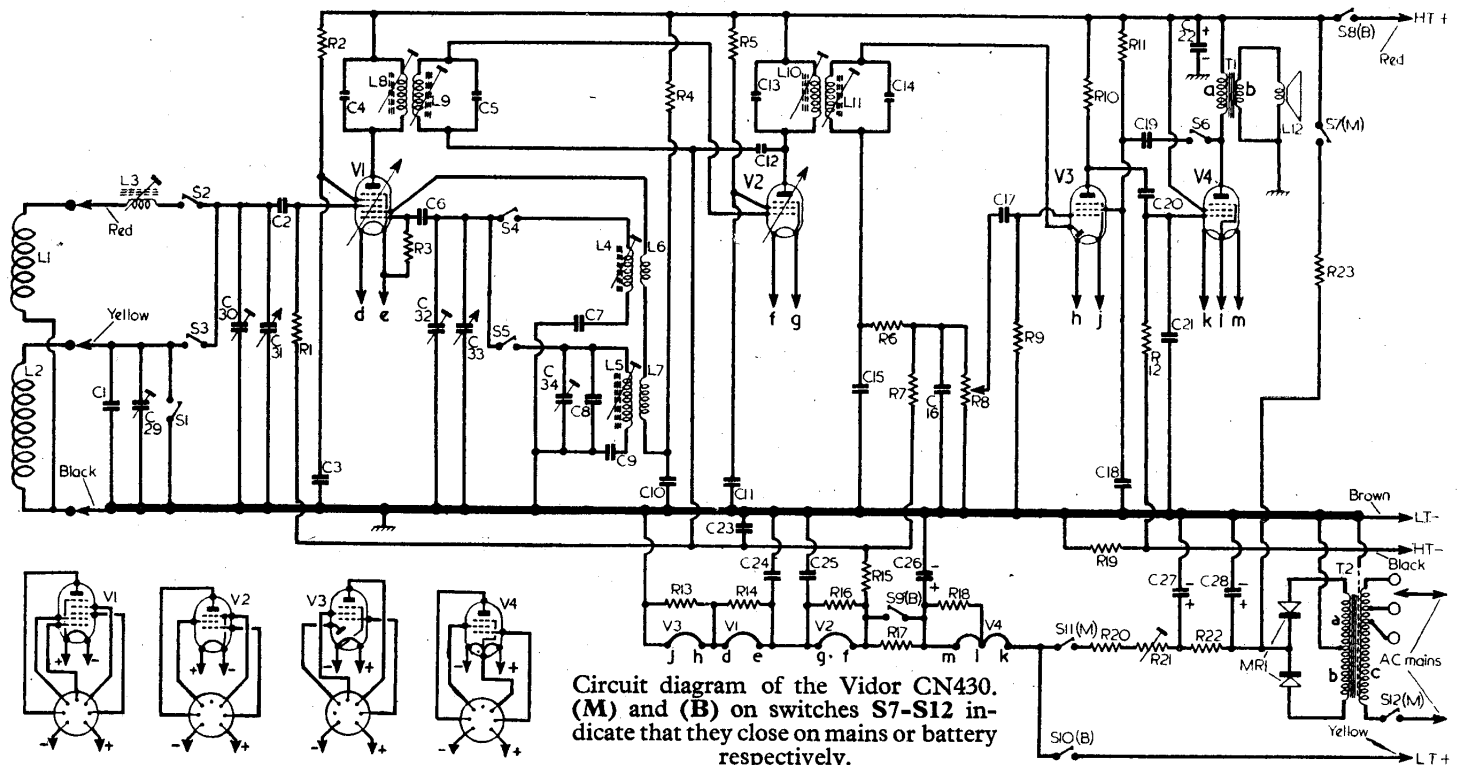
Tuned frame aerial input by L1, loading coil L3, C31 (M.W.) and L2, C31 (L.W.), which precede heptode valve (V1, Mullard DK96) operating as frequency changer with electron coupling. Oscillator grid coils L4 (M.W.) and L5 (L.W.) are tuned by C33. Parallel trimming by C32

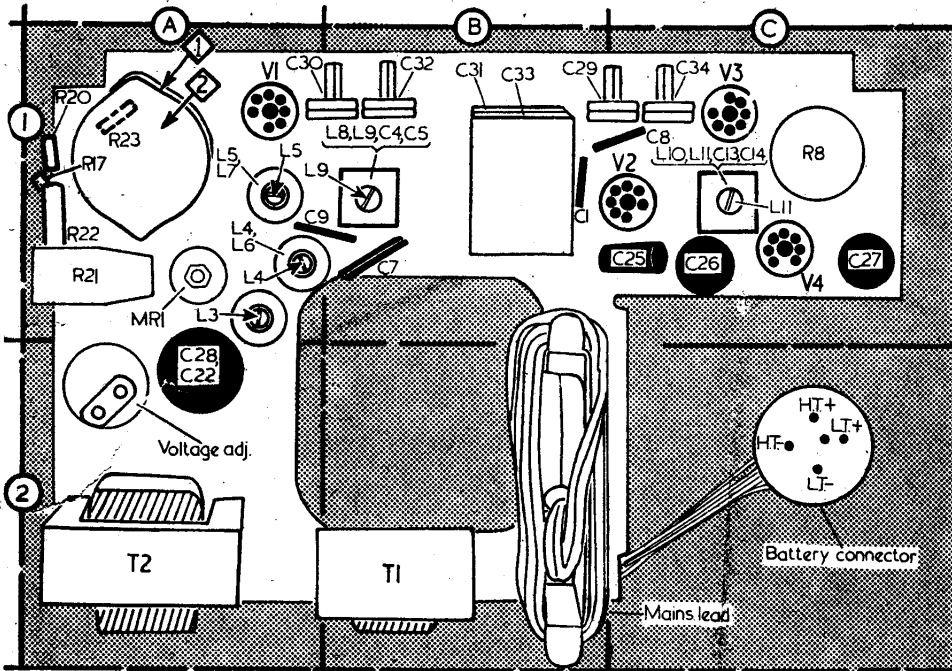
CAPACITORS		Values	Locations
C1	L.W. aerial trim ...	100pF	B1
C2	V1 C.G. ...	100pF	E3
C3	V1 S.G. decoupling	0.01 μ F	F3
C4	1st I.F.T. tuning ...	65pF	B1
C5		65pF	B1
C6	V1 osc. C.G. ...	100pF	E3
C7	M.W. osc. tracker ...	567pF	B1
C8	L.W. osc. trim. ...	160pF	C1
C9	L.W. osc. tracker ...	280pF	B1
C10	Osc. anode decoup.	0.01 μ F	F3
C11	V2 S.G. decoupling	0.01 μ F	E3
C12	V2 neutralizing ...	3.3pF	D3
C13	2nd I.F.T. tuning	65pF	C1
C14		65pF	C1
C15	I.F. by-pass ...	100pF	D3
C16		100pF	D3
C17	A.F. coupling ...	100pF	D3
C18	V3 S.G. decoupling	0.01 μ F	D3
C19	Alarm osc. coupling	0.005 μ F	D3
C20	A.F. coupling ...	470pF	D3
C21	I.F. by-pass ...	100pF	D3
C22*	H.T. reservoir ...	32 μ F	A2
C23	A.G.C. decoupling	0.01 μ F	E3
C24	Filament by-passes	0.1 μ F	F3
C25		0.1 μ F	C1
C26*	Filament smoothing	100 μ F	C1
C27*		50 μ F	C1
C28*	H.T. smoothing ...	32 μ F	A2
C29†	L.W. aerial trim. ...	40pF	B1
C30†	M.W. aerial trim. ...	40pF	B1
C31†	Aerial tuning ...	523pF	B1
C32†	M.W. osc. trim. ...	40pF	B1
C33†	Oscillator tuning ...	523pF	B1
C34†	L.W. osc. trim. ...	40pF	C1

RESISTORS		Values	Locations
R1	V1 C.G. ...	470k Ω	E3
R2	V1 S.G. feed ...	120k Ω	F3
R3	V1 osc. C.G. ...	27k Ω	F3
R4	Osc. anode feed ...	33k Ω	F3
R5	V2 S.G. feed ...	39k Ω	E3
R6	I.F. stopper ...	47k Ω	D3
R7	A.G.C. decoupling	2.2M Ω	D3
R8	Volume control ...	500k Ω	C1
R9	V3 C.G. ...	10M Ω	D3
R10	V3 anode load ...	1M Ω	D3
R11	V3 S.G. feed ...	2.7M Ω	D3
R12	V4 C.G. ...	1.8M Ω	D3
R13	Filament H.T. by-passes	150 Ω	F3
R14		180 Ω	F3
R15	A.G.C. delay ...	1.8M Ω	E3
R16	Filament H.T. by-pass	270 Ω	D3
R17		75 Ω	A1
R18	Filament H.T. by-pass	620 Ω	D3
R19		120 Ω	E3
R20	Filament ballast ...	68 Ω	A1
R21	Filament adj. ...	1k Ω	A1
R22	Filament smoothing	3k Ω	A1
R23		2.2k Ω	A1

OTHER COMPONENTS		Approx. Values (ohms)	Locations	
L1	M.W. frame aerial	1.7	—	
L2	L.W. frame aerial...	14.0	—	
L3	M.W. loading coil	1.8	A1	
L4	Oscillator tuning	2.3	A1	
L5		coils	5.1	A1
L6	Oscillator reaction	1.5	A1	
L7		coils	2.3	A1
L8	1st I.F.T. {	Pri. ...	13.5	B1
L9		Sec. ...	13.5	B1
L10	2nd I.F.T. {	Pri. ...	13.5	C1
L11		Sec. ...	13.5	C1
L12	Speech coil	2.5	—	
T1	O.P. trans. {	570.0*	B2	
		0.3s		
T2	Mains trans. {	a ...	235.0	A2
		b ...	250.0	A2
		c, total	434.0	A2
MR1	Metal rectifier	—	A1	
S1-S5	Waveband switches	—	A1	
S6	Alarm switch	—	—	
S7	Mains/battery sw.	—	A1	
S12		—	A1	

*Electrolytic. †Variable. ‡Pre-set.





Plan view of chassis. When not in use, the mains lead is wound round metal brackets.

Circuit Description—continued

component in its rectified output is developed across volume control R8 and passed via C17 to grid of pentode section R8 which operates as A.F. amplifier. I.F. filtering by C15, R6 and C16. D.C. component developed across R8 is fed back as bias to V1 and V2 giving automatic gain control.

Resistance-capacitance coupling via R10, C20 and R12 between V3 pentode section and output valve (V4, Mullard DL96).

For battery operation, power supplies are carried by switches S8(B), S9(B) and S10(B) which close in the battery positions of the waveband control.

For A.C. mains operation S7(M), S11(M) and S12(M) close instead. H.T. current is then supplied by full-wave rectifier (MR1, Westinghouse 15D39). H.T. smoothing by R23 and electrolytic capacitors C22, C28. Filament current is taken from the H.T. circuit, the filaments being connected in series and fed via ballast resistor R20 and voltage adjustment resistor R21. R13, R14, R16 and R18 are filament shunts to by-pass H.T. current past the heater chain.

When the lid of the carrying case is closed S6 also closes, causing positive feed-back via C19 between V4 anode and V3 screen grid, and producing a warning note in the speaker if the set is still switched on.

CIRCUIT ALIGNMENT

I.F. Stages.—Remove the chassis from its carrying case, then switch receiver to M.W. and turn gang to minimum capacitance. Connect output of signal generator between chassis and the junction of C31, C2. Feed in a 470 kc/s (638.3 m) signal and adjust the cores of L11 (location reference C1), L10 (D3), L9 (B1) and L8 (E3) for maximum output.

R.F. and Oscillator Stages.—Replace the chassis in its carrying case and raise the front panel just sufficiently to make the adjustments accessible. Check that with the gang at maximum capacitance, the cursor line on the panel coincides with the calibration mark at the 540 m end of the M.W. tuning scale. If adjustment is necessary, slacken the tuning control knob fixing screw and rotate the knob on the spindle until the cursor line and the calibration mark coincide. Disconnect "earthy" signal generator lead and inject a signal into the receiver by connecting the "live" generator lead to chassis.

M.W.—Switch receiver to M.W. and tune to 500 m. Feed in a 500 m (600 kc/s) signal and adjust the cores of L4 (A1) and L3 (A1) for maximum output. Tune receiver to 200 m, feed in a 200 m (1,500 kc/s) signal and adjust C32 (B1) and C30 (B1) for maximum output.

L.W.—Switch receiver to L.W., and tune to 1,900 m. Feed in a 1,900 m (158 kc/s) signal and adjust the core of L5 (A1) for maximum out-

put. Tune receiver to 1,100 m, feed in a 1,100 m (273 kc/s) signal and adjust C34 (C1) and C29 (B1) for maximum output.

VALVE ANALYSIS

Valve voltages and currents given in the table below are those derived from the manufacturers' information. They were measured on a receiver when it was operating from A.C. mains of 225 V and tuned to a point on the M.W. band where there was no signal pick-up. Readings taken when the receiver was operating from a new set of batteries were slightly lower.

Voltages were measured on the 100 V range of a 500 ohms-per-volt meter, chassis being the negative connection in every case. The voltage measured across C28 was 110 V, and the A.C. voltage measured on the anodes of MR1 was 100 V. The total H.T. current was 9.4mA, and the total L.T. current was 23.7mA.

Valve	Anode		Screen	
	V	mA	V	mA
V1 DK96	90	0.7	71	0.2
	Oscillator			
	35	1.6		
V2 DF96	90	1.7	68	0.6
V3 DAF96	*	0.06	*	0.02
V4 DL96	88.5	4.0	90	0.8

*Very low reading.

GENERAL NOTES

Switches.—S1-S5 are the waveband switches, and S7(M), S8(B), S9(B), S10(B), S11(M), S12(M) are the mains/battery/off switches, all ganged together in two 5-position rotary units. These units are indicated by arrows in the plan illustration, and shown in detail in the diagrams in column 1, where they are viewed in the direction indicated by the arrows. S1, S2, S4 close on M.W. and S3, S5 close on L.W. Of the Switches S7-S12, those with the suffix (M) close for mains operation, and those with (B) close for battery operation. In the "off" position of the control, all the switches open.

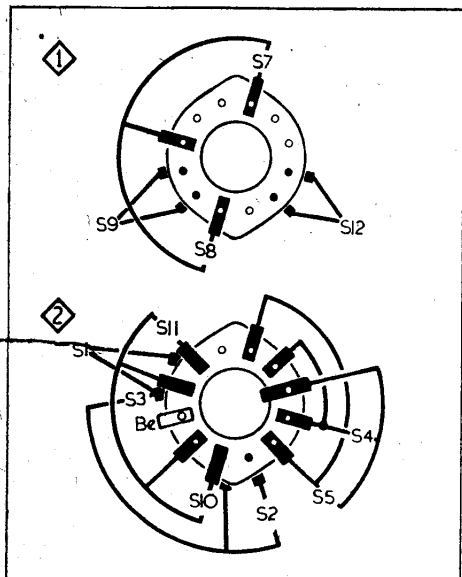
Battery.—The receiver employs a combined H.T. and L.T. Vidor battery type L3546, rated at 90V H.T. and 7.5V L.T.

R21.—When changing any component that will affect the filament current, it is important that control R21 should be adjusted as follows:

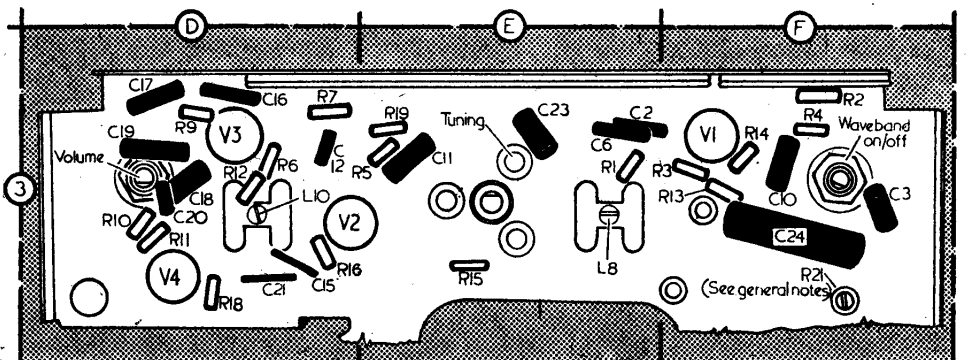
Connect a milliammeter in series between R20 and S11(M), with its positive lead to R20. With the voltage adjustment plug set to its correct tapping, carefully adjust R21 to give a filament current reading of 23.7mA. The filament current must be accurately set within ±2% of this figure. Valve replacements will not necessitate re-adjustment of R21.

DISMANTLING

Removing Chassis.—Remove waveband and volume control knob (pull-off), and tuning control knob (grub screw); remove wood screws from inside edges of carrying case lid and prise out the frame aerial cover; unsolder frame aerial connecting leads from tag strip in lid; unscrew two knurled-head captive fixing screws on receiver panel and hinge open panel; unsolder leads from speech coil tags; remove four self-tapping screws securing chassis to panel and withdraw chassis.



Diagrams of waveband and mains/battery switches.



Underside illustration of chassis showing filament current adjustment R21 in location F3.