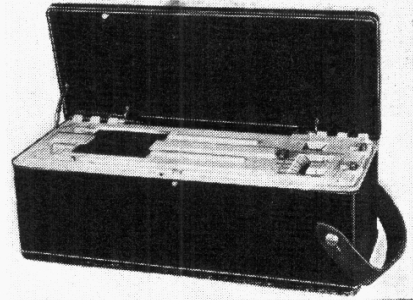


"TRADER" SERVICE SHEET
856

VIDOR 353

MINIATURE PORTABLE



THE Vidor 353 receiver is an all-dry battery powered 4-valve two-band "Personal" superhet equipped with two concealed frame aerials. The set is switched "on" automatically when the lid is opened, and the wavelength ranges are 200-550 m and 1,150-1,900 m.

Release date and original price: March, 1947; £17, plus purchase tax. (Price includes one set of batteries, spare L.T. cell, and adaptor to utilize a T2 cell for L.T. supply purposes.)

CIRCUIT DESCRIPTION

Tuned frame aerial input by **L1, C22** (M.W.) and **L1, L2, C22** (L.W.) precedes a heptode valve (**V1, Mullard DK91**) operating as frequency changer with electron coupling.

Triode oscillator grid coil **L3** is tuned by **C23**, with parallel trimming by **C24** (M.W.), and series tracking by **C7** on both bands. On L.W. only, a fixed trimmer **C8** is shunted across **L3** by **S3**. Inductive reaction coupling from anode is provided by **L4**.

Second valve (**V2, Mullard DF91**) is a variable- μ R.F. pentode operating as intermediate frequency amplifier with tuned transformer couplings.

Intermediate frequency 456 kc/s.

Diode second detector is part of single diode pentode valve (**V3, Mullard DAF91**). Audio frequency component in rectified output is developed across manual volume control **R6**, which is also the diode load resistor, and passed via A.F. coupling

capacitor **C15** and C.G. resistor **R7** to control grid of pentode section, which operates as A.F. amplifier. I.F. filtering by **C13, R5, C14** in diode circuit and **C17** in pentode anode circuit.

The D.C. potential developed across **R5, R6** in series is tapped off and fed back, via a decoupling circuit **R4, C3**, as G.B. to F.C. and I.F. valves, giving A.V.C.

Resistance-capacitance coupling by **R9, C18** and **R10** between **V3** pentode and pentode output valve (**V4, Mullard DL92**), the filament sections of which are wired in parallel. Fixed tone correction by **C19** in anode circuit.

G.B. potential for **V4** is obtained from the drop across **R11** in the H.T. negative lead to chassis. H.T. R.F. filtering by **C9**.

VALVE ANALYSIS

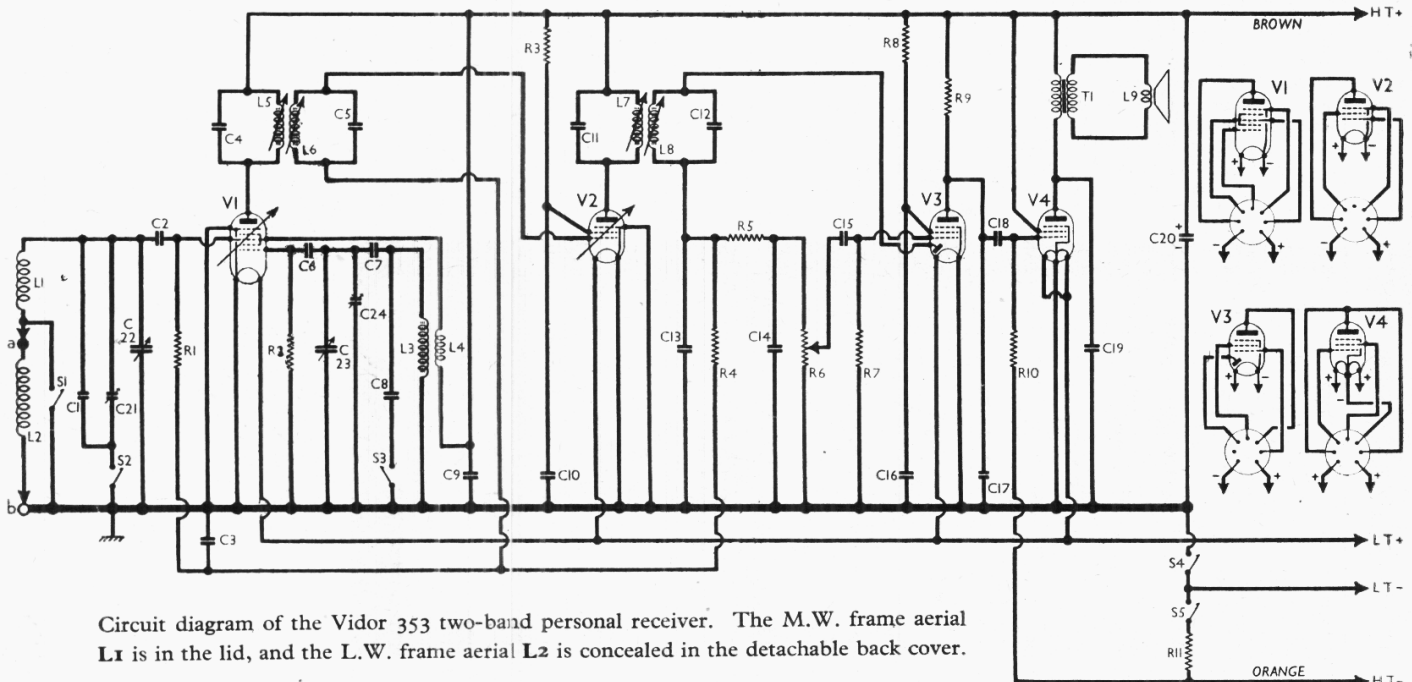
Valve voltages given in the table below are those measured in our receiver on the 400 V scale of a model 7 Avometer, but no individual electrode currents have been quoted, since it is inadvisable to disturb the wiring in such a compact assembly.

Valve	Anode Voltage (V)	Screen Voltage (V)
V1 DK91	59	59
V2 DF91	59	43
V3 DAF91	6	2
V4 DL92	57	59

COMPONENTS AND VALUES

CAPACITORS		Values (μ F)	Locations
C1	L.W. fixed trim. ...	0-00009	D2
C2	V1 pent. C.G. ...	0-0001	E3
C3	A.V.C. decoupling ...	0-1	F4
C4	1st I.F. transformer {	0-0001	C1
C5		tuning ...	0-0001
C6	V1 osc. C.G. ...	0-0001	E4
C7	Osc. tracker ...	0-00036	E4
C8	Osc. L.W. trim. ...	0-000315	E4
C9	H.T. R.F. by-pass ...	0-1	F4
C10	V2 S.G. decoup. ...	0-1	F4
C11	2nd I.F. transformer {	0-0001	B1
C12		tuning ...	0-0001
C13	I.F. by-pass capa- {	0-0001	G3
C14		itors ...	0-0001
C15	A.F. coupling ...	0-01	E3
C16	V3 S.G. decoup. ...	0-1	G4
C17	I.F. by-pass ...	0-00005	H4
C18	A.F. coupling ...	0-01	H4
C19	Tone corrector ...	0-005	A2
C20*	H.T. reservoir ...	2-0	A1
C21†	Aerial L.W. trim. ...	0-00003	E4
C22†	Aerial tuning ...	0-000305	D1
C23†	Oscillator tuning ...	0-000305	D2
C24‡	Osc. M.W. trim. ...	0-00003	E4

* Electrolytic. † Variable. ‡ Pre-set.



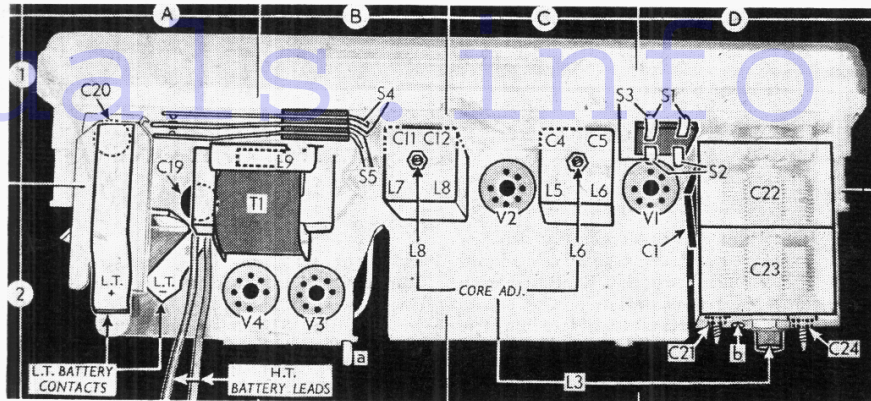
Circuit diagram of the Vidor 353 two-band personal receiver. The M.W. frame aerial **L1** is in the lid, and the L.W. frame aerial **L2** is concealed in the detachable back cover.

RESISTORS		Values (ohms)	Location
R1	V1 pent. C.G.	470,000	F3
R2	V1 osc. C.G.	100,000	E4
R3	V2 S.G. H.T. feed	47,000	F4
R4	A.V.C. decoupling	2,200,000	G4
R5	I.F. stopper	47,000	G4
R6	Volume control	1,000,000	E4
R7	V3 pent. C.G.	4,700,000	G4
R8	V3 S.G. H.T. feed	4,700,000	H4
R9	V3 pent. load	1,000,000	H4
R10	V4 C.G. resistor	4,700,000	H4
R11	V4 G.B. resistor	820	H3

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	M.W. frame aerial...	7.5	F3
L2	L.W. frame aerial...	18.0	—
L3	Osc. tuning coil...	1.8	E4
L4	Osc. reaction coil...	1.5	E4
L5	1st I.F. trans. {	Pri. 13.0	C1
L6		Sec. 13.0	C1
L7	2nd I.F. trans. {	Pri. 13.0	B1
L8		Sec. 13.0	B1
L9	Speech coil	3.0	B1
T1	Speaker trans. {	350.0	B2
	Sec.	0.5	B2
S1-S3	Waveband switches	—	D1
S4	L.T. circuit switch	—	B1
S5	H.T. circuit switch	—	B1

DISMANTLING THE SET

Removing Chassis.—Lay receiver lid downward on the bench and remove back cover (one captive screw), batteries, sponge rubber packing pieces above all valves, and fibre cover over trimmers and gang capacitor (one short 4 B.A. countersunk-head screw); remove the long 6 B.A. cheese-head screws located in plastic projections at the four corners of the case; remove the two 6 B.A. countersunk-head screws in similar projections to the right of the speaker chassis and directly beneath the left-hand I.F. transformer (accessible through a notch in the chassis flange); clasp the sides of the lid with one hand and ease off the side moulding in an upward direction, taking care not to lose the stud which operates the lid clasp release. *When replacing,* do not omit to fit the clasp release stud before pressing the side moulding into position. It will be found advantageous to fix the screws to the screwdriver blade with a touch of Plasticine or wax before inserting them.



Plan view of the chassis deck. The sliding-action waveband switch unit S1-S3 is shown in detail, and the letters a and b indicate points of connection of the L.W. frame aerial L2.

GENERAL NOTES

Switches.—S1-S3 are the waveband switches, ganged in a small sliding-action unit behind the front control panel, as indicated in our plan view of the chassis. In the M.W. position, S1 is closed and S2, S3 are open, while on L.W. S1 opens and S2, S3 close.

S4, S5 are the battery circuit switches, ganged in a leaf-type assembly which is plunger operated.

Coils.—The M.W. frame aerial winding L1 is concealed in the lid and connected to the chassis via the lid springs. The L.W. frame aerial winding L2 is contained in the detachable back cover. Connection to it is made by means of a spring contact on the chassis which presses against a metal plate on the back cover, and via the captive back cover retaining screw. The points of contact are shown in the circuit diagram and plan view of the chassis, where they are lettered a and b, respectively.

Batteries.—The miniature H.T. battery is a Vidor L5500 67.5 V unit with "snap-faster" type connectors. The dome-shaped connector on the receiver H.T. lead strip is the negative connection.

The L.T. cell is a Vidor V0007 high capacity unit. It should be fitted so that the brass carbon-pole cap is beneath the springy contact strip.

Capacitor C20.—This is a T.C.C. "Micropack" electrolytic of small dimensions, rated at 200 V D.C. peak working.

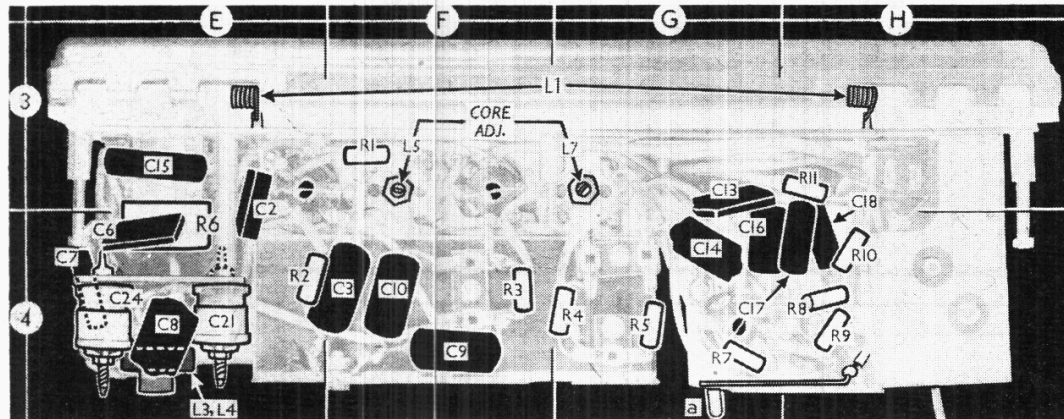
CIRCUIT ALIGNMENT

I.F. Stages.—Connect signal generator leads to control grid (pin 6) of V1, via an 0.1 μF capacitor, and chassis. Turn gang to minimum capacitance and short-circuit oscillator (rear) section, turn volume control to maximum, and feed in a 456 kc/s (657.8 m) signal. Using a non-metallic trimming tool, adjust the cores of L5, L6, L7 and L8 (location references F3, C1, G3, B1) for maximum output.

R.F. and Oscillator Stages.—With the gang at maximum capacitance the white indicator line should coincide with the 560 m calibration line. It will usually be found that sufficient signal is obtained by laying the signal generator leads close to the M.W. frame aerial in the lid.

M.W.—Switch set to M.W., tune to 250 m on scale, feed in a 250 m (1,200 kc/s) signal, and adjust C24 (D2) for maximum output. Tune to 500 m on scale, feed in a 500 m (600 kc/s) signal, and adjust the core of L3 (D2) for maximum output.

L.W.—For this operation the receiver must be reassembled in its carrying case and the batteries and back cover fitted. Switch set to L.W., tune to 1,500 m on scale, feed in a 1,500 m (200 kc/s) signal, and check sensitivity aurally by rocking the gang either side of the 1,500 m calibration line. If the sensitivity appears to be low, remove the back cover and give C21 (D2) one or two turns. Replace back cover and check sensitivity.



Under-chassis view, in which all the resistors are seen; together with the M.W. oscillator (C24) and L.W. aerial (C21) trimmers and the primary core adjustments (L5, L7) of the I.F. transformers.