Radio Manuals Info

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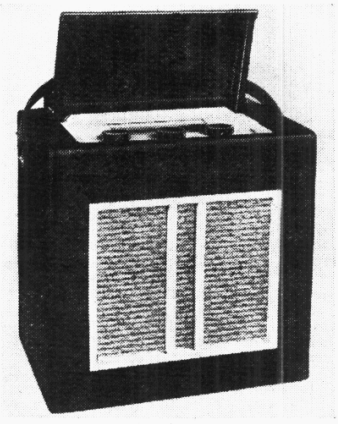
"TRADER" SERVICE SHEET

781

VIDOR 351

"RIVIERA" PORTABLE SUPERHET



SEPARATE dry battery units are used for H.T. and L.T. supplies in the Vidor CN351 "Riviera" portable, a 4-valve, 2-band superhet in an attractive case fitted with a detachable carrying strap.

Release date and original price: 1945; £13 7s 9d, plus purchase tax £2 17s 7d, complete with batteries.

CIRCUIT DESCRIPTION

Tuned frame aerial input by **L1** (L.W.), **L2** (M.W.) and **C20,** which precede heptode valve **(V1, Mullard metallized DK32)** operating as frequency changer with electron coupling. The L.W. winding **L1** is permanently connected in **V1** pentode C.G. circuit, and **L2** is connected in parallel with it, via **S2,** for M.W. operation.

V1 oscillator grid coils **L3** (M.W.) and **L4** (L.W.) are tuned by **C21**; parallel trimming by **C22** (M.W.) and **C23** (L.W.); series tracking by fixed capacitors **C6** (M.W.) and **C7** (L.W.). Reaction by **L5** (M.W.) and **L6** (L.W.).

Second valve **(V2, Mullard metallized DF33)** operates as I.F. amplifier with tuned-primary, tuned-secondary transformer couplings **C2, L7, L8, C3** and **C9, L9, L10, C10.**

Intermediate frequency 456 kc/s.

Diode second detector is part of single diode triode valve **(V3, Mullard metallized DAC32).** Audio-frequency component in rectified output is developed across load resistor **R4** and passed via I.F. filter **C11, R6, C12,** A.F. coupling capacitor **C13** and manual volume control **R7** to C.G. of triode section.

D.C. potential developed across **R4** is tapped off and fed back via decoupling circuits as G.B. to F.C. and I.F. valves, giving automatic volume control.

Resistance-capacitance coupling by **R8, C14** and **R9** between **V3** triode and pentode output valve **(V4, Mullard DL35).** Fixed tone correction by **C15.** G.B. potential for **V4** is obtained from the drop across **R10.**

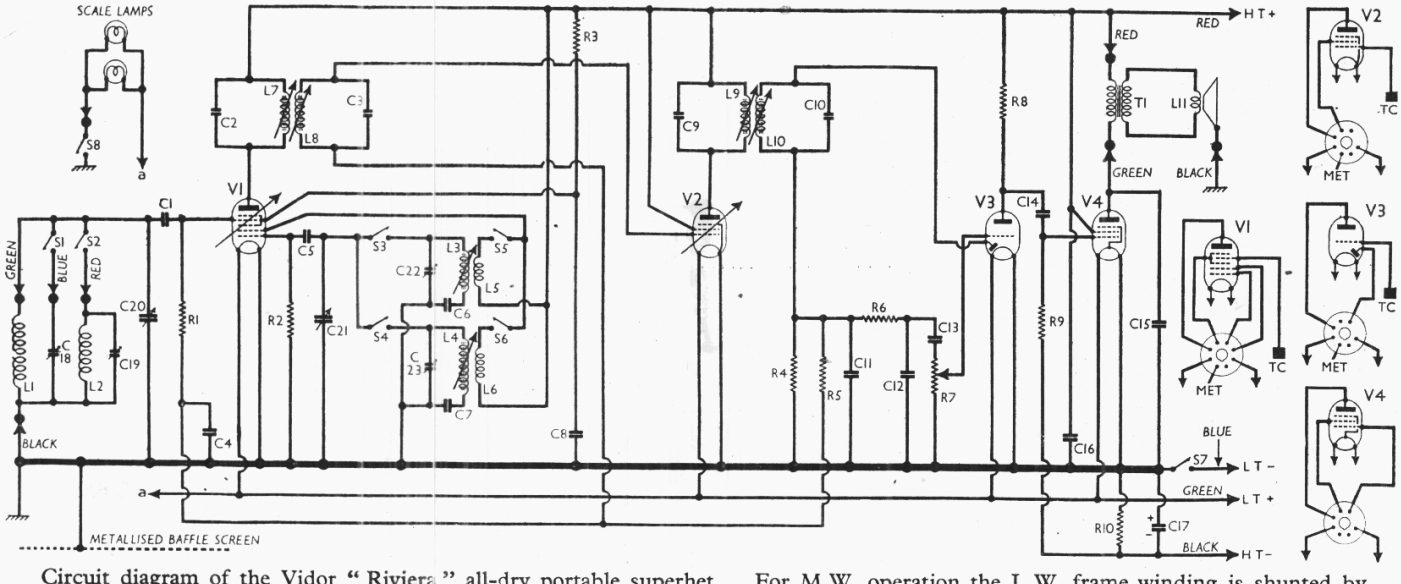
COMPONENTS AND VALUES

	RESISTORS	Values (ohms)
R1	V1 pent. C.G. resistor ...	1,000,000
R2	V1 osc. C.G. resistor ...	220,000
R3	V1 S.G. H.T. feed ...	68,000
R4	V3 diode load	470,000
R5	A.V.C. line decoupling ...	1,000,000
R6	I.F. stopper	47,000
R7	Manual volume control ...	2,000,000
R8	V3 triode anode load ...	470,000
R9	V4 C.G. resistor ...	2,200,000
R10	V4 G.B. resistor ...	820

	CAPACITORS	Values (μF)
C1	V1 pent. C.G. capacitor ...	0·00033
C2	1st I.F. transformer tuning capacitors ...	0·000065
C3		0·000065
C4	A.V.C. line decoupling ...	0·1
C5	V1 osc. C.G. capacitor ...	0·0001
C6	Osc. circuit M.W. tracker	0·000635
C7	Osc. circuit L.W. tracker	0·00023
C8	V1 S.G. decoupling ...	0·1
C9	2nd I.F. transformer tuning capacitors ...	0·000065
C10		0·000075
C11	I.F. by pass capacitors ...	0·0001
C12		0·0001
C13	A.F. coupling to V3 ...	0·01
C14	A.F. coupling to V4 ...	0·01
C15	Fixed tone corrector ...	0·005
C16	H.T. reservoir capacitor	1·0
C17*	V4 G.B. by-pass ...	50·0
C18‡	Aerial L.W. trimmer ...	0·00009
C19‡	Aerial M.W. trimmer ...	0·000015
C20†	Frame aerial tuning ...	0·000532
C21†	Oscillator circuit tuning	0·000532
C22‡	Osc. circuit M.W. trimmer	0·00008
C23‡	Osc. circuit L.W. trimmer	0·00024

* Electrolytic. † Variable. ‡ Pre-set.

	OTHER COMPONENTS	Approx. Values (ohms)
L1	Frame aerial windings ...	22·0
L2		2·0
L3	Osc. M.W. tuning coil ...	1·3
L4	Osc. L.W. tuning coil ...	3·25
L5	Osc. M.W. reaction coil	0·9
L6	Osc. L.W. reaction coil ...	1·9
L7	1st I.F. trans Pri. ...	11·5
L8	1st I.F. trans Sec. ...	11·5
L9	2nd I.F. trans. Pri. ...	11·5
L10	2nd I.F. trans. Sec. ...	11·5
L11	Speaker speech coil ...	2·5
T1	Speaker input trans' Pri.	575·0
	Sec.	0·3
S1-S6	Waveband switches ...	—
S7	L.T. circuit switch, ganged R7	—
S8	Scale lamp switch ...	—



Circuit diagram of the Vidor "Riviera" all-dry portable superhet. For M.W. operation the L.W. frame winding is shunted by the M.W. winding **L2.**

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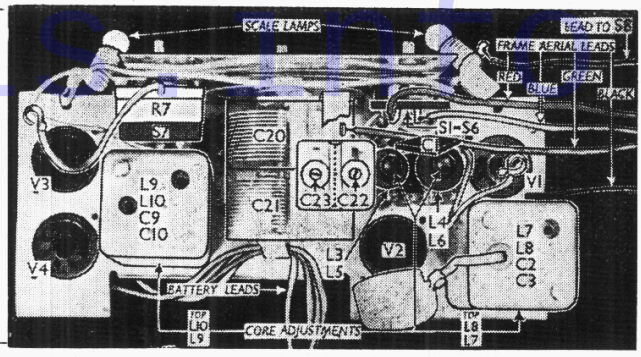
VALVE ANALYSIS

Valve voltages and currents given in the table below are those quoted by the makers. The receiver was tuned to 2,000 metres, the volume control was at maximum, and the readings were taken with a Model 7 Avometer.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 DK32	82	0·4	30	0·75
	Oscillator			
	82	1·45		
V2 DF33	82	1·1	82	0·25
V3 DAC32	40	0·05	—	—
V4 DL35	80	5·3	82	1·35

Plan view of the chassis. The frame aerial leads are identified by colour and their terminating points are clearly shown. **C22, C23** are mounted on the gang.



GENERAL NOTES

Switches.—S1-S6 are the waveband switches, ganged in a single rotary unit on the chassis deck. The unit is indicated in our plan view of the chassis, and shown in detail in the diagram in col. 2, where it is drawn as seen from the rear of the chassis. **S2, S3** and **S5** close on M.W. and open on L.W.; **S1, S4** and **S6** close on L.W. and open on M.W.

S7 is the Q.M.B. L.T. circuit switch, ganged with the volume control **R7**. **S8** is the scale lamp switch, incorporated in the waveband switch control knob. Its connecting lead is indicated in our plan view, attached to one of the lamps.

Coils.—L1 is the L.W. frame aerial winding, permanently connected in circuit. **L2** is the M.W. winding, which is connected in parallel with **L1** via **S2** on M.W. The oscillator coils **L3-L6** are in two unscreened tubular units on the chassis deck beside the gang. Their core adjustments, which are semi-fixed and waxed over, are indicated in our plan view, together with those of the I.F. transformers, which are in two screened units on the chassis deck.

Scale Lamps.—These in our sample were two Osram M.E.S. types, rated at 2.5 V, 0.2 A. Those specified by the makers are 1.5 V, 0.25 A. They are mounted on push-on brackets beneath the scale escutcheon, and controlled by the press-switch **S8** in the waveband switch control knob. If signals cease when the plunger is pressed, it is time to renew the L.T. battery.

Batteries and Leads.—The H.T. battery is a Vidor type L5039 90 V unit with two sockets only for the positive and negative wander plugs. The L.T. unit is a large-capacity 1.5 V dry battery, type L5049, with a two-pin socket outlet. The larger pin is positive. The lead colours are indicated in the circuit diagram.

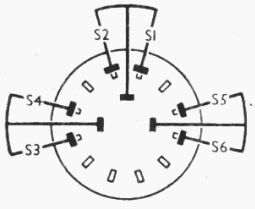


Diagram of the waveband switch unit as seen when viewed from the rear.

Baffle Screen.—The upper half of a compressed fibre sheet sandwiched between the frame aerial assembly and the front of the case is metallized to form a hand-capacity screen, a short flexible lead (indicated in our under-chassis view) connecting it to chassis.

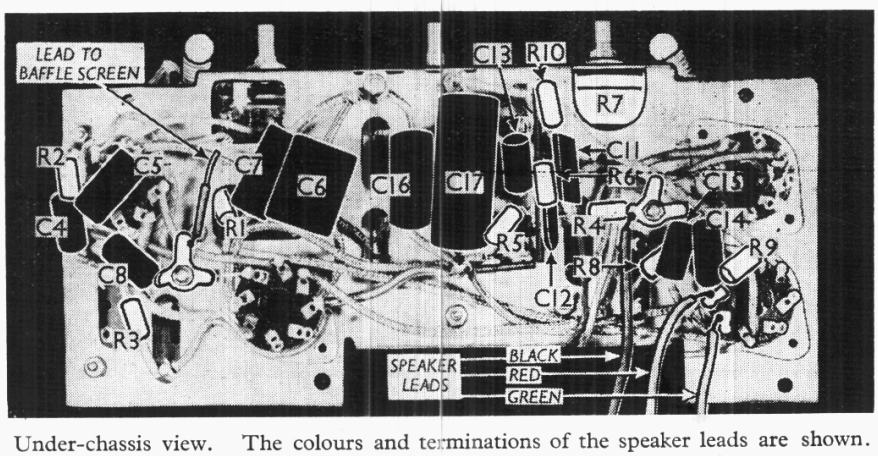
CIRCUIT ALIGNMENT

I.F. Stages.—Connect signal generator leads to control grid (top cap) of **V1** and chassis, leaving the normal top cap connector disconnected. Short-circuit **C21** (rear section of gang) and turn the volume control to maximum. Feed in a 456kc/s (657.8 m) signal, and adjust the cores of **L7, L8, L9** and **L10** for maximum output. Remove short-circuit from **C21** and replace top cap connector.

R.F. and Oscillator Stages.—For these operations the chassis and batteries must be in their normal positions in the cabinet. The signal generator leads should be secured firmly on the bench, close to the receiver.

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 **C22** (right) on gang, then **C19** (lower) on frame, for maximum output. Check calibration at 500 m on scale and, if necessary, feed in a 500 m (600 kc/s) signal and adjust the core of **L3** for maximum output while rocking the gang for optimum results.

L.W.—Switch set to L.W., tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal, and adjust **C23** (left) then **C18** (upper) for maximum output. Check calibration at 2,000 m on scale and, if necessary, feed in a 2,000 m (150 kc/s) signal and adjust the core of **L4** for maximum output while rocking the gang for optimum results. Finally, seal off all the core adjustments with soft wax.



Under-chassis view. The colours and terminations of the speaker leads are shown. The short flexible lead to the baffle screen is also indicated.

DISMANTLING THE SET

The chassis, speaker, and frame aerial can be removed from the cabinet as a complete assembly and this should be done before attempting to remove the chassis or speaker from the frame aerial housing.

Removing Assembly.—Remove the batteries and valves, and remove the three control knobs (recessed grub screws);
unsolder from the waveband switch control knob the flexible lead to **S8**, and withdraw the scale lamp holders from their brackets beneath the scale;
after laying the receiver on a felt pad, front downward, remove the two nuts (with washers) securing the escutcheon, and withdraw it;
remove the countersunk-head wood screw holding the assembly to the bottom of the cabinet.
If the two carrying-handle studs (with one nut and two washers each) are now removed, the complete assembly may be withdrawn from the cabinet, care being taken not to damage the frame aerial windings.

Removing Chassis.—First remove the assembly as previously described, then unsolder the lead from the metallized baffle screen;
unsolder the four coloured leads from the frame aerial trimmer assembly, the black earthing lead from the speaker chassis, and the two leads from the speaker input transformer.
Removal of the four nuts (with lock-washers) securing the chassis to the front of the assembly now permits the chassis to be withdrawn. It should be tilted to avoid fouling the frame aerial trimmers.
When replacing, connect the frame aerial leads to the aerial trimmer assembly as follows:—black to the common connection between **C18** and **C19**; blue to **C18** (upper); red to **C19** (lower); green to the single soldering tag above **C18**.
Do not omit to connect the earthing lead to the metallized baffle screen.

Removing Speaker.—First remove the chassis, as described previously, and then remove the four nuts (with washers) holding the speaker to the sub-baffle.
When replacing, see that the input transformer is on the left. The black earthing lead goes to a tag under the lower left-hand fixing nut.

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