

NUMBER 125

'TRADER' SERVICE SHEETS

VIDOR 212

3-VALVE BATTERY RECEIVER

FOR battery operation, the Vidor 212 receiver incorporates a 3-valve chassis using a pentode H.F. amplifier, a tetrode detector and a pentode output valve, provision being made for an extension speaker. Volume-selectivity control is by means of an aerial series condenser.

CIRCUIT DESCRIPTION

Aerial input via variable series condenser **C1** (selectivity-volume control) and coupling coils **L1, L2** to single tuned circuit **L3, L4, C2**, which precedes pentode H.F. amplifier (**V1, Mullard metallised SP2**).

Tuned-anode coupling by **L6, L7, C6** to tetrode detector (**V2, Mullard metallised PM12A**) operating on grid leak system with **C8** and **R1**. Reaction is applied from anode by coil **L5** and controlled by variable condenser **C5**. No provision for connection of gramophone pick-up.

Resistance-capacity coupling by **R2, C9** and **R3** to pentode output valve (**V3, Mullard PM22A**). Tone correction in anode circuit by fixed condenser **C10**. There is provision for the connection of a high-impedance external speaker.

COMPONENTS AND VALUES

Resistances		Values (ohms)
R1	V2 grid leak	1,000,000
R2	V2 anode load	100,000
R3	V3 grid resistance	1,000,000

Condensers		Values (μF)
C1†	Selectivity—volume control ..	0.0003
C2†	Aerial circuit tuning	0.0005
C3‡	Aerial circuit trimmer	—
C4	H.T. supply reservoir	1.0
C5†	Reaction control	0.0005
C6†	V1 anode circuit tuning	0.0005
C7†	V1 anode circuit trimmer	—
C8	V2 grid condenser	0.0001
C9	V2 to V3 L.F. coupling	0.01
C10	Tone corrector	0.005

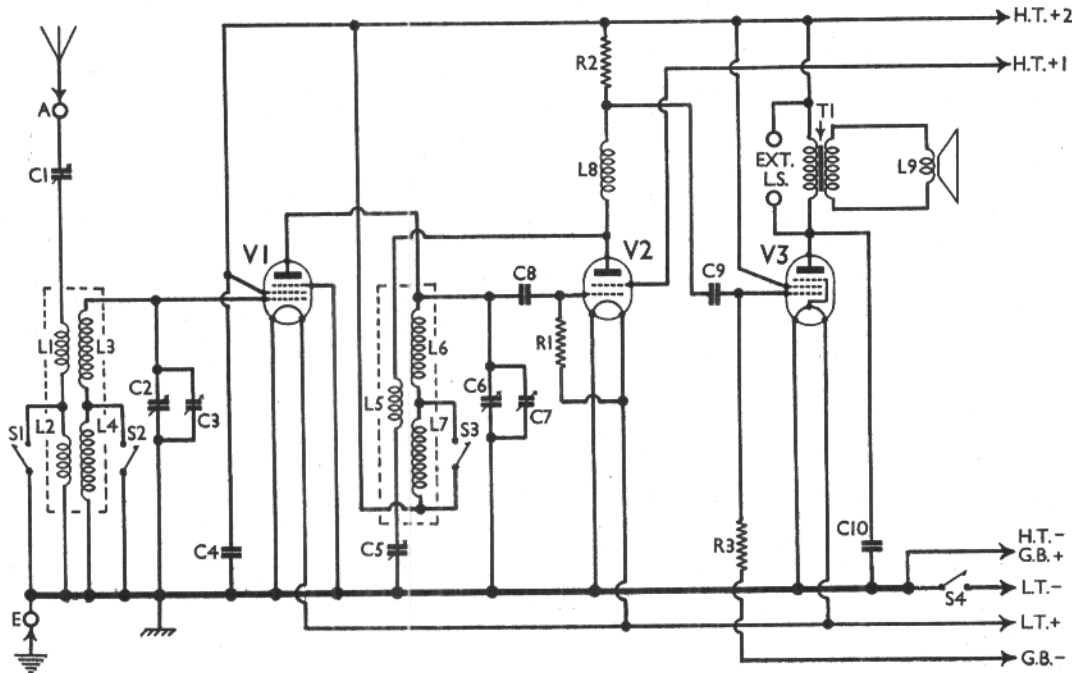
† Variable. ‡ Pre-set.

Other Components		Approx. Values (ohms)
L1	Aerial coupling coils ..	1.75
L2		3.2
L3	Aerial tuning coils ..	6.5
L4		10.0
L5	Reaction coil	5.25
L6	V1 anode tuning coils ..	6.5
L7		10.0
L8	V2 anode H.F. choke	175.0
L9	Speaker speech coil	2.75
T1	Speaker input trans. { Pri. 950.0 Sec. 0.35	
S1-S3	Waveband switches	—
S4	L.T. switch	—

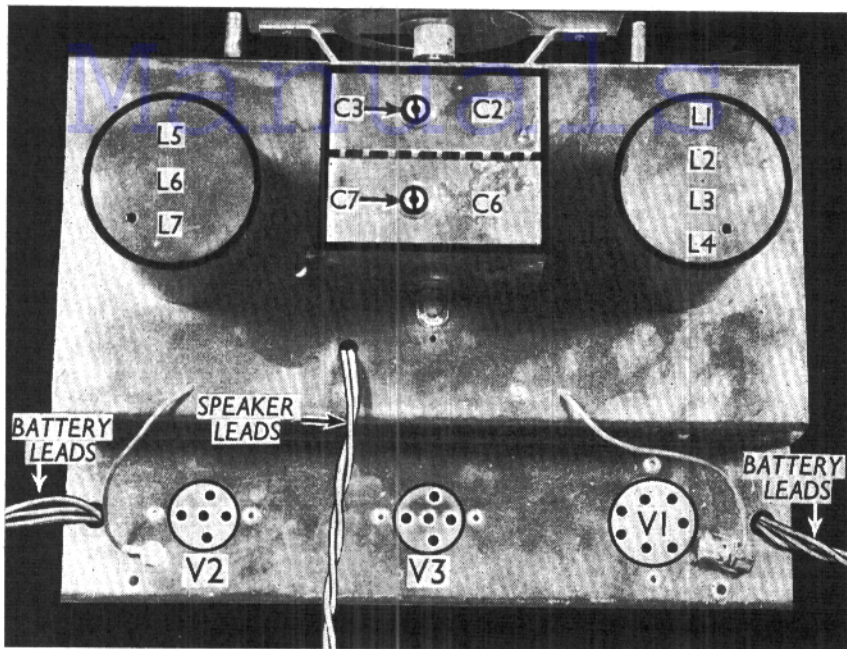
DISMANTLING THE SET

Removing Chassis.—If it is desired to remove the chassis from the cabinet, first remove the batteries and the four control knobs (recessed grub screws). Now remove the two cleats holding the battery leads to the sides of the cabinet and remove the bolt (with washer), holding the front of the chassis to the bottom of the cabinet. Now remove the two wood screws holding the back of the chassis to the cabinet bottom, when the chassis can be withdrawn to the extent of the speaker leads, which is just sufficient to allow of normal repairs being carried out.

When replacing, note that all the knobs except that for the tuning dial are marked with a white dot and see that the dot on the wave-change switch knob is uppermost



Circuit diagram of the Vidor 212 3-valve battery receiver. C1 is a variable condenser acting as a volume-selectivity control. C5 is the reaction control. Early models had transformer coupling between V2 and V3, and one or two other minor modifications, mentioned under "General Notes."



Plan view of the chassis. The layout is quite conventional and simple. Note that the output valve is the middle one of the three.

when the receiver is switched to the long waves.

To free the chassis entirely, unsolder the leads to the speaker terminal panel.

Removing Speaker.—To remove the speaker from the cabinet, remove the nuts and lock washers from the four bolts with ornamental heads, which hold it to the front of the cabinet. When replacing, see that the transformer is on the left.

Switch	Off	M.W.	L.W.
S ₁	C	C	O
S ₂	O	C	O
S ₃	C	C	O
S ₄	O	C	C

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating with a new H.T. battery reading 128 V, with the H.T.—plug in the 6 V tapping, as recommended in the instruction book, and the H.T. +2 plug in the 60 V tapping. The volume control was at maximum but the reaction control was at minimum, and there was no signal input.

Voltages were measured on the 1,200 V scale of an Avometer, with chassis as negative.

Valve	Anode Volts	Anode Current (mA)	Screen Volts	Screen Current (mA)
V ₁ SP2	120	1.9	120	0.7
V ₂ PM12A	60	0.5	58	0.3
V ₃ PM22A	115	2.0	120	0.6

GENERAL NOTES

Switches.—S₁-S₃ are the waveband switches, and S₄ the L.T. switch. These are all ganged in a single unit beneath the chassis, and are marked in our under-chassis view. The table (col. 2) gives the switch positions for the various control settings, O indicating open, and C closed.

Coils.—L₁-L₄ and L₅-L₇ are in two screened units on the chassis deck, the screens of which are easily removable. The choke L₈, of the flat type, is beneath the chassis.

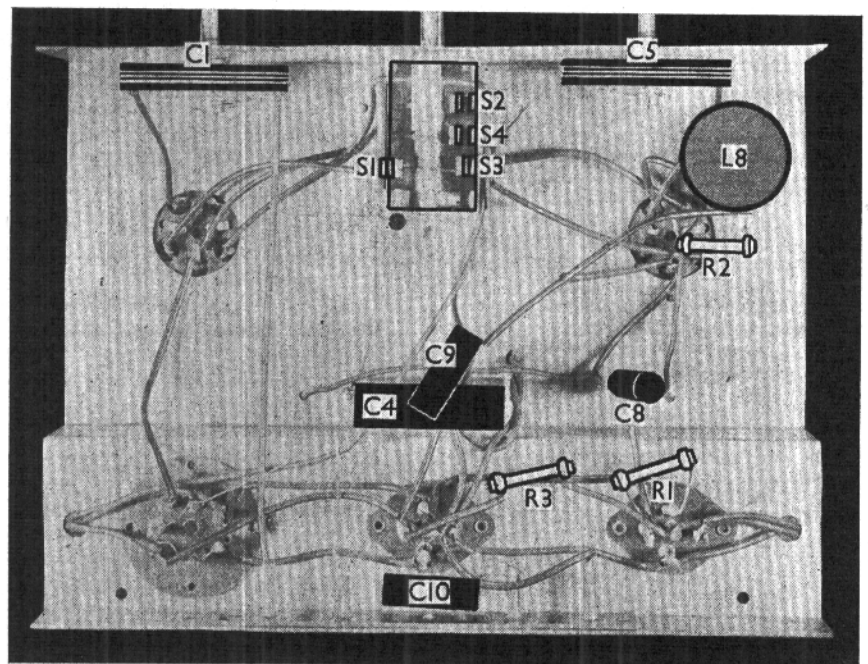
External Speaker.—Two sockets are provided at the rear of the chassis for the connection of an external high resistance speaker, the sockets being across the primary of T₁.

Batteries.—L.T., Dagenite Type LA 2 V 20 AH glass cased mass type cell. H.T. and G.B., Vidor Supercharged heavy duty 120 V battery, tapped every 1.5 V from negative to 9 V positive.

Battery Leads and Voltages.—Black spade tag, L.T. negative; Red spade tag, L.T. positive 2 V; Black plug, H.T. negative, 3 V or 4½ V socket (or 6 V when the battery is brand new); Green plug, H.T. positive 1, 48 V to 60 V socket; Red plug, H.T. positive 2, 120 V socket; Yellow plug, G.B. negative, negative socket of the battery.

Chassis Divergencies.—The foregoing details apply to the latest model receiver, but prior to the beginning of 1935 the receiver was known as the "Battery 3," and had a somewhat different circuit arrangement.

The coupling between V₂ and V₃ was by transformer instead of resistance-capacity, while L₈ was omitted. The loud-speaker was of a different type, L₉ having a resistance of 1.25 O. T₁ was also different, as it then had a primary resistance of 500 O and a secondary resistance of 1.0 O.



Under-chassis view. There are very few components, and even the switch unit is very simple. C₁ and C₅ are the volume-selectivity and reaction condensers respectively, while L₈ is the detector anode H.F. choke.