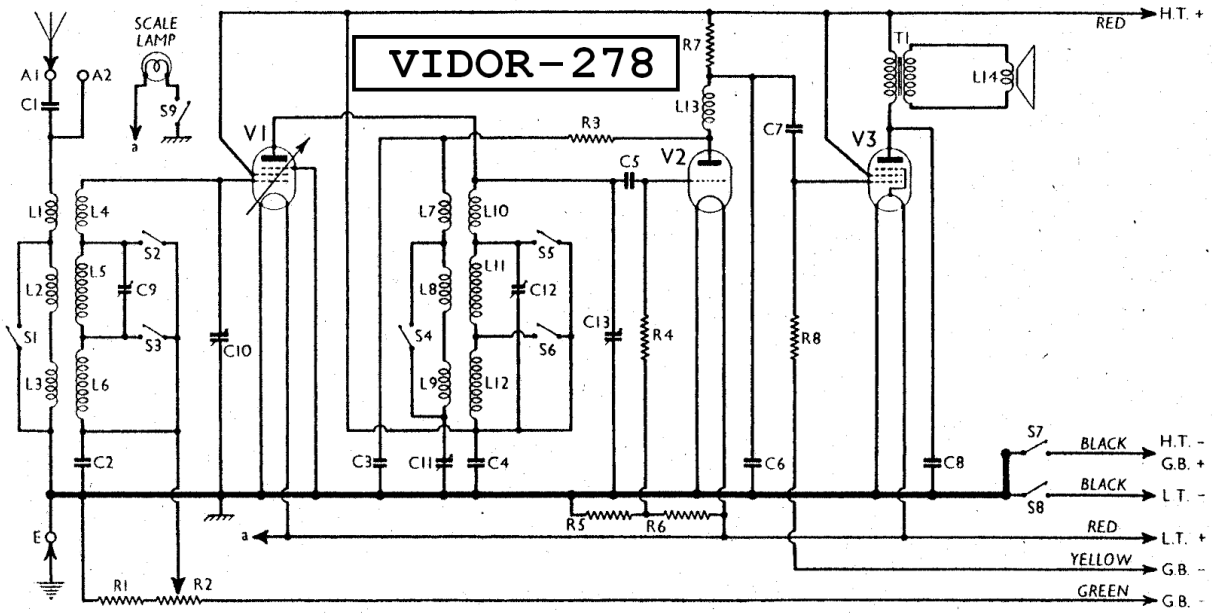

Circuit diagram of the Vidor 278 3-band battery receiver. **S9** is operated by pulling or pushing the wavechange switch knob.

COMPONENTS AND VALUES

	RESISTANCES	Values (ohms)
R1	V1 fixed G.B. resistance ..	500
R2	V1 gain control	15,000
R3	Reaction circuit damping ..	50
R4	V2 grid leak	1,000,000
R5	V2 filament potentiometer	200
R6	V2 filament potentiometer	200
R7	V2 anode load	10,000
R8	V3 C.G. resistance	500,000

	CONDENSERS	Values (μF)
C1	Aerial series condenser ..	0·0001
C2	V1 C.G. decoupling	0·1
C3	V2 anode R.F. by-pass ..	0·00005
C4	V1 anode R.F. by-pass ..	0·25
C5	V2 C.G. condenser	0·0002
C6	V2 anode R.F. by-pass ..	0·0002
C7	V2 to V3 A.F. coupling ..	0·01
C8	V3 anode fixed tone corrector	0·002
C9‡	Aerial circuit M.W. trimmer	0·00003
C10†	Aerial circuit tuning	—
C11†	Reaction control	0·0005
C12‡	V1 anode circuit M.W. trimmer	0·00003
C13†	V1 anode circuit tuning ..	—

† Variable. ‡ Pre-set.

	OTHER COMPONENTS	Approx. Values (ohms)
L1	Aerial S.W. coupling coil ..	0·8
L2	Aerial M.W. and L.W. coupling coils	3·0
L3	Aerial M.W. and L.W. coupling coils	3·0
L4	Aerial circuit S.W. tuning coil	0·05
L5	Aerial circuit M.W. tuning coil	3·0
L6	Aerial circuit L.W. tuning coil	18·0
L7	S.W. reaction coil	0·6
L8	M.W. and L.W. reaction coils, total	7·0
L9		
L10	V1 anode S.W. tuning coil ..	0·05
L11	V1 anode M.W. tuning coil ..	2·5
L12	V1 anode L.W. tuning coil ..	18·5
L13	V2 anode R.F. choke	170·0
L14	Speaker speech coil	2·3
T1	Speaker input trans. Pri. ..	700·0
	Speaker input trans. Sec. ..	0·3
S1-S6	Waveband switches ..	—
S7	G.B. and H.T. circuits switch (Ganged R2)	—
S8	L.T. circuit switch (Ganged R2)	—
S9	Scale lamp switch	—

VALVE ANALYSIS

Valve voltages and currents given in the table (p. III) are those measured in our receiver when it was operating on a battery reading 111 V on the H.T. section, on load. The H.T. + lead was plugged into 111 V, G.B. — 1 lead was plugged into the 1·5 V socket of the G.B. section and G.B. — 2 into the 9 V socket.

The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but the reaction control was at minimum. There was no signal input.

Voltages were measured on the 400 V scale of a model 7 Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VP2	111	1·5	111	0·5
V2 HL2	88	2·0	—	—
V3 PM22D	106	5·6	111	0·9

GENERAL NOTES

Switches.—**S1-S6** are the waveband switches, ganged in a single unit beneath the chassis, and indicated in our underchassis view. The table (col. 2) gives the switch positions for the three control settings, a dash indicating open, and **C** closed.

Switch	S.W.	M.W.	L.W.
S1	C	—	—
S2	C	—	—
S3	C	C	—
S4	C	—	—
S5	C	—	—
S6	C	C	—

S7 and **S8** are the battery circuit switches, ganged with the gain control **R2.** The upper two tags, looking from the underside of the chassis, belong to **S8,** and the lower two to **S7.**

S9 is the scale lamp switch, operated by a push-pull action of the wavechange switch knob. The spindle of this switch forms one contact of **S9,** and a leaf spring the other contact.

Coils.—**L1-L6** are in an unscreened unit on the chassis deck, and **L7-L12** in a similar unit beneath the chassis. The choke **L13** is also beneath the chassis.

Scale Lamp.—This is an M.E.S. type, rated at 2·6 V, 0·3 A. It can be switched on or off by pushing or pulling the wavechange switch knob, thus operating **S9.**

External Speaker.—No provision is made for this, but a high impedance type could be connected across the two tags on **T1,** to which the speaker leads from the chassis are connected.

Batteries.—L.T., 2 V accumulator cell. H.T. and G.B., Vidor combined 111V H.T. plus 9 V G.B. battery, type 16480.

Battery Leads and Voltages.—Black lead, spade tag, L.T. negative; red lead, spade tag, L.T. positive 2 V; black lead and plug, H.T. negative and G.B. positive; red lead and plug, H.T. positive, +111V; yellow lead and plug, G.B. negative 1, —1·5 V; green lead and plug, G.B. negative 2, —9 V.

CIRCUIT ALIGNMENT

With gang at maximum, pointer should be horizontal, in line with bottom of scale.

Switch set to M.W., tune to 200 m. on scale, feed a 200 m. (1,500 KC/S) signal into **A1** and **E** sockets, and adjust **C12** for maximum output, keeping reaction advanced to a point just short of oscillation. Then adjust **C9** similarly.

Switch set to L.W. and check calibration. If this is widely out, a compromise should be made by re-adjusting **C12** slightly. After this, **C9** must be re-adjusted on the M.W. band.