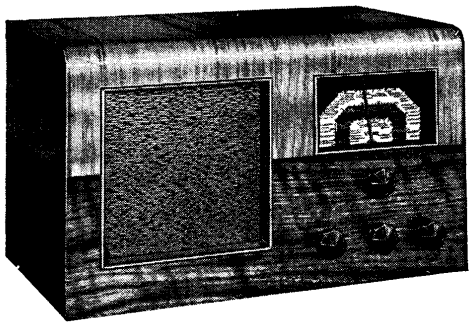
VIDOR 278 BATTERY ALL-WAVE



The Vidor 278 receiver, a battery all-wave three, is housed in this attractive horizontal walnut cabinet.

CIRCUIT.—The aerial can be fed to either of the two sockets, one of which places a fixed condenser in series with the input. The signal passes via a set of transformer aerial coils to the grid of the H.F. amplifying valve V1, an H.F. pentode.

The signal then passes to the demodulator valve V2, a triode, by a tuned anode coupling arrangement. Reaction is obtained from the anode of the triode and controlled by a variable condenser. A refinement of the design consists of centre-tapping the filament supply across the valve pins of V2 by means of resistances and connecting the grid leak R5 to the centre tap. This arrangement ensures a smooth reaction control so necessary on the shortwave bands if best results are desired.

The output of V2 then passes to V3, an output pentode, to which it is coupled through a resistance capacity coupling arrangement. In the anode circuit of V3 is the speaker matching transformer, and connected between the anode and chassis is a fixed condenser acting as a pentode compensator.

Battery power should be supplied by a Vidor No. 1640 combined 111 volts H.T. battery and 9 volts G.B. battery.

Chassis Removal.—Remove the four control knobs on the front of the cabinet. These are of the grub screw fixing type. Then turn the set up on end with the chassis nearest the test bench and remove the four fixing bolts and washers that secure the chassis to the cabinet. Also unscrew the cleats holding the battery leads.

The chassis can then be withdrawn from the cabinet, and is conveniently available for service requirements.

Special Notes.—There is a dial light rated at 2.6 volts .3 amp., mounted in a screw-in holder clamped to the top of the wavelength dial. It is not intended for continuous use as this would cause a needless waste of the L.T. battery, and a switch, operated by the wave range control knob, enables the light to be put out of action, when the tuning operation is completed.

ALIGNMENT NOTES

Connect an output meter across the primary of the speaker transformer. Feed the output of a service oscillator into the aerial No. 1 socket and the earth socket. Confirm that the pointer is level with the bottom of the wavelength scale. If this is not the case adjust the drive.

Medium Waves.—Tune the set to 200 metres and inject an oscillator signal of corresponding wavelength. Adjust the anode trimmer T1 until maximum is indicated in the output meter. Then adjust the aerial trimmer T2 until maximum sensitivity is obtained as indicated in the output meter.

Long Waves.—Inject a signal within the range of the receiver and tune it in on the set. If the calibration is very much out adjust the anode trimmer T1 slightly to compensate.

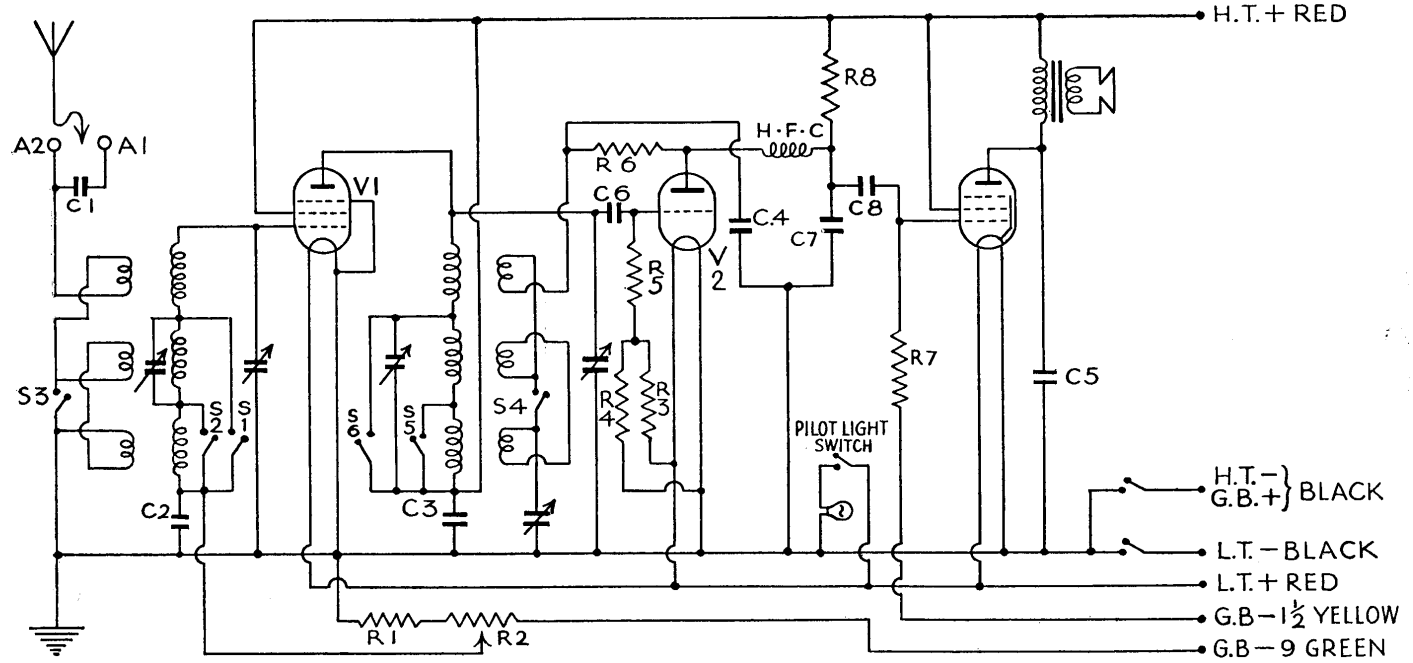
If it is found necessary to readjust the anode trimmer the aerial trimmer T2 will have to be readjusted on the medium waves.

RESISTANCES

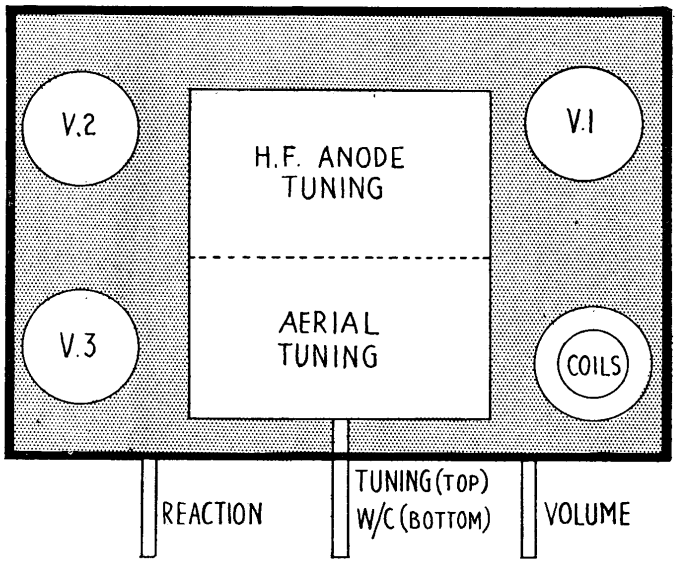
R.	Purpose.	Ohms.
1	V1 bias potr. (part)	500
2	V1 bias potr. (part) and volume control	15,000
3	V2 bias potr. (part)	200
4	V2 bias potr. (part)	200
5	V2 grid leak	1 meg.
6	Regeneration modifier ..	50
7	V3 grid resistance	500,000
8	V2 anode load	10,000

CONDENSERS

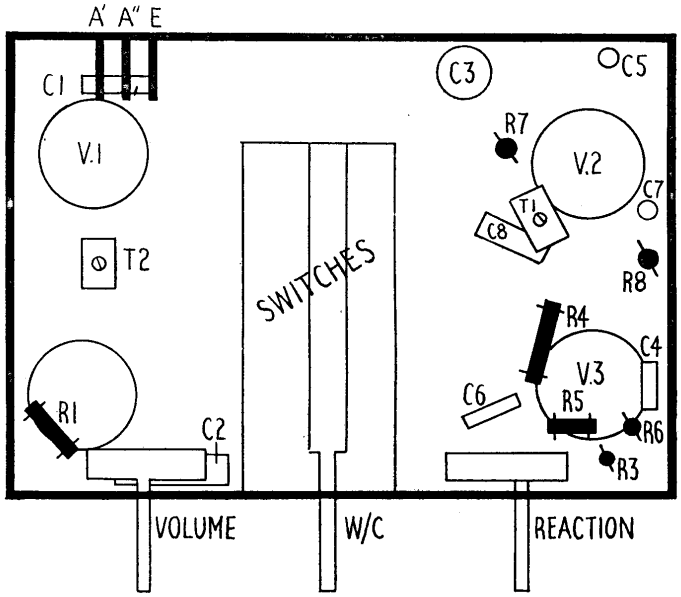
C.	Purpose.	Mfd.
1	Series aerial	.0001
2	V1 bias decoupling	.1
3	V1 anode decoupling ..	.25
4	H.F. bypass	.00005
5	Pentode compensator ..	.002
6	V2 grid	.0002
7	H.F. bypass	.0002
8	L.F. coupling	.01



Three tuning ranges are provided by the circuit of the Vidor 278 giving reception on 16-52, 200-550 and 775-2,000 metres.



Simple and clean layout is a feature of the design of the chassis of the Vidor 278 all-wave battery receiver. Drawing on the right shows the surface arrangement.



The underside of the chassis of the Vidor 278, shown on left, is particularly straightforward in design. Wave-change switches are particularly accessible along the centre.

VALVE READINGS

No Signal. Volume maximum. No reaction. 114 volts H.T., 9 volts G.B., 1,000 ohms per volt meter.

V.	Type.	Electrode.	Volts.	Ma.
1	VP2 met. (7) ..	Anode ..	114	1.2
		Screen ..	114	.3
2	HL2 met. (5) ..	Anode ..	82	2.
3	PM22 (5) ..	Anode ..	112	5.
		Screen ..	114	.8

MYSTERY SUPERHET FAULT

An A.C.5 superhet was brought in for service with the complaint that if tuning was adjusted when listening to a distant station the signal was lost. Intermittent rushing sounds were also heard.

It was noticed that the voltage on the anode of the I.F. valve was low and the current high. There was no apparent fault in the associated components, and the trouble was traced to the fitting on some previous occasion of an incorrect replacement valve in this position.

Trouble Shooters from America

TWO pocket "trouble shooter gadgets" for service-men have been published at 50 cents each, post paid, by the Radio and Technical Publishing Co., of 45, Astor Place, New York.

These take the form of handy pocket card-index arrangements—one for domestic and one for car radio—giving possible faults and their cures.

Troubles dealt with are divided under such headings as: Dead receiver, intermittent reception, fading, weak signals, excessive hum, noisy reproduction, oscillation and distortion, and rattling.

One card is devoted to each section, and the cards are secured by one corner so that they can be swung out of the pack for reference.

The faults listed on each card are further sub-divided according to where they may be found. These sub-divisions include: Aerial system, batteries, valves, receiver circuits proper, power unit, speaker and general.

Vidor 278 on Test

MODEL 278.—Standard model for battery operation, requiring a Vidor combined H.T. and G.B. battery, No. 16480. Price, £5 19s. 6d., without batteries.

DESCRIPTION. — Three-band straight three with reaction and volume controls. Switch for dial light operated by wave switch. Speaker by side of full-vision scale calibrated in wavelengths and names.

LOADING.—H.T., 10 ma.; L.T., 0.57 amp.

Selectivity and Sensitivity

SHORT WAVES.—(16-52 metres).—Representative gain and selectivity. Stations easily received with careful use of reaction control.

MEDIUM WAVES (200-550 metres). —Good gain on maximum aerial tapping with fairly good selectivity. Lower tapping gives best results at night when spread of local station is considerably reduced.

LONG WAVES (775-2,000 metres).—On maximum aerial tapping good volume from usual stations, with adequate separation and easy handling.

Acoustic Output

Average balance and volume for small battery set. Reasonable low-note radiation and satisfactory high note response. Speech is pleasing.

EXPLICIT SERVICE MANUAL

WIRELESS Servicing Manual, by W. T. Cocking, has appeared in a third and enlarged edition. The volume is one of the completest and most explicit service instruction books available.

The subject is dealt with logically: first testing equipment is explained; this is followed by chapters on current and voltage testing, and the interpretation of meter readings.

Valves are dealt with next, and succeeding chapter headings are: Tracing mains hum, Motor-boating, Instability in H.F. and I.F. stages, Frequency and amplitude distortion, and Background noise and local interference.

Ganging of both straight and superhet sets, the causes of superhet whistles, and A.V.C. circuits are dealt with fully—to the extent of some 70 pages. Short-wave sets, speakers, and other miscellaneous items, are followed by a comprehensive appendix containing such things as colour codes, wire tables, and valve base tables.

The volume deals with technical rather than practical aspects throughout. For this reason, perhaps, it will appeal particularly to the experienced engineer whose chief need is for increased "theory," so that his methods can be made more scientific.

The book, which is published by Iliffe and Sons, Ltd., is available from Odhams Press Book Department, Arne Street, Long Acre, London, W.C.2, price 5s. 5d., post free.