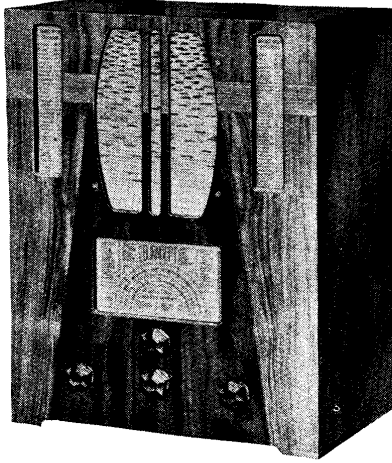


# SERVICE ENGINEER



The Burndeft 251 all-wave battery receiver "three."

## BURNDEPT 251 BATTERY THREE

**CIRCUIT.**—A three-valve battery receiver operating on the usual medium- and long-wave bands and two short-wave bands.

Alternative aerial taps are provided, one being connected through a coupling coil and the other through a series condenser to the band-pass aerial coils. The coupling coil is used on normal wavelengths, the aerial going straight to the grid of V1, an H.F. pentode, on short waves.

Coupling to V2, a triode, is a tuned H.F. coil and a grid condenser. Reaction is fed back from the anode in the orthodox manner.

The output of V2 is fed through an L.F.

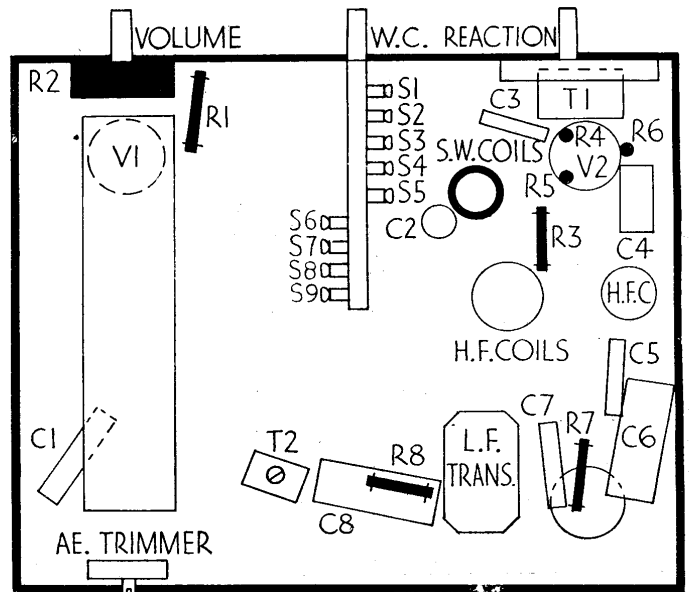
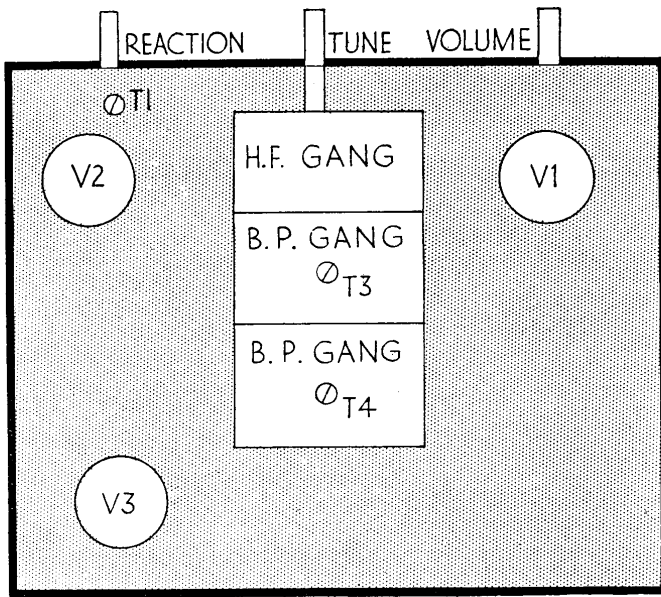
transformer to V3, a pentode. The secondary of this transformer is shunted by a resistance, the purpose of which is to modify the high note response.

Volume is controlled by variation in the bias applied to the grid of V1.

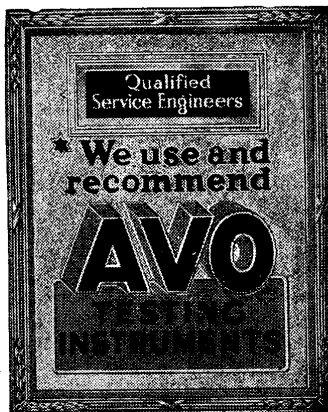
High tension and grid bias are obtained from a Vidor Triple-capacity combined battery of 120 volts and low tension from a Vidor 2-volt accumulator.

**Special Notes.**—Extension speaker terminals are not provided on this receiver; the internal speaker tags on the output transformer are easily accessible, however, and an extension speaker, which must, of course, possess its

(Continued on next page.)



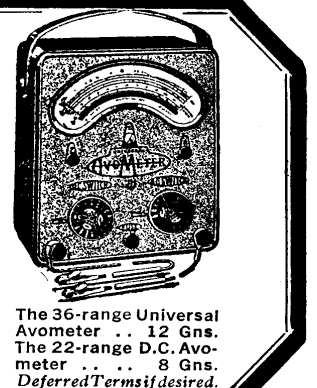
As these chassis layout diagrams show, the Burndeft receiver is orthodox. Most of the smaller components underneath are suspended in the wiring and occupy their logical positions. All resistors are in solid black and condensers in outline.



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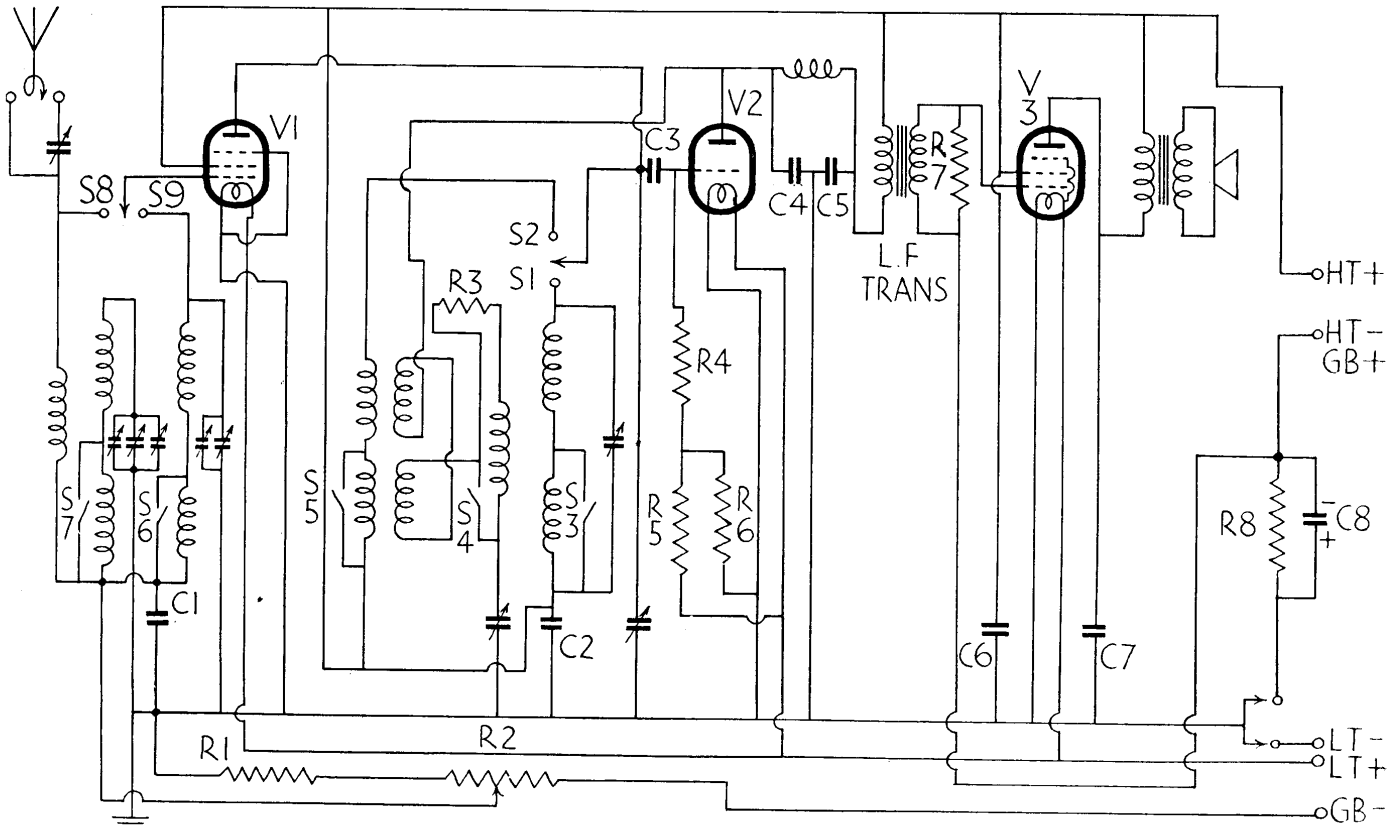
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## BURNDEPT 251 ALL-WAVE BATTERY SET (Cont.)



A band-pass input circuit is used on medium and long waves and an aperiodic input on short waves in the Burndept set. The H.F. coupling includes a switched tuning coil for the two short wavebands and a split reaction winding.

own matching transformer, may be connected across these.

**Exposing Chassis.**—Practically all the work necessary on this receiver may be done by removing the false bottom to the cabinet. This is secured by four wood screws.

Should it be considered necessary, the chassis can be removed as follows. First remove the four knobs from the front of the cabinet (grub screws) and four bolts

from underneath the cabinet. The leads to the speaker must next be unsoldered, a red spot on the transformer marking the tag to which the red lead must be connected. The chassis may then be removed.

### ALIGNMENT NOTES

All adjustments to the tuned circuits of this receiver are made on medium waves

at 200 metres. A signal of this wavelength should be injected at the aerial and earth terminals through a dummy aerial and T1, T2, T3 and T4 adjusted for maximum reading on an output meter, which should be connected across the speaker terminals.

The output meter must have a large fixed condenser of about 4 mfd. in series with it.

### CONDENSERS

C.	Purpose.	Mfds.
1	V1 bias shunt .. ..	.1
2	V1 anode decoupling ..	.25
3	V2 grid .. ..	.0001
4	H.F. filter .. ..	.00005
5	H.F. filter .. ..	.0002
6	V3 screen decoupling ..	8
7	Pentode compensating ..	.005
8	V3 bias shunt .. ..	50

### RESISTANCES

R.	Purpose.	Ohms.
1	V1 series bias potr. ..	500
2	V1 bias control .. ..	15,000
3	Reaction modifier .. ..	200
4	V2 grid leak .. ..	1 meg.
5	V2 grid leak potr. ..	200
6	V2 grid leak potr. ..	200
7	L.F. transformer shunt ..	150,000
8	V3 series bias .. ..	200

### VALVE READINGS

No signal. No reaction. Volume maximum. New batteries.

V.	Type.	Electrode.	Volts.	M.A.
1	Mullard VP2 (7)	Anode ..	110	1.4
		Screen ..	110	.6
2	Mazda HL2 (4)	Anode ..	106	3
		Screen ..	106	10.1
3	Mazda Pen 231 (5).	Anode ..	106	10.1
		Screen ..	110	4.4