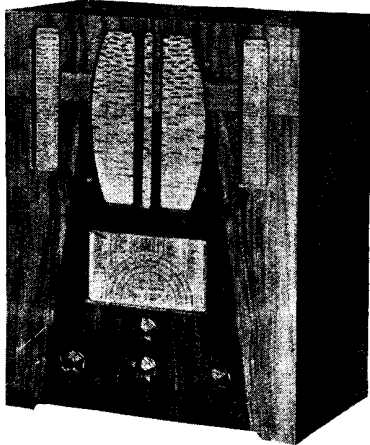


SERVICE ENGINEER



The Burndept 251 all-wave battery "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.

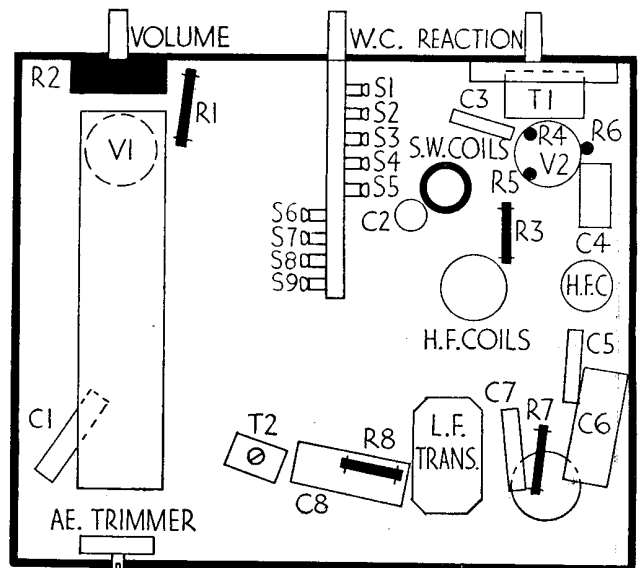
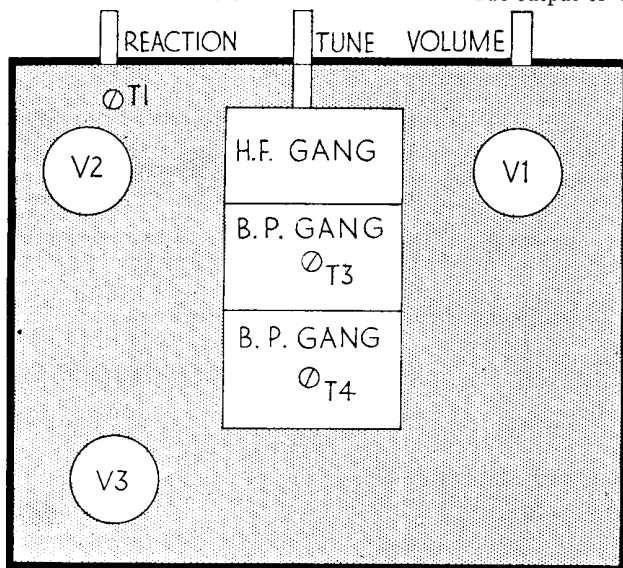
The output of V2 is fed through an L.F.

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.

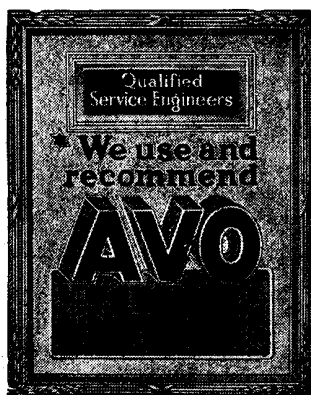
Volume is controlled by variation in the bias applied to the grid of V1.

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



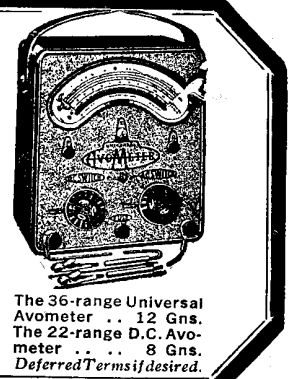
As these chassis layout diagrams show, the Burndept receiver is orthodox. Most of the smaller components underneath are suspended in the wiring and occupy their logical positions. All resistors are in solid black and condensers in outline.



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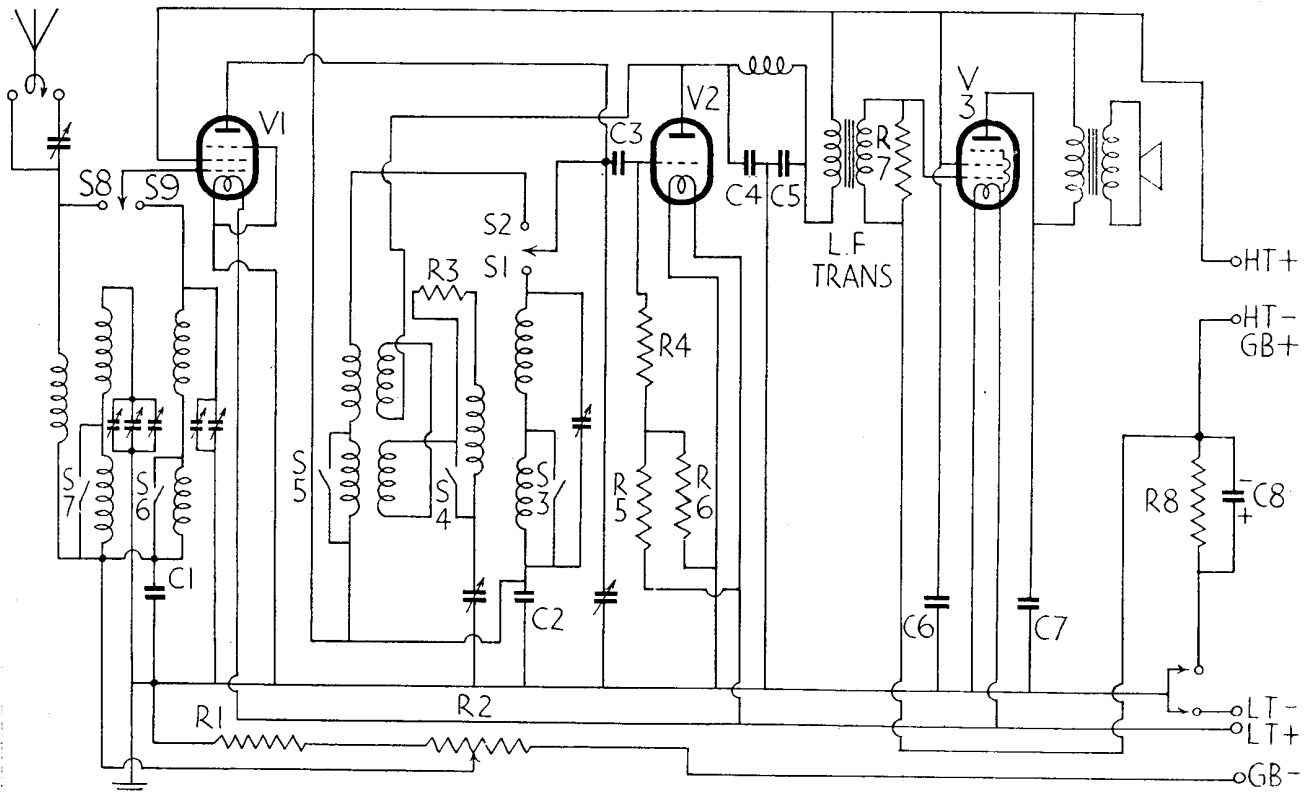
The AUTOMATIC COIL WINDER & ELECTRICAL EQUIPMENT CO., LTD., Winder House, Douglas Street, London, S.W.1.
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The 36-range Universal Avometer .. 12 Gns.
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BURNDEPT 251 ALL-WAVE BATTERY SET (Cont.)



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 shunt1
2	V1 anode decoupling25
3	V2 grid0001
4	H.F. filter00005
5	H.F. filter0002
6	V3 screen decoupling	8
7	Pentode compensating005
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
3	Mazda Pen 231 (5).	Anode	106	10.1
		Screen	110	4.4

SERVICE men and retailers who are "weak on theory" can safely be recommended "A First Course in Wireless," a book written by "Decibel," and published by Pitman's. The book is a reprint of a series of articles which appeared in *World Radio* under the title of "The Radio Circle: For Beginners Only."

It will be noticed from the various titles that the book is not one of those that set out to explain radio to the man in the street. It is a thorough-going text-book for the student.

Not-too-Simple First Course in Radio

The particular feature which makes it of interest to men in the trade is that it does not assume any knowledge of electricity or mathematics, and yet progresses far enough to take such things as curves and vectors in its stride.

Another aspect of the book which increases its value is that, while it is essentially an explanation of theory, it remains in constant touch with practice, and in

effect explains the functioning of most items of radio apparatus.

The second half of the book in particular deals with practical matters. After a chapter on reading circuit diagrams there are pages dealing with decoupling arrangements, mains sets, superhets, push-pull circuits, resistance-capacity combinations, A.V.C., and loudspeakers.

The book is published at 4s., and is obtainable through Odhams Press Technical Book Department, Arne Street, Long Acre, London, W.C.2, at 4s. 6d., post free.