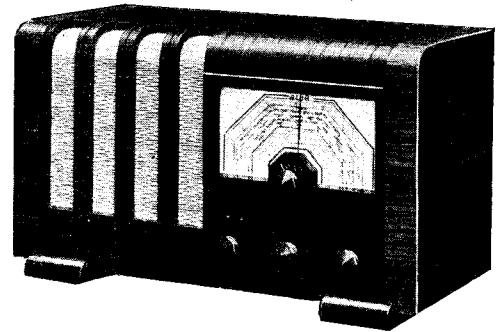


# ALBA 310 BATTERY THREE BAND 3



**CIRCUIT.**—The aerial input has two connections, one of which brings into circuit a Droitwich filter consisting of a pre-tuned condenser and coil arrangement. Coupling to V1, an H.F. pentode, operating as an H.F. amplifier, is by a set of iron-core band-pass coils on the medium and long wavebands and an H.F. transformer on the short waves.

V1 is tuned anode coupled to the detector V2, a triode valve. Reaction is obtained from the anode of V2 in the usual manner and is controlled by a variable condenser. The centre tap of two resistances connected across the filament supply of V2 is applied to the grid of V1, thereby assisting smooth reaction to be obtained—a very important point for efficient short-wave working.

Coupling to V3, a pentode output valve, is by a parallel-fed auto-transformer arrangement. In the anode circuit of V3 is connected the speaker matching transformer and a pentode compensator condenser. Bias for this valve is obtained

The Alba 310 battery all-wave straight three is provided with separate reaction and volume controls. Extension speaker and pick-up connections are also provided.

by an auto-bias arrangement, the network being shunted by a fixed condenser of large capacity.

Battery power is supplied by a standard capacity H.T. battery of 120 volts and a 2 volt accumulator of 45 a.h. capacity.

**Chassis Removal.**—Remove the back of the cabinet (held by sliding clips) and also the four control knobs from the front of the cabinet. The control knobs are of the grub-screw fixing type. Turn the cabinet on its end with the end of the chassis nearest the test bench, and remove the four chassis-securing bolts and washers observed on the base.

## CONDENSERS

C.	Purpose.	Mfds.
1	Bottom band-pass coupling ..	.02
2	H.T. reservoir ..	2.
3	Anode coupling ..	.0001
4	V1 anode decoupling ..	8.
5	S.W. decoupling ..	.01
7	L.W. and M.W. reaction coil shunt condenser.	.0002
8	V2 anode shunt ..	.00005
9	L.F. coupling ..	1.
10	Bias shunt ..	25.
11	Pentode compensator ..	.005

## WINDINGS

Winding.	Ohms.	Winding.	Ohms.
L1 .. ..	38	L11 .. ..	25
L2 .. ..	1.75	L12 .. ..	1.75
L3 .. ..	1.75	L13 .. ..	1.5
L4 .. ..	6	L14 .. ..	18
L5 .. ..	18	L15 .. ..	4.5
L6 .. ..	18	L16 .. ..	9
L7 .. ..	2	L17 .. ..	900
L8 .. ..	.25	L18 .. ..	700

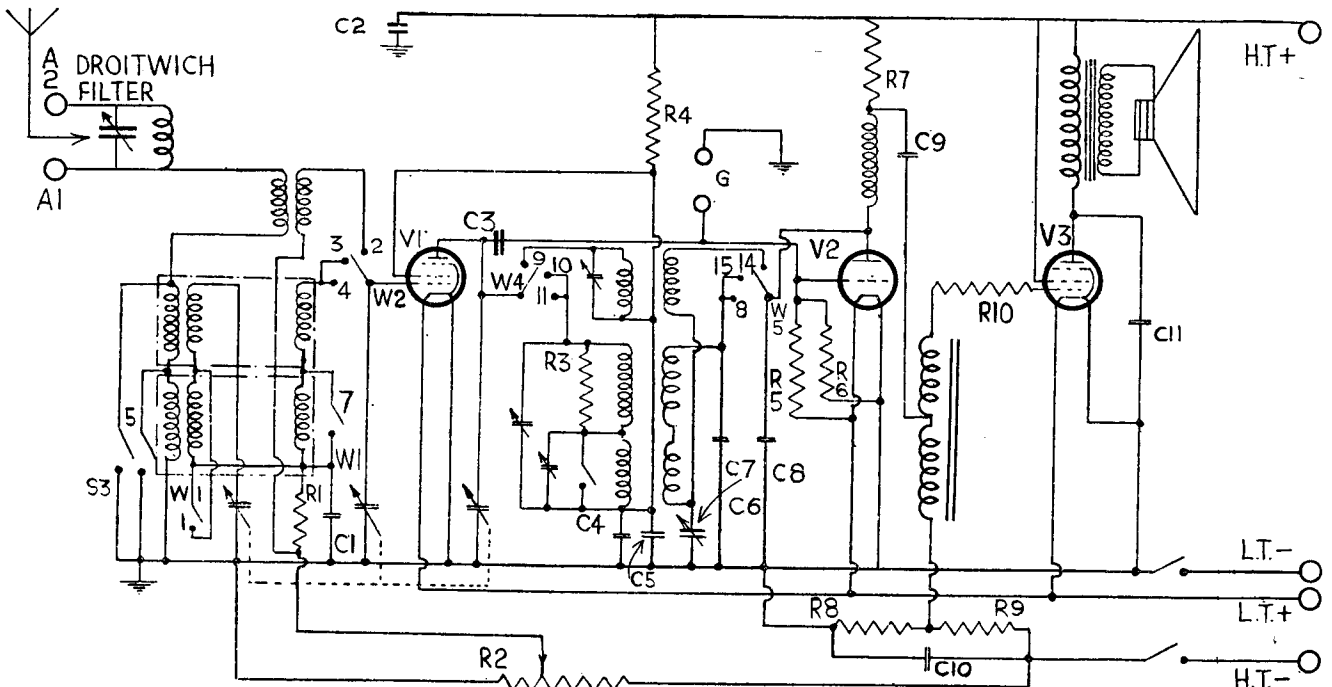
## VALVE READINGS

No signal. No reaction. M.W. band. 1,000 ohms/volt meter.

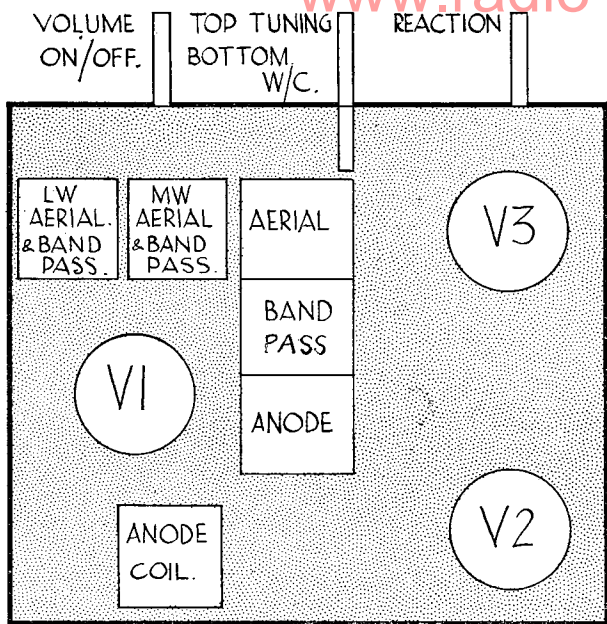
V.	Type.	Electrode.	Volts.	Ma.
1	All Mullard.			
	VP2 Met. (7) ..	Anode ..	93	1.6
		Screen ..	93	.5
2	PM2HL Met. (4) ..	Anode ..	50	1.4
3	PM22D (5) ..	Anode ..	99	3.9
		Screen ..	100	.4

## RESISTANCES

R.	Purpose.	Ohms.
1	V1 grid return ..	50,000
2	Volume control ..	25,000
3	M.W. anode coil shunt ..	250,000
4	V1 anode decoupling ..	2,000
5	V2 grid pot. (part) ..	2 meg.
6	V2 grid pot. (part) ..	2 meg.
7	V2 anode load ..	30,000
8	Bias pot. (part) ..	2
9	Bias pot. (part) ..	1,500
10	V3 grid stopper ..	100,000



Automatic bias is one of the features of the circuit of the Alba 310 battery three, which gives reception on three wavebands. Iron-cored coils are employed, while an alternative aerial tapping is provided to bring into circuit a Droitwich filter consisting of a pre-tuned condenser and coil arrangement.



The simple layout of the upper side of the Alba 310 chassis can be seen from the drawing on the left. The chassis can be removed from the cabinet after taking out four bolts and removing the control knobs. If it is necessary to remove the speaker, only four more bolts have to be removed.

## Alba 310 on Test

**MODEL 310.**—Standard model for operation from 120-volt H.T. battery and 2-volt cell. Price, 7½ gns. without batteries.

**DESCRIPTION.**—Three-band, battery operated, horizontal table model, straight three.

**FEATURES.**— Full-vision scale, separate reaction and volume controls. Automatic bias. Iron-core coils. Sockets for speaker and pick-up. Two-speed tuning.

**LOADING.**—H.T., 8 ma.; L.T., 0.58 amp.

### Selectivity and Sensitivity

**SHORT WAVES (16.5-50 metres).**— Reasonable gain with ease of handling and smooth reaction. Selectivity representative for circuit employed.

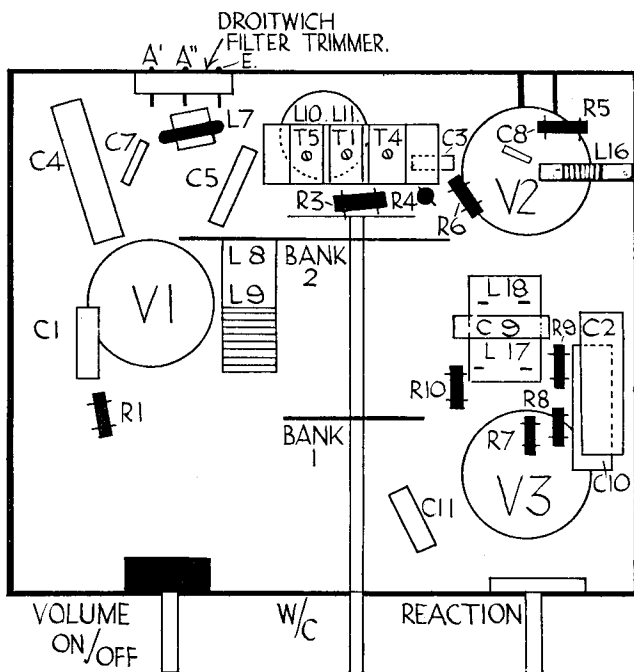
**MEDIUM WAVES (200-500 metres).**— Fairly good gain. Careful handling of volume and reaction enables a number of stations to be received between the local transmissions. Reaction quite smooth.

**LONG WAVES (700-2,000 metres).**— Performance similar to medium waves. Selectivity helped by Droitwich filter. No difficulty in separating main transmissions.

### Acoustic Output

Very good volume for a battery-operated pentode, with a reasonable current. Well balanced tone with pleasing musical reproduction and very little colouration on speech.

Where to find the components on the underside of the chassis of the Alba 310 is shown on the drawing to the right. Terminals for connecting an extension speaker are provided on the internal speaker panel. Small diagrams below show the connections to the wave-change switches.



and T3 should not be readjusted on the long waves.

**Long Waves.**—Tune the set and oscillator to 1,200 metres (250 kcs.) and adjust T4 for maximum.

**Short Waves.**—Tune the set and oscillator to 20 metres (15 mcs.) and adjust T5 for maximum.

### Replacement Condensers

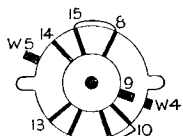
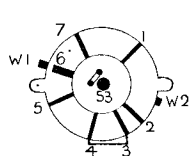
**EXACT** replacement condensers are obtainable from A. H. Hunt, Ltd., for: C4, unit 3,477, 1s. 9d.; C2, 2,964, 1s. 10d.; C10, 2,918, 1s. 9d.

### American Condenser Code

**CONDENSERS** in American receivers are often colour coded. The code is based on the colour-number table employed for resistors. The resistor colour code is the same in America as here, and is given on page VIII of this supplement.

The capacities are expressed in micro-microfarads, thus eliminating the decimals. Three colour dots are used, and are read from left to right. The first pair give the first two figures, and the third the number of cyphers.

Where three figures as well as the number of cyphers has to be given, the first two dots and a blank dot appear on one side of the condenser. The rest of the code—what is two dots representing the third figure and the number of cyphers—is given on the other side.



The speaker (secured by four bolts) can be removed if desired, or, alternatively, the two leads to the speaker transformer unsoldered.

**Special Notes.**—A pair of sockets at the rear of the chassis enable a pick-up to be used. The volume control does not operate on the pick-up, so that an external volume control must be used.

Terminals on the speaker panel provide

for the connection of an external speaker. This should be of the permanent magnet moving-coil type with its own matching transformer.

### Alignment Notes

Connect an output meter across the primary of the speaker transformer. Set the volume control to maximum. Only increase the reaction (if necessary) so as to obtain the signal in the output meter. Feed the output from a modulated oscillator to the A1 and E sockets.

**Medium Waves.**—Tune the set and oscillator to 250 metres (1,200 kcs.) and adjust first T1 and then T2 and T3 for maximum.

The aerial and band-pass trimmers T2