

ALBA MODEL 870 ALL-WAVE A.C. SUPERHET FOUR

CIRCUIT.—A four-valve plus rectifier three waveband receiver for A.C. mains. The input to V1, a frequency changer, is via an inductively coupled band-pass filter using iron-cored coils on medium and long, and through two inductively coupled coils on short waves.

Coupling to V2 is by means of an iron-cored I.F. transformer tuned to 117.5 kcs.

An H.F. pentode, V2, is in turn coupled via a second I.F. transformer to V3, a double diode, the diodes of which are strapped and used both for demodulation and to supply A.V.C. bias to the preceding valves in the orthodox manner.

Low-frequency signals from V3 are passed via the volume control to V4, which is a pentode, and after amplification to the moving coil loudspeaker via a matching transformer.

Mains equipment consists of transformer, full wave rectifier, electrolytic condenser, and the loudspeaker field.

Special Notes.—The dial lamps are rated at 6.2 volts .3 amp., and the holders are clipped one on either side of the dial assembly. A vertical lift will release them.



A. J. Balcombe's Model 870 is a three-waveband superhet using four valves. It is for A.C. operation.

The external speaker terminals will be found on the output transformer fixed to the speaker. They are connected to the primary so that any additional speaker must possess its own matching transformer.

Removing Chassis.—Remove the knobs from the front of the cabinet (grub screws) and four bolts from underneath. The chassis may then be removed from the cabinet far enough for most repairs without disconnecting the speaker leads.

Should it be found necessary to remove these, reconnection is as follows: F top, blue; 1, black; 3, F, red; and a white lead from the speaker chassis to earth.

ALIGNMENT NOTES

I.F. Circuits.—The I.F. transformers of this receiver, as in all Alba sets, are accurately adjusted by means of an oscilloscope before leaving the works, so that should they require readjustment, the set should be returned to the factory. Good results cannot be obtained by using an oscillator.

Medium Waves.—Connect a modulated oscillator to the aerial and earth terminals and an output meter across the speaker terminals.

(Continued on page 22.)

CONDENSERS

C.	Purpose.	Mfd.s.
1	V1 A.V.C. decoupling	.1
2	V1 cathode bias shunt	.1
3	V1 screen decoupling	.1
4	V1 osc. grid	.0001
6	Medium wave padding	.002
7	V1 osc. anode decoupling	.1
8	V2 cathode bias shunt	.1
9	V2 anode decoupling	.002
10	A.V.C. decoupling	.1
11	H.F. by-pass	.00025
12	Diode coupling	.00025
13	L.F. coupling	.005
14	Gramophone coupling	.005
15	Pentode compensating	.005
16	H.T. smoothing	12
17	H.T. smoothing	8
18	Mains aerial	.00025
19	H.F. by-pass	.00025
20	V4 cathode bias shunt	25

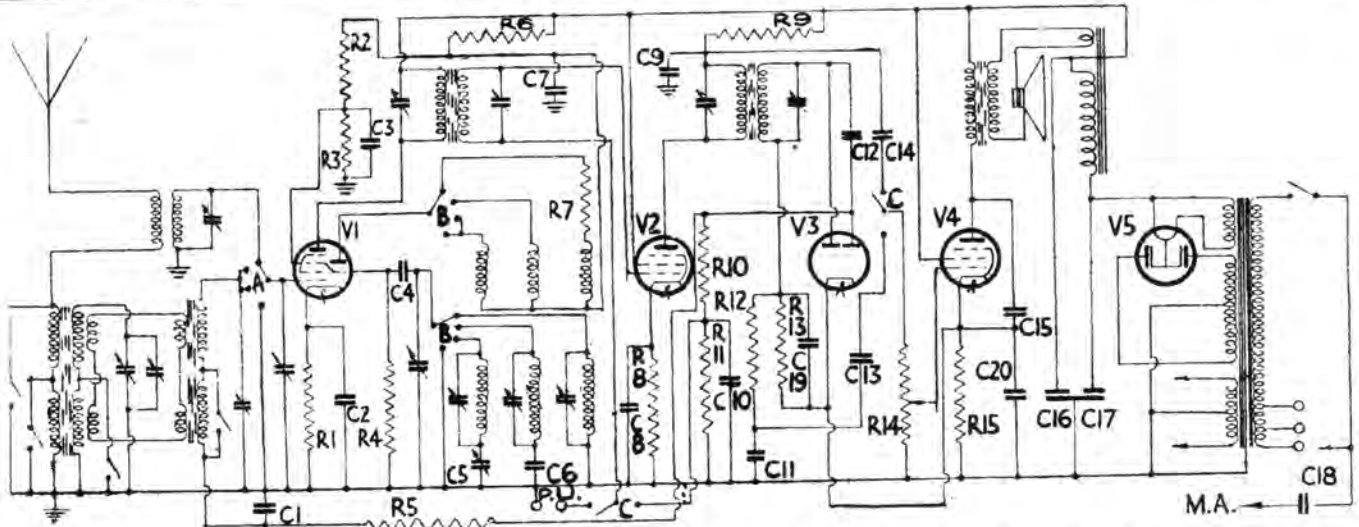
RESISTANCES

R.	Purpose.	Ohms.
1	V1 cathode bias	200
2	V1 screen potentiometer	10,000
3	V1 screen potentiometer	25,000
4	V1 osc. grid leak	25,000
5	V1 A.V.C. decoupling	1 meg.
6	V1 osc. anode decoupling	13,000
7	V1 osc. anode series resistance	100
8	V2 cathode bias	150
9	V2 anode decoupling	5,000
10	A.V.C. part of diode load	.5 meg.
11	A.V.C. part of diode load	.5 meg.
12	A.F. filter	50,000
13	Demodulator load	.5 meg.
14	Volume control	.5 meg.
15	V4 cathode bias	100

VALVE READINGS

No signal. Volume maximum. 200 volt A.C. mains

V.	Type.	Electrode.	Volts.	M/a.
1	(All Mullard)	TH4 (7) anode	265	2.2
		Met screen	65	4.0
		osc.anode	125	4.2
2	VP4B (7)	anode	195	13
		Met screen	265	4.2
3	2DA4 (5)	diode	—	—
		Met	—	—
4	Pen A4 (7)	anode	250	33
		screen	265	3.5
5	IW4 (4)	filament	420	—



Iron-cored coils are used in the band-pass input and I.F. stages of the Alba 870 A.C. The anodes of V3, a double diode, are strapped together and used both for demodulation and as a source of A.V.C. voltage.

ALBA MODEL 870 ALL-WAVE SUPERHET FOUR FOR A.C. MAINS

(Continued from page 21.)

Inject and tune in a signal of 500 metres and adjust T1 and T2 for maximum reading on output meter.

Tune the oscillator and the receiver to 200 metres and adjust T5 for maximum reading.

Long Waves.—Inject and tune in a signal of 1,600 metres and trim T7 for maximum reading, and, while rocking the gang condenser, T6.

Short Waves.—Inject and tune in a signal of 20 metres and adjust T3 and T4 for maximum reading on output meter.

QUICK TESTS

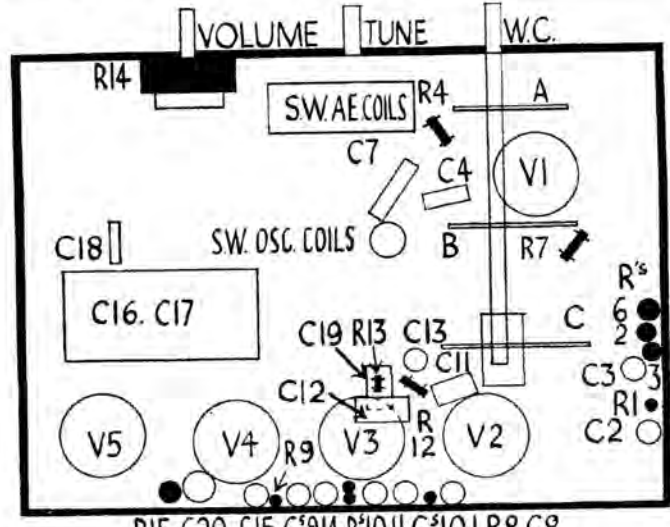
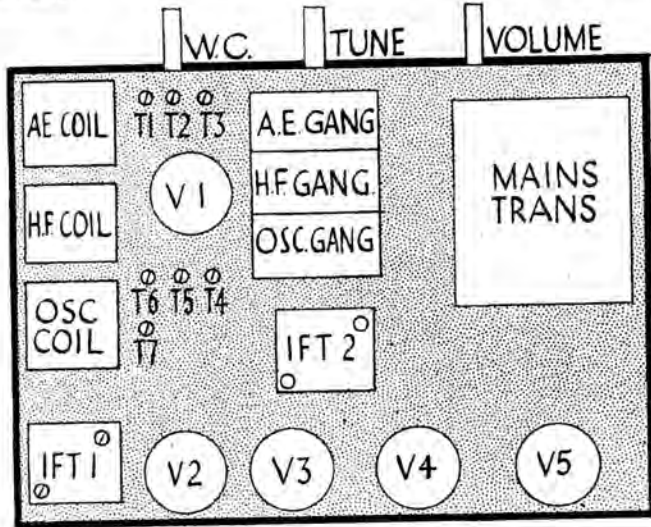
Quick tests are available on this receiver on the terminals strip on the speaker transformer.

Volts measured between this and the chassis should be:—

Blue lead top, 120 unsmoothed H.T.

Black lead, 265 smoothed H.T.

Red lead, 250 smoothed H.T.



These diagrams show the appearance of the chassis of Alba's 870 all-wave superhet. Left, the "tinted" diagram, is the top view; right is the underside view. All resistances are in solid black for easy reference.

SATOR

POTENTIOMETERS

YOUR
SILENT
FRIEND

ALSO FIXED RESISTANCES AND
NON-INDUCTIVE PAPER CONDENSERS

ORION

LAMPS LTD.

Telephone: **Holborn 9150.** Head Factories **in Austria.**

82/84, THEOBALDS ROAD, LONDON, W.C.2.

WHARFEDALE

"CORONET"

The Season's
Outstanding design in
EXTENSION SPEAKERS

The first appeal of the "Coronet" model is made by its appearance. Everyone admires its graceful proportions with a feeling of architectural stability in its design. It wins favour of the eye. Its second appeal is made by its performance. This you can prove for yourself by test. A demonstration wins favour of the ear. Its final, clinching appeal is made by its price. The Wharfedale range is worthy of your best efforts this season.

The Wharfedale EXTENSION SPEAKER range comprises

	A	B
Meritor	30/-	25/-
Bijou	39/6	32/-
Coronet	52/6	45/-
Bronzian	65/6	58/-
De Luxe	95/-	82/6

A—Universal. B—Less Transformer

Walnut Cabinet
Size 13 x 11½ x 5 ins.
UNIVERSAL
52/6
LESS TRANSFORMER
45/-
Send for Catalogue

WHARFEDALE WIRELESS WORKS
62, LEEDS ROAD, BRADFORD, YORKS.