

# ALBA 805 THREE-BAND A.C. FOUR

**CIRCUIT.**—The short-wave aerial input circuit consists of an air-core H.F. aerial transformer, while on the medium and long wavebands the input is *via* a set of iron-cored aerial coils. In the oscillator section of the circuit it will be noticed that a regeneration modifier resistance is included in series with the oscillator anode winding on short waves.

An iron-cored I.F. transformer tuned to 117.5 kc. couples V1 to the I.F. amplifier V2, an H.F. pentode. Another I.F. transformer of similar construction effects the coupling between V2 and the demodulating diode of V3, a double-diode output pentode, the secondary of the transformer being centre-tapped and the connection being made thereto. The secondary of the transformer is also connected to the demodulating diode load R10, and the rectified potentials led *via* an H.F. stopper resistance R9, and L.F. coupling condenser C14, to the manual volume control R11, and thence to the grid of the pentode section of V3.

The other diode of V3, fed by a coupling condenser C16 from the I.F. transformer, provides a D.C. potential that is fed back to the grids of V1 and V2 as bias, thereby obtaining automatic volume control.

A pentode compensator condenser C17 connected between the anode and cathode of V3 effects a fixed tone modification.

Mains equipment consists of a mains transformer, a full-wave rectifying valve V4, electrolytic smoothing condensers and smoothing choke (speaker field coil).

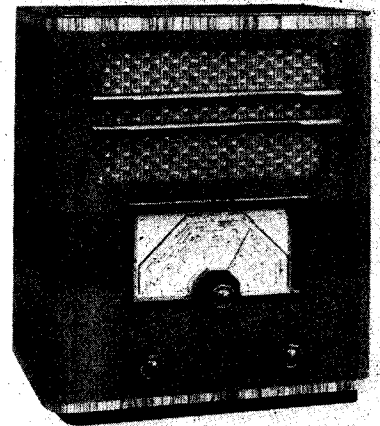
**Chassis Removal.**—Remove the back of the cabinet (secured by sliding clips) and the three grub screws securing knobs from the front of the cabinet.

Then turn the cabinet on its side and remove the four chassis securing bolts and washers from the base, afterwards return-

ing the cabinet to its original upright position.

The chassis may then be withdrawn from the cabinet free to the extent of the speaker cable, and is accessible.

If desired, the speaker (secured by four nuts and washers) may be removed and the receiver operated externally of the cabinet. If this is done, then when the



## RESISTANCES

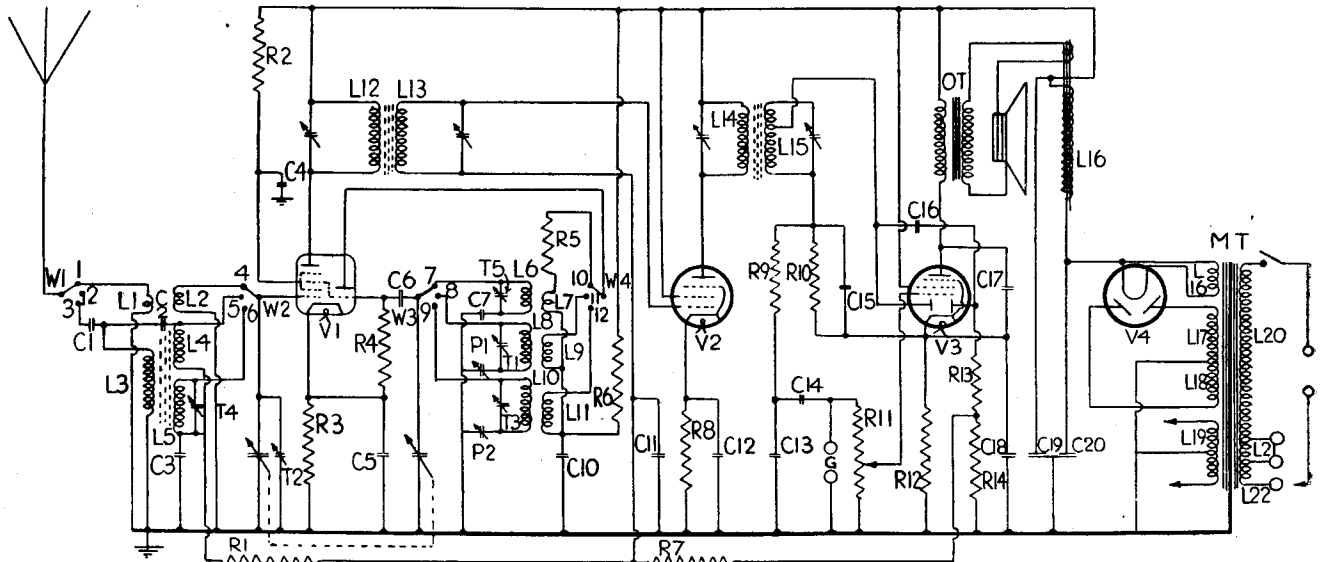
R.	Purpose.	Ohms.
1	V1 A.V.C. decoupling	250,000
2	V1 screen decoupling	25,000
3	V1 cathode bias	100
4	Osc. grid leak	50,000
5	Regeneration modifier S.W.	100
6	Osc. anode decoupling	25,000
7	V2 A.V.C. decoupling	500,000
8	V2 cathode bias	150
9	H.F. stopper	50,000
10	Demodulating diode load	500,000
11	Volume control	500,000
12	V3 cathode bias	150
13	A.V.C. diode load (part)	250,000
14	A.V.C. diode load (part)	500,000

## CONDENSERS

C.	Purpose.	Mfds.
1	M.W. and L.W. series aerial	.0002
2	M.W. top aerial coupling	.000005
3	V1 A.V.C. decoupling	.05
4	V1 screen decoupling	.1
5	V1 cathode bias shunt	.1
6	Osc. grid	.0001
7	S.W. osc. fixed padder	.005
10	Osc. anode decoupling	.1
11	V2 A.V.C. decoupling	.05
12	V2 cathode bias shunt	.1
13	H.F. bypass	.0001
14	L.F. coupling	.005
15	H.F. bypass	.0001
16	A.V.C. diode coupling	.0002
17	Pentode compensator	.005
18	V3 cathode bias shunt	25
19	H.T. smoothing	6
20	H.T. smoothing	6

## WINDINGS (D.C. Resistances)

Winding	Ohms.	Range.	Where measured.
L1	.4	S.W.	W1 and chassis.
L2	.15	S.W.	Top grid V1 and chassis.
L3	58	M.W.	C1 + C2 and chassis.
L4	2	M.W.	Top grid V1 and R1 + C3.
L5	15.3	L.W.	Top grid V1 and R1 + C3.
L6	—	—	Inaccessible.
L7	25	S.W.	R5 and R6 + C10.
L8	—	—	Inaccessible.
L9	34.4	M.W.	Osc. anode V1 and R6 + C10.
L10	—	—	Inaccessible.
L11	54.4	L.W.	Osc. anode V1 and R6 + C10.
L12	3.1	Any	Anode V1 and Screen V2.
L13	3.1	Any	Top grid V2 and R7 + C11.
L14	3.1	Any	Anode and screen V2.
L15	1.5	Any	R9 + R10 and Diode V3.
L16	1200	Any	Blue and red leads spkr. panel.
O.T.	550	Any	Red and green leads spkr. panel.
M.T.	54	Any	Mains plug pins (240 tap).
Total	540	Any	Anode pins V4.
H.T.			
sec.			



Iron-cored coils are used in both the aerial and I.F. transformer in the Alba 805 three-band receiver.

speaker is replaced the rubber washers should be returned also.

**Special Notes.**—A pair of sockets at the rear of the chassis are for connecting a pick-up. This should have a high output for optimum results, as the pick-up only operates the pentode section of the output valve.

The mains adjustment device located on the mains transformer consists of an insulating panel with three sockets, marked with voltage values, into one of which a threaded member makes contact.

There are two dial lights in screw-in holders mounted on brackets behind the wavelength dial. The bulbs are rated at 6.2 volts .3 amp., and have M.E.S. bases.

Terminals on the speaker panel enable an extension speaker of high impedance to be connected.

Condenser C7 is contained in the can containing the oscillator coils. R5 was found to have a value of 200 ohms in our particular chassis.

### Alignment Notes

**I.F. Circuits.**—Connect an output meter across the primary of the speaker transformer. Switch receiver to the MW band, turn gang to maximum capacity and volume to maximum volume position.

Connect a service oscillator between the top grid cap of V1 and chassis.

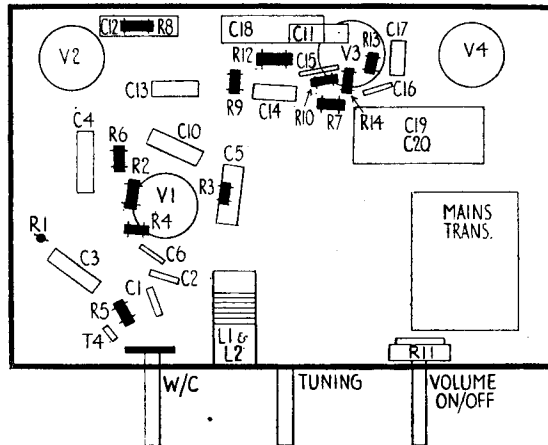
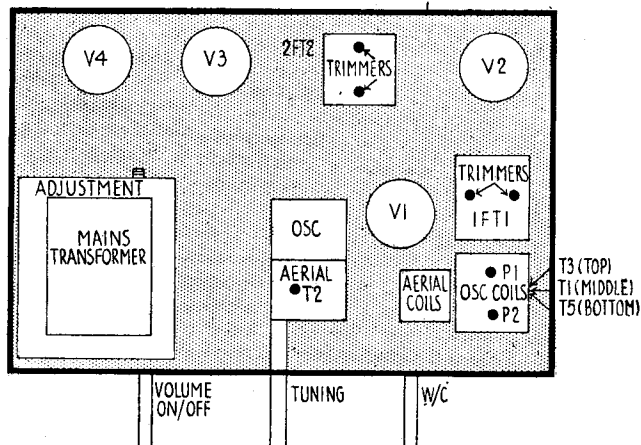
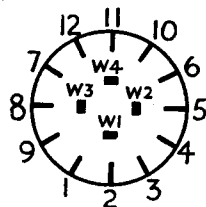
Tune the service oscillator to 117.5 kc.

### VALVE READINGS

No signal. Volume maximum. M.W. min. cap. 200 volts A.C. mains.

V.	Type.	Electrode.	Volts.	Ma.
1	All Mullard. TH4A (7 met.)	Anode ..	230	2.5
		Screen ..	72	6
		Osc. anode ..	88	5.3
2	VP 4B (7 met.)	Anode ..	228	11.5
		Screen ..	232	4.2
3	Pen 4DD (7)	Anode ..	220	30
		Screen ..	232	5.5
4	DW4/350 (4)	Heaters ..	300	—

Right is the Alba 805 switch diagram. Below are the chassis layouts, on the left being the view of the top, and right the underside.



and adjust first the trimmers of I.F. T2 and then I.F. T1 for maximum response, reducing the input from the service oscillator as the circuits come into line to render the AVC inoperative.

**Signal Circuits.**—Connect the service oscillator to the A and E sockets, only feeding sufficient input to obtain reliable peaks in the output meter, and progressively reducing the input as the circuits come into line.

**Medium Waves.**—Tune set and oscillator to 250 metres (1,200 kc.), and adjust T1 and then T2 for maximum response.

Tune set and oscillator to 500 metres (600 kc.) and adjust P1 for maximum simultaneously rocking the gang.

Repeat both operations until no further improvement results.

**Long Waves.**—Tune set and oscillator to 1,200 metres (250 kc.) and adjust T3 for maximum. (T4 is rather inaccessible, as this trimmer is set at the works, but can be adjusted if desired.)

Tune set and oscillator to 1,900 metres (157.9 kc.) and adjust P2 for maximum simultaneously rocking the gang.

Repeat both operations until no further improvement results.

**Short Waves.**—Tune set and oscillator to 20 metres (15 mc.) and adjust T5 for maximum, using the peak obtained with the trimmer nearest to its minimum capacity position. Short-wave padding is fixed.

**Replacement Condensers.**—Exact replacement condensers for the Alba 805 available from A. H. Hunt, Ltd., are: For C's 19 and 20, No. 3891A at 5s. 6d.; and for C18, No. 2918 at 1s. 9d.

### ULTRA 203 FIVE

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obtain only reliable peaks in the output meter. The pointer should lay between the two cream horizontal dial lines when the gang is fully closed.

**I.F. Wave-Trap.**—Tune the set to 950 metres on scale, inject a strong 470 kcs. signal from the output meter, and adjust T1 for minimum response.

**Medium Waves.**—Tune set and oscillator to 200 metres (1,500 kc.) and adjust T2 then T3 for maximum.

Tune set and oscillator to 500 metres (600 kc.) and adjust P1 for maximum simultaneously rocking the gang.

Repeat both operations until no further improvement results.

**Long Waves.**—Tune set and oscillator to 1,300 metres (230 kc.) and adjust T4 and then T5 for maximum.

Tune set and oscillator to 1,700 metres (176.5 kc.) and adjust P2 for maximum, simultaneously rocking the gang.

Repeat both operations until no further improvement results.

**Short Waves.**—Tune set and oscillator to 19 metres (15.7 mc.), screw T6 right up, then unscrew until the second peak is heard. Then adjust T7 for maximum.

The short-wave padding is fixed, but check calibration at 30 and 50 metres. Note: In some receivers the two padders P1 and P2 are mounted differently in another plane. P1, the

## Alba 805 on Test

**MODEL 805 A.C.**—Standard model for A.C. mains operation, 190-250 volts, 40-100 cycles. PRICE.—£7 19s. 6d.

**DESCRIPTION.**—Three-valve, plus rectifier, three-band superhet table receiver.

**FEATURES.**— Full-vision scale calibrated in metres and station names, traversed by single pointer. Controls for concentric tuning, wave selection and combined volume and master switch. Sockets at rear of chassis for P.U. and terminals on speaker panel for high impedance L.S.

**LOADING.**—60 watts.

**Sensitivity and Selectivity**

**SHORT WAVES (16.5-50 metres).**—Excellent gain and good selectivity, easy handling; sensitivity well maintained over entire band.

**MEDIUM WAVES (200-550 metres).**—Excellent gain and selectivity for the valve combination employed, with a good background.

**LONG WAVES (700-2,000 metres).**—High gain and representative selectivity, all main stations easily received.

**Acoustic Output**

Crisp, clean tone, with good attack and good medium- and low-note radiation. Little colouration on speech, and general well-balanced performance.

M.W. padder, will then be the one nearest the rear of the chassis.

**Press-button Alignment.**—There are seven press-buttons giving seven stations selected by the operator.

Remove the bakelite panel (secured by two screws) from the top of the cabinet, when the trimmers will be accessible. These are numbered one to seven and also, with the corresponding wave range, they are intended to cover, e.g., 373/484 and 240/360 metres.

To set a button—e.g., button 1—switch to the L.W. band (as the trimmer wavelength band is 1,400/1,900 metres), select a station within the range, press the button and adjust the rearmost trimmer No. 1 on the trimmer panel until the station is tuned in spot on. The receiver should have an aerial and earth system connected, of course. Then adjust the corresponding front trimmer No. 1 until the programme is at full strength.

**Replacement Condensers.**—Exact replacement condensers for the Ultra 203 are obtainable from A. H. Hunt, Ltd. They are: For C11, Unit No. 2958 at 2s. 6d.; C29, No. 2531 at 1s. 10d.; and C's 30 and 31, No. 3603 at 9s.