

ALBA 730, 745, 830, 845 A.C.-D.C.

Four - valve, plus rectifier and tuning indicator, four waveband superhet for A.C. or D.C. mains operation. Models 830 and 845 are table types; the 730 and 745 are radiograms. The 745 and 845 have mechanical Presto-Tune tuning. Made by A. J. Balcombe, Ltd., 52-58, Tabernacle Street, London, E.C.2.

Circuit.—Transformer coils, with a common primary on M. and L.W., couple the aerial to V1, the frequency-changer. Tuned grid coils, with separate anode reaction coils, are used for each band in the oscillator section. A section of the

aerial switch is used, in the medium wave position, to short the long-wave oscillator circuit. This is to prevent absorption effects.

Iron-core I.F. transformers, with trimmer tuning, couple V1 to V2, the I.F. amplifier, and V2 to V3, the double-diode triode.

The A.V.C. diode is fed from V2 anode, and the demodulation diode circuit contains a switched pick-up connection. Resistance-capacity coupling leads to V4, the output pentode. This has an anode tone-control circuit and a fixed tone shunt condenser.

Smoothing is by choke and electrolytics. H.T. is obtained through a full-wave rectifier, V5, utilised in the usual half-wave circuit. The heaters are run in series through a barretter, R24 (a type C1).

V6 is a "magic eye" tuning indicator and is controlled in the usual way from the A.V.C. line.

Notes.—Wavebands are 12-35, 30-90, 200-560, and 800-2,000 metres. Speaker leads: red and white are speech, black is earth.

Models 745 and 845 incorporate the Alba Presto-Tune automatic tuning system. This is a mechanical system, now very familiar, and is easily changed from the front. Adjustment instructions are not necessary.

GANGING

I.F. Circuits.—Inject 470 kcs. to V1 grid, short oscillator section of gang, and peak both I.F. transformers.

M.W. Band.—Tune to 250 m., inject 250 m. to aerial, and adjust T1 and T2. Tune set and generator to 500 m. and pad with T3.

L.W. Band.—Tune to 1,300 m., inject 1,300 m., and adjust T4 and T5. Tune set and generator to 1,900 m. and pad with T6.

S.W.1 Band.—Tune set and generator to 25 m. and adjust T7 and T8. Padding is fixed.

S.W.2 Band.—Tune set and generator to 50 m. and adjust T9 and T10. Padding is fixed.

CONDENSERS

C	Mfds.	C	Mfds.
1	.. 200 mmfds.	16	.. 75 mmfds.
2	.. 5 mmfds.	17	.. 100 mmfds.
3	.. .05	18	.. 100 mmfds.
4	.. .1	19	.. .005
5	.. .1	20	.. .01
6	.. 500 mmfds.	21	.. .01
7	.. 100 mmfds.	22	.. 2
8	.. .02	23	.. .02
9	.. .01	24	.. .005
10	.. .0086	25	.. 25
13	.. .05	26	.. 16+16+8
14	.. .1	27	.. .02
15	.. .1		

VALVE READINGS

V	Type	Electrode	Volts	Ma.
1	ECH3	Anode ..	265	5.5
		Screen ..	140	.7
		Osc. anode	130	5.5
2	EF9	Anode ..	265	5
		Screen ..	130	1.5
3	EBC3	Anode ..	200	4
4	CL6	Anode ..	230	55
		Screen ..	120	7
5	CY2	—	—	—
6	EM4 or 6G5	Anode ..	265	—
Pilot lamps, 4.5 v., .3 amp.				

RESISTANCES

R	Ohms.	R	Ohms.
1	.. 1 meg.	15	.. 2,500
2	.. 25,000	16	.. 15,000
3	.. 40,000	17	.. 1,500
4	.. 25,000	18	.. .5 meg.
5	.. 50,000	19	.. 25,000
6	.. 200	20	.. 50,000
7	.. 25 meg.	21	.. 50,000
8	.. 40	22	.. 25 meg.
9	.. 200	23	.. 200
10	.. .09 meg.	24	.. Barretter, C1
11	.. 300	25	.. 75
12	.. .05 meg.	26	.. 75
13	.. 5 meg.	27	.. .5 meg.
14	.. .5 meg.		

WINDINGS

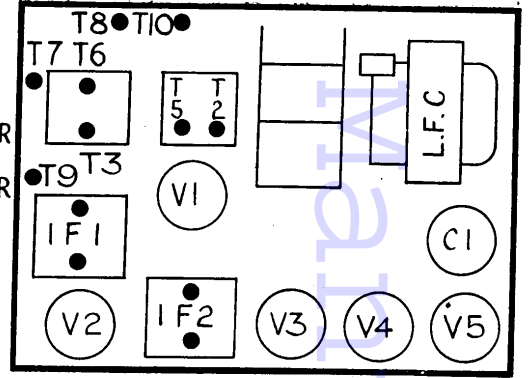
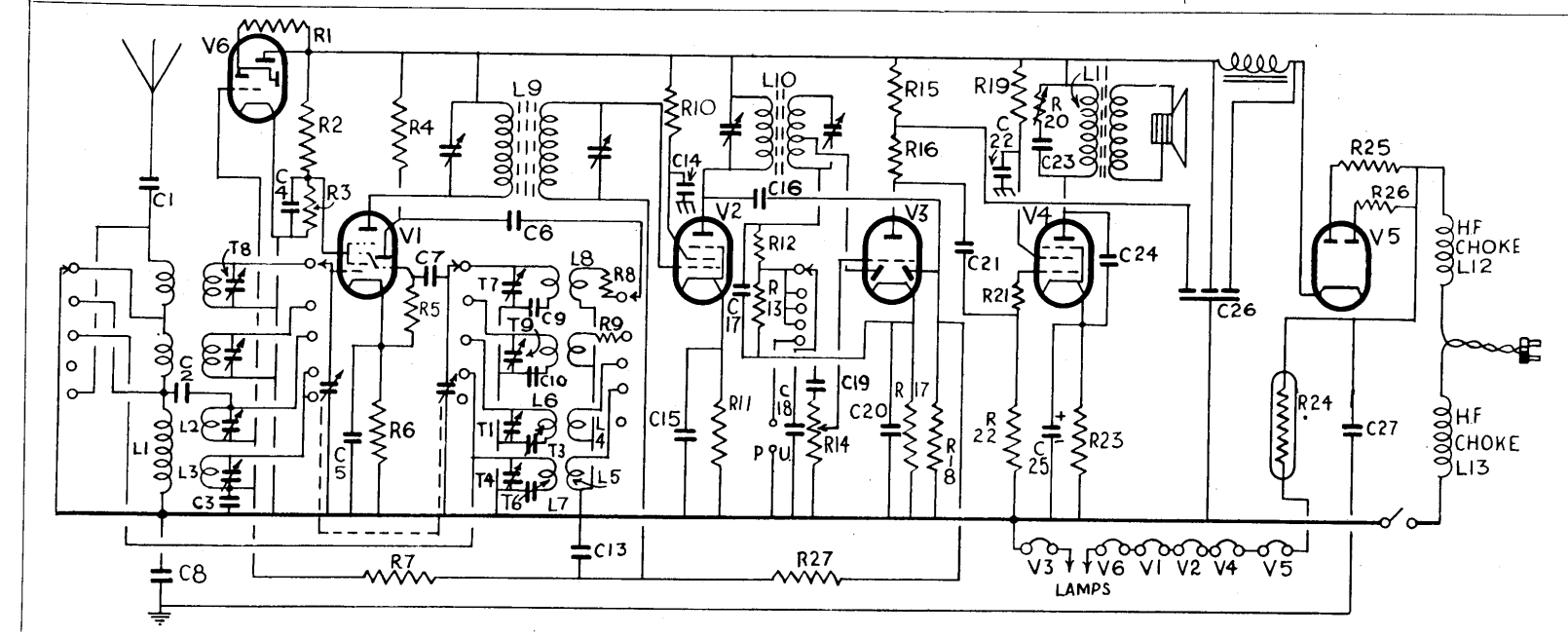
L	Ohms.	L	Ohms.
1	.. 40	8	.. 15
2	.. 15	9	.. 4
3	.. 15	10	.. 4
4	.. 30	11	.. 300
5	.. 50	12	.. 3
6	.. 3	13	.. 3
7	.. 9		

Alignment Procedure

THE ganging notes in "Service Engineer" reviews are given in skeleton form and it is assumed that engineers are familiar with the usual routine procedure. Those who have any doubts on the best methods to apply should refer to the articles on alignment in the August and September, 1940, issues.

Briefly, it may be said that ganging should never be undertaken without the use of an accurate signal generator and an output meter. Set volume should be turned to maximum, and the lowest signal giving a reliable output indication should be used at all times so that the A.V.C. does not come into operation. Before ganging, it should be seen that

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MARCONIPHONE

911

Four - valve, plus rectifier, three-waveband table model superhet in a moulded cabinet. For 195-255 v. 50-100 cycle A.C. Made by the Marconiphone Co., Ltd., Hayes, Middlesex.

Circuit.—Transformer coils with iron-dust cores on medium and long waves couple the aerial to V1 on all three bands. V1 is the frequency-changer, and the oscillator section is

tuned grid with separate anode reaction coils on S. and M. bands.

Air-core I.F. transformers link up V2, the I.F. amplifier, and V3, the double diode triode. The diodes are strapped together, the A.V.C. as well as the demodulated L.F. being taken from VR1, the combined diode load and volume control.

The triode section of V3 is resistance-capacity coupled to V4, the output tetrode. This has a feed-back tone condenser between anode and grid, and a parasitic oscillation stopper in R14.

V5, a full-wave rectifier, provides H.T., smoothed by the speaker field and C18, C19.

Notes.—Wavebands are 16.5-50, 195-560, and 950-2,000 m. Mains consumption, 50 watts. Connections are provided for a pick-up (a 7,500 ohm. parallel resistance is recommended) and a 4-5 ohm. extension speaker.

GANGING

I.F. Circuits.—Set receiver to M.W. maximum and volume control to maxi-

mum. Inject 465 kcs. to V1 grid and adjust I.F. trimmers for maximum.

M.W. Band.—Tune receiver to 210 m., inject this wavelength (1,428 kcs.) and adjust T1 and T2.

Tune to and inject 510 m. (588.2 kcs.) and adjust L4 core and L9 core. Repeat T1 and T2 adjustment at 210 m.

L.W. Band.—Tune to 1,000 m., inject 300 kcs. and adjust T3.

Tune to 1,850 m., inject 162.3 kcs. and adjust L11 core. Readjust T3 at 1,000 m.

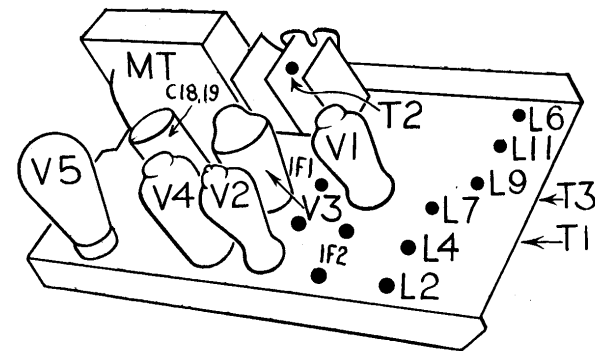
Tune to 1,400 m., inject 214.3 kcs. and adjust L6 core.

S.W. Band.—Tune to 50 m., inject 6,000 kcs. and adjust loop L7. While rocking gang slightly, adjust loop L2. Repeat both these operations.

WINDINGS

L Ohms.		L Ohms.	
1	.. .25	9	.. 3
2	.. V. low	10	.. 2
3	.. 24	11	.. 7.5
4	.. 2.5	12	.. 9
5	.. 70	13	.. 7
6	.. 19	14	.. 4.5
7	.. V. low	15	.. 4.5
8	.. 4	CK1	.. 950

The 911 is a simple set of special "war-time" design. All trimmers are accessible from above or the side.



CONDENSERS

C	Mfds.	C	Mfds.
1	.. 35 mmfds.	12	.. .0001
2	.. .0005	13	.. .05
3	.. .1	14	.. .001
4, 11	.. .05	15	.. 230 mmfds.
5	.. 75 mmfds.	16	.. .005
6	.. .005	17	.. 23 mmfds.
7	.. 430 mmfds.	18	.. .16
8	.. .0002	19	.. 8
9	.. 150 mmfds.	20	.. 5 mmfds.
10	.. 50 mmfds.	21	.. 35 mmfds.

VALVE READINGS

V	Type	Electrode	Volts	Ma.
1	X63M	Anode ..	260	2.5
		Screen ..	80	3
		Osc. anode ..	150	4.5
2	KTW61M	Cathode ..	3.5	10
		Anode ..	260	6
		Screen ..	80	2
3	DH63M	Cathode ..	2.8	8
		Anode ..	65	.4
4	KT61	Cathode ..	—	.4
		Anode ..	245	38
		Screen ..	260	7
		Cathode ..	4.5	45
5	U10	Anodes ..	345 A.C.	55
		Heater ..	335	—

Pilot lamp, 6v. .25 amp.

RESISTANCES

R	Ohms.	R	Ohms.
3	.. 350	10	.. 10 meg.
4	.. 50,000	11	.. .5 meg.
5	.. 23,000	12	.. .5 meg.
6	.. 35,000	13	.. 100
7	.. 350	14	.. 50,000
8	.. 2.3 meg.	VR1	.. .5 meg.
9	.. 50,000		

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the dial is "square" in its mounting and that the pointer registers with its correct mark with the gang at minimum or maximum. During adjustments on each band the trimmers and padder should be adjusted alternately three or four times until no further improvement is obtained.

The oscillator trimmers are adjusted first, injecting a modulated I.F. signal to the frequency-changer grid. The oscillator section of the gang may be shorted. The second transformer's trimmers are adjusted first.

It does not matter in what order the wavebands are adjusted unless some trimmers are in circuit on more than one band.

