ALBA 755, 855

Six valve, plus two rectifiers and tuning indicator, four wave-band superhet with 8 push-buttons utilising a mechanical system. In table (855) and radiogram (755) models and for 190–260 v. 40–100 cycle supplies. Made by A. J. Balcombe & Co., Ltd., 52–58, Tabernacle St., London, E.C.2.

Circuit.—Transformers couple the aerial to V1, the frequency-changer, on each of the four bands, there being a common primary for both M. & L.W. The oscillator section is straightforward with anode reaction coils on each band, and fixed padders on the two S.W. ranges.

Trimmer-tuned iron-core transformers link V1 to V2, the I.F. amplifier, and V2 to V3, a double-diode triode. A.V.C. arrangements are conventional, control being applied to V1 on M. and L.W. only.

Output of the signal demodulation diode is taken via a P.U. switch to the volume control, R.15. The triode section resistance-capacity feeds V4, an L.F. amplifier.

V4 has load resistors, R18 and R21, in both anode and cathode circuits and these develop opposite-phase signals which operate V5 and V6, the push-pull output pentodes, via C19 and C20. R20 biases V4.

R29 and R30 are grid leaks and R22 and R23 are oscillation stoppers. V5 and V6 energise a push-pull output transformer.

H.T. is obtained from a full-wave rectifier system which is perfectly normal, although a full-wave rectifier with strapped anodes is used for each half-wave (V7 and V8).

V9 is a "magic eye" tuning indicator operated from the A.V.C. line.

GANGING

I.F. Circuits.—Inject 470 kc. to V1 grid and adjust I.F. trimmers for maximum, repeatedly reducing the input to keep below the level at which the A.V.C. begins to function.

M.W. Band.—Tune to 250 m., inject this wavelength to aerial and adjust T1 and T2 for maximum.

Tune to 500 m., inject this wavelength and, rocking gang slightly, adjust T3.

L.W. Band.—Tune to, and inject, 1,300 m. Adjust T4 and T5. Pad with T6 at 1,900 m.

S.W.1 Band.—Tune to, and inject, 25 m. Adjust T7 and T8. Padding is fixed.

S.W.2 Band.—Tune to, and inject, 50 m. Adjust T9 and T10. Padding is fixed.

WINDINGS

L	Ohms.	L	Ohms.
1	40	9	4
2	15	10	4
3	15	11	4
4	30	12	4
5	50	13	300
6	3	14	250
7	9	15	14
8	15	16	700

CONDENSERS

C	Mfds.	C	Mfds.
1	5 mmfds.	15	.005
2	.1	16	25
3	25 mmfds.	17	.004
4	.1	18	.01
5	.1	19	.01
6	.0001	20	.01
7	.0002	21	16+16+8
8	.1	22	.05
9	75 mmfds.	23	.01
10	.1	24	.01
11	.1	25	.01
12	.1	26	.0036
13	.0001	27	600 mmfds.
14	.0001	28	300 mmfds.

VALVE READINGS

V	Type	Electrode	Volts	Ma.
1	ECH3	Anode	240	3.4
		Screen	90	3
		Osc. anode	90	5
2	EF9	Anode	246	3.5
		Screen	80	1.7
3	EBC3	Anode	150	2.4
4	EBC3	Anode	190	.4

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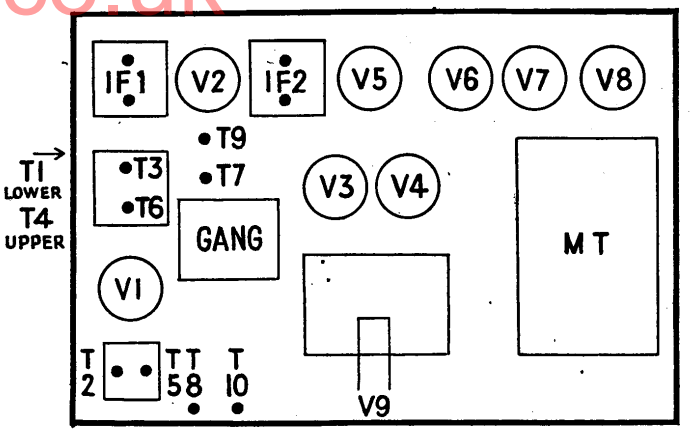
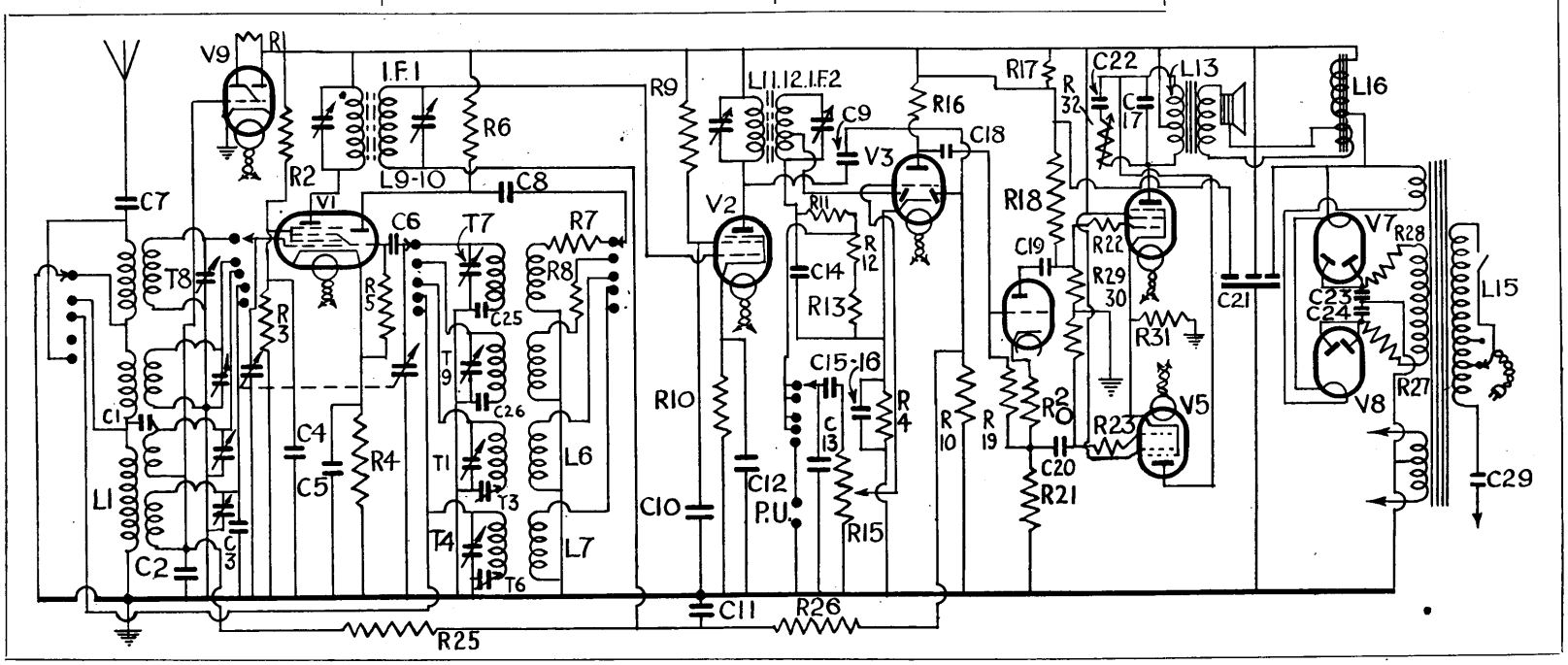


Although a large set, the R.F. and I.F. circuits of the 855 are quite straightforward. The current load of push-pull output with phase inverter necessitates the use of two rectifiers. An additional valve is the electronic tuning indicator.

Switching provides for four wavebands and a pick-up position. The aerial switch bank is utilised to short L.W. oscillator coils to prevent absorption effects.



VALVE READINGS—*Continued*

V	Type	Electrode	Volts	Ma.
5	EL6	Anode	230	40
		Screen	240	4.5
6	EL6	Anode	230	40
		Screen	240	4.5
7 & 8	AZ2	Rectifiers	—	—

Pilot lamps, 4.5 v., .3 amp.

RESISTANCES

R	Ohms.	R	Ohms.
1	1 meg.	16	30,000.
2	25,000	17	2,500
3	40,000	18,21	20,000
4	150	19	75,000
5,11	50,000	20	2,000
6	25,000	22, 23	50,000
7	40	24,25	.25 meg.
8	200	26	.5 meg.
9	90,000	27	75
10	300	28	75
12,13	.25 meg.	29,30	.25 meg.
14	1,500	31	100
15	.5 meg	32	30,000

I.F. Transformer Leak

A PHILIPS radiogram had two faults—blowing the mains fuse and weak reception. The first was found to be due to a collar-tightening screw in the combined volume-control and switch. In a certain position the screw touched a "live" contact and shorted it to chassis.

Tests revealed the grid of the I.F. valve was slightly positive. This caused grid current which damped the circuit, resulting in low signals and high background.

A high resistance leak from the H.T. (primary) trimmer to the grid trimmer on the I.F. transformer was suspected. A high-voltage test with a neon lamp gave confirmation. Incidentally, a low-voltage ohmmeter test would have been useless in this case.—D. L.