

ALBA 461

Four-valve, plus rectifier, three waveband superhet for operation from AC supplies of 200-250v, 40-100 cycles. Provision for PU and external speaker. Marketed by A. J. Balcombe, Ltd., 52-58 Tabernacle Street, London, EC2. Production, January, 1946. Retail price £15 plus £3 4s. 6d. tax.

the LW circuit uses another iron-dust coil L6 and trimmer T3, C2 being a fixed trimmer.

Automatic volume control is only applied to V1 on MW and LW (by C3 and R5). The main tuning capacitor is VC1.

A common cathode bias resistor R9 is used for V1, V2 and V3. C20 provides adequate decoupling at RF for V1 and V2 but insufficient decoupling of AF for V3. Hence negative feed-back occurs rendering the stage more stable. C7 gives additional decoupling for the oscillator. Screen supply for V1 in common with that of V2 is derived from a potential divider R1, R2 across the HT, C4 providing decoupling.

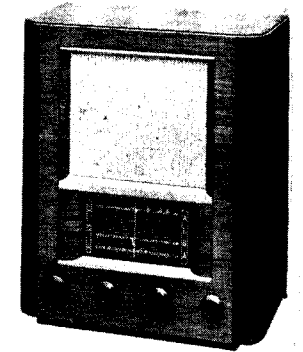
The oscillator obtains its anode supply via R3. C5 parallel feeds the anode coupling inductances

comprising L7, L8 and L9. The switching is similar to the aerial circuit.

Tuned oscillator grid circuit is formed by the main tuning capacitor VC2 with its attendant LW, MW and SW circuits. On SW this is simply coil L10 trimmed by T4 and padded by C11. MW reverts again to variable iron-dust coil L11 padded by C10 and trimmed by T5. LW has a fixed trimmer C8 across the main tuning capacitor and another variable iron-dust coil L12. The trimmer is T6 and the padder is C9. Leak and condenser bias is obtained from C6 and R4.

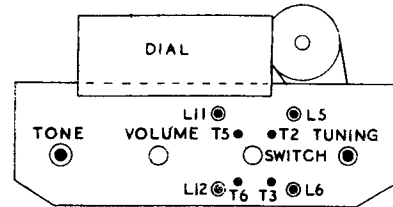
The first IF transformer uses iron-dust trimming by L13 and L14 with associated fixed tuners, C12 and C13. AVC in all wave-bands is series fed to V2 grid by R10 and C19 which provide decoupling and filtering. A similar transformer

One of Alba's two first post-war sets, the 461 is a five-valve superhet for AC mains.



RESISTORS

R	Ohms	R	Ohms
1	1 watt 22,000 (.1)	11	1 watt 1 meg (.25)
2	1/2 watt 30,000 (.5)	12	1/2 watt 47,000 (.25)
3	1/2 watt 30,000 (.5)	13	1/2 watt 47,000 (.25)
4	1/2 watt 47,000 (.25)	14	1/2 watt 560,000 (.25)
5	1/2 watt .25 meg (.25)	15	2 watts 2,200 (.2)
6	1/2 watt 47,000 (.25)	16	1/2 watt 150 (.5)
7	1/2 watt 470,000 (.25)	17	50,000
8	1 meg	18	2 watts 1,000 (.2)
9	1/2 watt 150 10 ⁶ (.5)		* Wattage in brackets.
10	1/2 watt 1 meg (.25)		



THE usual series aerial capacitor C1 feeds the signal to an aperiodic aerial circuit, L1, L2 and L3. Waveband switching shorts L2 and L3 on SW and L3 on MW leaving all three in circuit in series on LW.

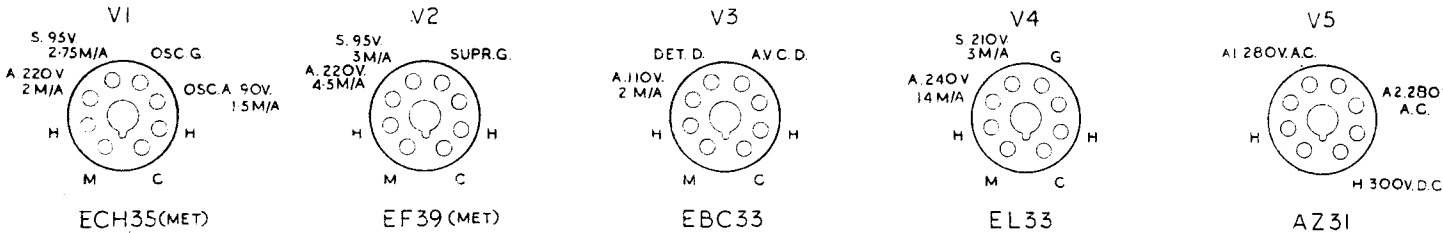
The grid circuit utilises L4 and trimmer T1 on SW, but brings in a variable iron-dust coil L5 with its associated trimmer T2 on MW. Similarly,

is formed by L15 and L16 with C14 and C15, the secondary passing the signal to the detector and via C28 to the AVC diode.

Detector load is R7 with R6, C17 and C18 providing IF filtering. The AF voltages are passed by C16 to a switch for either Radio or PU. The volume control is inserted at this point applying the signal to the triode grid.

AVC diode load is R11, the AVC line being taken

Continued overleaf.

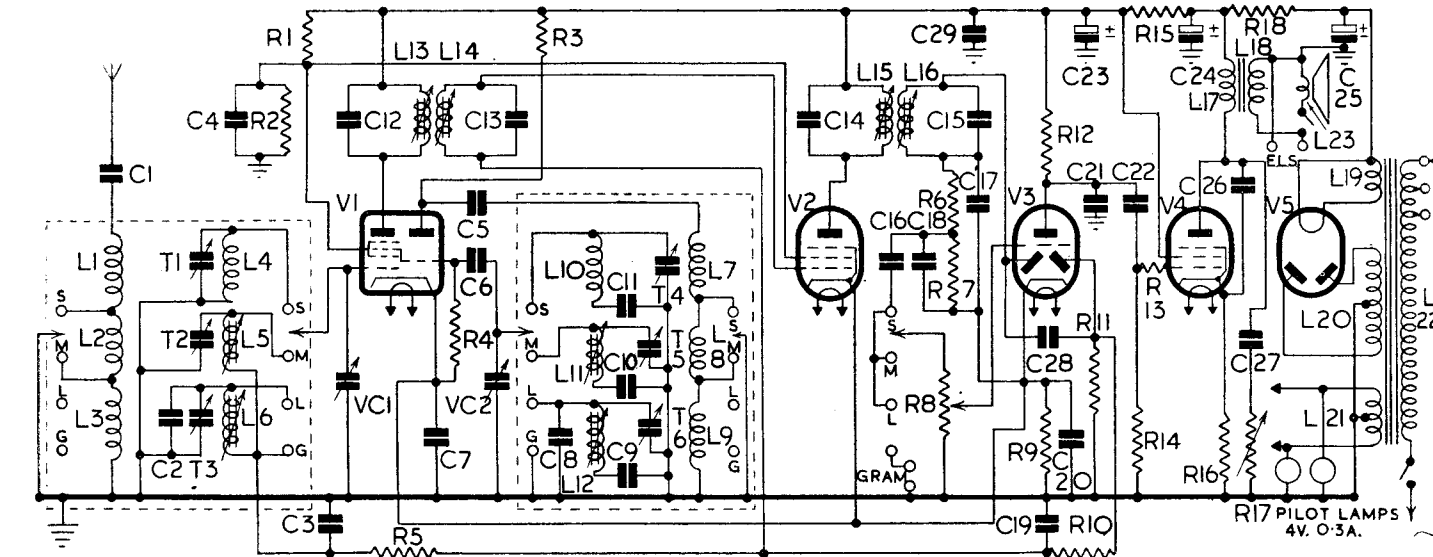


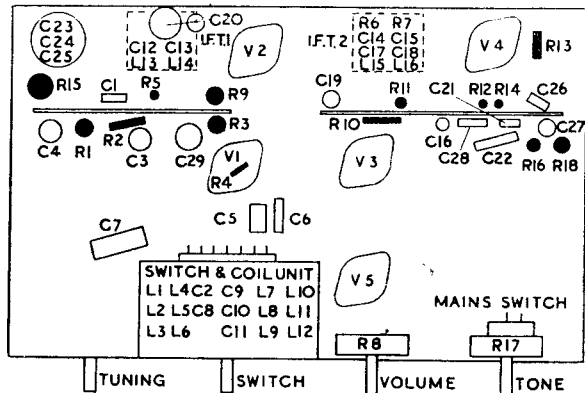
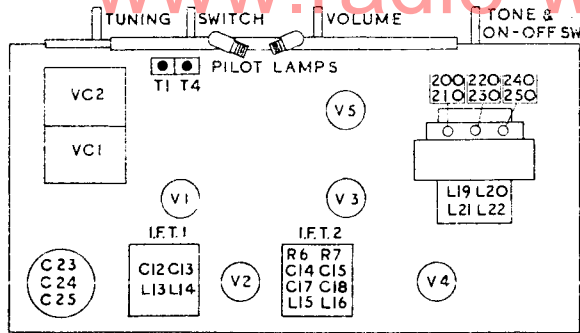
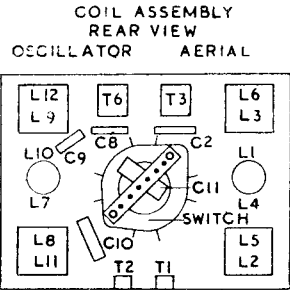
INDUCTORS

L	Ohms*	L	Ohms*
1	.4	13	8.0
2	1.0	14	8.0
3	100.0	15	8.0
4	.4	16	8.0
5	3.0	17	503.0
6	9.0	18	.5
7	.4	19	.3
8	.5	20	250-250
9	1.3	21	.3
10	Very low	22	21.0
11	.5	23	2.0
12	9.0		

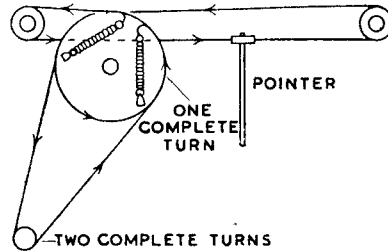
CAPACITORS

C	Type	Tolerance %	Mfds.
1	Silver-mica	20	200 pf
2	Paper	20	56 pf
3	Paper		.05 mfd
4	Paper		.1 mfd
5		20	100 pf
6	Silver-mica	20	47 pf
7	Paper		.1 mfd
8	Silver-mica		56 or 47 pf
9	Silver-mica	5	200 pf
10	Silver-mica	5	575 pf
11	Silver-mica	5	5600 pf
12	Silver-mica	5	100 pf
13	Silver-mica	5	100 pf
14	Silver-mica	5	100 pf
15	Silver-mica	5	100 pf
16	Paper		.005 mfd
17		20	100 pf
18		20	100 pf
19	Paper		.05 mfd
20	Paper		.5 mfd
21		20	200 pf
22	Paper		.01 mfd
23	Electrolytic		16 mfd
24	Electrolytic		16 mfd
25	Electrolytic		8 mfd
26	Paper		.005 mfd
27	Paper		.05 mfd
28		20	200 pf
29	Paper		.1 mfd





These drawings show how components are located on and under the 461 chassis and include a detail of the special coil unit. Below: arrangement of the dial drive cord.



ALBA 461—Continued

from the anode. A delay of approximately 2V is obtained from R9.

Amplified AF voltage appears across triode anode load R12 and is passed by C22 to grid of V4. IF filtering and a little treble cut are obtained from C21. An anti-parasitic oscillation grid stopper R13 is incorporated. R14 is the grid leak.

Cathode bias from un-bypassed R16 involves negative feed-back. Anode HT is tapped off the first stage of smoothing and a fixed tone corrector C26 used between anode and cathode. Variable tone control is effected by C27 and R17.

The output transformer secondary L18 has provision for an external speaker of 2 ohms impedance by a wander plug arrangement at the rear. The set speaker is of the permanent-magnet type.

Power unit uses a 300-0-300 HT winding with 4-volt rectifier heater and 6.3 volt heater windings. Primary tappings are provided for 200-210; 220-230; 240-250; 40-100 cycles.

Full-wave rectifier V5 provides the HT; smoothing is accomplished by a two-stage resistance capacitance network. C25 is the electrolytic reservoir capacitor. R18 provides the first smooth-

ing impedance with C24 decoupling. C29 is an RF by-pass.

Pilot lights are 4V .3A MES types from each side of valve heaters to earth.

ALIGNMENT INSTRUCTIONS

Apply Signal as Below.	Tune Receiver to.	Adjust in order stated for Max. Output.
(1) 460 KC to grid of V1.	MW 500 metres	L16, L15, L14, L13
(2) 1,500 KC to Ae socket.	MW 200 metres	T5, T2
(3) 600 KC as in (2)	MW 500 metres	L11, L5
(4) 15 MC as in (2)	SW 20 metres	T4, T1
(5) 6 MC as in (2)	SW 50 metres	Check calibration as compared with (4)
(6) 300 KC as in (2)	LW 1,000 metres	T6, T3
(7) 150 KC as in (2)	LW 2,000 metres	L12, L6

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14513	45/55	13	45 feet	3/3
14516	45/55	16	94 feet	3.6

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