

ALBA A.C. SUPERHET SIX (Cont.)

Replacing Chassis.—Stick or lay the rubber washers over the holes in the bottom of the cabinet.

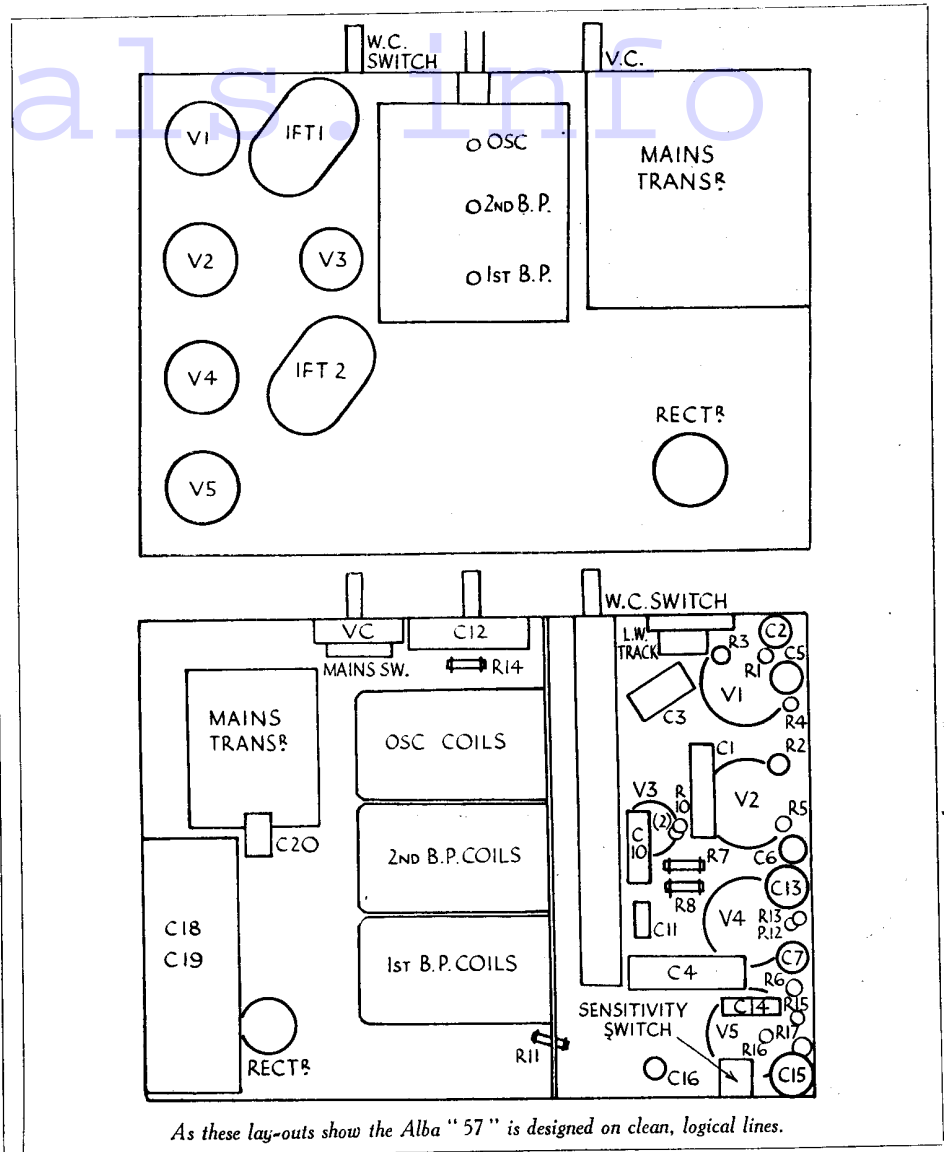
Lay the chassis inside, replace the holding screws and the knobs.

CONDENSERS

C.	Purpose.	Mfd.
1	Decoupling V1 grid ..	.1
2	V1 cathode by-pass ..	.1
3	V1 osc. grid. reservoir ..	.0002
4	V1 aux. grid by-pass ..	2
5	Decoupling V1 osc. anode ..	.1
6	V2 cathode by-pass ..	.1
7	Decoupling V2 anode ..	.1
8	I.F. feed to A.V.C. diode ..	.0002
9	H.F. by-pass ..	.0002
10	L.F. coupling V3 to V4 ..	.005
11	H.F. by-pass ..	.0006
12	Decoupling V4 grid ..	.25
13	V4 cathode by-pass .. el.	.25
14	I.F. coupling V4 to V5 ..	.005
15	V5 cathode by-pass .. el.	.25
16	Tone compensating V5 anode ..	.005
17	Tone control circuit ..	.02
18	H.T. smoothing .. el.	12
19	H.T. smoothing .. el.	8

RESISTANCES

R.	Purpose.	Ohms.
1	V1 cathode bias ..	250
2	Voltage dropping to V1 and V2 aux. grids ..	25,000
3	V1 osc. grid leak ..	50,000
4	Decoupling V1 osc. anode ..	75,000
5	V2 cathode bias ..	400
6	Decoupling V2 anode ..	10,000
7	Decoupling A.V.C. line ..	1 meg.
8	H.F. stopper ..	1 meg.
9	Diode load ..	.5 meg.
10	A.V.C. diode load ..	.5 meg.
11	Across P.U. leads ..	100,000
12	V4 bias ptr. ..	600
13	V4 bias ptr. ..	300
14	V4 grid leak, V.C. ..	5 meg.
15	V4 anode coupling ..	100,000
16	V5 grid leak ..	.25 meg.
17	V5 cathode bias ..	500
18	Tone control ..	50,000
—	L.S. field ..	2,000



As these lay-outs show the Alba "57" is designed on clean, logical lines.

ULTRA MODEL 66 RECEIVER

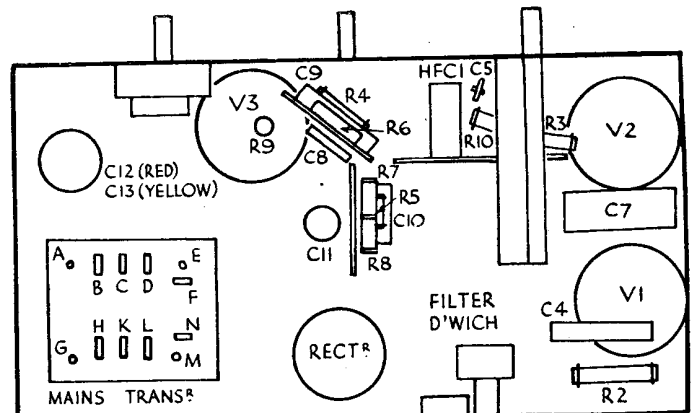
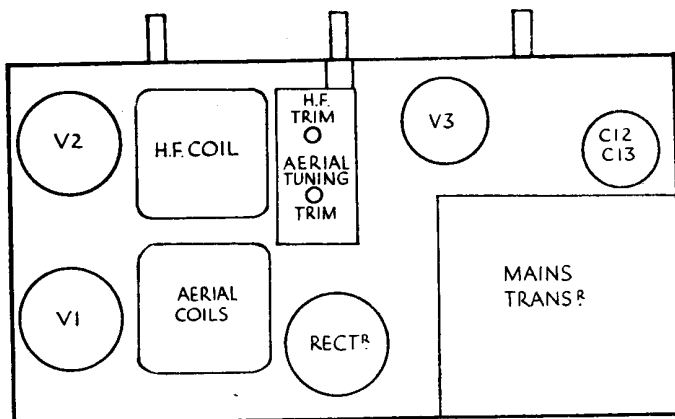
Circuit.—A single H.F. valve, AC/VPI met. (V1), has a tuned secondary aerial transformer in its grid circuit and is choke filter fed to the grid coil of the next valve. Volume is controlled by variable cathode resistance. The detector valve, AC/S2/Pen met. (V2), is employed as an anode-bend detector, and is coupled to the output valve by a resistance capacity filter.

The last valve, an A.C.2Pen (V3) has both grid and anode stabilising resistances, and is tone compensated by a condenser across the primary of the output transformer. Mains equipment consists of: transformer, full-wave UU3, indirectly-heated rectifier, and the speaker field in the positive H.T. lead for smoothing with electrolytic condensers. The supply for the pilot lamps is separate

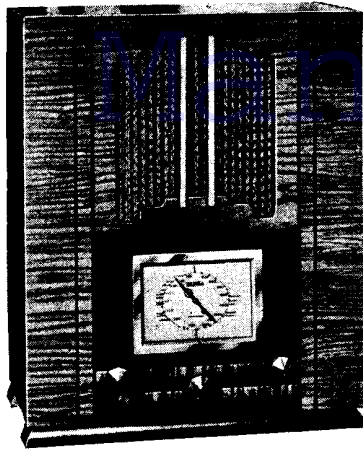
from that of the heaters. The lamps are on clips which slip out and are 4.5v. .3 amp. types connected in parallel.

Special Notes.—The auxiliary grid of V1 has approximately the same H.T. potential as the anode.

The resistance R2 is used to provide a (Continued on opposite page.)



These diagrams show how the parts are arranged on the Ultra chassis. For the mains transformer connections see "General Notes."



ULTRA MODEL 66 A.C. RECEIVER (Contd.)

steadily current through the volume control, as otherwise control would be almost neutralised by the decrease in valve current.

The auxiliary grid voltage for V2 is obtained from the cathode of V3, which is normally 12.5 volts positive with relation to chassis.

Quick Tests.—Between the two lower terminals (next to speaker field) on the output transformer and chassis:—

Nearest the back, V3 anode, 250 volts.

Nearest the front, H.T. smoothed, 265 volts.

Removing the Chassis.—Remove the knobs (grub screw). Remove the three hold-

Left is seen the table model in the Ultra range of 66 type instruments. Console and radiogram versions are also produced.

ing screws from underneath, and lift the chassis out

General Notes.—The condensers C12 and C13 are in one cylindrical container. The yellow lead is C13; the red, C12. Mains transformer connections (see layout diagram) are:—

- A and G, set heaters,
- C, C.T. to chassis,
- B and D, rectifier anodes,
- E and M, rectifier heater,
- F and N, pilot lamps,
- L, mains O to switch,
- K, 200 v. tapping,
- H, 230 v. tapping.

The L.F. coupling components between V2 and V3 are mounted on the assembly next V3.

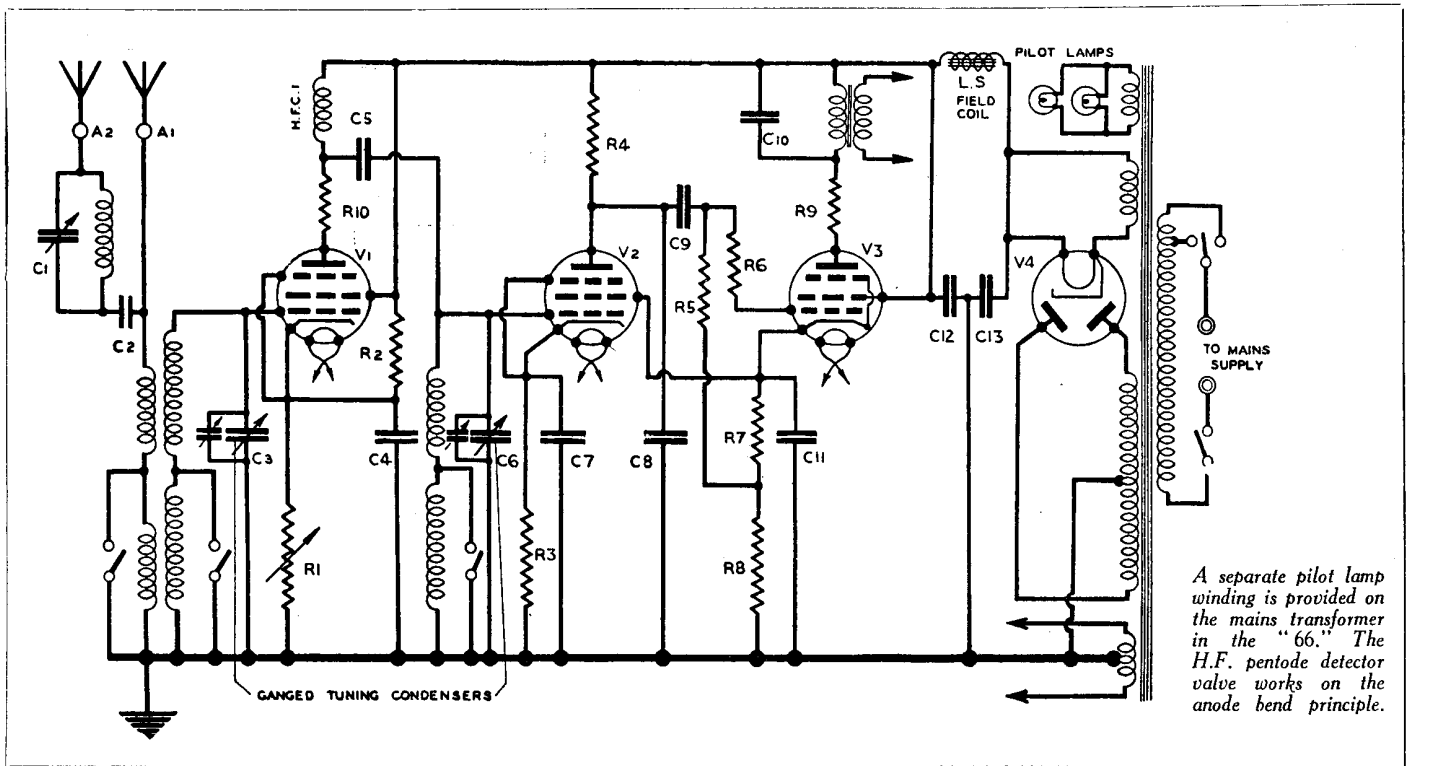
Replacing Chassis.—Lay chassis inside the cabinet. Replace holding screws and knobs.

VALVE READINGS				
Valve.	Type.	Electrode.	Volts.	M.A.
1	ACVP1 met. (7)	anode ..	260	14
		aux. grid ..	265	
2	AC/s2/Pen. (7)	anode ..	92	*
		aux. grid ..	12.5	
3	AC/2 Pen. (7)	anode ..	250	34
		aux. grid ..	265	5

* Insertion of current meter leads causes instability.

CONDENSERS		
C.	Purpose.	Mfd.
2	Series with aerial filter ..	10 mmfd.
4	V1 cathode by-pass ..	.1
5	H.F. coupling V1 to V2 ..	10 mmfd.
7	V2 cathode by-pass ..	10
8	V2 anode, H.F. by-pass ..	.0002
9	L.F. coupling V2 to V3 ..	.01
10	Tone compensating V3 ..	.01
11	V3 cathode by-pass ..	50
12	H.T. smoothing ..	16
13	H.T. smoothing ..	8

RESISTANCES		
R.	Purpose.	Ohms.
1	V1 cathode, V.C. ..	10,000
2	Current feed to V1 cathode resist. ..	50,000
3	V2 grid leak ..	15,000
4	V2 anode, L.F. coupling ..	.5 meg.
5	V3 grid leak ..	1 meg.
6	V3 grid stabiliser ..	50,000
7	V3 cathode bias ..	138
8	V3 bias ptr. (series) ..	138
9	V3 anode stabiliser ..	60
10	V1 anode stabiliser ..	50



A separate pilot lamp winding is provided on the mains transformer in the "66." The H.F. pentode detector valve works on the anode bend principle.

BUSH D.A.C.1 UNIVERSAL SUPERHET

Circuit.—The combined first detector-oscillator, FC13 met. (VI) (P type base), is preceded by a band-pass aerial circuit. Bias is by A.V.C. with limiting cathode resistance. Oscillator tuning is in the grid circuit and coupling to the next valve is by band-pass I.F. transformer (frequency 123KC). (Note that the manufacturers do not recommend adjustments to be made to the trimmers).

The I.F. valve, VPI3A met. (V2) (P base), is also biased by A.V.C. and cathode resistance, and is followed by a second band-pass I.F. transformer.

VALVE READINGS				
No signal. Taken on 225v. A.C.				
Valve.	Type.	Electrode.	Volts.	M.A.
1	FC13 met. (8) ..	anode ..	190	4
		"P" base ..	82	4
		aux. grid ..	82	
		osc. anode ..	82	
2	VPI3A met. (8) ..	anode ..	145	3.75
		"P" base ..	82	1
		aux. grid ..	206	42
3	Pen.3520 (7) ..	anode ..	230	10
		aux. grid ..	230	10

Note that voltages are approximately 15 to 20 per cent. lower on the same D.C. mains voltage.

The second detector for L.F. and A.V.C. purposes is a type WMX12 Westector, which is coupled to the output valve, Pen 3520 (V3), by resistance capacity filter. The volume control forms the diode load.

The output valve is stabilised by grid resistance, and optional tones are provided by condensers connected between the anode and chassis, and controlled by a switch.

Mains equipment consists of an H.F. choke in each mains lead, a B27 Westinghouse metal

(Continued on next page.)