

# SERVICE ENGINEER

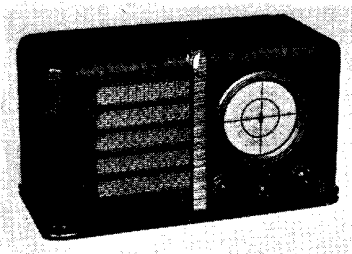
## PILOT MODEL U355 ALL-WAVE SUPERHET FIVE

**CIRCUIT.**—A five-valve superhet for A.C. mains and working on three wave-bands—medium, long and short.

Aerial signals are fed to V1, the frequency changer, through an inductively coupled coil on all wavelengths.

Coupling between V1 and V2, an H.F. pentode, is through an IF transformer tuned to 456 kc. Attention is drawn to the special condenser, C14, in the oscillator circuit, connected between the oscillator grid and the control grid of V1.

Signals from V2 are fed through a second



The Pilot U355 is an A.C. superhet five operating on three wave bands; short, medium and long.

IF transformer to V3, a double diode triode, in which the diode anodes are strapped and used both for demodulation and to supply AVC bias to the preceding valves in the orthodox manner.

The pick-up is connected to the grid of this valve through the volume control.

Rectified output of V3 is passed via a resistance and capacity stage to the output pentode V4, and after amplification to the moving coil loud speaker.

Mains equipment consists of transformer, full wave rectifier and the speaker field.

**Special Notes.**—The dial lamps are rated

at 6.3 volts, .25 amps., and are of the miniature bayonet cap type. They are fitted to the dial assembly by means of clips.

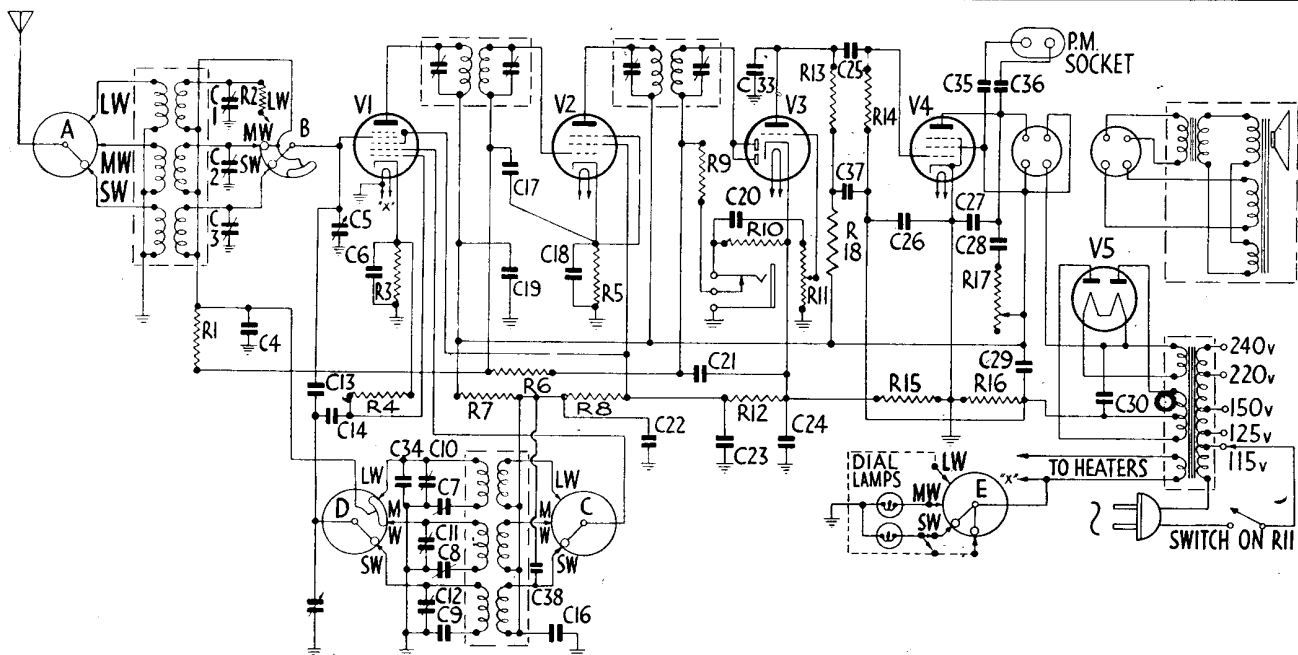
External speaker connections are on the primary of the output transformer, and any extra speaker should therefore have its

### RESISTANCES

R.	Purpose.	Ohms.
1	V1 A.V.C. decoupling	100,000
2	V1 grid suppressor	50
3	V1 cathode bias	400
4	V1 osc. grid leak	50,000
5	V2 cathode bias	400
6	V2 A.V.C. decoupling	1 meg.
7	V1 osc. anode and V2 screen potr.	3,000
8	V1 osc. anode and V2 screen potr.	15,000
9	V3 diode load part	50,000
10	V3 diode load part	300,000
11	Volume control	750,000
12	V2 screen decoupling potr.	30,000
13	V3 anode load	250,000
14	V4 grid leak	500,000
15	V3 cathode bias	420
16	V4 series bias	250
17	Tone control	100,000
18	V3 anode decoupling	50,000

### CONDENSERS

C.	Purpose.	Mfd.
4	V1 A.V.C. decoupling	.05
6	V1 cathode bias shunt	.1
9	Short wave osc. padding	.006
13	Neutralising	...
14	V1 osc. grid	.00005
16	V1 osc. anode decoupling	.05
17	V2 A.V.C. decoupling	.05
18	V1 anode H.T. shunt	.1
19	V2 cathode bias shunt	.1
20	L.F. coupling	.01
21	H.F. by-pass	.00025
22	V1 osc. anode	.4
23	V2 screen decoupling	5
24	V3 cathode bias shunt	.25
25	L.F. coupling	.01
26	V4 bias decoupling	.5
27	Pentode compensating	.005
28	Tone control	.05
29	H.T. smoothing	8
30	H.T. smoothing	8
33	H.F. by-pass	.00025
34	Long wave osc. padding	.000025
35	Extension speaker coupling	.05
36	Extension speaker coupling	.05
37	V3 anode decoupling	.25
38	Short wave reaction shunt	.000025

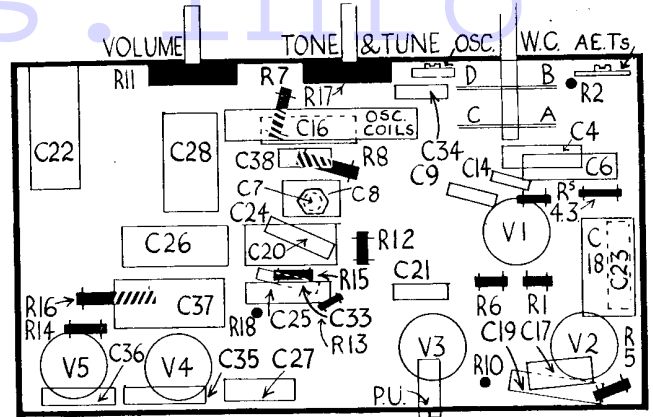
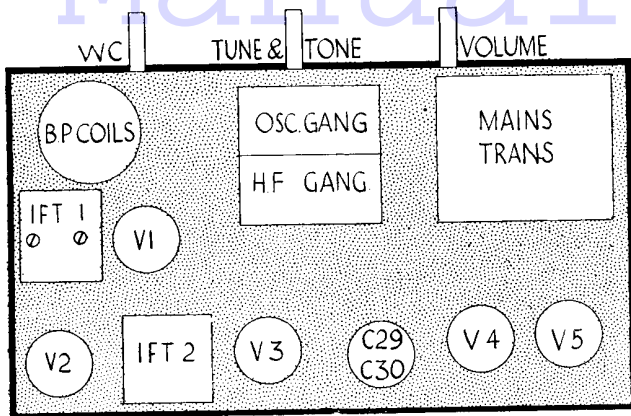


The circuit arrangement of the Pilot U355. Note C14, a special condenser in the oscillator circuit, connected between the oscillator grid and the control grid of V1.

For more information remember

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# PILOT U355 SUPERHET FIVE (Continued)



These two diagrams show the chassis layout of the U355. Left, the tinted one, shows the top "deck." Resistances are in black; those beneath other components are dotted.

own matching transformer, with a primary impedance of about 10,000 ohms.  
**Removing Chassis.**—Remove the four knobs from the front of the cabinet (the tuning knob is fixed by a grub-screw, the others by spring clips), then four chassis fixing bolts from underneath. Unplug the speaker leads from the socket on the back of the chassis, and the chassis may be completely removed from the cabinet.  
 The speaker leads will have to be extended if it is required to test the set out of the cabinet, as the speaker field forms part of the H.T. smoothing equipment.

## ALIGNMENT NOTES

**I.F. Circuits.**—Connect a modulated oscillator tuned to 456 kc. to the control grid of V2, via a .1 mfd. condenser, and connect an output meter across the external speaker terminals. Set the gang condenser to maximum capacity, and adjust the I.F. trimmers for maximum reading on the output meter.  
 Check the adjustment of these trimmers in the above order.

(Continued on next page.)

## VALVE READINGS

No signal. Volume and tone fully clockwise. 200 volt A.C. mains.

V.	Type.	Electrode.	Volts	M/a.
1	All Pilot. 6A7 (7)	Anode ...	230	3.2
		Screen ...	80	2.7
		Osc. anode ...	190	2.9
2	6D6 (6)	Anode ...	225	4.2
		Screen ...	80	.95
3	75 (6)	Anode ...	50	.3
4	42 (6)	Anode ...	200	36.
		Screen ...	225	6.25
5	80 (4)	Filament ...	312	—

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