

PHILIPS 617A

Three-valve, plus rectifier, three-waveband superhet for operation from AC mains. Provision is made for a high resistance pickup and a low impedance extra loudspeaker. Manufactured by Philips Lamps Ltd., Service Dept., 74-79, Cherry Orchard Road, Croydon, Surrey.

THE aerial input is fed via a switch either to the HF transformer L12, L13 on SW or L6, L7 of a band-pass filter circuit on MW and LW. An IF filter L29, C13 is provided across the aerial and earth sockets.

C4 section of the triple-ganged condenser tunes the secondary coils L10, L11 of the band-pass filter and the short wave grid coil L13.

From these circuits the signal is fed to the control grid of the triode hexode V1, which is cathode biased by R21 decoupled by C14. The oscillator triode section employs tuned anode circuits with the oscillator coils fed from the anode via C16 and tuned

by C5 section of the ganged condenser. The grid feed-back coils are L15, L17, L19.

An intermediate frequency transformer L20, L21 transfers the signal from V1 to the IF amplifying stage comprising V2 and a second IF transformer L22, L23. A tapping on L23 feeds the signal diode of the double-diode-pentode output valve V3. Delay volts for the signal circuit are derived from a variable tapping on R16 which is in the cathode circuit of V3.

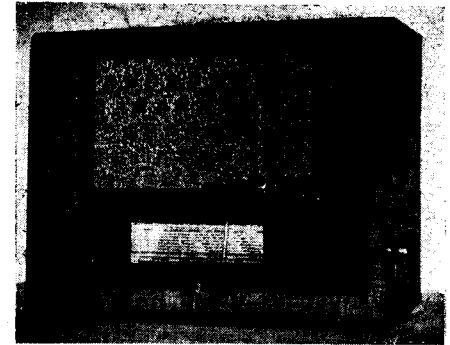
The low frequency signal is fed from the volume control R9/R9A to the grid of the pentode section of V3 via the coupling condenser C31 and filter R28

and C39. The pentode section is biased from a tapping on the cathode resistance network R12, R13 which is decoupled by C32. The pickup sockets are connected across the volume control.

The automatic volume control diode of V3 is fed from the anode of V2 via C29, the load resistance being R14 and R23, from which the AVC is fed to V1 and V2 grid circuits.

The output from V3 is coupled to the permanent magnet moving coil loudspeaker L27 via the matching transformer L25, L26, which also incorporates

Continued second column overleaf



WINDINGS

L	Ohms	L	Ohms
1	18 32
2 300	19 9.5
35	20 115
45	21 115
6 26	22 115
7 90	23 90
8 4.5	24 35
9 4.8	25 700
10 4.4	26 1
11 4.5	27* 2.5 or 5
12 2	29 110
135	307
145	317
15 1	32 180
16 8	33 180
17 2.5	34 800

* See text.

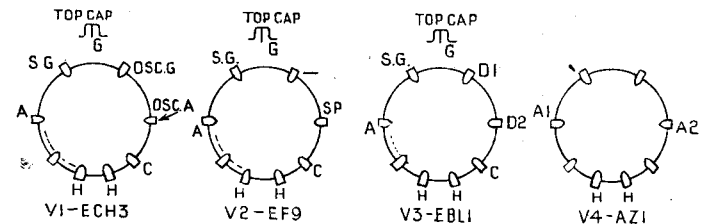
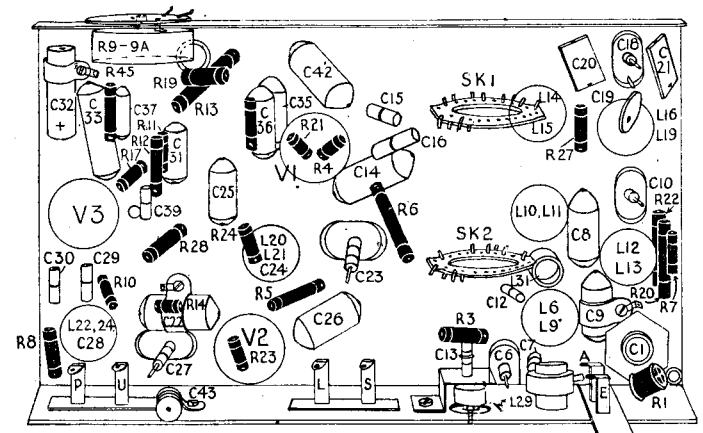
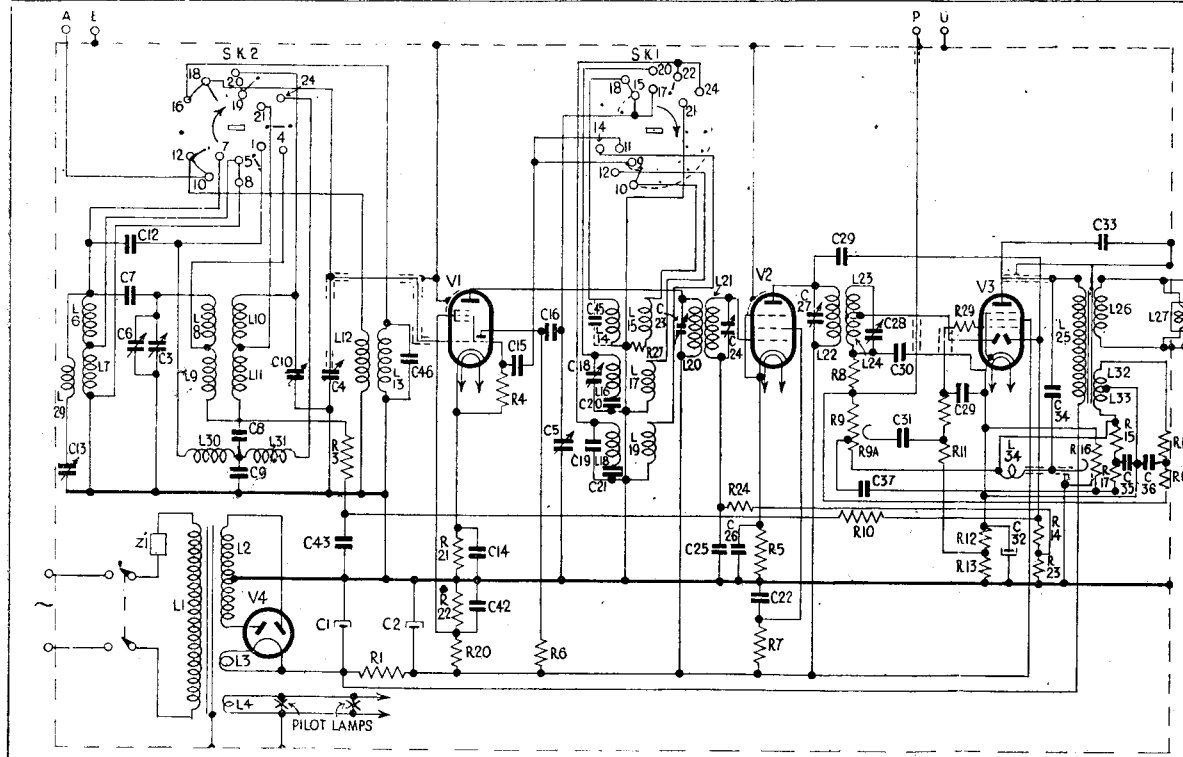
CONDENSERS

C	Mfd	C	Mfd
1 50	29047
2 15 or 2 x 32	26 8.2 mmfd
700001	30 56 mmfd
8012	310033
9039	32 25
9*01	33001
12 33 mmfd	340047
14047	35033
15 47 mmfd	360056
1600047	37027
19* 33 mmfd	390001
2000145	42047
21 415 mmfd	43047
21* 394 mmfd	45* 6.8 mmfd
22047	46* 2.2 mmfd
25047		

* Only fitted when gang has aluminium vanes.

RESISTANCES

R	Ohms	R	Ohms
1 1,800	15 1,500
3 100,000	16 50,000
4 47,000	17 12,000
5 330	18 10,000
6 27,000	19 820,000
7 100,000	20 47,000
8 47,000	21 330
9 650,000	22 33,000
9A 50,000	23 560,000
10 1.5 meg	24 1.8 meg
11 1 meg	27 47
12 150	28 82,000
13 390	29 56
14 560,000		



SERVICE ENGINEER INDEX 1944

HERE is a complete index to the receiver reviews and technical articles published in "Service Engineer" Supplement from the January to December 1944, issues inclusive.

Extra copies of "Service Engineer" have been printed throughout the year and at present all issues are still available.

Make.	Model.	Page.	Month
Belmont	541	v	Jan.
Bush	BA61	vii	Feb.
"	AC71	vi	June
"	SAC25	iv	Oct.
Cossor	483	vi	Aug.
Ekco	AD36	vii	Sept.
"	AC86	iii	Nov.
Emerson	301, 330, 331, 332, 336, 351, 353, 376, 400, 421, 422, 425, 461, 463	iv	Feb.
"	414, 415, 419, 439, 441	v	Feb.
"	413, 440, 465, 465A(BC), 467	iv	Mar.
"	426, 433	v	Mar.
"	424, 427, 428	iv	Apr.
Ferguson	378 AC	vi	Jan.
"	378 AC-DC	vii	Jan.
"	801, 804	iv	May
"	802, 805	v	May
"	881, 882, 884, 885	vi	May
GF	L.B. 673	v	Apr.
"	L651	iv	July
"	L541, L543, L570	v	July
GEC	4050	v	Nov.
HMV	459	v	June
"	459 MC	vii	June
"	442, 443, 570, 570A	iii	Dec.
Kolster Brandes	740	vi	Sept.
"	850-0	v	Dec.
Lissen	8301	vii	May
"	8108, 8111, 8116, 8117, 8121, 8125, 8128, 8129	v	Oct.
Marconiphone	255	v	June
"	255 MC	vii	June
"	296, 293, 288, 289A	iii	Dec.
Murphy	A90, A90RG	vi	Oct.
"	D90, D90RG	vii	Oct.
Philco	V537	iv	Jan.
"	269, 444 (AC People's set)	vi	July
"	450	v	Sept.
Philips	617A	vii	Dec.
"	834 A	vii	Aug.
Pilot	Little Maestro	iv	June
Pye	811	vii	Nov.
Ultra	121, 133, 140, 150	vii	July
War-time Receiver	Battery	iv	Aug.
"	AC	v	Aug.

ARTICLES AND FEATURES

Advantages of Full Wave Rectification	Sept.
Circuits for Valve and Metal Rectifiers	Oct.
Ferranti War-time VHT4	Mar.
Intermediate Frequencies	A-I
	K-Tel
	Tem-Z
Key to Valve Makers' Code	Sept.
Mains Sections of Receivers	Aug.
Matching and Biasing the Output Valve	Apr.
Modifications to War-time Receivers	Sept.
Negative Feedback and Tone Circuits	May
Parallel and Push-Pull Output Circuits	June
Principles of Low Frequency Stage	Feb.
QPP and Class B for Current Economy	July
Transformer Coupling in LF Stages	Mar.
Vibrator Circuits	Dec.
Volt-dropping Resistors for AC-DC Sets	Nov.

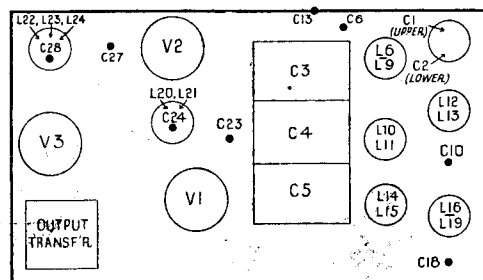
PHILIPS 617A

Continued from page vii

windings L32, L33 for negative feed-back into the grid and cathode circuits of V3.

Some receivers incorporate a matching transformer which has an additional winding between point 4 and an extra eyelet on the same cheek. Loudspeakers with 2.5-ohm speech coils should be connected to the L26 winding only, but 5-ohm loudspeakers should be wired across both L26 and the additional winding.

The high tension supply is derived from a full-wave rectifier V4 with resistance smoothing carried out by R1, C1 and C2. Some mains transformers are suitable for either 4-volt pilot lamps or 6.3-volt pilot lamps; the former models incorporate a 4-volt tapping point on the heater winding L4 which is brought out to an eyelet midway between the two normal outer connections for L4.



GANGING

IF Circuits.—Switch receiver to MW and tune to 180 metres. With volume control at maximum inject a 128 kc signal into the grid (top cap) of V1 via a .032 mfd condenser.

Detune L22 by connecting a 80 mmfd condenser across it and adjust C28 for maximum output.

Detune L24 in same way and trim C27. Detune L20 and trim C24. Detune L21 and trim C23.

HF Circuits.—Adjust variable condenser so that the angle between the edges of the fixed and moving vanes is 15 deg; the manufacturers can supply a jig for this purpose.

Inject a 1600 kc signal into the aerial socket and trim C18, C10, C6, C10 and C18 in that order for maximum output.

When the gang is of the type with aluminium vanes the input signal should be 1570 kc.

IF Filter Circuit.—Apply a 128 kc signal to the aerial socket and adjust C13 for minimum output.

VALVE READINGS

V	Type	Electrode	Volts	Ma
1	ECH3	Anode	255	1.2
		Osc anode	140	4.3
		Screen	70	1.8
2	EF9	Anode	250	5
		Screen	90	1.5
3	EBL1	Anode	260	32
		Screen	240	5.2
		Cathode	19	—
4	AZ1	Heater	300	51

Pilot lamps 4 v or 6.3 v (see text).

Name not for sale

Some of you say "We'd gladly pay higher prices if we could have all we want." And we say "Sorry, gentlemen, but we simply don't sell maintenance components at prices that aren't fair prices; in the long run, you know, it would be rank bad business." In other words, you can't coax us into giving you stop-gap war-time components at exorbitant prices, no, not even if our obstinacy loses us good money.

For we aren't out to make a wartime 'pile' in record time — and then turn to another line of business. We didn't start yesterday and we aren't packing up when the war's over. The here - today - and gone-tomorrowers have their policy. Ours is to keep our steady customers by serving them well and fairly over a long period. We're not selling our good name, thanks, at any price.

Radiospares Ltd.

44 BIRCHINGTON ROAD, LONDON, N.W.6 TEL: MAIDA VALE 9386-7