

# PHILCO A2

Three-valve, plus rectifier, three waveband table model receiver, suitable for 200-250 v., 50-100 cycles. Made by Philco Radio and Television Corp. of G.B., Ltd., Perivale, Greenford, Middlesex.

**Circuit.**—This set is unusual, since the second valve is a triode-pentode frequency-changer type used for I.F. and L.F. amplification. The first valve is a heptode frequency-changer on generally orthodox lines. The input circuit includes a wavetraps, L1—T1, and a choke coil (L2), and the input switching includes a position which connects the pick-up to the triode L.F. circuit of V2.

A trimmer-tuned intermediate-frequency transformer feeds the pentode section of V2.

A second I.F. transformer in the anode circuit of this section energises signal and A.V.C. diodes, which are incorporated in V3.

Demodulated L.F. signals are developed across the volume control, VR2 and tapped off to the triode grid of V2. The anode circuit of this section feeds the output pentode section of V3.

V4 is a conventional full-wave rectifier. Bias volts are developed across R12 and R13 in the negative H.T. lead. The cathodes of all the valves are returned to chassis and biases of either 3 or 5.5 volts are applied to the grids or diodes according to whether they are returned to the top of R12 or R13 respectively.

Wavebands: 16.5-50, 195-550, 1,000-2,000 metres. Provision for P.U. and 2-3 ohm extension speaker. Power consumption, 55 watts. Pilot lamps, 6.3 volts.

### GANGING

**I.F. CIRCUITS.**—Adjust I.F. trimmers to maximum at 465 kc.

**WAVETRAPS.**—Inject 465 kc. and adjust T1 for minimum.

**CALIBRATION.**—With pointer closed, see that pointer reads on the third vertical line from the left of dial.

**S.W. BAND.**—Inject 18 mc. and adjust T2 for last signal heard from tight. Rocking gang, adjust T3. Readjust T2, checking that image is heard at 17.1 mc. Repeat operations.

Inject 6 mc. and check for correct scale reading. There is no padding adjustment.

**M.W. BAND.**—Inject 214 m. and adjust T4 and T5. Pad with T6 at 500 m., rocking gang.

**L.W. BAND.**—Inject 1,034.5 m. and adjust T7 and T8. Pad with T9 at 1,875 m., rocking gang.

**NOTE.**—S.W. trimmers are in circuit on all bands.

### VALVE VOLTAGES

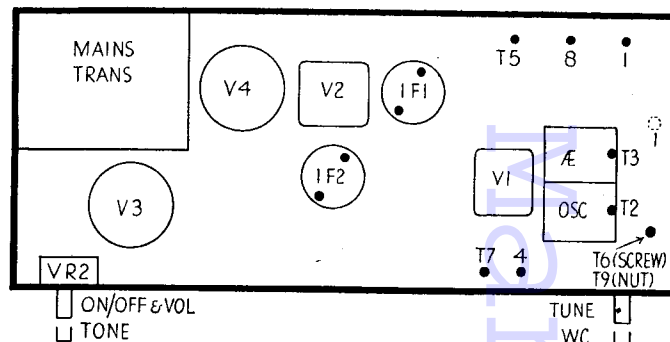
V	Type.	Anode.	Screen.
1	6A7	255	90
2	6F7B	110 (Osc.)	90
3	Pen DD61	30 (L.F.)	
4	80	240	255
		310 A.C.	(Cathode, 350 D.C.)

### RESISTANCES

R	Ohms.	R	Ohms.
1	400,000	11	250,000
2	99,000 or 100,000	12	68
3	6,500	13	68
4	400,000	14	650,000
5	25,000	15	650,000
6	5,000	16	1.5 meg.
7	65,000	17	51,000
8	650,000	VR1	100,000
9	10,000 or 9,000	VR2	500,000
10	6,500		

### WINDINGS

L	Ohms.	L	Ohms.
1	12	10+R17	51,000
2	20	11	650
3	25	12	.2
4	3	13	.2
5	8	14	1,500
6	12	15	20
7	16.5	16	480
8	2.5	17	.1
9	12	18	.2



### CONDENSERS

C	Mfds.	C	Mfds.
EC1	16	9	.065 or .06
EC2	8+8	10	400 mfmfs.
EC3	60, 50 or .5	11	140 or 100 mfmfs.
1A	.01	12	.006
1	60 mfmfs.	13	.0065
2	.1	14	.0008 or .001
3	1.540 mfmfs.	15	.05+.05
	250 or 240 mfmfs.	16	140 or 100 mfmfs.
4	.09+.09	17	110 mfmfs.
5	.025 or .02	18	110 mfmfs.
6	.04		
7, 8			

## PYE INTERNATIONAL

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### VALVE READINGS

V	Type.	Electrode.	Volts.	Ma
1	ECH3	Anode	248	3
		Screen	110	2.7
		Osc. anode	178	4.9
2	6F9	Cathode	2.5	10.6
		Anode	251	7.3
		Screen	110	1.6
3	EBC3	Cathode	2.5	8.9
		Anode	138	2.5
		Cathode	2.5	2.5
4	EL6	Screen	235	70
		Cathode	251	7.5
		Cathode	7.5	77.5
5	AZ2	Anode	340 A.C.	
		Cathode	352 D.C.	100

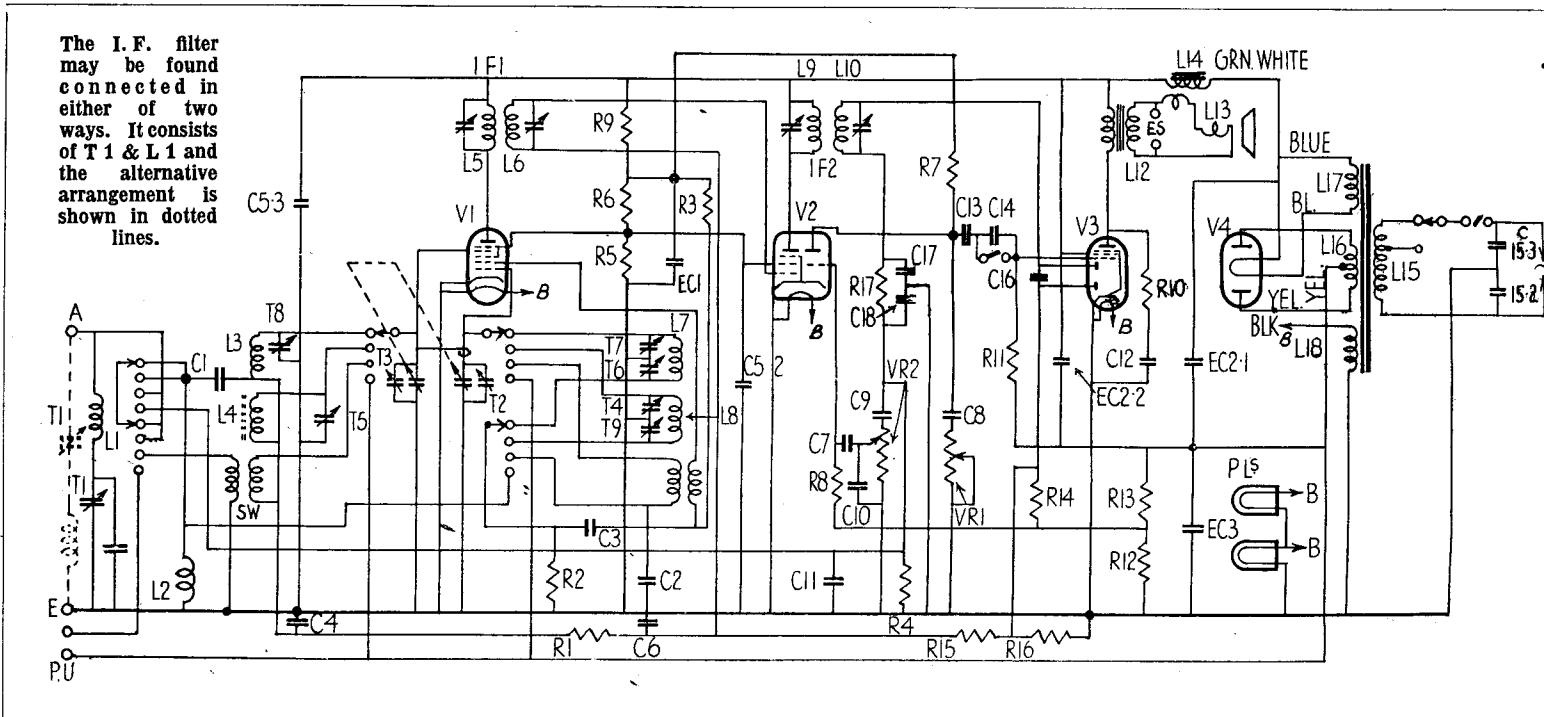
Mullard Dial lamps: 0 v. .5 amp. M.E.S.

### CONDENSERS

C	Mfds.	C	Mfds.
1, 2	.0025	19	.025
3	70 mfmfs.	20	130 mfmfs.
4	.025	21	140 mfmfs.
5	2,000 mfmfs.	22	20 mfmfs.
6	500 mfmfs.	23, 24	100 mfmfs.
7	100 mfmfs.	25	.005
8	70 mfmfs.	26	.01
9	520 mfmfs.	27	.20
10	300 mfmfs.	28	.2
11	200 mfmfs.	29	.003
12	100 mfmfs.	30	.01
13	.1	31	.4
14	.5 mfmfs.	32	.05
15	.1	33	.01
16	130 mfmfs.	34	.20
17	140 mfmfs.	35	.16
18	100 mfmfs.	36, 37	8

### RESISTANCES

R	Ohms.	R	Ohms.
1	10,000	13	1,000
2	10,000	14	25
3	1,000	15	15,000
4	1.1 meg.	16	.5 meg.
5	50,000	17	30,000
6	15,000	18	.5 meg.
7	20,000	19	25,000
8	.11 meg.	20	.51 meg.
9	.20 meg.	21	200
10	50,000	22	.51 meg.
11	1 meg.	23	3,000
12		24	50



The I.F. filter may be found connected in either of two ways. It consists of T1 & L1 and the alternative arrangement is shown in dotted lines.