

McMICHAEL MAINS TRANSPORTABLE

side of the frame aerial to the cabinet and remove the holder for the mains plug.

Take out the two wood screws at each end of the back plate of the chassis and slide the aerial and chassis assembly out, lower end first.

General Notes.—The resistances and condensers are numbered consecutively as

they are mounted on the panel, not as they appear in the circuit diagram.

The leads connecting the two chassis are labelled to correspond to the tags on the set chassis.

The leads from the tags on the mains transformer (see diagram) are:

(e) yellow, and (f) black, high voltage winding to rectifier top and junction of C24 and C25;

(g) green, and (h) red, set heaters to terminals (3) and (4) on strip.

Replacing Chassis.—Slip chassis into cabinet. It may be necessary to remove the plate for the switch control to allow the spindle through. Replace the holding screws and knobs.

Resolder the L.S. leads and replace the two holding screws on the base of the frame aerial.

Lay the power pack in position and replace the four holding screws. Replace the mains plug holder.

PYE MODEL E/A.C. SUPERHET

Circuit.—The H.F. valve A.C./S.G./V.M. met (V1), is preceded by a tuned secondary aerial transformer. Bias is obtained entirely from the A.V.C. line and coupling to the next valve is by choke capacity H.F. filter.

The first detector oscillator valve, A.C./S2/Pen. met. (V2), operates with cathode injection, and bias is fixed by cathode resistance. The I.F. coupling is by band pass I.F. transformer (frequency 114 K.C.).

The intermediate frequency valve, A.C./SI/VM met. (V3), is also biased by A.V.C., and is followed by a second band pass I.F. transformer.

The second detector and L.F. valve, A.C./HL/DD met (V4), is used for amplified A.V.C., the L.F. coupling to the triode grid being through C31 and R13, while the D.C. is applied through R12. The cathode is connected to the H.T. through R16 and R17, which give the "amplified" voltage. The L.F. coupling is a parallel fed transformer.

The output valve, PP3/250 (V5), is a triode. Tone control is provided by a variable condenser between the grid and chassis.

Mains equipment consists of transformer with screened primary and H.F. by-pass condenser, full wave Westinghouse rectifier used

as voltage doubler, while the L.S. field is inserted in the negative lead.

Special Notes.—The following details included in the circuit diagram differ from those in the first 3,000 sets manufactured.

C34, C35 and R18 are omitted. C42 of .01 mfd. and R25 of 2 meg. are added and the following have been altered to these values; C31, .25 mfd.; C37, 4 mfd.; R12, 2 meg.; and R.19, 15,000 ohms.

The positions of some of the components have been changed, such as C36 and C39, which are now found in the positions shown in the accompanying diagrams.

Quick Tests.—As the speaker is covered and the output transformer is inside the set the most convenient method of ascertaining that the rectifier voltage and the current taken by the set are correct is by measuring between the positive end of the rectifier and chassis and between the negative end and chassis.

These voltages should be (no signal) :— Positive end, 285 volts positive. Negative end, 95 volts negative.

The latter represents the voltage drop across the L.S. field in parallel with the bias potentiometer.

Removing Chassis.—To reach the components shown in the view of the back of the chassis it is necessary only to remove the back panel by undoing the four outer screws, i.e., two at each end.

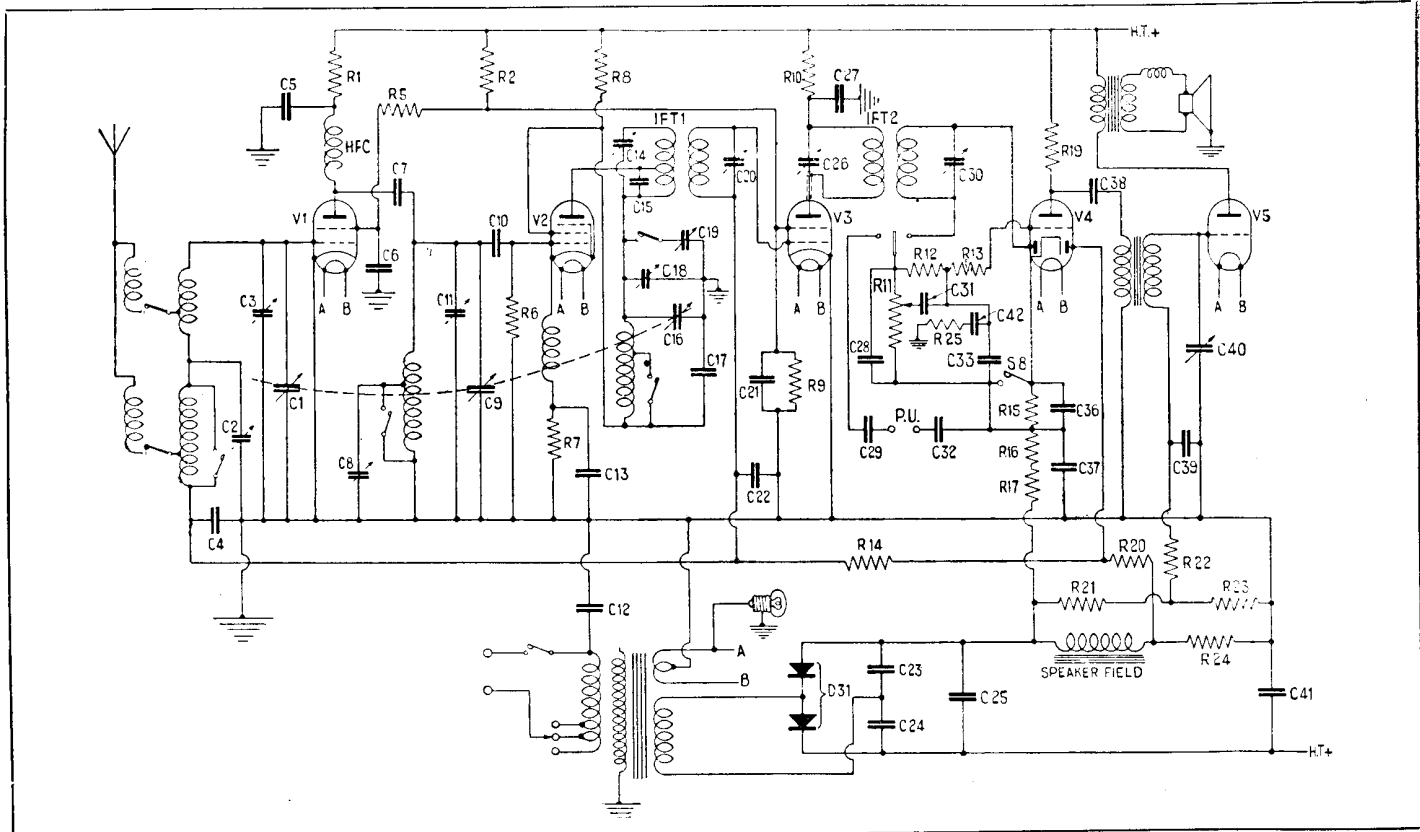
Pull off the knobs, release the L.S. leads from their sockets, remove the screws holding the mains switch, remove the two screws at the top corners of the front of the chassis, and, reaching them through the holes in the bottom of the cabinet, remove the four screws through the fillets at the sides of the cabinet.

Remove the two upper catches from the

VALVE READINGS

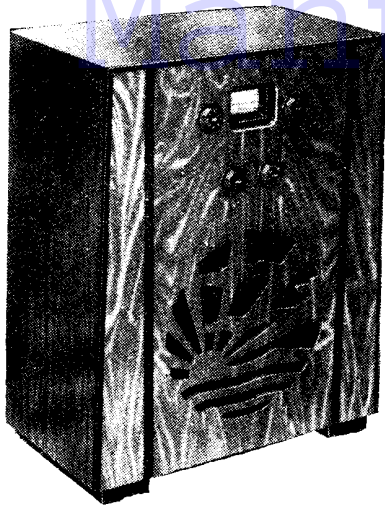
(No Signal)

V.	Type.	Electrode.	Volts.	M.a.
1	AC/SG/VM met. (5).	anode ..	145	6.9
		screen ..	45	
2	AC/S2/Pen met. (7).	anode ..	185	4.8
		aux.-grid ..	186	
3	AC/S1/VM met. (5).	anode ..	200	5.3
		screen ..	63	
4	AC/HL/DD met. (7).	anode ..	146	7.7
5	PP3/250	anode ..	275	24.7



Amplified A.V.C. is provided by the double-diode-triode in the E/A.C. receiver by Pye Radio. The triode section is coupled to an output triode through a parallel-fed transformer.

PYE MODEL E/A.C. SUPERHET (Cont.)



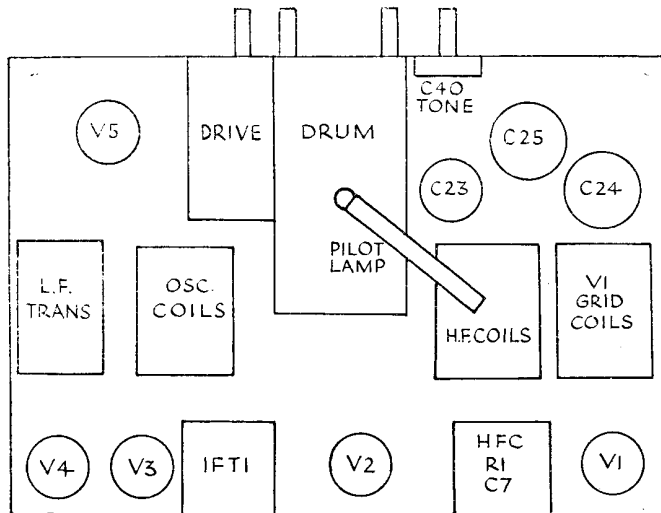
The E/A.C. 5-valve plus metal rectifier superhet is a product of Pye Radio, Ltd. On the top of the chassis (right) the H.F. filter components are contained in a screening box between V1 and V2.

RESISTANCES		
R.	Purpose.	Ohms.
1	Decoupling V1 anode	20,000
2	Top part of V1 and V3 screen ptr.	25,000
5	Decoupling V1 screen	8,500
6	V2 grid leak	50,000
7	V2 cathode bias	2,000
8	Decoupling V2	20,000
9	Lower part of V1 and V3 screen ptr.	12,500
10	Decoupling V3 anode	15,000
11	Volume control (diode load)	40,000
12	D.C. feed to triode	1 meg.
13	H.F. stopper to triode	5,000
14	Decoupling A.V.C. line	.25 meg.
15	Providing delay bias for A.V.C.	500
16	Providing amplified A.V.C.	12,500
17	Providing amplified A.V.C.	12,500
18	*	5,000
19	*V4 anode, L.F. coupling	10,000
20	Supplying potential for A.V.C. diode	.5 meg.
21	Part of V5 bias ptr.	40,000
22	Decoupling V5 grid	.1 meg.
23	Part of V5 bias ptr.	28,000
24	Providing delay to A.V.C. line circuit.	64
25	*Tone compensating circuit in V4 grid.	2 meg.
	L.S. field	1,650

* See Special Notes.

CONDENSERS		
C.	Purpose.	Mfd.
4	Decoupling V1 grid	.25
5	Decoupling V1 anode	.1
6	Decoupling V1 screen	.1
7	H.F. feed to V2 grid coil	.0002
12	H.F. by-pass from mains	.01
13	V2 cathode by-pass	.01
17	Decoupling V2 anode	.1
21	V3 screen by-pass	.4
22	Decoupling V3 grid	.25
23	Voltage doubler circuit	4 el.
24	Voltage doubler circuit	4 el.
25	H.T. smoothing	16 el.
27	Decoupling V3 anode	.1
28	H.F. by-pass from diode	.0002
29	In P.U. lead	.25
31	*L.F. coupling to V4 grid	.01
32	In other P.U. lead	.25
33	H.F. by-pass	.001
36	V4 cathode by-pass	25 el.
37	*Amplified A.V.C. resistor by-pass	8 el.
38	L.F. feed to transformer	.25
39	Decoupling V5 grid	4 el.
41	H.T. smoothing	8 el.
42	*Tone compensating circuit V4 grid.	.01

*See Special Notes.



(Continued from opposite page.)
back of the cabinet and free the switch leads from the cleat.

General Notes.—The choke filter coupling between V1 and V2 is enclosed in a container identical to that of the first I.F. transformer, but naturally there are no adjusting screws in the apertures.

To adjust the second I.F. transformer it is necessary to remove the back panel.

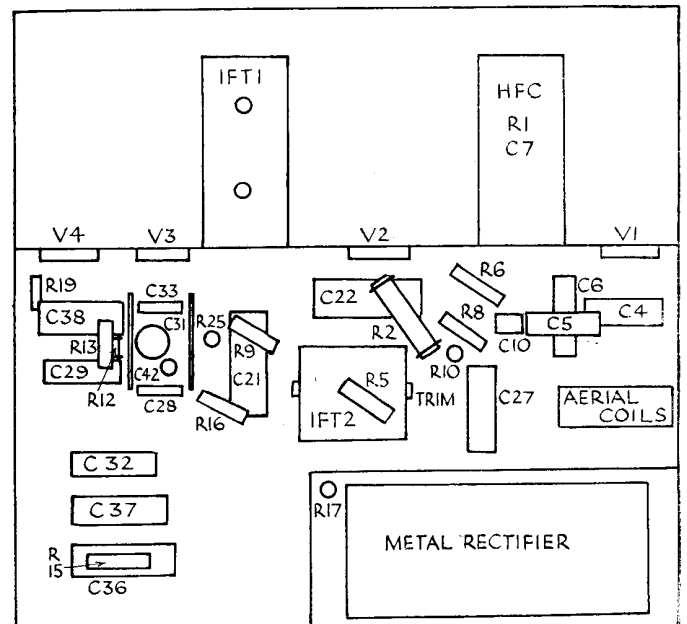
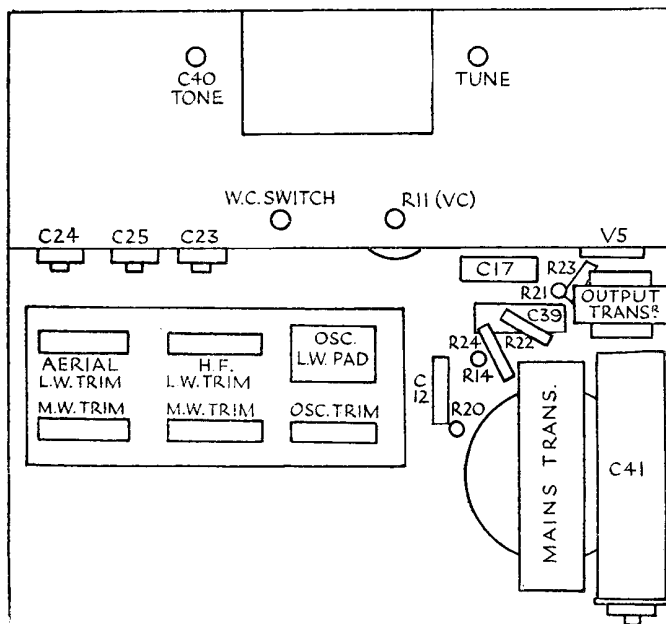
Though the assembly appears complicated, the components are easily traced, though, where any detail is not as given in the diagrams, reference should be made to "Special Notes."

Replacing Chassis.—Lay bakelised distance pieces on top of fillets and slide chassis into position.

Lay set on its face with felt underneath and replace the four holding screws. To do this it is necessary to ease the chassis away from the front.

Replace the two holding wood screws at the top corners of the front of the chassis, replace the switch, and catch the leads in the cleat.

Reconnect the L.S. lead plugs and replace the catches for the back of the cabinet.



The diagram of the front (immediately above) shows how the trimmers are placed. On the right is the layout of the back of the chassis.