TANNOY 15 WATT G.M.15C P.A. AMPLIFIER

CIRCUIT.—The microphone energising circuit consists of a Westinghouse metal rectifier fed from a winding on the mains transformer, voltage-doubling condensers and the usual smoothing.

From the microphone the output passes through a coupling condenser and the volume control to the input transformer. The pick-up and its shunt volume control is included in this circuit, and there is a small resistance, R4, which ensures that there is a load on the circuit when both volume controls are at minimum.

The microphone transformer is connected directly to the grid of V1, a triode. This is resistance and capacity coupled to V2, also a triode. The output of V2 then passes to the coupling transformer and to the output triodes V3 and V4. These are in Class A push-pull and deliver about 15 watts of undistorted output *via* an output transformer to the P.M. speakers.

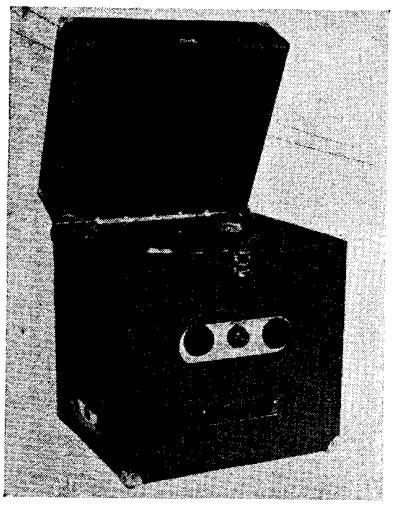
Cathode bias for these two valves is obtained by means of the usual resistance, and is fed to the centre tap of a small potentiometer connected across the heater.

Mains equipment consists of transformer full-wave rectifier, electrolytic condensers and a smoothing choke.

Removing Chassis.—Remove the turntable motor board by taking out the screws round the edge and release the mains and pick-up leads that are fixed on the underside, making a note of the positions for replacement.

Remove two motor-board battens, one on each side of the cabinet, which are fixed in place by panel pins. Unscrew the lid stay, where it is fixed inside the main body, turn the cabinet on its side and remove the four chassis fixing bolts—these are covered by small squares of rexine.

Now remove the fuse, the mains switch fixing bush and the escutcheon, and free



This Tannoy G.M.15C amplifier gives 15 watts undistorted output and forms a very complete equipment. A class A push-pull output circuit is employed. The amplifier is for A.C. mains operation and there is a special current supply for operating the microphone.

CONDENSERS

C.	Purpose.	Mfd.
1	Mike current voltage doubling	250
2	Mike current voltage doubling	250
3	Mike current smoothing ...	1,000
4	Mike current smoothing ...	1,000
5	Microphone coupling	4
6	V1 cathode bias shunt ...	50
7	V1 anode decoupling	8
8	Tone control	.03
9	L.F. coupling	.1
10	V2 cathode bias shunt ...	50
11	V2 anode decoupling	8
12	L.F. coupling	1
13	V3 cathode bias shunt ...	20
14	V4 cathode bias shunt ...	20
15	H.T. smoothing	8
16	H.T. smoothing	8
17	H.T. smoothing	8
18	H.T. smoothing	8

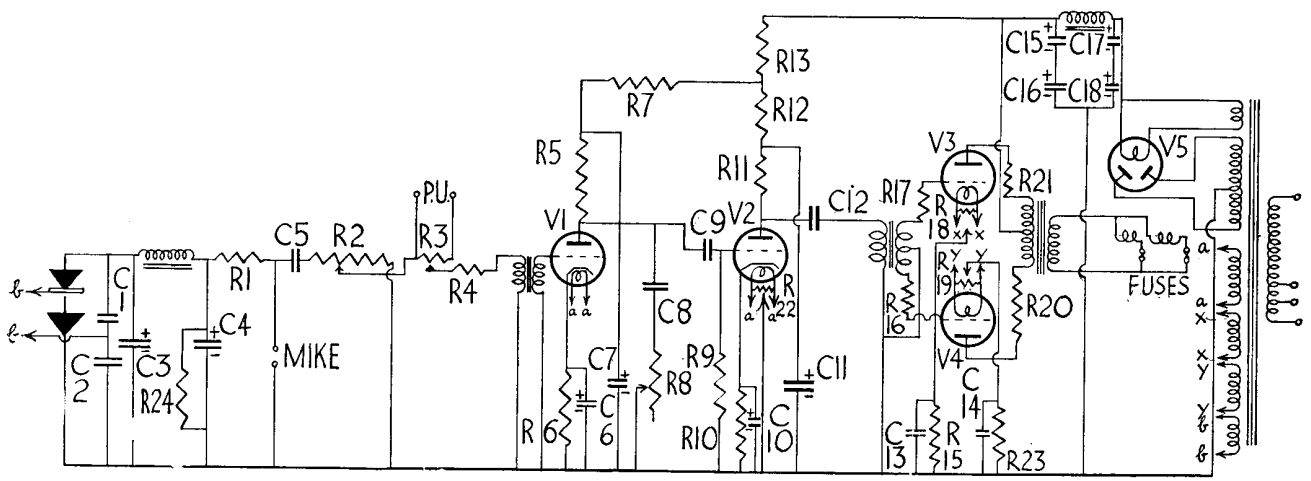
VALVE READINGS

Both volume controls at minimum. 200 volts A.C. mains.

V.	Type.	Electrode.	Volts.	Ma.
	All Marconi			
1	H30 met (7)	anode ...	80	1.8
2	L30 (7) ...	anode ...	170	16
3	PX25 (4) ...	anode ...	525	34
4	PX25 (4) ...	anode ...	525	34
5	U18 (4) ...	filament ...	550	—
	Microphone ...	—	14	22

RESISTANCES

R.	Purpose.	Ohms.
1	Microphone feed	61
2	Mike volume control	600
3	Pick-up volume control ...	600
4	Compensating load resistance	200
5	V1 anode load	10,000
6	V1 cathode bias	61
7	V1 anode decoupling	30,000
8	Tone control	50,000
9	V2 grid leak	100,000
10	V2 cathode bias	600
11	V2 anode load	10,000
12	V2 anode decoupling pot. ...	5,000
13	V1 and V2 anode decoupling pot.	5,000
15	V3 cathode bias	900
16	V3 grid stopper	75,000
17	V4 grid stopper	75,000
18	V3 filament pot.	30
19	V4 filament pot.	30
20	V4 anode stabiliser	100
21	V3 anode stabiliser	100
22	V1 and V2 mains hum neutraliser	200
23	V4 cathode bias	900
24	Microphone current bleeder ...	1,200



The circuit of the Tannoy G.M. 15C P.A. amplifier, it will be noticed, contains an interesting input arrangement for both pick-up and microphone. A special resistance is incorporated to provide a load when both volume controls are at their minimum settings.

TANNOY G.M.15C AMPLIFIER (Continued)

the control panel by removing the two securing wood screws. The chassis may then be taken from the cabinet.

It is advisable first to remove the valves owing to the weight of the chassis.

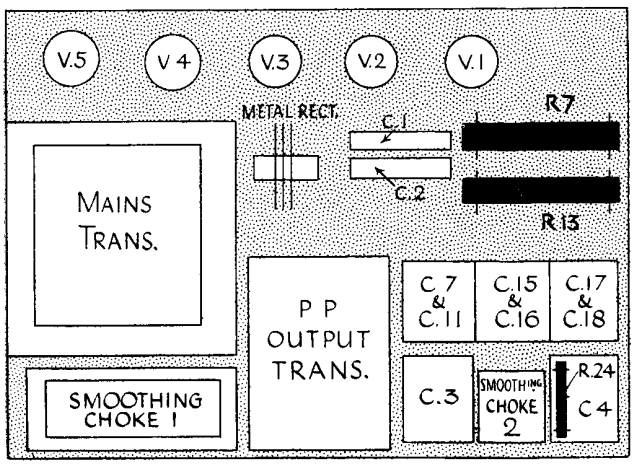
Special Notes.—Possible causes of lack of bass in the amplifier would be leakage in C5 or C12. Only good quality components should be used for replacement purposes.

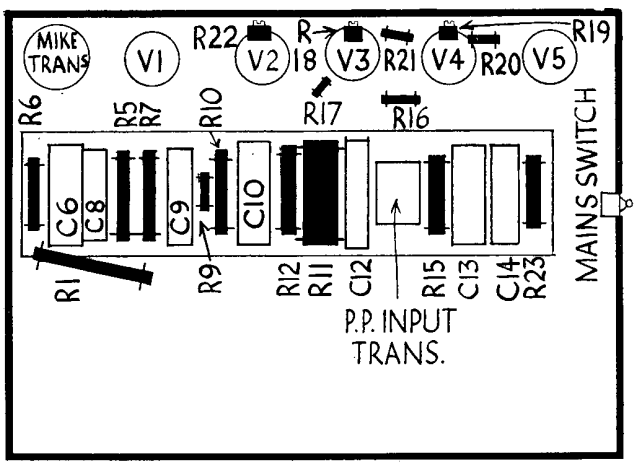
Distortion would be caused by large differences in the anode currents of V3 and V4. Correction can be made by altering the size of either R15 or R23.

To avoid feed back in the amplifier, make sure that the speakers are as far in front of the "mike" as possible.

The main fuse is rated at 1 amp. The fuses in the speaker speech-coil circuits are about 2-3 amp. ordinary fuse wire.

V1 and V3 are universal valves with heater ratings of 13 volts run from a separate tap on the mains transformer.





Left is the layout of the upper side of the chassis of the Tannoy G.M. 15C amplifier for P.A. work. The disposition of the various components can be readily observed. On the right is the arrangement of the underside of the chassis. Resistances are shown in solid black for easy reference.