

McMICHAEL SUPERVOX

Circuit.—The first H.F. valve, MS4B (V1), is preceded by a band-pass aerial circuit.

Bias is obtained from a potentiometer in the main negative H.T. lead. Full L.F. decoupling is included in the anode circuit, and the screen is decoupled for H.F. from the screen of the second H.F. valve.

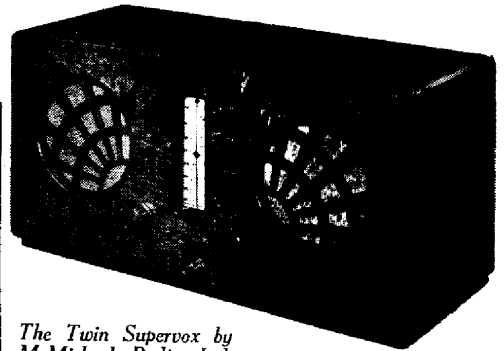
Tuned anode coupling is employed to the second H.F. valve, MS4B (V2), which is coupled to the detector by a special semi-

aperiodic choke filter. Full L.F. anode decoupling is used also with this valve.

The detector, MH4 (V3), operates as a power grid type, and is coupled to the output valve by an auto-transformer unit.

The output valve, MPT4 (V4), has an H.F. stopper in its grid circuit, and is tone compensated by an assortment of condensers and a resistance in the anode circuit.

The dual speakers have their speech coils connected in parallel, that with the lower

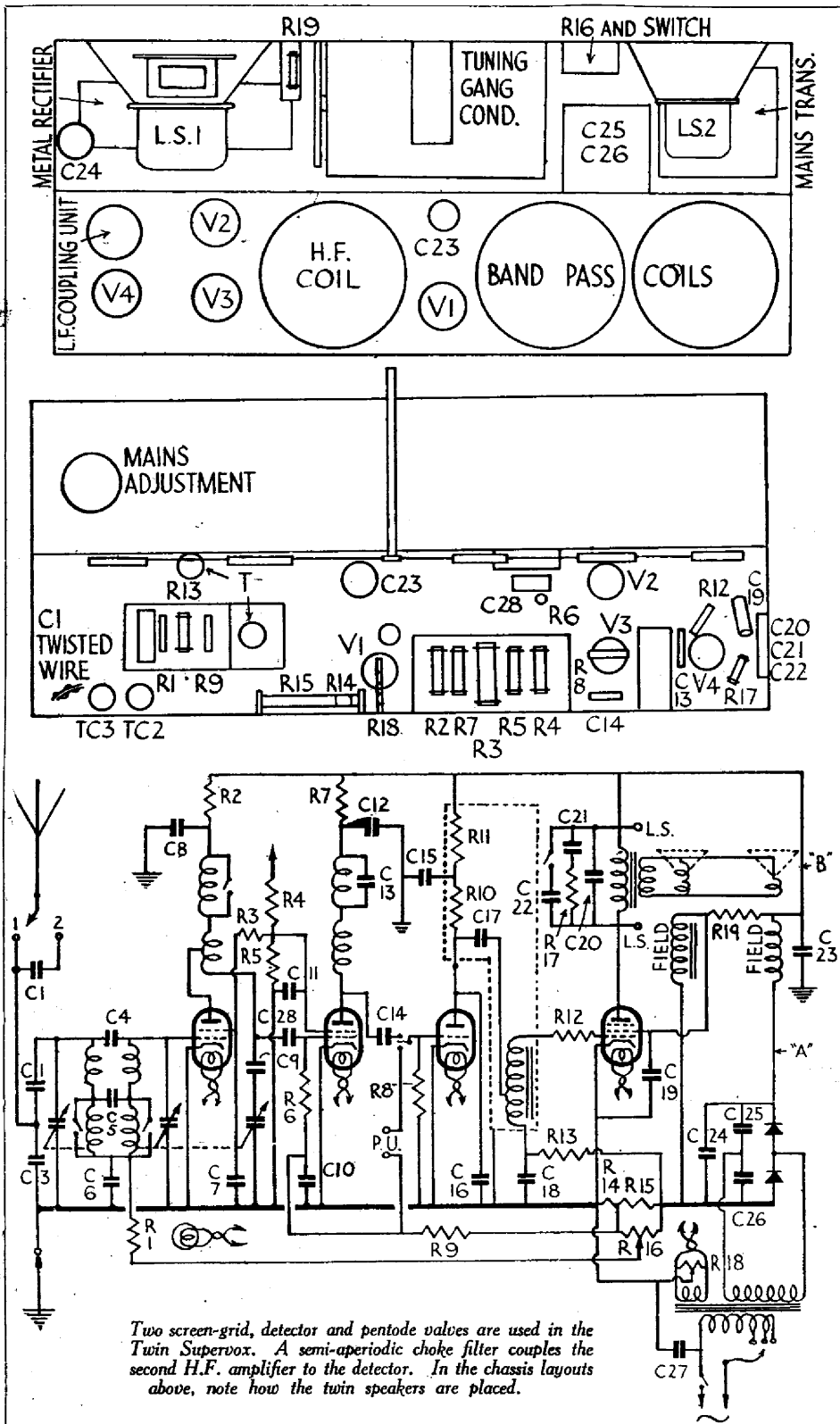


The Twin Supravox by McMichael Radio Ltd.

tone having a hum-bucking coil in series with it.

Mains equipment consists of:—Transformer, metal rectifier used on the voltage doubler principle, smoothing condensers, and the 1,500 ohm field of one of the speakers as a smoothing choke.

Special Notes.—The switch is a five position type giving long waves, medium (Continued on next page.)



Two screen-grid, detector and pentode valves are used in the Twin Supravox. A semi-aperiodic choke filter couples the second H.F. amplifier to the detector. In the chassis layouts above, note how the twin speakers are placed.

VALVE READINGS

V.C. Max.

Valve.	Type.	Electrode.	Volts.	M.A.
1	MS4B	anode	220	4.5
		screen	112	1.25
2	MS4B	anode	215	4.5
		screen	112	1.25
3	MH4	anode	90	3.5
4	MPT4	anode	240	24
		aux. grid	205	4

RESISTANCES

R.	Purpose.	Ohms.
1	Decoupling V1 bias	.5 meg.
2	Decoupling V1 anode	10,000
3	Decoupling V1 screen from V2	500
4	Top part of direct screen ptr. V2	20,000
5	Lower part of direct screen ptr. V2	20,000
6	V2 grid leak	2 meg.
7	V2 anode decoupling	10,000
8	V3 grid leak	.5 meg.
9	Decoupling bias to V2	.5 meg.
10	V3 anode coupling } inside	30,000
11	V3 anode decoupling } unit	20,000
12	HF stopper, grid V4	.5 meg.
13	Decoupling bias V4	.1 meg.
14	Part of bias ptr.	30
15	Part of bias ptr.	300
16	Var. V.C. ptr. across R15	5,000
17	Tone compensating circuit anode V4	20,000
18	Part of aux. grid and screen ptr.	1,500
19	Voltage dropping to LS2 field	1,500
	L.S. field	1,500
	L.S. field	7,500
	Primary of output transformer	720

CONDENSERS

C.	Purpose.	Mfd.
1	Aerial series condenser	Twisted wire.
2	In series across aerial coil	.000011
3	Band pass coupling on l.w.	.00003
4	Band pass coupling on m.w.	.6 mmfd.
5	Decoupling V1 bias	.000011
6	Decoupling V1 screen	.1
7	Decoupling V1 anode	.1
8	In series with tuning condenser	.1
9	Decoupling V2 bias	.1
10	Decoupling V2 screen	.1
11	Decoupling V2 anode	.1
12	Tuning semi aperiodic filter	.0002
13	V3 grid condenser	.00005
14	Decoupling V3 anode	.1
15	V3 anode by-pass	.002
16	L.F. filter to auto transformer (in unit)	.5
18	Decoupling V4 grid bias	.1
19	Decoupling V4 aux. grid	.1
20	Across P. of output transformer	.002
21	In series with R17 as tone compensator	.01
22	Additional tone control	.01
23	HT smoothing	8 (el)
24	H.T. smoothing	8 (el)
25	In voltage doubler circuit	4
26	Mains H.F. by-pass	.01
29	H.F. filter V1 to V2	.0002

TWIN SUPERVOX BY McMICHAEL (Cont.)

waves, gramophone and also providing tone control by switching an extra .01 mfd. condenser (22) into the tone compensating circuit.

The bias potentiometer in the H.T.—lead consists of R14 and R15. The potentiometer, R16, is connected only across R15.

Only one L.S. field is used for smoothing; the other forms part of the potentiometer supplying the auxiliary grid of the pentode and the screen potentiometer of the H.F. valves.

Quick Tests.—Between terminals on left hand (looking from back) of speaker, transformer and chassis, counting from outside:—

1, H.T. unsmoothed	...	370 volts.
2, V4 anode	...	235 volts.
3 and 4	...	Speech winding.
5, H.T.+ smoothed	...	252 volts.

Note that the 1,500 ohm field coil is between 1 and 5. Output transformer primary is between 2 and 5.

Removing Chassis.—Remove tuning knob and V.C. knob (grub screw). Remove switch lever by undoing the screw in the centre and pulling lever off.

Remove six screws round the sides and four from underneath the felt pads at the corners. The best method of doing this appears to be by laying the set on its back and, when the screws are out, lifting the cabinet from the chassis.

General Notes.—The lay-out is simple, and switch contacts are easily reached.

The condensers under the resistance panel are:—Three next V1, beginning from base-plate, C19, C10, C8. The other three, in same order, are C15, C12 and C11.

An L.F. coupling unit, consisting of R10, R11, C17 and the auto-coupled transformer, is mounted next V4.

The aerial condensers, C2 and C3, are adjusted for maximum efficiency, and are sealed as their values affect the tuning of the first band-pass coil.

Replacing Chassis.—Lay the chassis into the cabinet and slide it forward till the spindles appear behind the holes in the front of cabinet. If any difficulty is experienced in getting them through, remove one or more of the centring plates and replace after the chassis is in position.

Replace the ten screws underneath, and replace the knobs and switch lever.