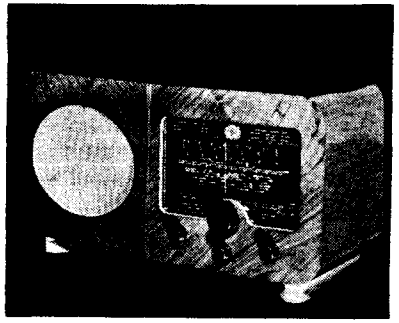
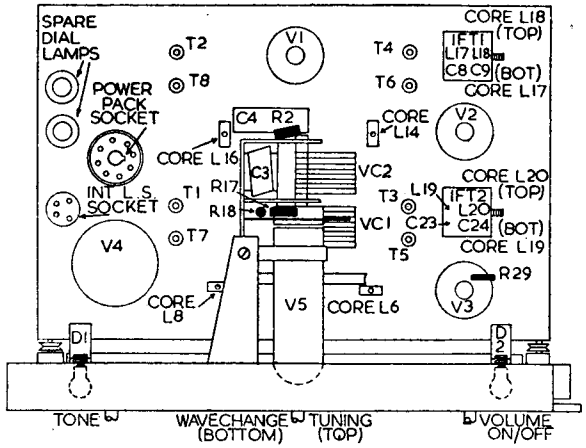
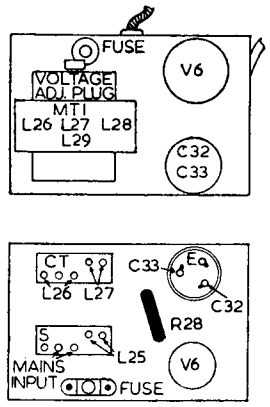
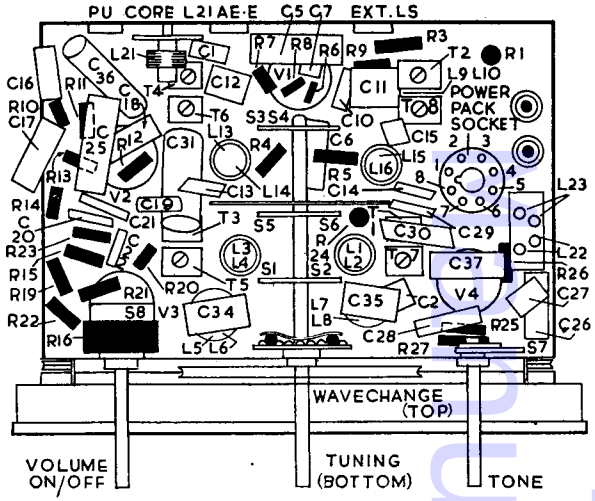
McMICHAEL 481 AC



Six-valve 4-waveband superhet for operation on 200-250V 50c/s AC mains. Provision for extension loudspeaker and pickup. Fitted with magic-eye tuning indicator. Walnut veneered cabinet. Made by McMichael Radio, Ltd., Slough.



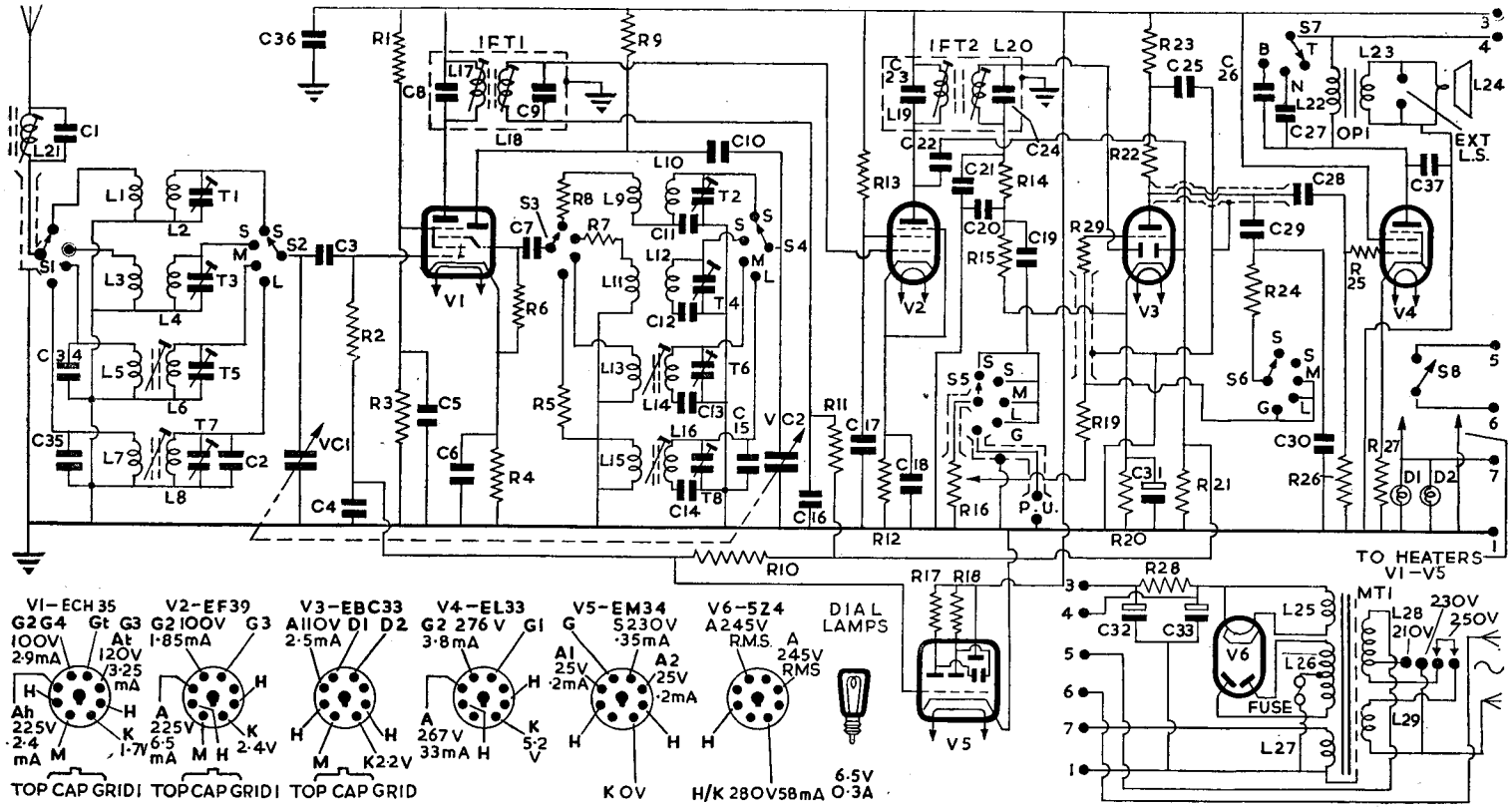




AERIAL is fed through an IF filter L21, C1 to S1, and thence to aerial coupling coils L1 (SW1), L3 (SW2), L5 (MW) and L7 (LW). C34 and C35 are by-pass capacitors across MW and LW coils. The grid tuned coils L2 (SW1), L4 (SW2), L6 (MW) and L8 (LW) are connected by S2 to tuning capacitor VC1 and through C3 to hexode grid of V1. T1, T3, T5 and T7, C2 are trimmers. AVC is applied to grid through R2 and decoupled by C4.

Cathode bias is provided by R4 decoupled by C6. Screen voltage is obtained from potential

Continued overleaf



RESISTORS

R	Ohms	Watts
1	22K	½
2	470K	½
3	33K	½
4	220	½
5	2.2K	½
6	47K	½
7	470	½
8	47	½
9	27K	½
10	470K	½
11	470K	½
12	330	½
13	68K	½
14	100K	½
15	330K	½
16	1 Meg Potr. fitted switch	
17	1M	½
18	1M	½
19	56K	½
20	1K	½
21	470K	½
22	33K	½
23	10K	½
24	1M	½
25	47K	½
26	470K	½
27	150	½
28	2K	6
29	47K	⅛

CAPACITORS

C	Capacity	Type
1	500 pf	silver mica
2	20 pf	silver mica
3	100 pf	silver mica
4	.1	tubular 500V
5	.1	tubular 500V
6	.1	tubular 350V
7	100 pf	silver mica
8	100 pf	silver mica
9	100 pf	silver mica
10	100 pf	silver mica
11	5400 pf	silver mica
12	1800 pf	silver mica
13	538 pf	silver mica
14	160 pf	silver mica
15	50 pf	silver mica
16	.1	tubular 350V
17	.1	tubular 350V
18	.1	tubular 350V
19	.01	tubular 350V
20	100 pf	silver mica
21	100 pf	silver mica
22	100 pf	silver mica
23	100 pf	silver mica
24	100 pf	silver mica
25	5	tubular 350V
26	.04	tubular 350V
27	.01	tubular 500V
28	.02	tubular 350V
29	500 pf	silver mica
30	1000 pf	silver mica
31	50	electrolytic 12V
32	32	electrolytic 350V
33	32	electrolytic 350V
34	250 pf	silver mica
35	1000 pf	silver mica
36	.25	tubular 350V
37	.005	tubular 1000V

INDUCTORS

L	Ohms
1	.5
2	Very low
3	1
4	.25
5	15
6	2.3
7	23
8	18
9	.5
10	Very low
11	1.25
12	.25
13	1.5
14	1.8
15	3.7
16	7
17	9.5
18	9.5
19	9.5
20	9.5
21	4.5
22	375
23, 24	.25
25	Very low
26	450
27	Very low
28, 29	28.5 total

McMICHAEL 481 AC—*Contd.*

divider R1, R3 decoupled by C5. L17, C8, the primary of IFT1, is in the hexode anode circuit.

Oscillator is connected in a tuned-anode parallel-fed HT circuit. L10 (SW1), L12 (SW2), L14 (MW) and L16 (LW) are the anode coils connected by S4 to tuning capacitor VC2 and through coupling capacitor C10 to oscillator anode of V1. T2, T4, T6 and T8, C15 are trimmers, and C11, C12, C13, C14 are padding. R9 is oscillator load.

L9 (SW1), L11 (SW2), L13 (MW), L15 (LW) are the grid coupling coils and S3 connects them through C7 to oscillator grid of V1. R8 (SW1), R7 (SW2) and R5 (LW) are series limiters. R6, C7 provide leak-condenser bias.

IF amplifier operates at a frequency of 465 Kc/s. L18, C9, the secondary of IFT1, feeds signal to grid of IF amplifier V2. AVC is applied to grid through L18 from R11 and is decoupled by C16. R12 decoupled by C18 provides cathode bias. Screen voltage is obtained from R13 and decoupled by C17. L19, C23 are the primary of IFT2.

Signal rectifier L20, C24, the secondary of IFT2, apply signal to one diode of V3. R15 is the diode load and R14, C20, C21 constitute an IF filter.

Automatic volume control. C22 feeds signal from primary of IFT2 to second diode of V3. R21 is diode load and R11, C16, R10, C4 are AVC line decoupling components.

Magic-eye tuning indicator is operated from the AVC line. The grid of V5 obtains its signal from R10. Cathode is connected down to earth line. Anode voltages are obtained from R17, R18 and target anode voltage direct from HT line.

AF amplifier C19 feeds rectified signal to S5 and thence to R16, the volume control. In "Gram" position of S1-S5 the pickup signal is connected to R16 and the tuned circuits of aerial and oscillator are disconnected from their electrodes.

The signal appearing across R16, the volume control (either radio or pickup) is fed through R19, R29 to grid of triode section of V3. Cathode bias is obtained from R20 decoupled by C31. Bias developed across R20 also provides the delay voltage for the AVC diode. R22 is anode load and R23, C25 decouple the HT supply to V3.

Negative feedback. On all except the two SW ranges feedback from the anode of V3 is applied through C29, R24 and S6 to its grid through R29. C30 with C29 acts as anode RF by-pass capacitor.

Output stage. C28 feeds signal at anode of V3 to grid of output pentode V4. R26 is grid resistor and R25 grid stopper. Cathode bias is obtained from R27. No decoupling capacitor is fitted, hence a degree of negative feedback is provided. Screen voltage is obtained from HT line.

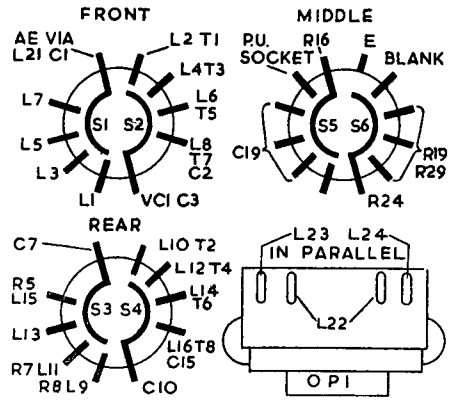
L22, the primary of OP1, the output matching transformer, is in the anode circuit of V4. Its HT is drawn from the reservoir capacitor C33. Tone control is effected by switching in capacitors C26, C27 across L22. C37, the "Treble" tone control capacitor, is between anode of V4 and earth.

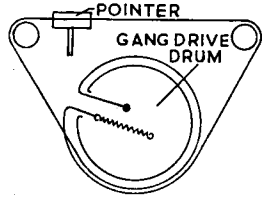
L23, the secondary of OP1, feeds signal to an 8in. PM loudspeaker L24. Sockets are fitted on L23 for connection of a low-impedance extension.

High tension is provided by full-wave indirectly heated rectifier V6. Resistance-capacity smoothing is by R28. C32 C33 and RF filtering by C36. A fuse consisting of a 6.5V, .3A pilot lamp is in the lead between CT of L26 and chassis.

Heaters of V1 to V5 and dial lights obtain their current from L27. L28, L29, which form the primary of MT1, the mains input transformer, are tapped for voltages of 200 to 250 50 c/s. S8, ganged to the volume control, is the on/off switch.

Removal of chassis. Remove the four control knobs and back panel. Unscrew the two receiver and the three power unit chassis bolts on underside of cabinet. Unplug loudspeaker lead and power unit interconnecting lead from the receiver chassis.





TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune Receiver to	Trim in Order stated for Max. Output
(1) 465 kc/s to g1 of V1 via .01 mF	—	Core L20, L19, L18, L17
(2) Check that pointer c end of band 2 scale meshed.	oincides with when gang co	ndenser is fully mark at extreme
(3) 22.5 mc/s to AE socket via a dummy aerial	13.5 metres	T2, T1
(4) 6 mc/s as above ..	50 metres	T4, T3
(5) 1.5 mc/s as above..	200 metres	T6, T5
(6) 570 kc/s as above..	526 metres	Core of L14, L6. Repeat (5) and (6)
(7) 400 kc/s as above..	750 metres	T8, T7
(8) 150 kc/s as above..	2,000 metres	Core of L16, L8. Repeat (7) and (8)
(9) 465 kc/s as above..	—	Core of L21 for minimum