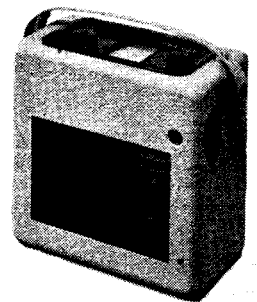
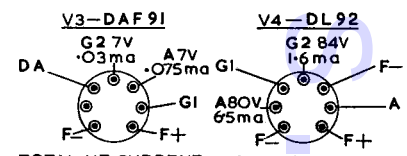
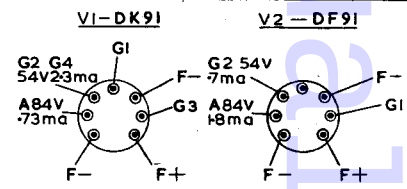
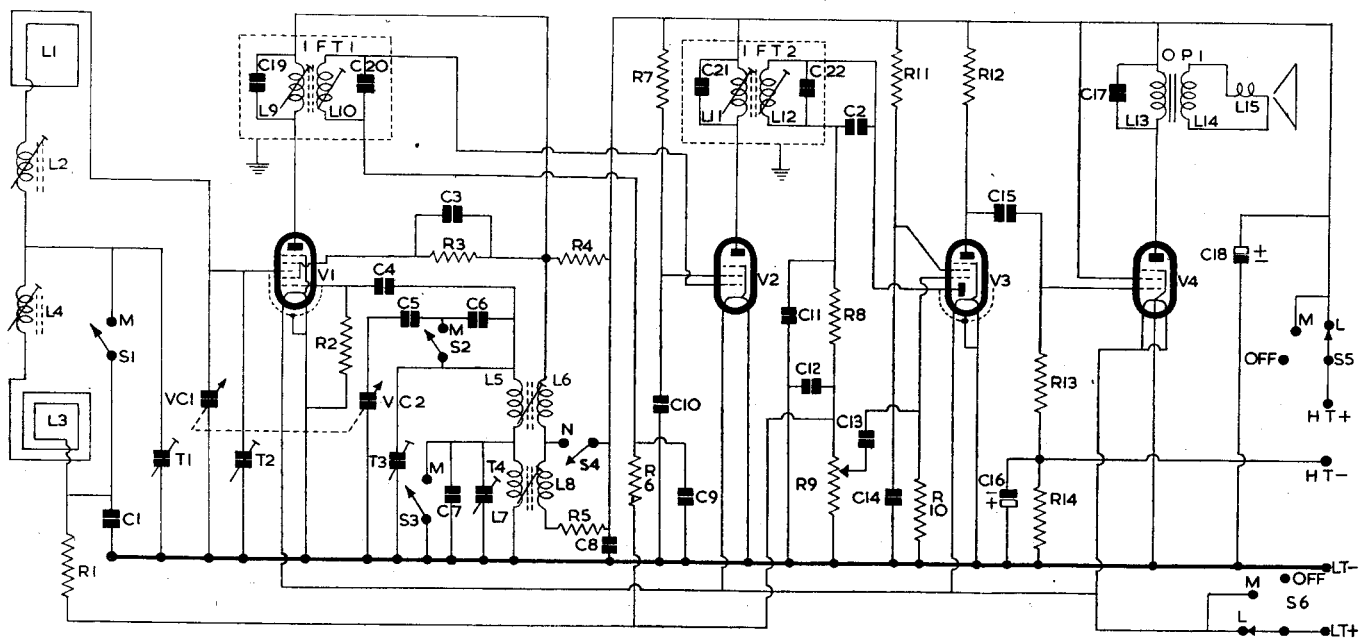
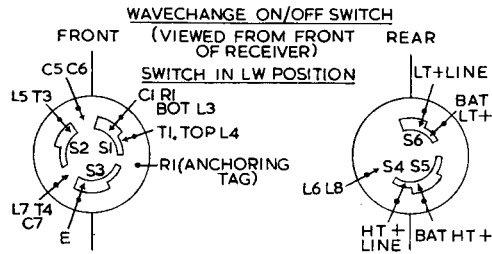
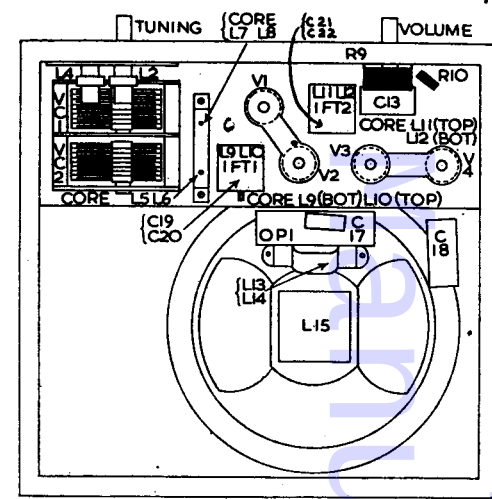
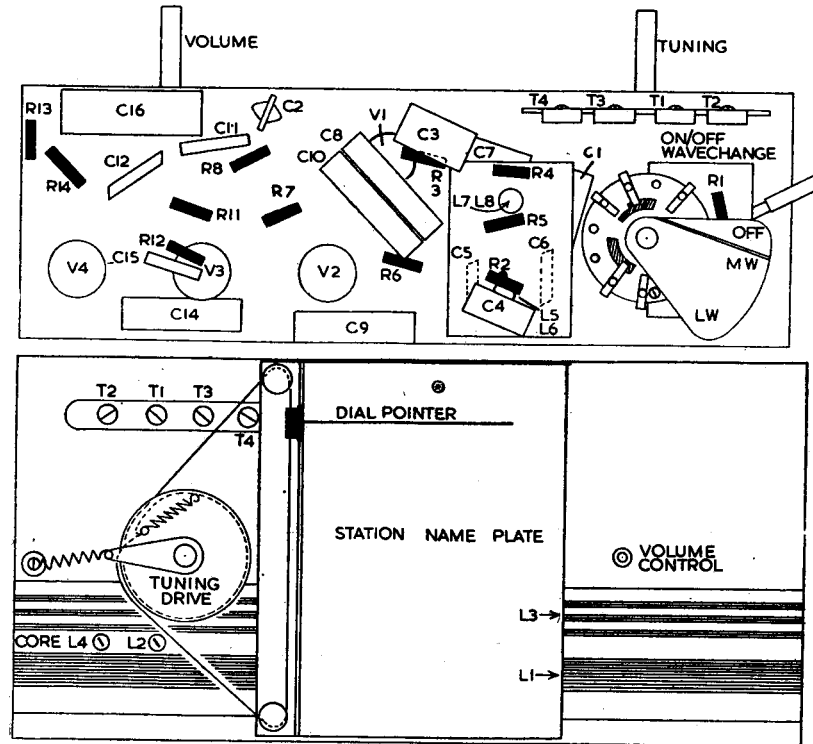


McMICHAEL 483



Four-valve, two-wave-band, all-dry miniature portable superhet receiver with internal frame aerial. Designed to operate from HT and LT batteries. Sprayed plastic carrying case fitted with substantial leather carrying handle. Manufactured by McMichael Radio Ltd., Slough, Bucks.



TOTAL HT CURRENT = 13.5ma WITH 94VHT VOLTAGE ACROSS R14 = 10V

RESISTORS

R	Ohms	Watts
1	2.2 Meg	1/2W
2	100K	1/2W
3	15K	1/2W
4	18K	1/2W
5	470	1/2W
6	2.2 Meg	1/2W
7	39K	1/2W
8	270K	1/2W
9	1 Meg	1/2W
10	8.2 Meg	1/2W
11	2.7 Meg	1/2W
12	1 Meg	1/2W
13	4.7 Meg	1/2W
14	680	1/2W

CAPACITORS

C	Mfads	Type
1	.05 tubular 500v	
2	5pf Ceramic	
3	250pf silver mica	
4	100pf silver mica	
5	620pf silver mica	
6	620pf silver mica	
7	250pf silver mica	
8	.1 tubular 350v	
9	.05 tubular 350v	
10	.1 tubular 350v	

C	Mfads	Type
11	...	33pf silver mica
12	...	33pf silver mica
13	...	500pf mica
14	...	.1 tubular 350v
15	...	.001 tubular 500v
16	...	25 electrolytic 25v
17	...	.01 tubular 500v
18	...	4 electrolytic 150v
19	...	100pf silver mica
20	...	100pf silver mica
21	...	100pf silver mica
22	...	100pf silver mica

INDUCTORS

L	Ohms
1	...
2	...
3	...
4	...
5	...
6	...
7	...
8	...
9	...
10	...
11	...
12	...
13	...
14	...
15	...

McMICHAEL 485-Continued

CIRCUIT consists of a heptode frequency changer V1, coupled by a permeability tuned transformer to an RF pentode IF amplifier V2. A second permeability tuned IF transformer couples V2 to a diode-pentode V3 used as signal rectifier, for AVC and as AF amplifier. Resistance capacity coupling is used between V3 and V4 the output pentode valve. V4 feeds into a 64-inch PM speaker. High tension is obtained from a 90-volt Ever Ready Battery type B.117 and low tension at 1.4 volts from Ever Ready Alldry No. 32.

Aerial circuit consists of frame aerials L1 (MW) L3 (LW), together with loading coils L2 (MW) and L4 (LW). On LW operation L1, L2, L3 and L4 are in series and tuned by VC1. T1 is LW trimmer across L3 and L4. On MW operation S1 shorts L3 and L4, leaving L1 and L2 tuned by VC1 and trimmed by T2. Aerial tuned circuit is coupled direct to control grid (G3) of V1 the frequency changer. AVC voltage is fed to grid V1 through the tuned circuits from R1. C1 is AVC decoupling.

Oscillator is connected in a tuned grid, series fed HT circuit. On LW operation L5 and L7 are in series and tuned by VC2. T4, with shunt capacitor C7, is LW trimmer and C5 and C6 are padders. On MW operation S3 short circuits L7 and S2 shorts C6. This leaves L5 in circuit, tuned by VC2. T3 is MW trimmer and C5 MW padder. C4 couples the oscillator tuned circuits to oscillator grid (G1). R2 and C4 provide bias for oscillator grid. Anode reaction voltages are developed inductively across L6 (MW) and L6, L8 (LW). R4 is a damping resistor across the feedback coils and R5 a series limiter resistor for LW only. S4 shorts L8 and R5 on MW. The reaction voltages are derived from oscillator anode (G2, G4) and also through L9, the primary of IFT1, from heptode anode. R3 drops the voltage to oscillator anode (G2, G4) and C3 provides bypass for feedback frequencies.

IF Amplifier operates at 465 kc/s. L10, C20, the secondary of IFT1, feeds signal to grid V2, the IF amplifier valve. AVC voltage is fed to grid, through L10, from R6. C9 is decoupling. Screen voltage is obtained from R7 decoupled by C10. L11, C21, the primary of IFT2, is in the anode circuit.

Signal Rectifier and AVC. L12, C22, the secondary of IFT2, feeds signal to diode of V3. R9, the volume control, is the diode load resistor and R8, C11, C12 constitute an IF filter. AVC voltages are taken from top of R9 and fed through R1, R6 to control grids of V1 and V2.

AF Amplifier. C13 feeds signal from volume control R9 to grid of pentode section of V3. R10 is grid resistor. Bias for grid is developed on C13. Screen voltage is obtained from R11 decoupled by C14. R12 is the anode load.

Output Stage. C15 feeds signal at anode V3 to grid of output pentode V4. R13 is its grid resistor. Bias for grid is developed across R14 in the HT negative lead to chassis decoupled by capacitor C16. Screen voltage is obtained from HT line of receiver. L13, the primary of output matching transformer OP1, is in the anode circuit of V4. C17 is fitted to limit rise in impedance of L13 at high frequencies.

L14, the secondary of OP1, feeds signal to L15, the speech coil of a 64-inch PM speaker.

High Tension of 90 volts is obtained from an Ever Ready Batrymax Type B.117. S5, which is

ganged to wavechange switch, breaks the positive HT connection to the receiver. C18 provides decoupling for HT battery.

Low Tension. Filaments of V1 to V4 are connected in parallel and obtain their total current of .25 amp. from an Ever Ready Alldry Battery Type 32. S6, which is ganged to wavechange switch, breaks the LT positive lead to valve filaments.

Removal of chassis from cabinet. Remove two control knobs on top and switch escutcheon plate on side of case. Unfasten rear panel of receiver by sliding catch at top to the left. Remove batteries. Remove moulded bakelite dial escutcheon on top of case, it is held in position by two plates attached to the underside of hexagonal rotating bushes through which the spindles of tuning and volume controls pass. By turning these bushes through 90 degrees the escutcheon is free to be lifted off. The tuning spindle bush requires to be turned in an anti-clockwise direction and the other clockwise.

Remove the four wood screws fastening internal wooden frame to sides of outer case. Withdraw internal frame, bottom end first to give clearance for spindles, etc. Remove paxolin panel covering sub-chassis wiring.

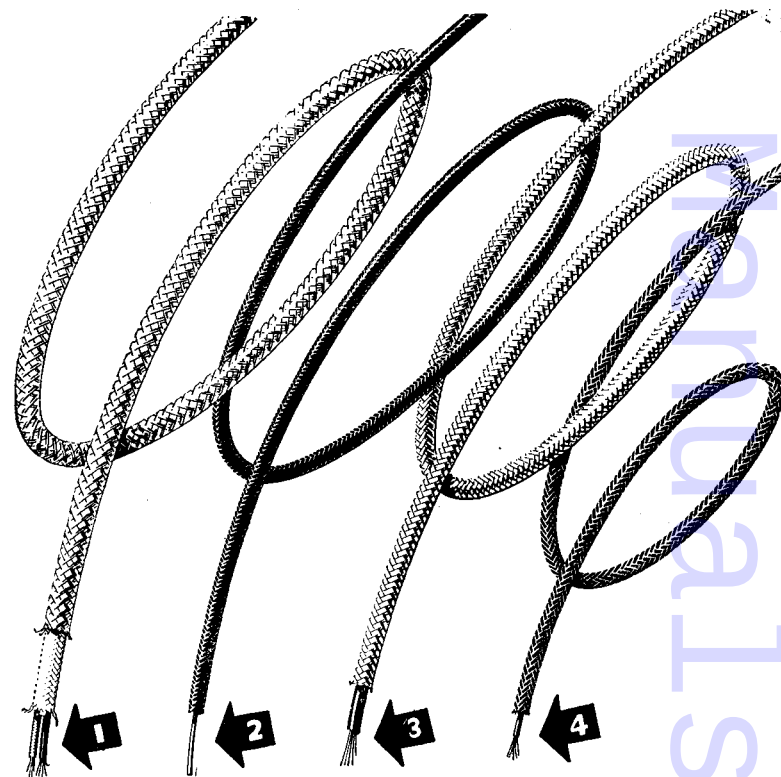
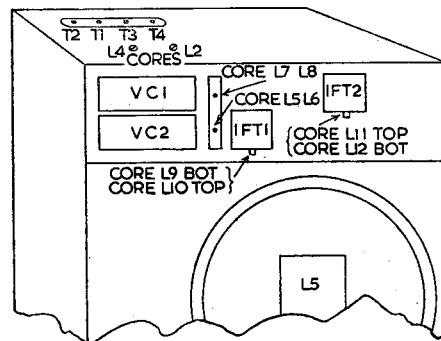
The receiver can now be serviced with access to all components.

To remove the special combined valve clamps and screening cans press downwards the metal strip projecting through slots in clamps.

TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune Receiver to	Trim in Order stated for Max. Output
(1) 465 kc/s to G3 of V1 via .01 capacitor	—	Core L12, L11, L10, L9
(2) With gang condenser at minimum capacity adjust dial pointer to coincide with bottom of "McMichael Radio Ltd." at lower end of scale.	—	—
(3) 1.5 mc/s to frame aerial via loop ...	200 metres	T3 T2
(4) 300 kc/s as above	1,000 metres	T4 T1

Note.—No instructions are given for re-alignment of cores of L2, L4, L5 and L7 as these are factory adjusted and sealed.



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Illustrations are strictly accurate

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3 SINGLE SCREENED WIRE

14/36 SWG., a flexible for grid-leads, etc., at 4/6d. per 36 ft. coil.

2 SINGLE CORE PUSH-BACK WIRE

22 SWG., for chassis wiring, etc., Colours: Red, White, Black, Green, Yellow, Blue, at 5/- per 100 ft. coil.

4 STRANDED PUSH-BACK WIRE

7/33 SWG., for speaker leads, etc. Colours: Red, Black, Green, Yellow, Blue, at 4/9d. per 100 ft. coil.

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