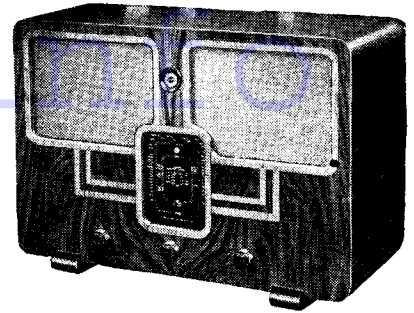


McMICHAEL 372 TWIN-SPEAKER



Twin speakers, magic eye tuning and mains static suppression are features of the McMichael 372 six valve super-het.

CIRCUIT.—The aerial is coupled to the grid of V1, an H.F. pentode, which operates as an amplifier on the short waves and is cut out on the medium and long wavebands. Coupling to V2, a triode hexode frequency changer, is a set of band-pass coils on medium and long waves. On the short waves the H.F. amplifier is transformer coupled to the frequency changer.

V2 is coupled to the grid of V3, another H.F. pentode, by an I.F. transformer. V3 is the I.F. amplifier of the receiver. Another transformer feeds the demodulating diode of V4, a double diode valve. The visual tuning indicator is fed from the secondary of this I.F. transformer.

The second diode of V4 is fed by a coupling condenser and the D.C. potential provides A.V.C. for the two preceding stages.

Coupling arrangements to the grid of V5, an output pentode, include a manual volume control and also a switch to cut off the radio input to the L.F. stage when the receiver is working from a pick-up.

In the anode circuit of V5 is the speaker matching transformer and a pentode compensator. In parallel with this is a variable resistance and condenser for tone control.

Mains equipment consists of a mains transformer, a full-wave rectifying valve, V6, electrolytic smoothing condensers and a smoothing choke (speaker field energising coil).

Chassis Removal.—Remove the back of the cabinet (secured by sliding clips) and the three control knobs from the front of the receiver. These are of the spring-fixing type.

Turn the cabinet on its side and remove the four fixing bolts and washers. Unclear the cable to the visual tuning indicator. The chassis can then be withdrawn.

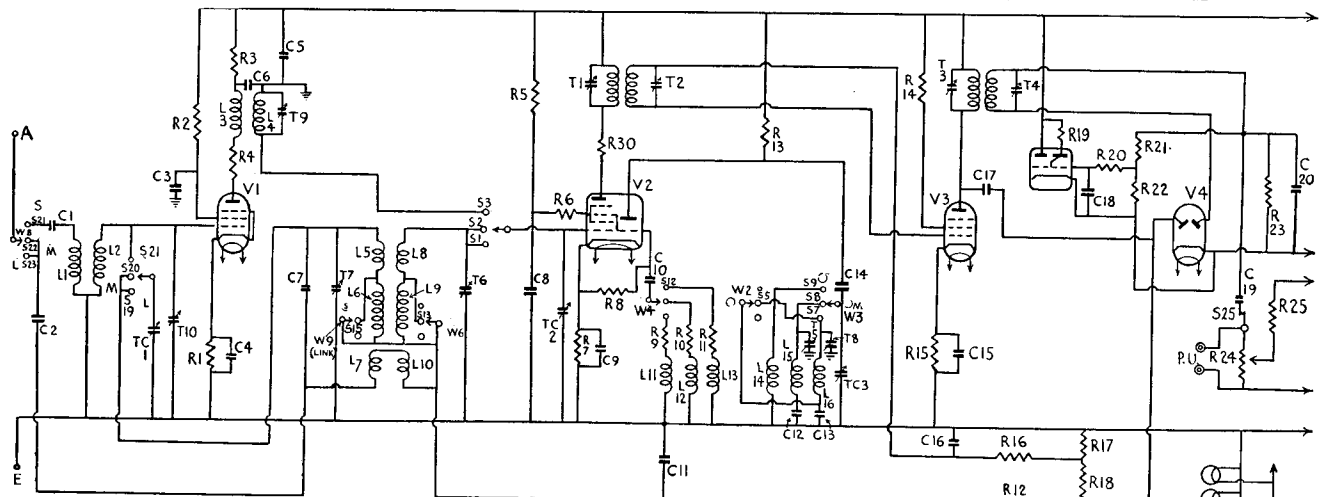
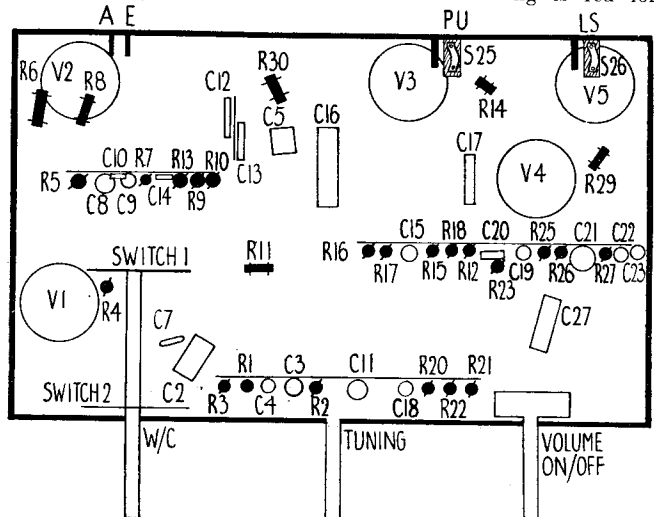
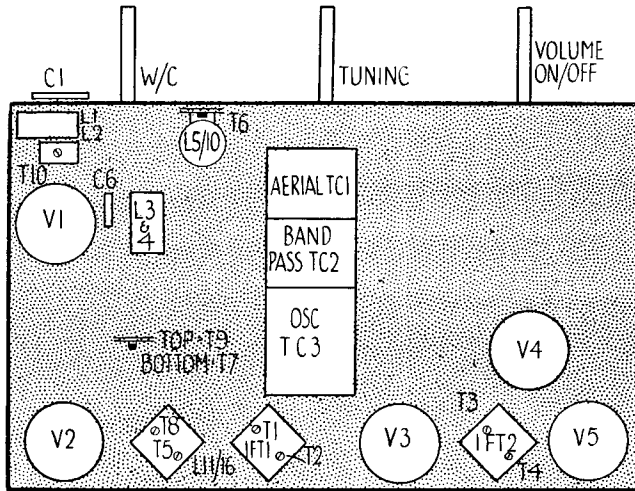
Special Notes.—There are five dial lights, and these are Ever Ready bulbs, rated at 6.2 volts .3 amp., fitted with M.E.S. bases.

Sockets at the rear of the chassis enable a pick-up to be connected. A special plug is supplied so that when it is pushed

right into the socket the radio input is cut out and the pick-up connected. A high output crystal pick-up should be used.

A similar pair of sockets at the rear of the chassis enables an external speaker to be operated. This should be connected to the special plug provided. If the plug is pushed right home the internal speakers are disconnected. With the plug pushed in a short way both external and internal speakers operate.

The colour code of wiring is red for



An H. F. valve in front of the frequency changer is used only on the short wave range. Above are the two chassis layouts.

anodes, screens and H.T., and heaters brown and green.

In our particular chassis R25 was found to be 150,000 ohms, a 50-ohms resistance was connected to the anode of V2, and a 40,000 ohms resistance found between the red lead on the speaker panel and earth line operating as a voltage surge reducer. C13 was found to have a value of .000223 mfd.

Electrolytic smoothing condensers C25 and C26 are located near the top of the cabinet above the visual tuning indicator. R19 across the tuning indicator holder, and C24 on the speaker panel.

Circuit Alignment Notes

I.F. Circuits.—Connect a service oscillator between the top grid cap of V2 and chassis. Connect an output meter across the primary of the speaker transformer. Turn the volume control to maximum, tone control to the high position, and the wave selector switch to the medium waves. Fully interleave the vanes of the gang.

Tune the service oscillator to 128.5 kc. and adjust T1, T2, T3 and T4, in that

order, for maximum response, reducing the input from the oscillator as the circuits come into line so as to render the A.V.C. inoperative.

Signal Circuits.—Connect the service oscillator to the aerial and earth sockets of the receiver via a dummy aerial. With the set switched to the medium waves and the gang at maximum capacity, check that the leading edge of the medium wave tuning pilot light is in line with the last calibration mark found 3/16 from the top (high wavelength) end of the medium wavelength scale. Adjust until it does by means of the set screws on the condenser coupling.

Only feed sufficient input from the service oscillator to obtain definite peaks in the output meter so as to keep the A.V.C. inoperative.

Medium Waves.—Tune the set and oscillator to 214 metres (1,400 kc.). On the set this is the short line opposite Radio Lyons. Adjust first T5 and then T6 and T7 for maximum.

The M.W. padding is fixed, but check at 500 metres (600 kc.) and compensate with T5 if calibration is very much out. Then retrim T6 and T7 on a 214 metres signal.

Long Waves.—Tune the set and oscillator to 1,000 metres (300 kc.) and adjust T8 for maximum. The L.W. padding is fixed.

Short Waves.—Inject a signal of 16.6 metres (18 mc.) and tune the set to the signal. Trim T9 and T10 for maximum response.

McMichael 372 on Test

MODEL 372.—For A.C. operation, 200-260 volts, 40-100 cycles. Price, 14½ gns.

DESCRIPTION.—Three-waveband, five valve and rectifier, table model superhet.

FEATURES.—Twin speakers, "change-over" sockets for L.S. and pick-up. Controls for tuning, with semi-flywheel action, volume and selection. Separate tone control on side of cabinet. H.F. stage operative on S.W. band only.

LOADING.—77 watts.

Selectivity and Sensitivity

SHORT WAVES (16.5-50 metres).—Excellent gain well maintained, with no appreciable drift and very easy handling.

MEDIUM WAVES (200-550 metres).—Representative gain and selectivity. Local station spread on adjacent channels. Gain well maintained over entire band with good background. Second channel noticeable.

LONG WAVES (850-2,000 metres).—Good gain, with excellent selectivity. All main stations well received with only slight side splash on Deutschlandsender.

Acoustic Output

Ample volume for any ordinary room. Twin speakers give pleasing effect with good tone balance and clean top response and good attack. Speech very free from marked coloration.

Replacement Condensers

TWO exact replacement condensers for the McMichael Model 372 are available from A. H. Hunt, Ltd., of Garratt Lane, Wandsworth, London, S.W.18.

The first is for C21. This is unit 2,918, at 1s. 9d. The second is the block containing C25 and C26, unit list No. 3.763. This retails at 6s. 6d.

CONDENSERS

C.	Purpose.	Mfds.
1	S.W. aerial coupling	.00005
2	M.W. and L.W. aerial coupling	.0002
3	V1 screen decoupling	.1
4	V1 cathode shunt	.1
5	V1 H.T. line shunt	.002
6	V1 anode decoupling	.0002
7	Aerial coupling	.00001
8	V2 screen decoupling	.1
9	V2 cathode shunt	.1
10	Osc. grid	.0001
11	V2 A.V.C. decoupling	.5
12	M.W. osc. fixed padder	.000719
13	L.W. osc. fixed padder	.00023
14	Osc. anode coupling	.0601
15	V3 cathode shunt	.1
16	V3 A.V.C. decoupling	.1
17	A.V.C. diode coupling	.0001
18	T.I. grid shunt	.1
19	L.F. coupling	.005
20	H.F. bypass	.0001
21	V5 cathode shunt	25.
22	Pentode compensator	.002
23	Tone control	.03
24	Speech coil bypass	.01
25	H.T. smoothing	8.
26	H.T. smoothing	8.
27	Mains suppressor	.002

VALVE READINGS

No signal. Volume maximum. Medium waves 200 volts A.C. mains. 1,000 ohms/volt meter.

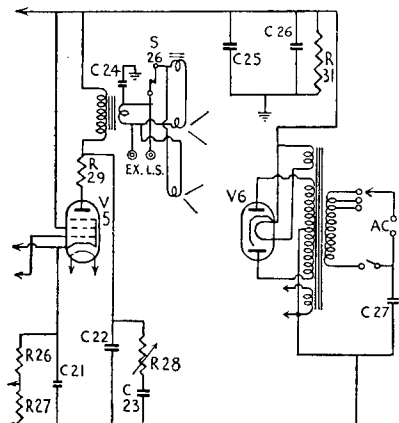
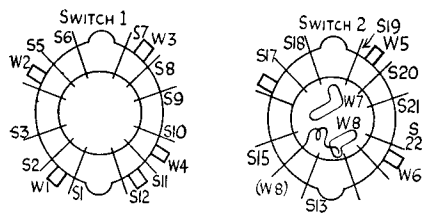
V.	Type.	Electrode.	Volts.	Ma.
1	All Mazda. AC/VP2 (7 met)	Anode ..	225	5.4
		Screen ..	233	1.2
2	ACTH1 (7 met)	Anode ..	230	3.1
		Screen ..	100	6.2
3	AC/VP2 (7 met)	Osc. anode	68	4.
		Anode ..	233	14.
4	V914 (5)	Screen ..	233	3.9
		Diode only	—	—
5	AC/2/Pen (7)	Anode ..	223	28.
		Screen ..	237	6.4
6	UU4 (4)	Filaments	335	—

WINDINGS

Winding.	Ohms.	Winding.	Ohms.
L1 ..	.1	L13 ..	6
L2 ..	.2	L14 ..	6
L3 ..	.2	L15 ..	2.8
L4 ..	.1	L16 ..	13.3
L5 ..	3.5	IFT1(P) ..	60.8
L6 ..	14.4	IFT1(S) ..	61.8
L7 and L10	11	IFT2(P) ..	60
L8 ..	3.3	IFT2(S) ..	58.4
L9 ..	15.3	Speech coils	3
L11 ..	4.5	(each)	3
L12 ..	2.3	Field coil ..	1250

RESISTANCES

R.	Purpose.	Ohms.
1	V1 cathode bias	150
2	V1 screen decoupling	200
3	V1 anode decoupling	1,000
4	V1 anode stabiliser	50
5	V2 screen decoupling	20,000
6	V2 screen stabiliser	40
7	V2 cathode bias	250
8	Osc. grid leak	50,000
9	L.W. regeneration modifier	5,000
10	M.W. regeneration modifier	2,500
11	S.W. regeneration modifier	50
12	V2 A.V.C. decoupling	500,000
13	Osc. anode load	40,000
14	V3 screen stabiliser	40
15	V3 cathode shunt	100
16	V3 A.V.C. decoupling	500,000
17	A.V.C. diode load (part)	500,000
18	A.V.C. diode load (part)	500,000
19	T.I. anode feed	2 meg.
20	T.I. grid	1 meg.
21	T.I. potr. (part)	1 meg.
22	T.I. potr. (part)	250,000
23	Demodulating diode load	500,000
24	Volume control	500,000
25	V5 grid stopper	100,000
26	V5 cathode bias (part)	150
27	V5 cathode bias	500
28	Tone control	100,000
29	V5 anode stabiliser	50
30	V2 anode stabiliser	50
31	H.T. bleeder	40,000



The output and mains sections of the 372 circuit. The top diagram identifies the switch connections.

For more information remember