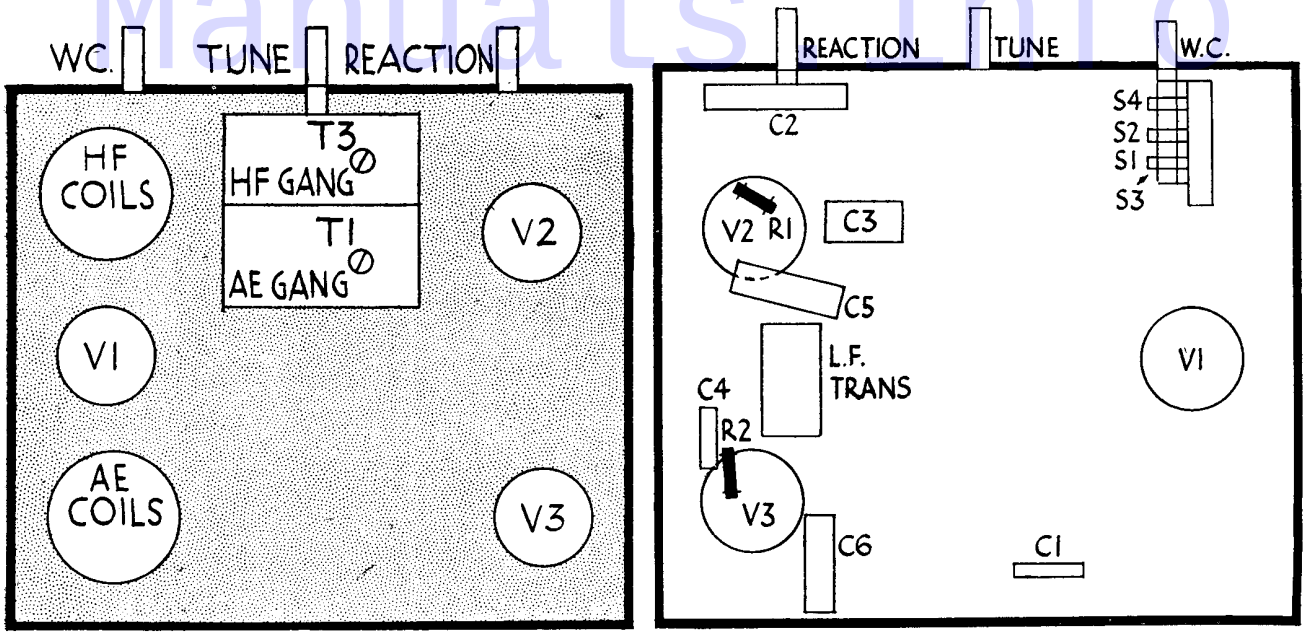
ALBA 210 BATTERY THREE—*Chassis Layouts*



McMICHAEL MODEL 363 BATTERY SUPERHET

CIRCUIT.—A five-valve battery superhet receiver having a frame aerial and operating on the usual medium and long wave bands.

The input to V1, an H.F. pentode, is through a tuned frame aerial. An external aerial tap is provided through a series condenser to the grid of V1, the frame aerial then acting as an ordinary tuned aerial coil.

Coupling to V2, the frequency changer, is through an inductively coupled H.F. transformer.

An I.F. transformer couples this valve to V3, which is an H.F. pentode, and a second I.F. transformer is used between this valve and V4, a double diode triode. One diode is used for demodulation, and the other to supply A.V.C. bias to the preceding valves in the usual manner. Volume is controlled by varying the input to the grid of V4.

The L.F. output of V4 is passed via a driver transformer to the quiescent push-pull output valve V5, which is tone controlled by R21 and C18.

The amplified output of V5 is fed to the permanent magnet speaker via a matching transformer.

H.T. is obtained from a Drydex type H1132, 120-volt battery, and low tension from an Exide type PLF5 2-volt 26 amp. hour accumulator.

Special Notes.—The dial lamp is rated at 2 volts .5 amp. Its holder is fixed to the frame aerial above the dial assembly by means of a large clip and is easily removed.

The external speaker is connected on the secondary of the output transformer, and should have a speech coil impedance of about 2 ohms.

Removing Chassis.—Remove the four knobs from the front of the cabinet. Take out the batteries and the board separating the battery compartment from the speaker; this is secured by four wood screws, and the board from underneath the chassis, which simply pulls out.

Four wood screws must be removed from the back edge of the chassis, and then two bolts from underneath the cabinet passing through the frame aerial.

The chassis, frame aerial and speaker will then slide out of the cabinet.

ALIGNMENT NOTES

I.F. Circuits.—Connect a modulated oscillator tuned to 128.5 k.c. to the grid cap of V2, and an output meter across the external speaker terminals, leaving the internal speaker in circuit, and a .1 mfd. condenser across the oscillator section of the gang condenser.

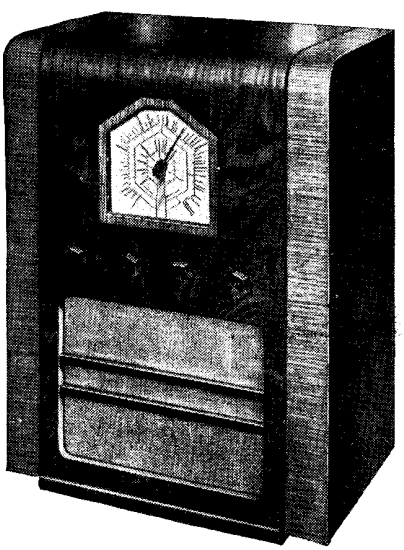
Inject a signal so that a maximum reading of about .5 volt is obtained on the output meter and adjust T1, T2, T3 and T4 for maximum deflection. Remove the swamp condenser

Medium Waves.—Connect the oscillator to the aerial and earth terminals, and inject and tune in a signal of 214 metres, adjusting T5 and T6 for maximum reading, using a signal of about .5 volt as before.

T7 should not be touched. Its correct position is at minimum.

Long Waves.—Tune the oscillator and the receiver to 1,000 metres, and adjust T8 for maximum reading on the output meter.

(Diagrams and tables, next page.)



The McMichael 363, a five-valve battery superhet. Circuit and chassis diagrams and component values are on the next page.

VALVE READINGS

No signal. Volume maximum. New batteries.

V.	Type.	Electrode.	Volts.	Ma.
1	(All Mazda) VP210 met. (7)	Anode ..	100	.9
		Screen ..	40	.3
2	TP22 met. (9)..	Anode ..	95	.8
		Screen ..	40	.85
		Osc.anode	40	.65
3	VP210 met. (7)	Anode ..	100	.9
		Screen ..	40	.3
4	HL21/DD met. (5)	Anode ..	70	.6
5	QP230 (7) ..	Anode (1)	115	2.7
		Screen ..	102	1.1
		Anode (2)	115	2.1

McMICHAEL 363—*Diagrams and Tables*

RESISTANCES

R.	Purpose.	Ohms.
1	V2 A.V.C. decoupling ..	.5 meg.
2	V2 screen decoupling.. ..	100,000
3	V2 suppressor grid leak ..	2 meg.
4	Harmonic suppressor ..	1,000
5	V2 grid leak	.1 meg.
6	V2 osc. anode load	70,000
7	V1 and V3 screen decoupling	100,000
8	V1, V2 and V3 A.V.C. decoupling	1 meg.
9	H.F. filter	.1 meg.
10	V1, V2 and V3 H.T. decoupling	5,000
11	Demodulator diode load ..	.5 meg.
12	A.V.C. diode load	1 meg.
13	Volume control	1 meg.
14	V4 grid stopper	.1 meg.
15	Grid bias and muting network	100

RESISTANCES – *Continued*

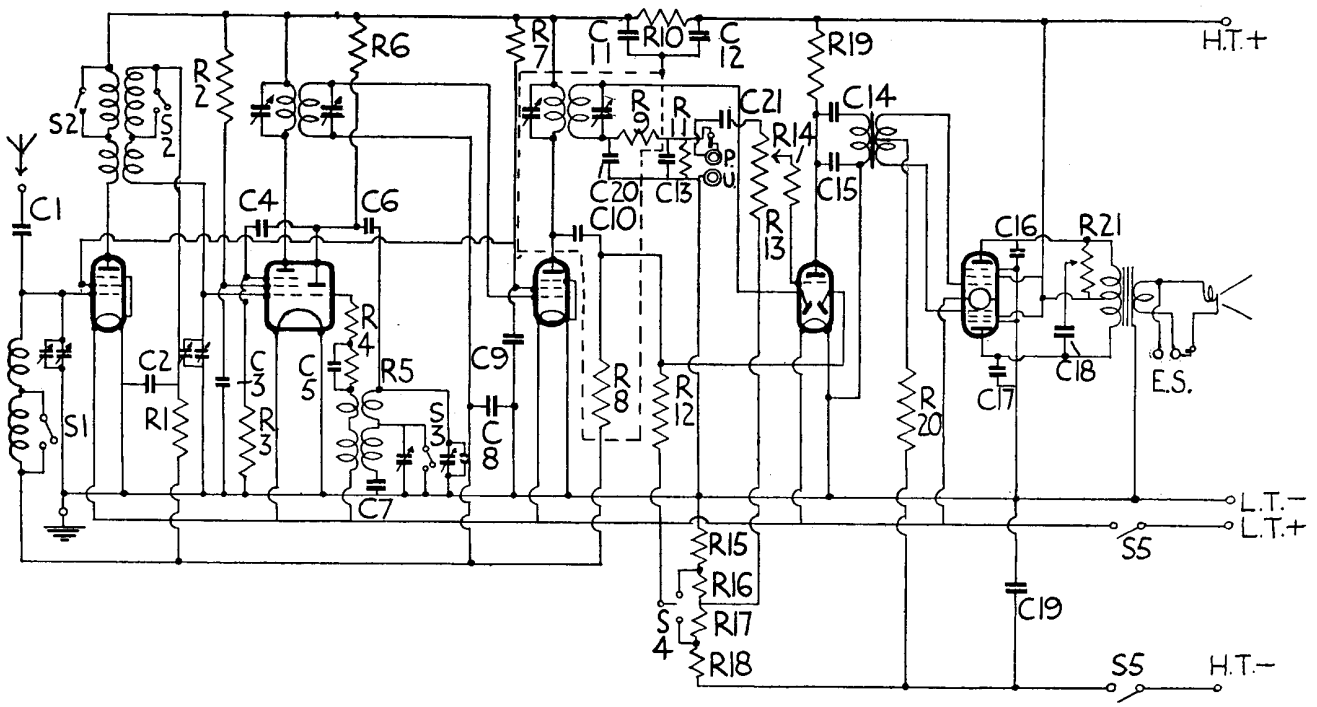
16	Grid bias and muting network	20
17	Grid bias and muting network	450
18	Grid bias and muting network	400
19	V4 anode load	50,000
20	V4 grid bias feed	.1 meg.
21	Tone control	1 meg.

CONDENSERS

C.	Purpose.	Mfds.
1	Series aerial	.00001
2	V2 A.V.C. decoupling ..	.1
3	V2 screen decoupling ..	.1

CONDENSERS – *Continued*

4	Injector condenser	.0005
5	V2 osc. grid	.0005
6	Osc. coupling	.0001
7	Long wave osc. padding ..	.001081
8	V3 A.V.C. decoupling ..	.1
9	V1 and V3 screen decoupling	.1
10	A.V.C. diode coupling ..	.0001
11	V1, V2 and V3 H.T. decoupling	8
12	V1, V2 and V3 H.T. decoupling	8
13	H.F. filter	.0001
14	L.F. coupling	.1
15	H.F. filter	.0003
16	Pentode compensating ..	.001
17	Pentode compensating ..	.001
18	Tone control	.01
19	Bias decoupling	50
20	H.F. filter	.0001
21	L.F. coupling	.005



Above is the theoretical circuit of the McMichael 363 superhet battery five, together with tables giving condenser and resistance values. Below are the chassis layouts, that on the left being the top view.