

TECHNICAL DATA AND PARTS LIST



CIRCUIT DESCRIPTION

Five tube, portable superheterodyne designed for operation on 115 volts, 25 or 60 cycles A.C., and 115 volts, D.C., or from batteries; incorporates detector oscillator, I.F. Amplifier, diode detector with A.V.C., two stage of audio amplification with pentode output driving a permanent magnet dynamic speaker.

FREQUENCY COVERAGE 540 to 1620 K.C.

POWER OUTPUT (U.P.O.)

AC-DC operation.....	100	M.W.
Battery operation.....	50	M.W.

BATTERY COMPLEMENT

"A" Supply.....one 4.5 v. Battery
"B" Supply.....one 67.5 v. Battery

CURRENT CONSUMPTION

A.C. 115 Volts, 25/60 cycles, D.C. 115 volts	0.25 amps.
Filament current (Battery operation).....	0.5 amps.
"B" Current (Battery operation).....	10 M.A.

RADIOTRON

FUNCTION

1R5.....	Detector-Oscillator
1U4.....	I.F. Amplifier
1U5.....	Diode Detector, AVC, 1st Audio Amplifier
3V4.....	Pentode Power Output
117Z3.....	Half-Wave Rectifier

LOUDSPEAKER DATA

Cone.....4" Dynamic
Field.....Alnico V 0.68 oz. Permanent Magnet
Voice Coil Impedance at 400 C.P.S.....3.2 Ohms
Output Transformer Primary Resistance.....455 Ohms

VOLTAGE READINGS		AC-DC OPERATION	BATT. OPERATION
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

Rectifier Cathode	108 V.	-
B+ (Pin 3 - 3V4)	86 V.	67.5 V.
Osc. Plate (Pin 3 - 1R5)	55 V.	38 V.

Above readings are approximate and will vary depending on the resistance of the voltmeter used. Readings are taken on lowest scale that will accommodate the voltage under test.

ALIGNMENT PROCEDURE

Maximum Performance depends on accurate alignment of the receiver, I.F. and R.F. circuits; therefore, follow the instructions below and the method outlined in the alignment chart carefully.

1. Remove chassis from cabinet.
2. Connect output meter across the voice coil terminals.
3. Make all alignment adjustments to the receiver with the volume control set at maximum. Reduce the signal intensity as much as possible at the signal generator.

Note: Four index marks are provided on the lower edge of the dial back plate to indicate respectively; gang fully meshed, 580 K.C., 1000 K.C., and 1400 K.C.

ALIGNMENT CHART

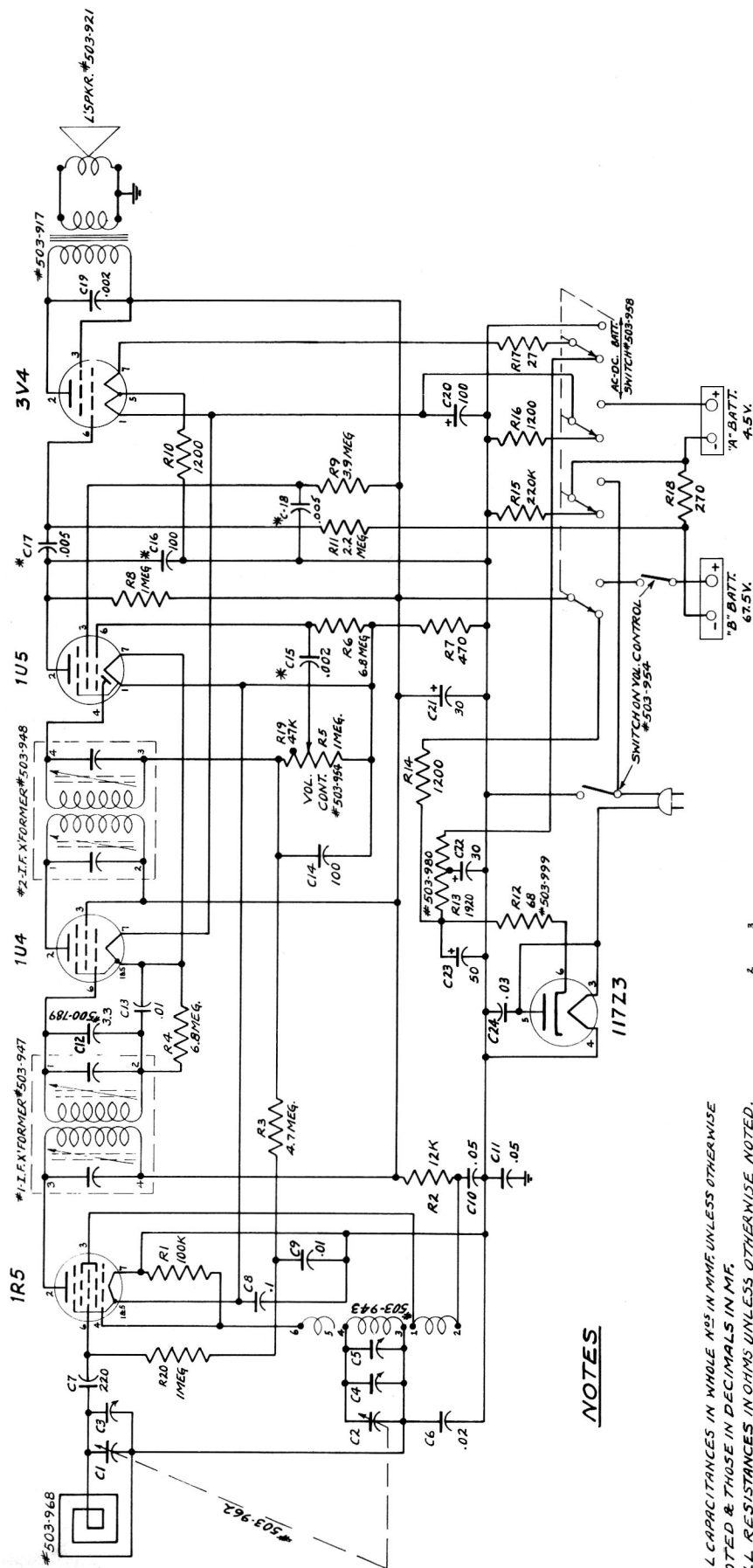
OPERATION	CONNECT S.G. OUTPUT TO	INPUT FREQUENCY	DIAL SETTING	ADJUST	CIRCUIT RESONATED	REMARKS
1	* C.G. IR5	455 K.C.	GANG AT MINIMUM	TOP & BOTTOM ALIGNERS	NO.2 I.F. NO.1 I.F.	MAXIMUM OUTPUT
** 2	*** RADIATION LOOP	1620 K.C.	GANG AT MINIMUM	C4 AND C5 IF NECESSARY	OSCILLATOR	MAXIMUM OUTPUT
3	RADIATION LOOP	1400 K.C.	1400 K.C.	C3	R.F.DETECTOR	MAXIMUM OUTPUT
4	RADIATION LOOP	580 K.C.	580 K.C.	OSC.CORE	OSC.PADDER	ROCK GANG FOR MAXIMUM OUTPUT

* Lug on Detector Section of gang forms a convenient point of connection. Apply signal through an 0.1 Mfd. Condenser.

** Before proceeding with R.F. alignment see that pointer is in line with left hand marking on lower edge of dial back plate, with gang capacitor fully meshed.

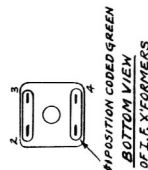
*** Radiation loop may consist of 4 turns of #18 wire approximately 6 inches in diameter and spaced 2 to 4 feet from receiver loop.

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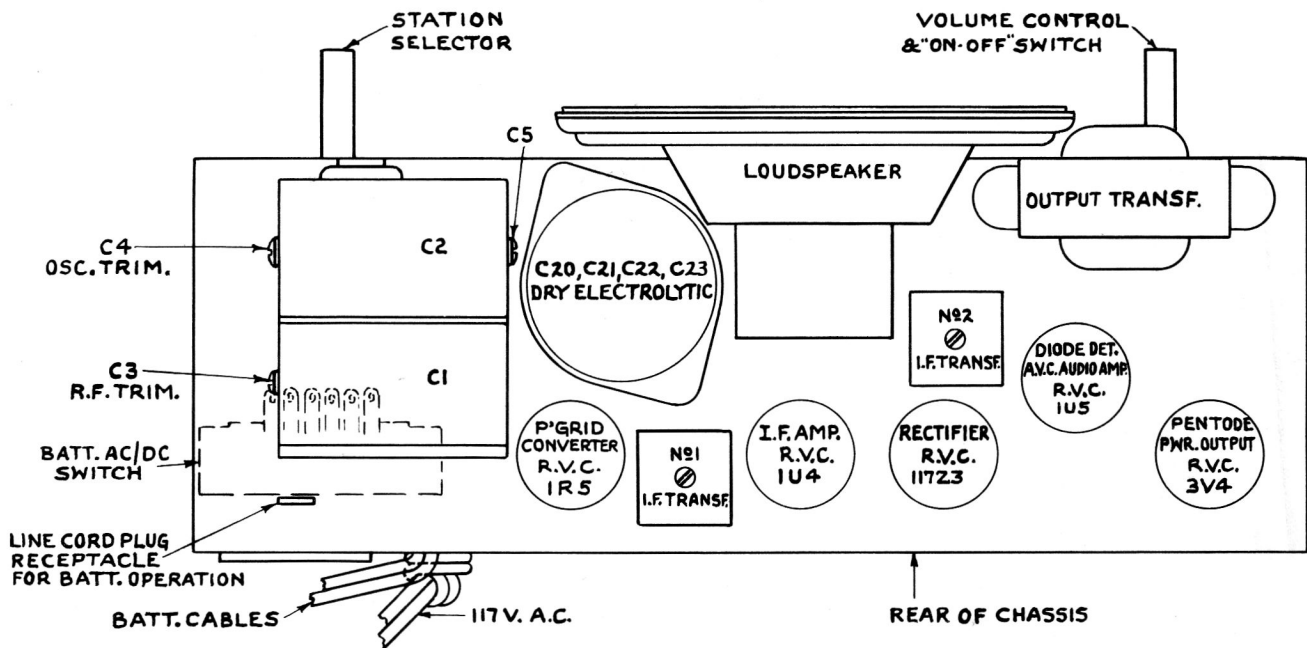
NOTES

ALL CAPACITANCES IN WHOLE NOS IN MMF UNLESS OTHERWISE NOTED & THOSE IN DECIMALS IN MF.
ALL RESISTANCES IN OHMS UNLESS OTHERWISE NOTED.
"K" = 1,000 OHMS
⊥ DENOTES CHASSIS



VALVE LOCATION CHART

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DRIVE CORD ARRANGEMENT

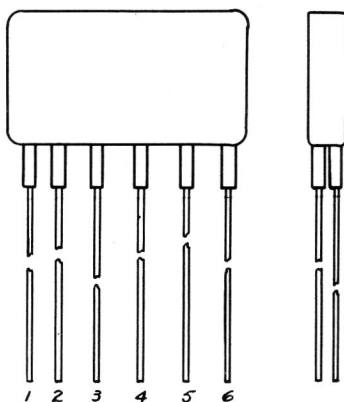
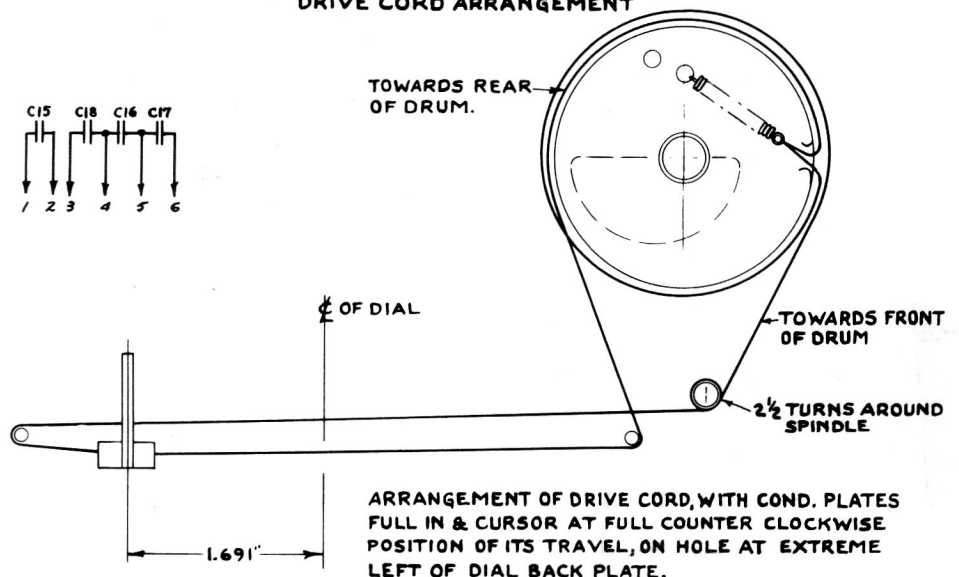
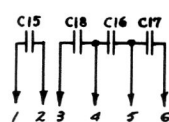


Fig. 1



ARRANGEMENT OF DRIVE CORD, WITH COND. PLATES FULL IN & CURSOR AT FULL COUNTER CLOCKWISE POSITION OF ITS TRAVEL, ON HOLE AT EXTREME LEFT OF DIAL BACK PLATE.

RESISTORS

REF.	DESCRIPTION	RATING	PART NO.
R1	100,000 Ohms	1/2 Watt	
R2	12,000 Ohms	1/2 Watt	
R3	4.7 Megohms	1/2 Watt	
R4	6.8 Megohms	1/2 Watt	
R5	1.0 Megohms	1/2 Watt	
R6	6.8 Megohms	1/2 Watt	
R7	470 Ohms	1/2 Watt	
R8	1.0 Megohms	1/2 Watt	
R9	3.9 Megohms	1/2 Watt	
R10	1200 Ohms	1/2 Watt	
R11	2.2 Megohms	1/2 Watt	
R12	68 Ohms	1-1/2 Watt	
R13	1920 Ohms (Centre Tapped at 960 Ohms)	1/2 Watt	
R14	1200 Ohms	1/2 Watt	
R15	220,000 Ohms	1/2 Watt	
R16	1200 Ohms	1/2 Watt	
R17	27 Ohms	1/2 Watt	
R18	270 Ohms	1/2 Watt	
R19	47,000 Ohms (Part of Volume Control)	1/2 Watt	

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CAPACITORS			PARTS LIST	
REF.	DESCRIPTION	PART NO.	PART NO.	DESCRIPTION
C1	335 MMF. (Eff)	GANG CAPACITOR 503962	503943	Oscillator Coil Assembly
C2	162 MMF. (Eff)		503947	1st I.F. Transformer
C3	Compensator for C1		503948	2nd I.F. Transformer
C4	Compensator for C2		503958	Switch (AC-DC-Batt.)
C5	Compensator for C2		503961	Dial Back Plate
C6	0.02 MFD. 600 V. Rolled Paper		503962	Gang Capacitor
C7	220 MMF. $\pm$ 20% Moulded Mica		503965	Cursor
C8	0.1 MFD. 200 V. Rolled Paper		100560	Drive Cord (29" Req'd.)
C9	0.01 MFD. 400 V. Rolled Paper		100379	Spring (Drive Cord Tension)
C10	0.05 MFD. 400 V. Rolled Paper		503983	"B" Battery Cable
C11	0.05 MFD. 600 V. Rolled Paper		503984	"A" Battery Cable
C12	3.3 MMF. $\pm$ 20% 500 V.	500789	504263	Lead Assembly (Power)
C13	0.01 MFD. 400 V. Rolled Paper		503904	Cabinet
C14	100 MMF. $\pm$ 20% Ceramic		503904-G	Cabinet (Green)
C15	0.002 MFD. + 100% - 25%	BULPLATE MULTIPLE CAPACITORS (See Note) 503955	503904-B	Cabinet (Beige)
C16	100 MMF + 75% - 25%		503924	Knob (Green)
C17	0.005 MFD + 100% - 25%		503925	Knob (Walnut)
C18	0.005 MFD Minimum		502614	Knob (Mahogany)
C19	0.002 MFD 600 V. Rolled Paper		503968	Loop Assembly
C20	100 MFD 150 R.V. - 108 W.V.)		503982	Hinge
C21	30 MFD 150 R.V. - 87 W.V.)	DRY 503975 ELECT.	503981	Handle
C22	30 MFD 150 R.V. - 58 W.V.)		503979	Baffle
C23	50 MFD 25 R.V. - 4 W.V.)		503921	Loudspeaker (Less Output Transformer)
C24	0.025 MFD 600 V. Rolled Paper		503917	Output Transformer
NOTE: For internal connections Refer to Figure 1.			503985	Spindle
			68065	Cotter Pin (Spindle Mtg.)
			SD-1613	"A" Battery Connector

CANADIAN MARCONI COMPANY

Head Office
Montreal, P.Q.
P.O. Box 1690

Service Department
2440 Trenton Ave.
Town of Mount Royal, P.Q.

552 Burrard Street,
VANCOUVER, B.C.

855 Bay Street,
TORONTO, ONT.

149 Portage E.
WINNIPEG, MAN.

572-8 Barrington Street,
HALIFAX, N.S.

90 New Gower Street,
ST. JOHN'S, Nfld.