SERVICE BULLETIN

Northern Electric

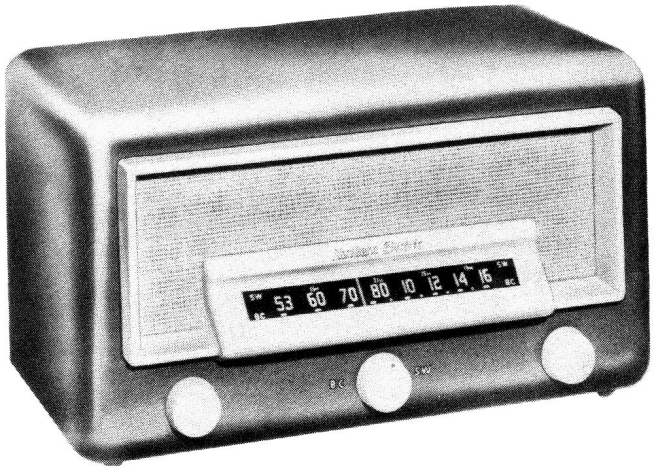
RADIO

Model 5412

5-Tube Mantel Model

AC Universal Superheterodyne

SERVICE INFORMATION



SPECIFICATIONS

GENERAL:

5-Tube Superheterodyne A.C. Universal Radio Receiver housed in table model moulded plastic cabinet available in Ivory and Brown.

1. FREQUENCY RANGE

Broadcast band -- 530 to 1600 K.C.
Short Wave -- 5.3 to 16 Mc.

2. INTERMEDIATE FREQUENCY

455 K.C.

3. TUBES

Type	*Function*
12BE6	Converter
12SK7	I.F. Amplifier
12SQ7	Detector, A.V.C. and Audio Amplifier
50L6GT	Audio Output Amplifier
35W4	Rectifier

4. A.V.C.

On 12BE6 Converter and 12SK7 I.F. Amplifier.

5. POWER SUPPLY

110-125 Volts, 25-60 Cycles -- A.C.
110-125 Volts D.C. (Reverse plug if set does not operate when plug is connected.)

6. POWER CONSUMPTION

30 Watts

7. AUDIO POWER OUTPUT

1.9 Watts

8. ANTENNA

Spool of flexible aerial wire attached to set.

9. GROUND

Ground must *never* be connected to this receiver.

10. AUDIO SYSTEM

Audio portion of 12SQ7 resistance -- capacity coupled to 50L6.

11. LOUDSPEAKER

5" Permanent Magnet, Alnico V.

12. CONTROLS

Left - Volume Control and ON-OFF Switch.
Center - Band Switch.
Right - Tuning Control.

13. DIMENSIONS

Chassis, Assembled (excluding shafts).
Length 9½" Width 4¾"
Height 6-3/8"

Cabinet, Overall (including knobs)
Length 13" Width 6-1/8"
Height 7½"

14. PHONO CONNECTION

At rear of chassis with switch.

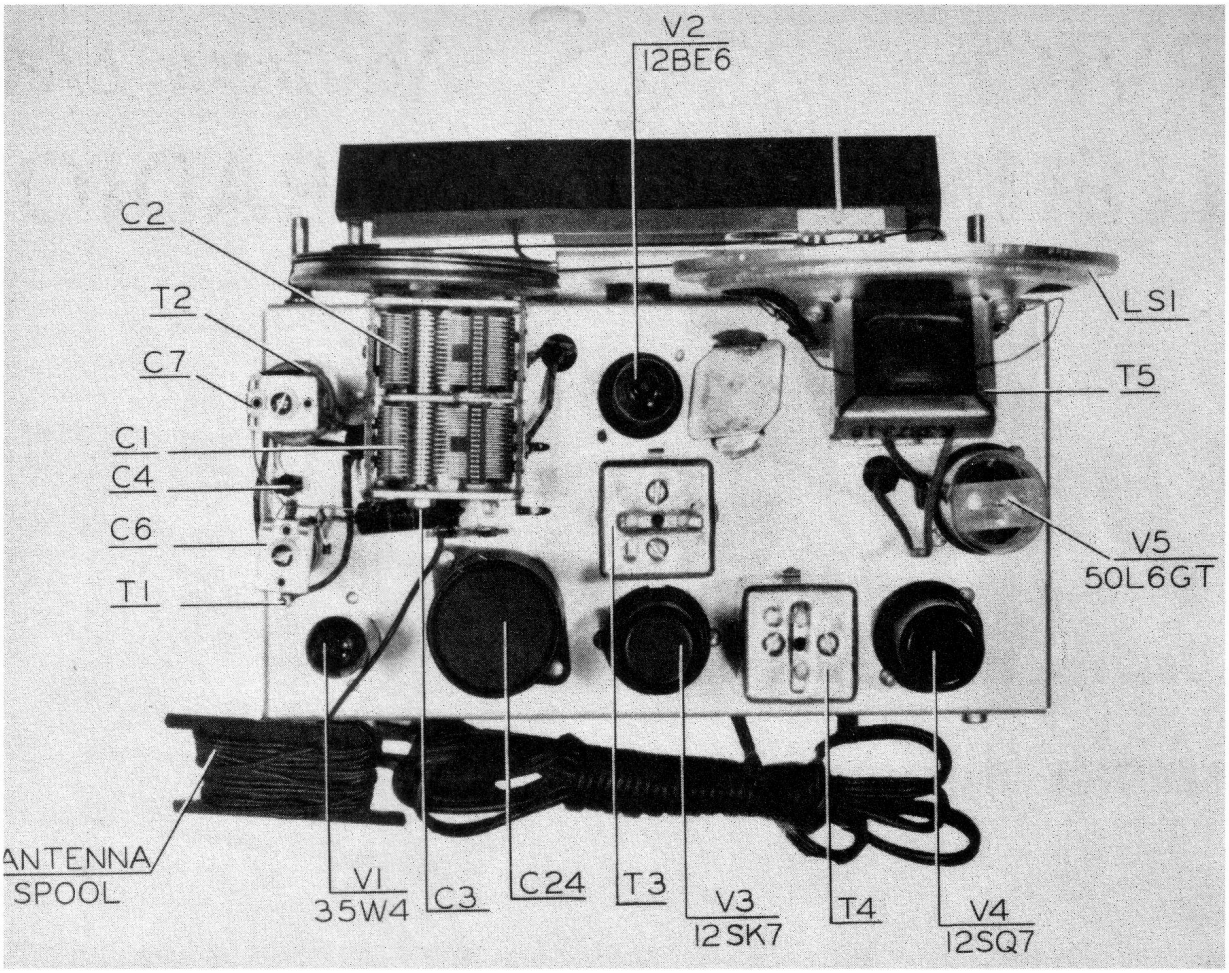
15. DIAL

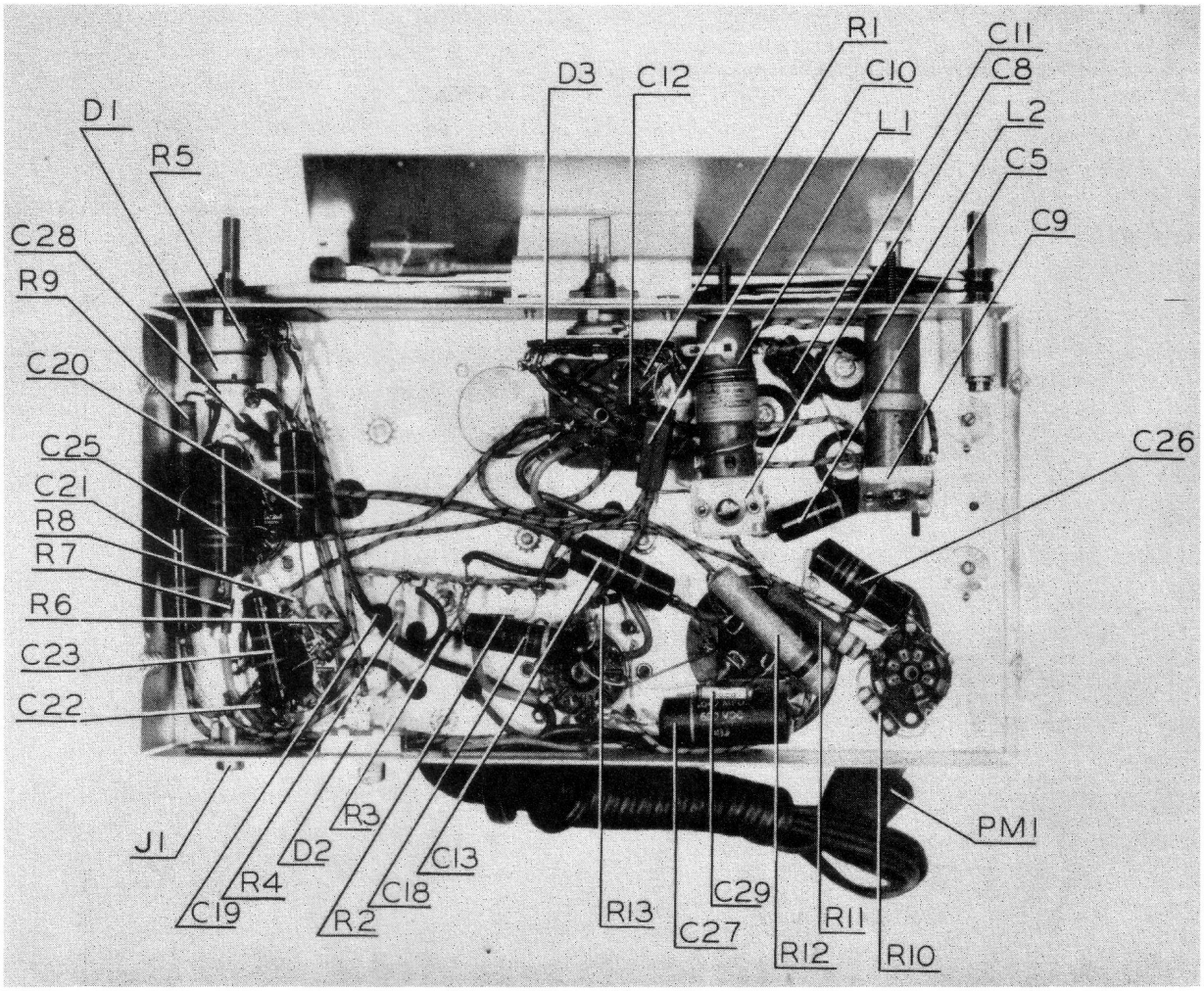
4½" Slide rule type. Fluorescent Plastic.

Bulletin RS 127 – April, 1950

Mailing Classifications 4.13 & 28.17

Price 25¢


V2
12BE6
C2
T2
C7
C1
C4
C6
T1
LS1
T5
V5
50L6GT
ANTENNA
SPOOL
V1
35W4
C3
C24
T3
V3
12SK7
T4
V4
12SQ7


R1
C11
D3
C12
C10
C8
D1
L1
L2
R5
C5
C28
C9
R9
C20
C26
C25
C21
R8
R7
R6
C23
C22
R3
J1
D2
C13
R4
C18
C19
R2
R13
C29
PM1
C27
R11
R12
R10

ALIGNMENT

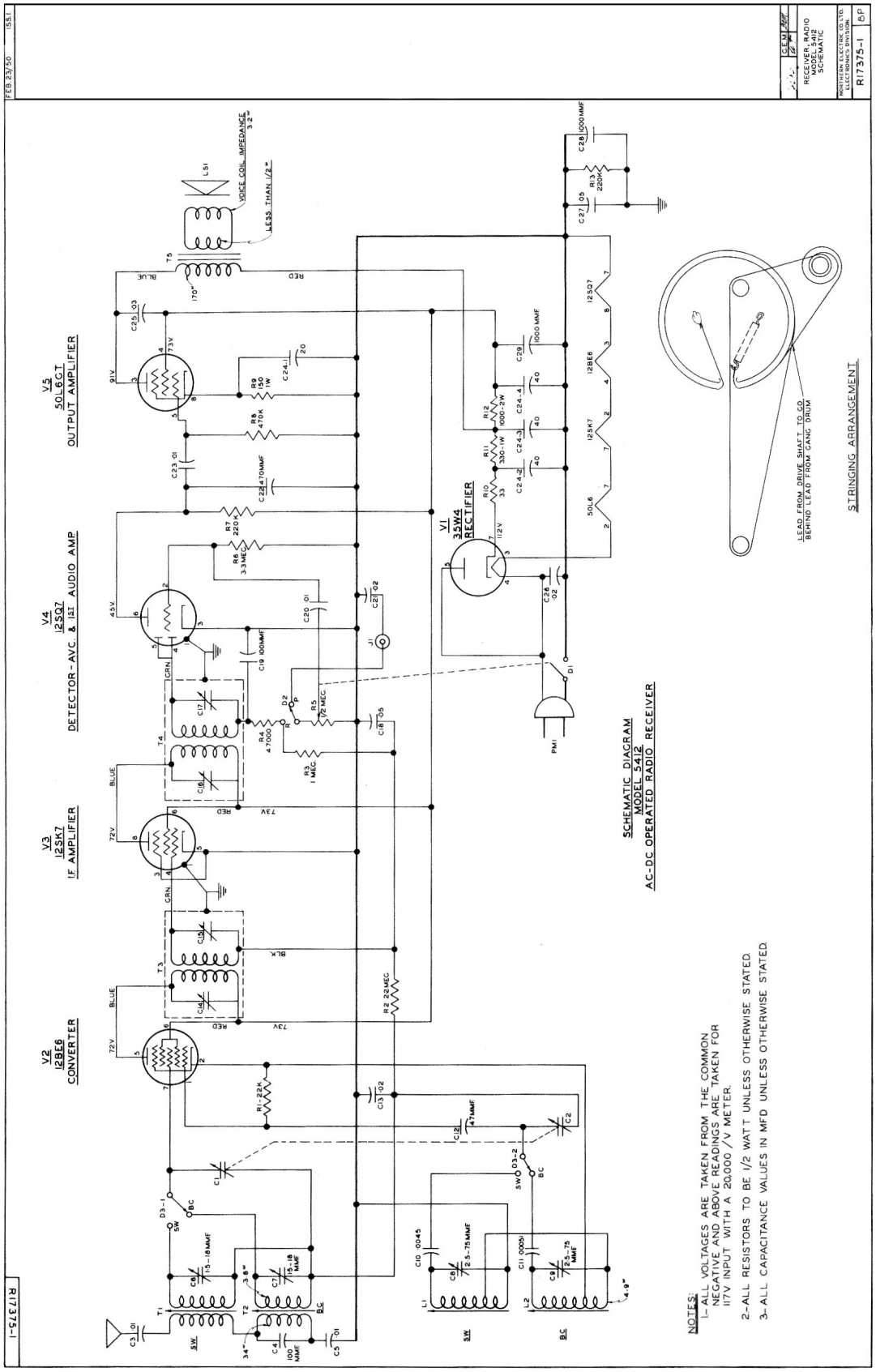
Alignment procedure should be carried out according to the following table and in the order shown.

Generator Frequency	*Dummy Antenna*	*Receiver Connection*	*Control Setting*	*Item to be adjusted for maximum audio output.*
1. 455 Kc	.1 Mfd	Pin No. 7 12BE6	BC-Gang Open	I.F. Trimmers C14, C15, C16, C17
2. 525 Kc	100 Mmf	Antenna	BC-Gang Closed	Iron Core on BC Oscillator Coil L2
3. 600 Kc	100 Mmf	Antenna	BC-Tune to Signal	Iron Core on BC Antenna Coil T2
4. 1625 Kc	100 Mmf	Antenna	BC-Gang Open	Trimmer C9 on BC Oscillator Coil L2
5. 1400 Kc	100 Mmf	Antenna	BC-Tune to Signal	Trimmer C7 on BC Antenna Coil T2
6. Repeat items 2 to 5 in specified order until no further adjustments are necessary.				
7. 5.25 Mc	400 Ohm (carbon)	Antenna	SW - Gang Closed	Iron Core on SW Oscillator Coil L1
8. 6.0 Mc	400 Ohm (carbon)	Antenna	SW - Tune to Signal	Iron Core on SW Antenna Coil T1
9. 16.25 Mc	400 Ohm (carbon)	Antenna	SW - Gang Open	Trimmer C8 on SW Oscillator Coil L1
10. 14.0 Mc	400 Ohm (carbon)	Antenna	SW - Tune to Signal	Trimmer C6 on SW Antenna Coil T1
11. Repeat items 7 to 11 in specified order until no further adjustments are necessary.				

NOTE: In making alignment adjustments on the SW band, it is essential that a check be made each time the receiver or generator is tuned to ensure that the proper signal is tuned in, instead of the image. When the receiver and generator are correctly tuned, the image may be heard by moving the generator 910 KC higher in frequency or tuning the receiver 910 KC lower in frequency.

Replacement Parts

Item	*Description*	*Part No.*	*Item*	*Description*	*Part No.*
C1	Capacitor, Gang 420 uuf	R17375-27	R11	Resistor, 330 ohms 1 W	K10004C-331
C2	Capacitor, Gang 420 uuf	R17375-27	R12	Resistor, 1,000 ohms 2 W	K10002C-102
C3	Capacitor, Paper .01 ufd 600V	K10372-103	R13	Resistor, 220,000 ohms ½ W	K10000C-224
C4	Capacitor, Ceramic 100 uuf	K10409B-101	T1	Ant. Coil, SW	R17375-52
C5	Capacitor, Paper .01 ufd 600 V	K10372-103	T2	Ant. Coil, BC	R17309-54
C6	Capacitor, Trimmer 1.5-18 uuf	K1458-14	T3	1st. IF Transformer	R17113
C7	Capacitor, Trimmer 1.5-18 uuf	K1458-14	T4	2nd. IF Transformer	R17103-2
C8	Capacitor, Trimmer 2.5 - 75 uuf	K1458-15	T5	Output Transformer	K3873-19
C9	Capacitor, Trimmer 2.5 - 75 uuf	K1458-15	L1	Osc. Coil, SW	R17375-51
C10	Capacitor, Mica 4500 uuf	K1952-36LT	L2	Osc. Coil, BC	R17309-51
C11	Capacitor, Mica 510 uuf	K10135B-511	V1	Tube, 35W4	
C12	Capacitor, Ceramic 47 uuf	K10409B-470	V2	Tube, 12BE6	
C13	Capacitor, Paper .02 ufd 600 V	K10372-203	V3	Tube, 12SK7	
C14	Capacitor, Part of 20-150uuf	R17113	V4	Tube, 12SQ7	
C15	Capacitor, Part of 20-150 uuf	R17113	V5	Tube, 50L6GT	
C16	Capacitor, Part of 20-150 uuf	R17103-2	D1	Switch, ON-OFF, Part of	R17184-1
C17	Capacitor, Part of 20-150 uuf	R17103-2	D2	Switch, Radio-Phono	R17326
C18	Capacitor, Paper .05 ufd 200 V	K10391-503	D3	Switch, Band	R17375-50
C19	Capacitor, Ceramic 100 uuf	K10409B-101	PM1	AC Plug and Cord Assembly	K10319-31
C20	Capacitor, Paper .01 ufd 600 V	K10372-103	J1	Phono Socket	K5893-1
C21	Capacitor, Paper .02 ufd 600 V	K10372-203	LS1	Loudspeaker	R17350-37
C22	Capacitor, Ceramic 470 uuf	K10397C-471		Tube Socket, Wafer	K10405-2
C23	Capacitor, Paper .01 ufd 600 V	K10372-103		Tube Socket, Octal	K10145-36
C24	Capacitor, Electrolytic 40-40 150-50			Antenna Spool Assembly	R13379
	40-20 150-25	R8234-38		Dial Plate Rivetting Assembly	R17375-56
C25	Capacitor, Paper .03 ufd 600 V	K10372-303		Dial Scale	R17375-25
C26	Capacitor, Paper .02 ufd 600 V	K10372-203		Dial Indicator Assembly	R17350-24
C27	Capacitor, Paper .05 ufd 600 V	K10372-503		Dial Spring	R17338-1
C28	Capacitor, Ceramic 1000 uuf	K10397C-102		Dial Cord	K10301
C29	Capacitor, Ceramic 1000 uuf	K10397C-102		Drive Shaft, Tuning	R17350-57
R1	Resistor 22000 ohms ½ W	K10000C-223		Pulley, Plastic	K10215-1
R2	Resistor 2.2 meg ½ W	K10000C-225		Pulley, Plastic	K10215-3
R3	Resistor 1 meg ½ W	K10000C-105		Clip, Retaining	K10216
R4	Resistor 47,000 ohms ½ W	K10000C-473		Knob Assembly Ivory	R14958-3
R5	Volume Control ½ meg	R17184-1		Knob Assembly Ivory with Dot	R14958-4
R6	Resistor 3.3 meg ½ W	K10000C-335		Knob Assembly Brown	R14958-1
R7	Resistor 220,000 ohms ½ W	K10000C-224		Knob Assembly Brown with Dot	R14958-2
R8	Resistor 470,000 ohms ½ W	K10000C-474		Cabinet Assembly, Ivory	R17375-30B
R9	Resistor 150 ohms 1 W	K10004B-151		Cabinet Assembly, Brown	R17375-30A
R10	Resistor 33 ohms ½ W	K10003C-330			



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