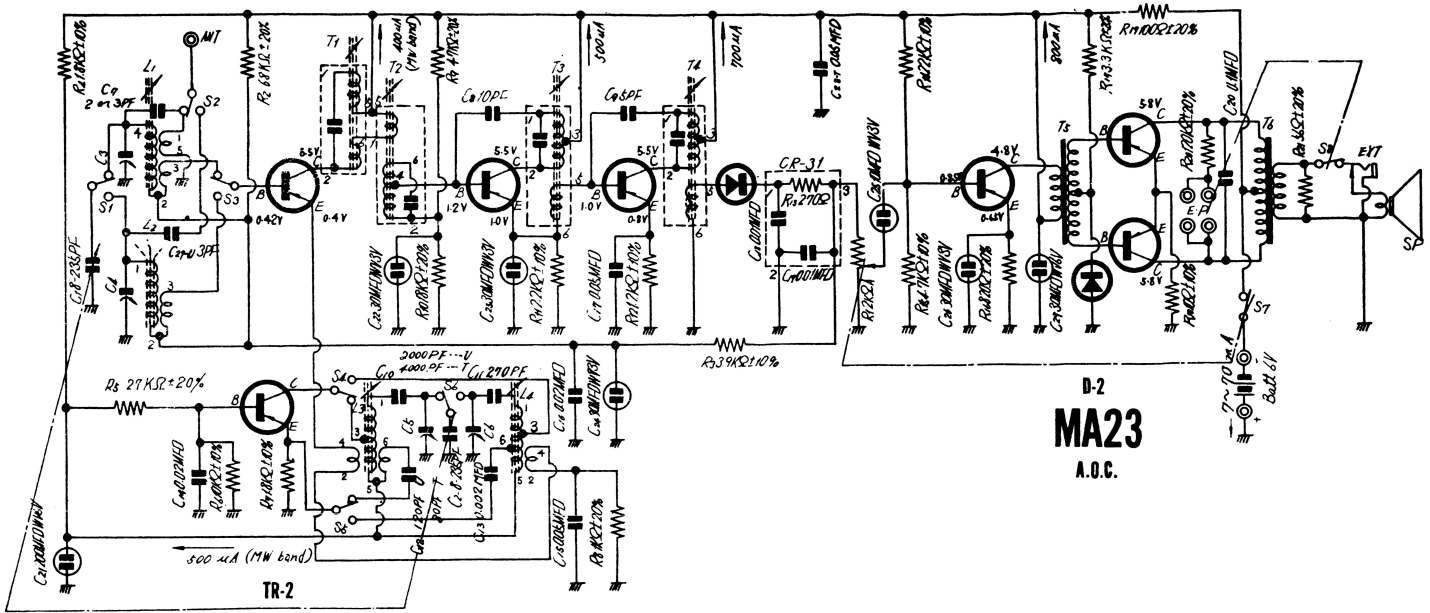
TR-1	TR-3	TR-4	D-1	TR-5	TR-6 & TR-7
OC44 / MC101	OC45	OC45	OA70	OC71	2OC72
MIXER	1ST IF AMP.	2ND IF AMP.	DET. & A.G.C.	AF AMP.	OUTPUT

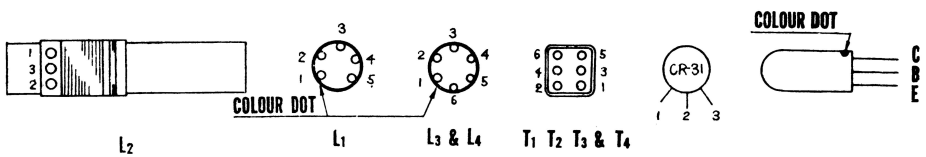


OC44 / MC101

LOCAL OSC

Notes:

1. Measurements of voltage and current should be made at minimum volume and at no signal.
2. Voltages indicated in the schematic diagram are given as standard values measured by Vacuum-tube Volt Meter. When 1 KΩ / 1 V Tester is used for voltage measurement, please note that you will get lower values (−0.1 V on Collector, −0.2 V on Base and −0.1 V on Emitter respectively) than the abovementioned standard values obtained by Vacuum-tube Volt Meter.
3. Please make your current measurement within the range of 1 mA. Collector current of both transistors TR-1 (I_{c1}), TR-2 (I_{c2}) and TR-3 (I_{c3}) are to be measured at the points, as illustrated on the printed circuit board removing solder on them.
   Those of other transistors can be measured by means of cutting the printed copper on the board.
4. Values of resistors R_2 (68KΩ), R_5 (27KΩ), R_9 (47KΩ) and R_{17} (3.3KΩ) given in the schematic diagram may be variable according to radio receivers.



L_2	L_1	L_3 & L_4	T_1 T_2 T_3 & T_4		
FERRITE ROD ANTENNA COIL	SW ANT COIL	OSC COIL (BOTTOM VIEW)	IF TRANS	COUPLED CAPACITORS & RESISTOR	TRANSISTOR

Frequency Range:	MW 540~1600Kc/s (556~187.5m) S W 3.9~10Mc/s (77 ~ 30m)...AB-175U 7~18Mc/s (42.9~16.6m)...AB-175T
Intermediate Frequency:	455 Kc/s
Sensitivity:	MW 300μV/m/10mW S W 50μV/10mW...U 70μV/10mW...T
Power Output:	150mW, undistorted 200mW, maximum
Power Supply:	Battery 6V (No. 3 penlight [illegible]
Size:	[illegible]

NATIONAL MODEL AB-175 UorT

AB-175 U				
Step	Band Switch position	Test OSC output	Dial setting	Adjusting to maximum output
1	MW	455 KC	Variable capacitor at maximum capacity	IF transformers (T_4, T_3, T_2, T_1)
2		455 KC		Repeat step ①.
3		530 KC		MW OSC coil (L_4)
4		1640 KC	Variable capacitor at minimum capacity	MW OSC trimmer (C_6)
5		530 KC or 1640 KC	Variable capacitor at max. or min. capacity	Repeat steps ③ and ④.
6		600 KC	600 KC	MW ANT coil (L_2)
7		1200 KC	1200 KC	MW ANT trimmer (C_4)
8		600 KC or 1200 KC	600 KC or 1200 KC	Repeat steps ⑥ and ⑦.
9	SW	3.8 MC	Variable capacitor at maximum capacity	SW OSC coil (L_3)
10		10.3 MC	Variable capacitor at minimum capacity	SW OSC trimmer (C_5)
11		3.8 MC or 10.3 MC	Variable capacitor at max. or min. capacity	Repeat steps ⑨ and ⑩.
12		4 MC	4 MC	SW ANT coil (L_1)
13		10 MC	10 MC	SW ANT trimmer (C_3)
14		4 MC or 10 MC	4 MC or 10 MC	Repeat steps ⑫ and ⑬.

AB-175 T				
1~8	MW	Same with AB-210 U		
9	SW	6.8 MC	Variable capacitor at maximum capacity	SW OSC coil (L_3)
10		18.7 MC	Variable capacitor at minimum capacity	SW OSC trimmer (C_5)
11		6.8 MC or 18.7 MC	Variable capacitor at max. or min. capacity	Repeat steps ⑨ and ⑩.
12		7 MC	7 MC	SW ANT coil (L_1)
13		18 MC	18 MC	SW ANT trimmer (C_4)
14		7 MC or 18 MC	7 MC or 18 MC	Repeat steps ⑫ and ⑬.

ALIGNMENT PROCEDURE

OUTPUT METER ..... Connect Output Meter across speaker voice coil.
OUTPUT LEVEL ..... Attenuate Test Oscillator output always to maintain 0.5 volt on Output Meter to prevent overloading of the receiver.

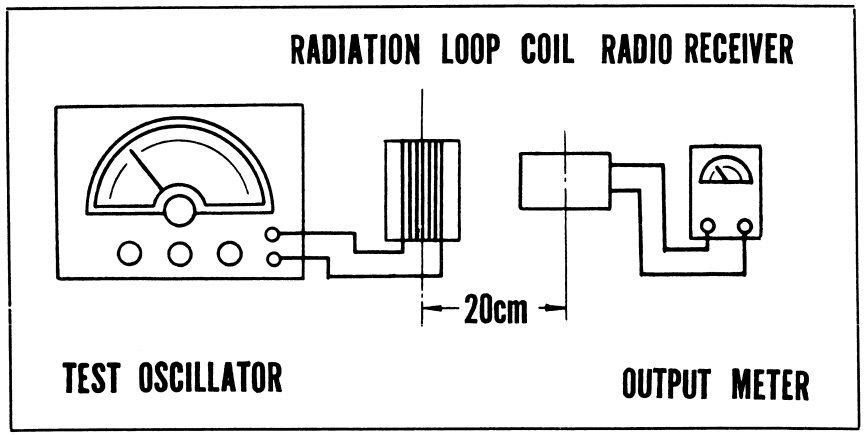
For MW

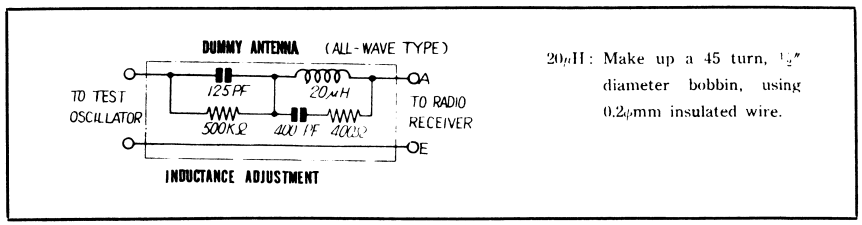
TEST OSCILLATOR ..... Modulate Test Oscillator at 1000 c/s and connect the lead wires of Test Oscillator output to Radiation Loop Coil.
RADIO RECEIVER ..... Place the radio receiver 20cm away from Radiation Loop Coil. Set volume control to maximum.
RADIATION LOOP COIL ... Make up a 20 turn, 15 cm diameter bobbin, using 1mm copper wire.

For SW—

TEST OSCILLATOR ..... Modulate Test Oscillator at 1,000 c/s and connect the output terminal of Test Oscillator to dummy antenna. Then connect the positive side of the dummy antenna to the telescopic whip antenna terminal of the receiver and the negative side to the earth terminal (such as frame of variable capacitor, earth terminal of trimmer, etc.) of the receiver.

Connection of Test Oscillator, Radiation Loop Coil, Radio Receiver and Output Meter.





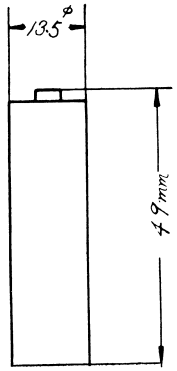
20μH: Make up a 45 turn, ½" diameter bobbin, using 0.2φmm insulated wire.

BATTERY

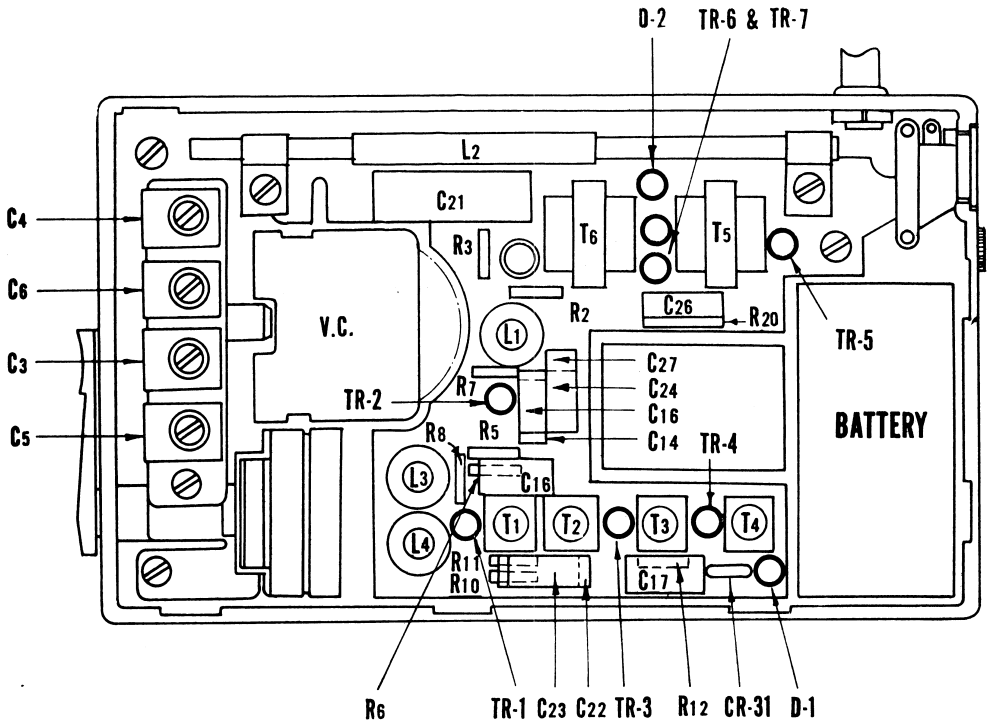
NATIONAL Dry Cell UM-3 × 4 pcs.

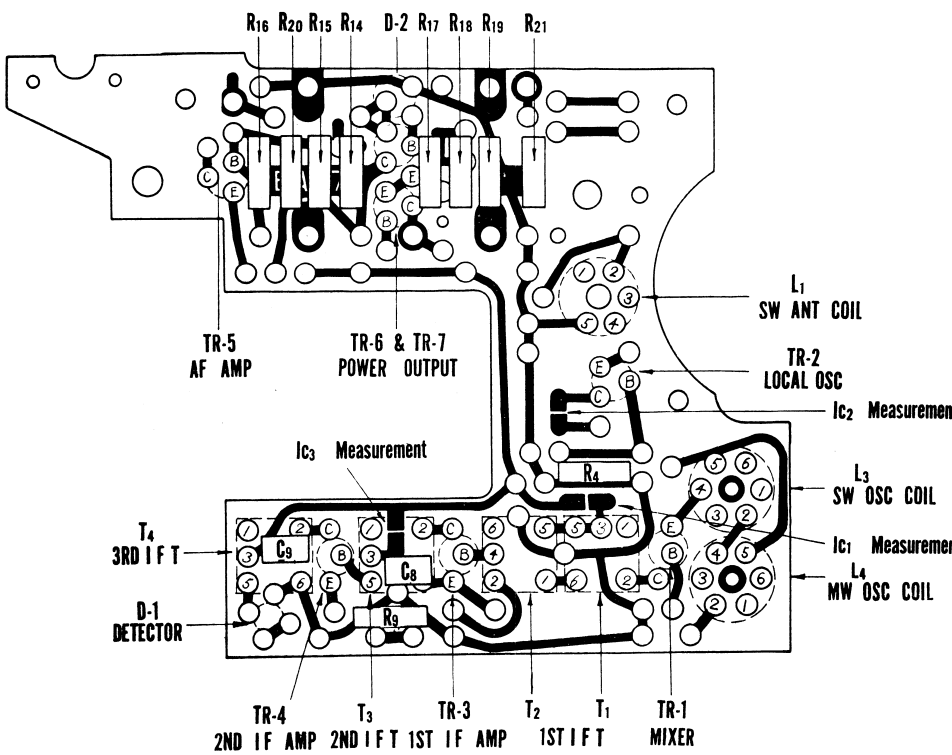
Voltage: 1.5V
Dimensions: 13.5φ dia. × 49 mm (17/32 in. × 1-15/16 in.)

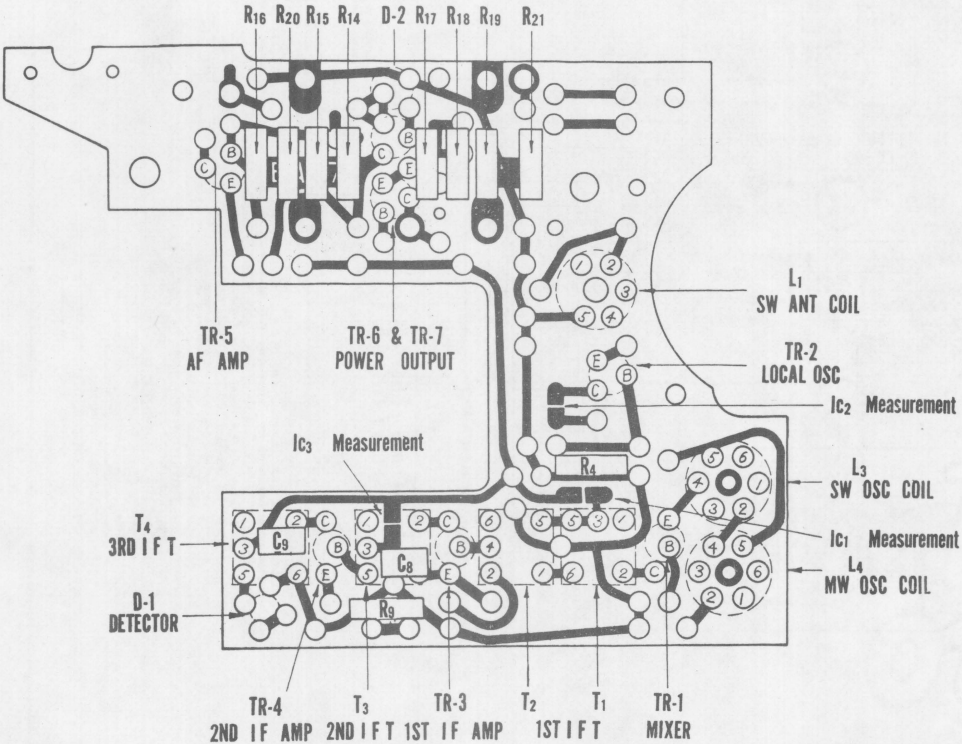
or any other batteries of same dimensions and voltages.



MAIN PARTS LOCATION & PRINTED CIRCUIT BOARD






R16 R20 R15 R14 D-2 R17 R18 R19 R21
TR-5
AF AMP
TR-6 & TR-7
POWER OUTPUT
L1
SW ANT COIL
TR-2
LOCAL OSC
Ic2 Measurement
Ic3 Measurement
R4
L3
SW OSC COIL
T4
3RD I F T
C9
C8
R9
Ic1 Measurement
L4
MW OSC COIL
D-1
DETECTOR
TR-4
2ND IF AMP
T3
2ND I F T
TR-3
1ST IF AMP
T2
1ST I F T
T1
TR-1
MIXER