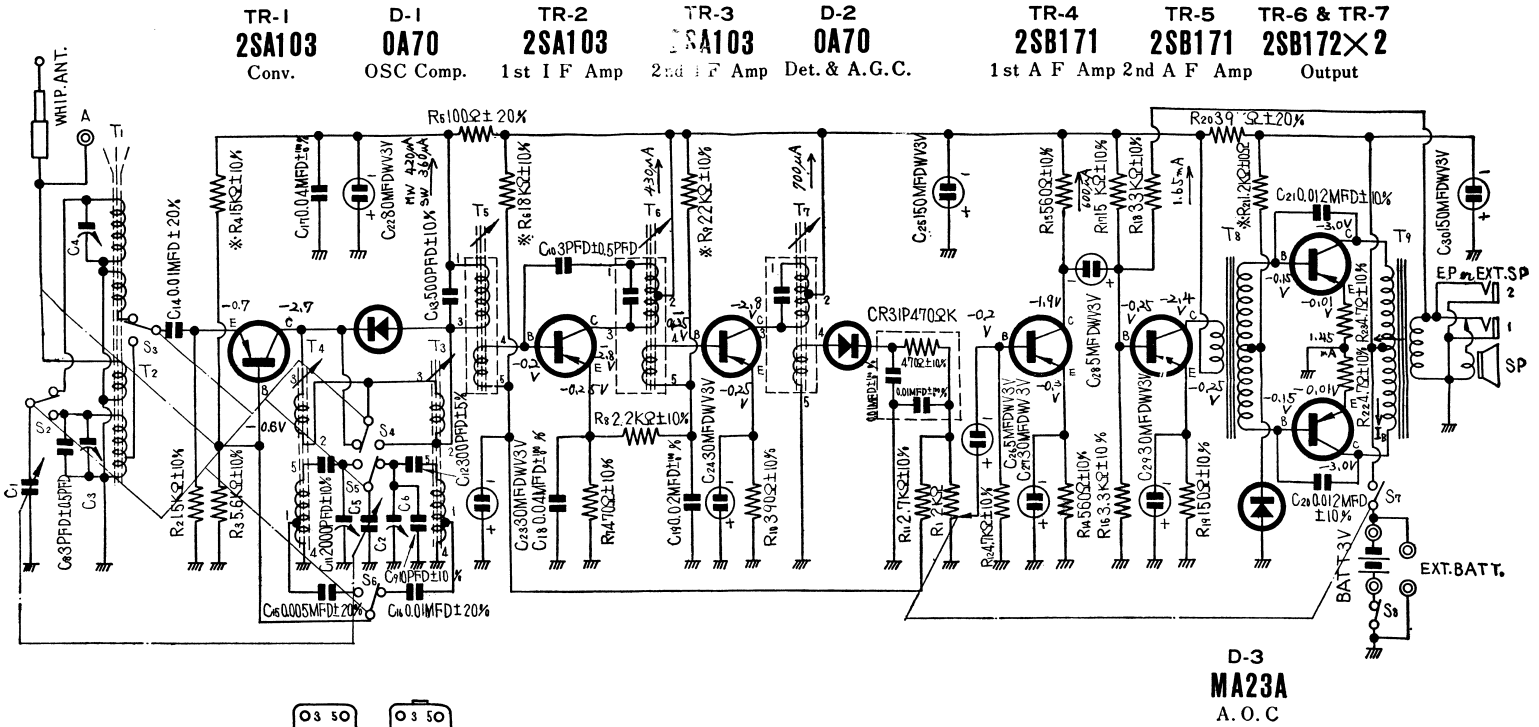
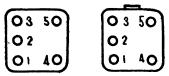
SCHEMATIC DIAGRAM

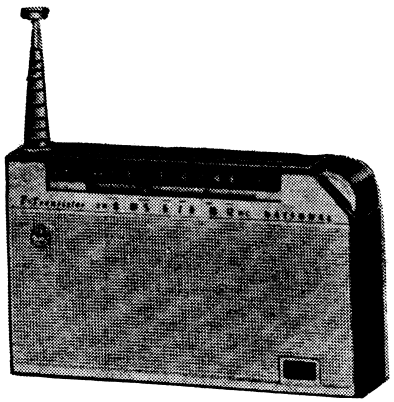




T_3 & T_4 T_5, T_6 & T_7
BOTTOM VIEW

Notes:

1. All resistance values in ohms (K=1000)
2. All capacitance values in micro farads, except those indicated in micro micro farads (P=μμF)
3. Lead wires on the printed circuit board are indicated in dotted lines.
4. Band selection switch is now at "MW" position. Turn it to SW in the direction of arrow mark.

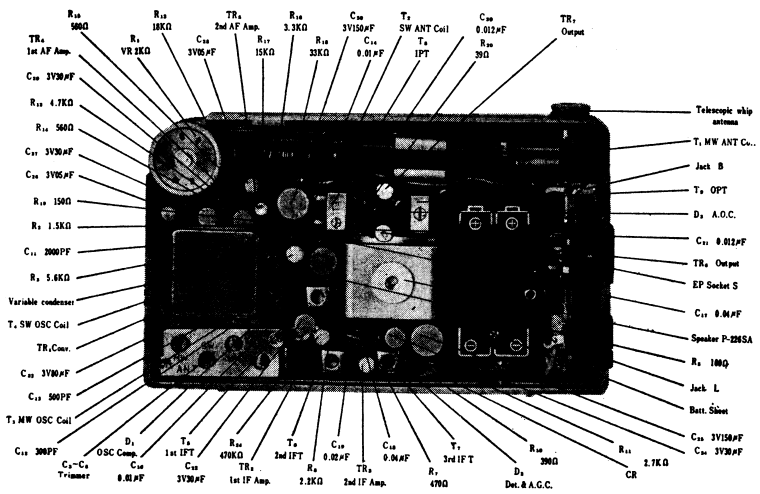


SPECIFICATIONS

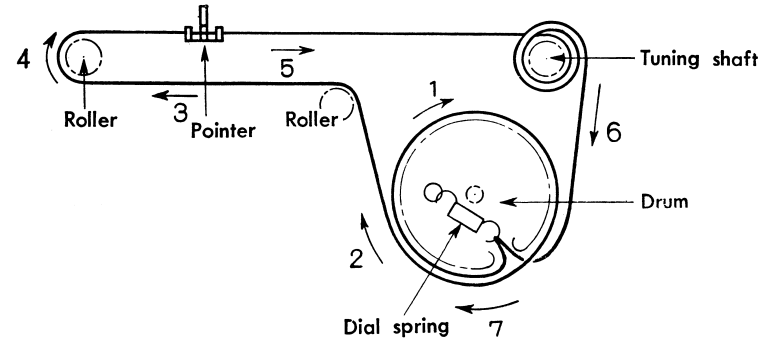
Frequency Range:	MW 540~1600Kc/s (556~187.5 m) SW 3.9~ 12Mc/s (77~ 25 m)
Intermediate Frequency:	455Kc/s
Sensitivity:	MW 200μV/m/5mW SW 200μV/m/5mW
Power Output:	85mW undistorted 150mW maximum
Batteries:	3.0V (Three No. 3 penlight dry cells 1.5V) (NATIONAL UM-3 or equivalents)
Speaker:	6cm (2¼") PM dynamic speaker Voice coil impedance, 8Ω

NATIONAL MODEL T-45

MAIN PARTS ON THE CHASSIS



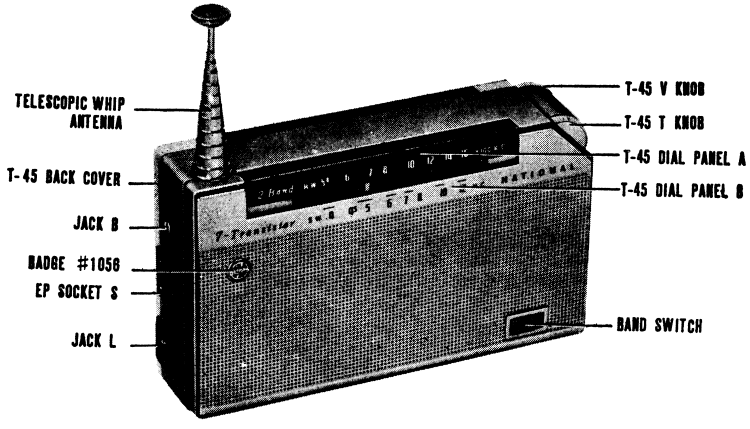
DIAL CORD STRINGING



Notes:

1. Arrow marks indicate the order of hanging the dial rope.
2. Tuning capacitor is at the position of maximum capacity (closed position).
3. The knot must be fixed with white lacquer.

CABINET MAIN PARTS



ALIGNMENT INSTRUCTIONS

OUTPUT METER ..... Connect Output Meter across speaker voice coil terminals.

OUTPUT LEVEL ..... Attenuate Signal Generator output always to maintain 0.2 volt on Output Meter to prevent over loading of the receiver.

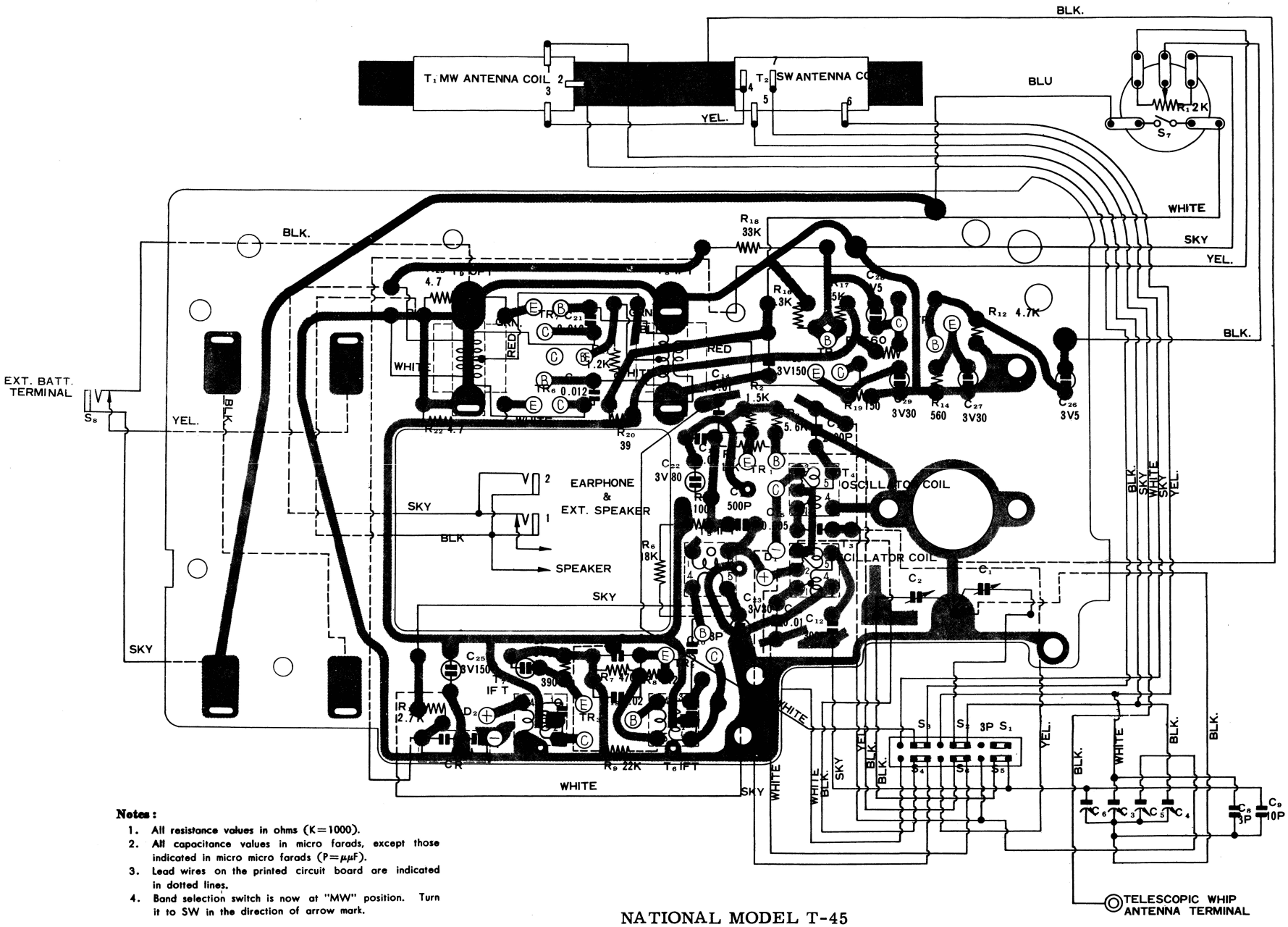
SIGNAL GENERATOR ..... Modulate Signal Generator at 1000c/s and connect the lead wires of Signal Generator output to Radiation Loop Coil.

RADIO RECEIVER ..... Place the radio 60cm (24″) away from Radiation Loop Coil. Set volume control to maximum.

RADIATION LOOP COIL ..... Make up a 20 turn, 25cm (10″) diameter bobbin, using 1mm (0.04″) copper wire.

Circuit		Step	Signal generator output	Dial setting	Adjusting for maximum output
IF		1	455 KC	Variable capacitor at maximum capacity	IF Transformers T_7, T_6, T_5
		2	455 KC		Repeat three times steps (1).
MW	OSC	3	530 KC		MW OSC coil (T_3)
		4	1650 KC	Variable capacitor at minimum capacity	MW OSC trimmer (C_6)
		5	530 KC or 1650 KC	Variable capacitor at max. or min. capacity	Repeat three times steps (3) and (4).
	ANT	6	600 KC	600 KC	MW ANT coil (T_1)
		7	1500 KC	1500 KC	MW ANT trimmer (C_4)
		8	600 KC	600 KC or 1500 KC	Repeat three times steps (6) and (7).
SW	OSC	9	3.8 MC	Variable capacitor at maximum capacity	SW OSC coil (T_4)
		10	12.7 MC	Variable capacitor at minimum capacity	SW OSC trimmer (C_5)
		11	3.8 MC or 12.7 MC	Variable capacitor at max. or min. capacity	Repeat three times steps (9) and (10).
	ANT	12	4.0 MC	4.0 MC	SW_1 ANT coil (T_2)
		13	12.0 MC	12.0 MC	SW^1 ANT trimmer (C_3)
		14	4.0 MC or 12.0 MC	4.0 MC or 12.0 MC	Repeat three times steps (12) and (13).

PRINTED CIRCUIT BOARD

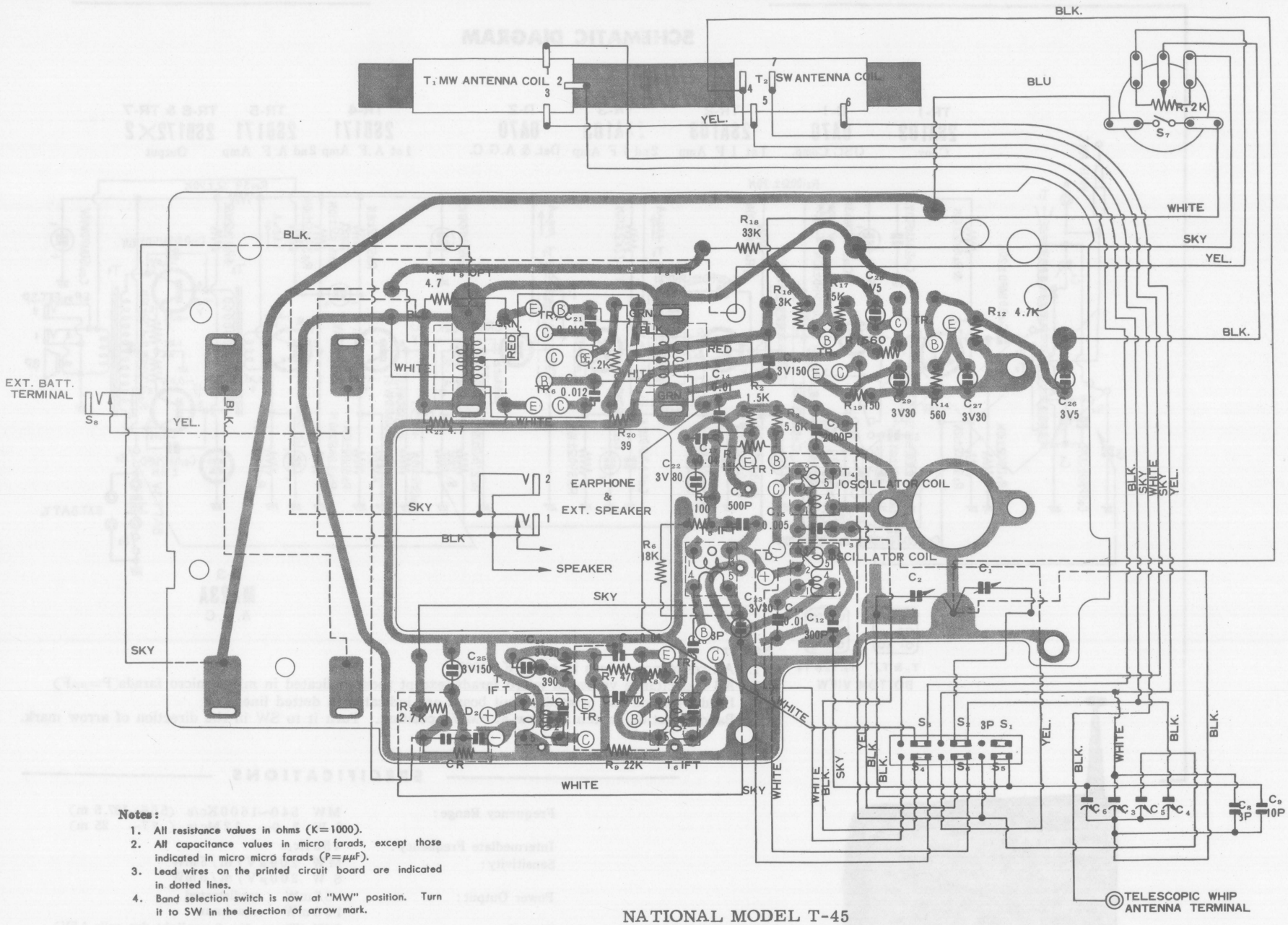


Notes:

1. All resistance values in ohms (K=1000).
2. All capacitance values in micro farads, except those indicated in micro micro farads (P=$\mu\mu$F).
3. Lead wires on the printed circuit board are indicated in dotted lines.
4. Band selection switch is now at "MW" position. Turn it to SW in the direction of arrow mark.

NATIONAL MODEL T-45

PRINTED CIRCUIT BOARD



Notes:

1. All resistance values in ohms (K=1000).
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NATIONAL MODEL T-45