

SHARP BY-150

TR2
MIX.

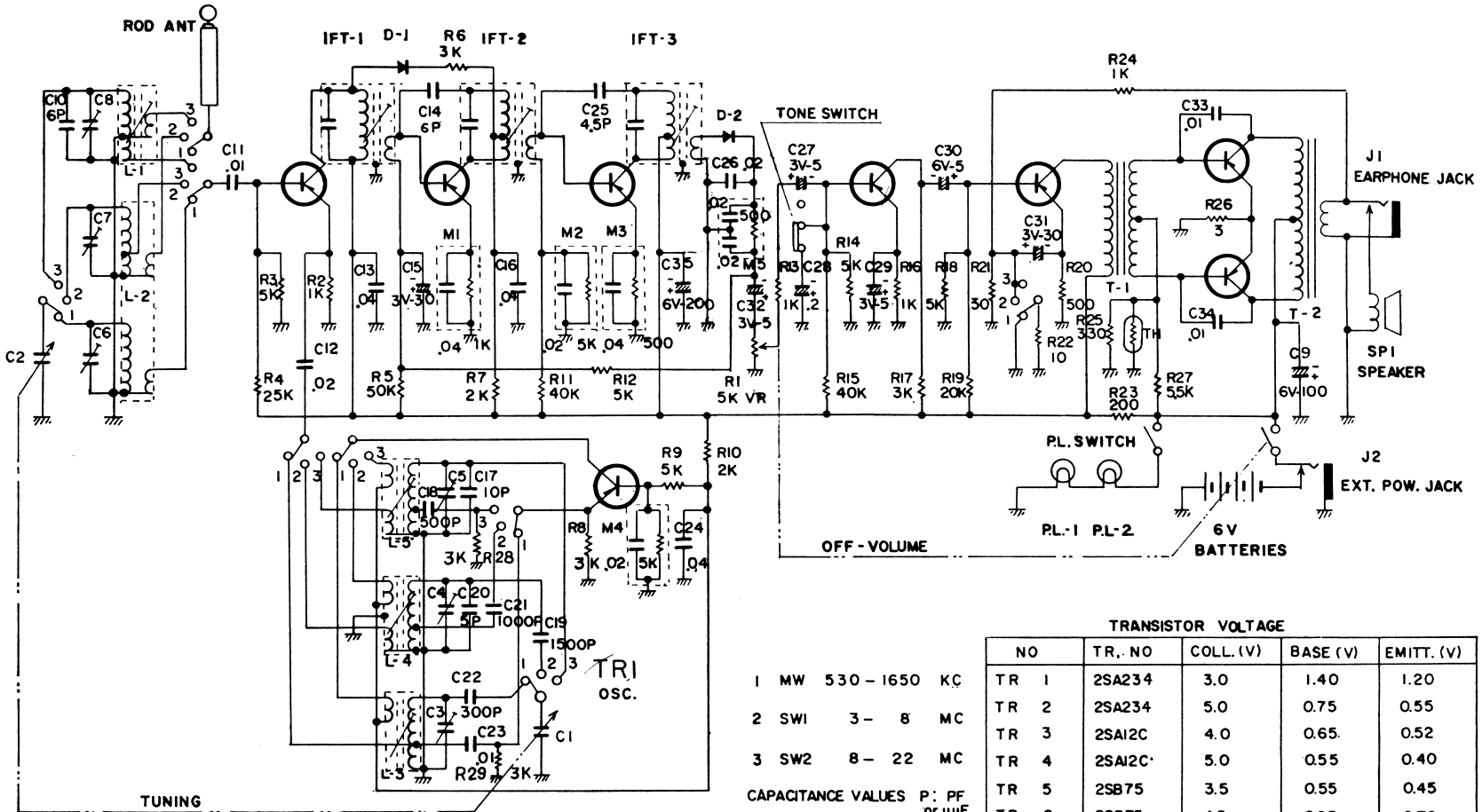
TR3
1ST IF AMP.

TR4
2ND IF AMP.

TR5
AUDIO AMP.

TR6
AUDIO DRIVE

TR7,8
OUT PUT



- 1 MW 530 - 1650 KC
 - 2 SW1 3 - 8 MC
 - 3 SW2 8 - 22 MC
- CAPACITANCE VALUES P: PF
or μF
NO UNIT MARKS: μF
RESISTOR VALUES : OHM

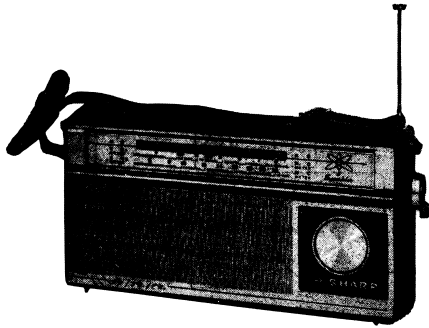
TRANSISTOR VOLTAGE

NO	TR. NO	COLL. (V)	BASE (V)	EMITT. (V)
TR 1	2SA234	3.0	1.40	1.20
TR 2	2SA234	5.0	0.75	0.55
TR 3	2SA12C	4.0	0.65	0.52
TR 4	2SA12C	5.0	0.55	0.40
TR 5	2SB75	3.5	0.55	0.45
TR 6	2SB75	4.7	0.85	0.70
TR 7	2SB77	6.0	0.14	—
TR 8	2SB77	6.0	-0.14	—

(BY-150)

This circuit diagram is original one.

Therefore there may be a slight difference from your set.



MODEL BY-150

SPECIFICATIONS

Frequency Range	
MW	530~1650KC
SW 1	3~8MC
SW 2	8~22MC
Intermediate Frequency	455KC
Power Supply	6V
Power Output	
Maximum	500mW
Undistorted	330mW
Speaker	3 1/2" P.D.S.

TRANSISTOR COMPLEMENT

TR. 1 2SA234	Oscillator
TR. 2 2SA234	Mixer
TR. 3 2SA12C	1st IF Amplifier
TR. 4 2SA12C	2nd IF Amplifier
TR. 5 2SB75	AF Amplifier
TR. 6 2SB75	Driver
TR. 7 2SB77	Output
TR. 8 2SB77	Output

GENERAL DESCRIPTION

The circuitry used in this portable radio incorporates 8 transistor, 2 diodes and 1 thermistor.

A bar antenna feeds the MW broadcast signal to the mixer, 2 IF amplifiers and 1 diode detector.

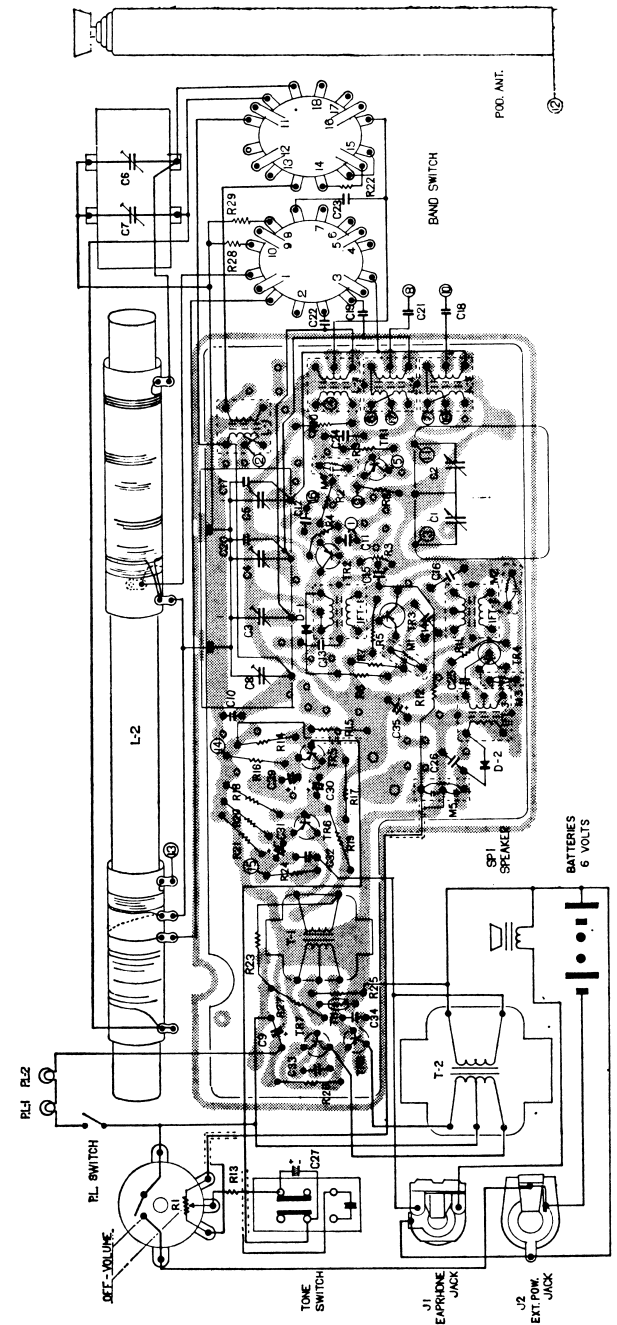
A rod antenna feeds the SW broadcast signal to the mixer, 2 IF amplifiers and 1 diode detector.

Then the audio signal passes through a 4 audio amplifier circuit.

An amplified AGC voltage is fed back to 1st IF amplifier.

CHASSIS REMOVAL

1. Pull off the tuning knob.
 2. Remove 2 back cover retaining screws.
 3. Remove the back cover.
 4. Remove 4 chassis retaining screws.
 5. Lay the cabinet face down. Carefully lift the chassis up and out of the cabinet.
- Exercise caution to avoid breaking the leads.



ALIGNMENT INSTRUCTION

Should it become necessary at any time to check the alignment of this receiver, proceed as follows;

- 1) Connect an output meter across the speaker voice coil lugs.
- 2) Set volume control for maximum.
- 3) Use the lowest setting of signal generator capable of producing adequate indication on the lowest scale of output meter.
- 4) Use a non-metallic alignment tool.
- 5) Repeat adjustments to insure good results.

ALIGNMENT CHART

MW Alignment		Signal generator		Receiver		Adjust	
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks		
1	M.W.	Connect signal generator through a 10K Ω dummy to the antenna tuning condenser. Ground lead to the receiver chassis.	Exactly 455KC. (400%, 30%, AM modulated.)	Tuning gang fully open. (minimum capacity)	Adjust for maximum output on speaker voice coil lugs.	IFT-3 IFT-2 IFT-1	
2	M.W.	Use radiating loop. Loop of several turns of wire, or place generator lead close to receiver for adequate signal pickup. Connect generator output to one end of this wire.	Exactly 525KC. (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Same as step 1.	L3	
3	M.W.	Same as step 2.	Exactly 1650KC. (400%, 30%, AM modulated.)	Tuning gang fully open. (minimum capacity)	Same as step 1.	C3	
4	M.W.	Same as step 2.	Exactly 600KC. (400%, 30%, AM modulated.)	600 KC	See NOTE	L2	
5	M.W.	Same as step 2.	Exactly 1400KC. (400%, 30%, AM modulated.)	1400 KC	Same as step 4.	C6	
6	M.W.	Repeat steps 2, 3, 4 and 5 until no further improvement is obtained.					
7	S.W.	Connect signal generator through a 10K Ω dummy to the external antenna coil lug. Ground lead to the receiver chassis.	Exactly 3.8MC (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Adjust for maximum output on speaker voice coil lugs.	L4	
8	S.W.	Same as step 7.	Exactly 12.5MC (Unmodulated.)	Tuning gang fully open. (minimum capacity)	Same as step 7.	C4	
9	S.W.	Same as step 7.	Exactly 4.5MC (400%, 30%, FM modulated.)	4.5 MC	See NOTE	L2	
10	S.W.1	Same as step 7.	Exactly 10MC (400%, 30%, FM modulated.)	10 MC	Same as step 9.	C7	
11	S.W.	Repeat steps 7, 8, 9 and 10 until no further improvement is obtained.					

AM Alignment		Signal generator		Receiver		Adjust	
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks		
12	S.W. 2	Connect signal generator through a 10K Ω dummy to the external antenna coil lug. Ground lead to the receiver chassis.	Exactly 7.85MC (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Same as step 1.	L5	
13	S.W. 2	Same as step 12.	Exactly 22.5MC (400%, 30%, AM modulated.)	Tuning gang fully open. (minimum capacity)	Same as step 1.	C5	
14	S.W. 2	Same as step 12.	Exactly 8.5MC (400%, 30%, AM modulated.)	8.5MC	Same as step 4.	L8	
15	S.W. 2	Same as step 12.	Exactly 19MC (400%, 30%, AM modulated.)	19MC	Same as step 4.	SW2 Antenna trimmer C3	
16	S.W. 2	Repeat steps 12, 13, 14 and 15 until no further improvement is obtained.					

NOTE

Check alignment of receiver antenna coil by bringing a piece of powdered iron (such as a coil slug) near the antenna loop stick, then a piece of brass. If powdered iron increases output, loop requires more inductance. If brass increase output, loop requires less inductance. Change loop inductance by sliding the bobbin toward the center of ferrite core to increase inductance, or away to decrease inductance.

DIAL CORD STRINGING

