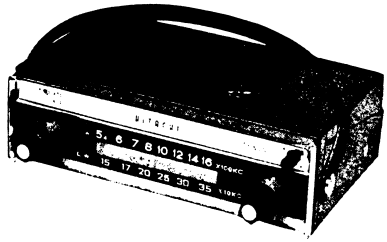


HITACHI MODEL WM-800L

H51

D1 1N34A(M) COMPLEMENTARY A.G.C.
TR3 2SA12(D) I. F. AMP.
TR4 2SA12(B) I. F. AMP.
D2 1N34A(M) DET. & A.G.C.
TR1 2SA355 R. F. AMP.
TR2 2SA354(B) FREQ. CONV.
TH1,2 15D26x2 TEMPERATURE COMPENSATOR
TR7, 8 2SB156(C)Px2 POWER AMP.
TR5 2SB75(B) A. F. AMP.
TR6 2SB77(B) A. F. AMP.
DIRECT CURRENT RESISTANCE
PRI. 202Ω
SEC. 14.5Ω
SW1 BAND SWITCH
S2 ON-OFF SWITCH
BATTERY UM-3A x 4 (6V)
J1 EARPHONE JACK
SP1 4" x 2¾" SPEAKER
PL1 PL2 PILOT LAMP (6V)
J2 ANTENNA JACK
S4 POWER VOLTAGE CHANGE-OVER SWITCH
SP2 4¾" SPEAKER
FUSE 1A
TO CAR BATTERY
S3 POLARITY CHANGE-OVER SWITCH
GROUND
MOUNT CASE
CONN1 MULTI CONNECTOR
PLUG BANANA TIP

NOTE : R_{11} 5.6 kΩ, C_9 10pF, C_{10} 8pF

ALIGNMENT AS AUTO-RADIO

Operate the receiver as auto-radio, connect the output of a signal generator to such a dummy antenna as Figure 10 instead of the loop antenna, connect the dummy antenna to the telescopic rod antenna jack, and make adjustments of the following table.

However, this alignment must be done so that the output voltage may not exceed 0.89 V.

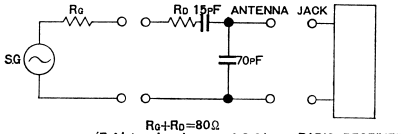


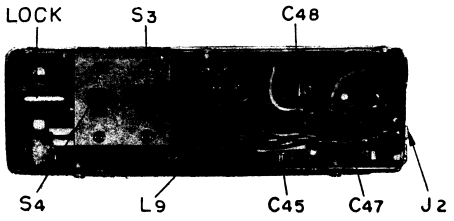
Fig. 10

Step	Set Band-Selector to-	Sig. Gen. Output	Dial Pointer Setting	Adjust-for Max. Output
⑰	MW	600 kc	600 kc signal	MW Ant. coil L_3
⑱		1,400 kc	1,400 kc signal	MW Ant. trimmer C_{45}
⑲		Repeat steps ⑰ and ⑱		
⑳	LW	160 kc	160 kc signal	LW Ant. coil L_4
㉑		330 kc	330 kc signal	LW Ant. trimmer C_4
㉒		Repeat steps ⑳ and ㉑		

SERVICE HINTS

1. To check for a circuit defect which would cause excessive battery drain, an overall current measurement and supplementary voltage measurements should be made. Because continuity measurements may be misleading for reasons explained below.
2. Signal tracing by injection of a signal generator is recommended as test procedure. The signal generator should be connected in series with a capacitor to avoid shorting out bias voltages. Of the transistors used in this receiver, the BASE is the signal input terminal (corresponding to signal grid of tubei), the COLLECTOR is the signal output terminal (corresponding to plate of tubes), and the EMITTER is the common terminal (corresponding to cathode of tubes).
3. The output circuit used in this receiver is of "Class-B" transistors.
4. Extreme care should be taken to avoid accidental shorting of transistor elements to circuit ground. This is especially true of the output transistors; if either BASE terminal is accidentally grounded for a few seconds, the output transistors will be permanently damaged.
5. Transistors and the printed circuit board may be damaged by too much heat. Whenever soldering is necessary on the board, use a soldering iron hot and clean. This reduces the amount of heat radiated from the soldering position.
6. Voltage measurements should be made only with a sensitive voltmeter such as vacuum tube voltmeter.
7. If transistors in the I. F. stage are interchanged, their realignment may be necessary.
8. It may be possible to damage a transistor when testing circuit continuity. Shince a transistor needs only low voltage applied to its terminals for conduction, testing of continuity of a circuit including a transistor is apt to mislead continuity indications. To avoid transistor damage and misleading continuity indications, remove the transistor before making continuity test of its circuit.

INTERNAL VIEW (MOUNTING CASE)



ALIGNMENT PROCEDURE

ALIGNMENT AS PORTABLE RADIO

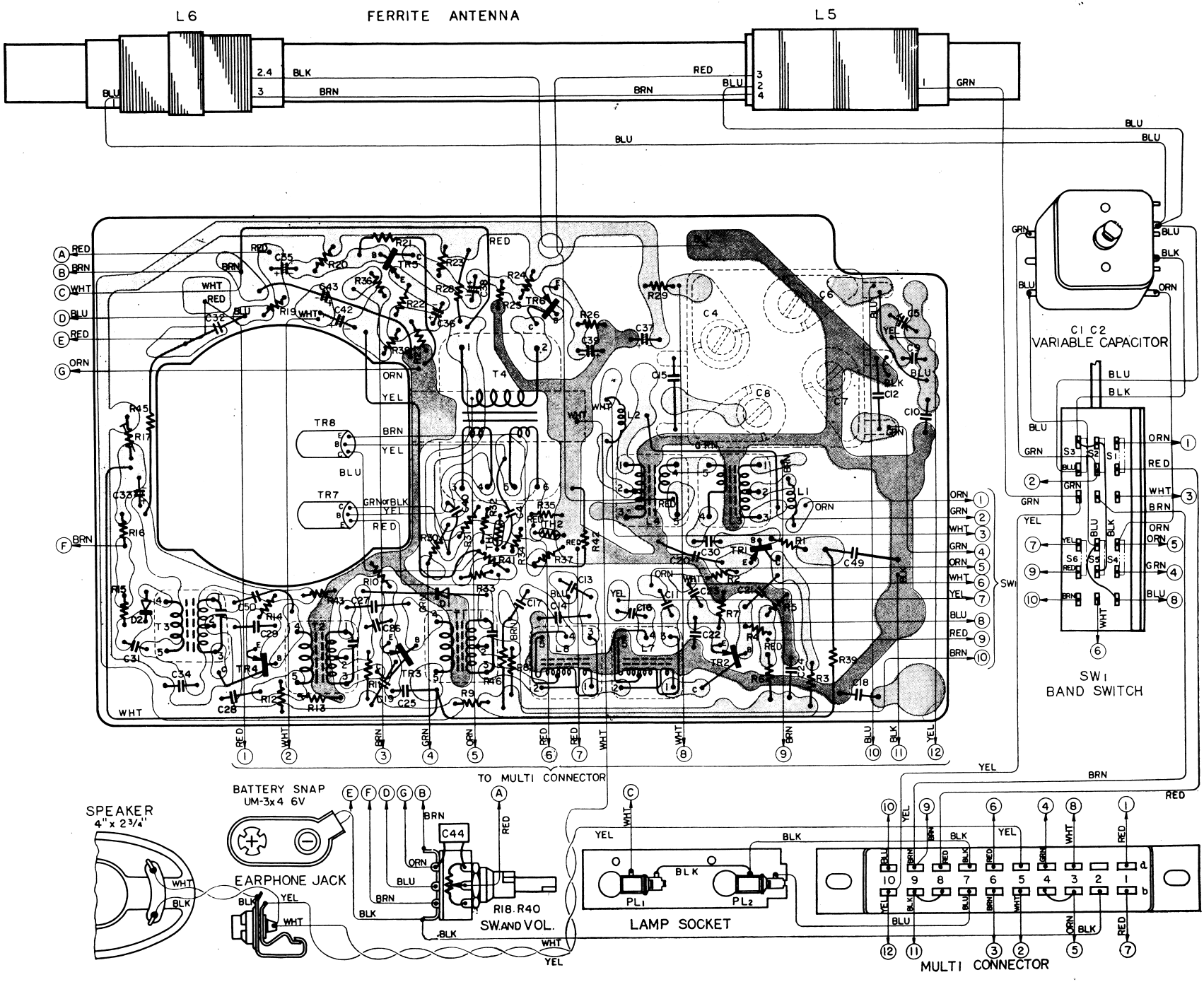
1. Use batteries having the specified voltage. Voltage, when the switch is turned on (with no signal), must not be less than 5.5 volts.
2. Adjust the resistor R_{17} so that the emitter current in the transistor TR_3 may be 0.4 mA (both ends voltage of the resistor R_{10} may be 0.4 V).
3. Adjust with an insulated screw driver.
4. Rotate the volume control to maximum, connect the output of a signal generator (modulated with 400 c/s +30%) to a loop antenna (4 inch in diameter, wound 2 or 3 rounds), the earth terminal of the signal generator to the receiver chassis. And couple the loop antenna to the ferrite-core antenna.
5. Connect a vacuum-tube voltmeter (with an AC 3 V ~ 1.5 V scale) to the earphone jack (with the negative ⊖ and the positive ⊕ connected with a 16Ω resistor).
6. Make adjustment of the following tables to gain maximum reading on voltmeter. During alignment, be sure to adjust the output of the signal generator so that the reading on voltmeter may not exceed 0.4 V at maximum as it rises in proportion to adjustment.
7. When an adjustment is over, fix the antenna coil by waxing, adjusted cores with white lacquer.

Adjustment of I. F. Circuit

Step	Set Band-Selector to-	Sig. Gen. Output	Dial Pointer Setting	Adjust-for Max. Output
①	MW	455 kc	Quiet point at the highest frequency	3rd I. F. T. T_3
②				2nd I. F. T. T_2
③				1st I. F. T. T_1
④		Repeat steps ①, ② and ③ for few times		

Adjustment of R. F. Circuit

Step	Set Band-Selector to-	Sig. Gen. Output	Dial Pointer Setting	Adjust-for Max. Output
⑤	LW	145 kc	Quiet point at the lowest frequency	LW osc. coil L_8
⑥		360 kc	Quiet point at the highest frequency	LW osc. trimmer C_8
⑦		Repeat steps ⑤ and ⑥ for few times		
⑧		160 kc	160 kc signal	LW ant. coil L_6
⑨		330 kc	330 kc signal	LW ant. trimmer C_6
⑩		Repeat steps ⑧ and ⑨ for few times		
⑪	MW	520 kc	Quiet point at the lowest frequency	MW osc. coil L_7
⑫		1,650 kc	Quiet point at the highest frequency	MW osc. trimmer C_7
⑬		Repeat steps ⑪ and ⑫ for few times		
⑭		600 kc	600 kc signal	MW ant. coil L_5
⑮		1,400 kc	1,400 kc signal	MW ant. trimmer C_5
⑯		Repeat steps ⑭ and ⑮ for few times		


L6
FERRITE ANTENNA
L5
C1 C2
VARIABLE CAPACITOR
SW1
BAND SWITCH
TO MULTI CONNECTOR
BATTERY SNAP
UM-3x4 6V
SPEAKER
4" x 2 3/4"
EARPHONE JACK
R18. R40
SW. AND VOL.
LAMP SOCKET
PL1
PL2
MULTI CONNECTOR