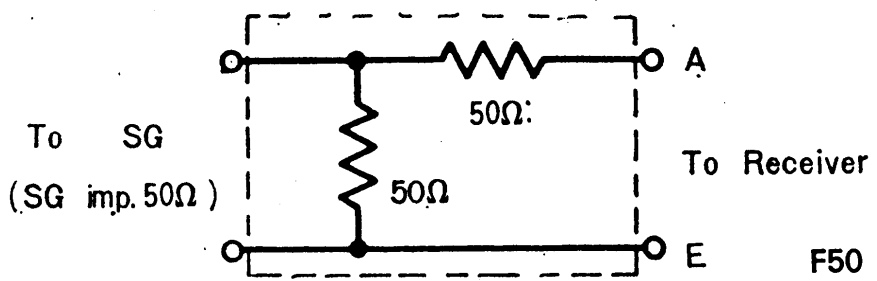
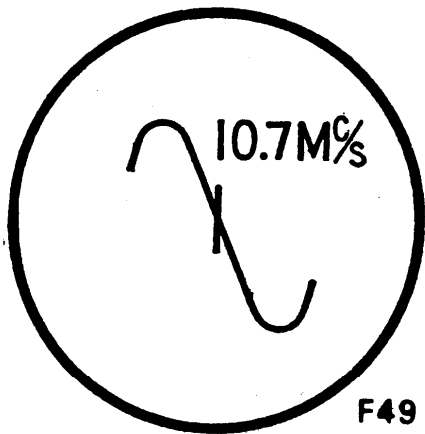


**General Description:** Nine-transistor, three-waveband A.M./F.M. portable radio. Power output 500 mW. maximum. Batteries: four penlight (6 volts). Wavebands: F.M. 87–108 Mc/s.; M.W. 577–186 m.; L.W. 2000–1000 m. External loudspeaker impedance 8 ohms. A whip aerial is used for F.M. and a ferrite aerial for the A.M. bands.

**Dismantling:** Remove the back cover, four red chassis mounting screws and the heat sink mounting screw. To remove the chassis, unsolder the loudspeaker leads.

## Alignment

**A.M.:** Connect several turns of wire across the signal generator output. I.F. 470 kc/s. Adjust T8, T5 and T3 for maximum output. L.W. 150 kc/s.—L9 (osc. coil), L8 (aerial coil); 300 kc/s.—C31 (osc. trimmer), C23 (aerial trimmer). M.W. 550 kc/s.—L10 (osc. coil), L7 (aerial coil); 1500 kc/s.—C35 (osc. trimmer), C22 (aerial trimmer).



(F50) F.M. DUMMY AERIAL

F49 (F49) WAVEFORM DIAGRAM

### F.M. I.F. and Detector Alignment with Oscilloscope

**Oscilloscope:** Set sweep selector of oscilloscope to "External Sweep". Apply 60-c/s. sweep signal from sweep generator to horizontal input terminals of oscilloscope.

**Equipment Required:** Signal generator that provides 10.7 Mc/s. marker. Sweep generator that provides 10.7 Mc/s. centre frequency and 400 kc/s. sweep width. Set band selector switch to F.M. Set volume control to minimum.

**Note:** Unsolder lead between test point PT<sub>3</sub> and point (A) before alignment and resolder it after alignment.

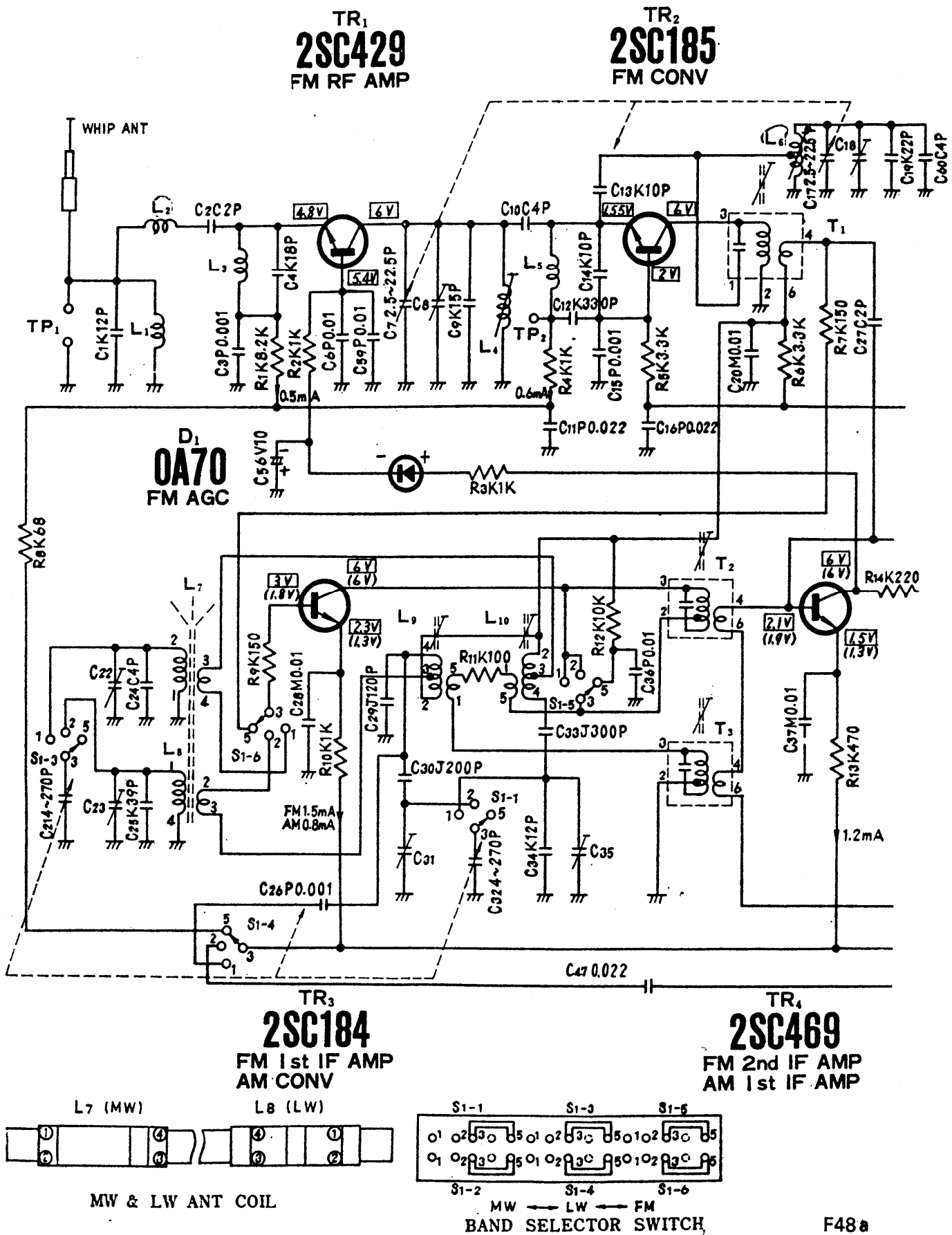
Sweep generator coupling	Signal generator coupling	Radio dial setting	Indicator	Adjust	Remarks
0.001 μF. to point TP <sub>2</sub> . Common to Chassis	0.001 μF. to point TP <sub>2</sub> . Common to Chassis	100 Mc/s.	Connect vert. Amp. of scope to point TP <sub>3</sub> . Common to chassis	T <sub>4</sub> (3rd I.F.T.) T <sub>2</sub> (2nd I.F.T.) T <sub>1</sub> (1st I.F.T.)	Adjust for maximum amplitude and symmetrical curve
0.001 μF. to point TP <sub>2</sub> . Common to Chassis	0.001 μF. to point TP <sub>2</sub> . Common to Chassis	100 Mc/s.	Connect vert. Amp. of scope to point TP <sub>4</sub> . Common to chassis	T <sub>6</sub> (4th I.F.T.) (Primary) T <sub>7</sub> (4th I.F.T.) (Secondary)	Adjust T <sub>6</sub> for maximum amplitude and proper linearity between ±100 kc/s. markers. Adjust T <sub>7</sub> so that 10.7 Mc/s. marker appears at the centre. (Refer to illustration F49)

**Note:** When aligning the Ratio Detector circuit, (Fig. F49) waveform may be inverted.

**F.M. R.F. Alignment:** Output of signal generator should be no higher than necessary to obtain an output reading. Set volume control to maximum. Set band selector switch to F.M.

Signal generator coupling	Signal Generator frequency	Radio dial setting	Indicator	Adjust	Remarks
(1) Connect to Point TP <sub>1</sub> through F.M. Dummy antenna. Common to chassis	90 Mc/s. (400 c/s. Mod.)	90 Mc/s.	Output meter across earphone jack	L <sub>6</sub> (F.M. Osc. coil) L <sub>4</sub> (F.M. Ant. coil)	Adjust for maximum output
(2) Connect to Point TP <sub>1</sub> through F.M. Dummy antenna. Common to chassis	106 Mc/s. (400 c/s. Mod.)	106 Mc/s.	Output meter across earphone jack	Cr <sub>8</sub> (F.M. Osc. trimmer) C <sub>8</sub> (F.M. Ant. trimmer)	Adjust for maximum output. Repeat steps (1) and (2)

**Note:** As three output responses will be present, proper tuning is the centre frequency.



(F48a) CIRCUIT DIAGRAM—MODEL RF-62iL (PART)

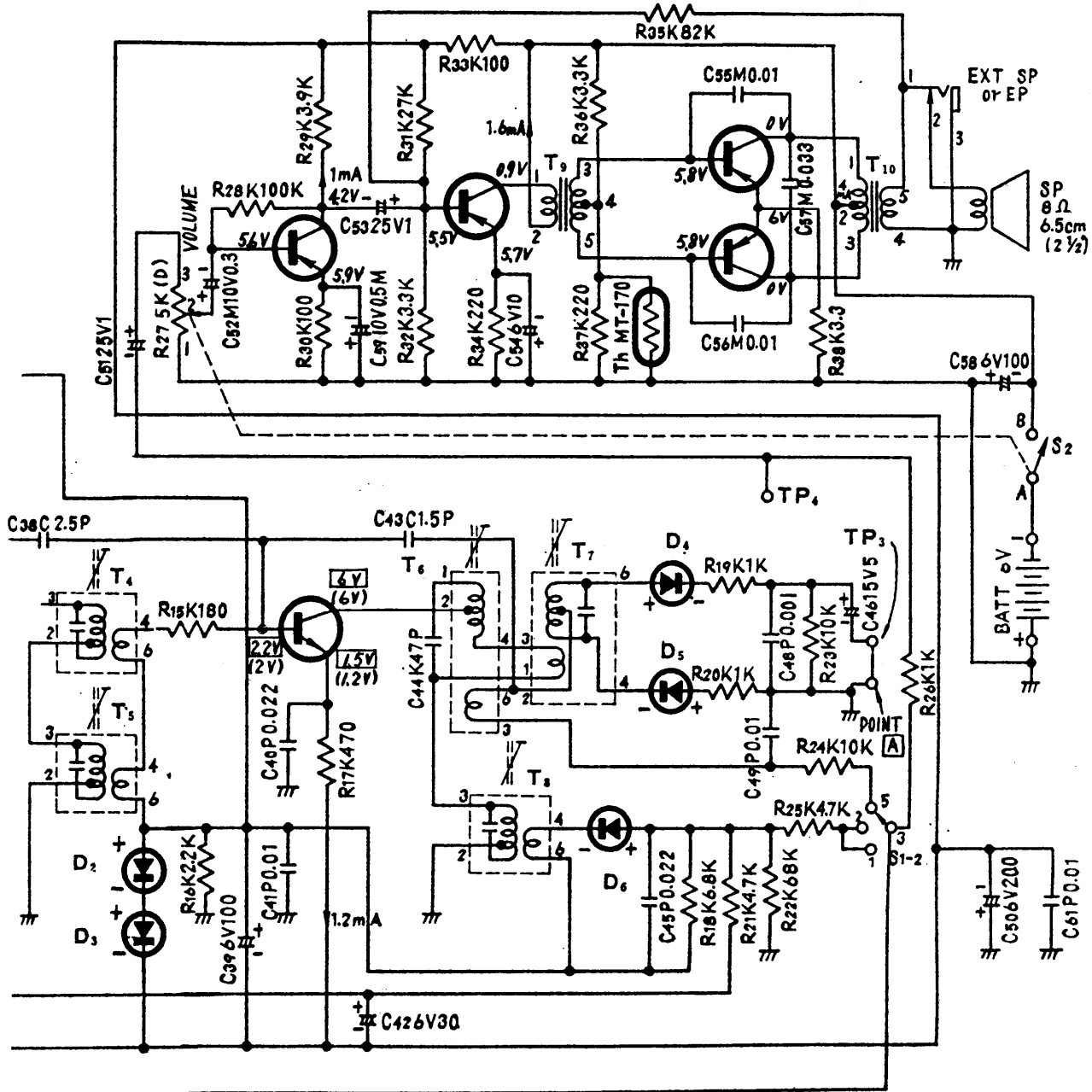
**Circuit Diagram Notes:** 1. S<sub>1-1</sub> ~ S<sub>1-6</sub>: Band selector switch in "F.M." position. 2. S<sub>2</sub>: Power source switch in "OFF" position. 3. D.C. voltages measurements are taken with circuit tester (10 kΩ/V) from negative terminal of battery.

□ . . . F.M. position ( ) . . . M.W. position. 4. Capital letters

TR<sub>6</sub>  
**2SB171**  
1st AF AMP

TR<sub>7</sub>  
**2SB175**  
2nd AF AMP

TR<sub>8</sub> & TR<sub>9</sub>  
**2SB176 × 2**  
POWER AMP

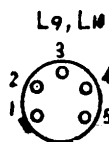


D<sub>2</sub> & D<sub>3</sub>  
**1S1211 × 2**  
AOC

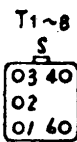
TR<sub>5</sub>  
**2SC469**  
FM 3rd IF AMP AM DET & AGC  
AM 2nd IF AMP

D<sub>4</sub> & D<sub>5</sub>  
**OA70 × 2**  
FM DET

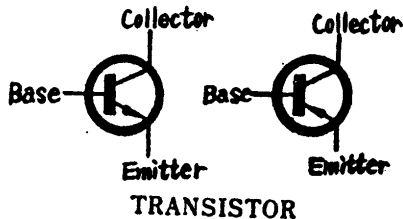
F48



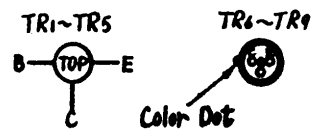
BOTTOM VIEW  
MW & LW OSC COIL



IFT



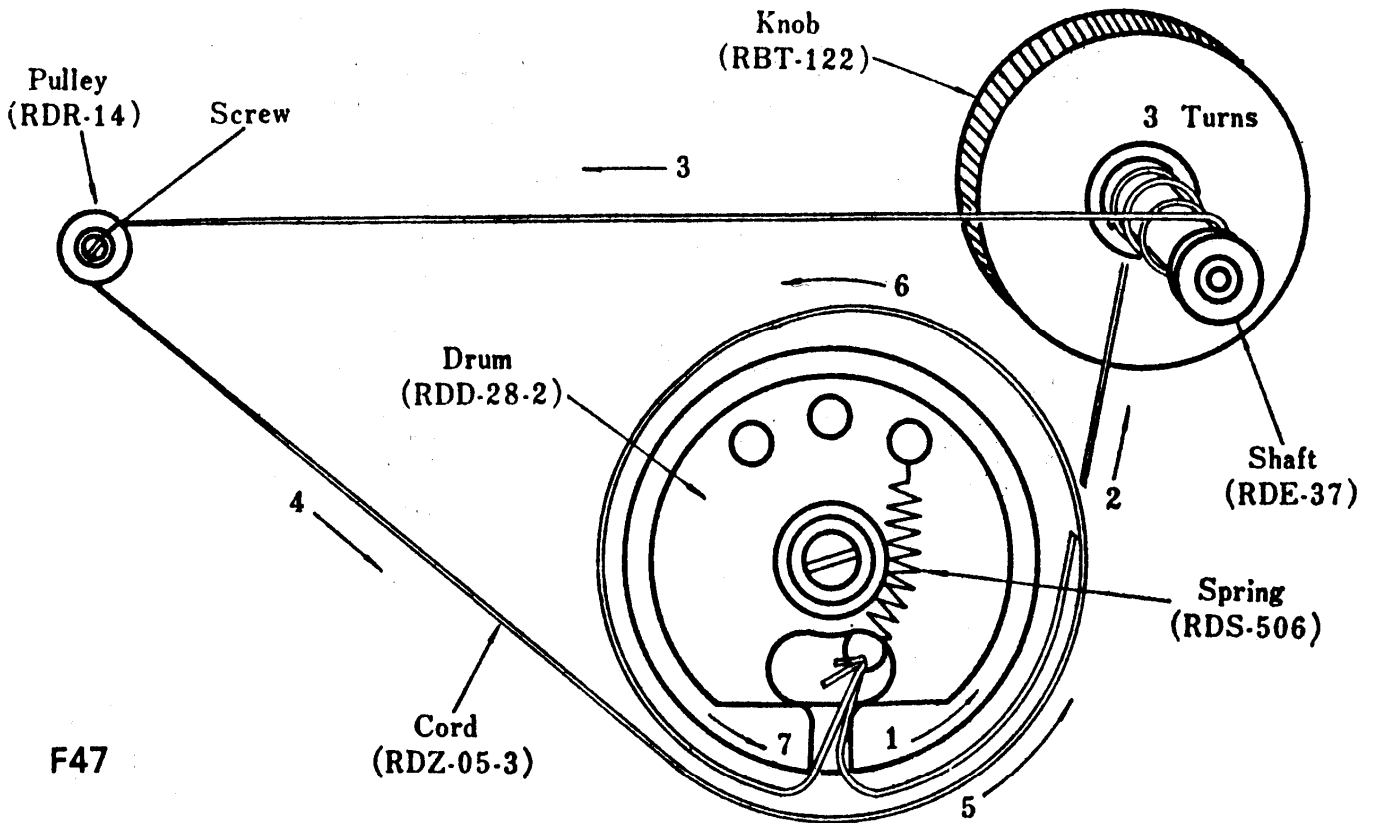
TRANSISTOR



(F48b) CIRCUIT DIAGRAM—MODEL RF-621L (CONTINUED)

(J, K, M, P, C) in the circuit diagram shows allowable tolerances of resistors and capacitors as follows: J = ±5%, K = ±10%, M = ±20%, P = +100%, C = ±0.25 pF. 5. Battery current: No signal F.M. M.W. 17 mA. Maximum output F.M. M.W. 130 mA. 7. All resistor values in ohms (K = 1000 ohms). 8. All capacitor values in micro-farads.

# RADIO SERVICING



(F47) DRIVE CORD—MODEL RF-621L

**Drive Cord Notes:** 1. Take the dial back plate off by removing the screw. Then reinsert the screws to hold the dial cord (see figure) 2. Dial cord length is 55 cm. ( $21\frac{2}{3}\frac{1}{2}$  in.). 3. Tuning gang is positioned at maximum capacity. 4. Arrow marks (1 ~ 7) indicate correct order and direction of stringing dial cord. 5. Cement dial cord ends.

## To Mount Dial Pointer:

1. Set tuning gang to fully closed position. 2. Set dial pointer to start point of pointer guide. 3. Attach dial cord to dial pointer.