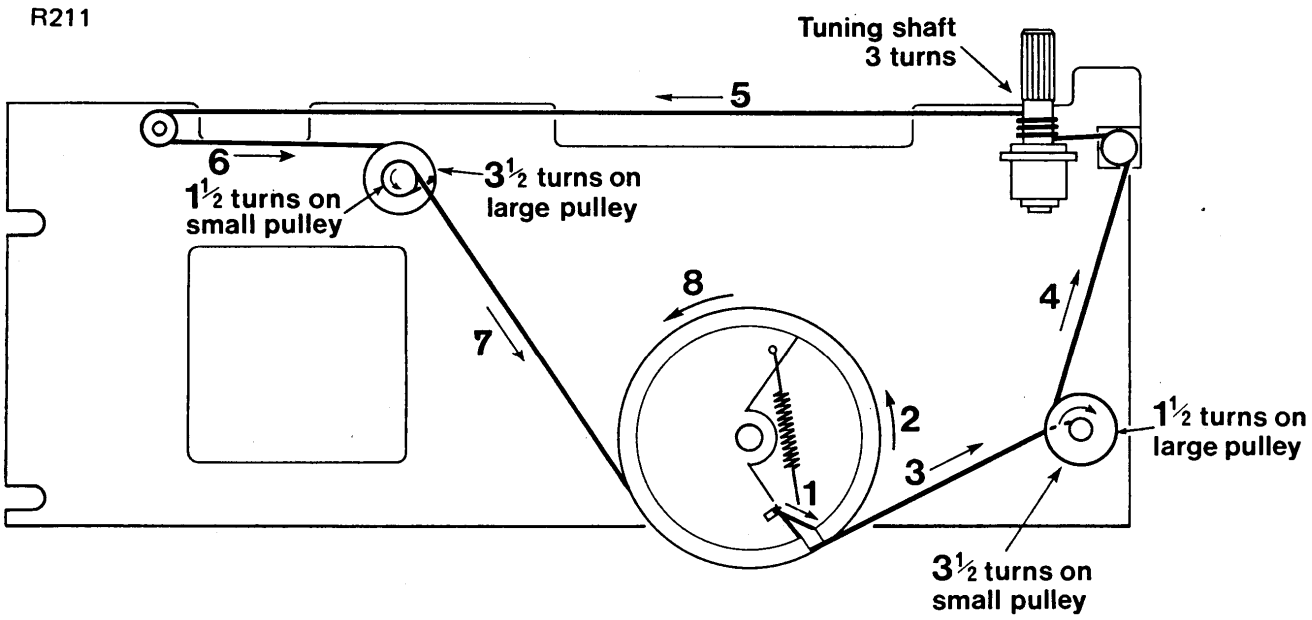
MURPHY Model B875

General Description: A portable, ten-transistor A.M./F.M. radio receiver covering Long, Medium and V.H.F. wavebands. An internal ferrite rod aerial is provided for A.M. bands and a telescopic rod aerial for the V.H.F. band. A car type aerial socket is provided for use on the M.W. and L.W. bands in conjunction with a CAR push-button switch.

Batteries: 6V (4 × SP2).

Quiescent Current: 19mA.



(R211) Drive Cord—Model B875

Wavebands: L.W. 150–285kHz; M.W. 515–1,620kHz; F.M. 87·5–104MHz.

Loudspeaker: 4Ω impedance.

Alignment

Equipment required:

Sweep generator with markers at 470kHz and 10·7MHz.
Oscilloscope.
F.M. signal generator to cover 86MHz to 106MHz.
A.M. signal generator to cover 150kHz to 2MHz.
Power output meter 500mW, 4Ω impedance.
Coupling loop consisting of a 10-in. diameter loop of wire in series with a resistor of a value to match the output impedance of the generator.

Set the Volume Control to maximum unless otherwise stated.

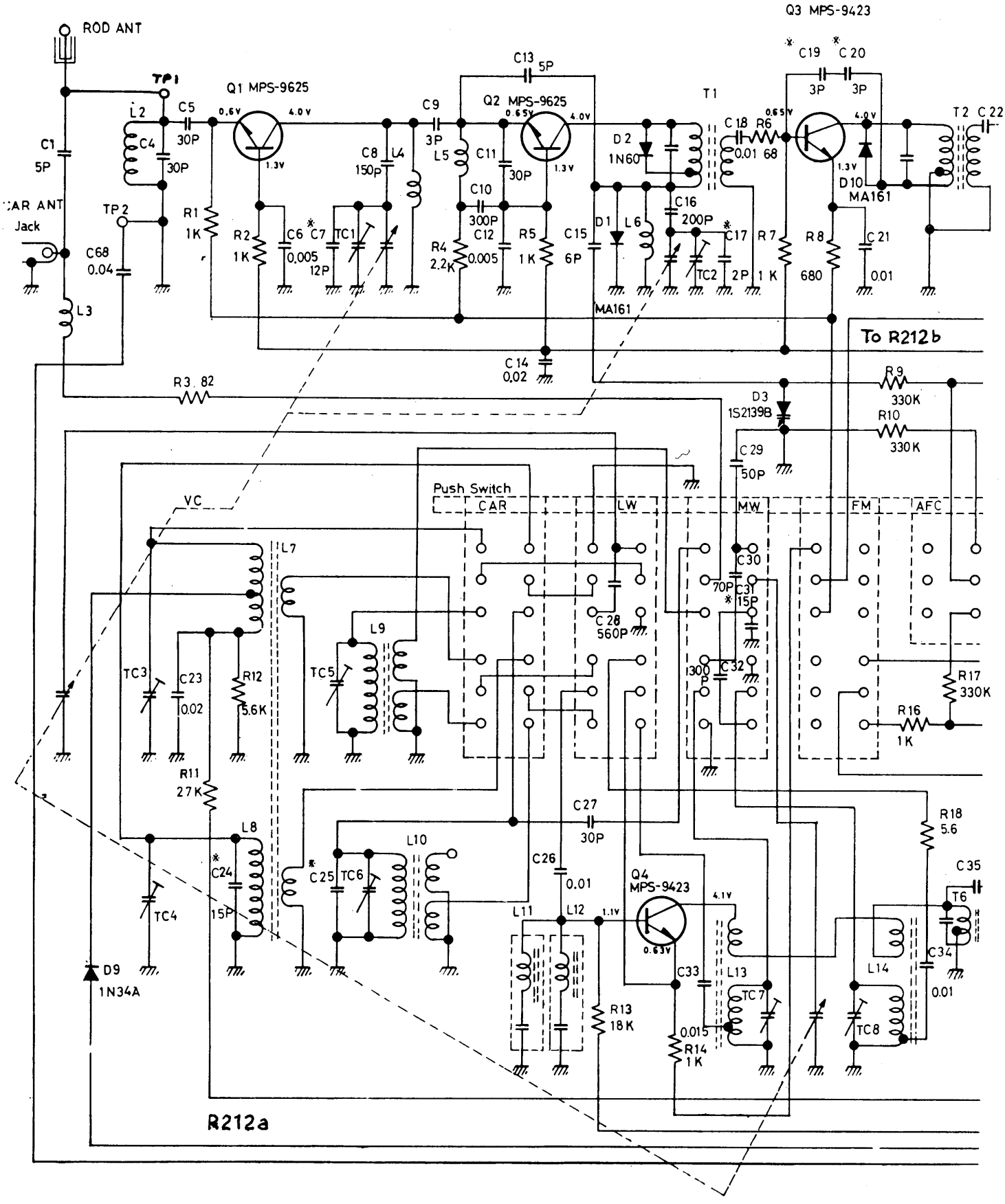
Disconnect the loudspeaker and connect the output meter in its place.

A.M. Circuits—I.F. Alignment (see Fig. 212): Connect the oscilloscope to the test point TP5.

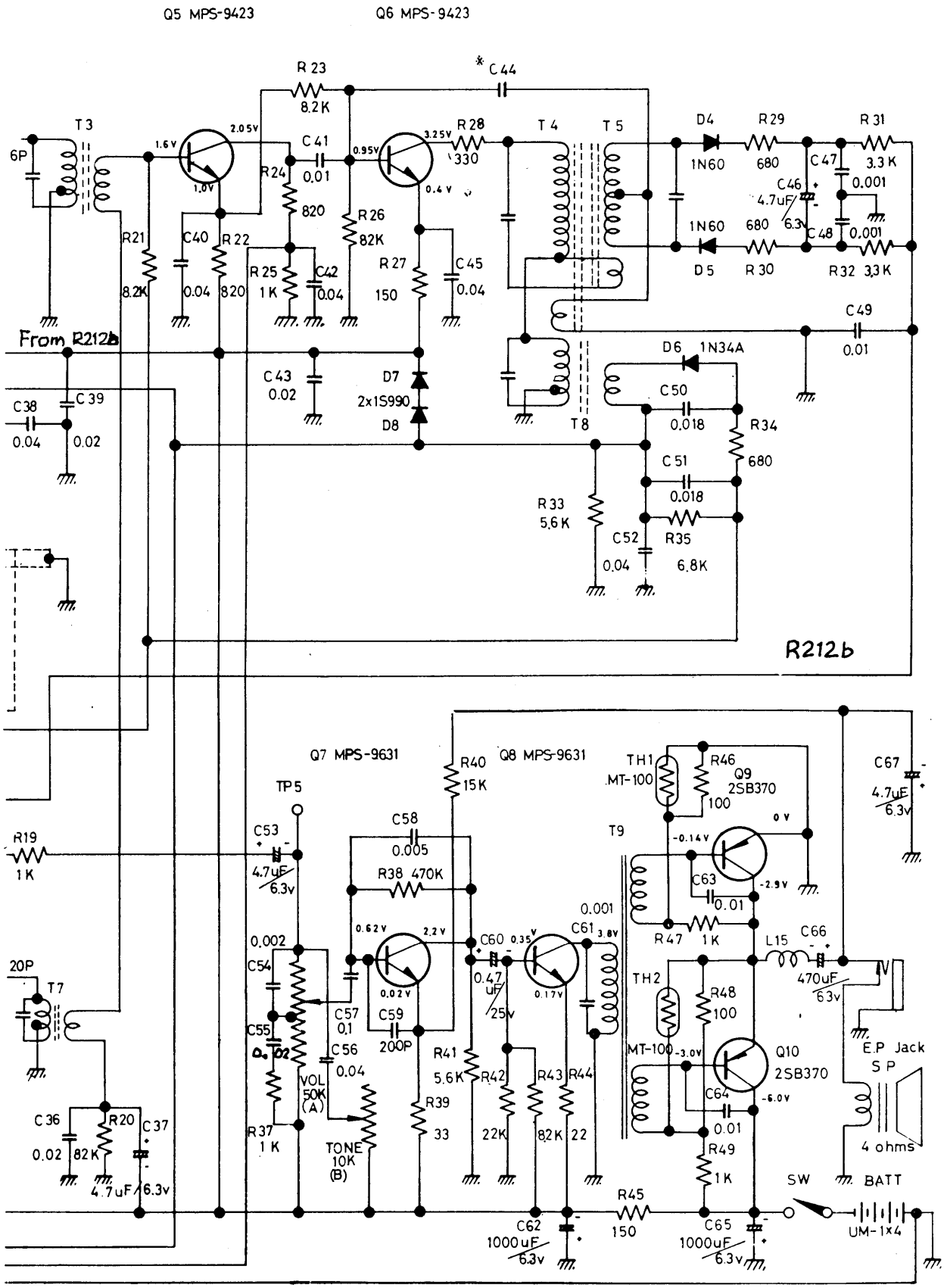
Connect the signal generator to the coupling loop and place the loop about 20ft. from the receiver with its plane at right angles to the ferrite rod aerial.

Switch the receiver to M.W., set the tuning pointer to mid-band and the Volume Control to minimum position.

Inject a modulated signal of 470kHz and adjust T6, T7 and T8 for maximum output and L11 and L12 (I.F. trap) for minimum output. Repeat adjustments for optimum results.



(R212a) Circuit Diagram—Model B875 (*Part*)



(R212b) Circuit Diagram—Model B875 (*Continued*)

R.F. Alignment—M.W. and L.W.: *Note:* Inject signal using the coupling loop.

Operation	*Waveband*	*Sig. Gen. Frequency (mod. 30% 400Hz)*	*Tuning*	*Adjust for Max. Output*
1	M.W.	510kHz	L.F. end of scale	L14
2	M.W.	1,650kHz	H.F. end of scale	TC8
Repeat operations 1 and 2 for optimum frequency coverage.				
3	M.W.	600kHz	600kHz	L7
4	M.W.	1,400kHz	1,400kHz	TC3
Repeat operations 3 and 4 for correct tracking.				
5	L.W.	145kHz	145kHz	L13
6	L.W.	300kHz	300kHz	TC7
Repeat operations 5 and 6 for optimum frequency coverage.				
7	L.W.	175kHz	175kHz	L8
8	L.W.	250kHz	250kHz	TC4
Repeat operations 7 and 8 for correct tracking.				

R.F. Alignment—Car (M.W. and L.W.): *Note:* Inject signal at junction of car aerial socket and L3. Car switch to inner position.

Operation	*Waveband*	*Sig. Gen. Frequency (mod. 30% 400Hz)*	*Tuning*	*Adjust for Max. Output*
1	M.W.	510kHz	510kHz	L14
2	M.W.	1,650kHz	1,650kHz	TC8
Repeat operations 1 and 2 for optimum frequency coverage.				
3	M.W.	600kHz	600kHz	L9
4	M.W.	1,400kHz	1,400kHz	TC5
Repeat operations 3 and 4 for correct tracking.				
5	L.W.	145kHz	145kHz	L13
6	L.W.	300kHz	300kHz	TC7
Repeat operations 5 and 6 for optimum frequency coverage.				
7	L.W.	175kHz	175kHz	L10
8	L.W.	250kHz	250kHz	TC6
Repeat operations 7 and 8 for correct tracking.				

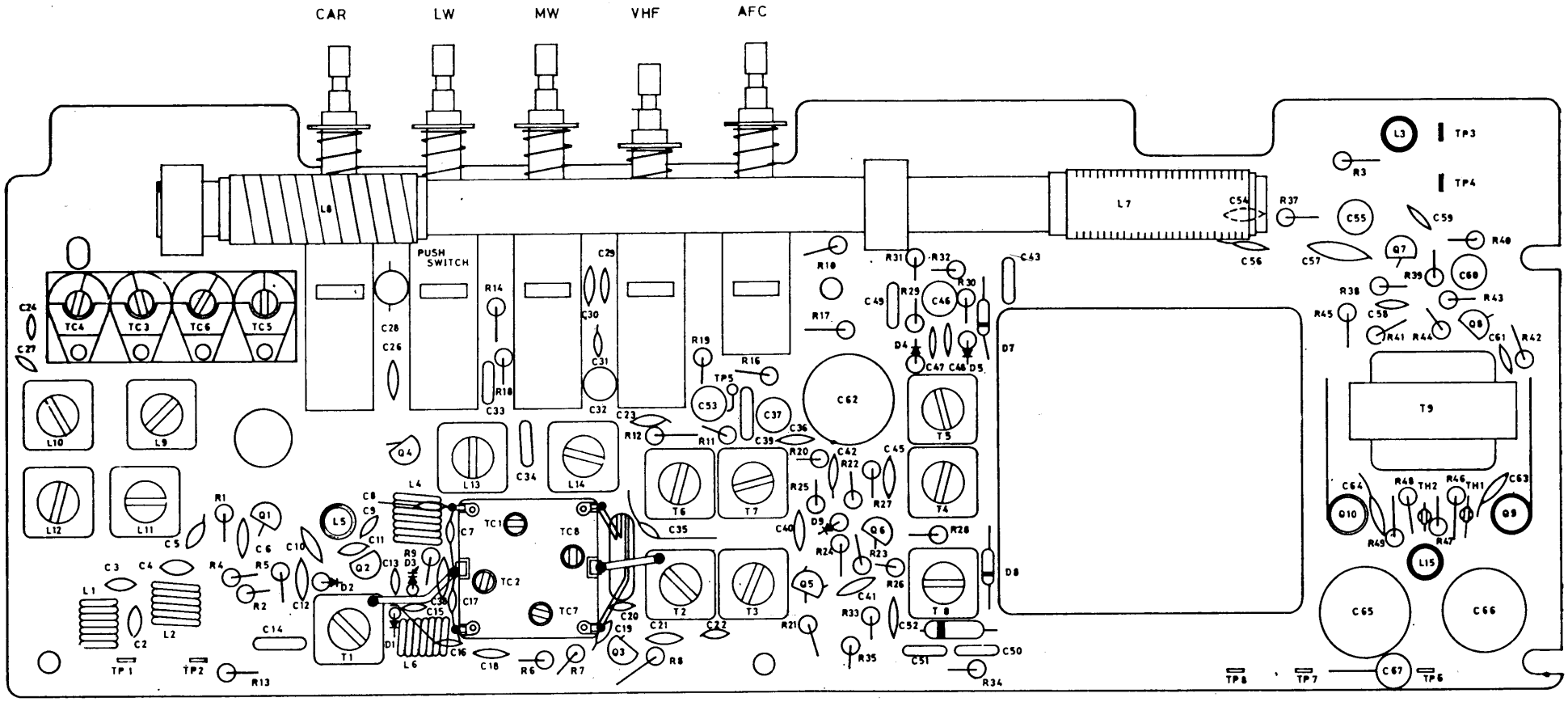
F.M. Circuits—I.F. Alignment: Connect the sweep generator to TP1 and chassis (telescopic rod aerial) and the oscilloscope to TP5.

Switch the receiver to V.H.F., set the tuning capacitor to maximum frequency and the Volume Control to minimum.

Inject a modulated signal of 10·7MHz and adjust T1, T2, T3 and T4 for a maximum symmetrical response centred at 10·7MHz.

With the same signal applied, adjust T5 for optimum symmetry of 'S'-shaped curve centred at 10·7MHz.

Repeat adjustments for optimum results.



(R211a) Component Layout—Model B875

R.F. Alignment: *Note:* Inject F.M. signal to TP1. Connect output meter across loudspeaker.

Operation	*Waveband*	*Sig. Gen. Frequency (mod. 30% 400 Hz)*	*Tuning*	*Adjust for Max. Output*
1	F.M.	88 MHz	88 MHz	L15
2	F.M.	100 MHz	100 MHz	CT8
Repeat operations 1 and 2 for correct calibration.				
3	F.M.	88 MHz	88 MHz	L13
4	F.M.	100 MHz	100 MHz	CT6
Repeat operations 3 and 4 for maximum output.				