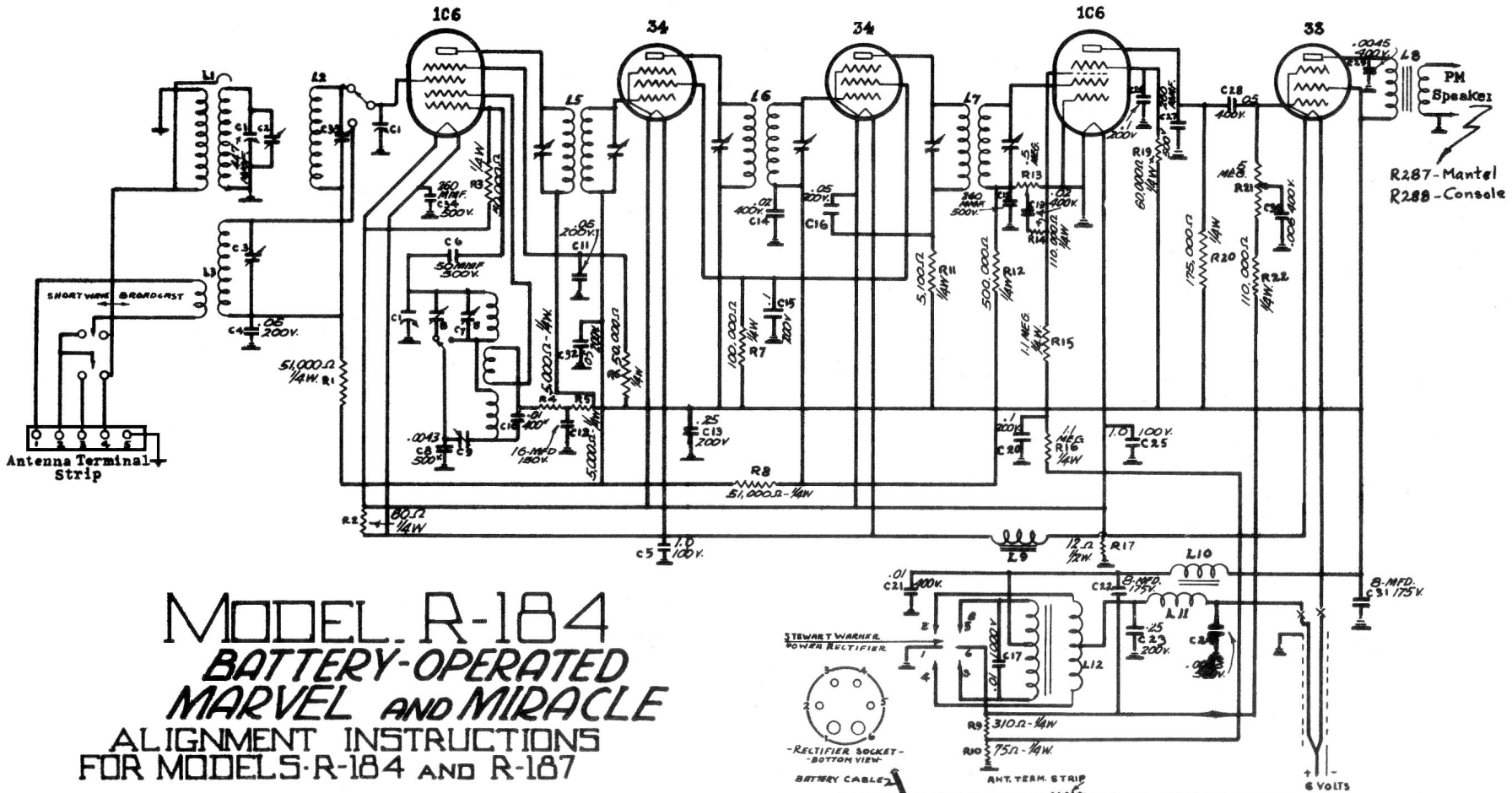

MODEL R-184
BATTERY-OPERATED MARVEL AND MIRACLE
ALIGNMENT INSTRUCTIONS FOR MODELS R-184 AND R-187

TUBE	CIRCUIT LOCATION	FIL.	PLATE	SCREEN	BIAS
1C6	1st. DETECTOR OSC.	1.92	85 *a* 78	45	-1.92 ‖
34	1st. I.F.	1.92	105	35	-1.92 ‖
34	2ND. I.F.	1.92	97	35	-1.92 ‖
1C6	2ND. DET. A.V.C. 1st. AUDIO	1.92	45	25	-1.4 ≠
33	OUTPUT	1.92	102	105	-10.5 ※

MEASURED WITH A 1000 OHMS PER VOLT METER FROM TUBE SOCKET TO GROUND EXCEPT:-
‖ - MEASURED FROM (-) FIL. TO GROUND.
≠ MEASURED ACROSS R.10
※ MEASURED FROM (-) FIL. TO JUNCTION OF R9 AND R22 DRAIN FROM 6 VOLT BATTERY = .98 AMP.

If the receiver lacks sensitivity and the tubes and their voltages have checked O.K. (see voltage chart accompanying circuit diagram) proceed to check the alignment as follows.

Alignment—The alignment operation can all be performed **without** removing the chassis from the cabinet.

(a) Connect an output meter to the speaker terminals or between plate and screen of the output tube.

(b) Connect a 370 K.C. oscillator between the grid cap of the 1C6 first detector and ground. Make sure that there is a condenser (approximately .02mfd) in the oscillator leads so that the 1 C-6 grid is not shorted to the ground and the bias upset.

(c) With the volume control full on, align the I.F. stages beginning with the last and working forward, keeping the input signal low enough so that the lowest practical output reading is obtained. Particular care must be taken in aligning the I.F. because these circuits are very selective If the alignment was very far out repeat the above operation. This alignment should be carried out with the range switch in the "broadcast band" position and the gang condenser set about 1490 K.C.

(d) Transfer the oscillator leads to the antenna and ground and tune it to 1400 K.C. With the range switch in the "broadcast position" set the dial on the receiver to 1400 K.C. and adjust C7B, C33 and C2 in that order for maximum output. Keep the input from the oscillator as low as possible as before.

(e) Adjust the receiver and oscillator in tune at 550 K.C. and align C9 for maximum output, rocking the tuning condenser back and forth slightly while aligning.

(f) If an appreciable change in C9 was necessary operation (d) should be repeated.

(g) Turn the range switch to the short wave position and adjust the oscillator and tuning condenser in tune at 15 megacycles (20 meters). A fairly strong 20 meter signal will be received at two points on the dial: set the dial at the lowest wave length point.

(h) Adjust C7S and C3 in that order for maximum output.

NOTE—Insulated screw driver must be used for adjusting C7B and C7S.

I.F. = 370 K.C.
1935-36