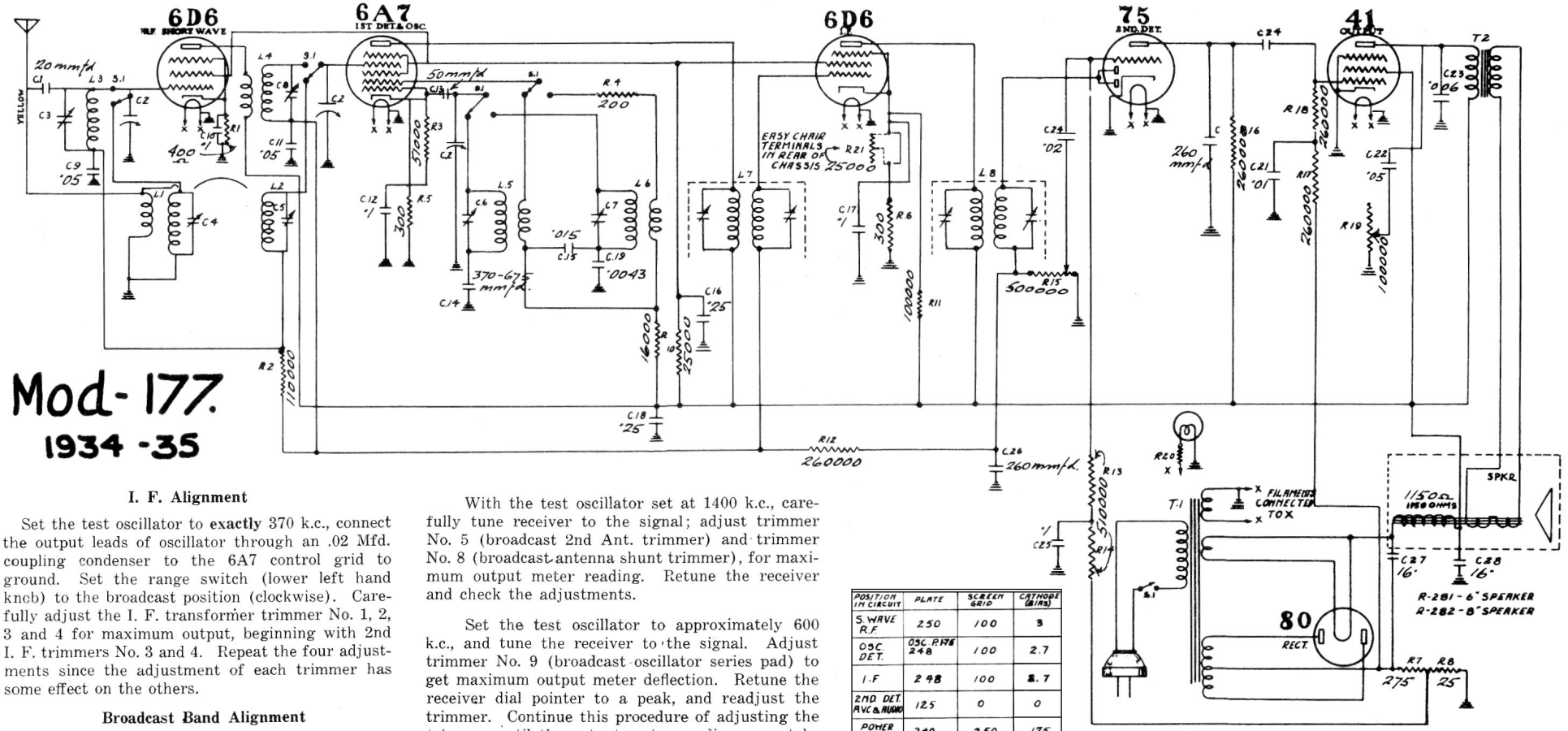
DATA SHEET

STEWART-WARNER-21



Mod-177.
1934-35

POSITION IN CIRCUIT	PLATE	SCREEN GRID	CATHODE (BIAS)
S. WAVE R.F.	250	100	3
OSC. DET.	OSC. P.176 248	100	2.7
I.F.	248	100	3.7
2ND DET. AVC & AUDIO	125	0	0
POWER OUTPUT	240	250	175

I. F. Alignment

Set the test oscillator to **exactly** 370 k.c., connect the output leads of oscillator through an .02 Mfd. coupling condenser to the 6A7 control grid to ground. Set the range switch (lower left hand knob) to the broadcast position (clockwise). Carefully adjust the I. F. transformer trimmer No. 1, 2, 3 and 4 for maximum output, beginning with 2nd I. F. trimmers No. 3 and 4. Repeat the four adjustments since the adjustment of each trimmer has some effect on the others.

Broadcast Band Alignment

Whenever possible, use a broadcast station signal between 1300 and 1400 k.c. to calibrate the receiver dial. If no such station can be heard, you can use a 1400 k. c. signal from your oscillator, provided that it is properly calibrated. To calibrate the set, turn the dial to the exact frequency setting of the signal, then carefully adjust trimmer No. 7 (broadcast oscillator shunt trimmer) until the signal is tuned in with maximum volume at its correct frequency setting.

Connect a standard dummy antenna in series with the test oscillator output and the receiver antenna lead. If a standard dummy antenna is not available a 400 ohm, 1 watt carbon resistor may be substituted with fairly good results. THE DUMMY ANTENNA OR 400 OHM RESISTOR MUST REMAIN CONNECTED FOR ALL BROADCAST FREQUENCY ADJUSTMENTS IN ORDER TO SECURE PROPER ALIGNMENT OF THE ANTENNA STAGE. Ground the receiver chassis, and connect the oscillator ground to the chassis.

With the test oscillator set at 1400 k.c., carefully tune receiver to the signal; adjust trimmer No. 5 (broadcast 2nd Ant. trimmer) and trimmer No. 8 (broadcast antenna shunt trimmer), for maximum output meter reading. Retune the receiver and check the adjustments.

Set the test oscillator to approximately 600 k.c., and tune the receiver to the signal. Adjust trimmer No. 9 (broadcast oscillator series pad) to get maximum output meter deflection. Retune the receiver dial pointer to a peak, and readjust the trimmer. Continue this procedure of adjusting the trimmer until the output meter reading cannot be increased. Trimmer No. 9 should also be used to adjust calibration of 550 k.c. end of dial. This procedure must be followed or the receiver will not be properly adjusted.

7. With a 1400 k.c. signal, recheck alignment of trimmers Nos. 7, 8 and 5.

Short-Wave Alignment

NOTE :

It should never be necessary to adjust the following short-wave circuits unless the short-wave trimmers or coils have been changed or tampered with. Alignment procedure, as a rule, should not go beyond this point.

Turn the receiver range switch to the short-wave band position (counter clockwise).

Set the test oscillator to give a 15000 k.c. signal. If the oscillator cannot reach this frequency, use the second harmonic of 7500 k.c., the third harmonic of 5000 k.c., or the fourth harmonic of 3,750 k.c., all of which will give a 15000 k.c. signal.

To calibrate this point, turn the receiver dial to 20 meters (15 megacycles or 15,000 k.c.) on short-wave oscillator shunt trimmer) to give maximum output. Generally, two peaks will be found. Align on the peak secured with the trimmer screw farthest out. Then adjust trimmer No. 11 (short-wave R.F. shunt trimmer) for maximum output. (When adjusting trimmer No. 11 two peaks may be found. The correct one is when trimmer is turned farthest in). Then adjust trimmer No. 6 (short-wave antenna shunt trimmer) for maximum output.

4. With a strong 15,000 k.c. (20 meter) signal from the oscillator, tune the receiver to 21 meters and check for the image signal which should be weaker than 15,000 k.c. (20 meter) signal. If the 21 meter signal is as strong as the 20 meter it shows that trimmer No. 11 is not properly adjusted. If no signal is received at 21 meters, but one at 19 meters, it shows that trimmer No. 10 is aligned on wrong frequency, and thus both No. 10 and 11 must be readjusted at the proper frequency.