

Alignment Instructions Models 276, 277 (276FM, 277FM, 277FM-LP)

In order to realign FM receivers properly, the serviceman should have available the following testing instruments:

- An FM-AM signal generator with a frequency coverage from 455 KC to at least 110 MC., and capable of supplying a variable frequency sweep of 0 K.C. to 450 K.C.
- A vacuum tube voltmeter or high resistance-high sensitivity D.C. voltmeter.
- An oscilloscope with synchronizing adjustment.

ADJUSTMENT OF INTERMEDIATE FREQUENCY AMPLIFIER AM CHANNEL

- Set WC switch on broadcast band and gang capacitor at maximum frequency. Connect output meter across speaker voice coil.
- Apply a 455 K.C. 30% amplitude modulated signal to the 6BE6 converter grid through a 0.1 MFD, condenser and adjust L-9, L-8, 6-5 and L-4 in that order for maximum output.

ADJUSTMENT OF INTERMEDIATE FREQUENCY AMPLIFIER FM CHANNEL

- Set WC switch in FM position.
- Short pin No.2 of 12AT7 to ground (osc.grid).
- Connect a 150 Ohms resistor across pins 4 and 5 of ratio detector tube (6BE6).
- Unground positive lead of C37.
- Connect DC vacuum tube voltmeter across R-16 (pin 3 of 6H6 to ground).
- With low impedance input to converter cathode (pin 8, 12AT7) apply a 10.7 MC unmodulated signal. Adjust L-10, L-7, L-6, L-3 and L-2, in that order for maximum output on DC vacuum tube voltmeter.

- Connect vertical plates of oscilloscope across R-16 (pin 3 of 6H6 to ground). Apply a frequency modulated signal of 10.7 MC $\pm$ 100 KC. linear deviation to the 12AT7 cathode. With scope synchronized to sweep check for symmetry of curve and freedom from regenerative peaks. Readjust L-10 if necessary.
- With positive lead of C-37 grounded, and 150 Ohm resistor across pins 4 and 5 of 6BE6 removed, connect a frequency modulated 10.7 MC signal (linear to $\pm$ 100 KC) to 12AT7 cathode and connect vertical plates of scope across volume control. Adjust L-11 for S curve of maximum linearity and centered about 10.7 MC. Retouch L-10 if necessary.

RF ALIGNMENT - AM

Note: Seven index holes are provided on the bottom edge of the dial backplate to indicate respectively; gang capacitor fully meshed, 580 KC, 90 MC, 100 MC, 1000 KC, 1400 KC and 106 MC. Before proceeding with RF alignment see that cursor is set over left hand index hole with gang capacitor fully meshed.

- Apply a 1720 KC signal to the aerial and ground terminals with gang capacitor fully open. Adjust C-8 and C-9 if necessary, for maximum output.
- Apply a 1400 KC signal and set cursor to 1400 KC. Adjust C-7 for maximum output.
- Apply a 580 KC signal and set cursor to 580 KC. Adjust L-1 while rocking gang capacitor for maximum output across voice coil.
- Repeat operation No. 2.

RF ALIGNMENT - FM

Note: Use 300 Ohm dummy antenna balanced to ground. Output measured by DC vacuum voltmeter across R-16.

- Set cursor to 106 MC, and apply a 106 MC unmodulated signal. Adjust C-6 and C-5 while rocking gang capacitor for maximum output.
- Set cursor to 90 MC, and apply a 90 MC unmodulated signal. Adjust oscillator and RF coils for maximum output.
- Rotate antenna coil assembly for maximum output and cement in place.
- Recheck operations 1 and 2 if necessary.

TELEVISION, PHONOGRAPH AND SOUND JACK (Model 276)

Jack on rear of chassis provide for the attachment of a phonograph record player, or may be used for the reproduction of television sound.

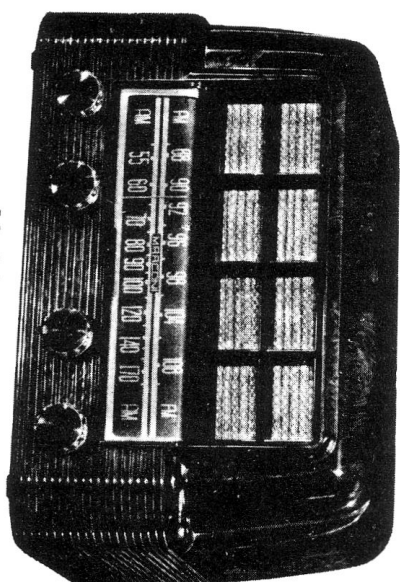
RADIOTRONS

FUNCTION

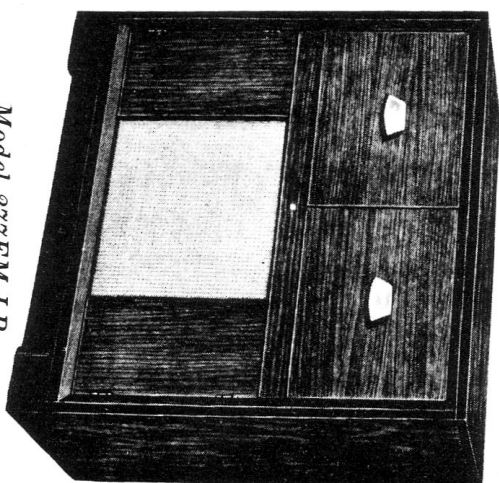
12AT7.....FM Dual Triode Oscillator and Converter
6BE6.....AM Pentagrid Converter
6BA1.....AM/FM 1st, I.F. Amplifier
6AU6.....FM 2nd, I.F. Amplifier
6H6.....FM Ratio Detector; Delayed AVC
6AT6.....AM Detector and AVC, 1st Audio Amp.
2nd Diode is part of FM Delayed
AVC Circuit

6AQ5.....Beam Power Amplifier
5Y3GT.....Full Wave Rectifier
6U5/6G5.....(Models 277FM and 277FM-LP)
Tuning Indicator
Broadcast band.....540-1720 KC.
FM band.....88-108 MC.

FREQUENCY COVERAGE



Model 276FM



Model 277FM-LP

LOUDSPEAKER DATA (Models 277FM and 277FM-LP)

Cone.....12" Dynamic
Field.....4.7 oz., Alnico V Permanent Magnet
Voice Coil Impedance at 400 C.P.S.....3.2 Ohms
Output Transformer Primary Resistance.....500 Ohms

VOLTAGE AND CURRENT DATA

Voltages	AM	FM	Phono.
Rectifier Cathode	280 V.	280 V.	
B+	250 V.	250 V.	
6BA6 (Plate)	90 V.	90 V.	
6AU6 (Plate)	90 V.	90 V.	
6AQ5 (Bias)	12.3 V.	12.3 V.	
12AT7 (Osc. Plate)	-	152 V.	
6BE6 (Osc. Plate)	100 V.	-	

CURRENT

Total Rectifier Current: 74 MA 74 MA 66 MA
Choke Current 36 MA 37 MA 28 MA

Above readings are approximate and will vary depending on the resistance of the voltmeter used. Readings are taken on lowest scale that will accommodate the voltage or current under test.