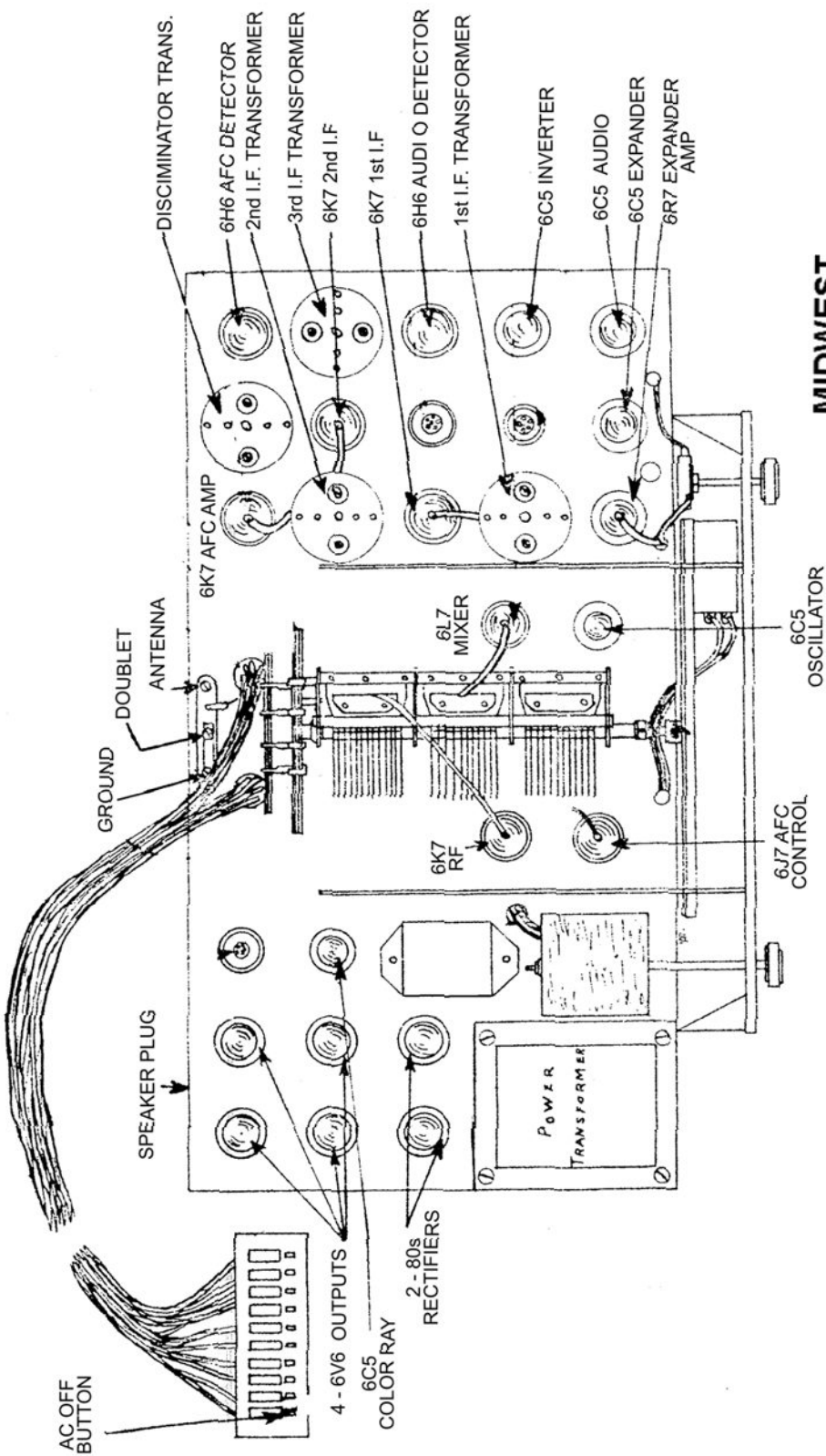




**MIDWEST
CHASSIS 20-38**
Revised January 30, 2011
Mike Simpson

1938 - 20 TUBE AC MIDWEST RECEIVER

OPERATING VOLTAGES

Note: Voltages taken with no signal input, 110 V. line voltage
and 1000 Ohm per Volt meter

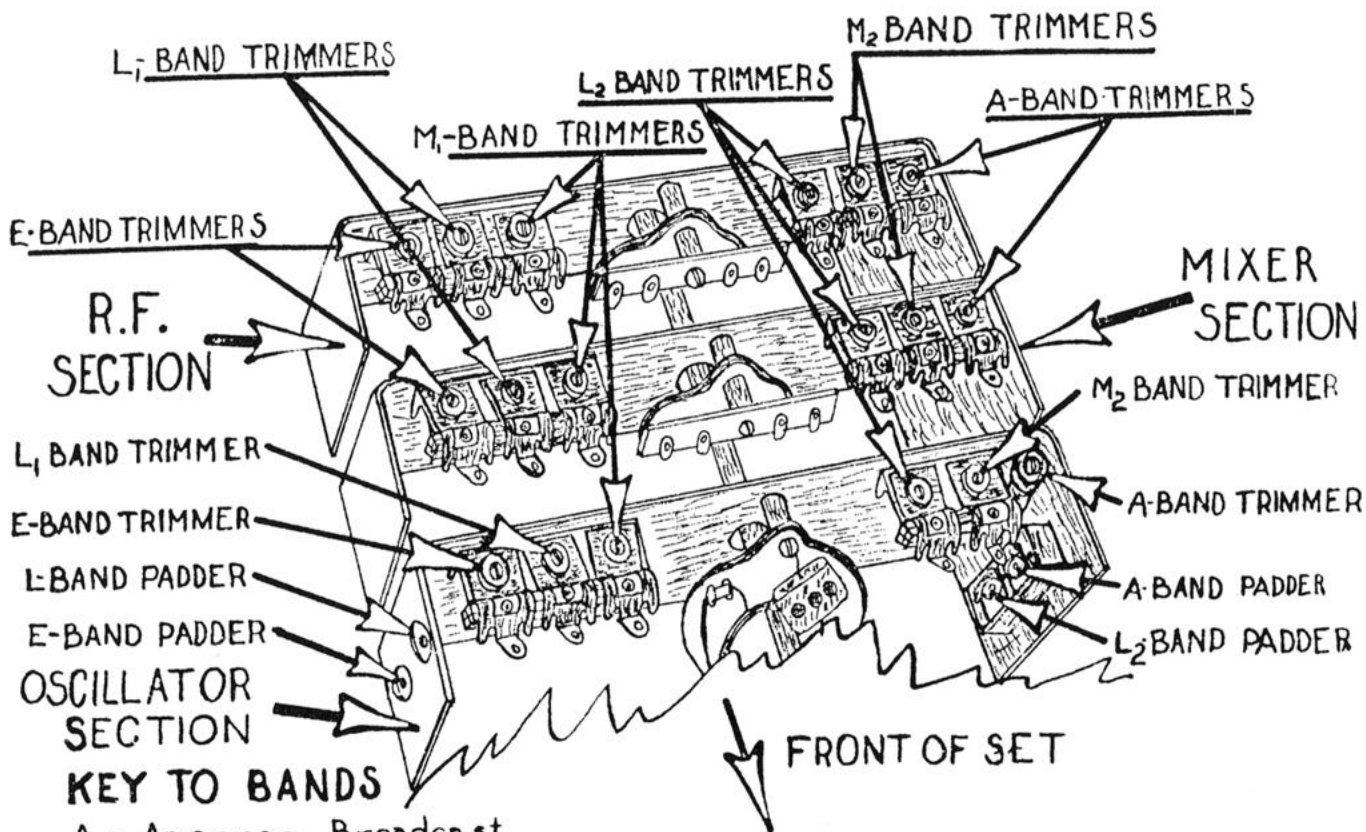
TUBE	PLATE	SCREEN	SUPPRESSOR	CATHODE	HEATER
6K7 R.F. Amp.	200	65	1.5	1.5	6.3
6L7 Mixer	200	65	2	2	6.3
6C5 Osc.	100				6.3
6J7 Osc. Control	120	65	3	3	6.3
6K7 1st I.F.	200	65			6.3
6K7 2nd I.F.	200	65	3	3	6.3
6H6 2nd Det.				4.5*	6.3
6K7 A.F.C. Amp.	200	65	2	2	6.3
6H6 A.F.C. Rect.					6.3
6C5 1st. Audio	100			4.5	6.3
6C5 Phase Inv.	100			4.5	6.3
6R7 Expander	90			4.5	6.3
6C5 Expander control	75			#	6.3
6V6 Outputs	250	200		11.5	6.3
#80 Rectifier	350 AC Per plate				6.3
6C5 Tunalite	150AC				6.3

* M2 Band

Zero Volts in Expander positions
otherwise 3 Volts

Revised October 5, 2014

Mike Simpson



MIDWEST CHASSIS 16-, 18- & 20-38 TRIMMER & Padder LOCATIONS

Revised September 22, 2013

M. Simpson

MIDWEST CHASSIS

16, 18, 20-38

ALIGNMENT

I.F. AND DISCRIMINATOR ALIGNMENT

Remove the oscillator tube. Connect AC volt meter to voice coil or DC volt meter to measure AVC line voltage.

Connect output of RF Generator to grid of mixer tube through .01 Ufd capacitor, low side to chassis.

Set generator to 456 KC, modulated output.

Adjust IF transformer trimmers A1 thru A6 for maximum reading.

Repeat procedure with lower level output from generator to assure proper peak.

Connect 10 Milliamp meter in series with 6J7, AFC Control Tube cathode.

Increase generator output to simulate an average radio signal.

Turn Tone/AFC control switch to RIGHT half - AFC OFF and note reading. This is the FALSE ZERO reading.

Turn Tone Control switch to LEFT half - AFC ON. If meter kicks up or down adjust A7 (plate trimmer) for maximum deflection. If no kick is noted, turn A8 (diode trimmer) slightly to obtain movement and adjust A7 as above. Adjust A8 to obtain the false zero reading.

Switch AFC OFF then ON while noting reading on milliamp meter. If meter kicks up or down the the diode trimmer is not properly adjusted. This adjustment is very critical and must be done carefully for proper AFC function.

Trimmer A8 may require a touch-up using a station to assure proper AFC function.

Alternate method:

Increase generator output to simulate an average radio signal.

Turn Tone/AFC control switch to RIGHT half - AFC OFF.

Connect high impedance VTVM to grid cap of 6J7, AFC Control Tube and note DC Voltage reading. This reading should be near Zero volts.

Turn Tone Control switch to LEFT half - AFC ON. If meter kicks up or down adjust A7 (plate trimmer) for maximum deflection. If no kick is noted, turn A8 (diode trimmer) slightly to obtain movement and adjust A7 as above. Adjust A8 to obtain the near zero volts reading as before.

Switch AFC OFF then ON while noting reading on VTVM. If meter kicks up or down the the diode trimmer is not properly adjusted. This adjustment is very critical and must be done carefully for proper AFC function.

Trimmer A8 may require a touch-up using a station to assure proper AFC function.

BAND ALIGNMENT

When aligning the bands a dummy antenna, consisting of a 200 ohm resistor and a 10 mmF capacitor in parallel, should be connected between the output of the signal generator and antenna terminal of the chassis. Generator ground is connected to chassis.

Verify the Doublet terminal is connected to chassis.

Re-insert the oscillator tube.

Band A - American Broadcast Band - covers 550 kc to 1500 kc.

Adjust the A Band oscillator padder at 550 Kc. Adjust the A Band oscillator trimmer at 1400 Kc.

Repeat the above steps as necessary to obtain proper readings.

The A Band RF and Mixer trimmers should be adjusted for maximum gain at 1400 kc.

MIDWEST CHASSIS

16, 18, 20-38

ALIGNMENT

Band M2 - Day Foreign Band - covers 10 Mc to 20 Mc.

This band has a fixed oscillator padder. Adjust the M2 Band oscillator trimmer at 18 Mc.
The M2 Band RF and Mixer trimmers should be adjusted for maximum gain at 18 Mc.

Band M1 - Night Foreign Band - covers 5.2 Mc to 10.4 Mc.

This band has a fixed padder. Adjust the M1 Band oscillator trimmer at 10.3 Mc.
The M1 Band RF and Mixer trimmers should be adjusted for maximum gain at 10.3 Mc.

Band L2 - Aviation Band - covers 2.7 Mc to 5.4 Mc.

Adjust the L2 Band oscillator padder at 2.9 Mc. Adjust the L2 Band oscillator trimmer at 5.3 Mc.
Repeat the above steps as necessary to obtain proper readings.
The L2 Band RF and Mixer trimmers should be adjusted for maximum gain at 5.3 Mc.

Band L1 - Police Band - covers 1.5 Mc to 3.0 Mc.

Adjust the L1 Band oscillator padder at 1.7 Mc. Adjust the L1 Band oscillator trimmer at 2.9 Mc.
Repeat the above steps as necessary to obtain proper readings.
The L1 Band RF and Mixer trimmers should be adjusted for maximum gain at 2.9 Mc.

Band E - Weather Band - covers 125 Kc to 350 Kc.

Adjust the E Band oscillator padder at 135 Kc. Adjust the E Band oscillator trimmer at 340 Kc.
Repeat the above steps as necessary to obtain proper readings.
The E Band RF and Mixer trimmers should be adjusted for maximum gain at 340 Kc.

Revised October 31, 2014

Mike Simpson