

# MANUAL OF 1950 MOST-OFTEN-NEEDED RADIO DIAGRAMS

EMERSON RADIO Model 605, Chassis 120076B

See page 43 for schematic diagram.

## ALIGNMENT INSTRUCTIONS

To position pointer, turn variable condenser fully closed and set pointer to reference mark on dial backplate at the low frequency end of the dial. Volume control should be set at maximum position. The output of the signal generator should be no higher than necessary to obtain an output reading tenante the signal input as alignment proceeds. Use an insulated alignment tool for all adjustments. Use isolation transformer if available; otherwise connect a .1 mfd. condenser in series with low side of signal generator to chassis.

### AM ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POSITION	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS	
1	.1 mfd.	High side to Pin 7 (grid) of 12BA7. Low side to chassis.	455 KC.	Broadcast	Tuning condenser fully open.	Across voice coil.	A1, A2, (Trans. T4). A3, A4, (Trans. T2).	Adjust for maximum output. Reduce dummy antenna to .001 mfd. if isolation trans. is not used.
2		Loop	1600 KC.	Broadcast	Tuning condenser fully open.	Across voice coil.	A5, (Trimmer cond. C6).	Form loop of several turns of wire. Radiate signal into receiver loop. Adjust for maximum output.
3		Loop	1400 KC.	Broadcast	Tune for max. output.	Across voice coil.	A6, (Trimmer cond. C5).	Adjust for maximum output.

### FM I-F and Disc. Alignment Using AM Signal Generator and VTVM

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POSITION	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS	
1	.01 mfd.	High side to Pin 1 (grid) of 12BA6 2nd i-f (V4). Low side to chassis.	10.7 mc. (Unmodulated)	Frequency modulation	Tuning condenser fully open.	Connect d.c. probe to point "A". Common to chassis.	A7, (Trans. T5).	Adjust for maximum output.
2	.01 mfd.	High side to Pin 1 (grid) of 12BA6 1st i-f (V3). Low side to chassis.	10.7 mc. (Unmodulated)	Frequency modulation	Tuning condenser fully open.	Connect d.c. probe to point "A". Common to chassis.	A8, A9, (Trans. T3).	Adjust for maximum output.
3	.01 mfd.	High side to Pin 2 (osc. grid) of 12BA7 conv. (V2). Low side to chassis.	10.7 mc. (Unmodulated)	Frequency modulation	Tuning condenser fully open.	Connect d.c. probe to point "A". Common to chassis.	A10, A11, (Trans. T1).	Adjust for maximum output.
4	.01 mfd.	High side to Pin 1 (grid) of 12BA6 2nd i-f (V4). Low side to chassis.	10.7 mc. (Unmodulated)	Frequency modulation	Tuning condenser fully open.	Connect d.c. probe to point "B". Common to chassis.	A12, (Trans. T6).	Adjust for maximum output.
5	.01 mfd.	"	10.7 mc. (Unmodulated)	Frequency modulation	Tuning condenser fully open.	Connect d.c. probe to point "C". Common to chassis.	A13, (Trans. T6).	Adjust for zero output. Continue with FM r-f alignment.

FM I-F AND DISC. ALIGNMENT USING SWEEP SIGNAL GENERATOR AND OSCILLOSCOPE. Use frequency modulated signal, with 60 cycle modulation and 450 kc sweep. Use 120 cycle sawtooth sweep voltage in oscilloscope for horizontal deflection.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POSITION	RADIO DIAL SETTING	CONNECT OSCILLOSCOPE	ADJUST	REMARKS	
1	.01 mfd.	High side to Pin 1 (grid) of 12BA6 1st i-f (V3). Low side to chassis.	10.7 mc. (Unmodulated).	Frequency modulation	Tuning condenser fully open.	Vertical input to Point "A". Ground to chassis.	A7, A8, A9, (Trans. T5 and T3).	Adjust for maximum output (height) and symmetry as per i-f alignment curve shown (page 43).
2	.01 mfd.	High side to Pin 2 (osc. grid) of 12BA7 conv. (V2). Low side to chassis.	10.7 mc. (Unmodulated).	Frequency modulation	Tuning condenser fully open.	Vertical input to Point "A". Ground to chassis.	A10, A11, (Trans. T1).	Adjust for maximum output (height) and symmetry as per i-f alignment curve shown (page 43).
3	.01 mfd.	High side to Pin 1 (grid) of 12BA6 2nd i-f (V4). Low side to chassis.	10.7 mc. (Unmodulated).	Frequency modulation	Tuning condenser fully open.	Vertical input to Point "C". Ground to chassis.	A12, A13, (Trans. T6).	Alternately adjust A12 for maximum amplitude and A13 for maximum straightness of cross-over lines, with cross-over occurring at center of pattern as per discriminator alignment curve (page 43). Continue with FM r-f alignment.

### FM R-F ALIGNMENT

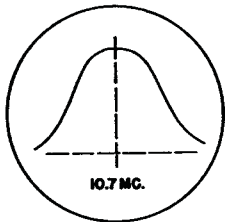
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POSITION	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS	
1	150 ohm resistor in series with each gen. lead.	High side to FM ant. term. Low side to chassis.	108.0 mc. (Unmodulated).	Frequency modulation	Tuning condenser fully open (108.0 mc.)	Connect d.c. probe to point "A". Common to chassis.	A14 (Trimmer cond. C8).	Adjust for maximum output.
2	"	"	106.0 mc.	Frequency modulation	Tune for maximum output.	"	A15 (Trimmer cond. C7).	Adjust for maximum output.

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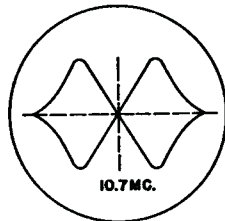
## EMERSON MODEL: 605

Alignment information given on page 42.

CHASSIS MODEL: 120076B



I.F. AND LIMITER



DISCRIMINATOR

### Voltage and Resistance Readings

In charts below, voltage readings are in D.C. volts, resistance in ohms, unless otherwise specified. D.C. measured at 20,000 ohms/volt, A.C. at 1000 ohms/volt. Values measured from socket pin to common negative. Line at 117 v., volume at maximum, no signal applied.

### VOLTAGE READINGS

SYMBOL	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9
V1	12BA6	0	0	80AC	67AC	76*	78*	.8*	—	—
V2	12BA7	100	-5	0	67AC	55AC	0	-5	0	95
V3	12BA6	-2	0	55AC	43AC	93	98	0	—	—
V4	12BA6	0	0	43AC	30AC	70*	70*	.6*	—	—
V5	12AU6	-4	0	30AC	18AC	50	50	0	—	—
V6	19T8	-5	-4	5.5*	18AC	0	-8	0	-.5	33
V7	35B5	0	6	117AC	80AC	132	100	NC	—	—

NC denotes "no connection"; \* for bandswitch in FM position only.

### RESISTANCE READINGS

SYMBOL	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9
V1	12BA6	0	0	16	12	65K*	65K*	66	—	—
V2	12BA7	65K	24K	1	56	75	0	0	0	65K
V3	12BA6	2.8 meg.	0	56	44	65K	65K	0	—	—
V4	12BA6	68	0	44	32	65K	65K	68	—	—
V5	12AU6	100K	0	32	20	65K	65K	0	—	—
V6	19T8	90K	90K	150K	20	0	1 meg.	0	4 meg.	550K
V7	35B5	400K	190	112	80	65K	65K	NC	—	—

K—Kilohms; meg.—megohms.

