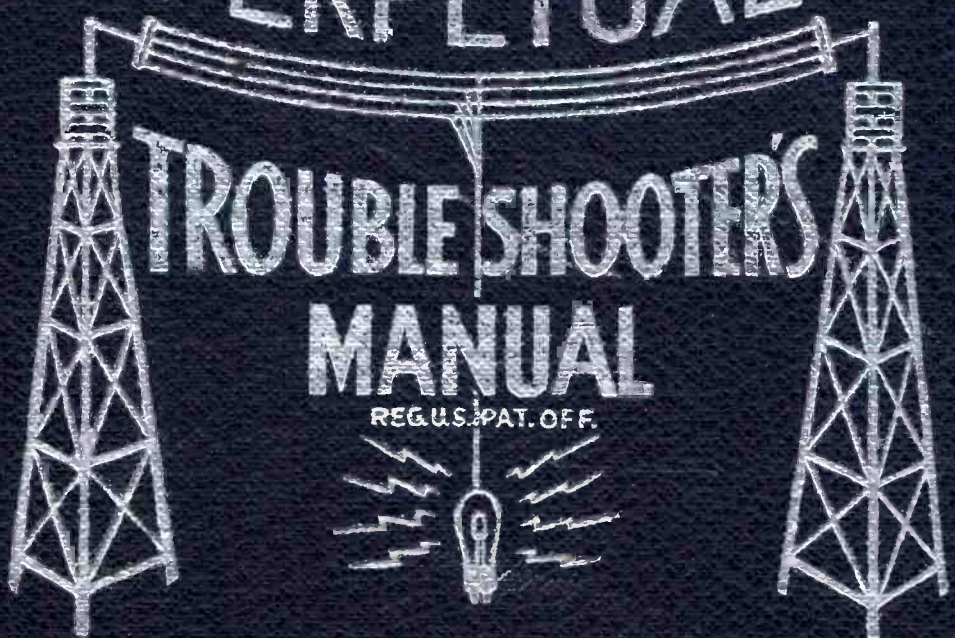
VOLUME XVII

PERPETUAL TROUBLE SHOOTER'S MANUAL

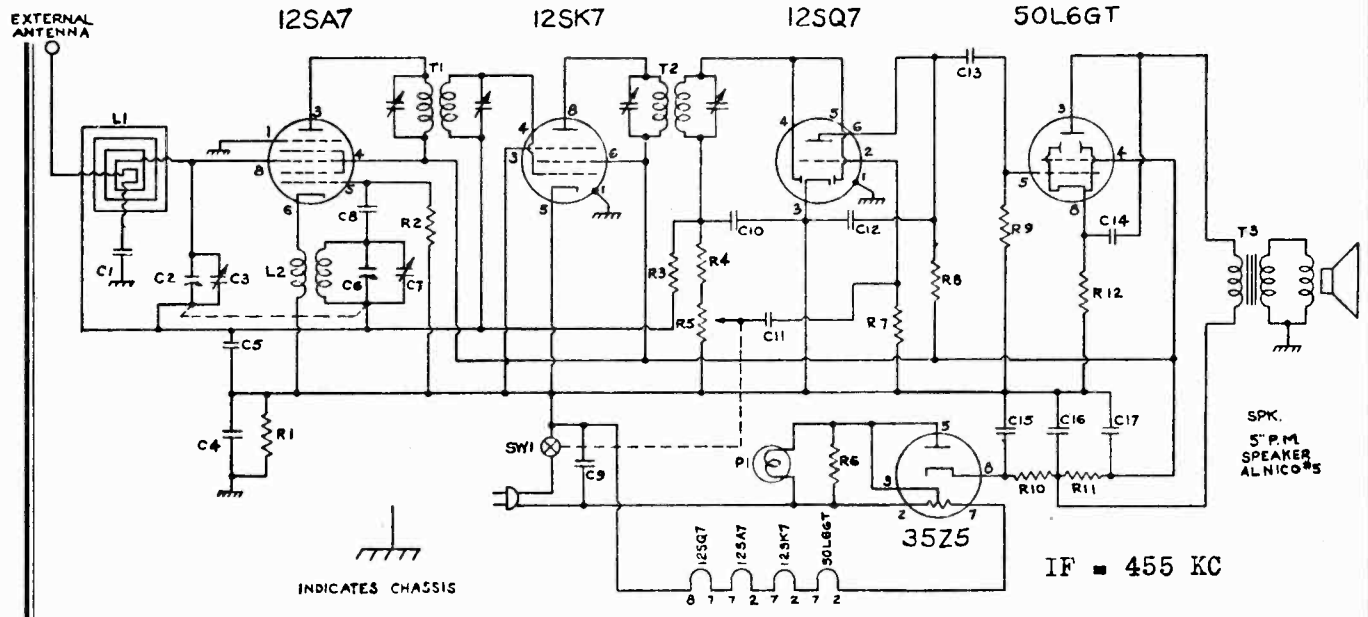


REG. U.S. PAT. OFF.

JOHN F. RIDER

WALGREEN CO.

Model 505



Wiring Diagram R-7000

NOTE: Specify Model and Serial Numbers for all Replacement Parts

REPLACEMENT PARTS

CAPACITORS

	Part No.
C1 .001 mf 600 V	12004-001
C2 Ant. Section Gang C3 Ant. Trimmer	R-1055
C4 .1 mf 200 V	12000-1
C5 .05 mf 200 V	12000-05
C6 Osc. Section Gang C7 Osc. Trimmer	R-1055
C8 50 mmf Mica	12010-50
C9 .05 mf 400 V	12002-05
C10 250 mmf Mica	12010-250
C11 .01 mf 400 V	12002-01
C12 250 mmf Mica	12010-250
C13 .01 mf 400 V	12002-01
C14 .03 mf 400 V	12002-03
C15 20 mf 150 V C16 40 mf 150 V	R-1241-1
C17 40 mf 150 V	12101-40

COILS AND TRANSFORMERS

	Part No.
L1 Loop	R-1237
L2 Osc. Trans. Coil	R-1033
T1 1st I. F. Trans.	R-1025-3
T2 2nd I. F. Trans.	R-1025-4
T3 Output Trans. Assem.	R-1040-1

RESISTORS

	Part No.
R1 470000 ohm ½ W	11005-474
R2 33000 ohm ½ W	11005-333
R3 2.2 Meg ½ W	11005-225
R4 47000 ohm ½ W	11005-473
R5 SW1—500000 ohm V. C.	R-1043-1
R6 150 ohm ½ W	11005-151
R7 6.8 Meg ½ W	11005-685
R8 220000 ohm ½ W	11005-224
R9 470000 ohm ½ W	11005-474
R10 330 ohm 1 W	11008-331
R11 1200 ohm 1 W	11008-122
R12 150 ohm ½ W	11005-151

MISCELLANEOUS

	Part No.
Spk. Speaker	R-1046
Dial Glass	R-1342
Dial Pointer	R-1255-1
Diffusion Screen	R-1194
Tuning Shaft	R-1160
Cabinet	R-5011
Knob	R-1032

Specification:

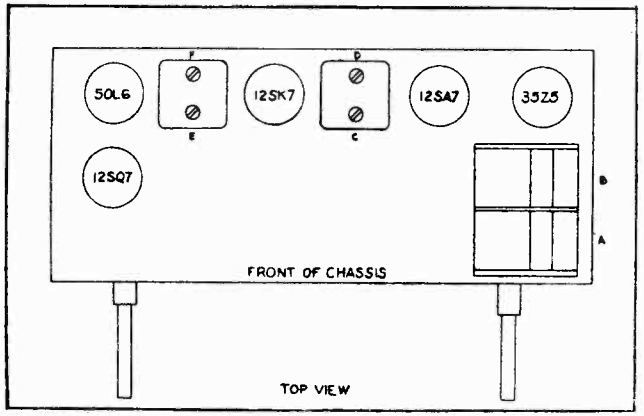
Power Supply
105 to 125 Volts AC or DC

Power Consumption
35 Watts

Tuning Range
540 KC to 1720 KC

Circuit

Superheterodyne — Built in Antenna with provision for connecting external antenna. Do not connect ground to receiver.



ALIGNMENT PROCEDURE

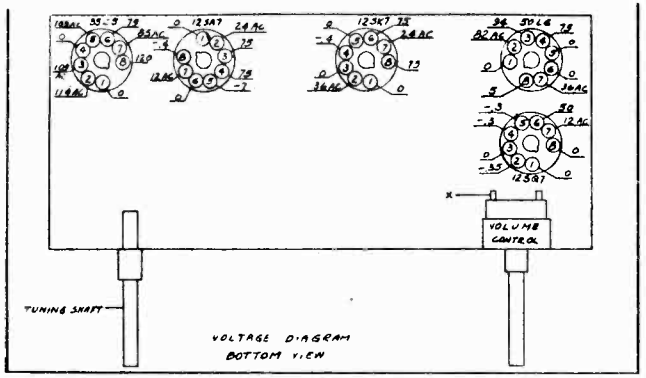
Allow receiver to warm up thoroughly before alignment. Turn volume control to maximum. Connect output meter to voice coil terminals.

455 IF ALIGNMENT

Tune receiver to high end of dial.
Connect signal generator to antenna through .0005 mf condenser,
Set generator to 455 KC, tune trimmers E—F—C—D to maximum output.
Always use lowest input from signal generator that provides good output indication.

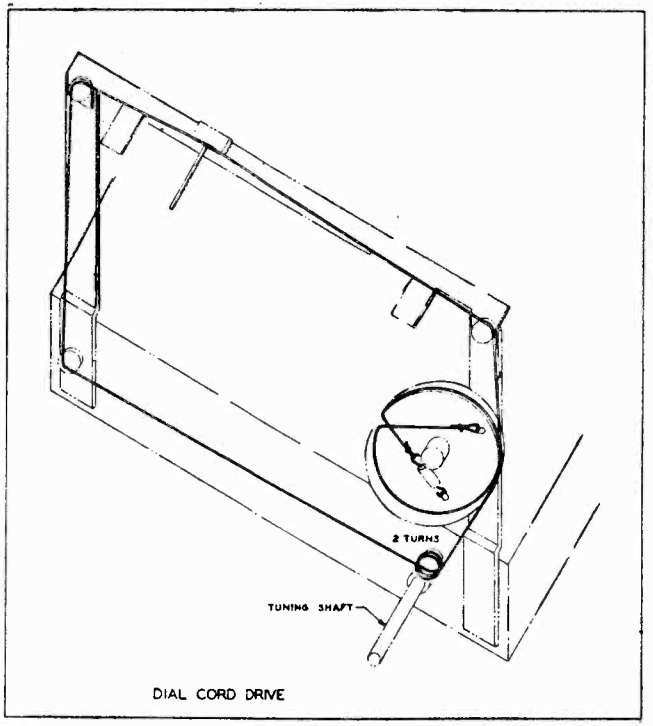
540 KC to 1720 KC ALIGNMENT

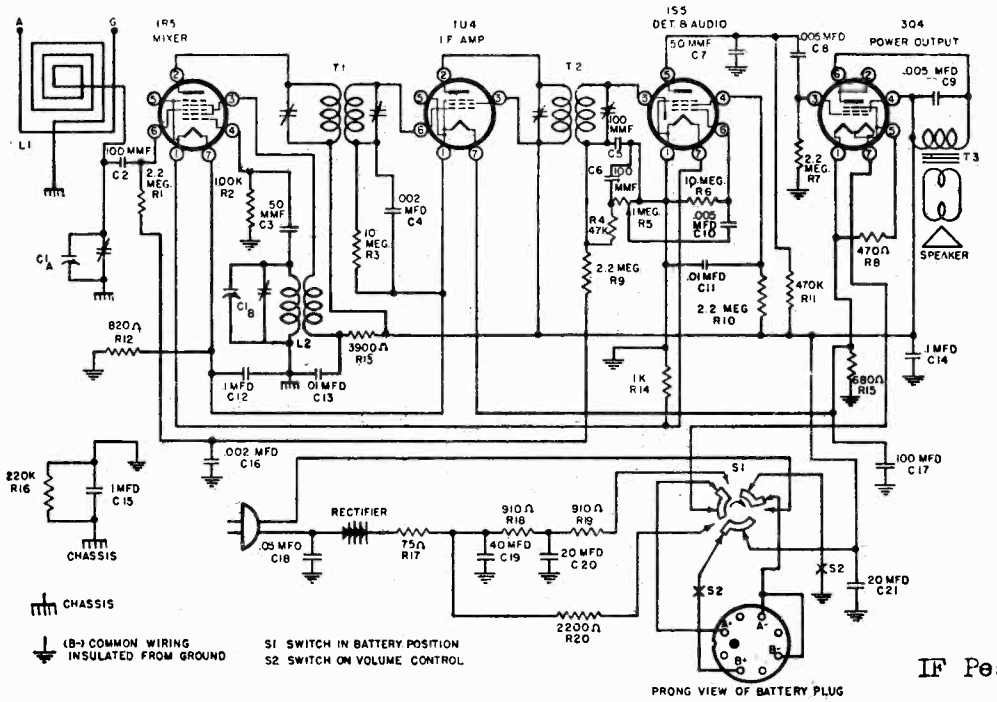
Loosely couple the signal generator to receiver by placing S. G. output lead near the pick-up antenna. (Nof connected to it.)
Set generator and receiver to 1400 KC.
Adjust trimmer "A" to signal.
Adjust trimmer "B" to maximum output.
Decrease signal generator output as receiver alignment provides more output to meter.



VOLTAGE DATA

Measured at 115 Volt line.
Volume control in maximum position.
Dial tuned to low frequency end — no signal.
Reading taken between tube socket and B—bus—point x on volume control.
Voltages measured with high resistance voltmeter, 20,000 ohm per volt preferable.





IF Peak = 455 KC

Code	Part No.	DESCRIPTION	Code	Part No.	DESCRIPTION	Code	Part No.	DESCRIPTION
C1A, C1B	B19-188	Variable Condenser	R4	A60-685	47K Ohm ½ watt 20% Resistor		10-470	Antenna Loading Coil
C2, C5, C6	A15-188	100 MMF Mica Condenser	R8	A60-707	470 Ohm ½ watt 20% Resistor		A52-197	Knob, Tuning
C3, C7	A15-175	50 MMF Mica Condenser	R11	A60-662	470K Ohm ½ watt 20% Resistor		A52-198	Knob, Volume
C4, C16	A16-155	.002 MFD. 600 volt Condenser	R12	A60-709	820 Ohm ½ watt 10% Resistor		A52-196	Knob, Battery—AC-DC
C8, C9, C10	A16-166	.005 MFD. 150 volt Condenser	R13	A60-710	3900 Ohm ½ watt 10% Resistor		B47-496	Dial Scale
C11, C13	A16-165	.01 MFD. 200 volt Condenser	R14	A60-675	1000 Ohm ½ watt 20% Resistor		A52-63	Dial Pointer
C12, C15	A16-160	.1 MFD. 400 volt Condenser	R15	A60-708	680 Ohm ½ watt 10% Resistor		A83-391	Selenium Rectifier
C14	A16-157	.1 MFD. 200 volt Condenser	R16	A60-667	220K Ohm ½ watt 20% Resistor		A75-60	Tuning Shaft
C18	A16-158	.05 MFD. 400 volt Condenser	R17	A60-712	75 Ohm 3 watt 5% Resistor		A88-27	AC Socket
C17	A16-281	100 MFD. 25 volt Electrolytic Condenser	R18, R19	A60-713	1820 Ohm 10 watt 5% Resistor (each section 910 ohms)		A58-28	Socket for AC cord
C19		40 MFD. 150 volt Electrolytic Condenser				S1	B69-173	Switch, Battery—AC-DC
C20, C21		20 MFD. 150 volt Electrolytic Condenser	R20	A60-714	2200 Ohm ½ watt 10% Resistor	T3	A80-228	Output Transformer
R1, R7, R9, R10	A60-684	2.2 Megohm ½ watt 20% Resistor	L2	B10-460	Oscillator Coil		B78-350	Speaker, 5" P M
R2	A60-671	100K Ohm ½ watt 20% Resistor	T1	C10-462	1st I. F. Transformer		A45-119	Plug, Battery
R3, R6	A60-663	10 Megohm ½ watt 20% Resistor	T2	C10-463	2nd I. F. Transformer		D42-406	Cabinet
			R5	A24-170	Volume Control and Switch		D40-140	Escutcheon and Grille

The radio is shipped from the factory minus the battery. One combination A. B. Battery Pack is required, having 90 volts "B" and 7½ volts "A," such as Ray-o-vac No. AB-994, General No. 60A6F6/5, Burgess No. D5A60 or Eveready No. 753.

MODEL 11011 WARWICK MFG. CORP.

DESCRIPTION

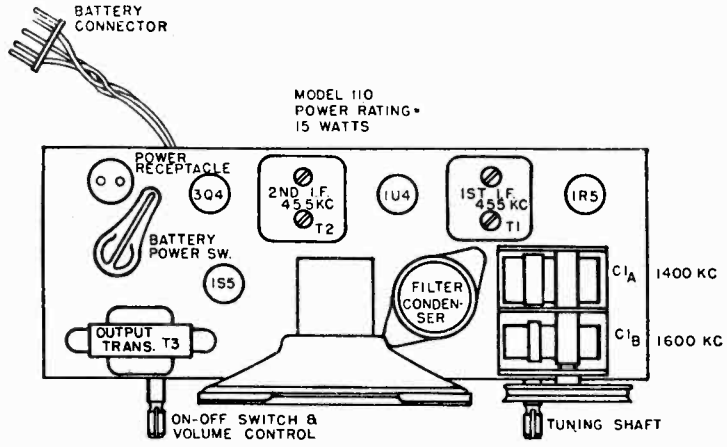
Model 11011 is a 4-tube superheterodyne portable receiver designed for operation on a 117 volt 50-60 cycle, 117 volt DC power supply or from a self-contained battery.

This receiver covers the frequency range from 535 kilocycles to 1600 kilocycles (K.C.).

The tubes used are:—

1R5—Mixer, Oscillator
1U4—I. F. Amplifier
1S5—Detector and first Audio
3Q4—Power Output

No rectifier tube is required as a Selenium rectifier is used when operating on A. C. current.



ALIGNMENT PROCEDURE

The following alignment procedure is for use only by competent servicemen having the proper equipment.

The alignment should be made with volume control fully on, and the output from the signal generator as low as possible, to prevent A. V. C. action from interfering with correct alignment.

With the output meter connect across the voice coil of the speaker, the output meter reading for 50 milliwatts is .4 volts using a signal which is modulated 400 c.p.s.

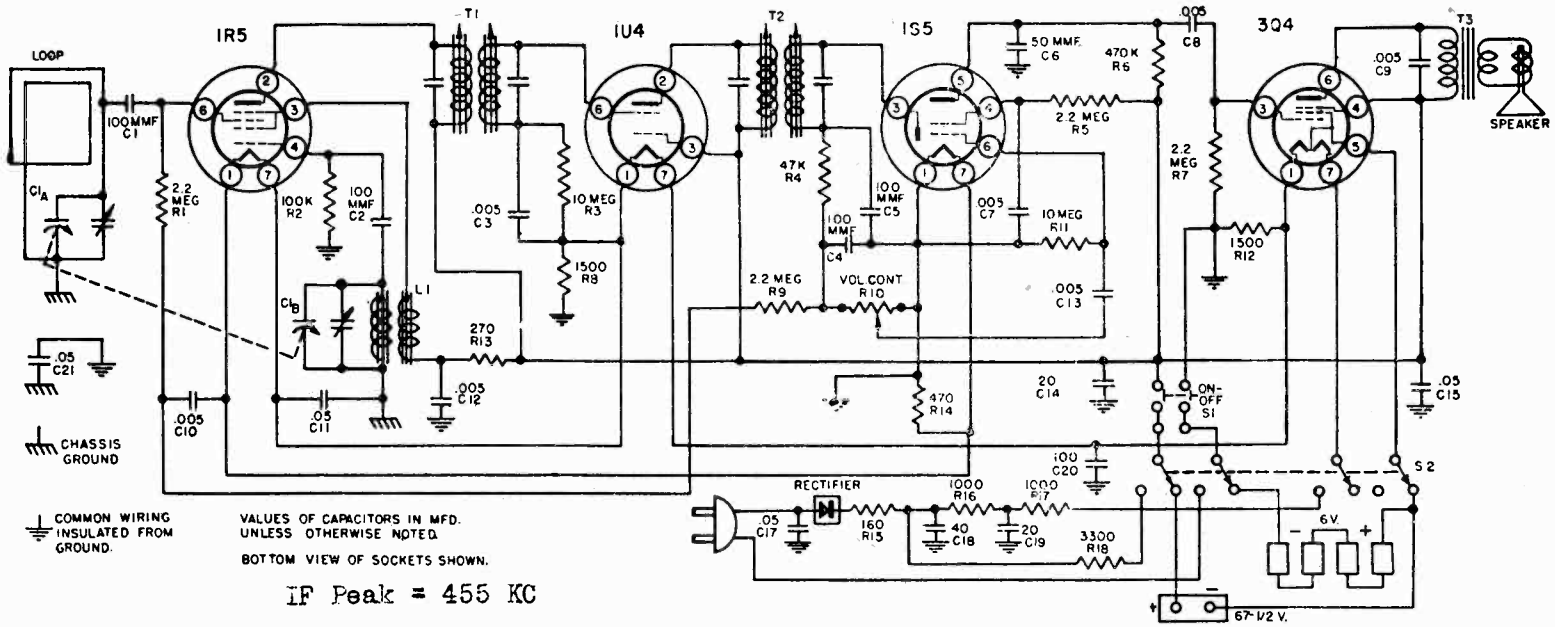
Adjust all trimmers for maximum output. Repeat alignment procedure given below as a final check.

CAUTION: This is an A.C.-D. C. receiver and if alignment is made with the receiver connected to 117 volts A. C. or D. C., it is necessary to isolate the signal generator or the receiver from the line by use of a transformer, or place a .2 M. F. D. condenser in both test leads of the Signal Generator.

Position of Variable	Generator Frequency	Dummy Ant. Mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Fully open	455 KC	.1	*1R5 Grid (Stator of C1A)	T2	Output I. F.
Fully open	455 KC	.1	*1R5 Grid (Stator of C1A)	T1	Input I. F.
Fully open	1600 KC	.00025	**Ant. lead (Stapled to Cabinet)	C1B	Oscillator
Tune in signal from generator	1400 KC	.00025	**Ant. lead (Stapled to Cabinet)	C1A	Antenna

*Connect ground lead of signal generator to Common "B."
**Connect ground lead of signal generator to ground wire stapled to cabinet.

If it should become necessary to re-adjust the loop antenna loading coil tune in a weak station, between 600 and 650 Kilocycles, and adjust for maximum output.



IF Peak = 455 KC

CODE NO.	PART NO.	DESCRIPTION
C1, C2, C4, C5	A15-190	100 MMF Mica Condenser
C1A, C1B	B19-190	Variable Condenser
C12, C13 C3, C7, C8, C9, C10,	A16-166	.005 MFD 150 volt Condenser
C6	A15-191	50 MMF Mica Condenser
C11, C17, C21	A16-179	.05 MFD 400 volt Condenser
C14, C19, C18, C20	A18-282	20 MFD 150 volt electrolytic Condenser 40 MFD 150 volt Electrolytic Condenser 100 MFD 25 volt electrolytic Condenser
C15	A16-170	.05 MFD 200 volt Condenser
R1, R5, R7, R9	A60-726	2.2 Megohm ½ watt Resistor
R2	A60-727	100K Ohm ½ watt Resistor
R3, R11	A60-728	10 Megohm ½ watt Resistor
R4	A60-730	47K Ohm ½watt Resistor
R6	A60-731	470K Ohm ½ watt Resistor
R8, R12	A60-729	1500 Ohm ½ watt Resistor
R10	A24-172	1 Megohm Volume Control
R13	A60-723	270 Ohm ½ watt Resistor
R14	A60-722	470 Ohm ½ watt Resistor
R15	A60-725	160 Ohm 3 watt Resistor

CODE NO.	PART NO.	DESCRIPTION
R16, R17	A60-713	2000 Ohm 10 watt Resistor (1000 Ohm each section)
R18	A60-724	3300 Ohm 1 watt resistor
T1, T2	C10-475	I. F. Transformer
T3	A80-231	Output Transformer
L1	B10-477	Oscillator Coil
	S84-112	Cover Assembly for "A" Batteries
	B52-218	Knob, On-off Switch
	A83-391	Selenium Rectifier
	B79-353	P.M. Speaker
	A69-174	AC-DC—Battery Switch
	A69-175	On-off Switch
	A76-34	Terminal for "B" Battery
	B23-154	Line Cord
	D21-108	End Cap for Handle
	B83-442	Handle
	C52-216	Knob, Tuning
	B52-217	Knob, Volume Control
	S84-126	Front Cover Assembly for Case, with Loop
	S84-111	Hub and Pointer Assembly
	S84-128	Rear Cover Assembly for Case

DESCRIPTION

Model 11411 is a 4-tube superheterodyne radio receiver designed for use on 117 volt AC-DC current or from self-contained batteries.

This receiver covers the frequency range from 545 kilocycles to 1600 kilocycles (K.C.).

The tubes used are:—

1R5—Mixer, Oscillator
1S5—Detector and first Audio
1U4—I.F. Amplifier
3Q4—Power output

No rectifier tube is required as a Selenium rectifier is used when operating on A.C. current.

ALIGNMENT PROCEDURE

The following alignment procedure is for use only by competent servicemen having the proper equipment.

The alignment should be made with volume control fully on, and the output from the signal generator as low as possible, to prevent A.V.C. action from interfering with correct alignment.

With the output meter connected across the voice coil of the speaker; the output meter reading for 50 milliwatts is .4 volts using a signal which is modulated 400 c.p.s.

Adjust all trimmers for maximum output. Repeat alignment procedure given below as a final check.

For alignment points refer to Figure No. 2.

CAUTION: This is an A.C.-D.C. receiver and if alignment is made with the receiver connected to 117 volts A.C. or D.C., it is necessary to isolate the signal generator or the receiver from the line by use of a transformer, or place a .2 M.F.D. condenser in both test leads of the Signal Generator.

Position of Variable	Generator Frequency	Dummy Ant. Mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Fully open	455 KC	.1	*1R5 Grid (Stator of C1A)	T2	Output I.F.
Fully open	455 KC	.1	*1R5 Grid (Stator of C1A)	T1	Input I.F.
Fully open	1600 KC	.00025	*1R5 Grid (Stator of C1A)	C1B	Oscillator
Tune in signal from generator	1400 KC	—	Loosely coupled to loop	C1A	Antenna
**Tune in signal from generator	600 KC	—	Loosely coupled to loop	L1	600 KC Padder

*Connect ground lead of signal generator to chassis.

**When making this adjustment the variable should be rocked back and forth.

INSTALLATION

This receiver is shipped from the factory minus the batteries. To install the batteries, open the back cover of the case and place them in their proper positions. (Figure No. 2 clearly illustrates the correct position for the batteries). The batteries required are one 67-½ volt "B" battery such as Eveready No. 467, Burgess No. XX45, Ray-O-Vac No. 4367 or similar battery of the same voltage and size. The "B" battery connections are of the snap-on type and so constructed that they can only be installed in the correct position. Four No. 2 standard flash light dry cells are required for "A" batteries.

CAUTION: Be sure the "A" batteries are placed exactly as shown in Figure No. 2 otherwise the receiver will not operate.

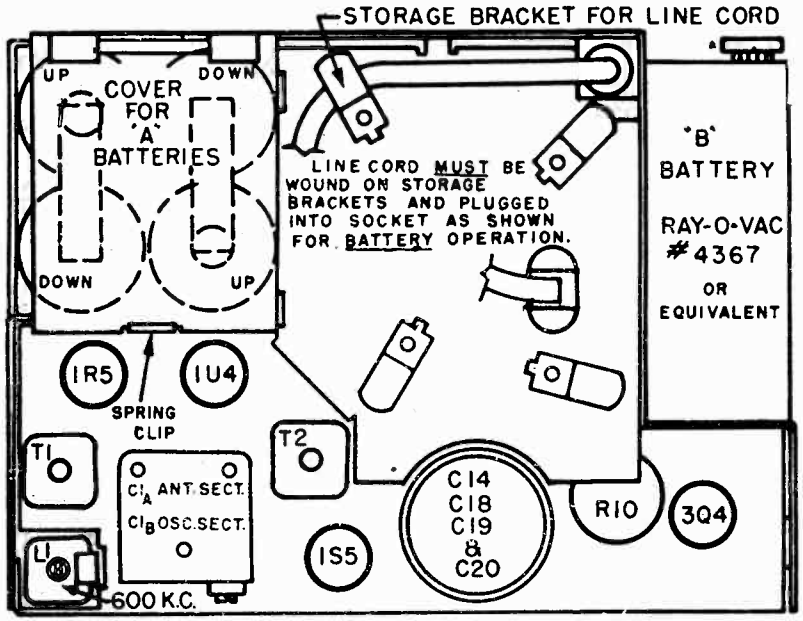
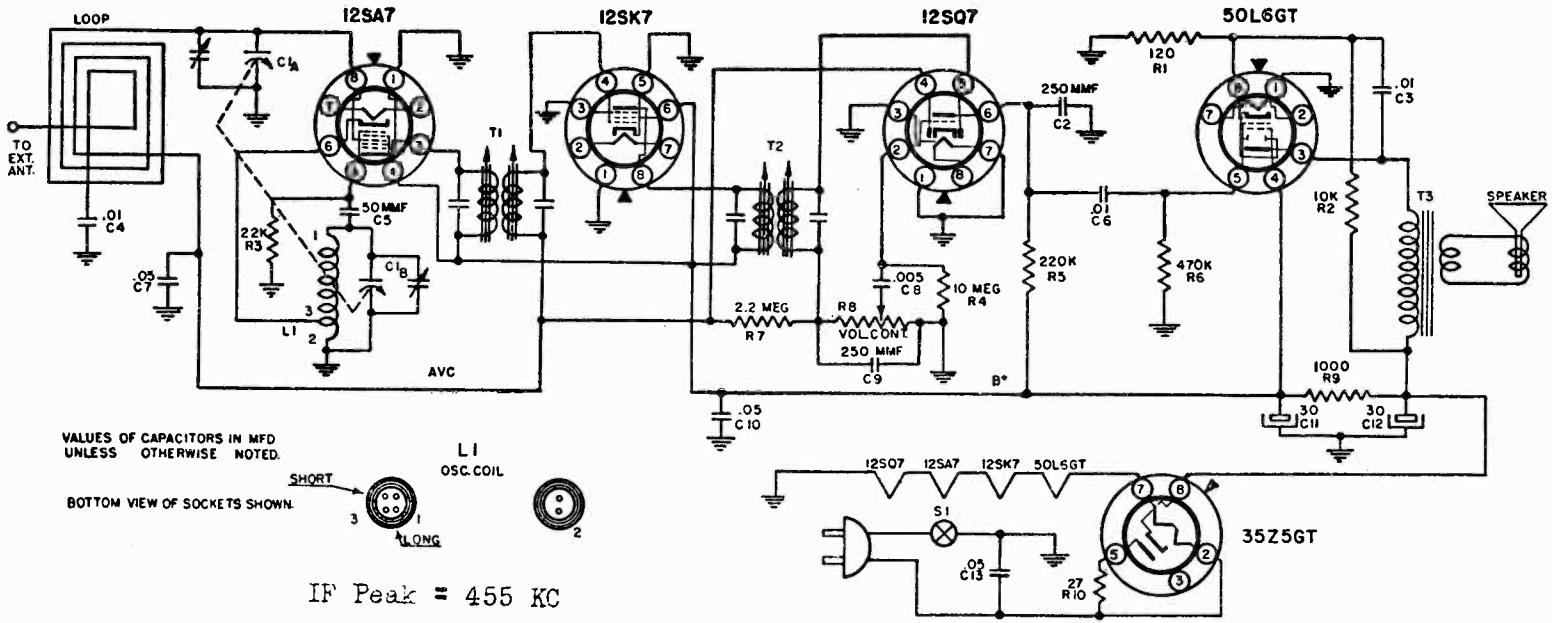


FIG. 2 PICTORIAL DIAGRAM



IF Peak = 455 KC

PARTS LIST

CODE	PART NO.	DESCRIPTION
C1A, C1B	19-173	Variable Condenser
C2, C9	A-15-176	250 MMFD. Mica Condenser
C3, C4, C6	A16-156	.01 MFD. 400 volt Condenser
C5	A15-175	50 MMFD. Mica Condenser
C7, C10	A16-152	.05 MFD. 200 volt Condenser
C8	A16-153	.005 MFD. 600 volt Condenser
C11, C12	B18-283	30x30 MFD. 150 volt Dual Electrolytic Condenser
C13	A16-158	.05 MFD. 400 volt Condenser
R1	A60-702	120 Ohm ½ watt Resistor
R2	A60-698	10K Ohm 1 watt Resistor
R3	A60-659	22K Ohm ½ watt Resistor
R4	A60-663	10 Megohm ½ watt Resistor
R5	A60-667	220K Ohm ½ watt Resistor
R6	A60-662	470K Ohm ½ watt Resistor
R7	A60-684	2.2 Megohm ½ watt Resistor
R8	24-157	Volume Control, 1 Megohm
R9	A60-732	1000 Ohm 1 watt Resistor
R10	A60-690	27 Ohm ½ watt Resistor
T1	A10-478	1st I. F. Transformer
T2	A10-479	2nd I. F. Transforer
T3	A80-233	Output Transformer
L1	B10-480	Oscillator Coil
	48-34	Dial Crystal
	58-37	Dial Pointer
	79-316	4-inch P.M. Speaker
	C83-448	Cabinet Back
	B82-46	Loop Antenna
	42-320W	Cabinet, Molded Walnut
	A42-420	Cabinet, Molded Ivory
	67-462	Dial Scale
	52-165W	Knob, Walnut
	A52-222	Knob, Ivory

Model 11801 is a 5 tube (including rectifier) superheterodyne radio receiver designed for use on 117 volts 60 cycle AC or 117 volts DC power supply.

The tubes used are:—

1—12SA7 Oscillator Converter
1—12SK7 I.F. Amplifier
1—35Z5GT Power Rectifier
1—12SQ7 AVC Detector and 1st Audio
1—50L6GT Power Output

This receiver covers the frequency range from 540 kilocycles to 1630 kilocycles (KC).

ALIGNMENT PROCEDURE

The following alignment procedure is for use only by competent servicemen having the proper equipment.

The alignment should be made with volume control fully on, and the output from the signal generator as low as possible, to prevent A.V.C. action from interfering with correct alignment.

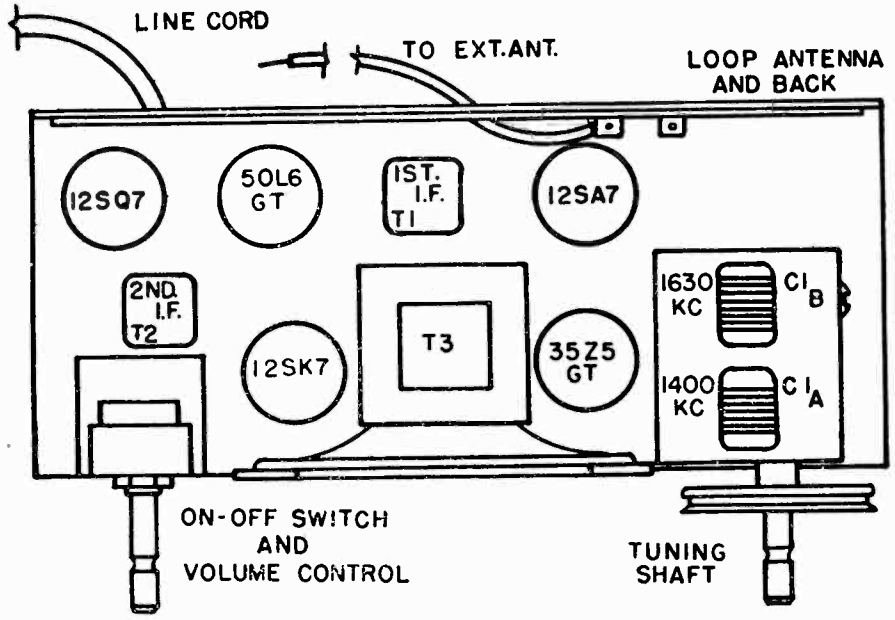
With the output meter connected across the voice coil of the speaker, the output meter reading for 50 milli-watts is .4 volts using a signal which is modulated 400 c.p.s.

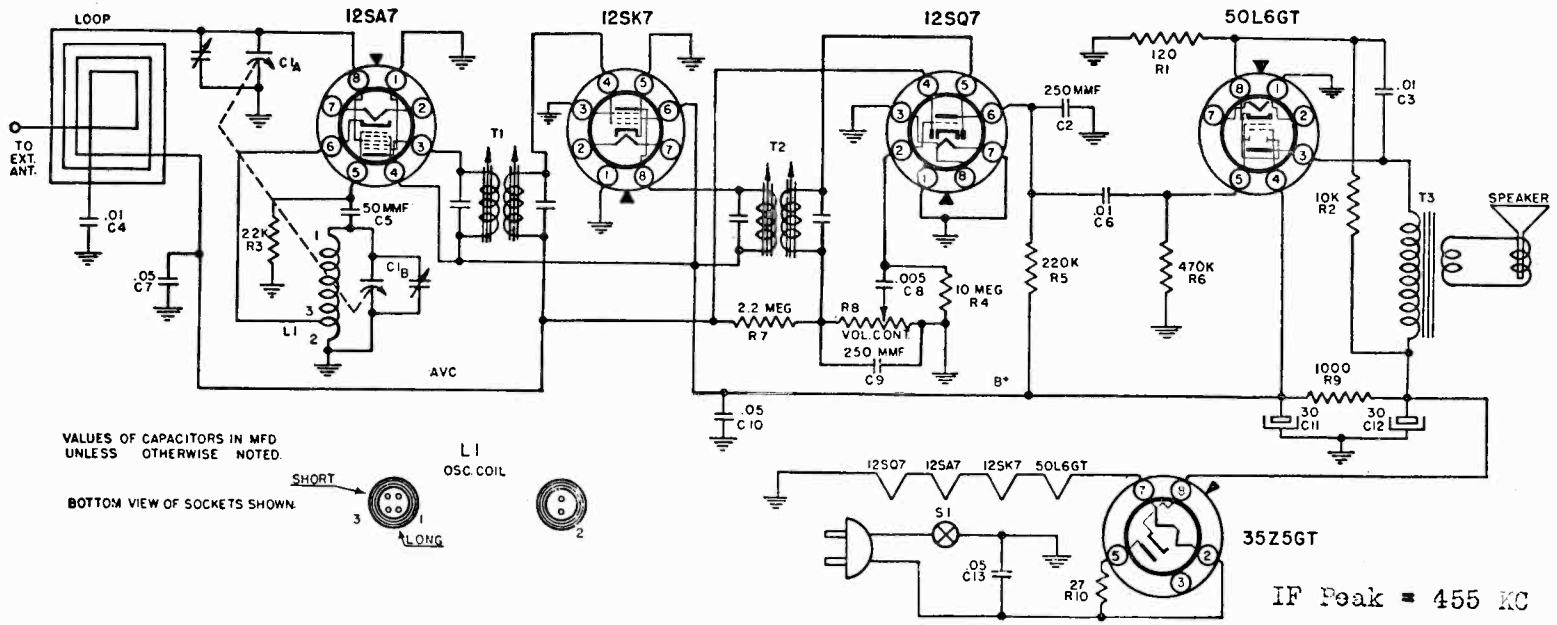
Adjust all trimmers for maximum output. Repeat alignment procedure given below as a final check.

CAUTION: This is an A.C.-D.C. receiver and when aligning the set it is necessary to isolate the Signal Generator or the Receiver from the line by use of a transformer, or place a .2 MFD. condenser in both test leads of the Signal Generator.

Position of Variable	Generator Frequency	Dummy Ant. Mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Fully open	455 KC	.1	*12SA7 Grid (Stator of C1A)	T1	Input I.F.
Fully open	455 KC	.1	*12SA7 Grid (Stator of C1A)	T2	Output I.F.
Fully open	1630 KC	.00025	*12SA7 Grid (Stator of C1A)	C1B	Oscillator
Tune in signal from generator	1400 KC	.00025	*Ant. lead from loop	C1A	Antenna

*Connect ground lead of signal generator to chassis.





PARTS LIST

CODE	PART NO.	DESCRIPTION
C1A, C1B	19-173	Variable Condenser
C2, C9	A15-176	250 MMFD. Mica Condenser
C3, C4, C6	A16-156	.01 MFD. 400 volt Condenser
C5	A15-175	50 MMFD. Mica Condenser
C7, C10	A16-152	.05 MFD. 200 volt Condenser
C8	A16-153	.005 MFD. 600 volt Condenser
C11, C12	B18-283	30 x 30 MFD. 150 volt Dual Electrolytic Condenser
C13	A16-158	.05 MFD. 400 volt Condenser
R1	A60-702	120 Ohm ½ watt Resistor
R2	A60-698	10K Ohm 1 watt Resistor
R3	A60-659	22K Ohm ½ watt Resistor
R4	A60-663	10 Megohm ½ watt Resistor
R5	A60-667	220K Ohm ½ watt Resistor
R6	A60-662	470K Ohm ½ watt Resistor
R7	A60-684	2.2 Megohm ½ watt Resistor
R8	24-157	Volume Control, 1 Megohm
R9	A60-732	1000 Ohm 1 watt Resistor
R10	A60-690	27 Ohm ½ watt Resistor
T1	A10-475	1st I. F. Transformer
T2	A10-479	2nd I. F. Transformer
T3	A80-233	Output Transformer
L1	B10-480	Oscillator Coil
	79-316	4" P.M. Speaker
	67-462	Dial Scale
	48-34	Dial Crystal
	58-37	Dial Pointer
	B82-46	Loop Antenna
	A42-432	Cabinet, Ivory
	C42-430	Cabinet, Walnut
	A52-222	Knob, Ivory
	A52-244	Knob, Maroon
	C83-500	Cabinet Back
	A36-123	Grille, Ivory
	C36-122	Grille, Maroon

Model 11802 is a 5 tube (including rectifier) superhetrodyne radio receiver designed for use on 117 volts 60 cycle AC or 117 volts DC power supply.

The tubes used are:—

1—12SA7 Oscillator Converter
1—12SK7 I.F. Amplifier
1—35Z5GT Power Rectifier
1—12SQ7 AVC Detector and 1st Audio
1—50L6GT Power Output

This receiver covers the frequency range from 540 kilocycles to 1630 kilocycles (KC).

ALIGNMENT PROCEDURE

The following alignment procedure is for use only by competent servicemen having the proper equipment.

The alignment should be made with volume control fully on, and the output from the signal generator as low as possible, to prevent A.V.C. action from interfering with correct alignment.

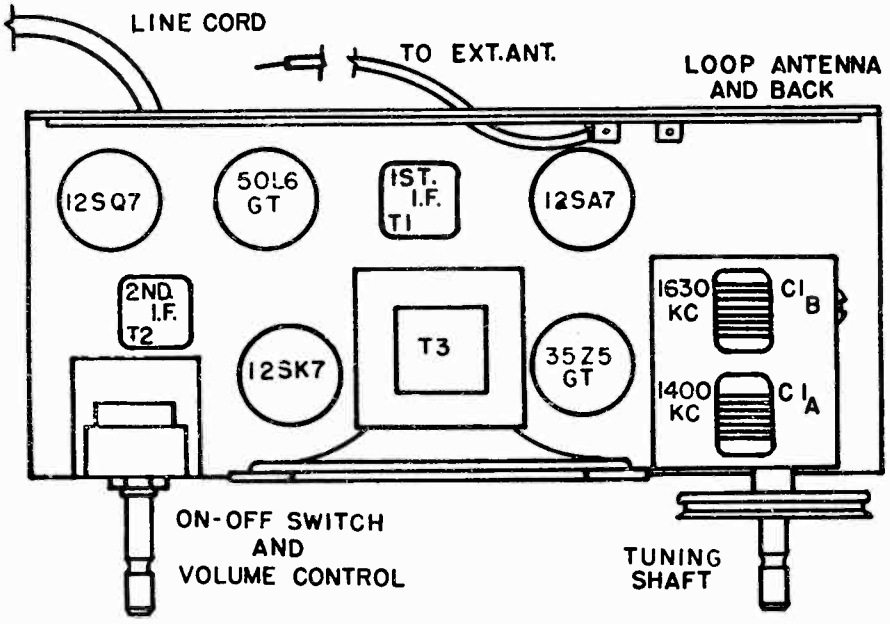
With the output meter connected across the voice coil of the speaker, the output meter reading for 50 milli-watts is .4 volts using a signal which is modulated 400 c.p.s.

Adjust all trimmers for maximum output. Repeat alignment procedure given below as a final check.

CAUTION: This is an A.C.-D.C. receiver and when aligning the set it is necessary to isolate the Signal Generator or the Receiver from the line by use of a transformer, or place a .2 MFD. condenser in both test leads of the Signal Generator.

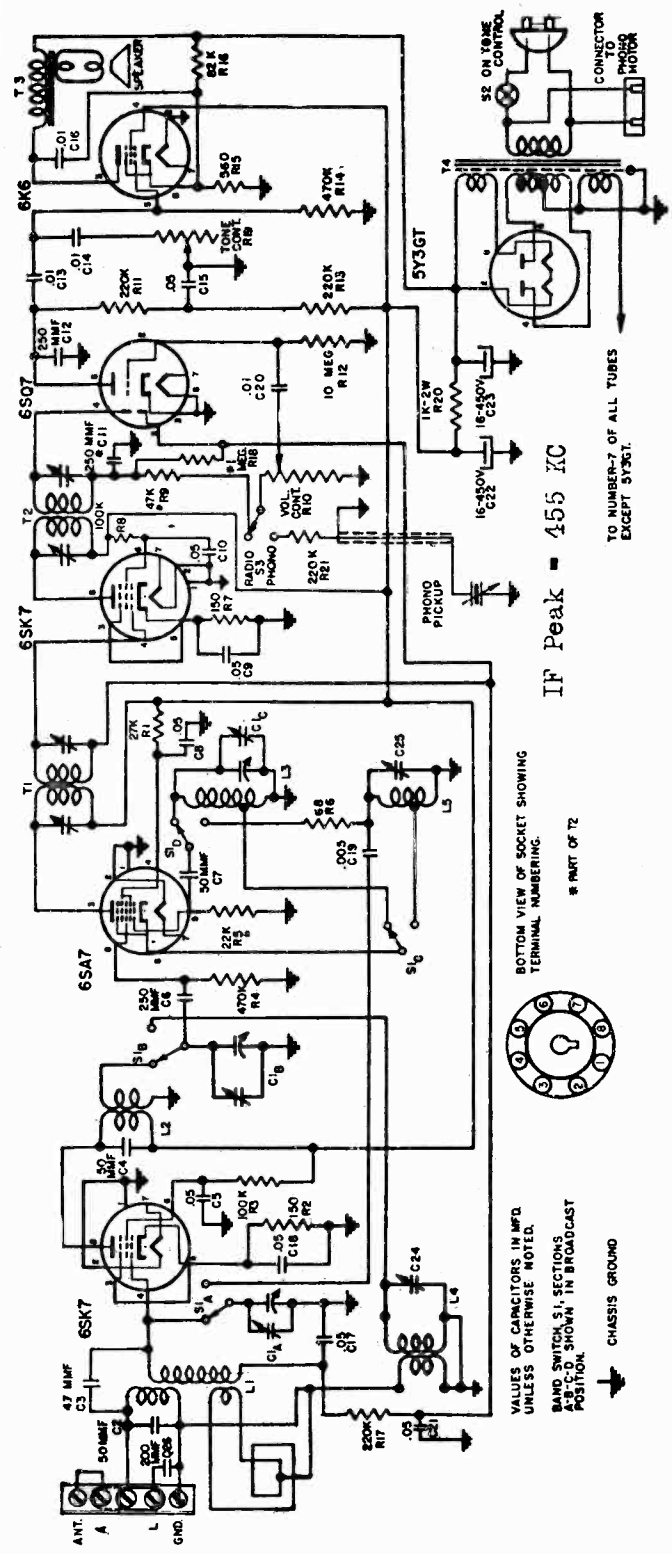
Position of Variable	Generator Frequency	Dummy Ant. Mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Fully open	455 KC	.1	*12SA7 Grid (Stator of C1A)	T1	Input I.F.
Fully open	455 KC	.1	*12SA7 Grid (Stator of C1A)	T2	Output I.F.
Fully open	1630 KC	.00025	*12SA7 Grid (Stator of C1A)	C1B	Oscillator
Tune in signal from generator	1400 KC	.00025	*Ant. lead from loop	C1A	Antenna

*Connect ground lead of signal generator to chassis.



WARWICK MFG. CORP.

MODELS 12310W, 12312M

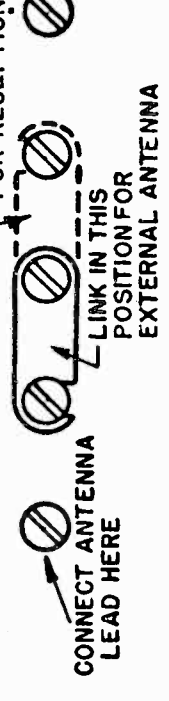


This receiver covers the standard broadcast frequency range, 535 to 1725 Kilocycles (K.C.) and the short wave frequency range from 6 to 18.2 Megacycles (M.C.).

The tubes used are:

6SK7—R. F. Amplifier
6SA7—Mixer—Osc.
6SK7—I. F. Amplifier
6SQ7—Det. AVC—Audio
6K6 GT—Power Output
5Y3 GT—Rectifier

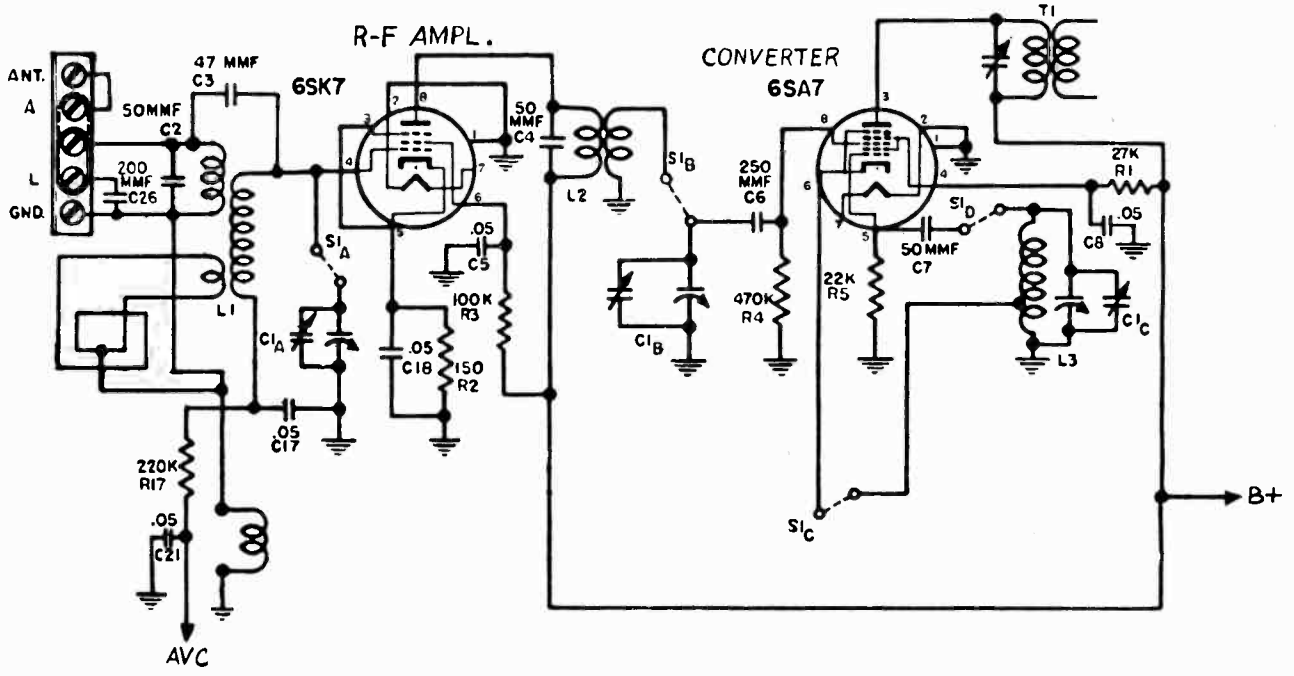
ANTENNA and GROUND CONNECTIONS



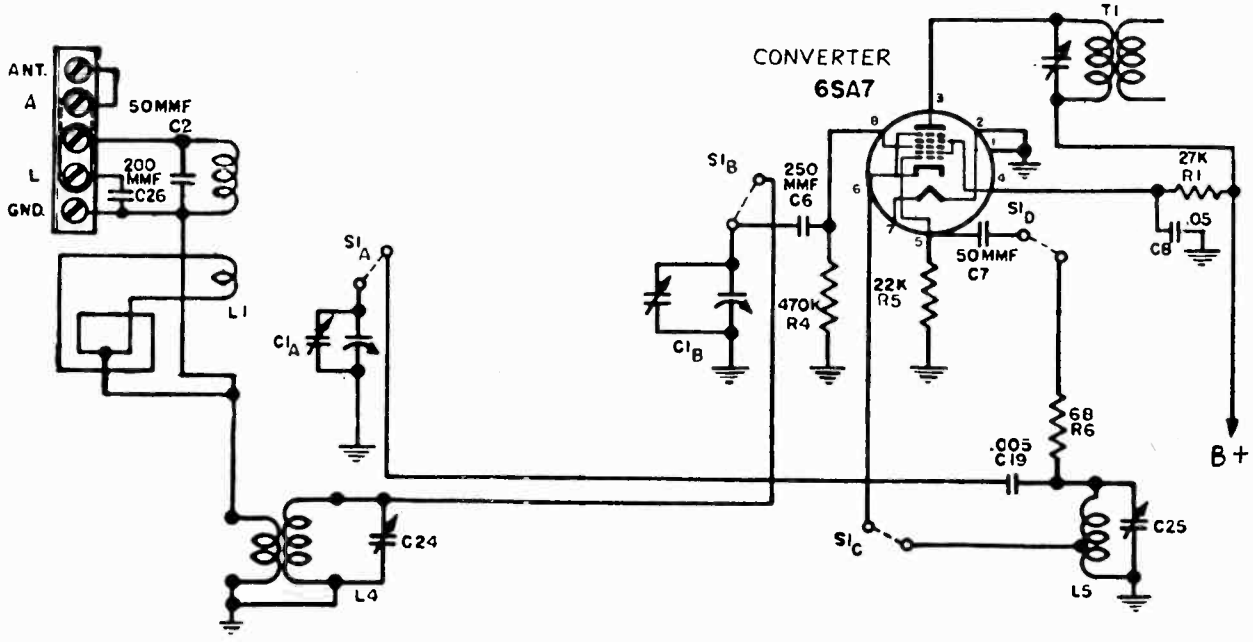
"clarified schematics"

MODELS 12310W, 12312M

WARWICK MFG. CORP.



BAND-SWITCH SHOWN AT 1ST POSITION. BROADCAST BAND 535 - 1725 KC



BAND-SWITCH SHOWN AT 2ND POSITION CLOCKWISE. SHORT WAVE BAND 6 - 18.2 MC

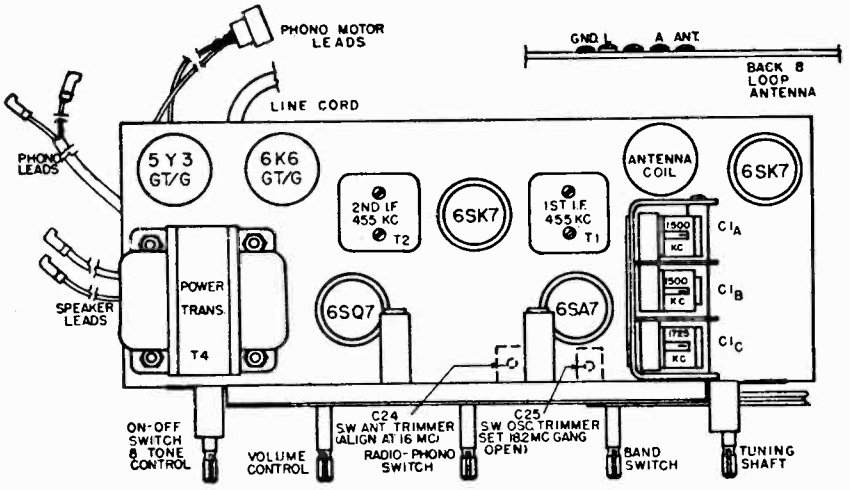


Fig. 2 Tube Positions and Alignment Points

ALIGNMENT PROCEDURE

The following alignment procedure is for use only by competent servicemen having the proper equipment.

With an output meter connected across the voice coil of the speaker, the output meter reading for ½ watt is 1.25 volts using a signal which is modulated 400 c.p.s. Follow through the procedure as outlined below for proper alignment.

The alignment should be made with volume control fully on, and the output from the signal generator as low as possible, for accurate alignment.

Position of Variable	Band Switch Position	Generator Freq.	Dummy Ant.	Generator Connections	Trimmer Adjustment	Trimmer Function
Fully Open	BC	455 KC	.1 MFD	6SA7 Grid (Stator of C1B)	T1 T2	I. F.
Fully Open	BC	1725 KC	.00025 MFD	*Ant. Terminal on Loop	C1C	BC Osc.
Tune in signal from Generator	BC	1500 KC	.00025 MFD	*Ant. Terminal on Loop	C1B	R. F.
Tune in signal from Generator	BC	1500 KC	.00025 MFD	*Ant. Terminal on Loop	C1A	BC Ant.
Fully Open	SW	18.2 MC	400 ohms	*Ant. Terminal on Loop	C25	SW Osc.
Tune in signal from Geneartor	SW	16 MC	400 ohms	*Ant. Terminal on Loop	C24	SW Ant.

GROUND lead of generator should be attached to the chassis for all adjustments

C24 and C25 are located under the chassis

For alignment points refer to Figure 2

* Be sure coupling link is in correct position for external antenna operation. See illustration below.

Repeat above alignment procedure as a final check.

MODEL 12310W PARTS LIST

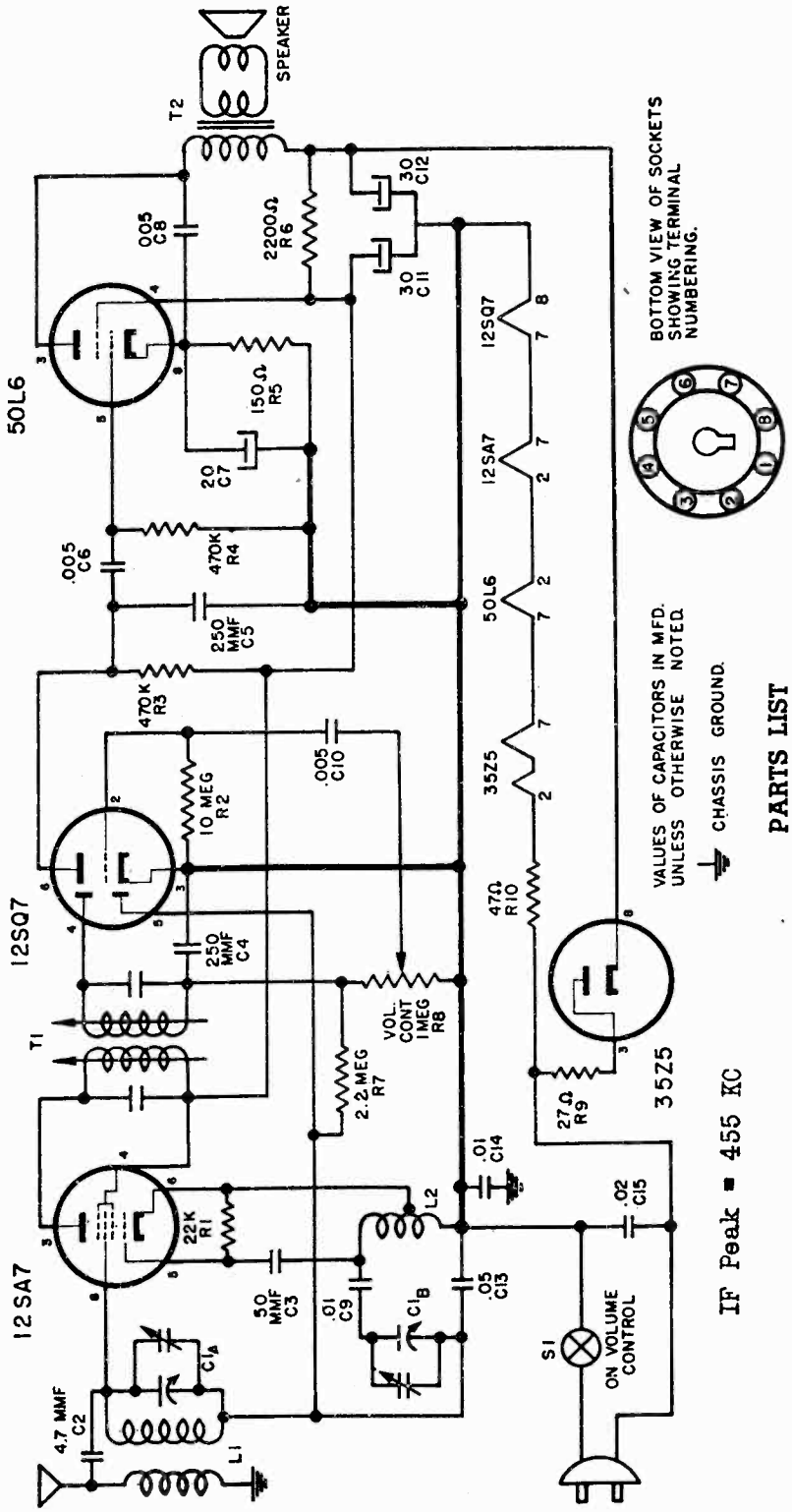
CODE	PART NO.	DESCRIPTION
C1A, C1B, C1C	B19-186	Variable Condenser
C2, C4, C7	A15-175	50 MMFD Mica condenser
C3	A83-355	4.7 MMFD condenser
C5, C8, C10, C15	A16-158	.05 MFD 400 volt condenser
C6, C12	A15-176	250 MMFD Mica condenser
C9, C17, C18, C21	A16-152	.05 MFD 200 Volt condenser
C13, C14, C20	A16-156	.01 MFD 400 Volt condenser
C16	A16-168	.01 MFD 1000 Volt condenser
C19	A16-181	.005 MFD Mica condenser
C22	A18-279	16 MFD 450 Volt electrolytic condenser
C23	A18-274	16 MFD 450 Volt electrolytic condenser
C24	A20-143	SW Antenna trimmer
C25	A20-143	SW Oscillator trimmer
C26	A15-189	200 MMFD Mica condenser
R1	A60-692	27K ohm 1 watt resistor
R2, R7	A60-686	150 ohm ½ watt resistor
R3, R8	A60-671	100K ohm ½ watt resistor
R4, R14	A60-662	470K ohm ½ watt resistor
R5	A60-659	22K ohm ½ watt resistor
R6	A60-733	68 ohm ½ watt resistor
R10	A24-169	Volume control, 500,000 ohm
R11, R13, R17, R21	A60-667	220K ohm ½ watt resistor
R12	A60-663	10 megohm ½ watt resistor
R15	A60-701	560 ohm 1 watt resistor
R16	A60-700	82K ohm 1 watt resistor
R19	A26-124	Tone control, 2 megohm, with switch
R20	A60-699	1K ohm 2 watt resistor
L1	C10-459	BC Antenna coil
L2	B10-452	RF Coil
L3	B10-446	BC Oscillator coil
L4	A10-482	SW Antenna coil
L5	A10-481	SW Oscillator coil
T1	B10-412	1st IF Transformer
T2	B10-444	2nd IF Transformer
T3	A80-222	Output Transformer
T4	C80-223	Power Transformer
	A84-41	Dial drive shaft assembly
S1	A69-176	Band Switch
S3	A69-180	Switch, Phono-Radio
	A52-200	Knob, Tuning
	A52-205	Knob, Volume
	A52-233	Knob, On-Off and Tone
	A52-234	Knob, SW-BC
	A52-235	Knob, Radio-Phono
	A58-67	Dial Pointer
	C67-507	Dial scale, glass
	C83-478	Dial scale retainer
	C79-357	Speaker, 8" P.M.
	S84-160	Back and Loop Assembly
	D42-426	Cabinet

MODEL 12312M PARTS LIST

CODE	PART NO.	DESCRIPTION
C1A, C1B, C1C	B19-186	Variable Condenser
C2, C4, C7	A15-175	50 MMFD Mica condenser
C3	A83-355	4.7 MMFD condenser
C5, C8, C10, C15	A16-158	.05 MFD 400 volt condenser
C6, C12	A15-176	250 MMFD Mica condenser
C9, C17, C18, C21	A16-152	.05 MFD 200 Volt condenser
C13, C14, C20	A16-156	.01 MFD 400 Volt condenser
C16	A16-168	.01 MFD 1000 Volt condenser
C19	A16-181	.005 MFD Mica condenser
C22	A18-279	16 MFD 450 Volt electrolytic condenser
C23	A18-274	16 MFD 450 Volt electrolytic condenser
C24	A20-143	SW Antenna trimmer
C25	A20-143	SW Oscillator trimmer
C26	A15-189	200 MMFD Mica condenser
R1	A60-692	27K ohm 1 watt resistor
R2, R7	A60-686	150 ohm ½ watt resistor
R3, R8	A60-671	100K ohm ½ watt resistor
R4, R14	A60-662	470K ohm ½ watt resistor
R5	A60-659	22K ohm ½ watt resistor
R6	A60-733	68 ohm ½ watt resistor
R10	A24-169	Volume control, 500,000 ohm
R11, R13, R17, R21	A60-667	220K ohm ½ watt resistor
R12	A60-663	10 megohm ½ watt resistor
R15	A60-701	560 ohm 1 watt resistor
R16	A60-700	82K ohm 1 watt resistor
R19	A26-124	Tone control, 2 megohm, with switch
R20	A60-699	1K ohm 2 watt resistor
L1	C10-459	BC Antenna coil
L2	B10-452	RF Coil
L3	B10-446	BC Oscillator coil
L4	A10-482	SW Antenna coil
L5	A10-481	SW Oscillator coil
T1	B10-412	1st IF Transformer
T2	B10-444	2nd IF Transformer
T3	A80-222	Output Transformer
T4	C80-223	Power Transformer
	A84-41	Dial drive shaft assembly
S1	A69-176	Band Switch
S3	A69-180	Switch, Phono-Radio
	A52-203	Knob, Tuning
	A52-208	Knob, Volume
	A52-240	Knob, On-Off and Tone
	A52-241	Knob, SW-BC
	A52-242	Knob, Radio-Phono
	A58-68	Dial Pointer
	C67-509	Dial scale, glass
	B83-471	Dial scale retainer
	B79-359	Speaker, 10" P.M.
	S84-173	Back and Loop Assembly
	C42-429	Cabinet
	B83-482	Plate, Diffusing

WARWICK MFG. CORP.

MODEL 12801



PARTS LIST

CODE	PART NO.	DESCRIPTION
C1A, C1B	B19-194	Variable Condenser
C2	A83-355	4.7 Mmfd Condenser
C3	A15-175	50 Mmfd Mica Condenser
C4, C5	A15-176	250 Mmfd Mica Condenser
C6, C8, C10	A16-153	.005 Mfd 600 Volt Condenser
C7	A18-278	20 Mfd-25 Volt Electrolytic Condenser
C9, C14	A16-156	.01 Mfd 400 Volt Condenser
C11, C12	A18-283	30x30 Mfd 150 Volt Electrolytic Condenser
C13	A16-152	.05 Mfd. 200 Volt Condenser
C15	A16-151	.02 Mfd 600 Volt Condenser

CODE	PART NO.	DESCRIPTION
R1	A60-659	22K ohm ½ watt Resistor
R2	A60-663	10 Megohm ½ watt Resistor
R3, R4	A60-662	470K ohm ½ watt Resistor
R5	A60-686	150 ohm ½ watt Resistor
R6	A60-737	2200 ohm 1 watt Resistor
R7	A60-684	2.2 Megohm ½ watt Resistor
R8	A24-174	Volume Control, 1 Megohm
R9	A60-690	27 ohm ½ watt Resistor
R10	A60-750	47 ohm 1 watt Resistor
L1	A10-483	Antenna Coil
L2	B10-502	Oscillator Coil
T1	A10-479	I.F. Transformer
T2	A80-239	Output Transformer

CODE	PART NO.	DESCRIPTION
	B79-360	Speaker, 5" P. M.
	A91-57	Antenna Wire, 20 feet
	C21-118	Cabinet Back
	D42-424	Cabinet, Ivory
	A42-433	Cabinet, Black
	A42-434	Cabinet, Red
	A42-435	Cabinet, Green
	A48-42	Dial Crystal
	B67-510	Dial Scale
	A58-69	Dial Pointer
	A52-222	Knob, White
	A52-243	Knob, Black

MODEL 12801 WARWICK MFG. CORP.

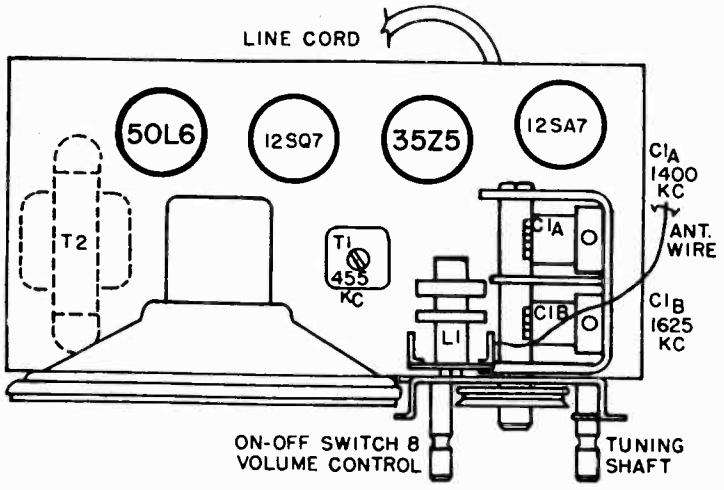
DESCRIPTION

Model 12801 is a superheterodyne receiver, designed for use on 105-125 volt 60 cycle AC or DC current.

The tubes used are:

12SA7—Oscillator-Mixer
12SQ7—Detector and first Audio
50L6—Power Output
35Z5—Rectifier

This receiver covers the frequency range from 540 to 1625 KC. The dial scale is calibrated in kilocycles, minus the final zero.



ALIGNMENT PROCEDURE

The following alignment procedure is for use only by competent servicemen having the proper equipment.

The alignment should be made with volume control fully on, and the output from the signal generator as low as possible, to prevent A.V.C. action from interfering with correct alignment.

Adjust all trimmers for maximum output. Repeat alignment procedure given below as a final check.

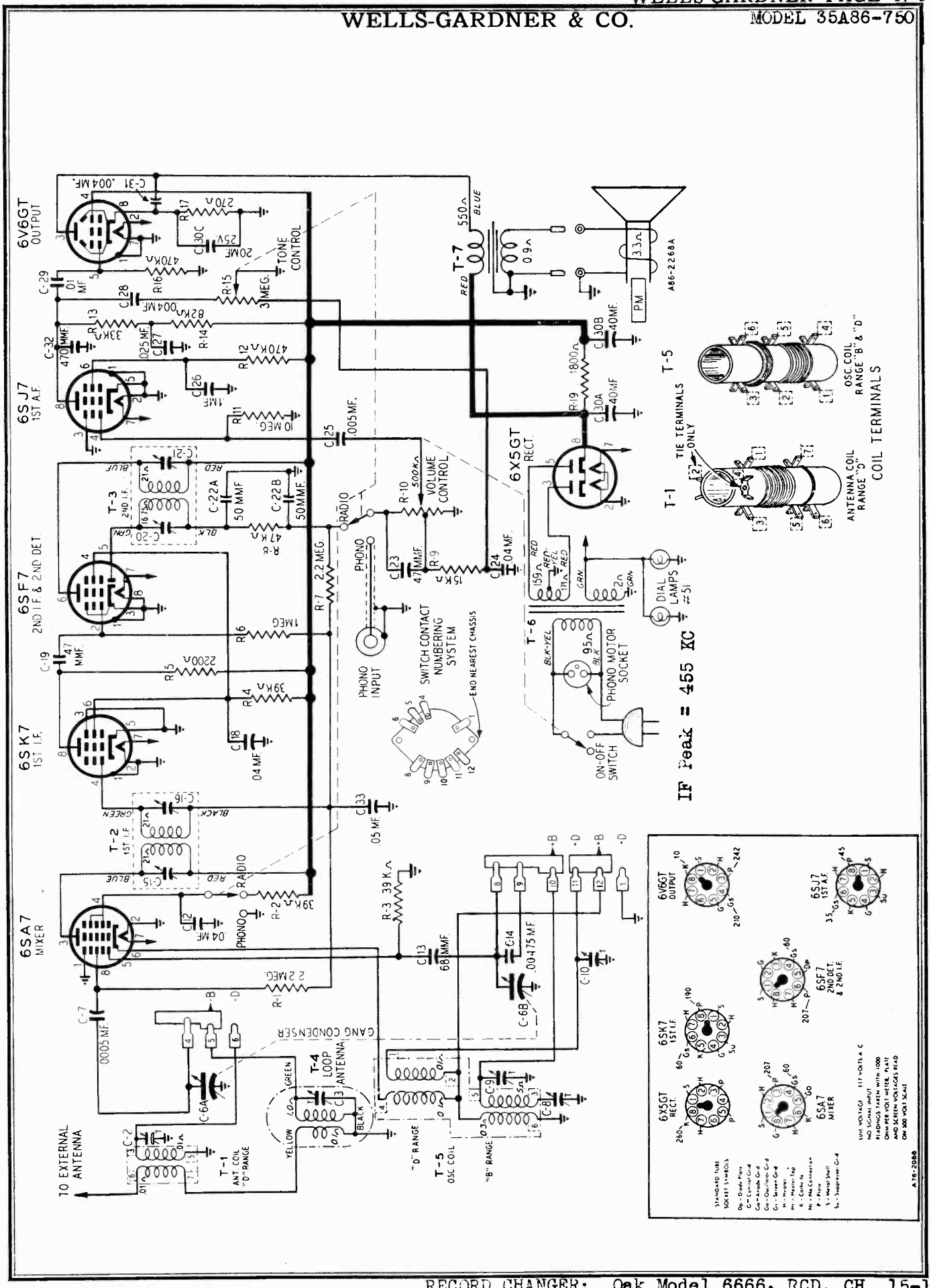
CAUTION: This is an A.C.-D.C. receiver and when aligning the set it is necessary to isolate the Signal Generator or the Receiver from the line by use of a transformer, or place a .2 MFD. condenser in both test leads of the Signal Generator.

Position of Variable	Generator Frequency	Dummy Ant. Mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Fully open	455 KC	.1	*12SA7 Grid (Stator of C1A)	T1	I.F.
Fully open	1625 KC	.00025	*Antenna Wire	C1B	Oscillator
Tune in signal from generator	1400 KC	.00025	*Antenna Wire	C1A	Antenna

*Connect ground lead of signal generator to chassis.

WELLS-GARDNER & CO.

MODEL 35A86-750

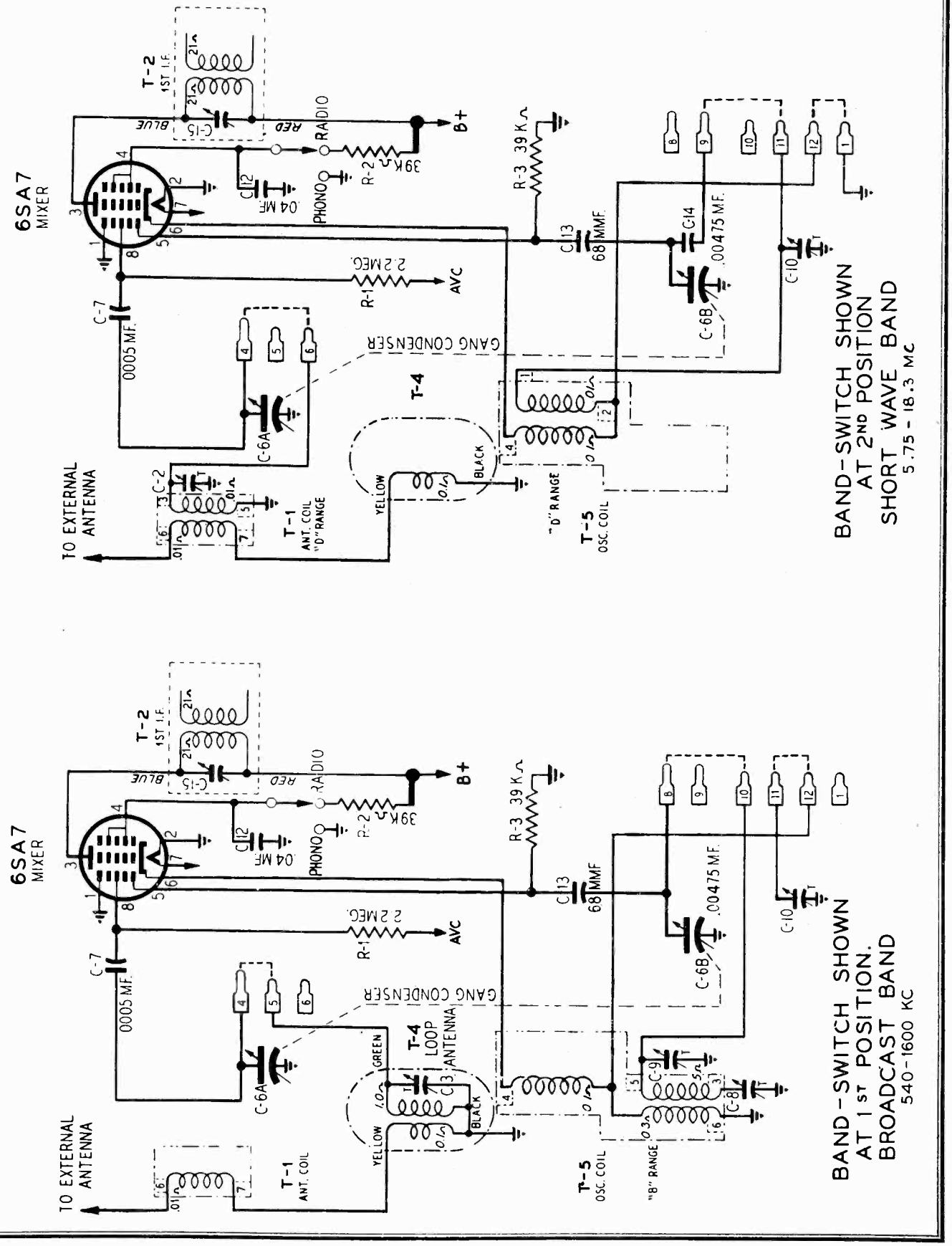


RECORD CHANGER: Oak Model 6666, RCD. CH. 15-1

"clarified schematics"

MODEL 35A86-750

WELLS-GARDNER & CO.



ALIGNMENT PROCEDURE

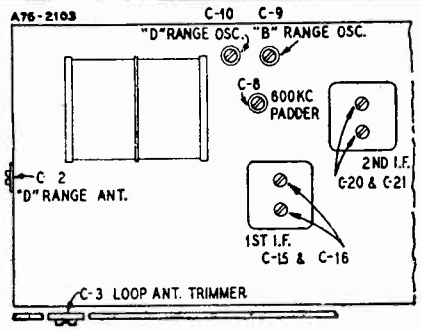
Volume Control—Maximum All Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning:
An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.
Output Indicating Meter—Non-Metallic Screwdriver.
Dummy Antennas—.1 mf., 50 mmf., and 400 ohms.

	SIGNAL GENERATOR FREQUENCY SETTING	SIGNAL GENERATOR CONNECTION AT RADIO	DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM
I.F.	455 KC	Grid of 6SA7 Pin 8	.1 mf.	B Range	Turn Rotor to Full Open	1st I.F. (C15) & (C16) 2nd I.F. (C20) & (C21)
RANGE B	1620 KC	Antenna Lead	50 mmf.	B Range	Turn Rotor to Full Open	Oscillator Range B (C9)
	1400 KC	Antenna Lead	50 mmf.	B Range	Tune Rotor to Max. Output	Ant. Range B (C3)
	600 KC	Antenna Lead	50 mmf.	B Range	Tune Rotor to Max. Output	600 KC (C8) See Note B
	Repeat above steps at 1620 and 600 KC until readjusting the oscillator Range B Trimmer (C9) causes no further improvement in output.					
RANGE D	18.3 MC	Antenna Lead	400 Ohm	D Range	Turn Rotor to Full Open	Oscillator Range D (C10)
	16 MC	Antenna Lead	400 Ohm	D Range	Tune Rotor to Max. Output	Ant. Range D (C2) Rock Rotor—See Note B
LOOP RANGE B	Reassemble chassis in cabinet. 1400 KC	Antenna Lead	50 mmf.	B Range	Tune Rotor to Max. Output See Note A	Ant. Range B (C3)



NOTE A—Set pointer at the 1400 KC mark on the dial scale. Attach pointer to drive cord.

NOTE B—Turn rotor back and forth and adjust the trimmer until peak of greatest intensity is obtained.

REMOVAL OF CHASSIS FROM CABINET

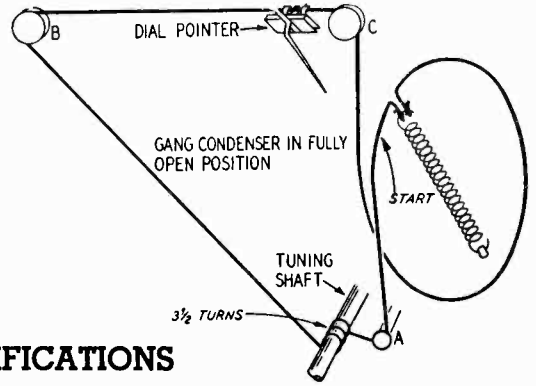
Before removing the chassis from the cabinet it will be necessary to detach the dial pointer from the dial string. To do this, spread the tabs on the pointer and pull the dial string off the pointer.

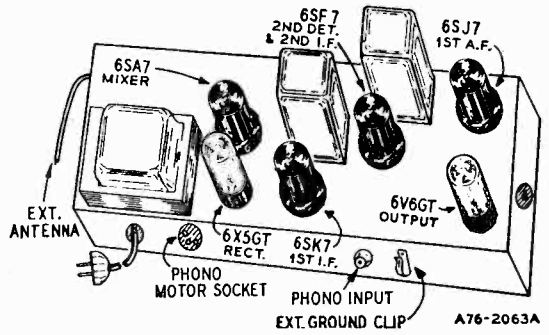
The dial lamp socket assemblies may be disengaged from the cabinet mounting by squeezing together and pulling away from the cabinet mounting, the spring bracket to which the dial lamp socket is mounted. Take care not to bend or damage the large drive pulley on the gang condenser while doing this.

When replacing the chassis in the cabinet it will be necessary to tune in a station of a known frequency and move the dial pointer until that frequency is indicated on the dial and then attach the pointer to the dial string. Take care not to scuff or cut the dial string or bend the pointer during this operation.

DRIVE CORD REPLACEMENT

The drive cord should be replaced as shown on the accompanying illustration using a new 10X56 drive cord assembly for the purpose. After the cord has been installed, stretch the tension spring and fasten the free end of the cord to it.





SPECIFICATIONS

Power Consumption
(at 117 Volts AC)..... 45 Watts (normal)
70 Watts (phono operating)

Power Output..... 4 Watts, Maximum
2.3 Watts, 10% Harmonics

Tuning Frequency Range
B Range ..... 540-1600 Kilocycles
D Range ..... 5.75-18.3 Megacycles

Speaker..... 8" PM Dynamic

Intermediate Frequency..... 455 KC

Selectivity..... 40 KC Broad at 1000 Times Signal

Sensitivity (For 0.5 Watt Output, with External Antenna)
B Range..... 9 Microvolts Average
D Range..... 20 Microvolts Average

WELLS-GARDNER & CO.

REPLACEMENT PARTS LIST

NOTICE: There is a model number label on the chassis. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

12A477	8" P.M. Speaker
3A303	Tube Socket—Octal (8 prong) Moulded
3A304	Phono Motor Socket
3A305	Phono Socket—Single Pin Tip
10A467	Knob (Tuning)
10A468	Knob (Off-On Volume)
10A634	Knob (SW-BC)
10A529	Knob (Tone—R.P.)
2A372	Band Change Switch
13X328	Line Cord and Plug Assembly
	No. 750 Phono-Console Cabinet

CAPACITORS

C-2	17A164	5-50 mmf		Trimmer
C-3	17A235	2-24 mmf		Trimmer
C-6A, C-6B	14A184	Gang Condenser with		Drive Pulley
C-7	B66501	.0005 mf	200 V	Tubular
C-8	17A155	350-430 mmf		Trimmer
C-9, C-10	17A109	2.5-35 mmf		Dual Trimmer
C-12, C-18	D66403	.04 mf	400 V	Tubular
C-13	47X466	68 mmf		Moulded
C-14	46X289	.00475 mf	180 V	Tubular
C-15, C-16	Part of T-2 (1st I-F Coil Assembly)			
C-19, C-23	47X463	47 mmf		Moulded
C-20, C-21	Part of T-3 (2nd I-F Coil Assembly)			
C-22A, C-22B	47X112	50-50 mmf		Dual Mica
C-24	D64403	.04 mf	400 V	Tubular
C-25	D66502	.005 mf	400 V	Tubular
C-26	D67104	.10 mf	400 V	Tubular
C-27	D64253	.025 mf	400 V	Tubular
C-28	D66402	.004 mf	400 V	Tubular
C-29	D66103	.01 mf	400 V	Tubular
C-30A	45X346	40 mf	450 V	3 Section Electrolytic
C-30B		40 mf	450 V	
C-30C		20 mf	25 V	
C-31	H66402	.004	800 V	Tubular
C-32	47X467	470 mmf		Moulded
C-33	B66503	.05 mf	200 V	Tubular

RESISTORS

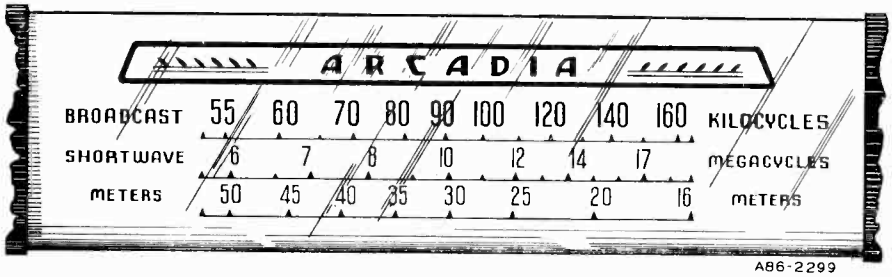
B85225	R-1, R-7	2.2 megohms	0.5 W	Carbon
C84393	R-2, R-4	39 K ohms	1.0 W	Carbon
B84393	R-3	39 K ohms	0.5 W	Carbon
B84222	R-5	2200 ohms	0.5 W	Carbon
B85105	R-6	1 megohm	0.5 W	Carbon
B85473	R-8	47 K ohms	0.5 W	Carbon
B84153	R-9	15 K ohms	0.5 W	Carbon
36X358	R-10	500 K ohms	Volume Control and Line Switch	
B85106	R-11	10 megohms	0.5 W	Carbon
B85474	R-12, R-16	470 K ohms	0.5 W	Carbon
B84333	R-13	33 K ohms	0.5 W	Carbon
B84823	R-14	82 K ohms	0.5 W	Carbon
40X276	R-15	3.0 megohms	Tone Control & Radio Phono Switch	
C84271	R-17	270 ohms	1.0 W	Carbon
D84182	R-19	1800 ohms	2.0 W	Carbon

DIAL AND DRIVE ASSEMBLY

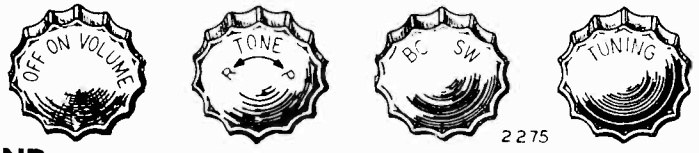
6X21	Rubber Grommet } Mtg. Gang Condenser
20X329	Cond. Cushion Stud } Mtg. Gang Condenser
25X1489	Pulley Bracket (Right)
25X1490	Pulley Bracket (Left)
26X485	Drive Shaft
19X192	"C" Washer
25X1491	Pointer Bracket
15X229	Pointer
10X56	Drive Cord Assembly
28X113	Drive Cord Tension Spring
30X517	Dial Clamp
4X915	Escutcheon, Dial (Right)
4X916	Escutcheon, Dial (Left)
4X931	Escutcheon Insert
58X704	Dial Glass
7A200	Pilot Light Socket Assembly
7A32	Pilot Light Bulb No. 51

TRANSFORMERS AND COILS

T-1	9A1917	"D" Range Antenna Coil Assembly
T-2	9A1814	1st I-F Coil Assembly
T-3	9A1815	2nd I-F Coil Assembly
T-4	26A442	"B" Range Loop Antenna
T-5	9A1918	Oscillator Coil Assembly
T-6	53X282	Power Transformer
T-7	51X134	Output Transformer



A86-2299



2275

ON-OFF SWITCH AND VOLUME CONTROL

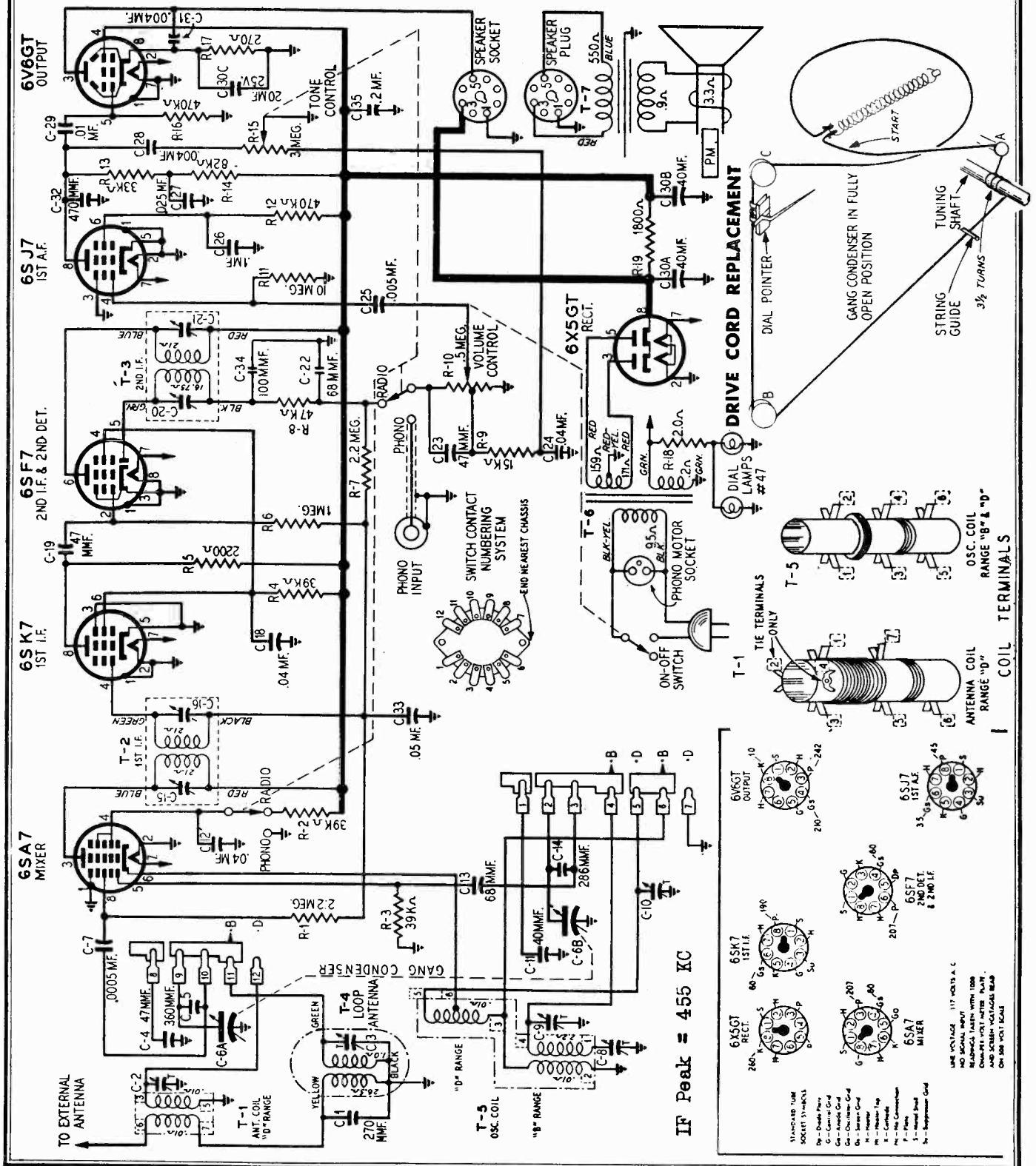
TONE CONTROL AND PHONO-RADIO SWITCH

BAND SWITCH

TUNING KNOB

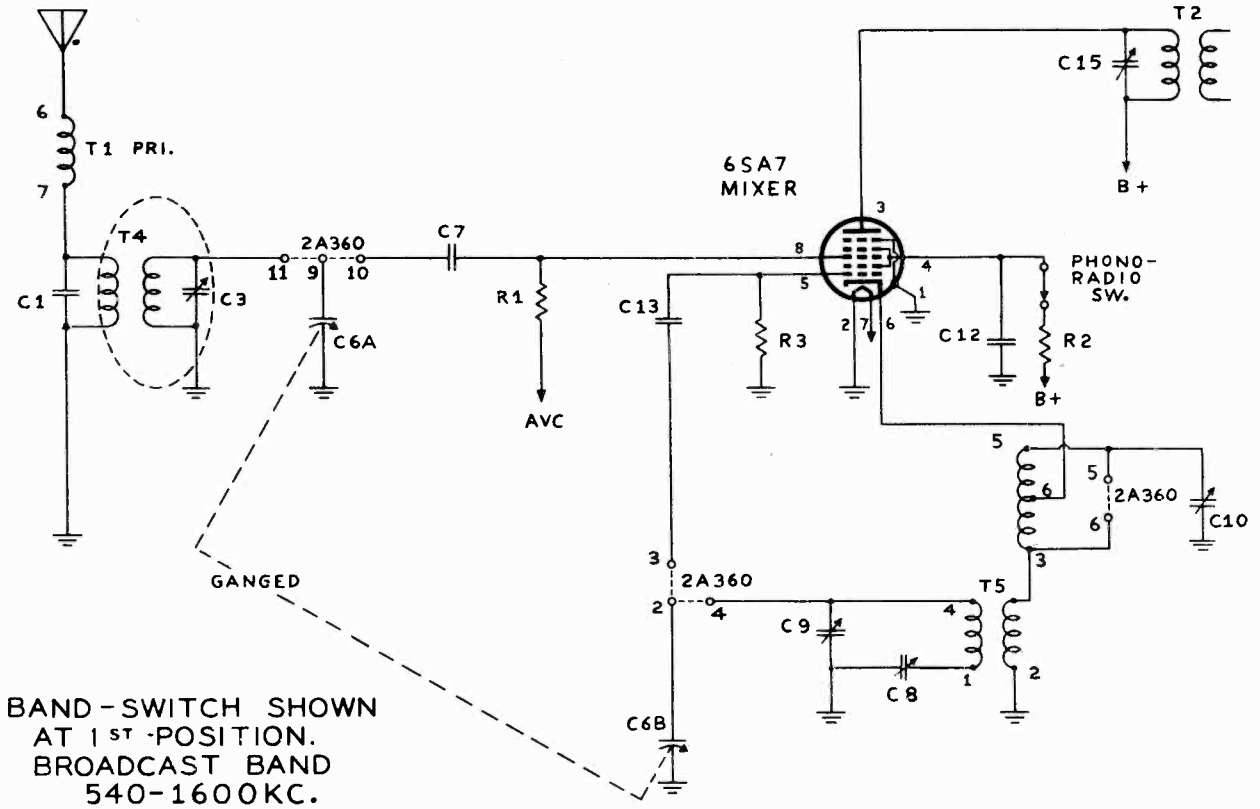
WELLS-GARDNER & CO.

MODEL 436A76-670

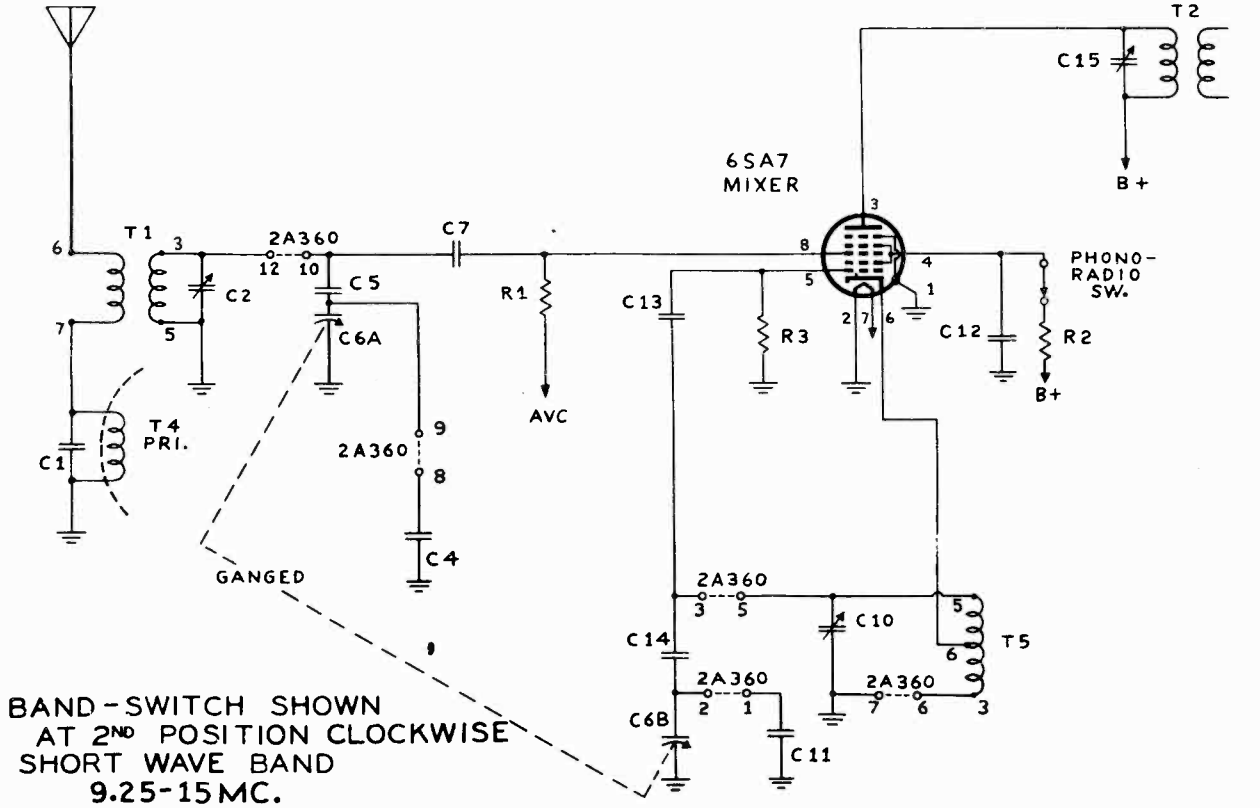


RECORD CHANGER: Farnsworth Model P-51, RCD. CH. 17-1

MODEL 436A76-670 WELLS-GARDNER & CO.



BAND-SWITCH SHOWN
AT 1ST POSITION.
BROADCAST BAND
540-1600KC.



BAND-SWITCH SHOWN
AT 2ND POSITION CLOCKWISE
SHORT WAVE BAND
9.25-15MC.

WELLS-GARDNER & CO. MODEL 436A76-670

REPLACEMENT PARTS LIST

NOTICE: There is a Model Number label on the chassis. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

PART NO.	DESCRIPTION
12A442	6" P.M. Speaker complete with Output Transformer
12A436	8" P.M. Speaker complete with Output Transformer
	Cone and Voice Coil Assembly (Specify part number and letters stamped on speaker)
	Output Transformer (Specify part number and letters stamped on speaker)
3A303	Tube Socket—Octal (8 prong) Molded
3A304	Phono Motor Socket
3A305	Phono Socket—Single Pin Tip
2A360	Band Change Switch
13X328	Line Cord and Plug Assembly
10A614	Knob (Tuning)
10A615	Knob (Volume)
10A616	Knob (Tone—R.P.)
10A617	Knob (SW-BC)

CAPACITORS

C-1	47X445	270 mmf		Molded
C-2	17A164	5-50 mmf		Trimmer
C-3	17A235	2-12 mmf		Trimmer
C-4	47X473	47 mmf		Silvered Mica
C-5	47X474	360 mmf		Silvered Mica
C-6A, C-6B	14A184	Gang Condenser		
C-7	B66501	.0005 mf	200 V	Tubular
C-8	17A155	350-430 mmf		Trimmer
C-9, C-10	17A109	2.5-35 mmf		Dual Trimmer
C-11	47X472	40 mmf		Silvered Mica
C-12, C-18	D66403	.04 mf	400 V	Tubular
C-13	47X466	68 mmf		Molded
C-14	47X481	286 mmf		Silvered Mica
C-15, C-16	Part of T-2 (1st I-F Coil Assem.)			
C-19, C-23	47X463	47 mmf		Molded
C-20, C-21	Part of T-3 (2nd I-F Coil Assem.)			
C-22	47X471	68 mmf		Molded
C-24	D64403	.04 mf	400 V	Tubular
C-25	D66502	.005 mf	400 V	Tubular
C-26	D67104	.10 mf	400 V	Tubular
C-27	D64253	.025 mf	400 V	Tubular
C-28	D66402	.004 mf	400 V	Tubular
C-29	D66103	.01 mf	400 V	Tubular
C-30A	45X346	40 mf	450 V	Three Section Electrolytic
C-30B		40 mf	450 V	
C-30C		20 mf	25 V	
C-31	F66402	.004 mf	600 V	Tubular
C-32	47X505	470 mmf		Molded
C-33	B66503	.05 mf	200 V	Tubular
C-34	47X476	100 mmf		Molded
C-35	D67204	.2 mf	400 V	Tubular

RESISTORS

		OHMS	WATTS	
R-1, R-7	B85225	2.2 meg.	0.5	Carbon
R-2, R-4	C84393	39 K	1.0	Carbon
R-3	B84393	39 K	0.5	Carbon
R-5	B84222	2200	0.5	Carbon
R-6	B85105	1 meg.	0.5	Carbon
R-8	B85473	47 K	0.5	Carbon
R-9	B84153	15 K	0.5	Carbon
R-10	36X357	.5 meg.		Volume Control & Switch
R-11	B85106	10 meg.	0.5	Carbon
R-12, R-16	B85474	470 K	0.5	Carbon
R-13	BB4333	33 K	0.5	Carbon
R-14	B84823	82 K	0.5	Carbon
*R-15	40X277	3 meg.		Tone Control & Radio Phono Switch
R-17	C84271	270	1.0	Carbon
R-18	43X213	2.0	0.5	Wire-wound
R-19	D84182	1800	2.0	Carbon

DIAL AND DRIVE ASSEMBLY

6X21	Rubber Grommet	Mtg. Gang Condenser
20X329	Cond. Cushion Stud	
26A443	Dial Bracket Assembly complete with Snacers, Pulleys, Diffusers and Dial Background less Dial Glass	
58X676	Dial Glass	
26A444	Idler Bracket Assembly	
26X486	Drive Shaft	
19X192	"C" Washer (for drive shaft)	
15X163	Pointer	
10X38	Drive Cord Assembly or 50" Cord	
28X113	Drive Cord Tension Spring	
7X199	Pilot Light Socket Assembly	
	No. 47 Pilot Light	
4X353	Escutcheon	

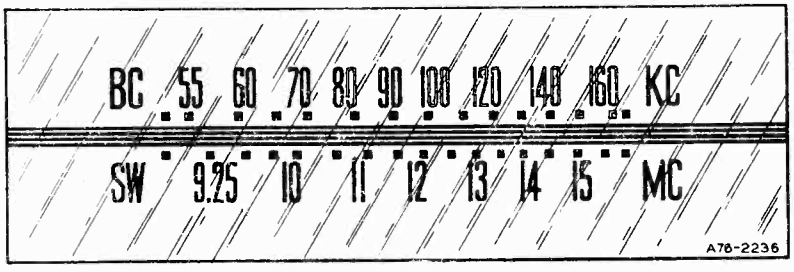
TRANSFORMERS AND COILS

T-1	9A1812	"D" Range Antenna Coil Assembly
T-2	9A1814	1st I-F Coil Assembly
T-3	9A1815	2nd I-F Coil Assembly
T-4	26A449	"B" Range Loop Antenna Assembly
T-5	9A1813	"B" and "D" Range Oscillator Coil Assembly
T-6	53X282	117 Volt, 60 Cycle, Standard Power Transformer
T-7		Output Transformer (See Miscellaneous)

SUBSTITUTE PARTS

The following parts are used in some receivers only. Check part numbers on old part before ordering and order part originally used in receiver.

*40X282	Tone Control (Substitute for 40X277)
*25X1539	Radio Phono Switch Lever (Use with 40X282)
*2A161	D.P.D.T. Switch (Use with 40X282)



ON-OFF SWITCH AND VOLUME CONTROL

BAND SWITCH

TUNING KNOB

TONE CONTROL AND PHONO-RADIO SWITCH

ALIGNMENT PROCEDURE

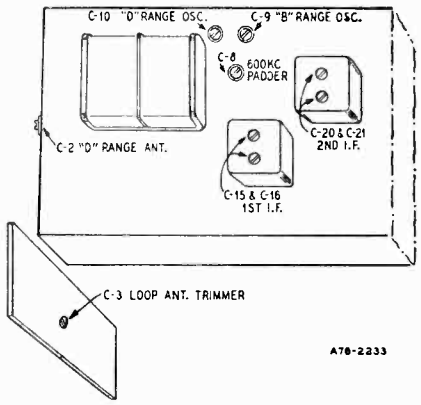
Volume Control—Maximum All Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning:
An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.
Output Indicating Meter—Non-Metallic Screwdriver.
Dummy Antennas—.1 mf., 100 mmf., and 400 ohms.

	SIGNAL GENERATOR FREQUENCY SETTING	SIGNAL GENERATOR CONNECTION AT RADIO	DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM
I.F.	455 KC	Grid of 6SA7 Pin 8	.1 mf.	B Range	Turn Rotor to Full Open	1st I.F. (C15) & (C16) 2nd I.F. (C20) & (C21)
RANGE B	1620 KC	Antenna Lead	100 mmf.	B Range	Turn Rotor to Full Open	Oscillator Range B (C9)
	1400 KC	Antenna Lead	100 mmf.	B Range	Tune Rotor to Max. Output See Note A	Ant. Range B (C3)
	600 KC	Antenna Lead	100 mmf.	B Range	Tune Rator to Max. Output	Oscillator (C8) See Note B
	Repeat above steps at 1620 and 600 KC until readjusting the oscillator Range B Trimmer (C9) causes no further improvement of output.					
RANGE D	15.6 MC	Antenna Lead	400 Ohm	D Range	Turn Rotor to Full Open	Oscillator Range D (C10)
	14 MC	Antenna Lead	400 Ohm	D Range	Tune Rotor to Max. Output	Ant. Range D (C2)
LOOP RANGE B	Reassemble chassis in cabinet.					
	1400 KC	Antenna Lead	100 mmf.	B Range	Tune Rotor to Max. Output	Ant. Range B (C3)

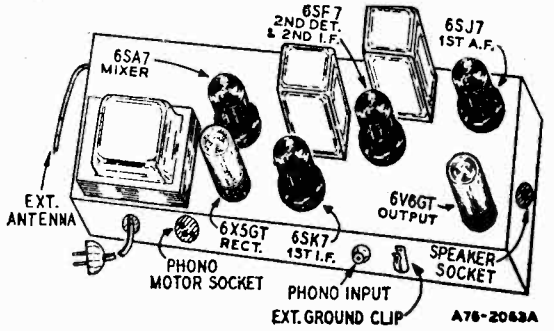


NOTE A—Set pointer at the 1400 KC mark on the dial scale. Attach pointer to drive cord.

NOTE B—Turn rotor back and forth and adjust the trimmer until peak of greatest intensity is obtained.

REMOVAL OF CHASSIS FROM CABINET

Before the chassis may be taken from the cabinet, it is necessary to pull off the 4 control knobs, remove the 4 chassis mounting bolts, disconnect the leads running to the loop antenna, record changer and speaker and loosen the screw and remove the black lead fastened to the lower left corner of the chassis.



SPECIFICATIONS

Power Consumption (at 117 Volts AC) ..... 40 Watts (normal) 58 Watts (phono operating)

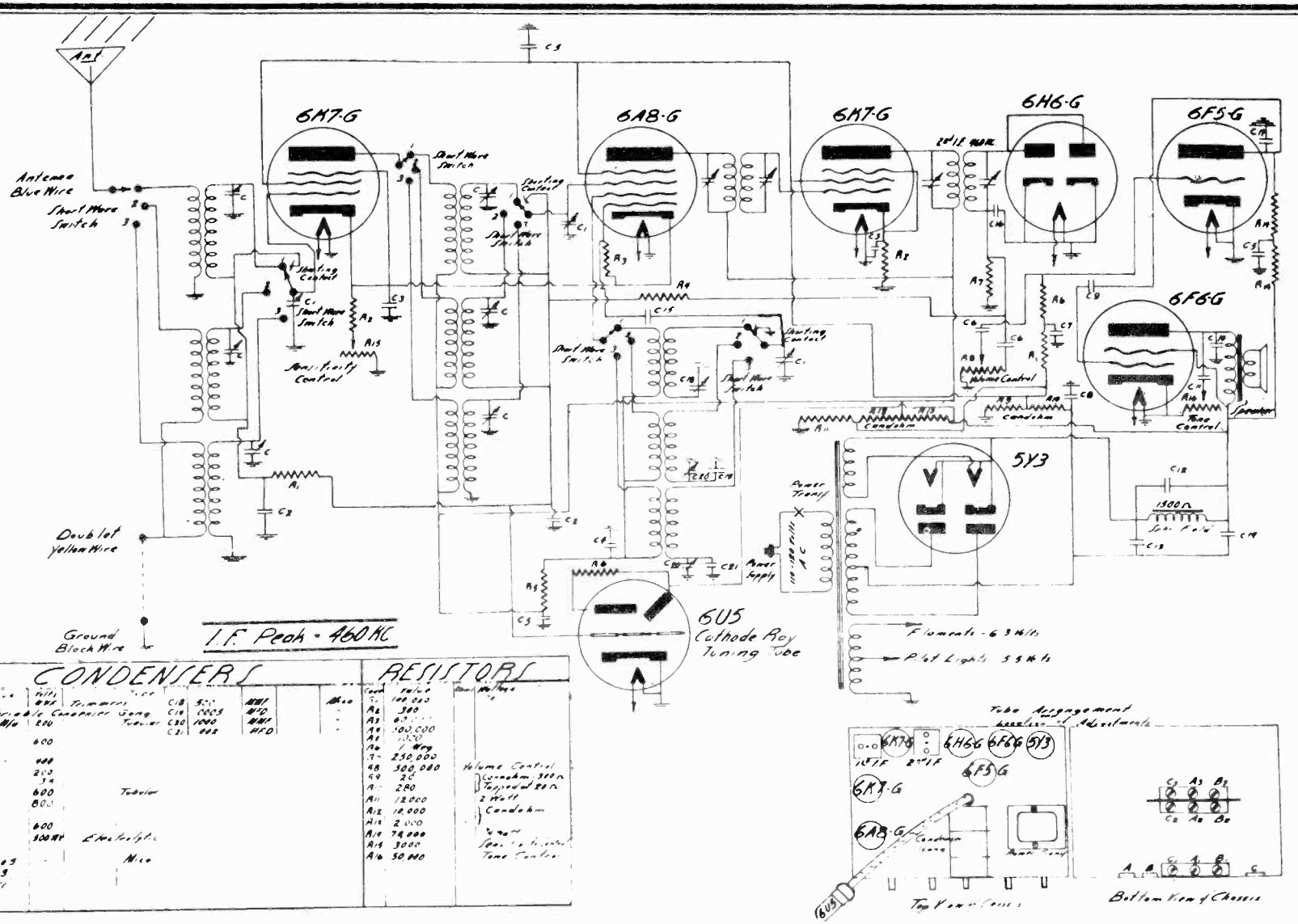
Power Output ..... 4 Watts, Maxtmum 2.3 Watts, 10% Distortion

Tuning Frequency Range
- B Range ..... 540-1600 Kilocycles
- D Range ..... 9.25-15 Megacycles

Intermediate Frequency ..... 455 KC

Selectivity ..... 40 KC Broad at 1000 Times Signal

Sensitivity (For 0.5 Watt Output, with External Antenna)
- B Range ..... 9 Microvolts Average
- D Range ..... 20 Microvolts Average



CONDENSERS

C	330	mmf					
C1	Variable Condenser Gang		Trimmers	C18	500	Mica	
C2	85 Mfd	200	Trimmer	C19	.0005	Mica	
C3				C20	1000	Mica	
C4		600		C21	005	Mica	
C5	25						
C6	01	400					
C7	25	200					
C8	10	25					
C9	01	600	Tubular				
C10	006	800					
C11	03						
C12	05	600					
C13	B	300 MV	Electrolytic				
C14							
C15	.00005		Mica				
C16	.0003						
C17	.001						

RESISTORS

R	100,000		
R1	300		
R2	0.3		
R3	500,000		
R4	1000		
R5	1 Meg		
R6	250,000		
R7	500,000	Volume Control	
R8	25	Candohm 300 Ω Tapered 80 Ω	
R9	280	2 Watt	
R10	12,000	Candohm	
R11	10,000		
R12	2,000		
R13	78,000	Watt	
R14	3000	Sensitivity Control	
R15	50,000	Tone Control	

ALIGNMENT FREQUENCIES

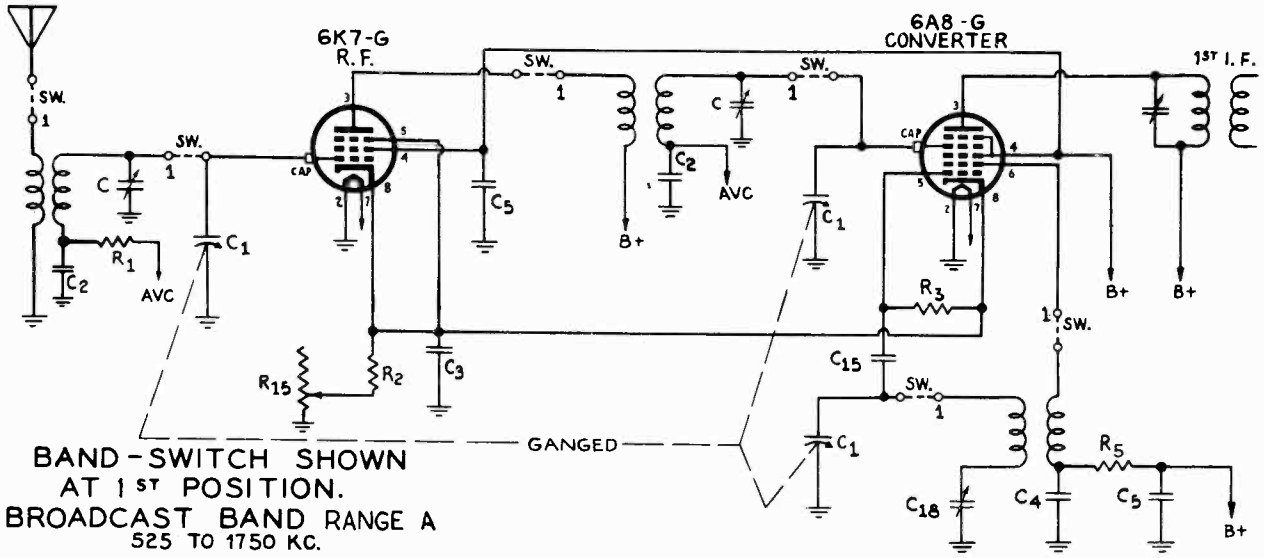
RANGE A-525-1750 KC.
TRIMMER A1-1712KC.
TRIMMER A-600 KC.
TRIMMER A2,A3-1300 KC.

RANGE B-1700-5800 KC.
TRIMMER B1-5400 KC.
TRIMMER B-1800 KC.
TRIMMER B2,B3-5400 KC.

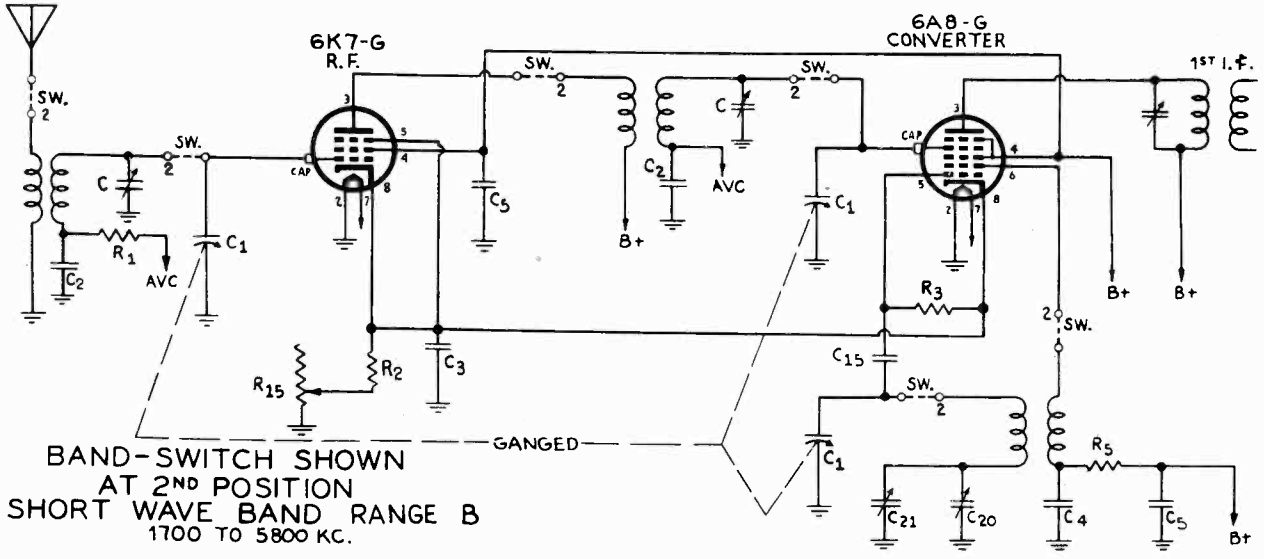
RANGE C-5400-18000 KC.
TRIMMER C1-18 MC.
TRIMMER C-6000 KC.
TRIMMER C2,C3-18 MC.

Model 587

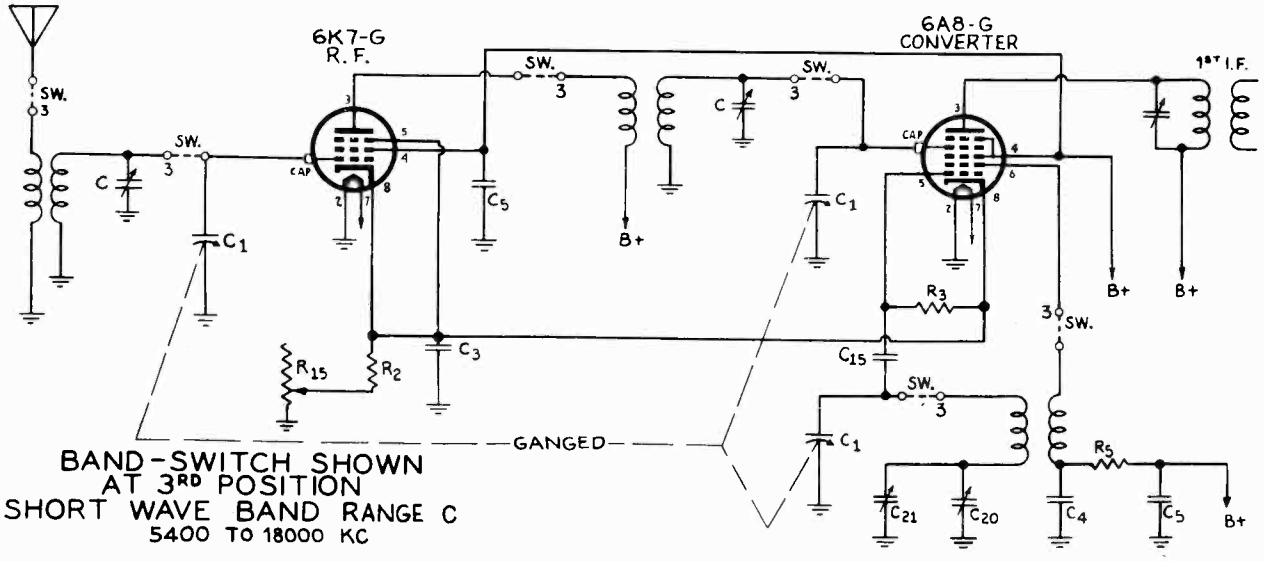
WESTERN AIR PATROL



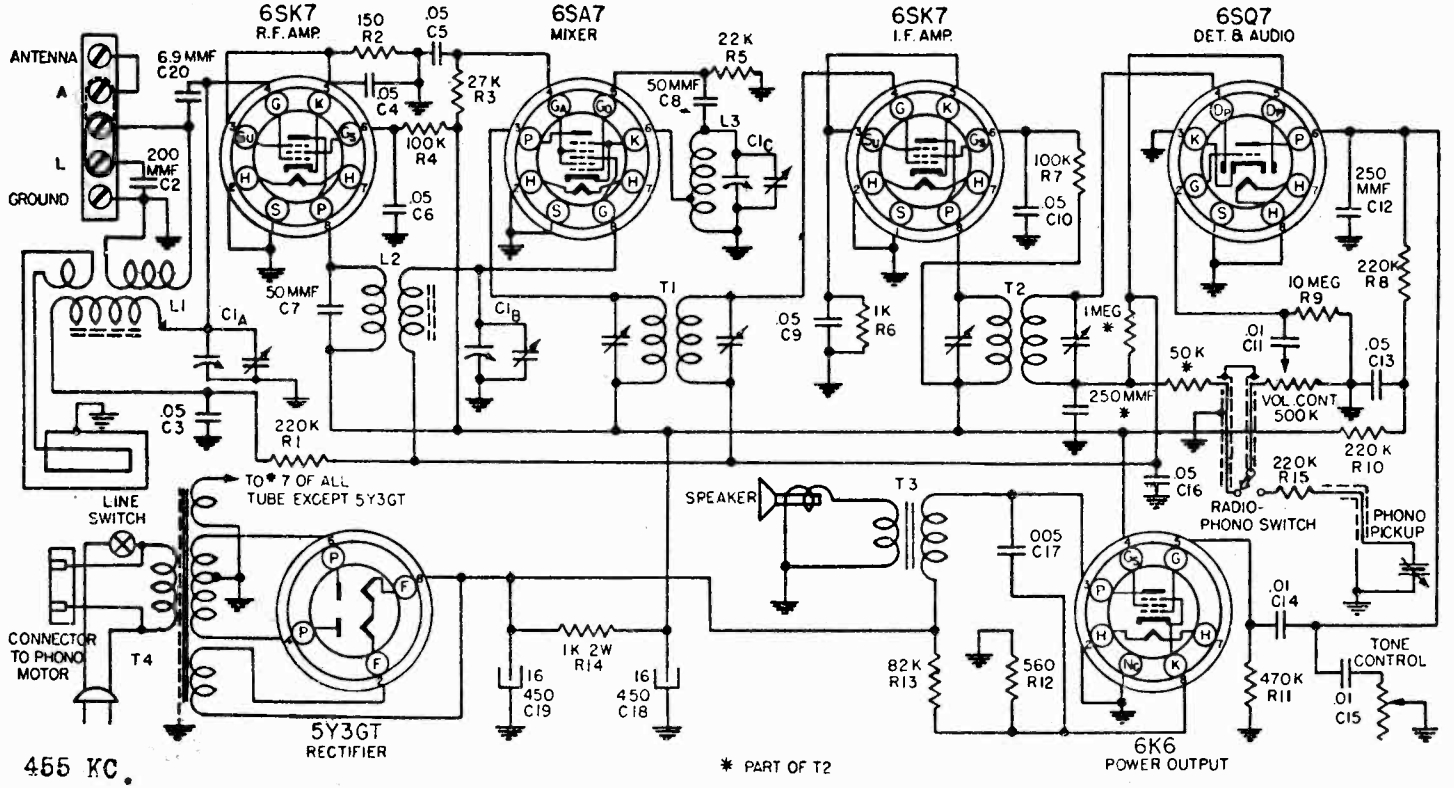
BAND-SWITCH SHOWN
AT 1ST POSITION.
BROADCAST BAND RANGE A
525 TO 1750 KC.

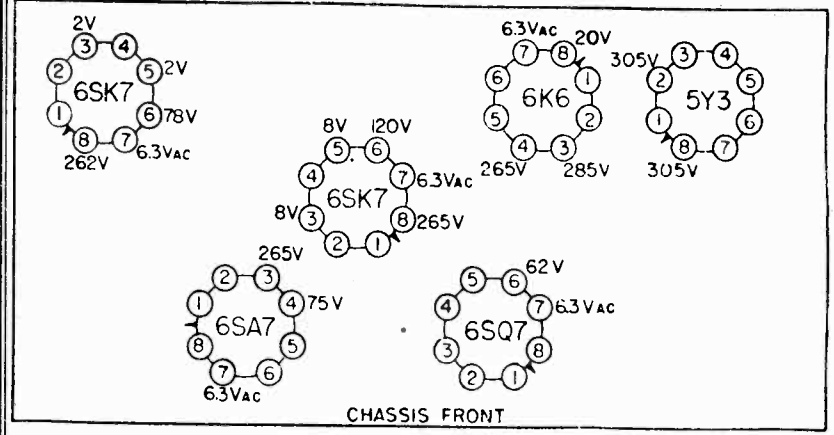


BAND-SWITCH SHOWN
AT 2ND POSITION
SHORT WAVE BAND RANGE B
1700 TO 5800 KC.



BAND-SWITCH SHOWN
AT 3RD POSITION
SHORT WAVE BAND RANGE C
5400 TO 18000 KC

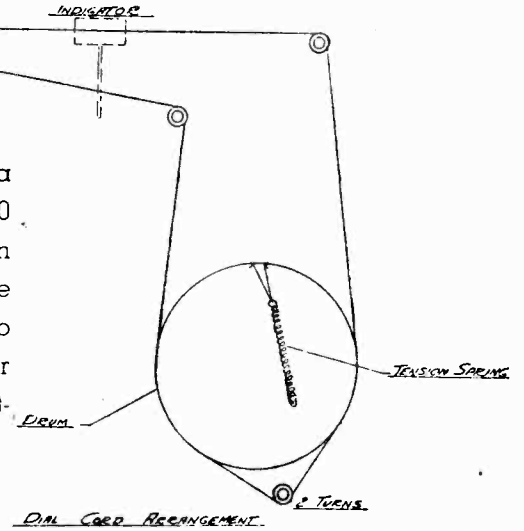




Chassis, Bottom View

SOCKET VOLTAGES

All voltages are measured with a 1000 ohm per volt meter on the 150 volt scale, with no signal. To obtain an accurate voltage check the A.C. line voltage must be 117 volts. Where no voltage is shown the voltage is O or cannot be read with this type of voltmeter.



ALIGNMENT PROCEDURE

Volume control—Maximum: all adjustments.
Tone Control—Treble: Full Clockwise Rotation.
Connect ground lead of signal generator to radio chassis.

Connect dummy antenna in series with output lead of signal generator.

Connect output meter across voice coil of speaker.

The following equipment is necessary for proper alignment

Signal generator that will provide the test frequencies as listed.

Output meter.

Non-metallic screwdriver.

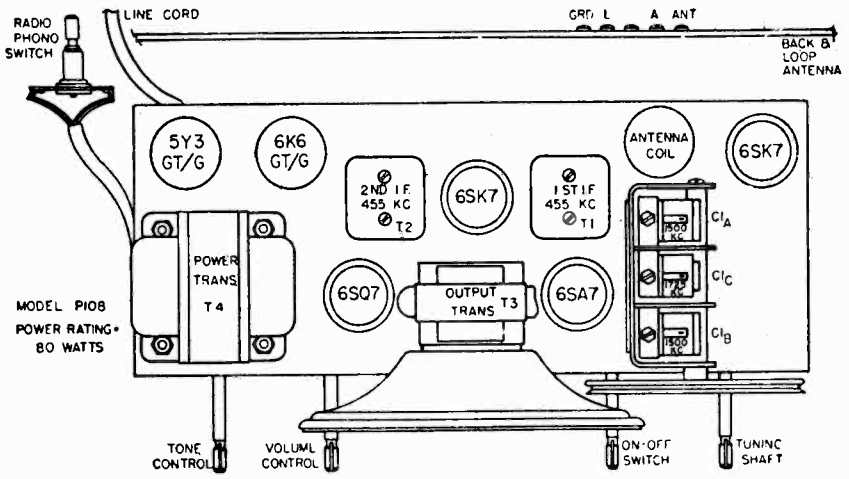
Dummy antennas—.1 mfd., 00025 mfd.

Position of Variable	Generator Frequency	Dummy Ant. mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Minimum Capacity (Fully Opened)	455 K.C.	.1	6SA7 Grid (Stator of C1B)	T1 T2	I. F.
Minimum Capacity (Fully Opened)	1725 K.C.	.00025	*Ant. Terminal on Loop	C1C	Osc.
Tune in signal From Generator	1500 K.C.	.00025	*Ant. Terminal on Loop	C1B	R. F.
Tune in signal From Generator	1500 K.C.	.00025	*Ant. Terminal on Loop	C1A	Ant.

*Be sure coupling link is in correct position for external antenna operation. See illustration below (Fig. 4).

Repeat the above alignment procedure as a final check.

With an output meter connected across the voice coil of the speaker, the output meter reading for ½ watt is 1.25 volts using a signal which is modulated 400 c.p.s.

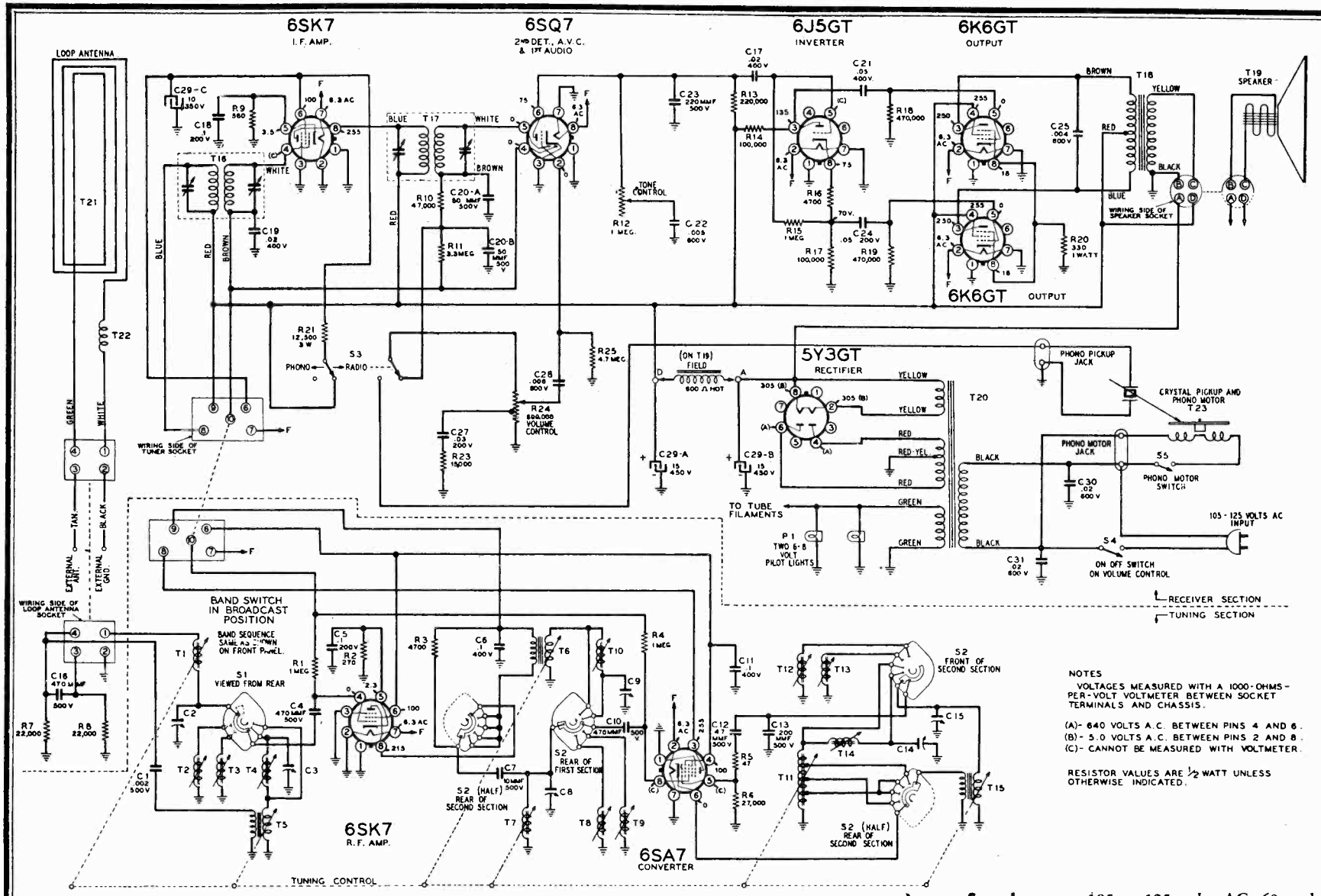


Chassis, Top View

Speaker cones and output transformers are not furnished as seperate items. Defective speakers should be returned to the factory for replacement and repair.

Note: The two speakers shown are interchangeable.

Circuit Reference	Part No.	Description
		CONDENSERS
C1A, C1B, C1C	B19-186	Variable condenser
C2		200 MMF mica condenser (on Loop)
C3 C4, C9, C16	A16-152	.05 MFD. 200 volt tubular condenser
C5, C6, C10, C13	A16-158	.05 MFD. 400 volt tubular condenser
C7, C8	A15-175	50 MMF mica condenser
C11, C14, C15	A16-156	.01 MFD. 400 volt tubular condenser
C12	A15-176	250 MMF. mica condenser
C17	A16-153	.005 MFD. 600 volt tubular condenser
C18	A18-279	16 MFD. 450 volt electrolytic condenser
C19	A18-274	16 MFD. 450 volt electrolytic condenser
C20	A84-71	6.9 MMF. condenser
		RESISTORS
R1, R8, R10 & R15	A60-667	220K ohm ½ watt resistor
R2	A60-686	150 ohm ½ watt resistor
R3	A60-692	27K ohm 1 watt resistor
R4, R7	A60-671	100K ohm ½ watt resistor
R5	A60-659	22K ohm ½ watt resistor
R6	A60-675	1K ohm ½ watt resistor
R9	A60-663	10 megohm ½ watt resistor
R11	A60-662	470K ohm ½ watt resistor
R12	A60-701	560 ohm 1 watt resistor
R13	A60-700	82K ohm 1 watt resistor
R14	A60-699	1000 ohm 2 watt resistor
		COILS
L1	B10-451	Antenna coil
L2	B10-452	R. F. coil
L3	A10-446	Oscillator coil
T1	B10-412	1st I.F. transformer
T2	B10-444	2nd I.F. transformer
		MISCELLANEOUS
T3		Output transformer (part of Speaker)
T4	C80-223	Power Transformer
	A69-169	ON-OFF Switch
	A26-123	Tone Control
	A24-169	Volume Control
	A84-41	Dial Drive Shaft and Pulley Assembly
	B79-341	6¼" P.M. Speaker
	B79-342	6¼" P.M. Speaker, alternate
	S84-56	Antenna Loop Assembly
	C67-494	Dial Scale
	D42-391	Wood Cabinet
	A52-188	Knob (Phono-Radio)
	A52-193	Knob
	A58-61	Dial Pointer
	A83-361	Dial Scale Retainer
	A69-172	Phono-Radio Switch



NOTES

VOLTAGES MEASURED WITH A 1000-OHMS-PER-VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND CHASSIS.

(A)- 640 VOLTS A.C. BETWEEN PINS 4 AND 6.
(B)- 5.0 VOLTS A.C. BETWEEN PINS 2 AND 8.
(C)- CANNOT BE MEASURED WITH VOLTMETER.

RESISTOR VALUES ARE ½ WATT UNLESS OTHERWISE INDICATED.

Power Output....5.5 watts undistorted. 7.5 watts maximum.

Sensitivity.....4 microvolts average for ½ watt output.

Selectivity.....35 kc. broad at 1000 times signal at 1000 kc.

Intermediate Freq....455 kc.

Tuning.....All bands permeability-tuned.

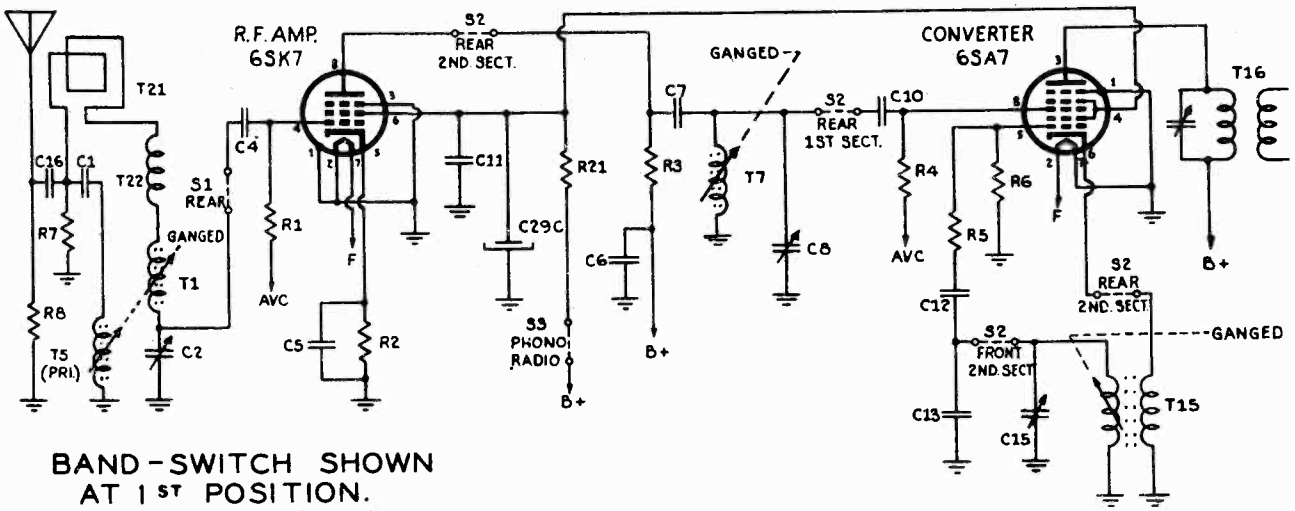
Antenna.....Built-in; provisions also for external antenna and ground.

Speaker.....8" electrodynamic. Voice coil impedance 3.2 ohms.

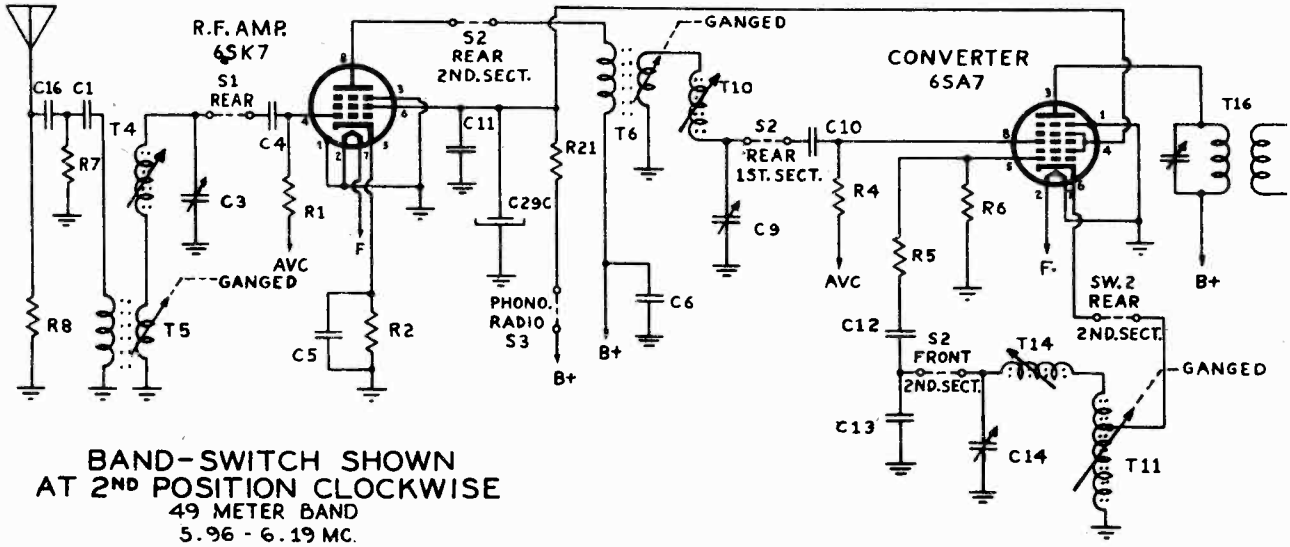
Power Supply.....105 to 125 volts AC, 60 cycles; 95 watts (118 watts with phono motor operating).

Frequency Ranges....Broadcast band—540 to 1600 kc.
49-meter band—5.96 to 6.19 mc.
31-meter band—9.1 to 10 mc.
25-meter band—11.45 to 12.16 mc.
19-meter band—14.94 to 15.46 mc.

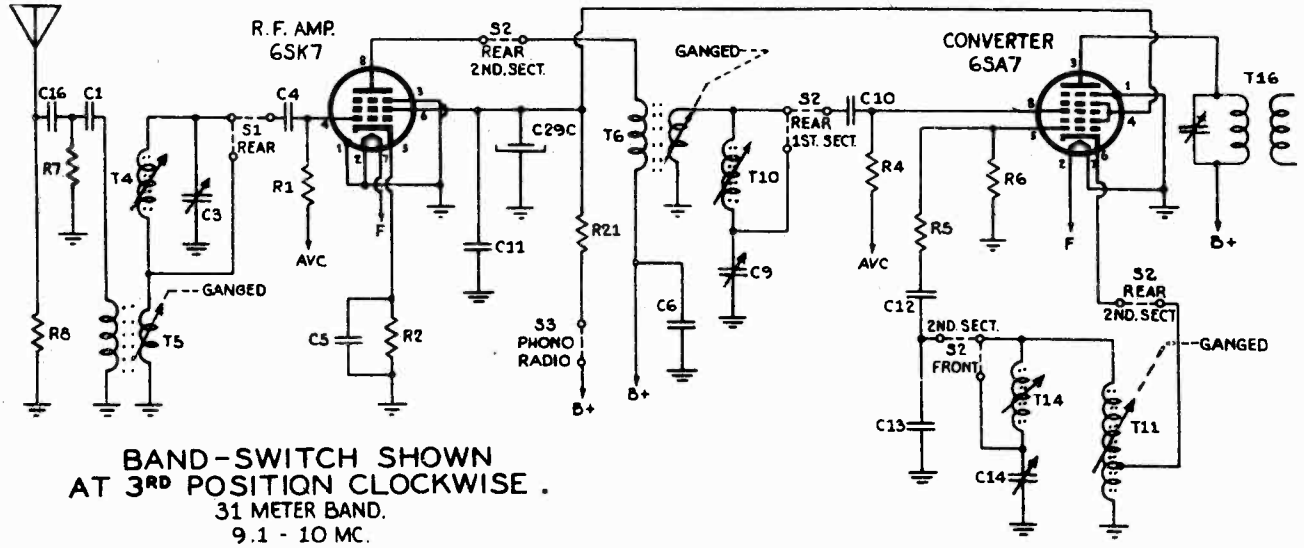
Models D-1747, D-1748 WESTERN AUTO SUPPLY CO.



BAND-SWITCH SHOWN
AT 1ST POSITION.
BROADCAST BAND
540-1600 KC

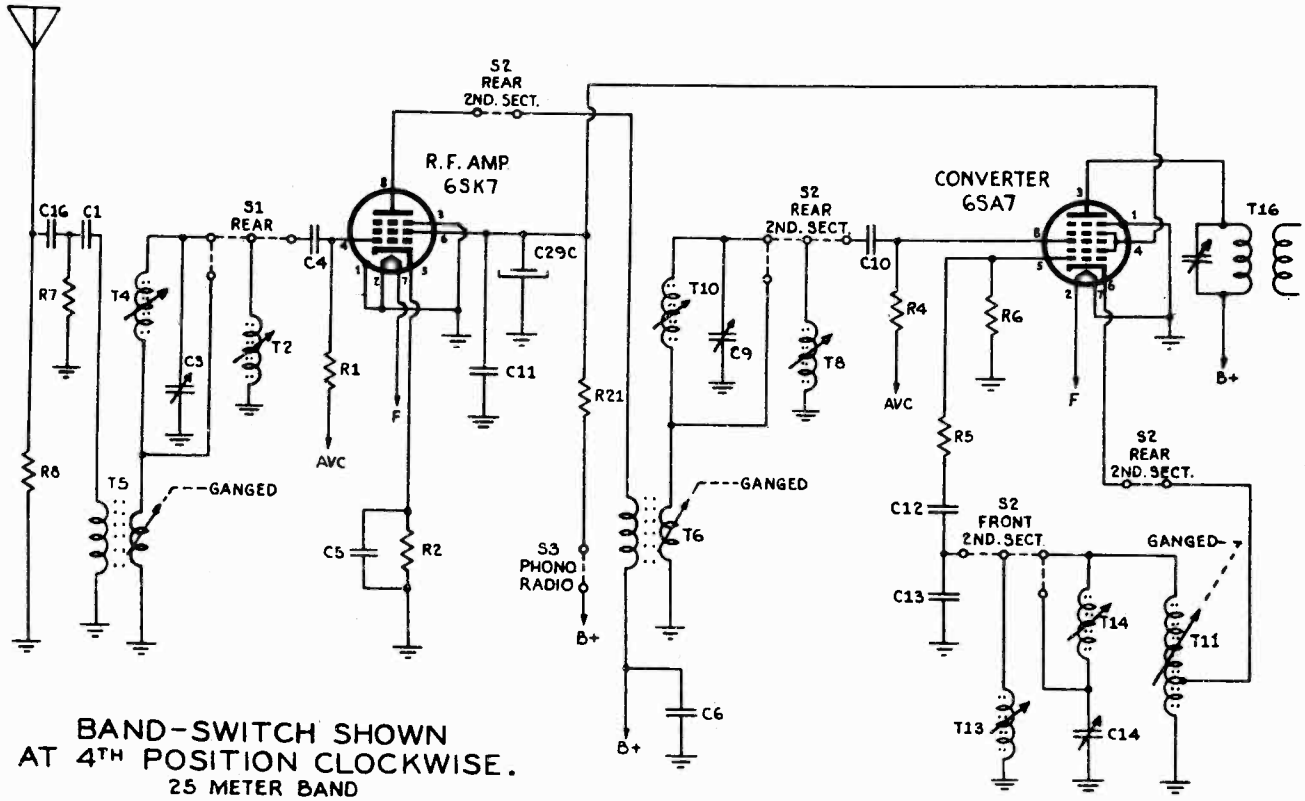


BAND-SWITCH SHOWN
AT 2ND POSITION CLOCKWISE
49 METER BAND
5.96 - 6.19 MC.

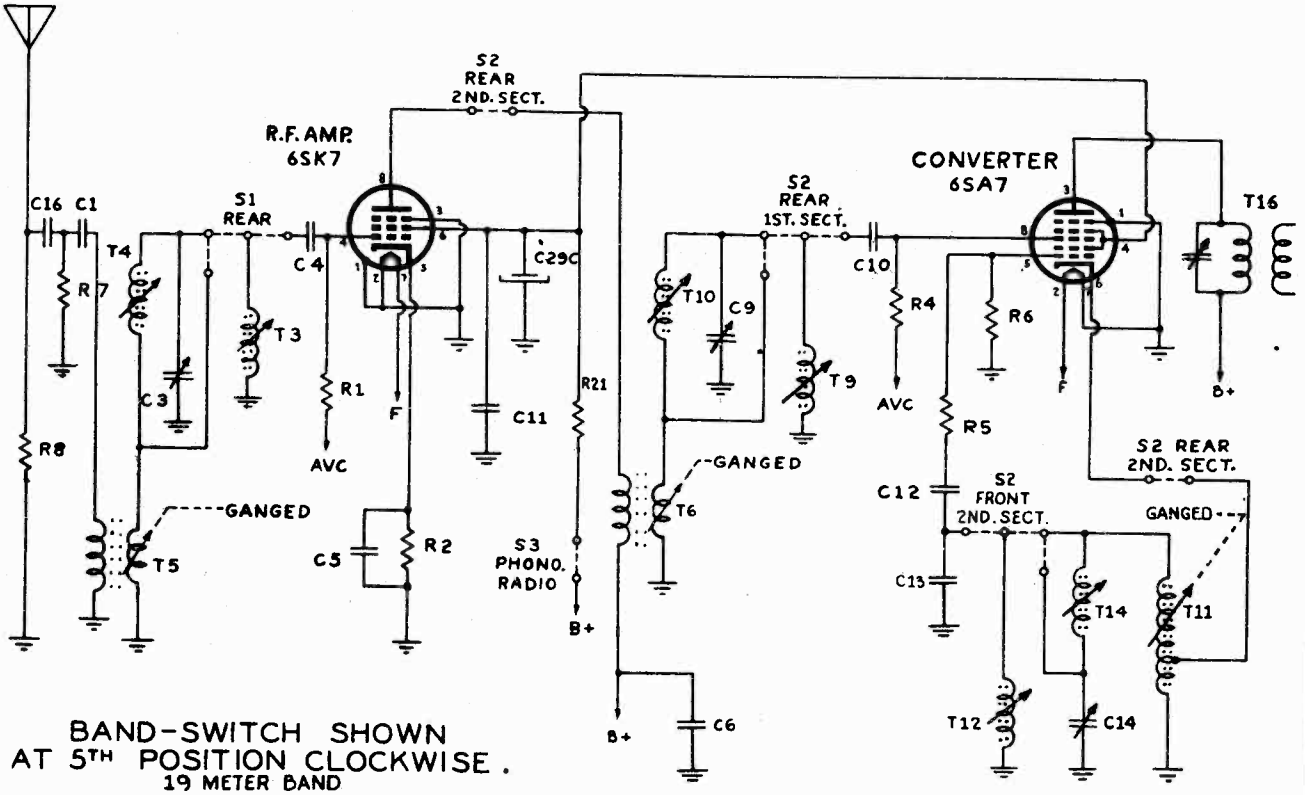


BAND-SWITCH SHOWN
AT 3RD POSITION CLOCKWISE.
31 METER BAND.
9.1 - 10 MC.

WESTERN AUTO SUPPLY CO. Models D-1747, D-1748



BAND-SWITCH SHOWN AT 4TH POSITION CLOCKWISE.
25 METER BAND
11.45 - 12.16MC.



BAND-SWITCH SHOWN AT 5TH POSITION CLOCKWISE.
19 METER BAND
14.94 - 15.46 MC.

Models D-1747, D-1748 WESTERN AUTO SUPPLY CO.

ALIGNMENT PROCEDURE

MECHANICAL ADJUSTMENT—The core tuning bar (see illustration of iron cores) and dial pointer must be adjusted mechanically before any electrical alignment is attempted. Rotate the manual tuning control until the core bar is farthest from the coils. For proper adjustment the bar should be approximately 1/32 of an inch from the two rod guide angles.

With the core bar in this position, adjust the dial pointer to coincide with 1600 kc on the dial scale.

Rotate the cores of each of the three broadcast coils (see illustration) until the end of the coil is 1-5/32" from the end of the coil form. Rotate the three 9-mc cores until this dimension is 1-1/16" for these coils. After these adjustments have been made, the unit can be aligned electrically.

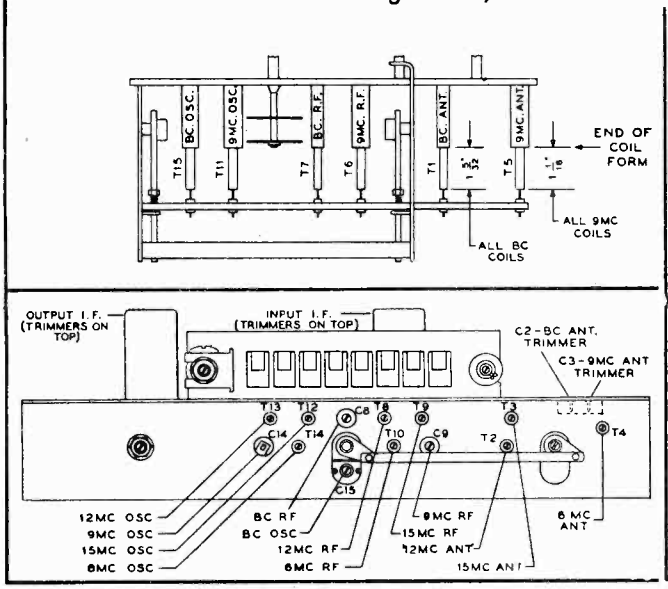
ELECTRICAL ADJUSTMENT—To align the set make the following preliminary adjustments: Set the tone control for treble tone; set the volume control at maximum; connect the ground post of the signal generator to the radio chassis; connect the output meter across a 3.2-ohm output load; and allow the receiver and signal generator to warm up for several minutes.

Align the set according to the sequence given in the chart. The indicated dummy antenna is to be connected in series between the signal generator output lead and the receiver. Adjust the set for maximum output; reduce the input as needed to keep the output near 1.3 volts.

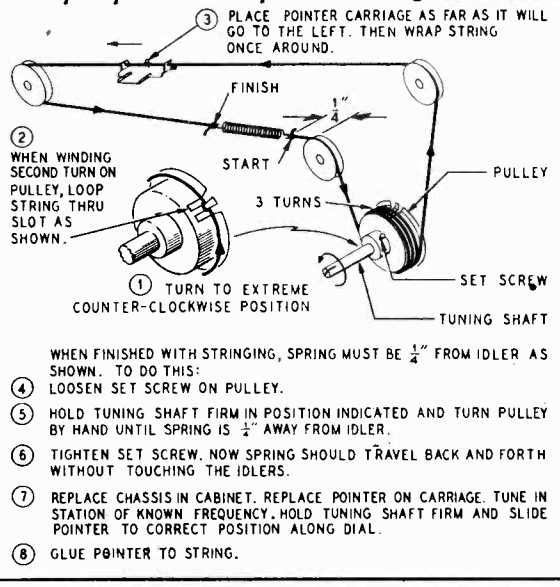
Locations of all trimmers and coils are shown elsewhere in this manual. After adjustment, seal the coil cores with collodion or a similar substance (do not use cement).

BAND SWITCH SETTING	*SIGNAL GENERATOR*			*DIAL POINTER SETTING*	*ADJUST TO MAXIMUM OUTPUT (in order shown)*
	Frequency	*Coupling Capacitor*	*Connection to Radio*		
Broadcast (for I. F.)	455 kc	.1 mf	Grid (pin 8) of converter (6SA7)	1600 kc	Trimmers on output and input I. F. cans
Broadcast	1600 kc	200 mmf	Antenna lead	1600 kc	BC Osc. trimmer C15 BC R. F. trimmer C8 BC Ant. trimmer C2
	1400 kc	200 mmf	Antenna lead	1400 kc	Rotate cores of BC R. F. coil T7 and BC Ant. coil T1
31 Meter	9.6 mc	400 ohms	Antenna lead	9.6 mc	9 mc Osc. trimmer C14 9 mc R. F. trimmer C9 9 mc Ant. trimmer C3
49 Meter	6.1 mc	400 ohms	Antenna lead	6.1 mc	6 mc Osc. coil T14 6 mc R. F. coil T10 6 mc Ant. coil T4
25 Meter	11.8 mc	400 ohms	Antenna lead	11.8 mc	12 mc Osc. coil T13 12 mc. R. F. coil T8 12 mc. Ant. coil T2
19 Meter	15.2 mc	400 ohms	Antenna lead	15.2 mc	15 mc. Osc. coil T12 15 mc R. F. coil T9 15 mc Ant. coil T3

NOTE: Before removing chassis, take off escutcheon and pull pointer from pointer carriage.



Coils and Trimmers



WHEN FINISHED WITH STRINGING, SPRING MUST BE 1/4" FROM IDLER AS SHOWN. TO DO THIS:

4. LOOSEN SET SCREW ON PULLEY.
5. HOLD TUNING SHAFT FIRM IN POSITION INDICATED AND TURN PULLEY BY HAND UNTIL SPRING IS 1/4" AWAY FROM IDLER.
6. TIGHTEN SET SCREW. NOW SPRING SHOULD TRAVEL BACK AND FORTH WITHOUT TOUCHING THE IDLERS.
7. REPLACE CHASSIS IN CABINET. REPLACE POINTER ON CARRIAGE. TUNE IN STATION OF KNOWN FREQUENCY. HOLD TUNING SHAFT FIRM AND SLIDE POINTER TO CORRECT POSITION ALONG DIAL.
8. GLUE POINTER TO STRING.

Replacement of Drive Cord

WESTERN AUTO SUPPLY CO. Models D-1747, D-1748

REPLACEMENT PARTS LIST

When ordering parts, specify part number, model number, and series

REMOVABLE TUNER ASSEMBLY

CAPACITORS*

Ref. No.	Part No.	Description
C1	B-8F-10767	.002 mf, 500 volts, 10%, mica
C2, C3	124143	Dual, broadcast (67-123 mmf) and 9 mc (95-175 mmf) ant. trimmers
C4, C10	B-8F3-121	470 mmf, 500 volts, 10%, mica
C5	C-8D-10771	.1 mf, 200 volts, +20%−10%
C6, C11	C-8D-10760	.1 mf, 400 volts, +20%−10%
C7	B-8F5-101	10 mmf, 500 volts, 10% silver mica
C8	A-8G-7205	Broadcast RF trimmer (120-220 mmf)
C9	A-8G-7206	9 mc RF trimmer (60-110 mmf)
C12	B-8F3-109	47 mmf, 500 volts, 10%, mica
C13	B-8F-10763	200 mmf, 500 volts, 3%, silver mica
C14	124145	9 mc oscillator trimmer (7-35 mmf)
C15	124144	Broadcast oscillator trimmer (15-27 mmf)

RESISTORS*

R1, R4	C-9B1-31	1 megohm, ½ watt, 20%
R2	C-9B1-55	270 ohms, ½ watt, 10%
R3	C-9B1-70	4700 ohms, ½ watt, 10%
R5	C-9B1-46	47 ohms, ½ watt, 10%
R6	C-9B1-79	27,000 ohms, ½ watt, 10%
R7, R8	C-9B1-21	22,000 ohms, ½ watt, 20%
R9	C-9B1-59	560 ohms, ½ watt, 10%
R10	C-9B1-23	47,000 ohms, ½ watt, 20%
R11	C-9B1-34	3.3 megohms, ½ watt, 20%
R12, S3	125180	Tone control (1 megohm) and radio-phone switch
R13	C-9B1-87	120,000 ohms, ½ watt, 20%
R14, R17	C-9B1-86	100,000 ohms, ½ watt, 10%
R15	C-9B1-31	1 megohm, ½ watt, 20%
R16	C-9B1-70	4700 ohms, ½ watt, 10%
R18, R19	C-9B1-29	470,000 ohms, ½ watt, 20%
R20	C-9B2-56	330 ohms, 1 watt, 10%
R21	10662	12,500 ohms, 3 watts, 10%
R23	C-9B1-20	15,000 ohms, ½ watt, 20%
R24, S4	A-10A-10586	Volume control (500,000 ohms) and on-off switch
R25	C-9B1-35	4.7 megohms, ½ watt, 20%

COILS (complete with cores)

T1	111195	Broadcast antenna coil
T2	111191	12-mc antenna coil
T3	111192	15-mc antenna coil
T4	111189	6-mc antenna coil
T5	111190	9-mc antenna coil
T6	10959	9-mc RF coil
T7	10962	Broadcast RF coil
T8	10960	12-mc RF coil
T9	10961	15-mc RF coil
T10	10958	6-mc RF coil
T11	110157	9-mc oscillator coil
T12	110159	15-mc oscillator coil
T13	110158	12-mc oscillator coil
T14	110156	6-mc oscillator coil
T15	110161	Broadcast oscillator coil
T16	108177	Input IF coil complete in can (Range of trimmers: 110-210 mmf)
T17	108176	Output IF coil complete in can (Range of trimmers: 80-140 mmf)
T18	B-12C-10234	Output transformer
T20	104202B	Power transformer

MISCELLANEOUS

S1	B-20A-10964	Band switch, antenna
S2	B-20A-10965	Band switch, oscillator and RF
	121210	Socket, molded, for 6SA7
	121171	Socket, laminated, for 6SK7GT
	117907	Tuning shaft
	117798	Pinion gear on tuning shaft
	120393	Spring, intermediate link, under ends of treadle bar
	131251	Washer, "C," on slug tuning bar
	B-2C-7245	Gear segment
	A-2J-7439	Spring clip, for coils

SOCKETS

121200	Socket, 4-terminal, for loop antenna
121279	Socket, 5-terminal, for tuner
A-15B-11538	Socket, 4-terminal, for speaker
121280	Socket, 1-terminal, for phono pick-up
121199	Socket, 2-terminal, for phono motor
121210	Socket, octal, molded (all tubes except 6SK7, IF amp.)
121273	Socket, octal, laminated (for 6SK7, IF amplifier)

MISCELLANEOUS

T19	C-18B-13181	Speaker, 8-inch, electrodynamic
	A-19A-11539	Plug on speaker leads
T21	A-14MA-11066-3	Loop antenna (ribbon only)
T22	A-16A-11113	Choke on loop terminal board
	A-19A-11322	Plug on loop antenna leads
	107401	Phono motor cable assembly
	10724	Connector, for phono pickup leads
	B-6D-10949	Dial scale
	10794	Dial light, 6-8 volts, type T-44 (2 used)
	107-259	Dial light shield
	B-2G-10588	Dial pointer
	A-2J-11041	Pointer spring
	1121035	Pointer carriage
	B-53A-10989	String for dial pointer
	120377	Spring for dial pointer string
	107266	Line cord and plug (9 feet)
	1121040-14	Side escutcheon, walnut
	1121040-41	Side escutcheon, mahogany
	1121033-14	Bottom escutcheon, walnut
	1121033-41	Bottom escutcheon, mahogany
	128-787-14	Knob, walnut, for all controls
	128-787-41	Knob, mahogany, for all controls
	B-47A-10842	Socket assembly for pilot lite
	A-2L-11293	Bandswitch link
	112808	Station call letters
	131316B	Washer "C", for 9-mc coils
	134134	Grommet for core mounting (all broadcast and 9-mc coils)
	134126	Grommet for coil mounting (broadcast RF and antenna coils)
	134125	Grommet for coil mounting (broadcast oscillator coil)
	A-25A-7619	Grommet for all 9-mc coils
	B-202-10475	Pushrod assembly
	A-2J-7176	Cam locking spring
	A-2J-7627-1	Retainer spring
	120366	Spring, pushrod return
	121281	Plug, 5-prong
	128-505-14	Pushbutton sleeve section, walnut
	128-505-41	Pushbutton sleeve section, mahogany
	128-504-29	Pushbutton, clear end piece
	131210	Washer "C", on end plate

MAIN CHASSIS

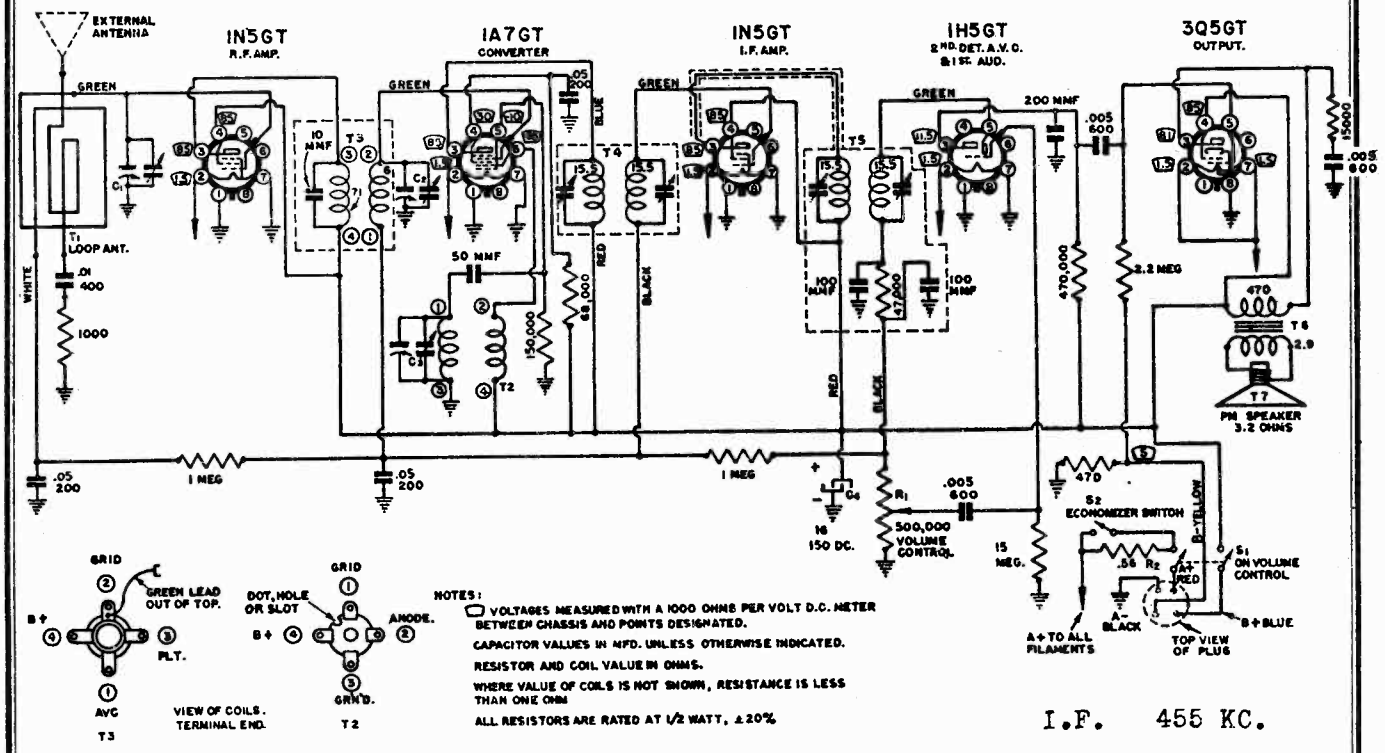
CAPACITORS*

C16	C-8F3-12	470 mmf, 20% ,mica
C17, C19	C-8D-10774	.02 mf, 400 volts, 20%
C18	C-8D-10771	.1 mf, 200 volts, +20%−10%
C-20-A C20-B	129165B	Dual, 50 mmf each section, mica, 20%
C21	C-8D-10813	.05 mf, 400 volts, 20%
C22	C-8D-10935	.005 mf, 600 volts, +40%−15%
C23	C-8F3-10	220 mmf, 20%, mica
C24	C-8D-10770	.05 mf, 200 volts, 20%
C25	C-8D-10788	.004 mf, 600 volts, 20%
C27	C-8D-10992	.03 mf, 200 volts, 20%
C28	C-8D-10785	.006 mf, 600 volts, 20%
C29-A, -B, -C	119109	Electrolytic, 15 mf x 450 volts, 15 mf x 450 volts, 10 mf x 350 volts
C30, C31	C-8J-11321	.02 mf, 600 volts, 20%

*The values of the resistors and mica capacitors listed above (except C13) are based on RMA standards. Due to conditions beyond our control some receivers have been shipped with components of pre-standardized values. This receiver will operate equally well with components of either group.

Model D2621

WESTERN AUTO SUPPLY CO.



I.F. 455 KC.

SERVICE PARTS LIST MODEL D2621

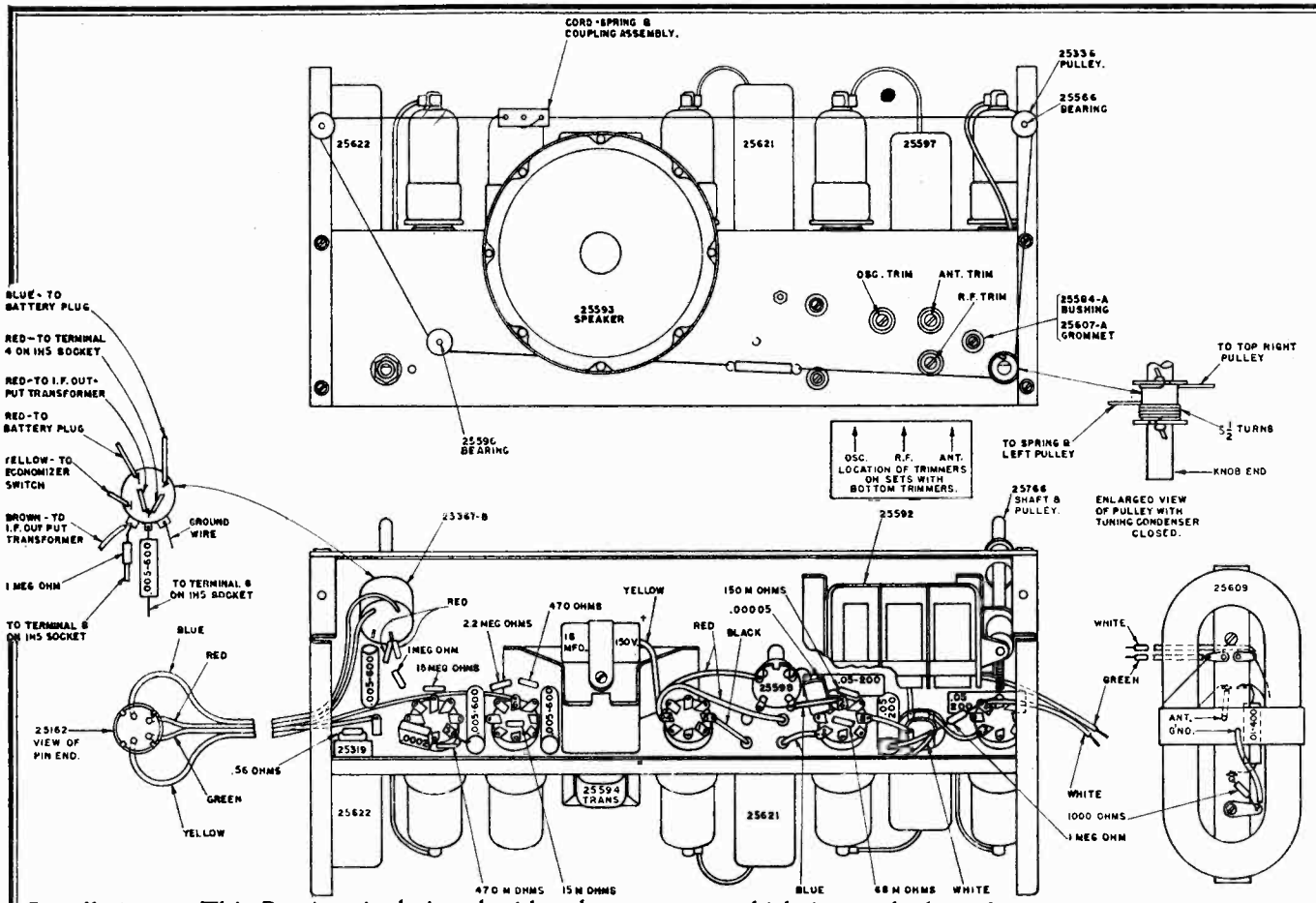
Order Parts by Model No., Part No., Series and Issue

Part No.	Name
25566	Bearing (for wood pulleys)
25597	Coil, R. F. (T3)
25598	Coil, Oscillator (T2)
25600	Condenser, Electrolytic 16 Mfd, 150 V. (C4)
25592	Condenser—Tuning, 3 Gang, less Tuning Shaft (C1, C2, C3)
25367	Control, Volume, with On-Off Switch (R1)
25767	Cord, Dial, complete with Spring and Pointer Coupling
25696	Knob, Tuning or Volume
25609	Loop (T1)
25612	Plug, Battery Cable 4 Prong
	Pointer, Dial — See "Track-Pointer"
25336	Pulley—Wood
25615	Scale, Dial
25766	Shaft—Tuning with "spool" pulley
25620	Socket—Tube
25593	Speaker 5" P. M. Dynamic (T7) (less Transformer)
25319	Switch, Economizer (S2)
25788	Track, Pointer, complete with Brackets and Pointer
25621	Transformer I. F. Input (T4)
25622	Transformer I. F. Output (T5)
25594	Transformer—Speaker Output (T6)

Reference Numbers such as (C4) are shown on circuit diagram.

Parts not listed above, may be ordered by part number as shown in the picture and by complete description, send a sketch if possible. Order parts from your local Western Auto Store.

We cannot supply speaker cones. We can replace or repair a damaged speaker for a nominal price if it is returned to our factory, transportation charges prepaid.

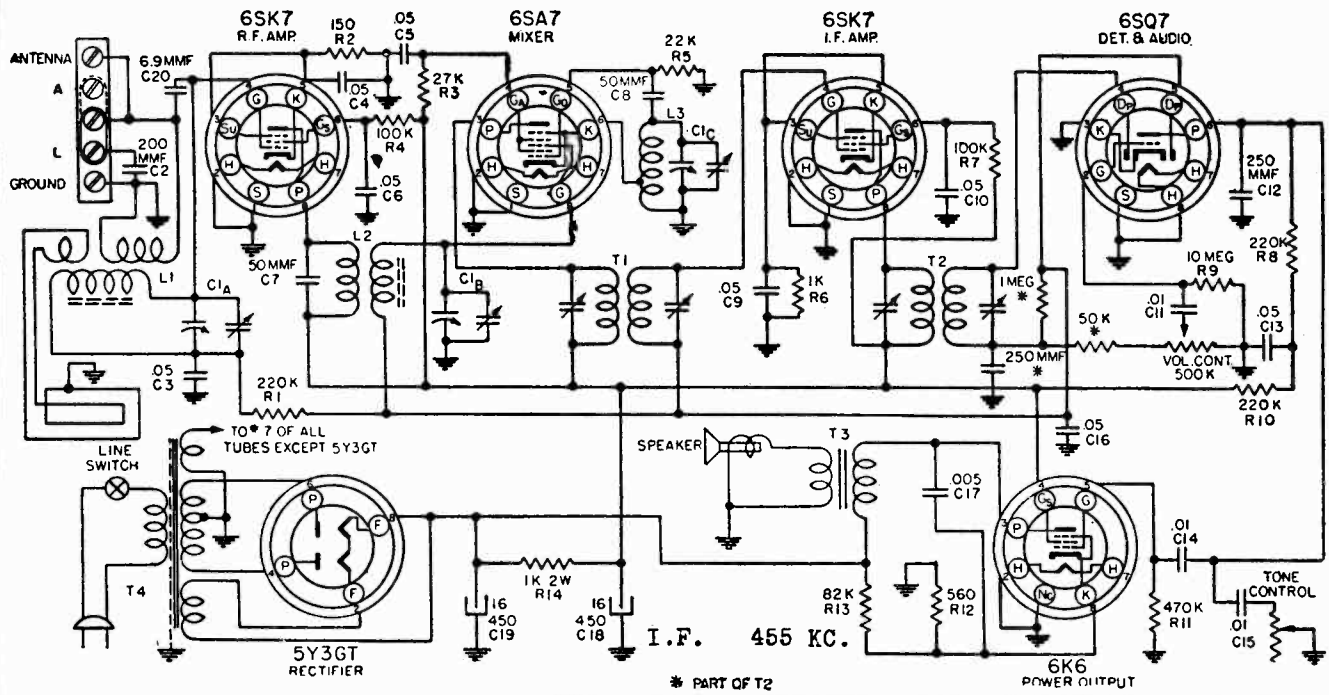


Installation — This Receiver is designed with a loop antenna which is matched to the receiver to give maximum performance. However, under certain conditions, an outside antenna and ground may give improved reception. Connections are provided for an antenna and ground. At the right rear of chassis will be found two wires, a green for antenna, and a black for ground connection. This receiver operates from a single unit Wizard B6430, Ray-O-Vac #AB-82, Burgess 17G-D60, Eveready 748, Bond. 0528, or General 60 DL-11L Battery. NO OTHER BATTERIES ARE REQUIRED, as this type of battery is a combination 90 Volt "B" battery and 1.5 Volt "A" battery. A compartment is provided in the cabinet to accommodate the battery. THIS RECEIVER HAS THE TRUE-TONE BATTERY ECONOMIZER SWITCH located at the top left rear of receiver chassis, when battery unit is NEW the ECONOMIZER switch should be in the "New" position. When the volume of local stations becomes noticeably weaker, the ECONOMIZER switch should be set to the "Used" position. ALWAYS HAVE THE ECONOMIZER SWITCH AT THE "NEW" POSITION when first putting new receiver in operation or when INSTALLING A NEW BATTERY UNIT. Battery unit is connected to receiver by means of a four wire cable and 4 prong plug. (Note: The volume at which the receiver is operated has no bearing on the life of the battery unit.)

Alignment--Remove chassis from cabinet, and align I.F. Transformers in the conventional manner with a test oscillator adjusted to 455 KC, connected to the grid of the 1A7GT through a .1 Mfd condenser, with the tuning condenser set at minimum capacity. To align tuning condenser, connect test oscillator to antenna wire (green) through a .0001 Mfd. condenser. Adjust oscillator trimmer condenser (located on left top) to 1620 KC with tuning condenser at minimum capacity (completely out of mesh). The antenna and R.F. sections are trimmed at 1400 KC. Ant. trimmer is top right; R.F. trimmer is below at right. Dial pointer may be adjusted to scale by slipping bakelite pointer coupling on dial cord.

Model D2623

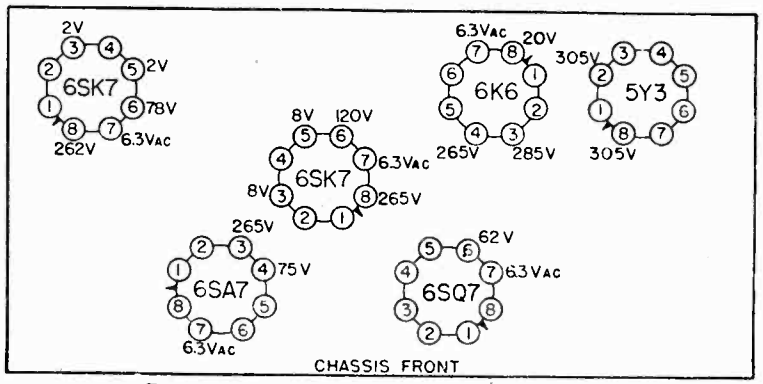
WESTERN AUTO SUPPLY CO.



SOCKET VOLTAGES

Chassis, Bottom View

All voltages are measured with a 1000 ohm per volt meter on the 150 volt scale, with no signal. To obtain an accurate voltage check the A.C. line voltage must be 117 volts. Where no voltage is shown the voltage is O or cannot be read with this type of voltmeter.



Circuit Reference	Part No.	Description
		CONDENSERS
C1A, C1B, C1C	B19-186	Variable condenser
C2		200 MMF mica condenser (on Loop)
C3, C4, C9, C16	A16-152	.05 MFD. 200 volt tubular condenser
C5, C6, C10, C13	A16-158	.05 MFD. 400 volt tubular condenser
C7, C8	A15-175	50 MMF mica condenser
C11, C14, C15	A16-156	.01 MFD. 400 volt tubular condenser
C12	A15-176	250 MMF. mica condenser
C17	A16-153	.005 MFD. 600 volt tubular condenser
C18	A18-279	16 MFD. 450 volt electrolytic condenser
C19	A18-274	16 MFD. 450 volt electrolytic condenser
C20	A84-71	6.9 MMF. condenser
		RESISTORS
R1, R8 & R10	A60-667	220K ohm 1/3 watt resistor
R2	A60-686	150 ohm. 1/3 watt resistor
R3	A60-692	27K ohm 1 watt resistor
R4, R7	A60-671	100K ohm ½ watt resistor
R5	A60-659	22K ohm 1/3 watt resistor
R6	A60-675	1K ohm 1/3 watt resistor
R9	A60-663	10 megohm 1/3 watt resistor
R11	A60-662	470K ohm 1/3 watt resistor
R12	A60-701	560 ohm 1 watt resistor
R13	A60-700	82K ohm 1 watt resistor
R14	A60-699	1000 ohm 2 watt resistor
		COILS
L1	B10-451	Antenna coil
L2	B10-452	R. F. coil
L3	A10-446	Oscillator coil
T1	B10-412	1st I.F. transformer
T2	B10-444	2nd I.F. transformer
		MISCELLANEOUS
T3		Output transformer (Part of Speaker)
T4	C80-223	Power Transformer
	A69-169	ON-Off Switch
	A26-123	Tone Control
	A24-169	Volume Control
	A84-41	Dial drive shaft and pulley Assembly
	B79-341	6¼" P.M. Speaker
	S84-54	Loop Antenna Assembly

WESTERN AUTO SUPPLY CO. Model D2623

Volume control—Maximum: all adjustments.
Tone Control—Treble: Full Clockwise Rotation.
Connect ground lead of signal generator to radio chassis.

Connect dummy antenna in series with output lead of signal generator.

Connect output meter across voice coil of speaker.

The following equipment is necessary for proper alignment:

Signal generator that will provide the test frequencies as listed.

Output meter.

Non-metallic screwdriver.

Dummy antennas—.1 mfd., 00025 mfd.

Position of Variable	Generator Frequency	Dummy Ant. mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Minimum Capacity (Fully Opened)	455 K.C.	.1	6SA7 Grid (Stator of C1B	T1 T2	I. F.
Minimum Capacity (Fully Opened)	1725 K.C.	.00025	*Ant. Terminal on Loop	C1C	Osc.
Tune in signal From Generator	1500 K.C.	.00025	*Ant. Terminal on Loop	C1B	R. F.
Tune in signal From Generator	1500 K.C.	.00025	*Ant. Terminal on Loop	C1A	Ant.

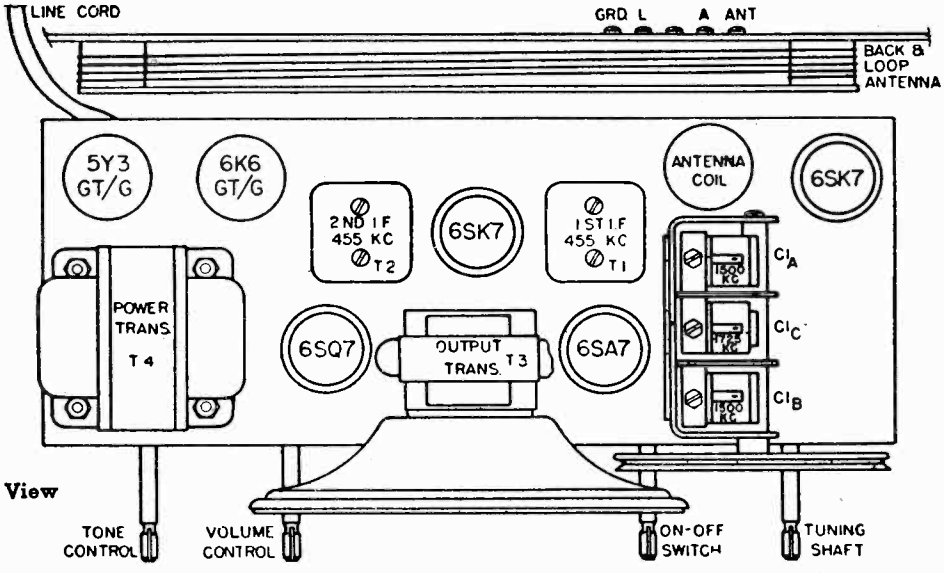
*Be sure coupling link is in correct position for external antenna operation. See illustration below (Fig. 4).

Repeat the above alignment procedure as a final check.

With an output meter connected across the voice coil of the speaker, the output meter reading for ½ watt is 1.25 volts using a signal which is modulated 400 c.p.s.

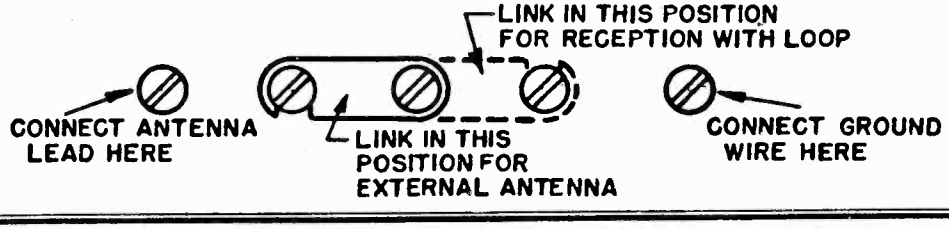
The tube complement of this receiver consists of the following:

1—6SK7—R.F. Amplifier
1—6SA7—Mixer—OSC.
1—6SK7—I.F. Amplifier
1—6SQ7—Det. AVC—Audio
1—6K6—Power Output
1—5Y3—Rectifier



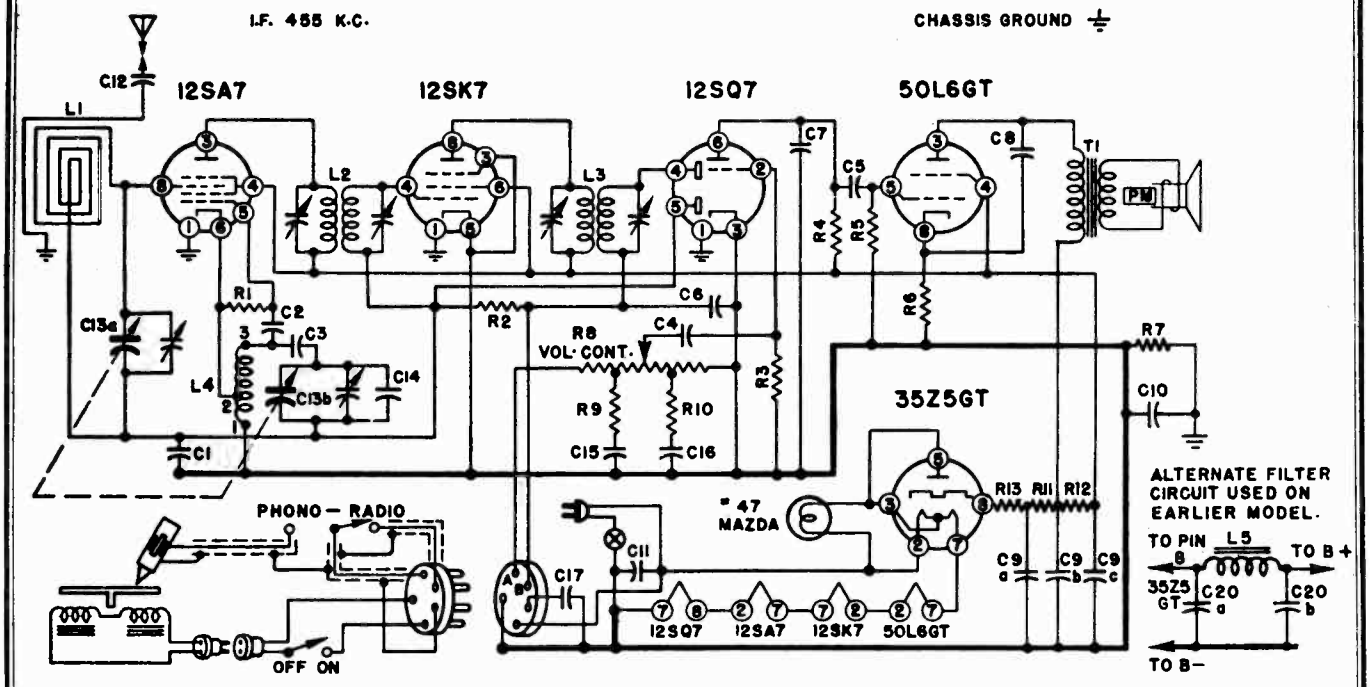
Chassis, Top View

ANTENNA and GROUND CONNECTIONS



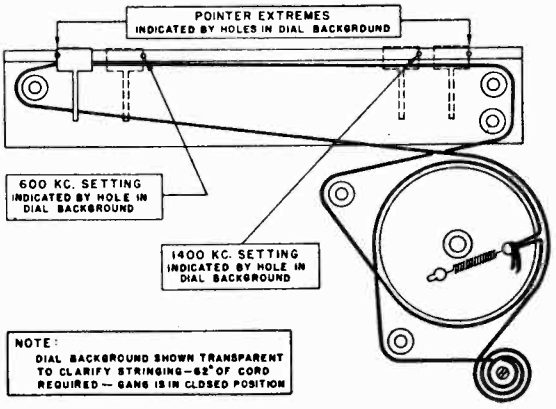
Model D2642

WESTERN AUTO SUPPLY CO.



NOTE: Connect points "A" and "B" with jumper when testing chassis with phono plug removed.

DIAL STRINGING AND POINTER SETTINGS



TRUETONE TUBES USED

12SA7—1st Det. Osc.
12SK7—I. F. Amplifier
12SQ7—2nd Det.—A. V. C.—1st Audio
50L6GT—Beam Power Output
35Z5GT—Rectifier

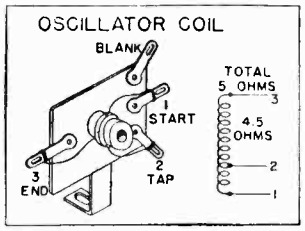
RADIO RECEPTION DURING PHONO

It is normal for strong radio stations to be heard faintly when switched to PHONO, unless the radio dial is tuned between stations. This interference can sometimes be reduced by moving condenser C4 as far from the 12SQ7 socket and as close to the chassis as possible. Also move the I.F. transformer wire, connected to pin 4 or 5 of 12SQ7, as far from condenser C4 and as close to the chassis as possible.

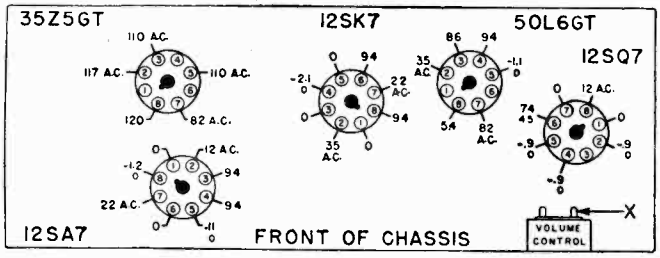
POWER SUPPLY

This receiver is designed to operate ONLY from an AC (Alternating Current) power supply line of 110-120 volts, 60 cycles.

The line plug should be tried both ways and left in the position that gives minimum hum.



VOLTAGE DATA



Bottom View of Chassis, Showing Voltages

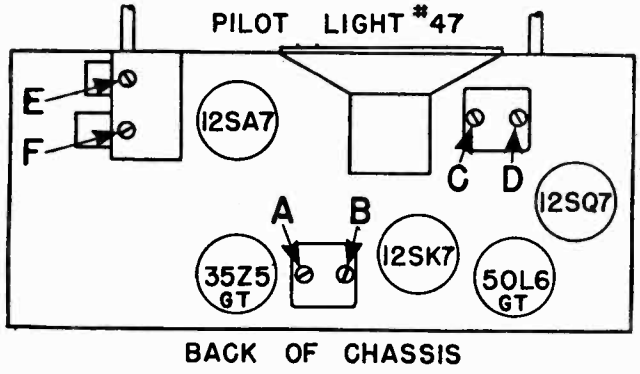
All readings made between Tube Socket Terminals and Switch Lug on volume control (Point "X" on drawing).
Measured on a 117 Volt A.C. line.
Volume control full on.
Dial tuned to low frequency end, no signal.
Voltages obtained on Vacuum Tube voltmeter.
A second voltage reading is shown made with a 1000 ohm-per-volt meter when use of this instrument would result in appreciably lower readings.

WESTERN AUTO SUPPLY CO. Model D2642

Step	Dummy Antenna between Radio and Signal Generator	Connect Signal Generator to	Signal Generator Frequency	Gang Condenser Setting	Trimmers Adjusted for Maximum Output
1	250 mmfd. Condenser	Gang Condenser Antenna Stator	455 KC.	Rotor full open (Plates out of mesh)	C and D—2nd. I.F.
2	250 mmfd. Condenser	Gang Condenser Antenna Stator	455 KC.	Rotor full open (Plates out of mesh)	A and B—1st I.F.
3	250 mmfd. Condenser	Gang Condenser Antenna Stator	1630 KC.	Rotor full open (Plates out of mesh)	E—Oscillator
4	No actual connection between set and generator.	Loop radiator (or place pickup lead from generator close to loop of set to obtain adequate signal).	1400 KC.	Set Gang to tune in Generator Signal	F—Antenna (See Note)

NOTE: Antenna trimmer "F" must be aligned after chassis and loop are mounted in the cabinet. This adjustment can be made by lifting up the top cover and removing the plug button which is directly above trimmer "F."

- IMPORTANT—Check to see that dial pointer reaches each end of dial scale when Station Selector Control is turned from one end to the other.
- Volume control—Maximum for all adjustments.
- Connect radio chassis to ground post of signal generator with a short heavy lead.
- Connect output meter across voice coil of speaker.
- Allow chassis and signal generator to warm up for several minutes.
- Use lowest Output setting of Signal Generator capable of producing adequate Output Meter indication and then proceed in the following sequence.



BACK OF CHASSIS

REPLACEMENT PARTS

CONDENSERS

Symbol	Description	Part No.
C1	Paper, .1 mfd., 200 V.	64B1-30
C2	Mica, 50 mmf. ±20%	65B7-11
C3	Paper, .02 mfd. 400 V.	64B1-24
C4	Paper, .01 mfd. 400 V.	64B1-25
C5	Paper, .01 mfd. 400 V.	64B1-25
C6	Mica, 250 mmf. ±20%	65B7-22
C7	Mica, 500 mmf. ±20%	65B7-27
C8	Paper, .02 mfd. 400 V.	64B1-24
C9a	Elect., 30 mfd. 150 V.	67A8
C9b	Elect., 30 mfd. 150 V.	
C9c	Elect., 20 mfd. 150 V.	
C10	Paper, .2 mfd. 400 V.	64A2-1
C11	Paper, .05 mfd. 400 V.	64B1-22
C12	Paper, .005 mfd. 600 V.	64B1-12
C13a, C13b	Gang Condenser (2 Section)	68A2
C14	Mica, 20 mmf. ±10%	65B5-5
C15	Paper, .01 mfd. 400 V.	64B1-25
C16	Paper, .01 mfd. 400 V.	64B1-25
C17	Paper, .2 mfd. 400 V.	64A2-1
C20a	Elect., 30 mfd. 150 V.	67A3
C20b	Elect., 50 mfd. 150 V.	

RESISTORS

Symbol	Description	Part No.
R1	22,000 ohm ±10%, ½ W.	60B8-223
R2	1 megohm ±10%, ½ W.	60B8-105
R3	10 megohm ±10%, ½ W.	60B8-106
R4	220,000 ohm ±10%, ½ W.	60B8-224
R5	470,000 ohm ±10%, ½ W.	60B8-474
R6	150 ohm ±10%, ½ W.	60B8-151
R7	150,000 ohm ±10%, ½ W.	60B8-154

RESISTORS (Cont'd)

Symbol	Description	Part No.
R8	½ megohm Volume Control and Switch	75B3-2
R9	47,000 ohm ±10%, ½ W.	60B8-473
R10	27,000 ohm ±10%, ½ W.	60B8-273
R11	150 ohm ±10%, 1 W.	60B28-1
R12	1,000 ohm ±10%, 1 W.	60B28-2
R13	33 ohm ±10%, 1 W.	60B28-3

TRANSFORMERS AND COILS

Symbol	Description	Part No.
L1	Antenna, Loop	69B6
L2	Transformer, 1st I. F.	72B3
L3	Transformer, 2nd I. F.	72B4
L4	Oscillator Coil	69A5
L5	Choke Coil (Filter)	74A1
T1	Transformer, Output	*

*When ordering, specify all numbers on speaker and transformer.

PHONOGRAPH PARTS

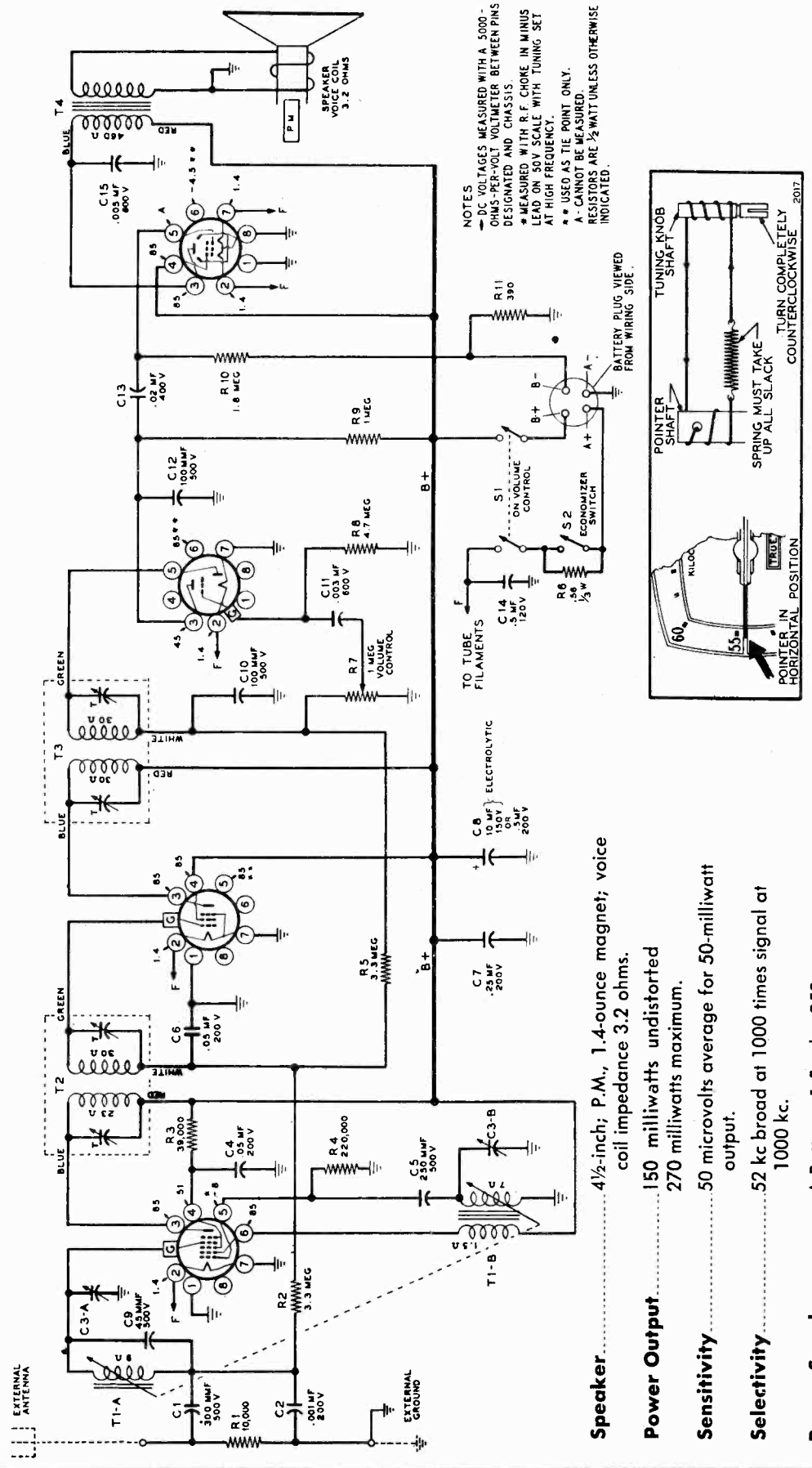
Description	Part No.
Centerpast	G400A12
Crystal Cartridge	409A1
Idler Wheel (407B3 Motor)	G400A23
Idler Wheel (407B1 Motor)	G400A57
Idler Wheel (407B2 Motor)	G400A59
Motor, 60 cycle 115 volt, A.C. (Types 407B1 and 407B2 also used)	407B3

MISCELLANEOUS

Description	Part No.
Background, Dial	X22C3-1
Buttons, Snap	13A1-2-47
Cord, Dial (62")	50A1-3
Drum and Hub Assembly	A1012
Escutcheon, On-Off	26A6-1
Escutcheon, Radio-Phono	26A6-2
Grommet, Rubber (Gang Mtg.)	12A1-2
Knob	33A10-2
Pilot Light #47	81A1-8
Pilot Light Socket and Leads	82A2-3
Plug (Phono Leads)	88A3-5
Plug, Button	13A2-1-57
Plug, Alden (Motor Leads)	88A8-1
Plug Shell (Phono Leads)	88A3-4
Pointer	25A13-1
Pulley, Fibre Dial	17A1-3
Scale, Glass Dial	21B27-1
Shaft, Tuning	28A1-1
Socket and Leads (Alden)	89A6-1
Socket, Octal Tube	87A10-2
Speaker, 5" PM and Output Transformer	78B13-1
Spring, Dial Cord Tension	19A1-3
Switch, SPDT (Radio-Phono)	77B1-11
Switch, SPST (On-Off)	77B1-44
Washer, Flat Insulating	5A1-6
Washer, Offset Insulating	5A2-5
Washer, C	4A4-1
Washer, Spring	4A6-3-0

Model D2661

WESTERN AUTO SUPPLY CO.



NOTES
— DC VOLTAGES MEASURED WITH A 5000-OHMS-PER-VOLT VOLTMETER BETWEEN PINS DESIGNATED AND CHASSIS.
* MEASURED WITH R.F. CHOKE IN MINUS LEAD ON 50V SCALE WITH TUNING SET AT HIGH FREQUENCY.
* * USED AS TIE POINT ONLY.
A - CANNOT BE MEASURED.
RESISTORS ARE ½ WATT UNLESS OTHERWISE INDICATED.

REPLACEMENT OF DIAL POINTER DRIVE CORD

When the installation is complete, and when the capacitor rotors are closed, the spring should be close to the pointer shaft.

After installing the cord, remove the crystal covering the face of the dial. Turn the tuning shaft completely counterclockwise. Then rotate the pointer, against the friction of the shaft, until it is in a horizontal position, as indicated.

Speaker.....4½-inch; P.M., 1.4-ounce magnet; voice coil impedance 3.2 ohms.

Power Output.....150 milliwatts undistorted
270 milliwatts maximum.

Sensitivity.....50 microvolts average for 50-milliwatt output.

Selectivity.....52 kc broad at 1000 times signal at 1000 kc.

Power Supply.....A Battery—1.5 volts, 250 ma.
B Battery—90 volts, 11 ma.

Frequency Range.....540 to 1700 kc.

Intermediate Freq......455 kc.

Tuning.....Two permeability-tuned circuits.

Antenna.....External only. Also external ground.

WESTERN AUTO SUPPLY CO. Model D2661

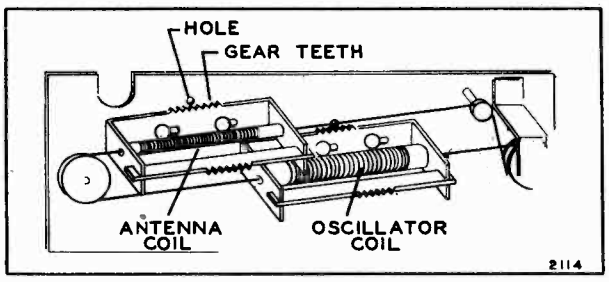
ALIGNMENT PROCEDURE

(Refer to Chassis and Coil Views)

- Output meter across 3.2-ohm output load.
- Align for maximum output. Reduce input as needed to keep output near 0.4 volts.
- Volume control at maximum for all adjustments.
- Connect ground post of signal generator to radio chassis.

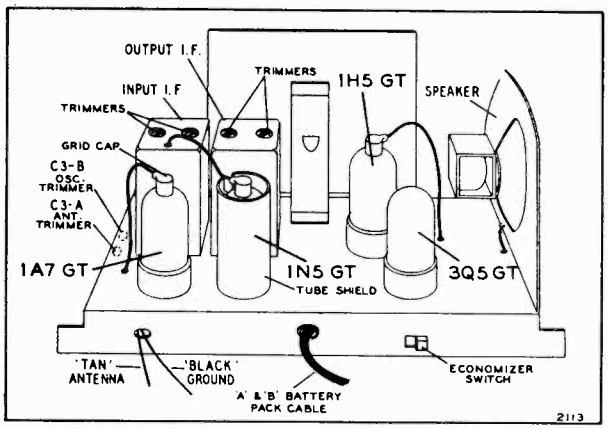
SIGNAL GENERATOR			*TUNER SETTING*	*ADJUST FOR MAXIMUM OUTPUT (in order shown)*
Frequency	*Dummy Antenna*	*Connection to Radio*		
455 kc	.1 mf	Grid (top cap) of 1A7GT	Iron cores all the way out	Trimmers on output and input I.F. cans
1700 kc	.1 mf	Grid (top cap) of 1A7GT	Iron cores all the way out	Oscillator trimmer C3-B
1700 kc	200 mmf	Antenna lead	Iron cores all the way out	Antenna trimmer C3-A
1400 kc	200 mmf	Antenna lead	Turn dial to 1400 kc	Adjust position of antenna coil (see coil view)*

*This adjustment and the previous adjustment are interlocking; therefore repeat the two adjustments alternately for best results.



VIEW OF COIL ASSEMBLY

The antenna coil assembly is movable left or right. When making the adjustment as required in the alignment procedure, move the coil assembly very slowly, either by hand or by pivoting one end of a screwdriver blade in the hole and engaging the blade in the gear teeth of the coil form.



CHASSIS VIEW

Ref. No.	*Part No.*	*Description*
		CAPACITORS
C1	129114	300 mmf, 20%, mica
C2	100112	.001 mf, 200 volts, 10%
C3-A, -B	124165	Dual trimmer, antenna and oscillator. Range: 84-156 mmf ea.
C4, C6	10022	.05 mf, 200 volts, 25%
C5	12912	250 mmf, 20%, mica
C7	1006	.25 mf, 200 volts, 25%
C8	C-8D-11270 or 119117	.5 mf, 200 volts, +20%—10% 10 mf, 150 volts, electrolytic
C9	129177	45 mmf, 5%, ceramicon
C10, C12	12940	100 mmf, 10%, mica
C11	10012	.003 mf, 600 volts, 25%
C13	10026	.02 mf, 400 volts, 25%
C14	10017	.5 mf, 120 volts, +50%—10%
C15	1007	.005 mf, 600 volts, 25%
		RESISTORS*
R1	C-9B1-74	10,000 ohms, ½ watt, 10%
R2, R5	C-9B1-34	3.3 megohms, ½ watt, 20%
R3	C-9B1-81	39,000 ohms, ½ watt, 10%
R4	C-9B1-27	220,000 ohms, ½ watt, 20%
R6	130346	.56 ohm, ⅓ watt, 10%, wirewound
R7, S1	101210	Volume control (1 megohm) and on-off switch
R8	C-9B1-35	4.7 megohms, ½ watt, 20%
R9	C-9B1-98	1 megohm, ½ watt, 10%
R10	C-9B1-101	1.8 megohms, ½ watt, 10%
R11	C-9B1-57	390 ohms, ½ watt, 10%

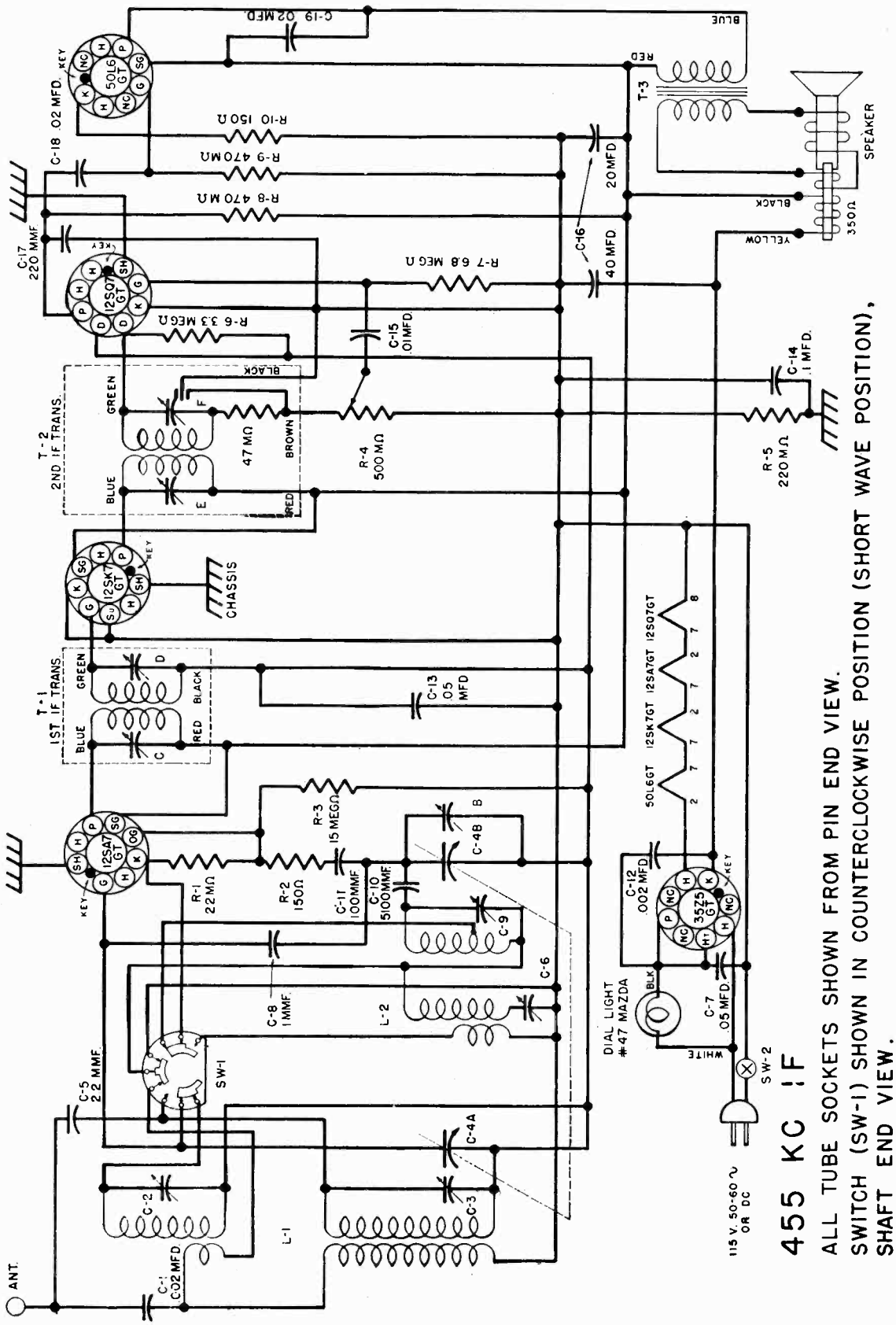
Ref. No.	*Part No.*	*Description*
		TRANSFORMERS AND COILS
T1-A, -B	13613	Tuning assembly complete, including antenna and oscillator coils
T2	108202B	Input I.F. coil, complete in can. Range of trimmers: 60-110 mmf (pri.), 40-70 mmf (sec.)
T3	108153C	Output I.F. coil, complete in can. Range of trimmers: 40-70 mmf each
T4	10591C	Output transformer
		MISCELLANEOUS
	114213	Speaker, 4-inch, P.M.
	121210	Tube socket
	107364	Battery cable assembly
S2	12588B	Battery economizer switch
	115396	Tube shield (for 1N5GT)
	112825	Pointer, for dial
	112924	Dial scale
	112824	Crystal for dial scale
	B-2M-10383	Snap-in rivets for dial scale
	A-53A-10989	Cord for dial pointer drive (1 ft)
	120184	Spring for drive cord
	128501-36	Cabinet
	128499-36	Knob, tuning
	128499B-36	Knob, volume
	128638	Back for cabinet
	131193	Snap-in rivets for mounting back

*The values of the resistors listed above are based on RMA standards. Due to conditions beyond our control some receivers have been shipped with resistors of pre-standardized values. This receiver will operate equally well with resistors of either group. An illustration of the difference follows:

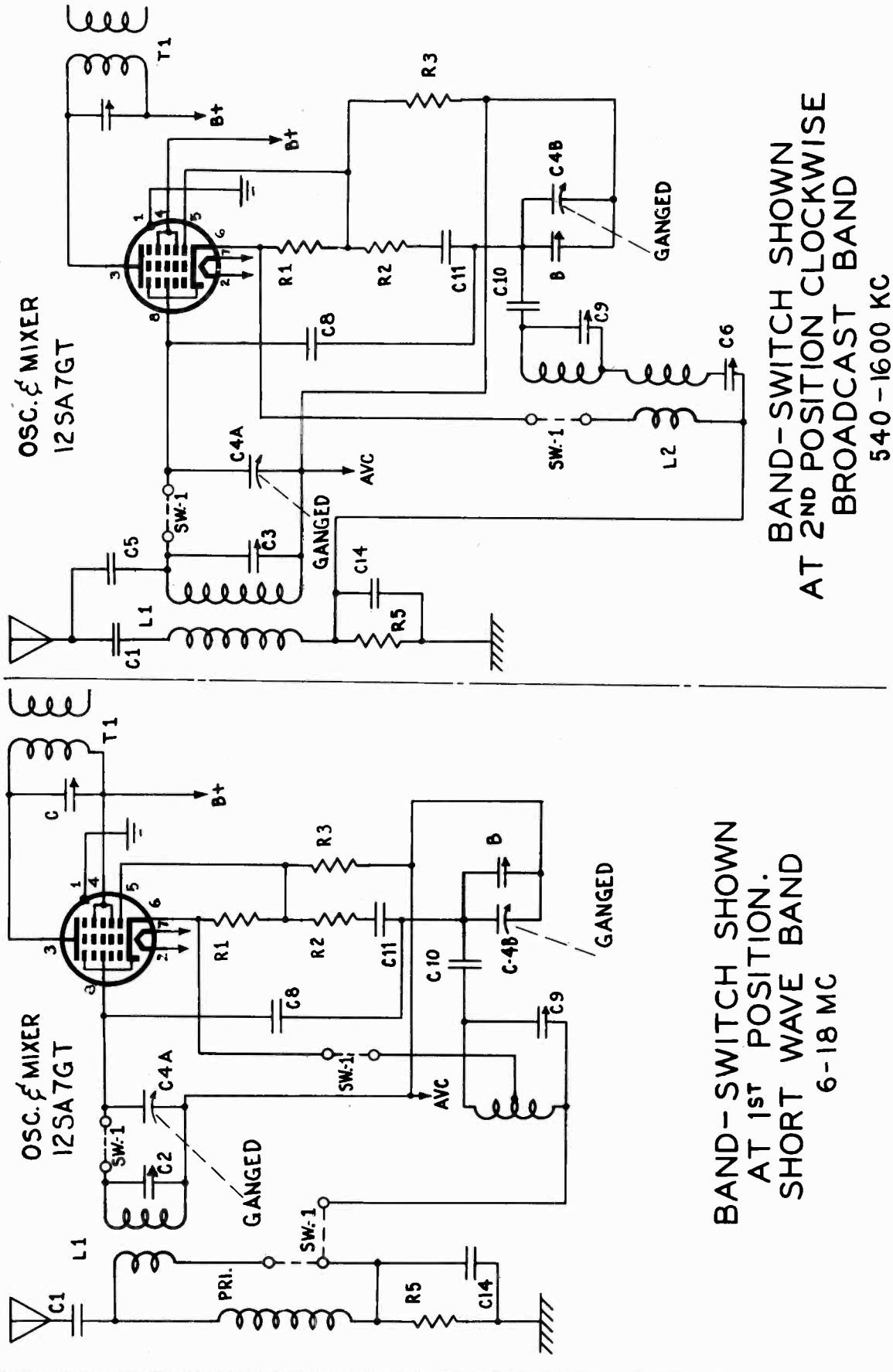
Pre-standardized value — 200,000 ohms, ⅓ watt, 20%
RMA value — 220,000 ohms, ½ watt, 20%

Model D2691

WESTERN AUTO SUPPLY CO.



WESTERN AUTO SUPPLY CO. Model D2691



Model D2691

WESTERN AUTO SUPPLY CO.

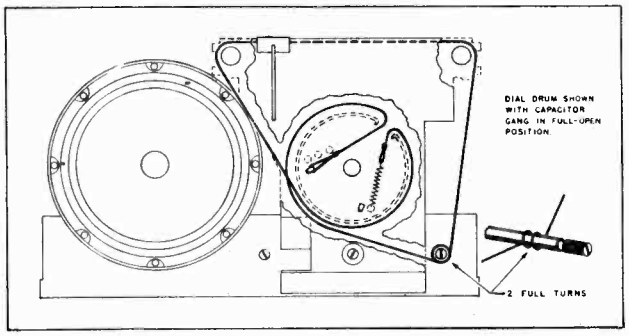
ALIGNMENT PROCEDURE

The following equipment is necessary to properly align this chassis:

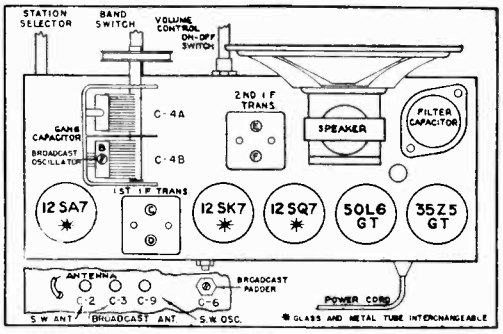
1. A signal generator which will provide an accurately calibrated signal at the frequencies listed.
2. An output meter.
3. A non-metallic screwdriver.
4. Dummy antenna: — .1 mfd. — 200 mmf. — 400 ohms

CONNECT TEST OSCILLATOR TO	DUMMY ANTENNA	INPUT SIGNAL FREQUENCY	BAND	SET DIAL AT	TRIMMERS	PURPOSE
12SA7GT grid	.1 mfd.	455 kc.	Broadcast	HF end	C D E F	Align IF
12SA7GT grid	.1 mfd.	1620 kc.	Broadcast	HF end	B	Set limit of band
Ant. terminal	400 ohms	18.3 mc.	Short Wave	HF end	C-9	Set limit of band
Ant. terminal	400 ohms	18.0 mc.	Short Wave	18 mc.	C-2	Align antenna
Ant. terminal	200 mmf.	1400 kc.	Broadcast	1400 kc.	C-3	Align antenna
Ant. terminal	200 mmf.	600 kc.	Broadcast	600 kc.	C-6	Rock gang and adjust to max.

NOTE: Recheck alignment of trimmers B and C-3 after adjusting C-6.



Dial Mechanism



Tube Layout

Electrical and Mechanical Specifications

Frequency Range	540-1600 kc., 6-18 mc.	V.C. Impedance	3.5 ohms at 400 cycles
Intermediate Frequency	455 kc.	Power Output (Undistorted)	.75 watt
Power Supply	105-125 volts, 50-60 cycle AC or DC	Power Output (Maximum)	1.5 watts
Loudspeaker	Dynamic	Tuning Drive Ratio	5-1

TUBE COMPLEMENT

1—12SA7GT Oscillator and Mixer tube
1—12SK7GT IF Amplifier tube
1—12SQ7GT Second Detector and First Audio tube
1—50L6GT Power Output tube
1—35Z5GT Rectifier tube

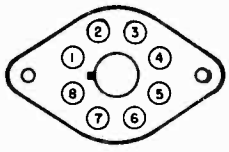
NOTE: The above glass tubes are interchangeable with their metal equivalent.

WESTERN AUTO SUPPLY CO.

Model D2691

SOCKET VOLTAGES

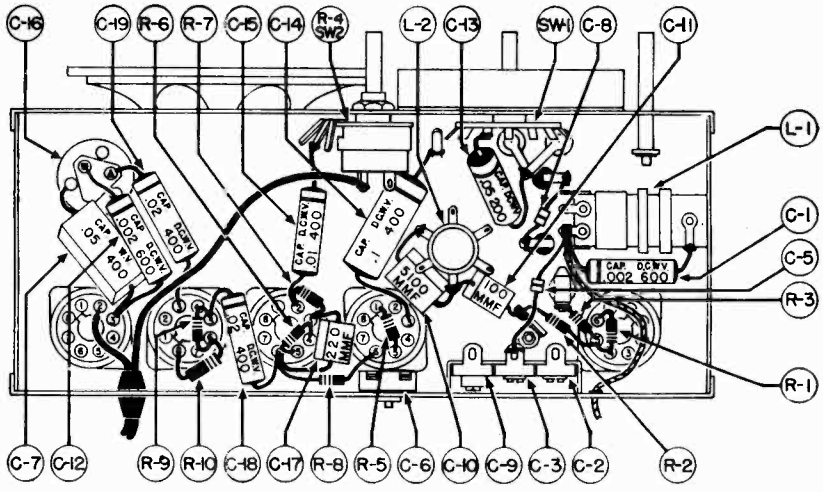
TUBE	POSITION	1	2	3	4	5	6	7	8
12SA7GT	Oscillator and Mixer	0	37.5 AC	99	99	–4.2	0	24.5 AC	0
12SK7GT	IF Amplifier	0	24.5 AC	0	0	0	99	12.5 AC	99
12SQ7GT	2nd Det.—1st Audio	0	0	0	0	0	16	12.5 AC	0
50L6GT	Power Output	0	85 AC	91.5	99	0	0	37.5 AC	5.9
35Z5GT	Rectifier	0	117 AC	112 AC	0	112 AC	0	85 AC	112



NOTE: All DC voltages measured with a 1000 ohm-per-volt meter from ON-OFF switch (—B) to socket contact indicated. All voltages are positive DC unless otherwise marked.

Volume control full on. No signal.

Line Voltage 117 volts AC.



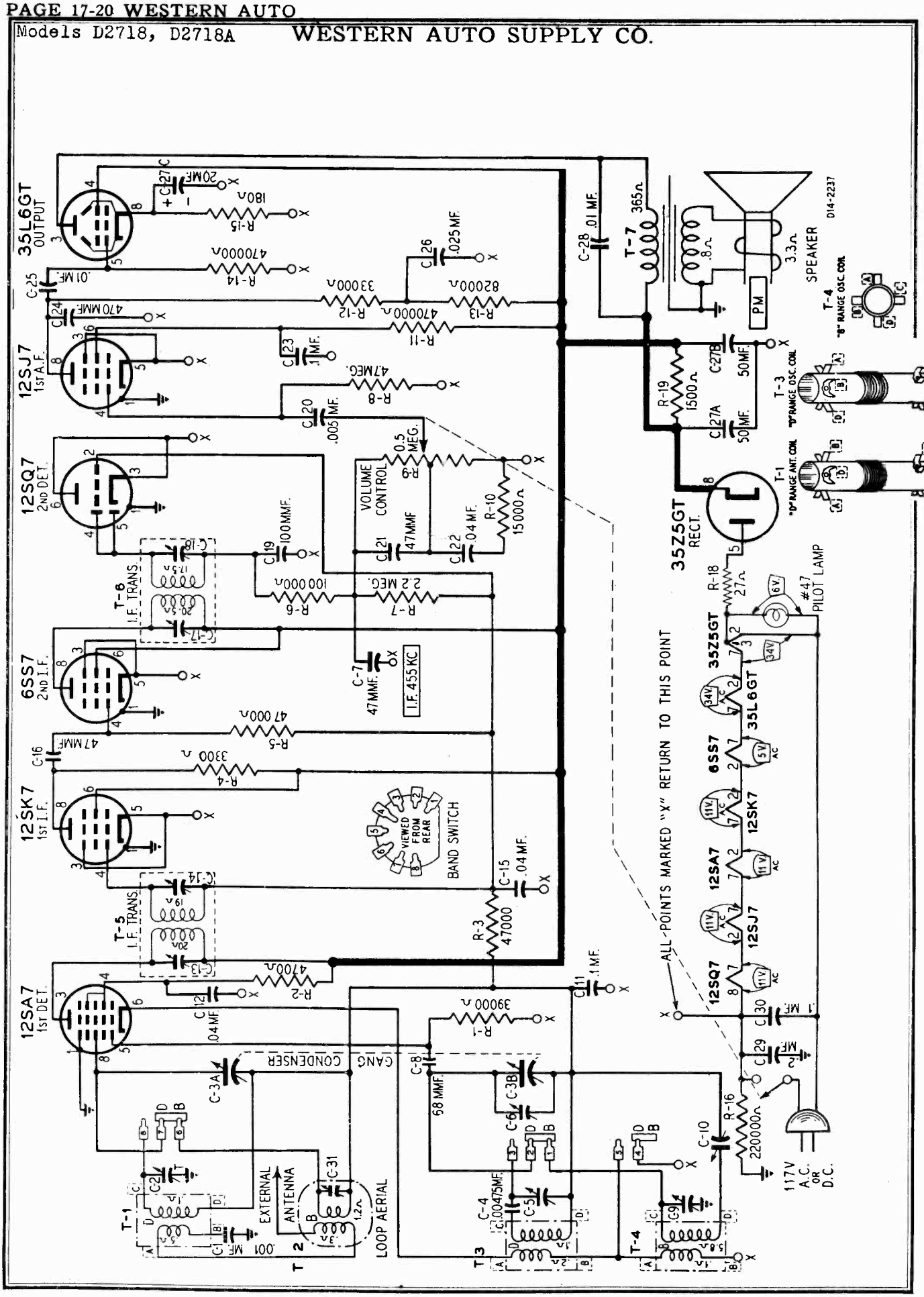
SERVICE PARTS LIST

Symbol	Part No.	Description
C-7	BC31B503	Cap., Molded Paper, .05 mfd.
C-13	BD210503	Cap., Paper, .05 mfd., 200 v.
C-15	BD410103	Cap., Paper, .01 mfd., 400 v.
C-14	BD410104	Cap., Paper, .1 mfd., 400 v.
C-18, 19	BD410203	Cap., Paper, .02 mfd., 400 v.
C-1, 12	BD610202	Cap., Paper, .002 mfd., 600 v.
C-10	BM58D512	Cap., Mica, 5100 mmf.
C-11	BM78A101	Cap., Mica, 100 mmf.
C-17	BM78A221	Cap., Mica, 220 mmf.
R-10	BR16C151	Resistor, 150 ohm, ½ w.
R-2	BR17B151	Resistor, 150 ohm, ⅓ w.
R-3	BR17B156	Resistor, 15 meg., ⅓ w.
R-1	BR17B223	Resistor, 22,000 ohm, ⅓ w.
R-5	BR17B224	Resistor, 220,000 ohm, ⅓ w.
R-6	BR17B335	Resistor, 3.3 meg., ⅓ w.
R-8, 9	BR17B474	Resistor, 470,000 ohm, ⅓ w.
R-7	BR17B685	Resistor, 6.8 meg., ⅓ w.
	A-2163	Cable, Drive
	A-6158	Lamp, Pilot, No. 47, Mazda, 6.3 v.
C-16	A-8948	Cap., Electrolytic, 40-20 mfd.
R-4	B-9051-5	Control, Vol & Sw. 500,000 ohm
T-1	B-51010-1	Transformer Assembly, 1st IF
T-2	B-51011-1	Transformer Assembly, 2nd IF
	C-51014	Speaker, 5-inch Dynamic
	A-51160-1	Cord, Power, 6 ft.
	A-51163	Clip, Spring
C-6	B-51428-5	Capacitor, Padder
	B-51591	Spring, Dial Bracket
SW-1	B-51764-1	Switch, Band
	A-51787	Spring, Cable, Music Wire
L-1	B-51828	Coil Assembly, BC & SW Ant.
C-2, 3, 9	A-51834	Capacitor, Trimmer, 3-section
L-2	B-51836	Coil Assembly, Osc.
C-4	C-51837-1	Capacitor, Variable
C-8	B-51839-2	Capacitor, 1 mmf.
C-5	B-51839-4	Capacitor, 2.2 mmf.
	A-51869	Antenna Reel Assembly

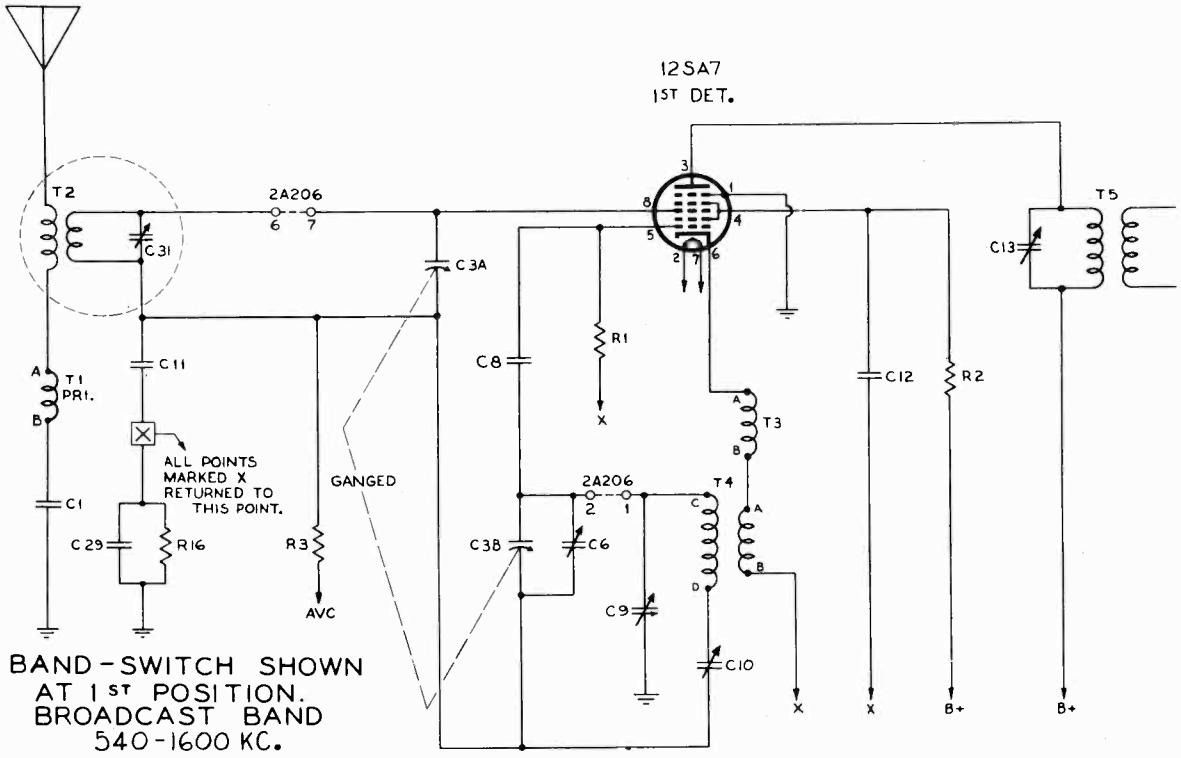
Order parts not listed by specifying (1) Part Name and (2) Model Number (include number following dash)

Models D2718, D2718A

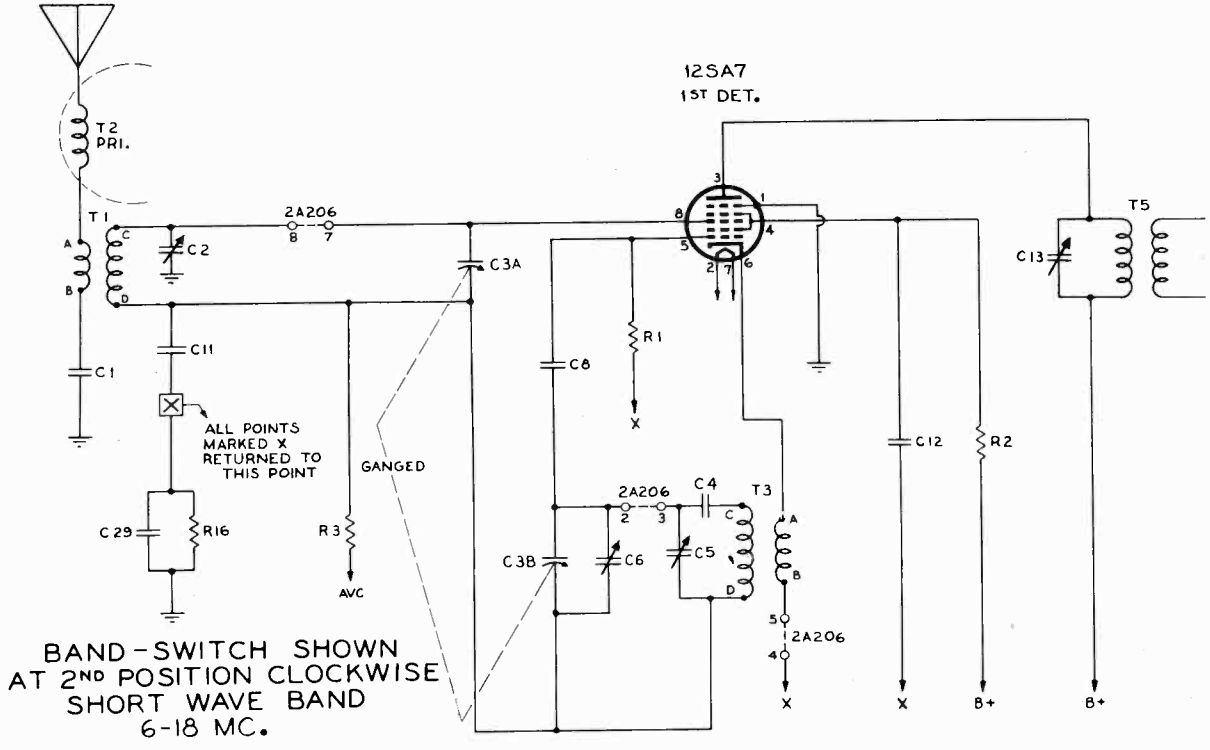
WESTERN AUTO SUPPLY CO.



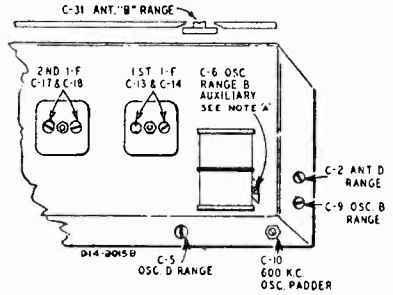
WESTERN AUTO SUPPLY CO. Models D2718, D2718A



BAND-SWITCH SHOWN AT 1ST POSITION. BROADCAST BAND 540-1600 KC.



BAND-SWITCH SHOWN AT 2ND POSITION CLOCKWISE SHORT WAVE BAND 6-18 MC.



ALIGNMENT NOTES

NOTE A—Adjust Oscillator Range B (C9) trimmer on side of chassis. Oscillator Range B (C6) auxiliary trimmer on gang condenser is adjusted at factory and ordinarily need not be readjusted in the field.

NOTE B—Turn the rotor back and forth and adjust the trimmer until the peak of greatest intensity is obtained.

NOTE C—Attach pointer to drive cord and position at 1400 KC mark on dial scale.

NOTE D—Some receivers have a "gimmick" capacity formed by twisting two wires together on the loop antenna in place of the Antenna Range B Trimmer, C-31. When aligning receivers having the "gimmick" capacity, proceed as instructed in the Alignment Procedure Table but omit the steps at 1400 KC involving C-31.

The "gimmick" capacity is set at the factory and normally will not require adjustments when realigning the receiver. Adjustment is obtained by twisting or untwisting the wires.

On receivers having the "gimmick" the dial pointer should be set at 1600 KC rather than as instructed in Note C.

On receivers having neither a trimmer or a "gimmick", the dial pointer should also be set at 1600 KC.

ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.

Allow Chassis and Signal Generator to "Heat Up" for several minutes.

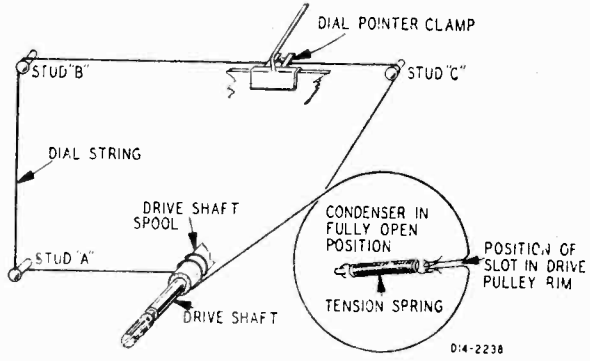
The equipment in column at right is required for Aligning:

Signal Generator which will provide an accurately calibrated signal at test frequencies as listed.

Output indicating Meter; Non-Metallic Screwdriver.

Dummy Antennas—.1 mf., 50 mmf., and 400 ohm.

SIGNAL GENERATOR						
FREQUENCY SETTING	ANTENNA CONNECTION	GROUND CONNECTION	DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM (See Trimmer Illustration)
I.F. 455 KC	Signal Grid of 1st Det. Connect at Stator of Large Gang Section.	Point "X" 12SK7— 1st I-F Prong No. 3	.1 mf.	B Range	Turn Rotor to Fully Open Position	1st I.F. (C13) & (C14) 2nd I.F. (C17) & (C18)
RANGE B 1600 KC	External Antenna Clip	Point "X"	50 mmf.	B Range	Turn Rotor to Fully Open Position	Oscillator Range B (C9) See Note A
1400 KC Note D	External Antenna Clip	Point "X"	50 mmf.	B Range	Turn Rotor to Max. Output. Set pointer to 1400 KC See Note C	Antenna Range B (C-31)
600 KC	External Antenna Clip	Point "X"	50 mmf.	B Range	Turn Rotor to Max. Output and Rock	600 KC Padder (C10) Rock Rotor See Note B
	Repeat above oscillator adjustments at 1600 and 600 KC until readjusting the oscillator Range B Trimmer (C9) causes no further improvement of output.					
RANGE D 18.3 MC	External Antenna Clip	Point "X"	400 Ohm	D Range	Turn Rotor to Fully Open Position	Oscillator Range D (C5)
17 MC	External Antenna Clip	Point "X"	400 Ohm	D Range	Turn Rotor to Max. Output	Ant. Range D (C2)
Loop Range B 1400 KC Note D	Reassemble chassis in cabinet External Antenna Clip	Chassis	50 mmf.	B Range	Turn Rotor to Max. Output	Ant. Range B (C-31)

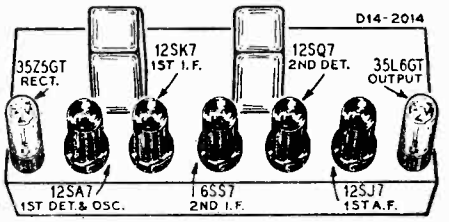


SPECIFICATIONS

Power Consumption.....42 Watts (At 117 volts AC)
Power Output.....1.5 Watts Maximum .9 Watt 10% Harmonics
Selectivity.....49KC Broad at 1000 times Signal
Intermediate Frequency.....455 KC
Speaker.....4"x6" oval PM Dynamic
Tuning Frequency Range
B Range.....540 to 1600 KC
D Range.....6000 to 18,000 KC
Sensitivity (For .05 watt output—External Antenna).
B range.....9 Microvolts Average
D Range.....30 Microvolts Average

CAUTION—If a dial lamp burns out, it should be replaced at once.

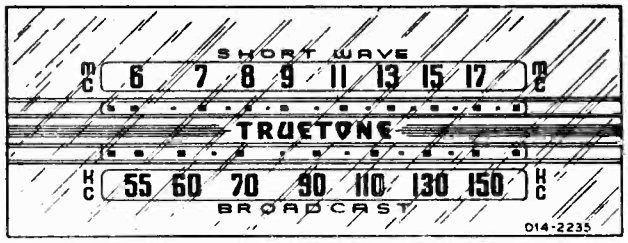
Use ONLY No. 47 dial lamps.



DRIVE CORD REPLACEMENT

Use a new 10X51 drive cord assembly or a piece of new cord 45" long for this installation. Turn the large drive pulley counterclockwise until the gang condenser is in the fully open position, then fasten one end of the new drive cord to one end of the tension spring. Hook the other end of the tension spring over the tab on the drive pulley, pass the drive cord through the slot in the drive pulley rim and wind it ½ turn counterclockwise around the top of the drive pulley. Wind 2 turns around the drive shaft spool with the turns progressing towards the chassis. Continue with the cord around idler studs A, B and C as shown in the illustration. Wind the cord ¾ turn counterclockwise around the large drive pulley, pass it through the slot in the pulley rim and fasten the end to the tension spring. Ratate the tuning shaft several turns to take up any slack in the drive cord, then attach the dial pointer to the cord.

WESTERN AUTO SUPPLY CO. Models D2718, D2718A



SHORT WAVE BAND

6 to 18 Megacycles

This band is calibrated in megacycles. The 16, 19, 25, 31 and 49 meter bands, in which the principal international short wave broadcasts will be heard, are located in this band.

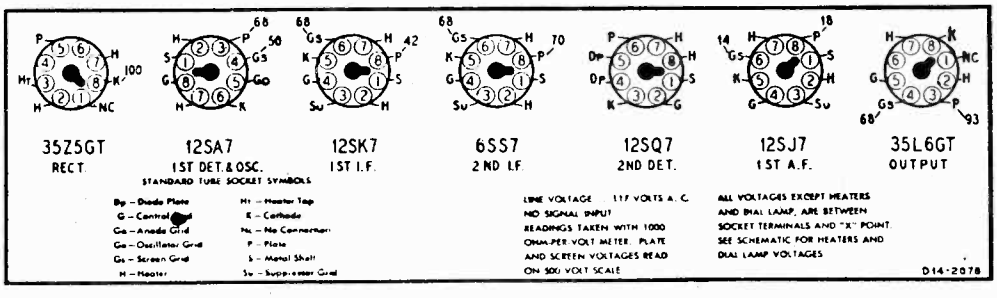
These bands will be found on the dial as follows:

16 Meter Band.....17.7—17.9 MC
19 Meter Band.....15.1—15.3 MC
25 Meter Band.....11.7—11.9 MC
31 Meter Band..... 9.5— 9.7 MC
49 Meter Band..... 6— 6.2 MC

ON-OFF SWITCH AND VOLUME CONTROL

TUNING KNOB

BAND SWITCH



REPLACEMENT PARTS LIST

NOTICE: There is a Model Number label on the chassis. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

MISCELLANEOUS

42A464	4" x 6" P.M. Speaker complete with Mounting Bracket	
	Cone and Voice Coil Assembly (Specify Part Number and Letter Stamped on Speaker)	
3A303	Tube Socket—Octal (8 prong) Molded	
2A206	Band Change Switch	
10A601	Knob, Tuning } For Ivory Cabinet	
10A602	Knob, Volume } For Ivory Cabinet	
10A603	Knob, Band } For Ivory Cabinet	
10A604	Knob, Tuning } For Brown Cabinet	
10A605	Knob, Volume } For Brown Cabinet	
10A606	Knob, Band } For Brown Cabinet	
13X546	Line Cord and Plug Assembly	
55X292	Cabinet, Ivory Plastic	
55X296	Cabinet, Brown Plastic	
28X292	Snap Button (Mtg. Antenna to Cabinet) No. 6 x 3/8" P-K Type "Z" Screws (Mtg. Antenna to Chassis)	
6X53	Rubber Bumpers (Mtd. to Bottom of Cabinet)	

TRANSFORMERS AND COILS

T-1	9A1443	"D" Range Antenna Coil Assembly
T-2	26A451	"B" Band Loop Antenna Assembly (For Ivory Cabinet)
T-2	26A452	"B" Band Loop Antenna Assembly (For Brown Cabinet)
T-3	9A1444	"D" Range Oscillator Coil Assembly
T-4	9A1442	"B" Band Oscillator Coil Assembly
T-5	9A1793	1st I-F Coil Assembly
T-6	9A1794	2nd I-F Coil Assembly
T-7	51X118	Output Transformer

CAPACITORS

C-1	B67102	.001 mf 200 V	Tubular
C-2, C-9	17A152	2-25 mmf	Trimmer Strip
C-3A,C-3B	14A148	Gang Condenser Assembly	
C-4	46X289	.00475 mf 180 V	Tubular
C-5	17A174	2-25 mmf	Trimmer
C-6	Part of C-3	(Gang Condenser Assembly)	
C-7	47X463	47 mmf	Molded
C-8	47X466	68 mmf	Molded
C-10	17A234	300-450 mmf	Trimmer
C-11,C-23	B66104	.1 mf 200 V	Tubular
C-12,C-15, C-22	B66403	.04 mf 200 V	Tubular
C-13,C-14	Part of T-5	(1st I-F Coil Assembly)	
C-16,C-21	47X446	47 mmf	Molded
C-17,C-18	Part of T-6	(2nd I-F Coil Assembly)	
C-19	47X476	100 mmf	Molded
C-20	B66502	.005 mf 200 V	Tubular
C-24	47X467	470 mmf	Molded
C-25,C-28	B66103	.01 mf 200 V	Tubular
C-26	B67253	.025 mf 200 V	Tubular
C-27A, C-27B, C-27C	45X342	50 mf 150 V, 50 mf 150 V, 20 mf 25 V	Dry Electrolytic
C-29	D67204	.2 mf 400 V	Tubular
C-30	D67104	.1 mf 400 V	Tubular
C-31	17A123	1.5-12 mmf	Trimmer

RESISTORS

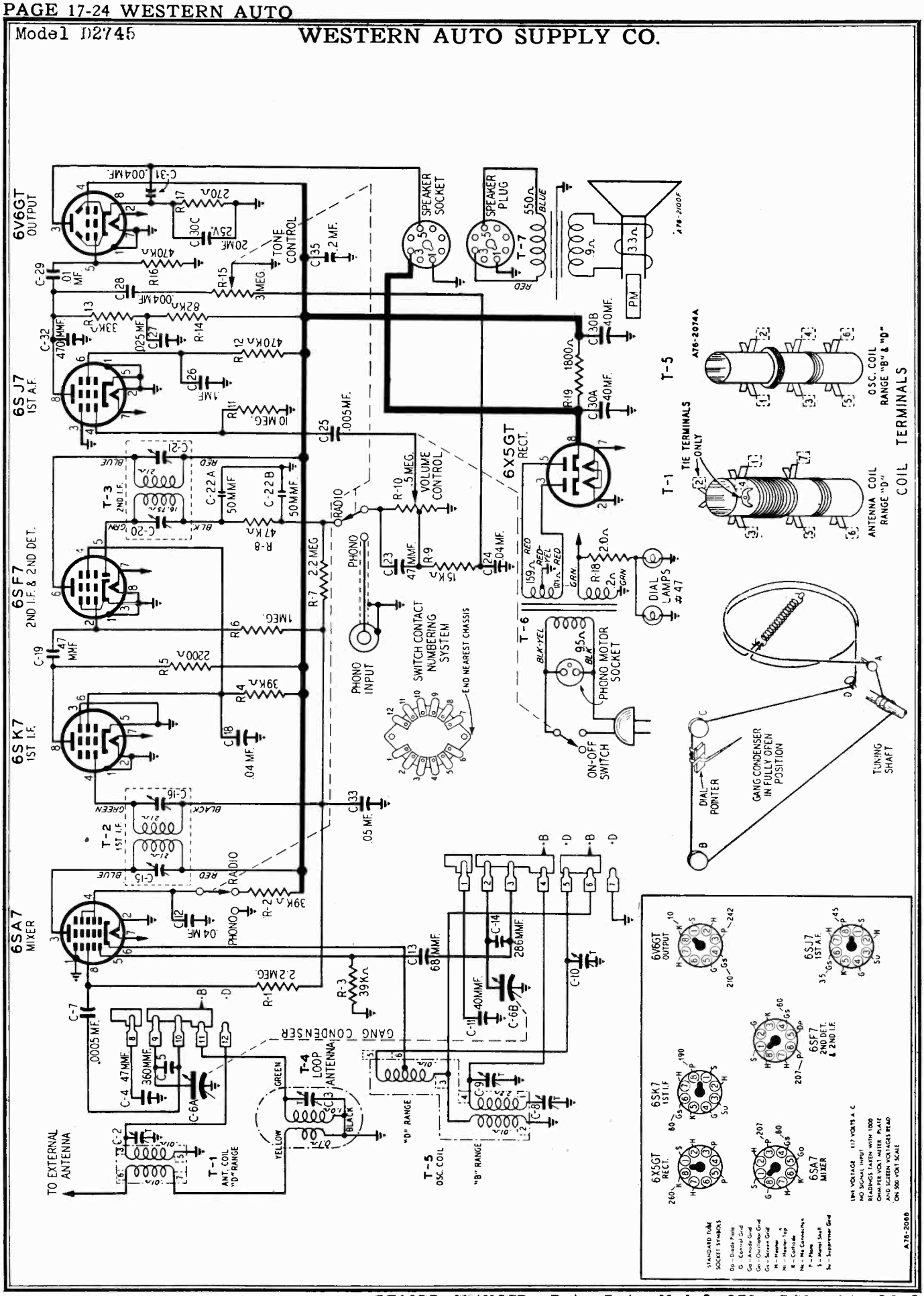
		OHMS	WATTS	
R-1	B84393	39 K	0.5	Carbon
R-2	B84472	4700	0.5	Carbon
R-3,R-5	B85473	47 K	0.5	Carbon
R-4	B84332	3300	0.5	Carbon
R-6	B85104	100 K	0.5	Carbon
R-7	B85225	2.2 meg	0.5	Carbon
R-8	B85475	4.7 meg	0.5	Carbon
R-9	36X309	.5 meg		Volume Control and Switch
R-10	B84153	15 K	0.5	Carbon
R-11,R-14	B85474	470 K	0.5	Carbon
R-12	B84333	33 K	0.5	Carbon
R-13	B84823	82 K	0.5	Carbon
R-15	B84181	180	0.5	Carbon
R-16	B85224	220 K	0.5	Carbon
R-18	B84270	27	0.5	Carbon
R-19	C85152	1500	1.0	Carbon

DIAL AND DRIVE ASSEMBLY

20X329	Cond. Cushion Stud } Mtg. Gang Condenser	
6X21	Rubber Grommet } Mtg. Gang Condenser	
26A450	Dial Bracket Assembly	
25A1044	Diffuser and Clamp Assembly	
58X671	Dial (for Ivory Cabinet)	
30X532	Dial Clamps	
15X236	Pointer	
25X580	Drive Shaft Bracket	
26X465	Drive Shaft	
19X192	"C" Washer (For Drive Shaft)	
24X564	Drive Shaft Spool	
10X51	Drive Cord Assembly	
28X113	Drive Cord Tension Spring	
7A185	Pilot Light Socket Assembly	
	No. 47 Pilot Light Bulb	

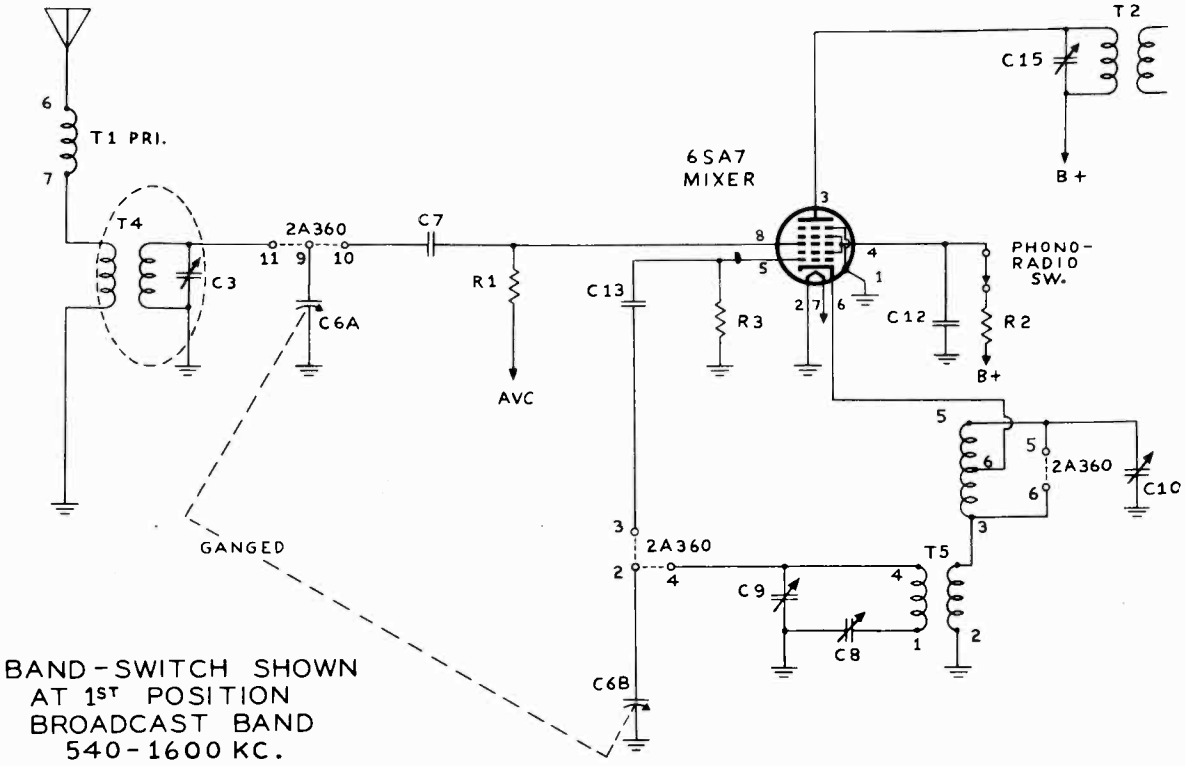
Model D2745

WESTERN AUTO SUPPLY CO.

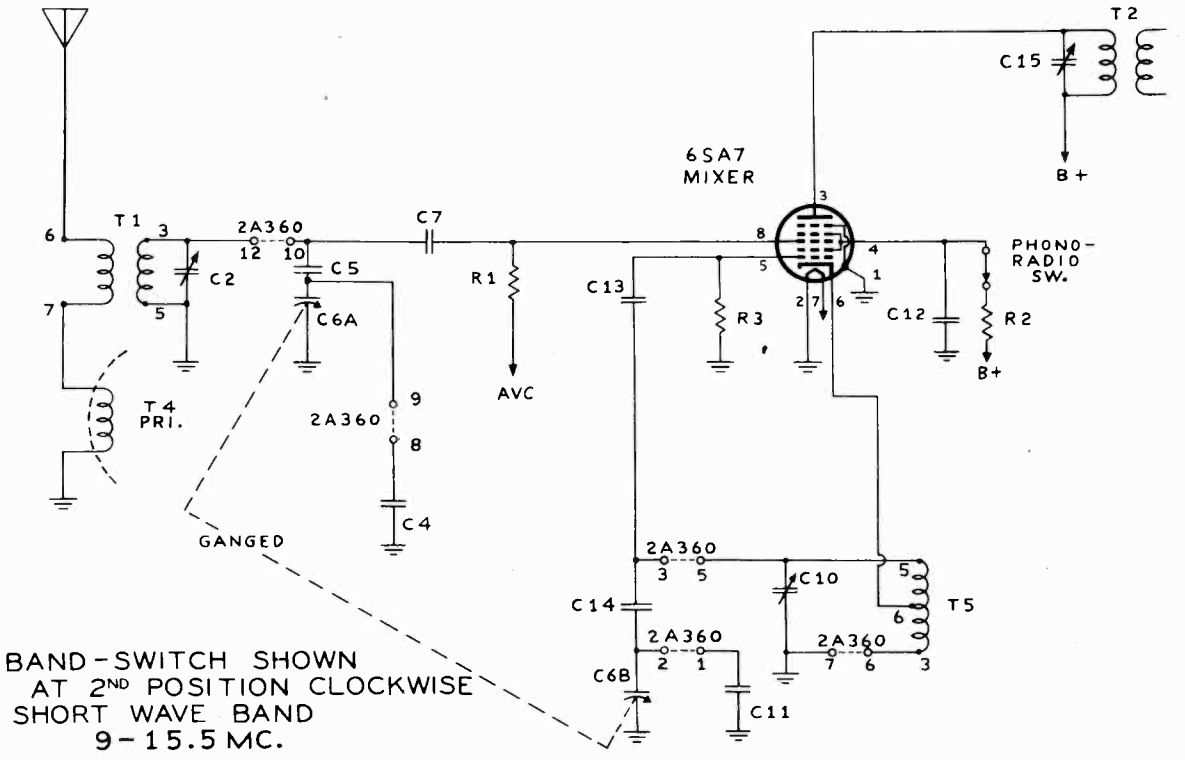


RECORD CHANGER: Int. Det. Model 650, RCD. CH. 17-1

WESTERN AUTO SUPPLY CO. Model D2745



BAND-SWITCH SHOWN
AT 1ST POSITION
BROADCAST BAND
540-1600 KC.



BAND-SWITCH SHOWN
AT 2ND POSITION CLOCKWISE
SHORT WAVE BAND
9-15.5 MC.

Model D2745

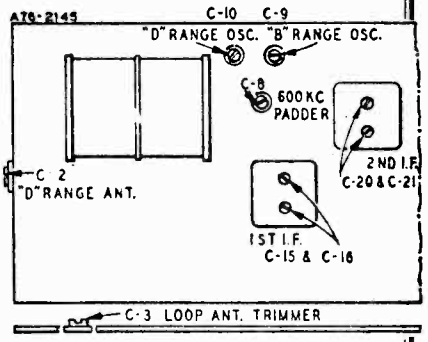
WESTERN AUTO SUPPLY CO.

ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.
Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.
Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning:
An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.
Output Indicating Meter—Non-Metallic Screwdriver.
Dummy Antennas—.1 mf., 100 mmf., and 400 ohms.

	SIGNAL GENERATOR FREQUENCY SETTING	SIGNAL GENERATOR CONNECTION AT RADIO	DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM
I.F.	455 KC	Grid of 6BA7 Pin 8	.1 mf.	B Range	Turn Rotor to Full Open	2nd I.F. (C20) & (C21) 1st I.F. (C15) & (C16)
RANGE B	1620 KC	Antenna Lead	100 mmf.	B Range	Turn Rotor to Full Open	Oscillator Range B (C9)
	1400 KC	Antenna Lead	100 mmf.	B Range	Tune Rotor to Max. Output Set Pointer to 1400 KC (See Note A)	Ant. Range B (C3)
	600 KC	Antenna Lead	100 mmf.	B Range	Tune Rotor to Max. Output	Oscillator (C8) Rock Rotor—See Note B
	Repeat above steps at 1620 and 600 KC until readjusting the oscillator Range B Trimmer (C9) causes no further improvement of output.					
RANGE D	15,600 KC	Antenna Lead	400 Ohm	D Range	Turn Rotor to Full Open	Oscillator Range D (C10)
	14,000 KC	Antenna Lead	400 Ohm	D Range	Tune Rotor to Max. Output	Ant. Range D (C2) Rock Rotor—See Note B
LOOP RANGE B	Reassemble chassis in cabinet. 1400 KC	Antenna Lead	100 mmf.	B Range	Tune Rotor to Max. Output	Ant. Range B (C3)



NOTE A—Set pointer at the 1400 KC mark on the dial scale. Attach pointer to drive cord.

NOTE B—Turn Rotor back and forth and adjust the trimmer until the peak of greatest intensity is obtained.

MISCELLANEOUS

12A442	6" P.M. Speaker Complete with Output Transformer
	Cone and Voice Coil Assembly (Specify part number and letters stamped on speaker)
	Output Transformer (Specify part number and letters stamped on speaker)
3A303	Tube socket-octal (8 prong) moulded
3A304	Phono motor socket
3A305	Phono socket—single pin tip
10A578	Knob (Tuning)
10A579	Knob (Off-On, Volume)
10A581	Knob (Tone, Radio-Phono)
10A580	Knob (SW-BC)
2A359	Band Change Switch
13X328	Line cord and plug assembly

TRANSFORMERS AND COILS

T-1	9A1812	"D" Range Antenna Coil Assembly
T-2	9A1814	1st I.F. Coil Assembly
T-3	9A1815	2nd I.F. Coil Assembly
T-4	26A475	"B" Range Loop Antenna
T-5	9A1813	"B" Range and "D" Range Oscillator Coil Assembly
T-6	53X282	117 Volt 60 Cycle Standard Power Transformer
T-7		Output Transformer (See Miscellaneous)

CAPACITORS

C-2	17A164	5-50 mmf		Trimmer
C-3	17A251	1.5-12 mmf		Trimmer
C-4	47X473	47 mmf		Silvered mica
C-5	47X474	360 mmf		Silvered mica
C-6A, C-6B	14A178	Gang Capacitor with drive pulley		
C-7	B66501	.0005 mf	200 V	Tubular
C-8	17A155	350-430 mmf		Trimmer
C-9, C-10	17A109	2.5-35 mmf		Dual Trimmer
C-11	47X472	40 mmf		Silvered mica
C-12, C-18	D66403	.04 mf	400 V	Tubular
C-13	47X466	68 mmf		Moulded
C-14	47X481	286 mmf		Silvered mica
C-15, C-16	Part of T-2 (1st I.F. Coil Assem.)			
C-19, C-23	47X463	47 mmf		Moulded
C-20, C-21	Part of T-3 (2nd I.F. Coil Assem.)			
C-22A & B	47X112	50-50mmf		Dual Mica
C-24	D64403	.04 mf	400 V	Tubular
C-25	D66502	.005 mf	400 V	Tubular
C-26	D67104	.10 mf	400 V	Tubular
C-27	D64253	.025 mf	400 V	Tubular
C-28	D66402	.004 mf	400 V	Tubular
C-29	D66103	.01 mf	400 V	Tubular
C-30A	45X346	40 mf	450 V	3 Section Electrolytic
C-30B		40 mf	450 V	
C-30C		20 mf	25 V	
C-31	F66402	.004 mf	600 V	Tubular
C-32	47X467	470 mmf		Moulded
C-33	B66503	.05 mf	200 V	Tubular
C-35	D67204	.2 mf	400 V	Tubular

Sensitivity (For 0.5 Watt Output, with External Antenna)
B Range..... 9 Microvolts Average
D Range..... 20 Microvolts Average

RESISTORS

B85225	R-1, R-7	2.2 megohms	0.5 W	Carbon
C84393	R-2, R-4	39 K ohms	1.0 W	Carbon
B84393	R-3	39 K ohms	0.5 W	Carbon
B84222	R-5	2200 ohms	0.5 W	Carbon
B85105	R-6	1 megohm	0.5 W	Carbon
B85473	R-8	47 K ohms	0.5 W	Carbon
B84153	R-9	15 K ohms	0.5 W	Carbon
36X358	R-10	.5 megohm	Volume control and line switch	
B85106	R-11	10 megohms	0.5 W	Carbon
B85474	R-12, R-16	470 K ohms	0.5 W	Carbon
B84333	R-13	33 K ohms	0.5 W	Carbon
B84823	R-14	82 K ohms	0.5 W	Carbon
40X276	R-15	3.0 megohms	Tone control & Radio-Phono switch	
C84271	R-17	270 ohms	1.0 W	Carbon
43X213	R-18	2.0 ohms	0.5 W	Wire wound
D84182	R-19	1800 ohms	2.0 W	Carbon

DIAL AND DRIVE ASSEMBLY

26A400	Dial bracket assembly complete with dial glass, background, diffusers, etc.
7A202	Pilot light socket assembly
	No. 47 Pilot light
28X113	Drive cord tension spring
10X58	Drive cord assembly
15X150	Pointer
26X485	Drive Shaft
19X192	"C" Washer (for drive shaft)
6X21, 20X329	Rubber Grommet, Cond. Cushion Stud } Mtg. Gang Capacitor

Power Output..... 4 Watts Maximum
2.3 Watts, 10% Harmonics

Power Consumption (at 117 Volts AC)..... 40 Watts (normal)
60 Watts (phono operating)

Frequency Ranges
B Range..... 540-1600 Kilocycles
D Range..... 9-15.5 Megacycles

Intermediate Frequency..... 455 KC

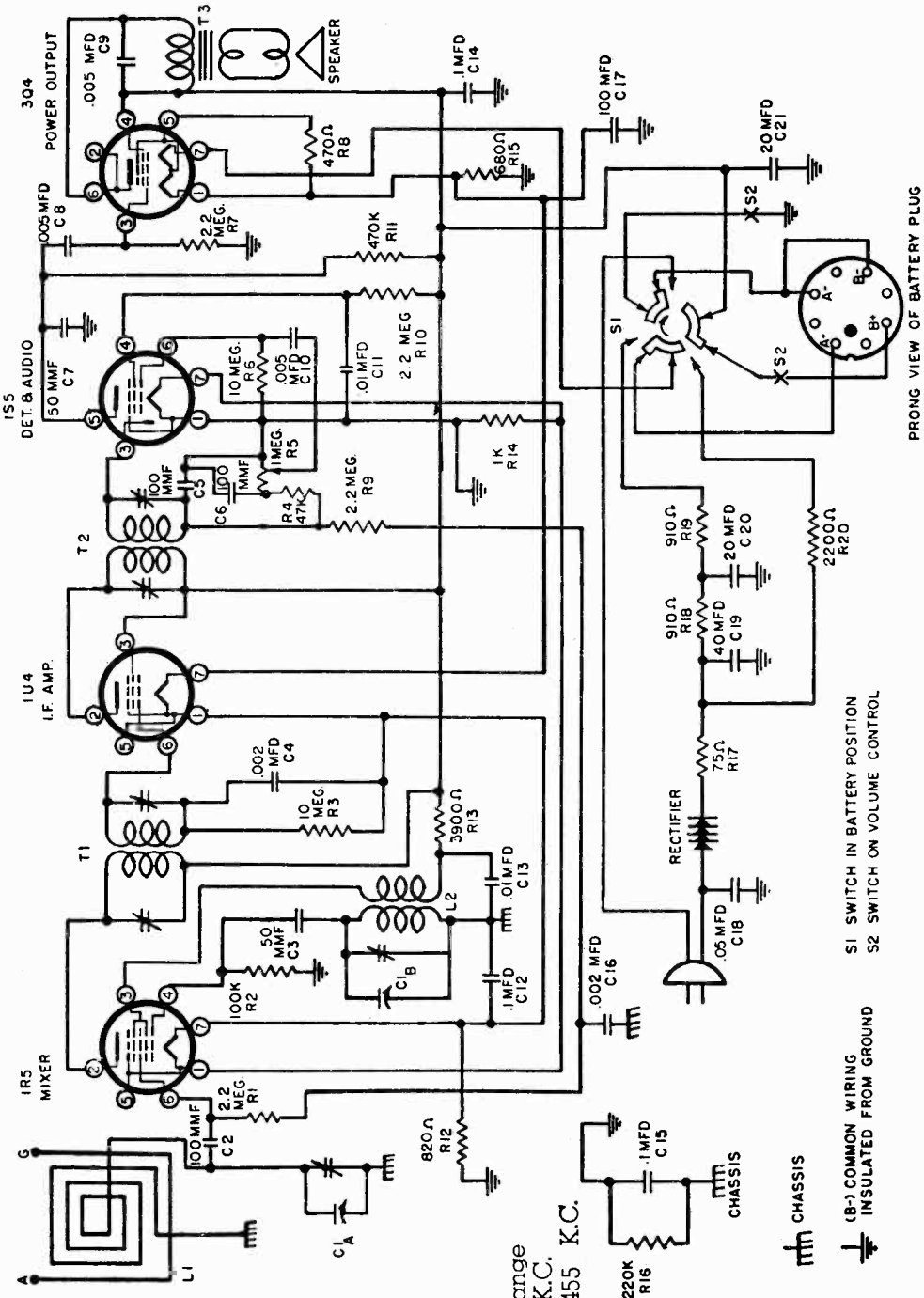
Selectivity ..... 40 KC Broad at 1000 Times Signal

Speaker ..... 6" PM Dynamic

NOTICE: There is a Model Number label on the chassis. This label identifies the radio as to chassis, dial and issue letter. When ordering parts or writing, give ALL information appearing on this label.

WESTERN AUTO SUPPLY CO.

Model D3720



VOLTAGE CHART

All voltages are measured from minus "B" with a 1000 ohm per volt meter on the 150 volt scale. For the following voltages the AC line voltage is 117 volts. Where no voltages are shown the voltage is 0 or is too low to be read with this type of voltmeter.

TUBE — Pin Numbers	1	2	3	4	5	6	7
1R5	1.5	85	69	—5	1.5	0	3.0
1U4	3.0	85	85	0	3.0	0	4.5
1S5	0	0	0	4	8	0	1.5
3Q4	4.5	82	0	85	6.0	82	7.5

ALIGNMENT PROCEDURE

Volume control—Maximum: all adjustments.

Connect ground lead of signal generator to common "B."

Connect dummy antenna in series with output lead of signal generator.

Connect output meter across voice coil of speaker.

The following equipment is necessary for proper alignment:

Signal generator that will provide the test frequencies as listed, 30% modulated, 400 c.p.s.

Output meter.

Non-metallic screwdriver.

Dummy antennas— .1 mfd., .00025 mfd.

Position of Variable	Generator Frequency	Dummy Ant. Mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Fully open	455 KC	.1	*1R5 Grid (Stator of C1A)	T2	Output I. F.
Fully open	455 KC	.1	*1R5 Grid (Stator of C1A)	T1	Input I. F.
Fully open	1600 KC	.00025	**Ant. lead (Stapled to Cabinet)	C1B	Oscillator
Tune in signal from generator	1400 KC	.00025	**Ant. lead (Stapled to Cabinet)	C1A	Antenna

*Connect ground lead of signal generator to Common "B."

**Connect ground lead of signal generator to ground wire stapled to cabinet.

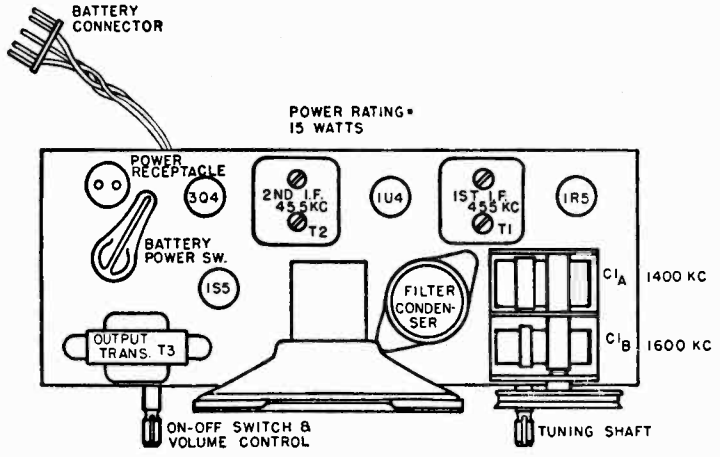
If it should become necessary to re-adjust the loop antenna loading coil tune in a weak station, between 600 and 650 Kilocycles, and adjust for maximum output.

With an output meter connected across the voice coil of the speaker, the output meter reading for 50 milliwatts is .4 volts using a signal which is modulated 30% at 400 c.p.s.

ALIGNING INSTRUCTIONS

Never attempt any adjustments on this receiver unless it becomes necessary to replace a coil or transformer, or the adjustments have been tampered with in the field. Always make certain that other circuit components, such as tubes, condensers, resistors, etc., are normal before proceeding with realignment.

If realignment is necessary follow the instructions given below in the order listed. After realignment has been completed repeat the procedure as a final check.



Chassis, Top View.

CONDENSERS

Circuit Diagram Reference	Part No.	Description
C1A, C1B	B19-188	Variable Condenser.
C2, C5, C6	A15-188	100 MMF Mica Condenser.
C3, C7	A15-175	50 MMF Mica Condenser.
C4, C16	A16-155	.002 MFD 600 volt Condenser.
C8, C9, C10	A16-166	.005 MFD 150 volt Condenser.
C11, C13	A16-165	.01 MFD 200 volt Condenser.
C12, C15	A16-160	.1 MFD 400 volt Condenser.
C14	A16-157	.1 MFD 200 volt Condenser.
C18	A16-158	.05 MFD 400 volt Condenser.
C17	A18-281	100 MFD 25 volt Electrolytic Condenser.
C19		40 MFD 150 volt Electrolytic Condenser
C20, C21		20 MFD 150 volt Electrolytic Condenser.

RESISTORS

R1, R7, R9, R10	A60-684	2.2 Megohm ½ watt 20% Resistor.
R2	A60-671	100K Ohm ½ watt 20% Resistor.
R3, R6	A60-663	10 Megohm ½ watt 20% Resistor.
R4	A60-685	47K Ohm ½ watt 20% Resistor.
R8	A60-707	470 Ohm ½ watt 20% Resistor.
R11	A60-662	470K Ohm ½ watt 20% Resistor.
R12	A60-709	820 Ohm ½ watt 10% Resistor.
R13	A60-710	3900 Ohm ½ watt 10% Resistor.
R14	A60-675	1000 Ohm ½ watt 20% Resistor.
R15	A60-708	680 Ohm ½ watt 10% Resistor.
R16	A60-667	220K Ohm ½ watt 20% Resistor.
R17	A60-712	75 Ohm 3 watt 5% Resistor.
R18, R19	A60-713	1820 Ohm 10 watt 5% Resistor. (each section 910 ohms).
R20	A60-714	2200 Ohm ½ watt 10% Resistor.

COILS

L2	B10-460	Oscillator Coil.
T1	C10-462	1st I.F. Transformer.
T2	C10-463	2nd I.F. Transformer.
	or	
	C10-473	1st I.F. Transformer.
	C10-474	2nd I.F. Transformer.
	or	
	C10-471	1st I.F. Transformer.
	C10-472	2nd I.F. Transformer.
	or	
	C10-475	1st I.F. Transformer.
	C10-475	2nd I.F. Transformer.
T3	A10-476	Antenna Loading Coil
R5		
S1		

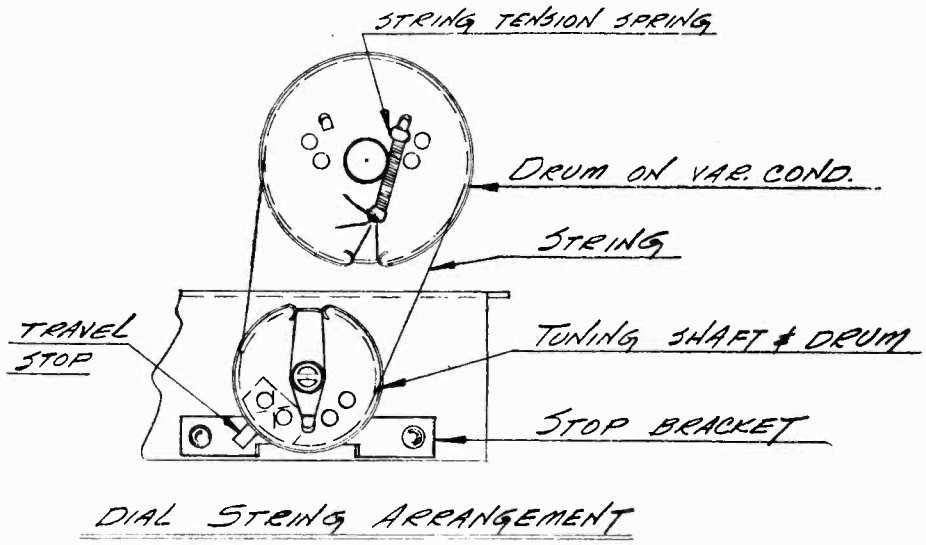
NOTE:

I. F. Transformers shown are interchangeable.

Part No. C10-475 may be used as 1st or 2nd I. F. Transformer.

MISCELLANEOUS

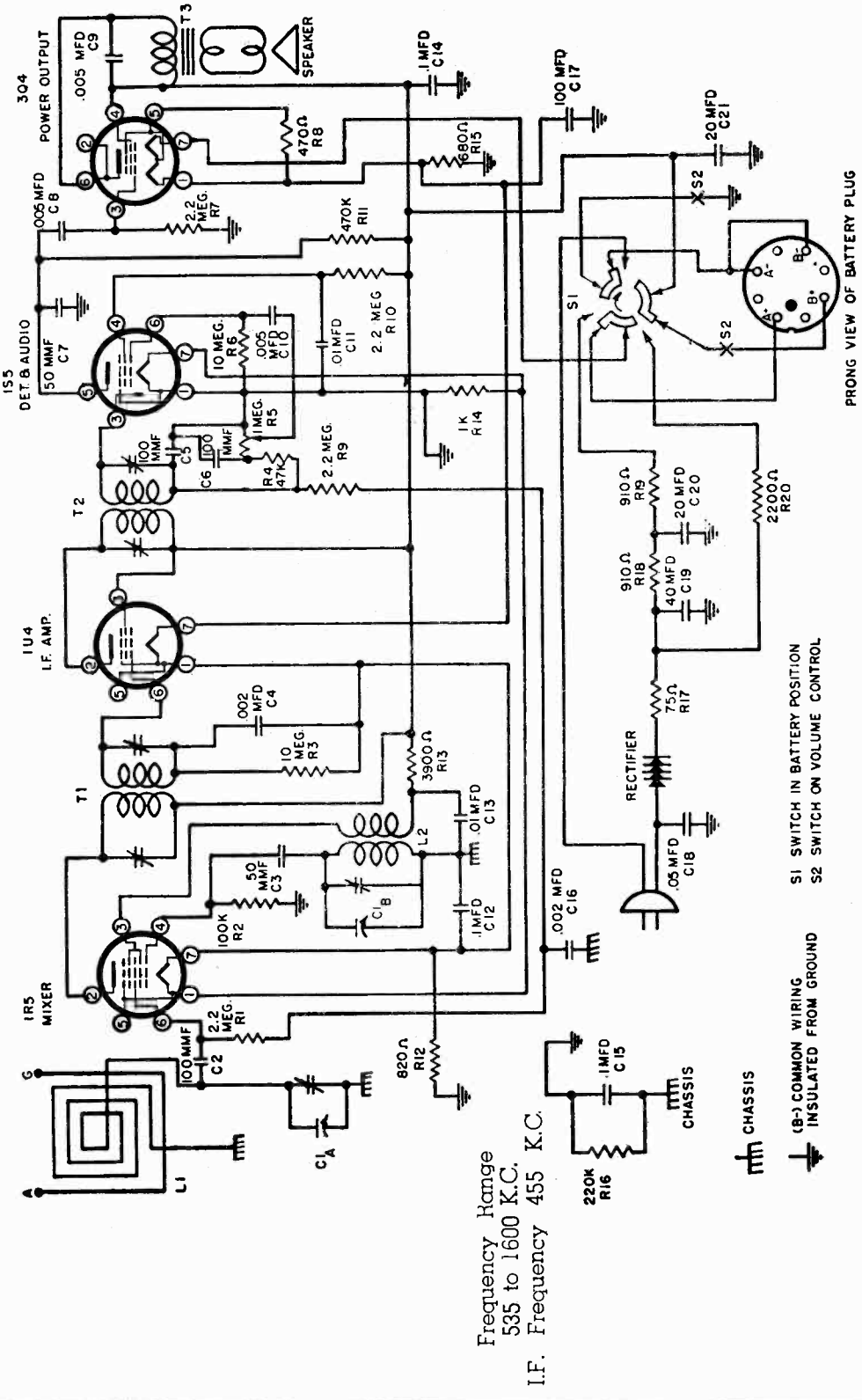
A80-228	Output Transformer.
A24-170	Volume Control and Switch.
B69-173	Switch, Battery—AC-DC.
D42-409	Cabinet, Leatherette cover.
A52-213	Knob, Tuning.
C52-212	Knob, Dial Scale Calibrated.
C36-120	Grille.
B83-402	Handle for Cabinet.
S84-77	Line cord assembly.
A83-412	Iron Core for loop loading coil.
A52-196	Knob, Battery—AC-DC.
A83-391	Selenium Rectifier.
S84-101	Dial drive drum and shaft assembly.
A45-121	AC Socket.
A68-28	Plug for AC cord.
B79-350	Speaker, 5" PM.
A45-119	Plug, Battery.



Dial Drive.

Model D3721

WESTERN AUTO SUPPLY CO.



VOLTAGE CHART

All voltages are measured from minus "B" with a 1000 ohm per volt meter on the 150 volt scale. For the following voltages the AC line voltage is 117 volts. Where no voltages are shown the voltage is 0 or is too low to be read with this type of voltmeter.

TUBE — Pin Numbers							
	1	2	3	4	5	6	7
1R5	1.5	85	69	—5	1.5	0	3.0
1U4	3.0	85	85	0	3.0	0	4.5
1S5	0	0	0	4	8	0	1.5
3Q4	4.5	82	0	85	6.0	82	7.5

ALIGNMENT PROCEDURE

Volume control—Maximum: all adjustments.

Connect ground lead of signal generator to common "B."

Connect dummy antenna in series with output lead of signal generator.

Connect output meter across voice coil of speaker.

The following equipment is necessary for proper alignment:

Signal generator that will provide the test frequencies as listed, 30% modulated, 400 c.p.s.

Output meter.

Non-metallic screwdriver.

Dummy antennas— .1 mfd., .00025 mfd.

Position of Variable	Generator Frequency	Dummy Ant. Mfd.	Generator Connections	Trimmer Adjustment	Trimmer Function
Fully open	455 KC	.1	*1R5 Grid (Stator of C1A)	T2	Output I. F.
Fully open	455 KC	.1	*1R5 Grid (Stator of C1A)	T1	Input I. F.
Fully open	1600 KC	.00025	**Ant. lead (Stapled to Cabinet)	C1B	Oscillator
Tune in signal from generator	1400 KC	.00025	**Ant. lead (Stapled to Cabinet)	C1A	Antenna

*Connect ground lead of signal generator to Common "B."

**Connect ground lead of signal generator to ground wire stapled to cabinet.

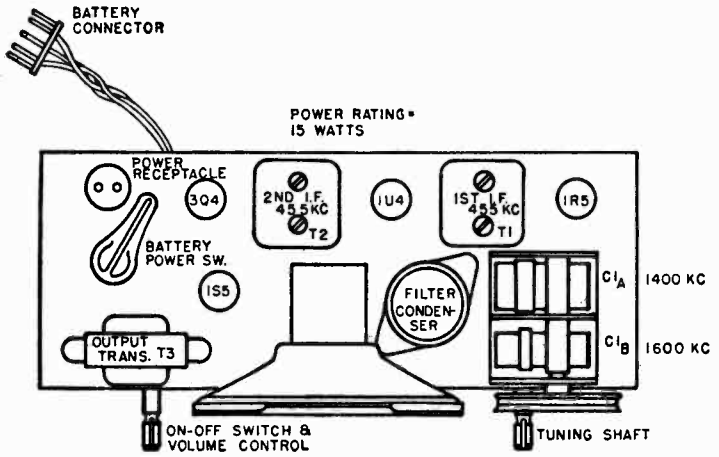
If it should become necessary to re-adjust the loop antenna loading coil tune in a weak station, between 600 and 650 Kilocycles, and adjust for maximum output.

With an output meter connected across the voice coil of the speaker, the output meter reading for 50 milliwatts is .4 volts using a signal which is modulated 30% at 400 c.p.s.

ALIGNING INSTRUCTIONS

Never attempt any adjustments on this receiver unless it becomes necessary to replace a coil or transformer, or the adjustments have been tampered with in the field. Always make certain that other circuit components, such as tubes, condensers, resistors, etc., are normal before proceeding with realignment.

If realignment is necessary follow the instructions given below in the order listed. After realignment has been completed repeat the procedure as a final check.



Chassis, Top View.

CONDENSERS

Circuit Diagram Reference	Part No.	Description
C1A, C1B	B-19-188	Variable condenser
C2, C5, C6	A15-188	100 MMF Mica condenser
C3, C7	A15-175	50 MMF Mica condenser
C4, C16	A16-155	.002 MFD 600 volt condenser
C8, C9, C10	A16-166	.005 MFD 150 volt condenser
C11, C13	A16-165	.01 MFD 200 volt condenser
C12, C15	A16-160	.1 MFD 400 volt condenser
C14	A16-157	.1 MFD 200 volt condenser
C18	A16-158	.05 MFD 400 volt condenser
C17	A18-281	100 MFD 25 volt electrolytic condenser
C19		40 MFD 150 volt electrolytic condenser
C20, C21		20 MFD 150 volt electrolytic condenser

RESISTORS

R1, R7, R9, R10	A60-684	2.2 Megohm ½ watt 20% resistor
R2	A60-671	100K ohm ½ watt 20% resistor
R3, R6	A60-663	10 Megohm ½ watt 20% resistor
R4	A60-685	47K ohm ½ watt 20% resistor
R8	A60-707	470 ohm ½ watt 20% resistor
R11	A60-662	470K ohm ½ watt 20% resistor
R12	A60-709	820 ohm ½ watt 10% resistor
R13	A60-710	3900 ohm ½ watt 10% resistor
R14	A60-675	1000 ohm ½ watt 20% resistor
R15	A60-708	680 ohm ½ watt 10% resistor
R16	A60-667	220K ohm ½ watt 20% resistor
R17	A60-712	75 ohm 3 watt 5% resistor
R18, R19	A60-713	1820 ohm 10 watt 5% resistor (each section 910 ohms)
R20	A60-714	2200 ohm ½ watt 10% resistor

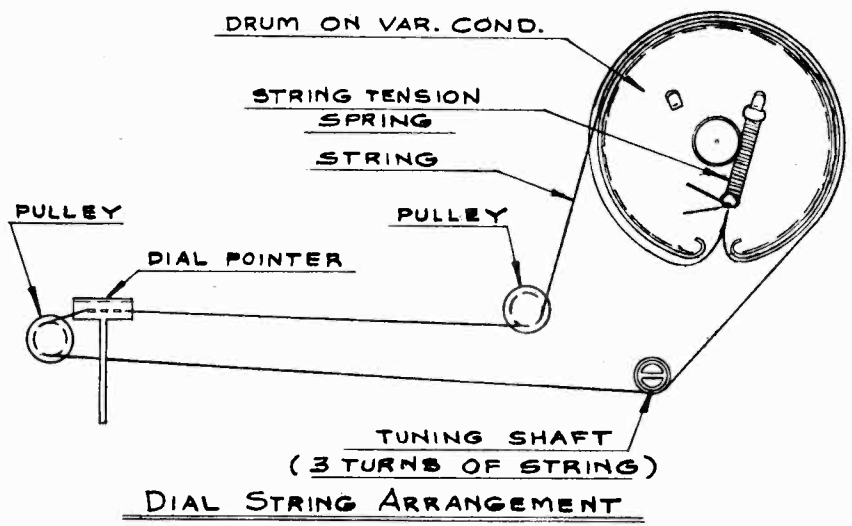
COILS

L2	B10-460	Oscillator coil
T1	*C10-475	1st I.F. transformer
T2	C10-475	2nd I.F. transformer
T3	A10-470	Antenna loading coil

MISCELLANEOUS

T3	A80-228	Output transformer
R5	A24-170	Volume control and switch
S1	B69-173	Switch, Battery—AC-DC
	B42-427	Cabinet, Leatherette cover
	A52-197	Knob, tuning
	A52-198	Knob, volume
	D40-140	Grille
	S84-77	Line cord assembly
	A52-196	Knob, battery—AC-DC
	A83-391	Selenium rectifier
	A45-121	AC socket
	A68-28	Plug for AC cord
	B79-350	Speaker, 5" PM
	A45-119	Plug, battery
	B67-496	Dial scale
	A58-63	Dial pointer
	A75-60	Tuning shaft

*Part No. C10-475 may be used as 1st or 2nd I.F. Transformer.

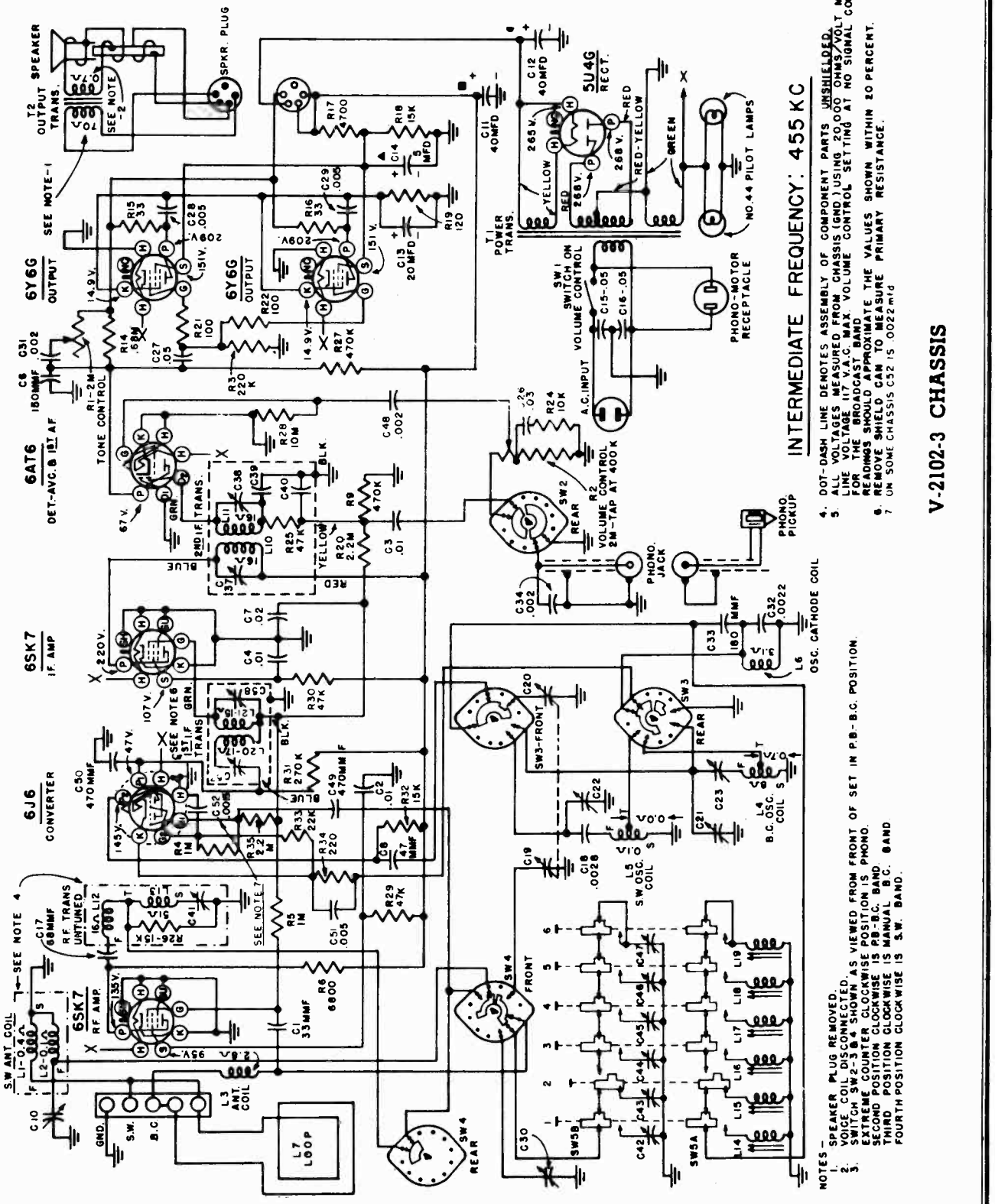


DIAL STRING ARRANGEMENT

Dial Drive.

WESTINGHOUSE ELECTRIC CORP.

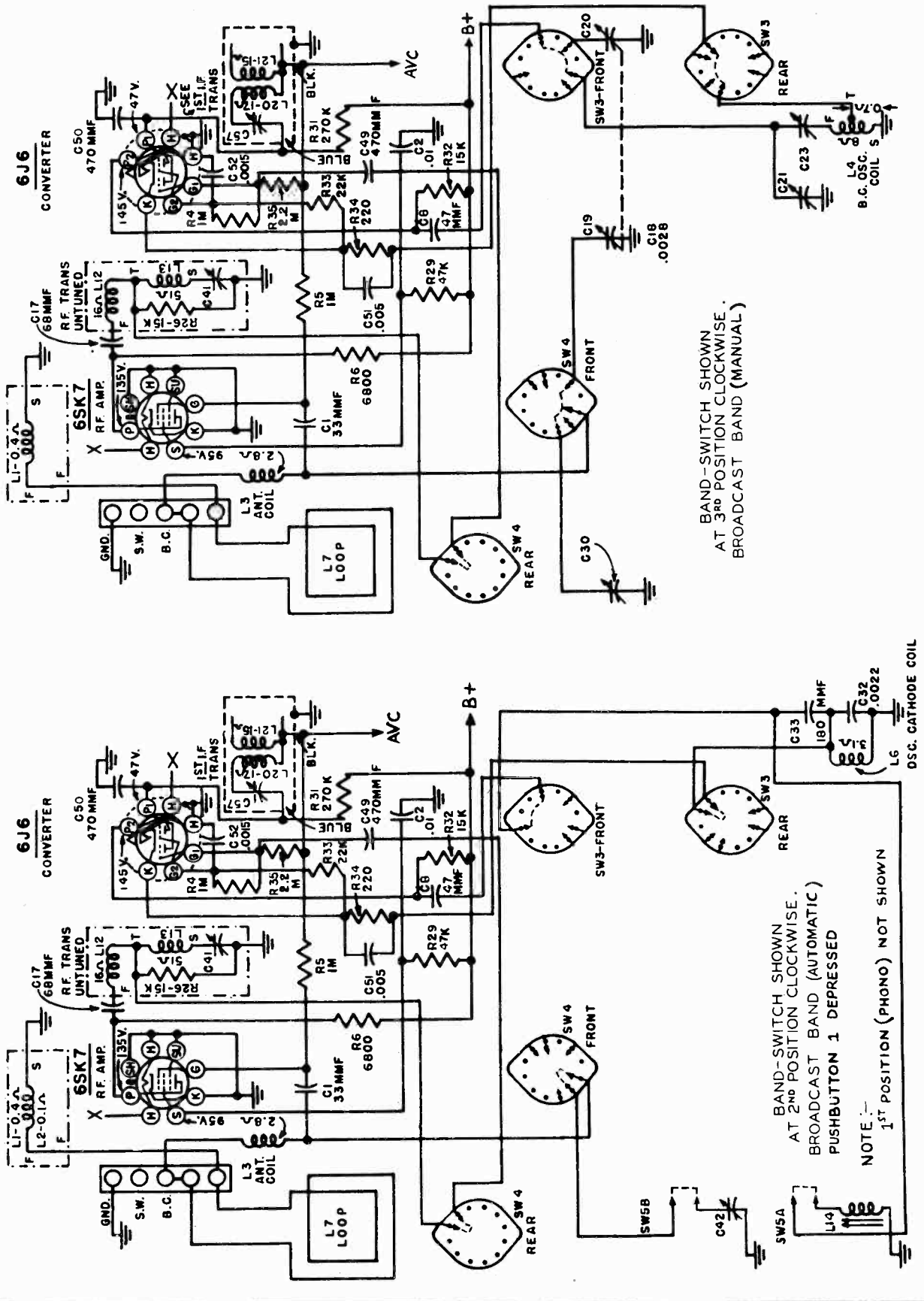
MODELS H-104B, H-105B,
H-107B, H-108B, H-110B,
H-111B, H-137B, H-138B
Chassis V-2102-3



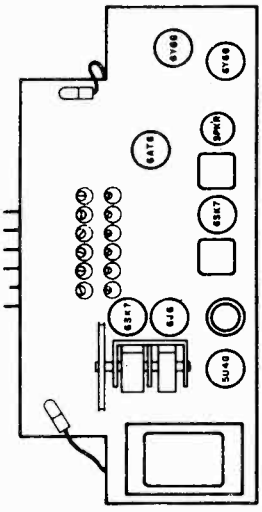
For alignment and additional material see Model H-104, pages 15-1, 15-3, 15-4 of Rider's Volume XV.

MODELS H-104B, H-105B, H-107B, H-108B, H-110B, H-111B, H-137B, H-138B
Chassis V-2102-3

WESTINGHOUSE ELECTRIC CORP.



WESTINGHOUSE ELECTRIC CORP. MODELS H-104B, H-105B, H-107B, H-108B, H-110B, H-111B, H-137B, H-138B Chassis V-2102-3



TUBE LAYOUT. V-2102-3 AND V-2102-5 CHASSIS

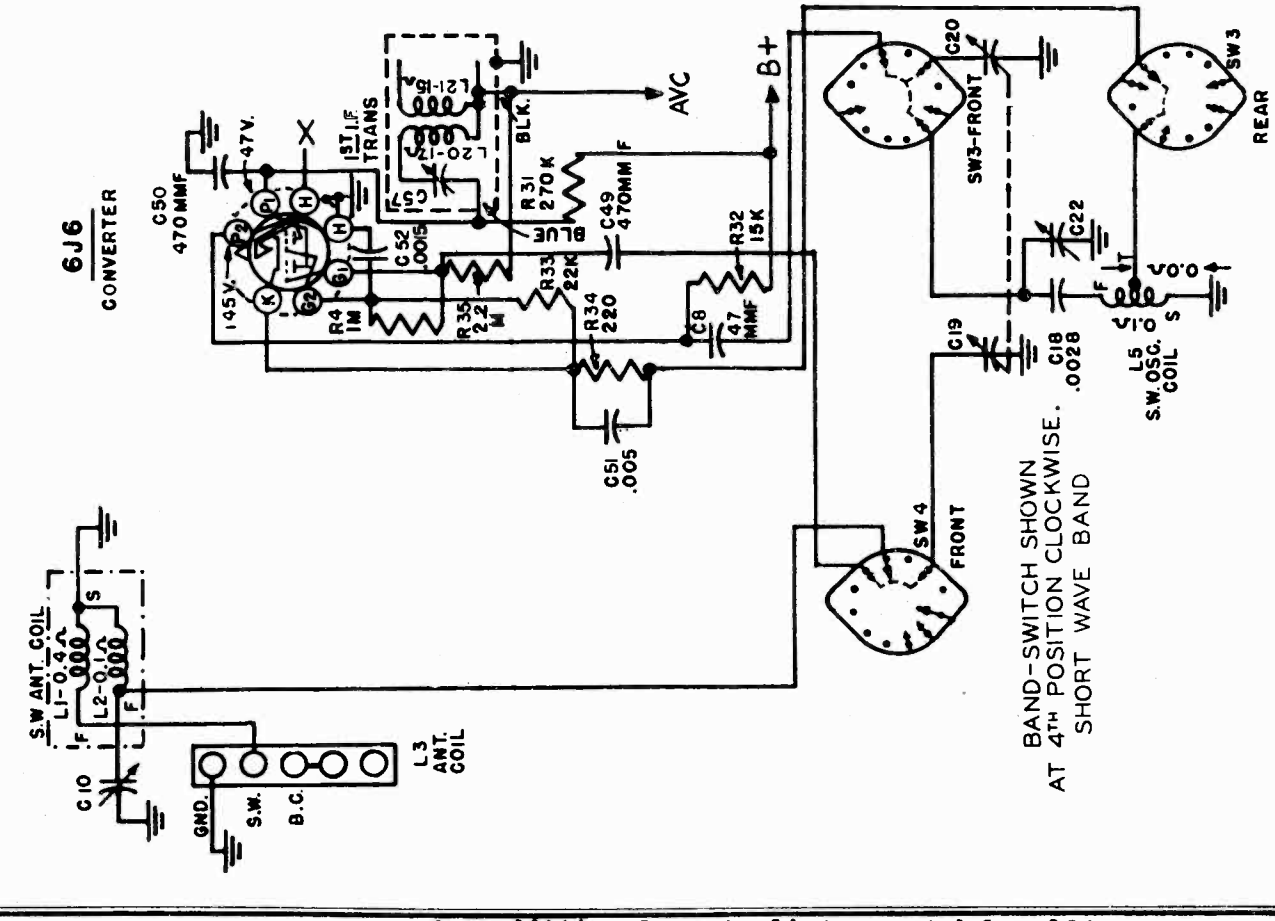
PARTS LIST ADDITIONS FOR MODELS H-104B, H-105B, H-107B AND H-108B H-110B, H-111B, H-137B AND H-138B

PART NO.	DESCRIPTION
RCP10W6202A	Capacitor, .002 mld 600 v. (C48)
RCM20A471M	Capacitor, 470 mmf mica (C49, C50)
RCP10W6502A	Capacitor, .005 mld 600 v. (C51)
RCM30B222M	Capacitor, .0022 mld mica (C52)
RCM20A221M	Capacitor, 220 mmf mica (C53)
RCM30B102M	Capacitor, .001 mld mica (C54)
RCM20C201J	Capacitor, 200 mmf mica (C55)
RCP10W4503A	Capacitor, .05 mld 400 v. (C56)
RCP10W4203A	Capacitor, .02 mld 400 v. (C61)
V-4317	Coil, B.C. and S.W. osc. (L24, L25)—V-2102-5 Chassis only
V-4316	Coil, osc. cathode (L26)—V-2102-5 Chassis only
RC10AE474K	Resistor, 470K ¼ w. (R27)
RC10AE106M	Resistor, 10M ¼ w. (R28)
RC20AE473K	Resistor, 47K ½ w. (R29, R30)
RC20AE274K	Resistor, 270K ½ w. (R31)
RC41AE153K	Resistor, 15K 2 w. (R32)
RC10AE223K	Resistor, 22K ¼ w. (R33)
RC10AE221K	Resistor, 220 ohms ¼ w. (R34, R40)
RC10AE225M	Resistor, 2.2M ¼ w. (R35)
RC10AE105M	Resistor, 1M ¼ w. (R36)
RC30AE183K	Resistor, 18K 1 w. (R37)
RC10AE394K	Resistor, 390K ¼ w. (R38)
RC30AE333K	Resistor, 33K 1 w. (R39)
RC10AE683K	Resistor, 68K ¼ w. (R41)
RC10AE680M	Resistor, 68 ohms ¼ w. (R42)
V-4169-2	Shield, 6J6 tube
V-4162-1	Socket Assy., 6AT6 tube (including adapter plate)
V-4162-3	Socket Assy., 6J6 tube (including adapter plate and shield base)
V-4180	Transformer, 1st I-F (L20, L21, C57, C58)—V-2102-3 Chassis only
V-4345	Transformer, 1st I-F (L22, L23, C59, C60)—V-2102-5 Chassis only

ADDITION TO V-3269-1 RECORD CHANGER PARTS LIST

This item should be added to the V-3269-1 Record Changer parts list given in the "Models H-104, H-105, H-107 and H-108 Service Notes."

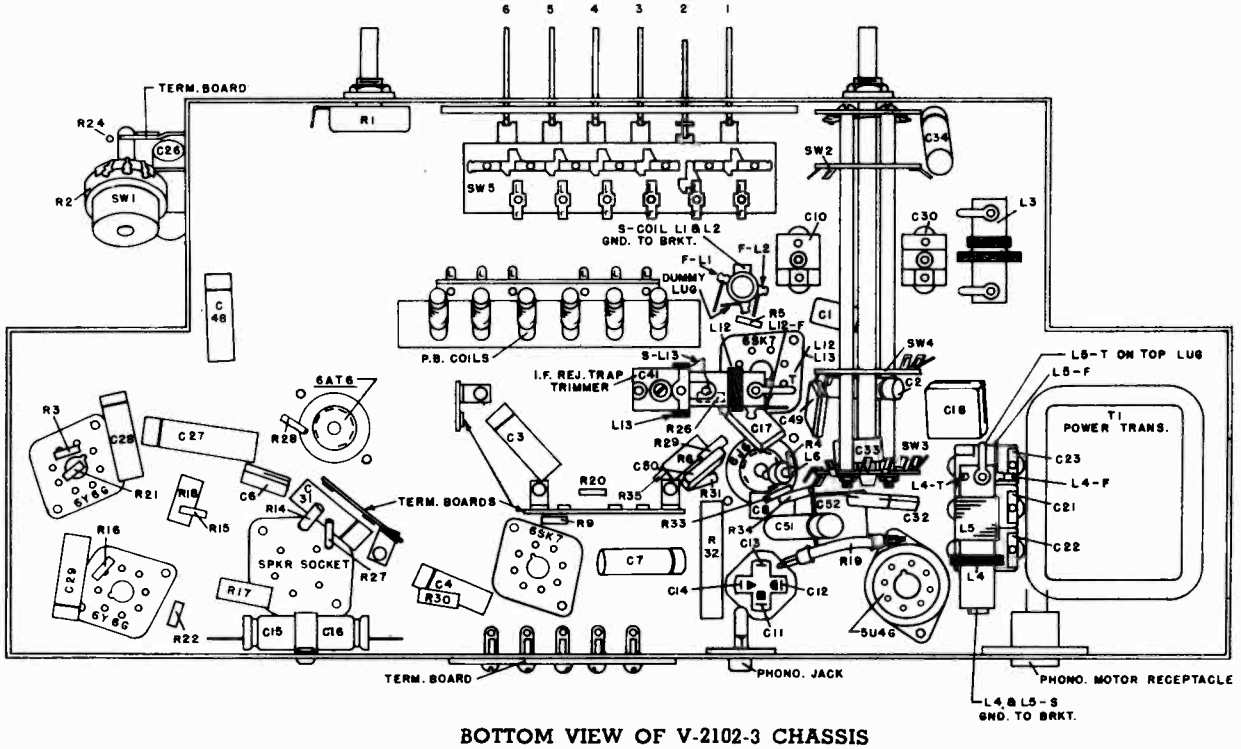
PART NO.	DESCRIPTION
V-4152	Cord, pickup (shielded)



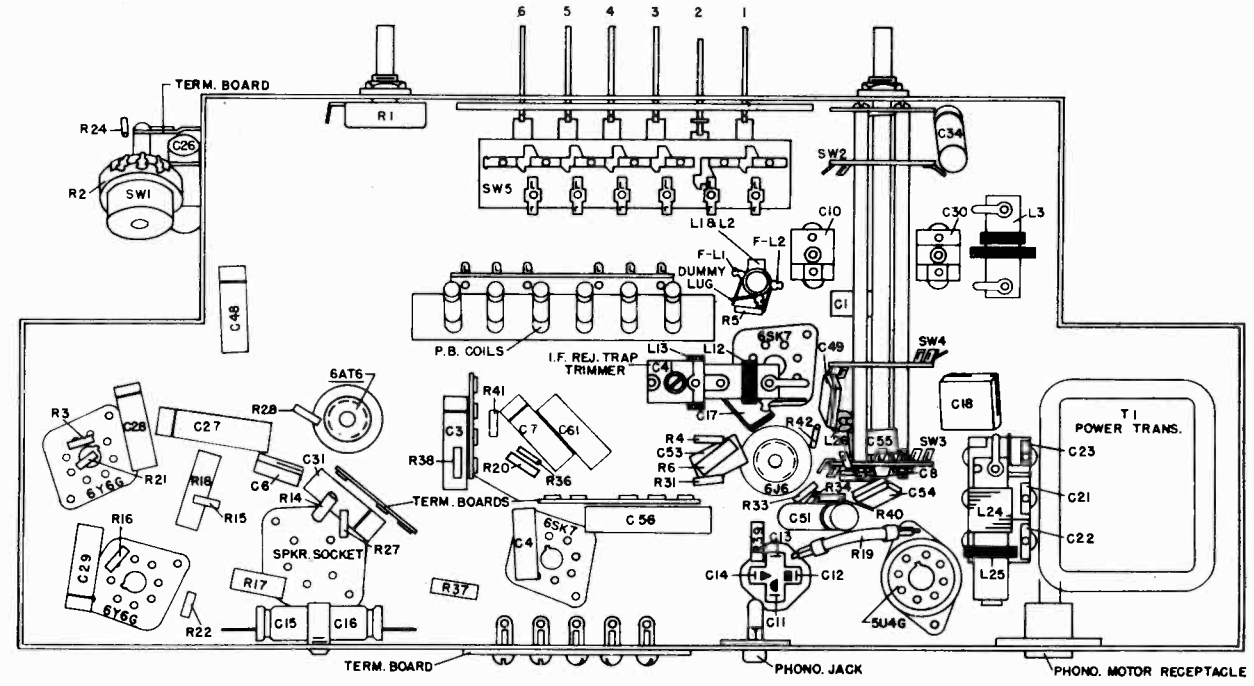
For additional parts list see Model H-104, page 15-4 of Rider's Volume XV.

MODELS H-104B, H-105B, H-107B, H-108B, H-110B, H-111B, H-137B, H-138B
Chassis V-2102-3, V-2102-5

WESTINGHOUSE ELECTRIC CORP.



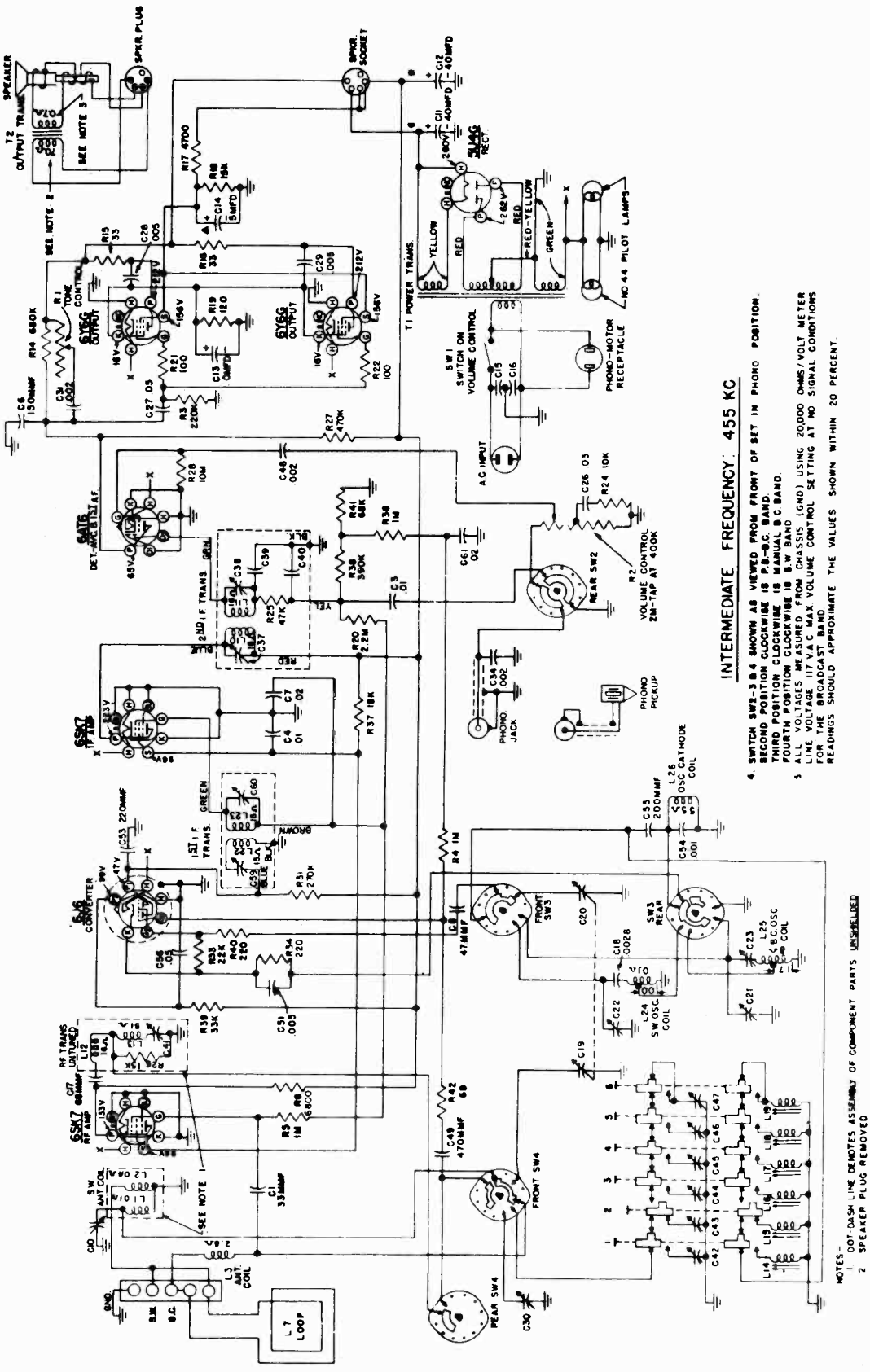
BOTTOM VIEW OF V-2102-3 CHASSIS



BOTTOM VIEW OF V-2102-5 CHASSIS

WESTINGHOUSE ELECTRIC CORP.

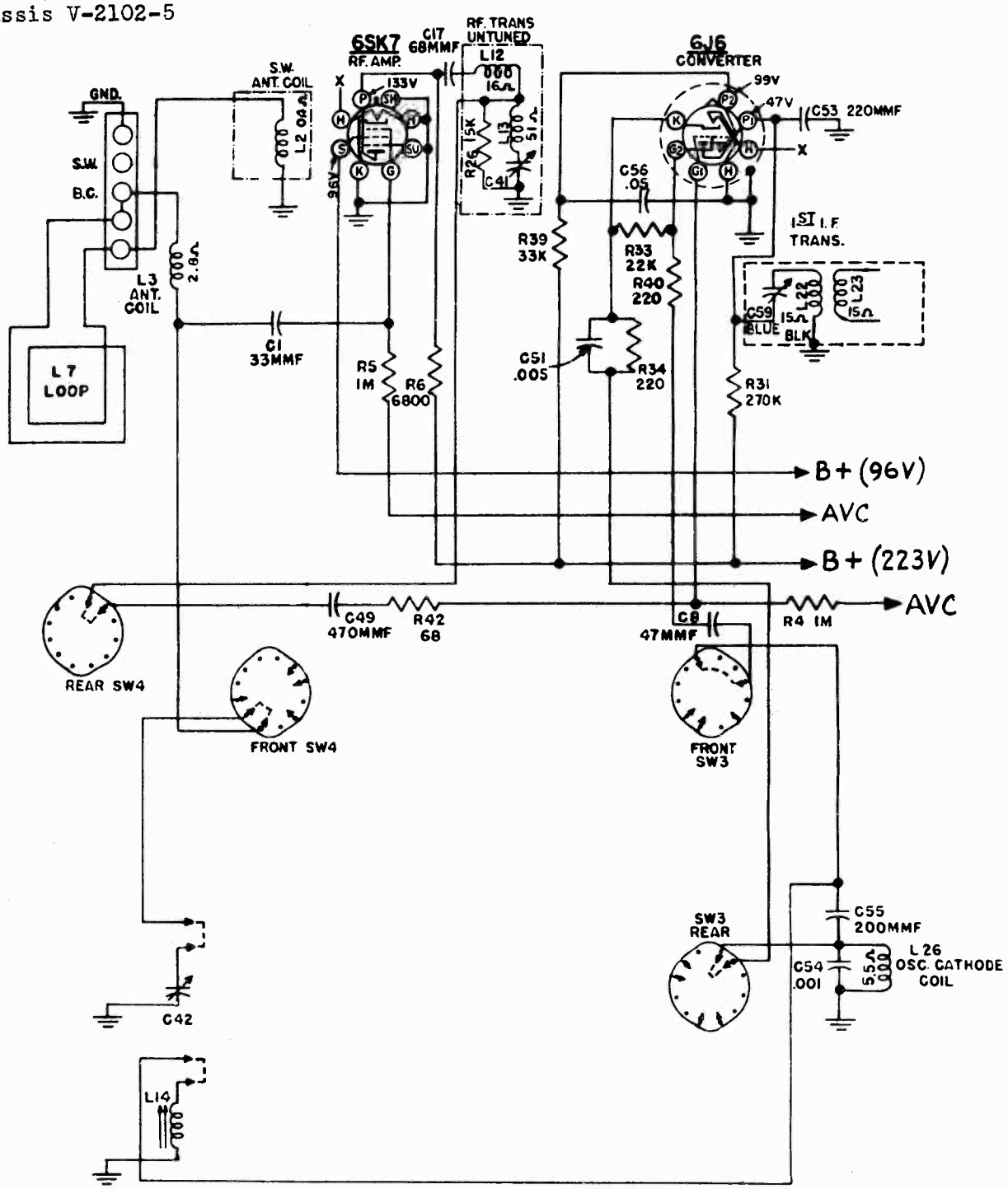
MODELS H-104B, H-105B,
H-107B, H-108B, H-110B,
H-111B, H-137B, H-138B
Chassis V-2102-5



For alignment and additional material see Model H-104, pp. 15-1, 15-3, 15-4 of Rider's Volume XV.

MODELS H-104B, H-105B, H-107B, H-108B, H-110B, H-111B, H-137B, H-138B
Chassis V-2102-5

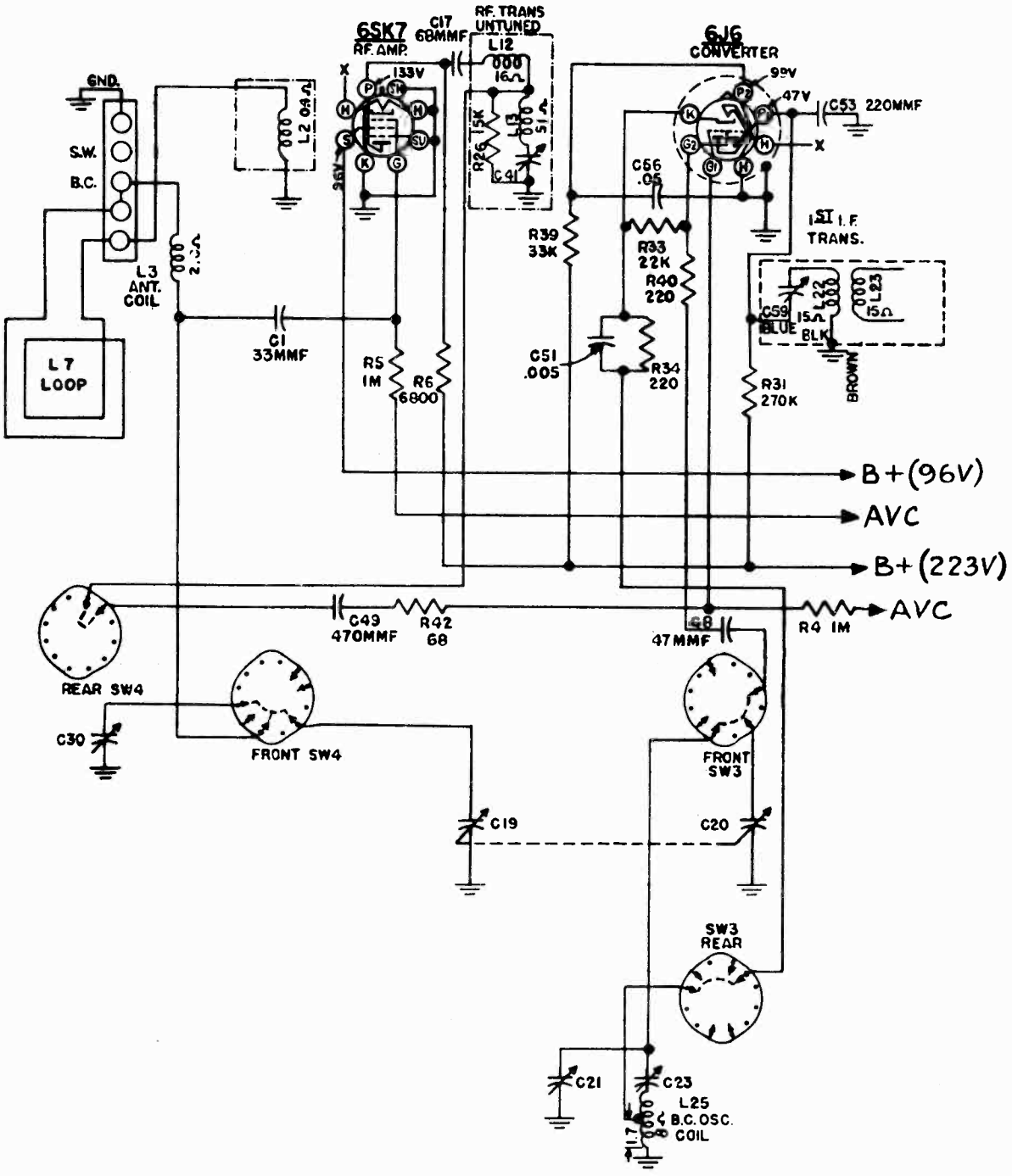
WESTINGHOUSE ELECTRIC CORP.



NOTE :
1ST POSITION (PHONO)
NOT SHOWN.

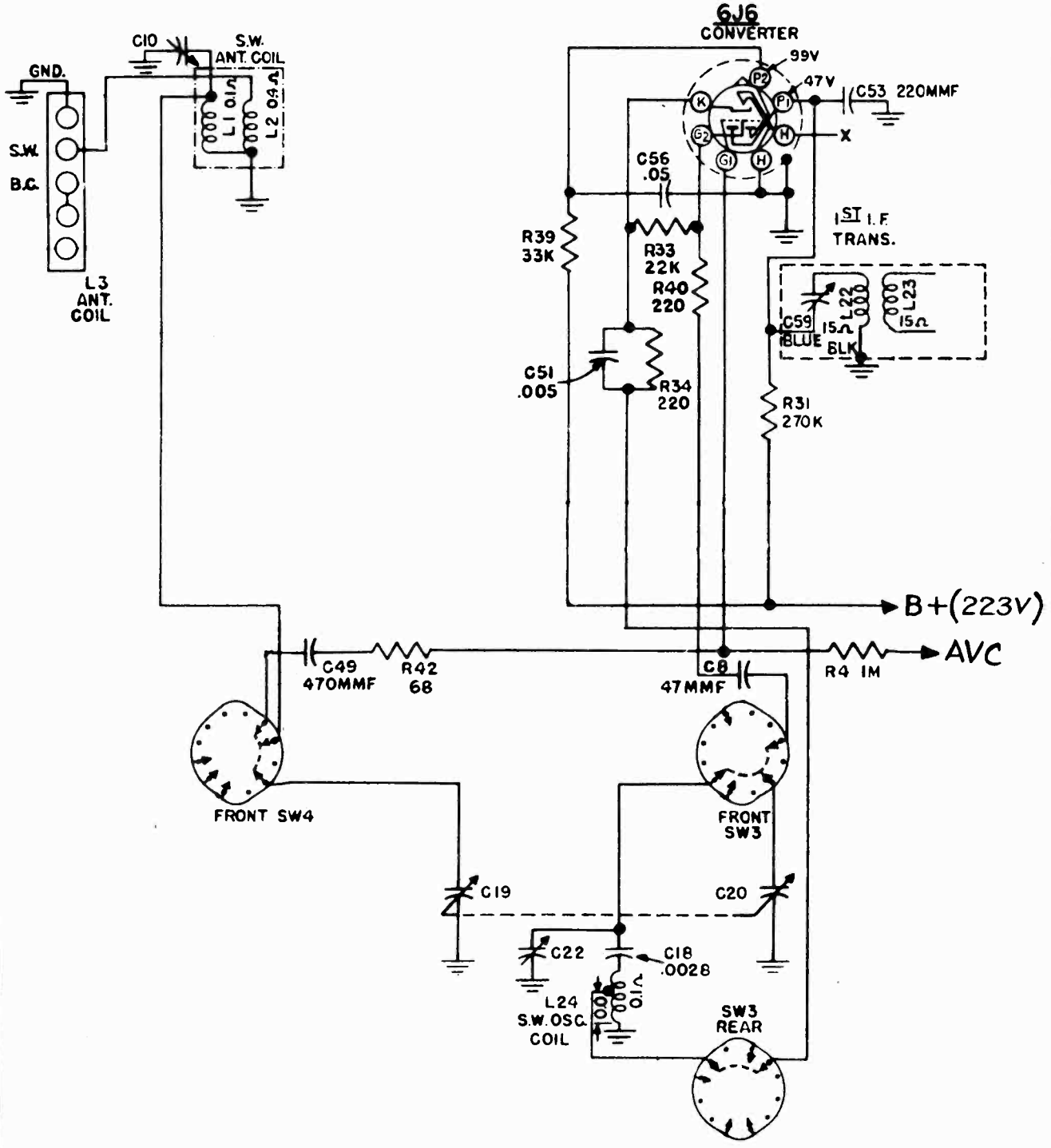
BAND-SWITCH SHOWN
AT 2ND POSITION CLOCKWISE.
BROADCAST BAND (AUTOMATIC)
PUSHBUTTON 1 DEPRESSED

WESTINGHOUSE ELECTRIC CORP. MODELS H-104B, H-105B, H-107B, H-108B, H-110B, H-111B, H-137B, H-138B
Chassis V-2102-5

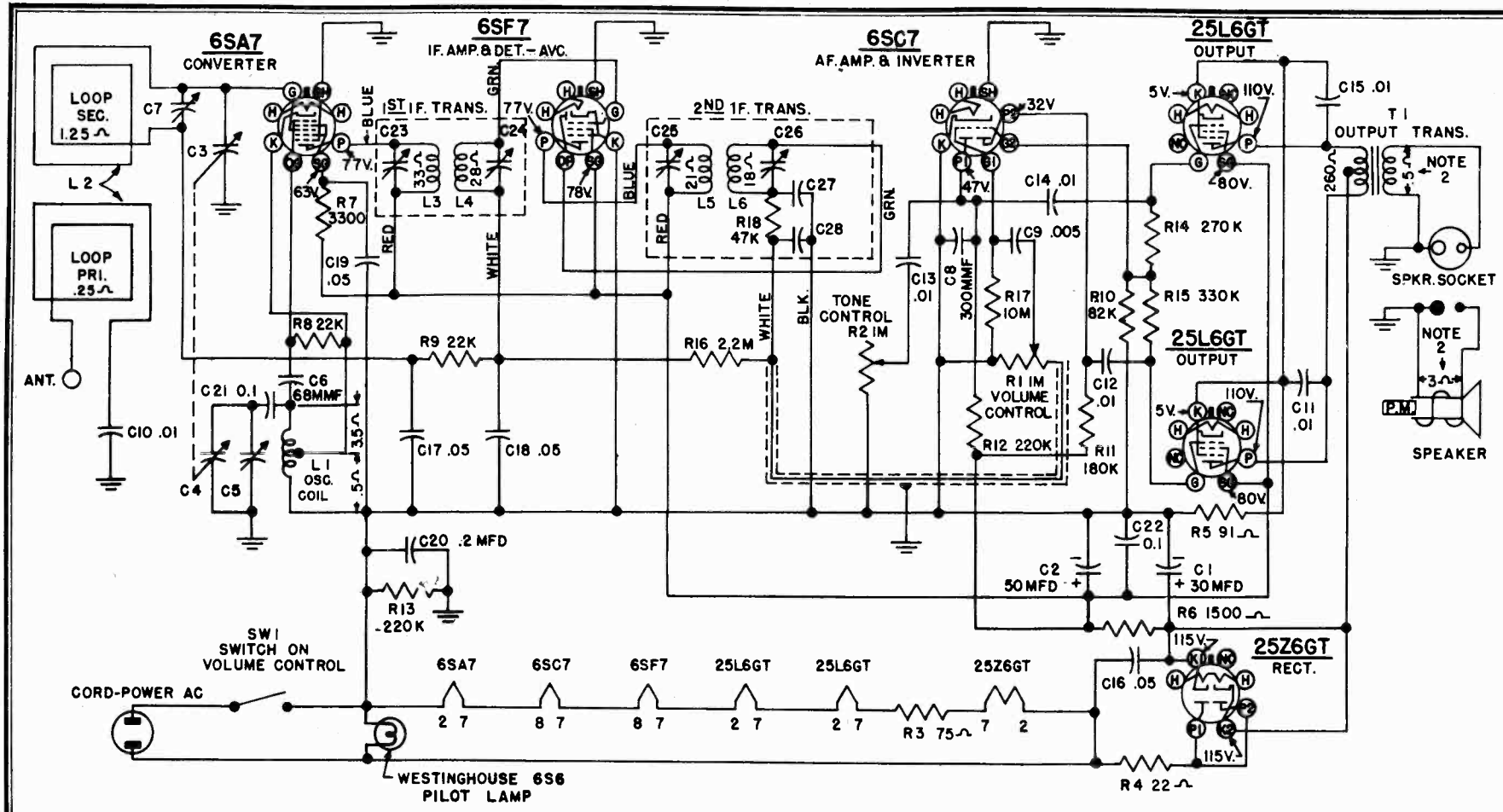


BAND-SWITCH SHOWN
AT 3RD POSITION CLOCKWISE.
BROADCAST BAND (MANUAL)

MODELS H-104B, H-105B, WESTINGHOUSE ELECTRIC CORP.
H-107B, H-108B, H-110B,
H-111B, H-137B, H-138B
Chassis V-2102-5



BAND-SWITCH SHOWN
AT 4TH POSITION CLOCKWISE.
SHORT WAVE BAND



NOTE: 1. ALL VOLTAGES MEASURED FROM COMMON NEGATIVE USING A 20,000 OHMS PER VOLT METER – LINE VOLTAGE 117 VOLTS A-C. VOLTAGES SHOULD BE AS SHOWN ± 20 %.
2. SPEAKER PLUG REMOVED.

SPECIFICATIONS

FREQUENCY RANGE:
Standard Broadcast ..... 540 to 1600 kc

INTERMEDIATE FREQUENCY: ..... 455 kc

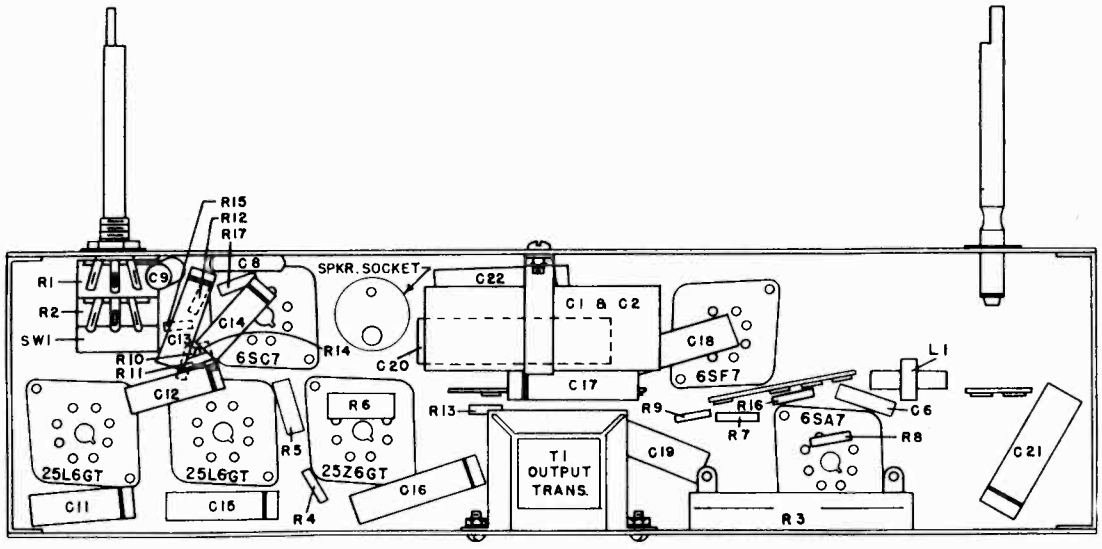
POWER OUTPUT:
Undistorted ..... 2.75 watts
Maximum ..... 5 watts

LOUDSPEAKER:
Size and Type ..... 5"x 7" oval P. M.
Voice Coil Impedance ..... 3.2 ohms

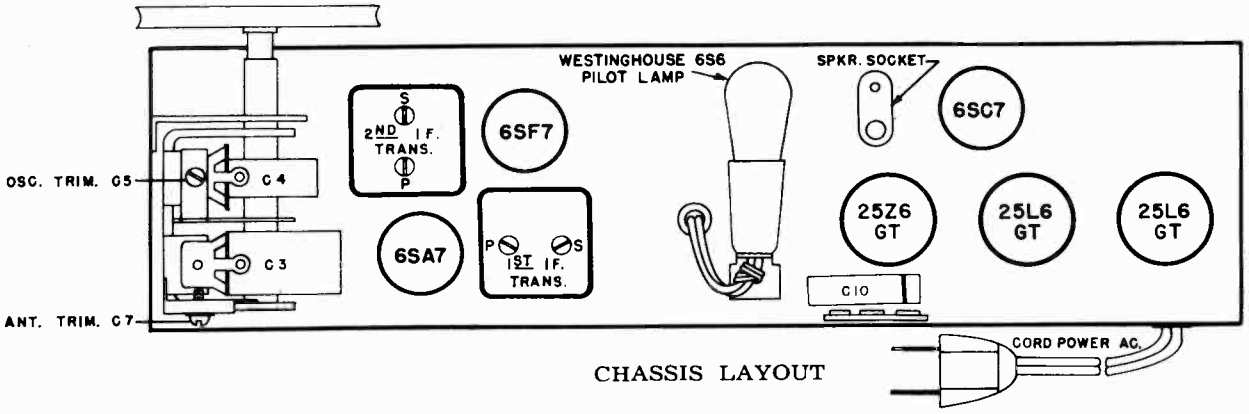
OPERATING VOLTAGE: ..... 105 to 120 volts 50-60 cycles A-C or 105 to 120 volts D-C

POWER CONSUMPTION: ..... 60 watts

MODEL H-157 WESTINGHOUSE ELECTRIC CORP.



BOTTOM VIEW OF CHASSIS



CHASSIS LAYOUT

ALIGNMENT

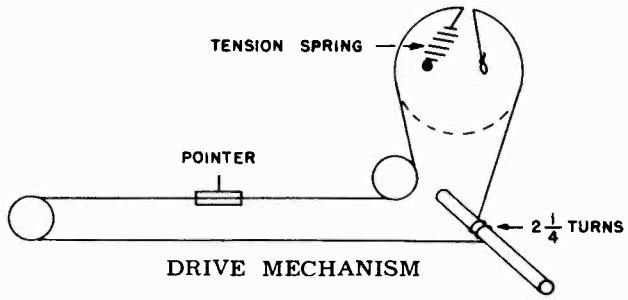
Before beginning alignment, make certain that the dial pointer is correctly positioned.

Connect an output meter across the speaker voice coil.

While making the following adjustments, keep the volume control set for maximum output and the signal generator output attenuated to avoid AVC action.

Step	Connect Signal Generator to—	Signal Generator Frequency	Radio Dial Setting	Adjust
1	6SF7 control grid through 0.1 mfd capacitor	455 kc	1600 kc	Primary and secondary trimmers of 2nd I-F trans. for max. output
2	6SA7 control grid through 0.1 mfd capacitor	455 kc	1600 kc	Primary and secondary trimmers of 1st I-F trans. for max. output
3	Antenna terminal through 200 mmf capacitor	455 kc	1600 kc	"Peak" all I-F trimmers for max. output
4	Antenna terminal through 200 mmf capacitor	1615 kc	gang at minimum	Oscillator trimmer for max. output
5	Radiated signal (no actual connection)	1400 kc	1400 kc	Antenna trimmer for max. output

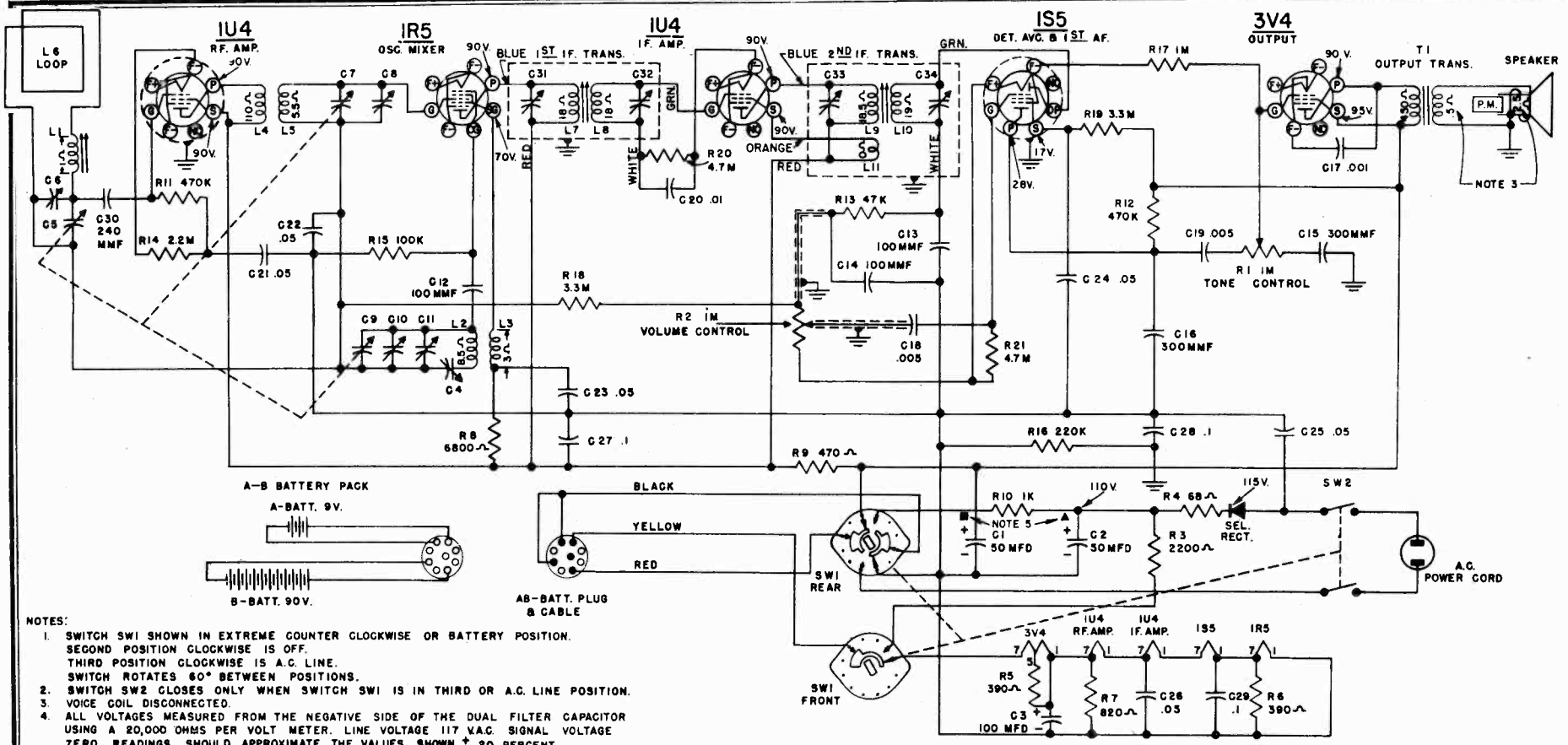
WESTINGHOUSE ELECTRIC CORP. MODEL H-157



DRIVE MECHANISM

PARTS LIST

Part No.	Description
V-5019	Asbestos Sheet
V-5268	Background, dial
V-5021	Baffle and Grille Cloth Assy.
V-4997	Bracket, dial background
V-4991	Bracket, var. capacitor mtg.
V-5352	Bracket, volume control
V-1139-1	Cabinet, mahogany
V-3304	Capacitor, electrolytic 30 mfd 150 v. (C1) 50 mfd 150 v. (C2)
V-4993	Capacitor, var. 2-gang (C3, C4, C5)
RCM20A680M	Capacitor, 68 mmf mica (C6)
V-4992	Capacitor, trimmer (C7)
RCM20A301M	Capacitor, 300 mmf mica (C8)
RCP10W6502A	Capacitor, .005 mfd 400 v. (C9)
RCP10W4103A	Capacitor, .01 mfd 400 v. (C10, C11, C12, C13, C14, C15)
RCP10W4503A	Capacitor, .05 mfd 400 v. (C16, C17, C18, C19)
RCP10W4204K	Capacitor, .2 mfd 400 v. (C20)
RCP10W4104A	Capacitor, .1 mfd 400 v. (C21, C22)
V-4763	Clamp, dial
V-3382	Coil, oscillator (L1)
V-4982	Control, volume (R1), tone (R2) and switch (SW1)
V-4349-1	Cord, A-C power
V-4304S-10	Cord, dial drive (incl. clip)
V-5024	Cover, back
V-4983	Dial Scale
V-4072-1	Fastener, back cover clip
V-4893	Foot, rubber
V-3345S-5	Grommet, var. capacitor mtg.
V-4362-3	Knob, ON-OFF and tone
V-5039-1	Knob, tuning
V-5028-1	Knob, volume
No. 6S6	Lamp, pilot
V-5031	Loop, antenna (L2)
V-5043	Nameplate, Westinghouse
V-5022	Nameplate, Stations
V-5023	Nameplate, Volume
V-5033	Plate, front glass
V-4986	Pointer, dial
V-3166S	Pulley, 7/16" dia.
V-4987	Rail, pointer (incl. pulley studs)
V-4994	Resistor, ballast, 75 ohms (R3)
RC20AE220M	Resistor, 22 ohms ½ w. (R4)
RC30AE910J	Resistor, 91 ohms 1 w. (R5)
RC40AE152M	Resistor, 1500 ohms 2 w. (R6)
RC10AE332M	Resistor, 3300 ohms ¼ w. (R7)
RC10AE223M	Resistor, 22K ¼ w. (R8, R9)
RC10AE823K	Resistor, 82K ¼ w. (R10)
RC20AE184K	Resistor, 180K ½ w. (R11)
RC20AE224K	Resistor, 220K ½ w. (R12)
RC10AE224M	Resistor, 220K ¼ w. (R13)
RC10AE274K	Resistor, 270K ¼ w. (R14)
RC10AE334K	Resistor, 330K ¼ w. (R15)
RC10AE225M	Resistor, 2.2M ¼ w. (R16)
RC10AE106M	Resistor, 10M ¼ w. (R17)
V-4988	Shaft, tuning
V-3344S-1	Sleeve, spacer, var. Capacitor mtg.
V-3246S	Socket, octal
V-3163S	Socket, octal (pin No. 1 GND)
V-4989	Socket, pilot lamp
V-3299S	Socket, speaker
V-5034	Speaker, 5"x 7" P. M.
V-3248S	Spring, dial drive
V-3909	Strip, plastic, loop mtg.
V-3228S-1	Terminal Board, 2 lugs
V-4776	Terminal Board, 3 lugs
V-5041	Terminal Board, 4 lugs
V-3375S	Terminal Board, 5 lugs
V-3328	Transformer, 1st I-F (L3, L4, C23, C24)
V-3329	Transformer, 2nd I-F (L5, L6, C25, C26, C27, C28, R18)
V-3297	Transformer, output (T1)
V-3752S	Washer, felt (for knobs)
V-3267S-4	Washer, flat (chassis mtg.)



NOTES:

1. SWITCH SW1 SHOWN IN EXTREME COUNTER CLOCKWISE OR BATTERY POSITION. SECOND POSITION CLOCKWISE IS OFF. THIRD POSITION CLOCKWISE IS A.C. LINE. SWITCH ROTATES 60° BETWEEN POSITIONS.
2. SWITCH SW2 CLOSES ONLY WHEN SWITCH SW1 IS IN THIRD OR A.C. LINE POSITION.
3. VOICE COIL DISCONNECTED.
4. ALL VOLTAGES MEASURED FROM THE NEGATIVE SIDE OF THE DUAL FILTER CAPACITOR USING A 20,000 OHMS PER VOLT METER. LINE VOLTAGE 117 V.A.C. SIGNAL VOLTAGE ZERO. READINGS SHOULD APPROXIMATE THE VALUES SHOWN ± 20 PERCENT.
5. IN LATER PRODUCTION, THE POSITIONS OF C1 & C2 IN THE CIRCUIT WERE REVERSED.

SPECIFICATIONS

FREQUENCY RANGE:
Standard Broadcast ..... 550 to 1600 kc

INTERMEDIATE FREQUENCY ..... 455 kc

TUBE COMPLEMENT:
2 1U4 ..... R-F Amp. and I-F Amp.
1 IR5 ..... Oscillator-mixer
1 1S5 ..... Det., AVC and 1st A-F Amp.
1 3V4 ..... Output Amp.

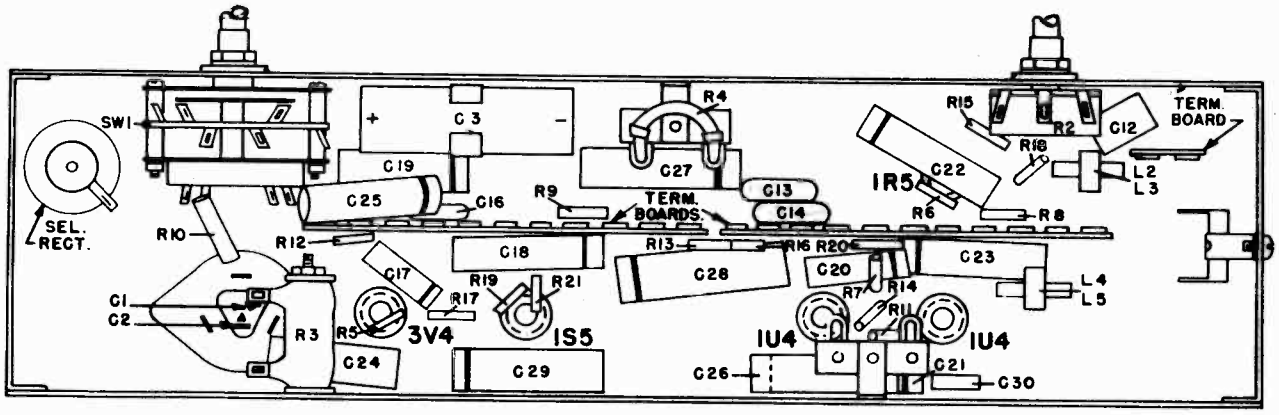
POWER OUTPUT:
Undistorted ..... 200 milliwatts
Maximum ..... 350 milliwatts

LOUDSPEAKER:
Size and Type ..... 4"x 6" P. M.
Voice Coil Impedance ..... 3.2 ohms

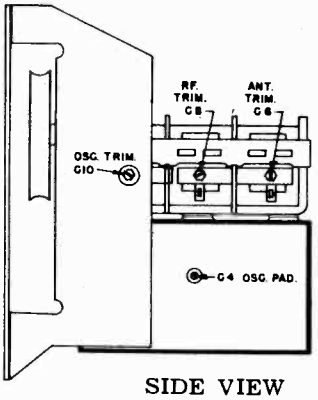
POWER SUPPLY:
Battery Operation ..... 1 Westinghouse V-3920 "AB" Battery (9 v. "A" and 90 v. "B").
Line Operation ..... 105 to 120 volts, 50-60 cycles A-C, or D-C.

CURRENT CONSUMPTION (Battery Operation):
"A" Section of "AB" Battery ..... .05 amp.
"B" Section of "AB" Battery ..... .012 amp.

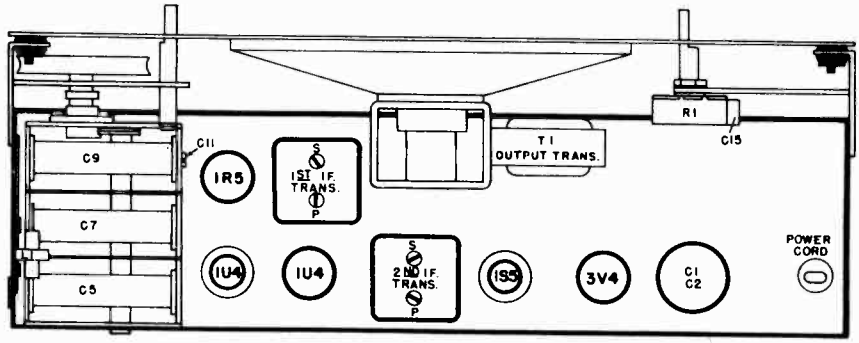
POWER CONSUMPTION:
(Line Operation) ..... 12 watts



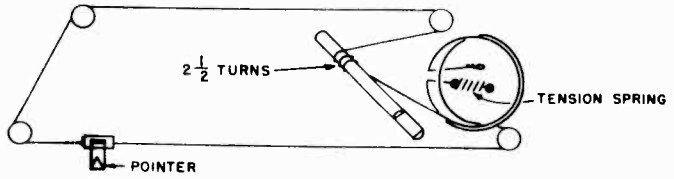
BOTTOM VIEW OF CHASSIS



SIDE VIEW



CHASSIS LAYOUT



DIAL DRIVE

ALIGNMENT

Before beginning alignment, make certain that the dial pointer is properly orientated with respect to the dial scale.

Connect an output meter across the speaker voice coil.

While making the following adjustments, keep the volume control set for maximum output and the signal generator output attenuated to avoid A. V. C. action.

Step	Connect Signal Generator to—	Signal Generator Frequency	Radio Dial Setting	Adjust for Maximum Output
1	1U4, I-F Amp., control grid through a 0.1 mfd capacitor	455 kc	550 kc	Primary and secondary trimmers of 2nd I-F trans.
2	1R5, Converter, control grid through a 0.1 mfd capacitor	455 kc	550 kc	Primary and secondary trimmers of 1st I-F trans.
3	Stator of R-F section (C7) of tuning capacitor through a 0.1 mfd capacitor	455 kc	550 kc	"Peak" all I-F trimmers
4	Same as above	600 kc	600 kc	Oscillator padder (C4)
5	Same as above	1600 kc	1600 kc	Oscillator trimmer (C10)
6	Repeat steps 4 and 5			
7	Radiated signal (no actual connection)	1400 kc	1400 kc	R-F trimmer (C8) and ant. trimmer (C6)

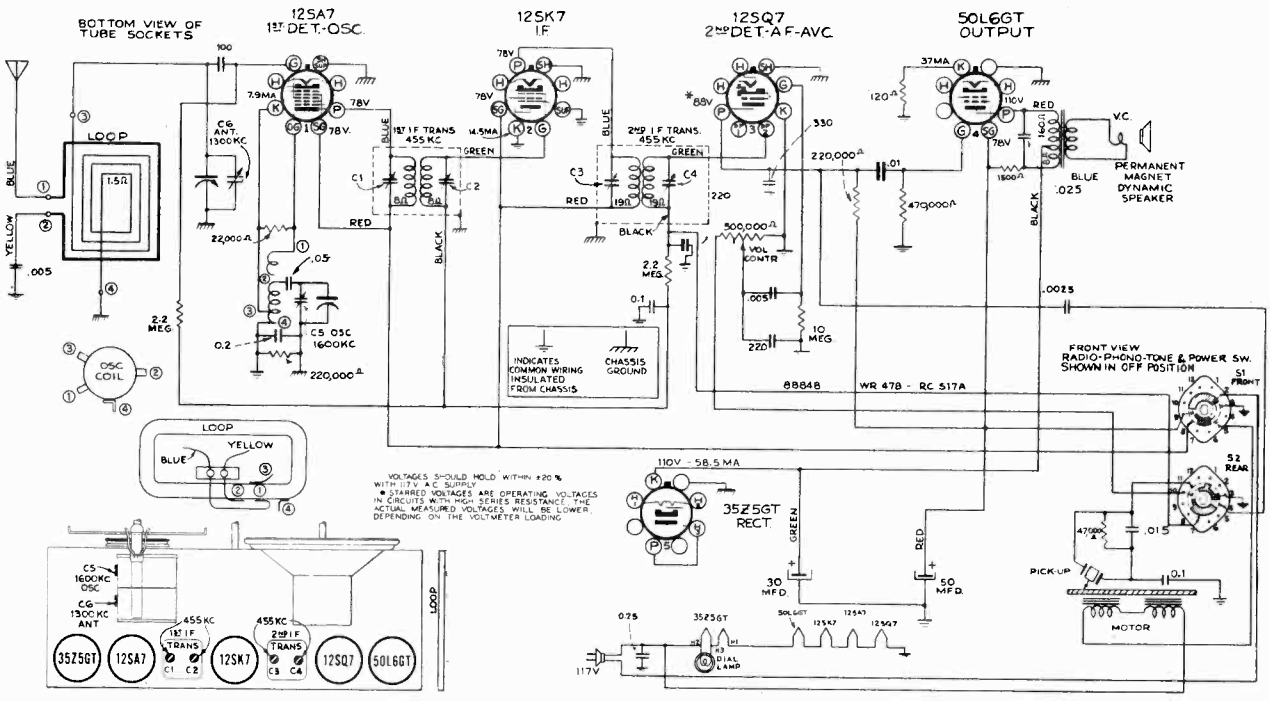
MODEL H-165

WESTINGHOUSE ELECTRIC CORP.

PARTS LIST

Part No.	Description
V-4865	Background, pointer
V-4869	Baffle and Grille Cloth Assembly
V-4169-1	Base, shield, miniature tube
V-3920	Battery Pack, "A-B"
V-4790-1	Bracket Assy., R.H. (control)
V-4790-2	Bracket Assy., L.H. (control)
V-4818	Bracket, chassis mounting
V-4789	Bracket, rail pointer
V-4835	Bracket, shield mounting
V-4893	Bumper, door
V-4836-2	Button, hole plug
V-4242	Button, back cover
V-1134	Cabinet
V-3874	Cable, battery
V-4791	Capacitor, dry electrolytic, dual 50 mfd 150 v. (C1, C2)
V-3866	Capacitor, electrolytic cartridge, 100 mfd 25 v. (C3)
V-4792	Capacitor, oscillator padder (C4)
V-4793	Capacitor, variable 3 gang (C5, C6, C7, C8, C9, C10, C11)
RCM20A101M	Capacitor, 100 mmfd mica (C12)
RCM20A101K	Capacitor, 100 mmfd mica (C13, C14)
RCM20A301M	Capacitor, 300 mmfd mica (C15, C16)
RCP10W6102A	Capacitor, .001 mfd 600 v. (C17)
RCP10W6502A	Capacitor, .005 mfd 600 v. (C18, C19)
RCP10W4103A	Capacitor, .01 mfd 400 v. (C20)
RCP10W4503A	Capacitor, .05 mfd 400 v. (C21, C22, C23, C24, C25, C26)
RCP10W4104A	Capacitor, 0.1 mfd 400 v. (C27, C28, C29)
RCM20A241K	Capacitor, 240 mmfd mica (C30)
V-4849	Catch, door, front cover
V-4202S	Clamp, power cord
V-4874	Clamp, spring (electrolytic capacitor mounting)
V-4794	Coil, antenna loading (L1)
V-4795	Coil, oscillator (L2, L3)
V-4813	Coil, R-F (L4, L5)
V-4796	Control, tone, 1.0 megohms (R1)
V-4797	Control, volume, 1.0 megohms (R2)
V-4304S-6	Cord, dial drive
V-4349-1	Cord, power A-C
V-4825	Cover Assembly, back
V-4826	Cover Assembly, front, with knob and catch
V-3371	Foot, rubber
V-4798	Grille, front
V-3766	Grommet, fibre
V-3345-5	Grommet, rubber
V-4828	Handle
V-4833	Hinge, back
V-3437	Insulator, electrolytic capacitor
V-4840	Knob, battery-off-line
V-4848	Knob, door catch, front
V-4839	Knob, volume, tuning, tone
V-4856	Latch, back cover
V-4831	Loop, antenna (L6)
V-4846	Molding, front cover
V-3894	Nameplate
V-3891	Nut, speed, back cover, 3/16"
V-4800S-1	Nut, speed, grille mounting
V-4876S-1	Nut, speed, speaker mounting
V-5045	Paper, fish, switch insulating
V-3873	Plug, battery cable
V-4801	Pointer
V-3166S	Pulley, 7/16 dia.
V-4115	Rectifier, selenium
V-4872	Resistor, ballast, 2200 ohms (R3)
V-4807	Resistor, 68 ohms fusible (R4)
RC10AE391K	Resistor, 390 ohms ¼ w. (R5, R6)
RC20AE821K	Resistor, 820 ohms ½ w. (R7)
RC20AE682K	Resistor, 6800 ohms ½ w. (R8)
RC20AE471M	Resistor, 470 ohms ½ w. (R9)
RC30AE102M	Resistor, 1000 ohms 1 w. (R10)
RC10AE474M	Resistor, 470,000 ohms ¼ w. (R11, R12)
RC10AE473M	Resistor, 47,000 ohms ¼ w. (R13)
RC10AE225M	Resistor, 2.2 megohms ¼ w. (R14)
RC10AE104K	Resistor, 100,000 ohms ¼ w. (R15)
RC10AE224M	Resistor, 220,000 ohms ¼ w. (R16)
RC20AE105K	Resistor, 1 megohm ½ w. (R17)
RC10AE335M	Resistor, 3.3 megohms ¼ w. (R18, R19)
RC20AE475M	Resistor, 4.7 megohms ½ w. (R20, R21)
V-4802-4	Screw, speaker mounting
V-4805	Shaft, tuning
V-4169-2	Shield, miniature tube
V-4806	Shield, mounting plate (under chassis)
V-5521	Shield, selenium rectifier
V-3344-1	Sleeve, spacer, grille mounting and variable capacitor mounting
V-4292S-1	Socket, miniature tube
V-4809**	Speaker, 4x6" P.M.
V-4057	Spring, dial drive
V-3258S	Spring, knob
V-3909	Strip, plastic, loop mounting
V-3892-2	Stud, back cover
V-4829	Stud, handle mounting
V-4803	Switch, battery-off-line (SW1, SW2)
V-3351	Terminal Board, 2 lugs
V-3228S-2	Terminal Board, 2 lugs, 1 lug grounded
V-3487	Terminal Board, 11 lugs
V-4810	Terminal Strip, 2 lugs, R.H. control bracket assembly
V-4811	Transformer, 1st I-F (L7, L8, C31, C32)
V-4812	Transformer, 2nd I-F (L9, L10, L11, C33, C34)
V-3752S	Washer, felt, knob mounting
V-4853	Washer, felt, upper front cover
V-3267S-4	Washer, flat, back cover latch mtg.
V-4896	Washer, flat, foot mounting
V-3867	Washer, phenolic, ballast mounting

WESTINGHOUSE ELECTRIC CORP. MODEL WR-478



Alignment Procedure

Power Supply.—Although this model employs an ac-dc chassis, it is not suitable for use on d.c., as this would damage the motor.

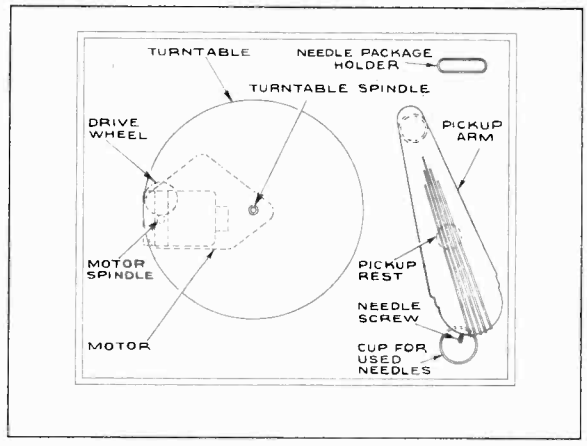
Output Meter Alignment.—Connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—Connect the low side of the test-oscillator to the receiver chassis, through a .01 mfd. capacitor, and keep the output as low as possible.

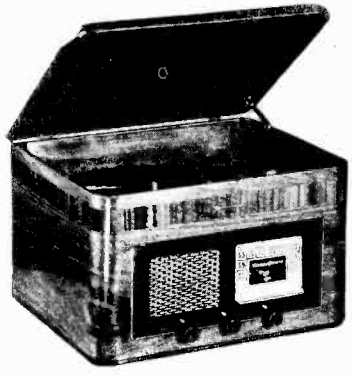
Antenna.—The set is equipped with a built-in loop antenna. If an outdoor antenna is used, it should be connected to the blue antenna lead on the rear of the chassis.

Steps	Connect the high side of test-osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1	12SK7 I-F grid in series with 0.1 mfd.	455 kc	Quiet Point 1,500 kc end of dial	C3, C4 2nd I-F transformer
2	12SA7—1st. det. grid in series with 0.1 mfd.			C1, C2 1st I-F transformer
3	Antenna Lead (blue) in series with 100 mmfd.	1,560 kc	signal frequency	C5 (osc.)
4		1,300 kc		C6 (ant.)
5	Repeat steps 3 and 4.			

Controls



Phonograph



The phonograph motor is a self-starting, constant-speed induction type. It should be lubricated every six months by applying a few drops of light machine oil to the top and bottom motor spindle bearings, to the turntable spindle and to the turntable drive wheel bearing.

CAUTION: Keep oil away from drive bushing on top of motor spindle and from rubber driving tire on turntable drive wheel.

Pre-setting Dial.—With gang condenser in full mesh, the pointer should be horizontal.

MODEL WR-478 WESTINGHOUSE ELECTRIC CORP.

Electrical and Mechanical Specifications

Frequency Range ..... 540-1,650 kc

Intermediate Frequency ..... 455 kc

Tube Complement

(1) RCA-12SA7 ..... 1st Detector-Oscillator
(2) RCA-12SK7 ..... I-F Amplifier
(3) RCA-12SQ7 ..... 2nd Detector, 1st A-F, and A.V.C.
(4) RCA-50L6GT ..... Power Output
(5) RCA-35Z5GT ..... Half-Wave Rectifier
Dial Lamp (1) ..... Mazda 51, 7.5 volts, 0.2 amp.

Power Output (125 volt, 60 cycle supply)	**Radio**	**Phonograph**
Undistorted	0.9 watts	1.5 watts
Maximum	1.2 watts	2.2 watts

Power Supply Ratings

A-C Rating ..... 105-125 volts, 60 cycles, 55 watts

Loudspeaker (RL-81-A4)

Type ..... 5-inch Permanent Magnet Dynamic
Voice-Coil Impedance ..... 4 ohms at 400 cycles

Phonograph ..... Synchronous (self-starting)
Records ..... 10-inch and 12-inch, 78 r.p.m.
Pickup ..... Crystal, 100,000 ohms at 1,000 c.p.s.
Average Output of Pickup ..... 1½ volts at 1,000 c.p.s. across ¼ meg. load
Cabinet Dimensions (inches) .... Height 10¾, Width 16⅜, Depth 13⅜
Weight (net) ..... 18 pounds
Tuning Drive Ratio ..... 9—1

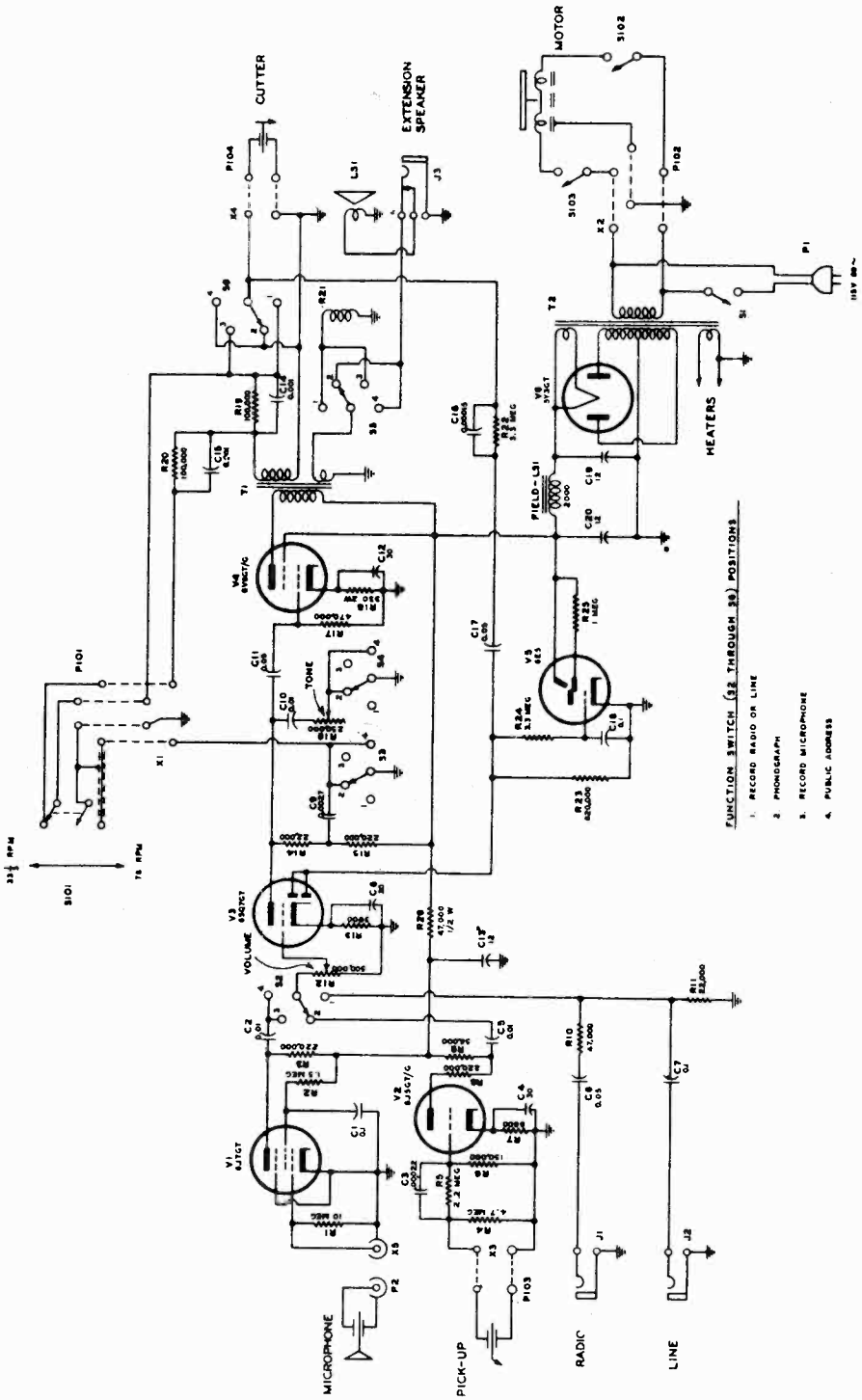
REPLACEMENT PARTS

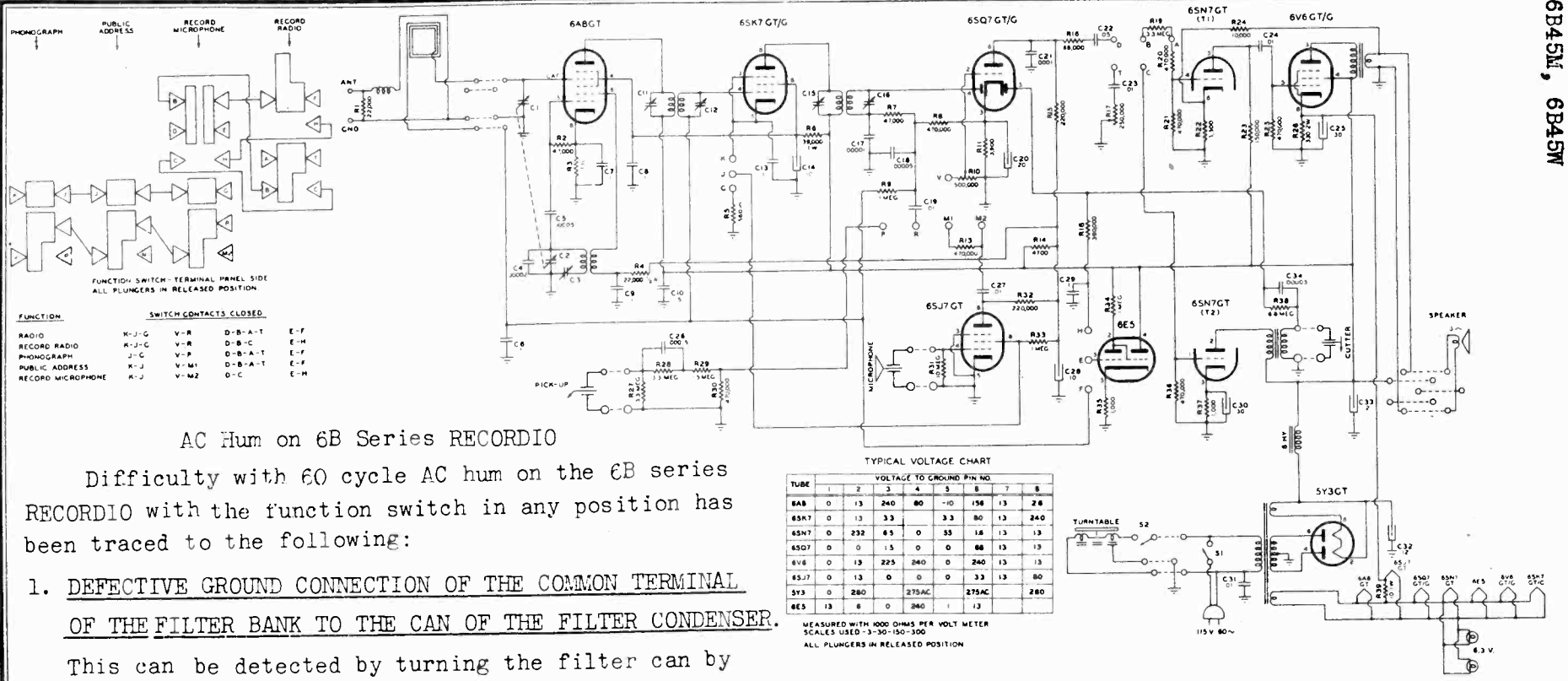
PART No.	DESCRIPTION
	PICKUP AND ARM ASSEMBLIES
33591	Arm—Pickup arm only—less cartridge, base and cable
34481	Arm—Pickup pivot arm and shaft
34482	Base—Pickup mounting base
34758	Bushing—Rubber bushing and metal bushing for pickup pivot arm shaft
33122	Crystal—Pickup crystal cartridge and needle screw
34311	Ring—Retaining ring for pivot shaft
33529	Screw—Needle screw
	MOTOR ASSEMBLIES
36402	Arm—Idler arm and stud
20134	Ball—Steel ball
37215	Motor—105-125 volts, 50 cycle
36404	Motor—105-125 volts, 60 cycle motor
36403	Mounting—One set of motor mounting grommets, spacers, and washers
36406	Plate—Idler arm guide plate
36401	Plate—Motor plate complete with bearing and ball
30340	Retainer—Motor fan retainer
30585	Spring—Idler arm tension spring
36399	Turntable—Turntable and bushing complete with spindle
33726	Washer—"C" washer for idler wheel
36405	Washer—Flat washer for idler wheel
36274	Wheel—Idler wheel and bearing
	SPEAKER ASSEMBLIES (RL-81-A-4)
32907	Cap—Dust cap
36295	Cone—Cone complete with voice coil
	MISCELLANEOUS ASSEMBLIES
36438	Crystal—Dial scale crystal
4109	Cup—Used needle cup
36612	Decalcomania—Control panel decal
35447	Decalcomania—Trade mark decal
36809	Hinge—Cabinet lid hinge
36246	Holder—Needle book holder
34340	Knob—Radio-Phono-Power switch knob
36202	Knob—Tuning or volume control knob
11765	Lamp—Dial lamp, Mazda 51
36305	Mounting—One set of mounting hardware for motor
36303	Mounting—One set of mounting hardware for pickup arm
30870	Plug—2-prong male plug for motor
32610	Rest—Rubber pickup rest
14270	Spring—Retaining spring for knobs
36810	Support—Cabinet lid support

PART No.	DESCRIPTION
	CHASSIS ASSEMBLIES (RC-517-A)
35332	Can—Shield can for I-F transformer, Part No. 36432
35097	Can—Shield can for I-F transformer, Part No. 35088
12720	Capacitor—100 mmfd., moulded mica
12694	Capacitor—220 mmfd., moulded
12952	Capacitor—330 mmfd., moulded mica
34459	Capacitor—.0025 mfd., 1,400 volts—tubular
33584	Capacitor—.005 mfd., 1,200 volts—tubular
4937	Capacitor—.01 mfd., 1,000 volts—tubular
11315	Capacitor—.015 mfd., 400 volts—tubular
30938	Capacitor—.025 mfd., 400 volts—tubular
32787	Capacitor—.05 mfd., 400 volts—tubular
4839	Capacitor—0.1 mfd., 400 volts—tubular
34505	Capacitor—0.2 mfd., 300 volts—tubular
12484	Capacitor—0.25 mfd., 350 volts—tubular
35673	Capacitor—Electrolytic comprising 1 section of 30 mfd., 150 volts, and 1 section of 50 mfd., 150 volts
35571	Coil—Oscillator coil
36285	Condenser—Variable tuning condenser
36435	Control—Volume control
32634	Cord—Drive cord
36439	Dial—Dial scale
36440	Indicator—Station selector indicator
36289	Loop—Antenna loop
36286	Plate—Dial plate and support—less dial
30868	Plug—2-contact female plug for motor cable
30189	Resistor—120 ohms, ½ watt
3153	Resistor—1,500 ohms, 1 watt
13998	Resistor—22,000 ohms, ¼ watt
12412	Resistor—47,000 ohms, ¼ watt
12264	Resistor—220,000 ohms, ¼ watt
12285	Resistor—470,000 ohms, ¼ watt
12679	Resistor—2.2 meg., ¼ watt
13601	Resistor—10 meg., ¼ watt
36437	Shaft—Tuning shaft
36292	Socket—Dial lamp socket
31251	Socket—Tube socket
31319	Socket—Tube socket—moulded for 12SA7 tube
30585	Spring—Drive cord spring
35098	Spring—Used to hold I-F transformers in shield cans
36436	Switch—Radio, phono., and power switch
35088	Transformer—First I-F transformer—less shield can
36432	Transformer—Second I-F transformer—less shield can
35666	Transformer—Output transformer
33726	Washer—"C" washer for tuning shaft

WILCOX-GAY CORP.

MODELS 6A10, 6A20





TYPICAL VOLTAGE CHART

TUBE	VOLTAGE TO GROUND PIN NO.							
	1	2	3	4	5	6	7	8
6A8	0	13	240	80	-10	158	13	26
6SK7	0	13	33		33	80	13	240
6SN7	0	232	65	0	55	16	13	13
6SQ7	0	0	15	0	0	88	13	13
6V6	0	13	225	240	0	240	13	13
6SJ7	0	13	0	0	0	33	13	80
5Y3	0	280		275AC		275AC		280
6E5	13	6	0	240	1	13		

MEASURED WITH 1000 OHMS PER VOLT METER
SCALES USED - 3-30-150-300
ALL PLUNGERS IN RELEASED POSITION

AC Hum on 6B Series RECORDIO

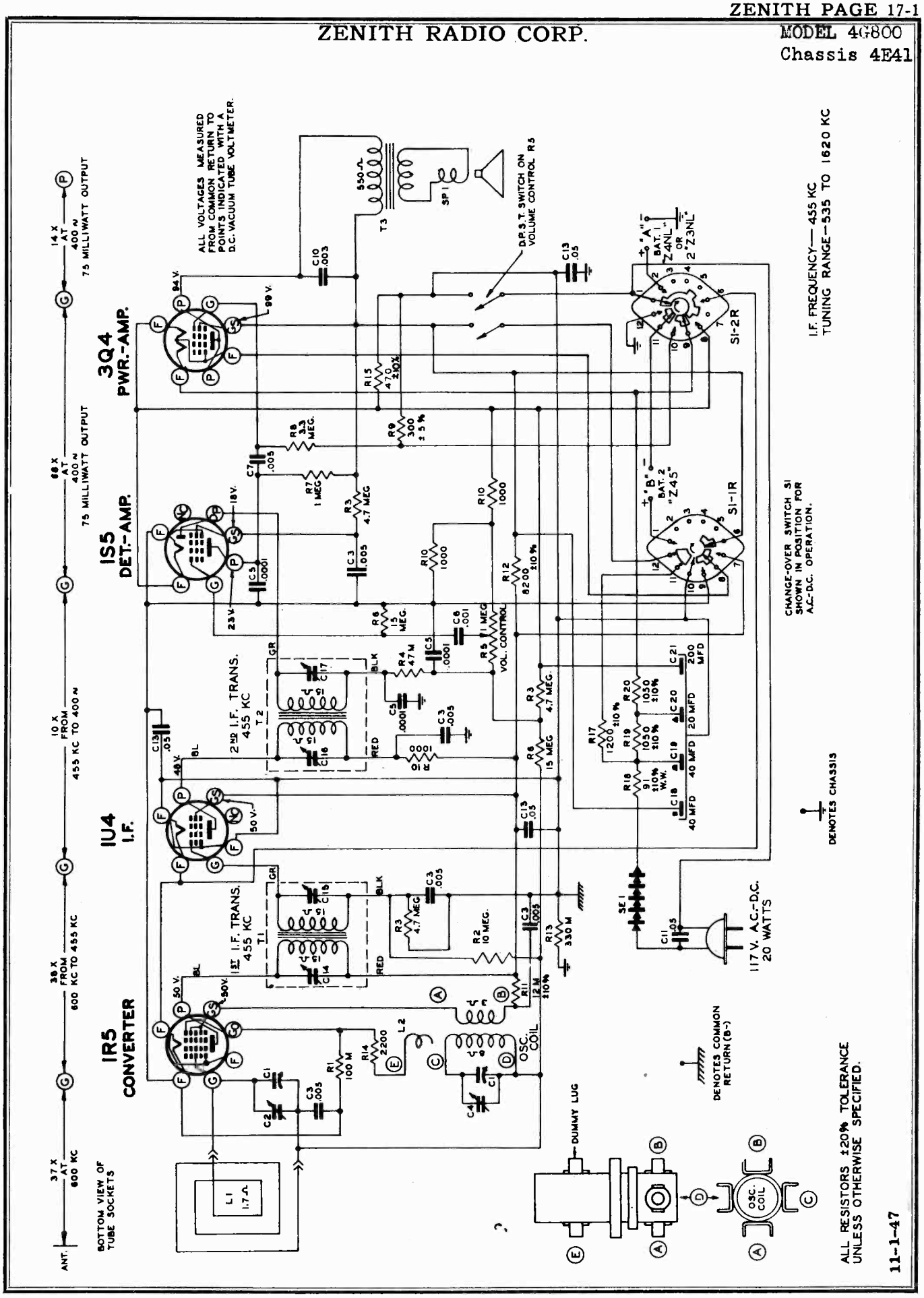
Difficulty with 60 cycle AC hum on the 6B series RECORDIO with the function switch in any position has been traced to the following:

1. DEFECTIVE GROUND CONNECTION OF THE COMMON TERMINAL OF THE FILTER BANK TO THE CAN OF THE FILTER CONDENSER. This can be detected by turning the filter can by hand -- if the hum stops at a certain point then the connection is defective. Peening the can base at the connection point will sometimes help, if not, replace with a new filter condenser.

2. GROUNDED DIAL LIGHT OR HEATER CIRCUIT ON THE CHASSIS USING THE 6SJ7 MICROPHONE AMPLIFIER TUBE. This can be detected by checking the resistance between one side of the heater circuit to ground (chassis) with an ohmmeter. This value should be approximately 340 ohms. If a direct short is shown the short should be cleared. Check dial light sockets by removing them from the supporting brackets.

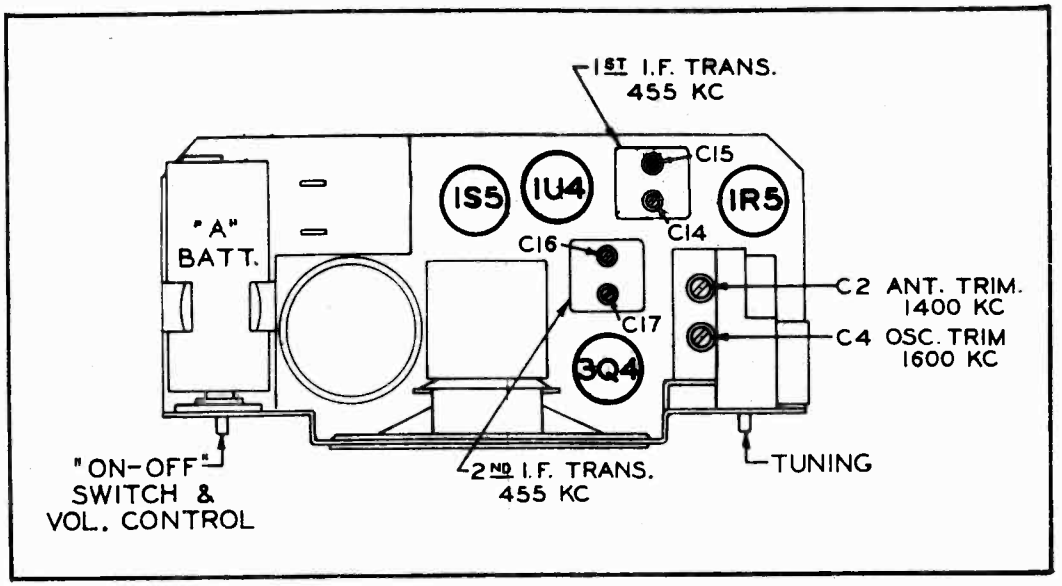
ZENITH RADIO CORP.

MODEL 4G800
Chassis 4E41



PARTS LIST

REFERENCE NO.	DIAGRAM NO.	DESCRIPTION
		CABINET ASSEMBLY
S-13788		Handle Strip Assembly.
S-13795		Bottom Cover Assembly.
S-13847		Wavemagnet & Cover Assembly.
12-1379		Handle Support Bracket (R.H.).
12-1380		Handle Support Bracket (L.H.).
43-149		Handle End Piece
46-683		Front Cover Latch.
46-684		Tuning Control Knob.
46-685		Volume Control Knob.
57-1314		Cabinet Front Plate.
57-1315		Chassis Bottom Plate
59-200		Dial Pointer
80-567		Latch Spring
83-1416		Decorative Strip
83-1417		Handle Strip - Rubber.
93-870		Fibre Shoulder Washer.
110-127		Grille Cloth
199-79		Flexible Handle Sleeve
		CONDENSERS
22-1457	C1	2 Gang Variable. . . . 450 V.
22-1706	C3	.005 MFD . . . . 500 V.
22-1669	C5	.0001 MFD. . . . 500 V.
22-1676 OR 22-1343	C6	.001 MFD . . . . 500 V. .001 MFD . . . . 300 V.
22-1175	C7	.005 MFD . . . . 600 V.
22-326	C10	.003 MFD . . . . 400 V.
22-1660	C11	.05 MFD. . . . 400 V.
22-1655	C13	.05 MFD. . . . 200 V.
ON T1	C14	1st I. F. Trans. Pri. Trim
ON T1	C15	1st I. F. Trans. Sec. Trim
ON T2	C16	2nd I. F. Trans. Pri. Trim
ON T2	C17	2nd I. F. Trans. Sec. Trim
22-1443	C18	40 MFD. Electro. . . . 150 V.
	C19	40 MFD. Electro. . . . 150 V.
	C20	20 MFD. Electro. . . . 150 V.
	C21	200 MFD. Electro . . . 10 V.
		RESISTORS
63-1870	R1	100 M Ohm. . . . 1/2 W.
63-1954	R2	10 Megohm. . . . 1/2 W.
63-1940	R3	4.7 Megohm . . . . 1/2 W.
63-1856	R4	47 M Ohm . . . . 1/2 W.
63-1553	R5	1 Meg. Vol. Control.
63-1961	R6	15 Megohm. . . . 1/2 W.
63-1912	R7	1 Megohm . . . . 1/2 W.
63-1933	R8	3.3 Megohm . . . . 1/2 W.
63-1762	R9	300 Ohm. . . . 1/2 W.
63-1786	R10	1000 Ohm . . . . 1/2 W.
63-1831	R11	12 M Ohm . . . . 1/2 W.
63-1824	R12	8200 Ohm . . . . 1/2 W.
63-1891	R13	330 M Ohm. . . . 1/2 W.
63-1800	R14	2200 Ohm . . . . 1/2 W.
63-1771	R15	470 Ohm. . . . 1/2 W.
63-1789	R17	1200 Ohm . . . . 1/2 W.
63-1564	R18	91 Ohm . . . . 2 W.
63-1647	R19	1050 Ohm . . . . 2-1/2 W.
	R20	1050 Ohm . . . . 2-1/2 W.
		COILS AND CHOKES
S-13786	L1	Wagemagnet Assembly.
S-13774	L2	Oscillator Coil Assembly
95-1015	T1	1st I. F. Transformer.
95-1016	T2	2nd I. F. Transformer.
		MISCELLANEOUS
85-400	S1	Change over Switch
49-567	SP1	3½" P. M. Speaker.
95-1014	T3	Speaker Transformer.
212-2 OR 212-4	SE1	Selenium Rectifier



TUBE AND TRIMMER LOCATION

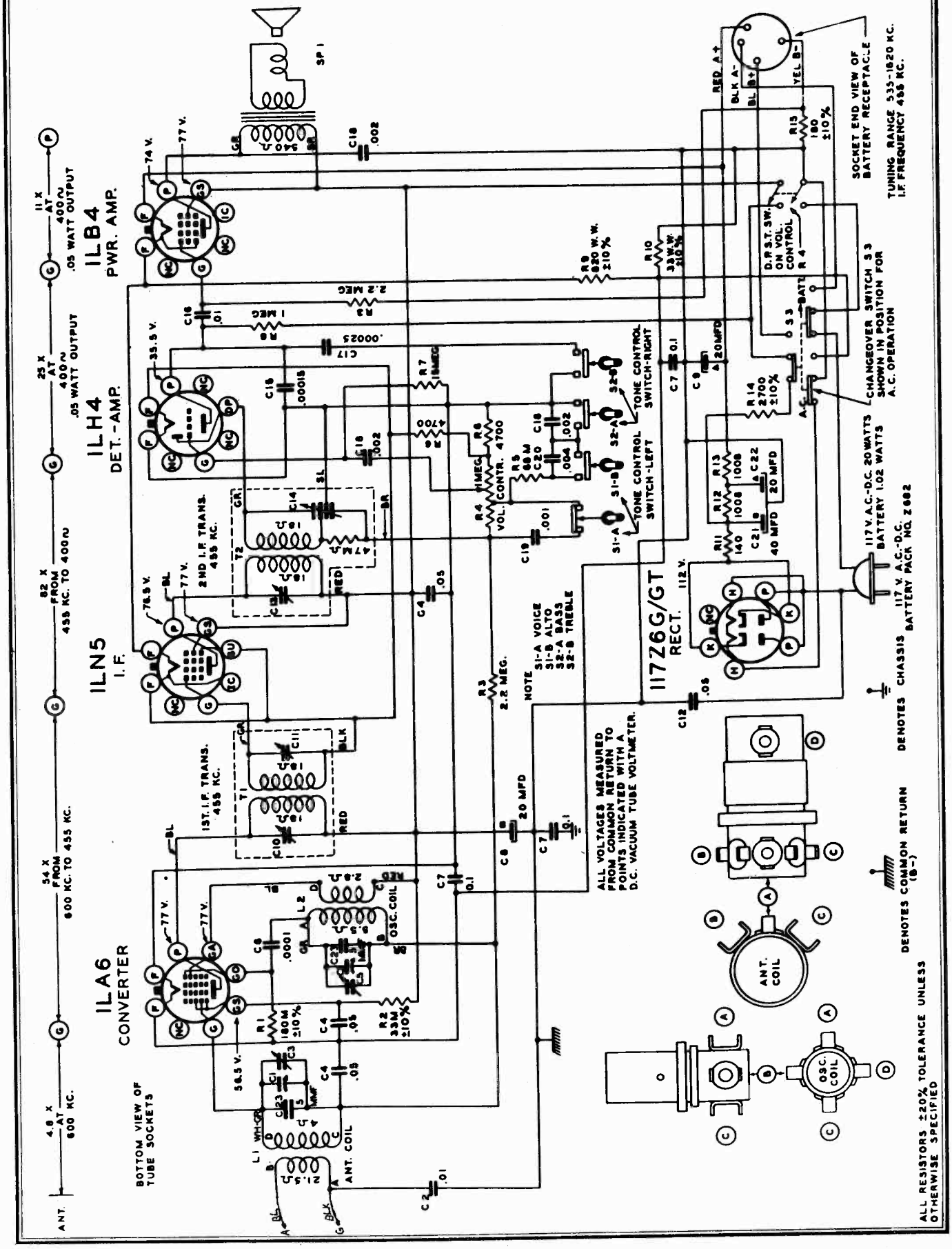
Final alignment of the 4E41 chassis should be made with the chassis installed in the cabinet. Tune in a weak station in the vicinity of 1400 KC and adjust the antenna trimmer for maximum.

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid. . . .	.1 MFD	455 Kc.	600 Kc.	C14, C15, C16, C17	Align I.F.
2	One Turn Loosely Coupled to Wavemagnet.		1600 Kc.	1600 Kc.	C4	Set Oscillator to Scale --
3			1400 Kc.	1400 Kc.	C2	Adjust for Maximum.

ZENITH RADIO CORP.

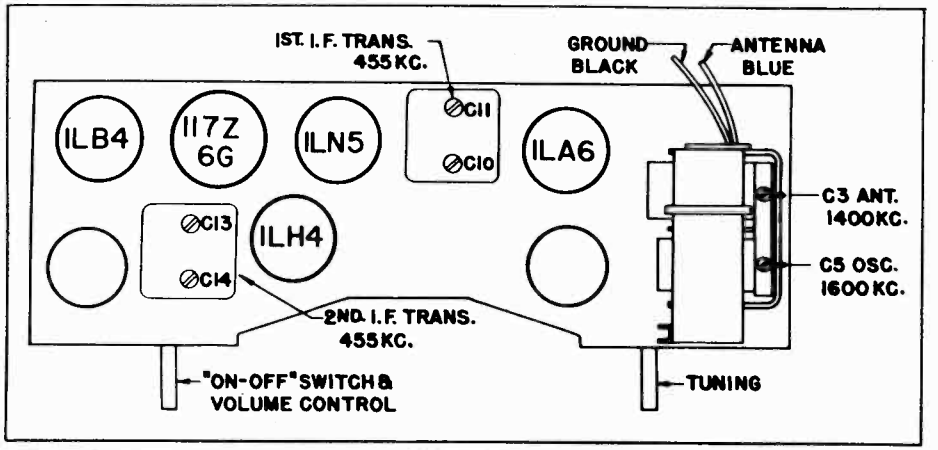
MODEL 5G036
Chassis 5C51



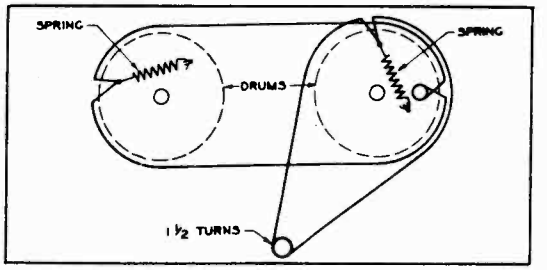
PARTS LIST

PART NO.	REF. NO.		
		RESISTORS	
63-271	R8	1 MEGOHM.....1/4 WATT	
63-439	R14	2700 OHM.....1/4 WATT	
63-587	R6	4700 OHM.....1/4 WATT	
63-594	R5	68M OHM.....1/4 WATT	
63-600	R3	2.2 MEGOHM.....1/4 WATT	
63-627	R15	180 OHM.....1/4 WATT	
63-646	R2	33M OHM.....1/4 WATT	
63-654	R1	180M OHM.....1/4 WATT	
63-976	R7	15 MEGOHM.....1/4 WATT	
63-1099	R10	33 OHM W.W. INSUL.1/2 WATT	
63-1236	R4	VOLUME CONTROL & SWITCH...	
63-1239	R12	CANDOHM (OR 63-1465).....	
63-1366	R11	140 OHM W.W. (USED ONLY WHEN USING 63-1465)2 WATT	
53-1558	R9	820 OHM W.W. INSUL..1 WATT	
		MISCELLANEOUS	
11-68		LINE CORD & PLUG.....	
15-67		BATTERY CABLE PLUG CAP....	
49-523	SP1	6 1/2" P.M. SPEAKER..... 206-523 OUTPUT TRANSFORMER 208-523 CONE & VOICE COIL.	
52-190		SPEAKER CABLE & PLUG.....	
54-34		#6-32 x 1/4" x 3/32" HEX NUT - STEEL N.P.	
57-11A		ANTENNA LEAD MARKER.....	
57-11G		GROUND LEAD MARKER.....	
57-1159		RADIORGAN ESCUTCHEON.....	
70-124		#2 x 3/8" PHILLIPS HD.WOOD SCREW-BRASS PLATED (57-1159).....	
78-229		ELECTROLYTIC CONDENSER SOCKET.....	
78-348		BATTERY CABLE SOCKET.....	
78-401		LOKTAL BASE TUBE SOCKET (OR 78-596-729).....	
78-456		LOKTAL BASE TUBE SOCKET (7 CONTACT).....	
78-611		OCTAL BASE TUBE SOCKET (8 CONTACT).....	
85-254	S3	POWER CHANGE OVER SWITCH..	
85-284	S1	RADIORGAN SWITCH (VOICE & ALTO) (LEFT).....	
85-288	S2	RADIORGAN SWITCH (TREBLE & BASS) (RIGHT).....	
93-125		#6 INTERNAL SHAKEPROOF LOCKWASHER.....	
93-258		BROWN FELT WASHERS (KNOBS)	
94-295		RADIORGAN SWITCH MOUNTING BUSHING (4 USED).....	
112-56		#6 x 1/4" HEX HD. SELF TAPPING SCREW.....	
114-67		#6-32 x 7/16" HEX ACORN HD. MACH.SCREW-STEEL N.P.	
114-162		#8 x 7/8" HEX ACORN WASHER SELF TAPPING SCREW (CHASSIS MTG.).....	
125-17		RUBBER GROMMETS.....	
202-385		INSTRUCTION BOOKL.....	

PART NO.	REF. NO.		
		DIAL ASSEMBLY	
26-338		DIAL SCALE.....	
46-443		RADIORGAN KNOB - VOICE....	
46-444		RADIORGAN KNOB - TREBLE..i	
46-445		RADIORGAN KNOB - ALTO.....	
46-446		RADIORGAN KNOB - BASS.....	
46-520		VOLUME & TUNING CONTROL KNOB (USE S-11558).....	
59-122		ON-OFF INDICATOR.....	
59-160		DIAL POINTER.....	
76-335		TUNING CONTROL SHAFT.....	
80-183		INDICATOR SPRING.....	
80-209		DIAL CORD TENSION SPRING..	
80-471		TUNING SHAFT SPRING.....	
93-690		BROWN FELT WASHER.....	
159-50		CINCH PLUG BUTTON #49361 - BLACK OXIDIZE.....	
188-32		RETAINING RING (76-335)...	
188-34		RETAINING RING (S-11362)..	
192-90		DIAL CRYSTAL.....	
196-64		DIAL CRYSTAL GASKET.....	
S-9588		INDICATOR CAM ASSEMBLY....	
S-9610		DIAL CORD & EYELET ASSEMBLY (POINTER).....	
S-9733		DIAL CORD & EYELET ASSEMBLY (GANG CONDENSER).....	
S-9751		PULLEY & RIVET ASSEMBLY:...	
S-11362		PULLEY & BUSHING ASSEMBLY (POINTER).....	
S-11558		DECORATIVE RING & CONTROL KNOB ASSEMBLY (2 USED)...	
S-11660		DIAL PLATE & INDICATOR ASSEMBLY.....	
		COILS & CHOKES	
95-816	T1	1ST I.F. TRANSFORMER.....	
95-817	T2	2ND I.F. TRANSFORMER.....	
S-11960	L1	ANTENNA COIL ASSEMBLY.....	
S-12505	L2	OSCILLATOR COIL ASSEMBLY..	
		CONDENSERS	
22-182	C6	.0001 MFD. .....600 V.	
22-182	C17	.00025 MFD. .....600 V.	
22-196	C16	.01 MFD. .....600 V.	
22-303	C23	5 MMFD. .....600 V.	
22-446	C20	.004 MFD. .....600 V.	
22-470	C15	.00015 MFD. .....600 V.	
22-492	C18	.002 MFD. .....600 V.	
22-827	C7	.1 MFD. .....200 V.	
22-829	C4	.05 MFD. .....200 V.	
22-887	C19	.001 MFD. .....600 V.	
22-1017	C12	.05 MFD. .....400 V.	
22-1026	C21-C22	20 MFD. X 40 MFD. DRY ELECTROLYTIC.....150 V.	
22-1027	C8-C9	20 MFD. 25 V. X 20 MFD. 150 V. DRY ELECTROLYTIC..	
22-1183	C2	.01 MFD. .....400 V.	
22-1216	C1	TWO SECTION VARIABLE.....	



TUBE TRIMMER LOCATION



DIAL CABLE DRAWING

The alignment of chassis 5C51 is conventional. None of the adjustment interlock, however, the most accurate alignment will be accomplished if the procedure is followed exactly. The IF frequency is 455 KC and all measurements, voltage, and resistance have been taken with an electronic voltohm meter.

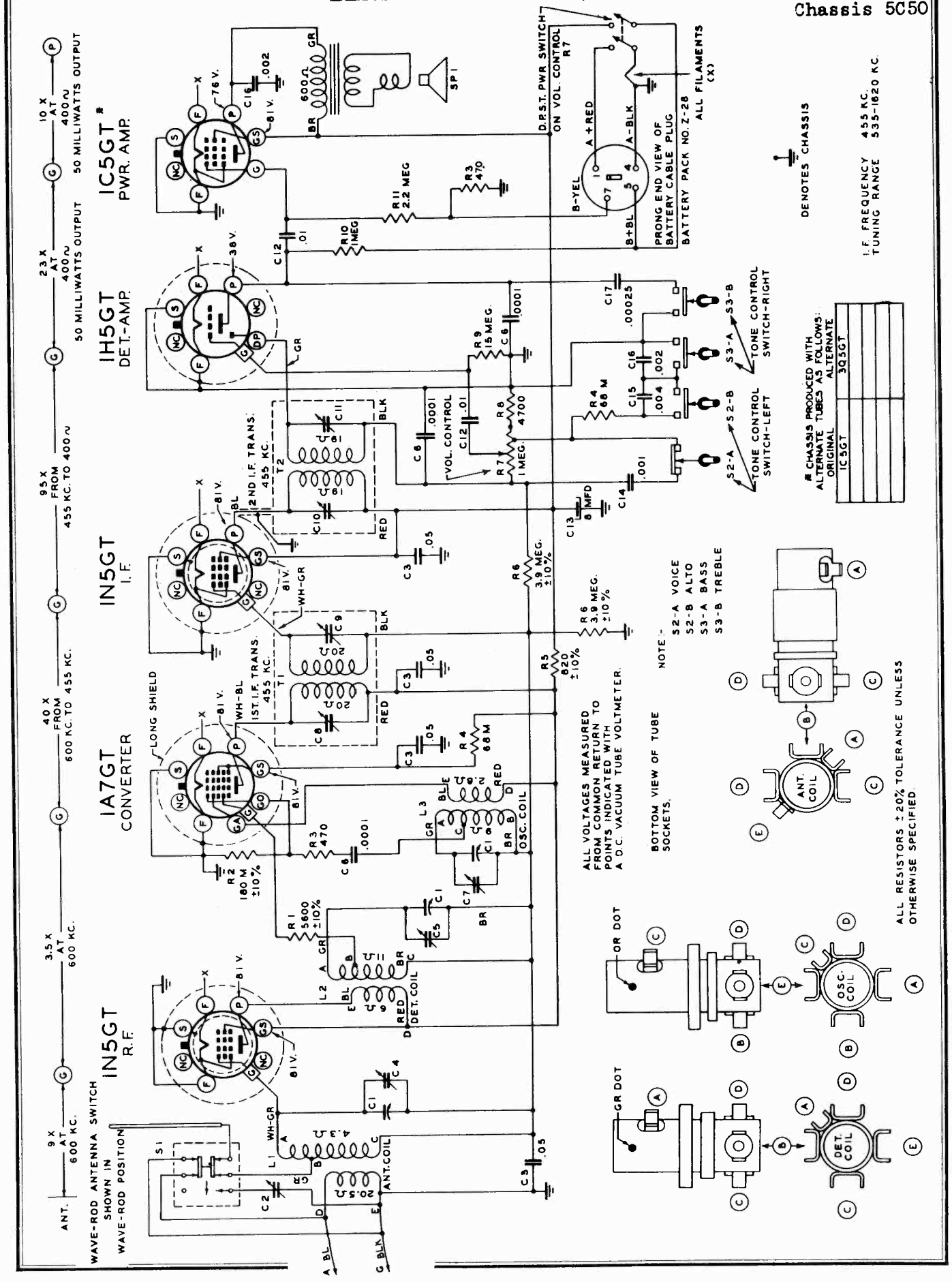
Stage by stage measurements are for reference purposes only. Gain measurements can seldom be duplicated, and are used only for comparison purposes.

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 Mfd.	455 Kc.	600 Kc.	C10, C11 C13 and C14	Align I.F.
2	Antenna and Ground	200 Mmfd.	1600 Kc.	1600 Kc.	C5	Set Oscillator to scale
3	Antenna and Ground	200 Mmfd.	1400 Kc.	1400 Kc.	C3	Align Antenna

ZENITH RADIO CORP.

MODEL 5K037
Chassis 5C50



PARTS LIST

DIAL ASSEMBLY

26-344	Dial Scale
46-443	Radiorgan Knob (Voice)
46-444	Radiorgan Knob (Treble)
46-445	Radiorgan Knob (Alto)
46-446	Radiorgan Knob (Bass)
59-122	Off & On Indicator
59-160	Dial Pointer
76-335	Tuning Control Shaft
80-183	Indicator Spring
80-209	Dial Cord Tension Spring
80-471	Tuning Shaft Spring
93-690	Brown Felt Washer (S-11362)
188-32	Retainer Ring (76-335)
188-34	Retainer Ring (S-11362)
192-90	Dial Crystal
196-64	Dial Crystal Gasket
S-9588	Indicator Cam & Bushing Assembly)
S-9610	Dial Cord & Eyelet Assem (Pointer)
S-9733	Dial Cord & Eyelet Assem (Gang)
S-9751	Pulley & Rivet Assem. (Gang)
S-11362	Pulley & Bushing Assem.
S-11558	Vol. & Tuning Knob Assem (2 used) (46-520)

CHOKES & COILS

95-814	1st I.F. Transformer (T1)
95-839	2nd I.F. Transformer (T2)
S-9570	Detector Coil Assem. (L2)
S-9746	Oscillator Coil Assem (L3)
S-11731	Antenna Coil Assem. (L1)

CONDENSERS

22-162	.0001 Mfd. (C6) 600 V.
22-182	.00025 Mfd. (C17) 600V.
22-196	.01 Mfd. (C12) 600V.
22-448	.004 Mfd. (C15) 600V.
22-492	.002 Mfd. (C16) 600V.
22-684	Dry Electroclytic 8Mfd. (C13) 150 V.
22-829	.05 Mfd (C3) 200 V.
22-887	.001 Mfd. (C14). 600V.
22-1358	Three Section Gang (C1)
22-1421	Antenna Trimmer (C2)

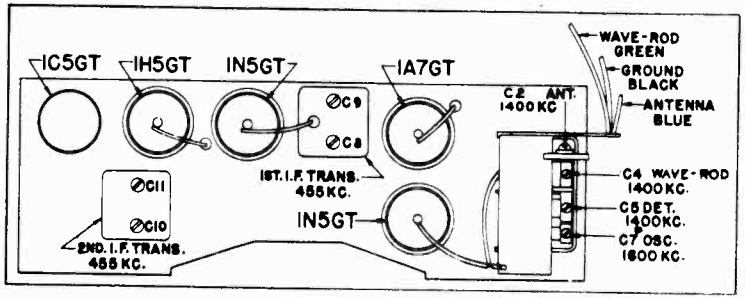
RESISTORS

63-271	1 Megohm (R10) ¼ Watt
63-581	470 Ohm (R3) ¼ Watt
63-587	4700 Ohm (R8) ½ Watt
63-594	68M Ohm (R4) ¼ Watt
63-600	2.2 Megohm (R11) ¼ Watt
63-634	820 Ohm (R5) ¼ Watt
63-638	5600 Ohm (R1) ¼ Watt
63-669	3.9 Megohm (R6) ¼ Watt
63-976	15 Megohm (R9) ¼ Watt
63-1236	Volume Control & Switch (R7)

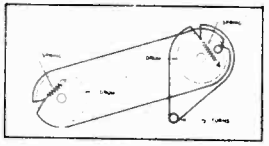
MISCELLANEOUS

12-1082	Ant. Rod Mtg. Brkt.
46-572	Telescopic Ant. Knob
49-522	6½" P.M. Speaker
	206-522 Output Trans.
	208-522 Cone & Voice Coil
49-523	6½" P.M. Speaker (Alt. for 49-522) (SP1)
	206-523 Output Trans.
	208-523 Cone & Voice Coil
52-190	Speaker Cable
57-11A	Antenna Marker
57-11G	Ground Marker
57-900	Dial Plate
57-1103	Antenna Knob Escutcheon
57-1139	Radiorgan Escutcheon
58-74	Battery Cable Plug
70-124	#2 x 3/8 Phillips Hd. Wood Screw (Esc. Mtg)
78-611	Octal Base Tube Socket 5 used
85-228	Wave-Rod Antenna Sw. (CR 85-303) (S1)
85-284	Radiorgan Switch (Voice & Alto L.H) (S2)
85-288	Radiorgan Switch (Treble & Bass R.H. (S3)
93-125	#6 Internal Shakeproof Lockwasher
93-258	Brown Felt Washer (Knobs)
94-295	Steel Bushing (Radiorgan 4 used)
112-56	#6 - ¼ Hex Hd. Self Tapping Screw
114-67	#6-32 x 7/16 Hex Acorn Head Screw
114-162	#8 x 7/8 Hex Acorn Washer Hd S.T. Screw (Chassis Mtg)
125-17	Rubber Grommets
126-379	Tube Shield (3used) Short
126-382	Tube Shield (1A7GT) Long.
159-50	Plug Button (Blk Oxidize)
202-386	Instruction Book
S-11251	Telescopic Antenna Assem. (Complete)
S-11586	Release Assem. (Telescopic Assembly)
S-11729	Waverod Switch & Plate Assembly
Z-28	Battery Pack (BP)

15M2-15-47



TUBE TRIMMER LOCATION



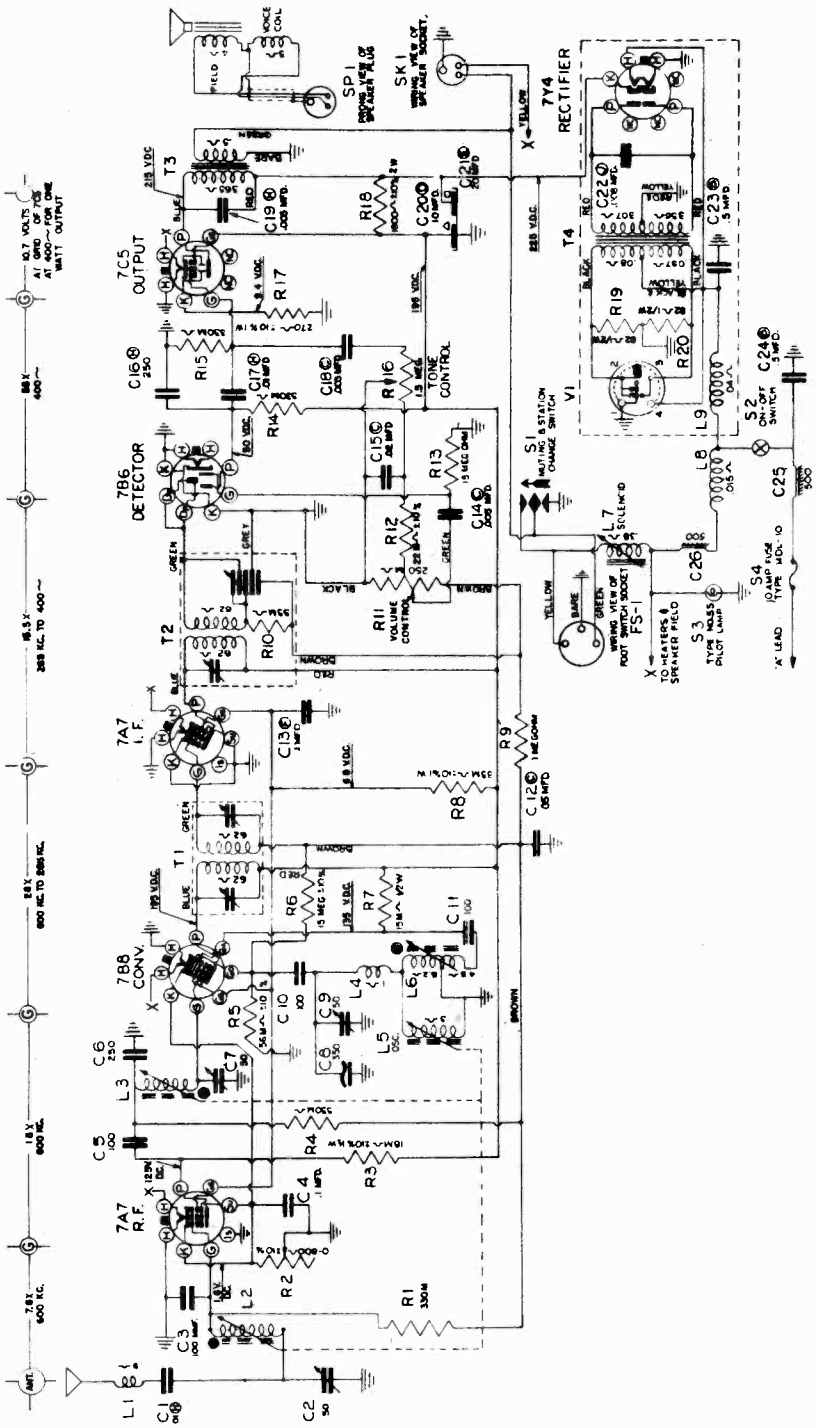
DIAL CABLE DRAWING

The alignment of chassis 5C50 is conventional. None of the adjustment interlock, however, the most accurate alignment will be accomplished if the procedure is followed exactly. The IF frequency is 455 KC and all measurements, voltage, and resistance have been taken with an electronic voltohm meter.

Stage by stage gain measurements are for reference purposes only. Gain measurements can seldom be duplicated, and are used only for comparison purposes.

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 Mfd.	455 Kc.	600 Kc.	C8,C9,C10, and C11	Align I.F
2	Ant. and Ground	200Mmfd Antenna Switch in Ant. position	1600 Kc.	1600 Kc.	C7	Set Oscillator to Dial Scale.
3	"	"	1400 Kc.	1400 Kc.	C5	Align Detector
4	"	"	"	"	C2	Align Antenna
5	Two Turns Loosely Coupled To Waverod	Wave Rod Fully extended Switch in Waverod Position	1400 Kc.	1400 Kc.	C4	Align Waverod Antenna

ZENITH RADIO CORP. MODEL 6MF780, Ford



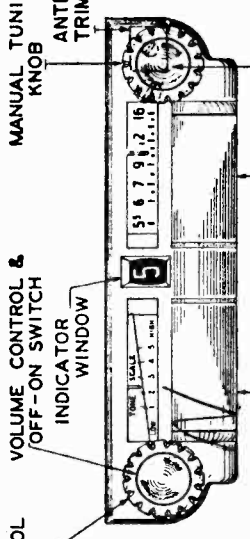


Fig. 1. Panel View

Receiver Installation

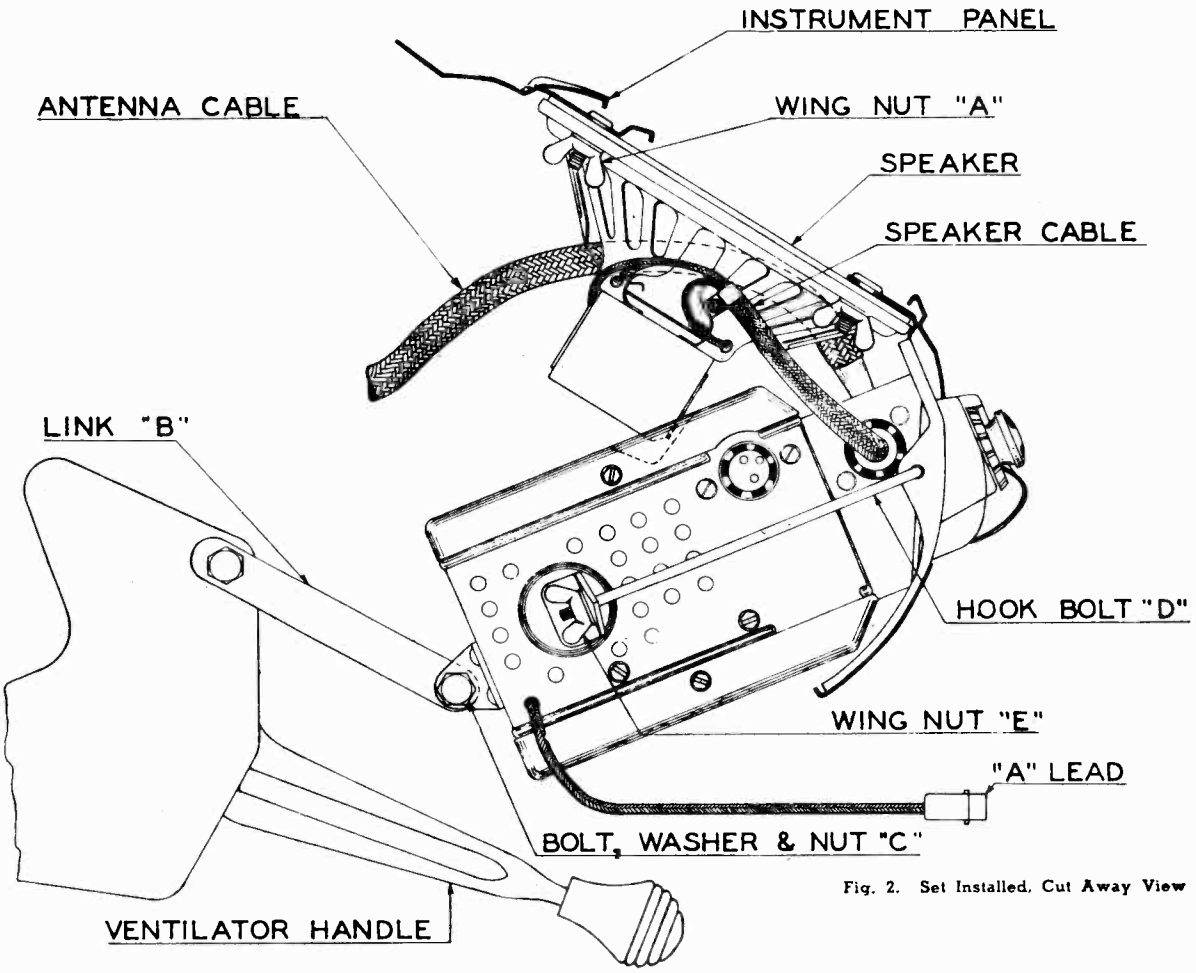


Fig. 2. Set Installed, Cut Away View

1—Install the antenna and antenna cable. Complete installation instructions are packed with each antenna kit.

2—Remove the radio opening cover plate from the instrument panel.

3—Place the speaker over the studs on the rear of the instrument panel, with the cable to the left. Fasten securely with the four wing nuts No. 54-189, furnished in the installation kit.

4—Start the No. 12-24 wing nuts "E" on the hook bolts "D" (Fig. 2). Place the receiver in position. Slip the end of the hook bolts through the receiver brackets with the hooks turned toward the center. Hook the bolts in the holes provided on the instrument panel. Tighten the wing nuts sufficiently to hold the receiver in place while the supporting link "B" is connected between the rear hanger bracket of the receiver and the ventilator bracket of the car, with bolts, lock-washers and nuts ("C." Fig. 2.)

5—Tighten all nuts and bolts to hold the receiver firmly in place.

6—Connect "A" lead to circuit breaker. (Fig. 3.)

7—Connect the speaker cable and antenna lead to the receiver.

8—IMPORTANT: Turn the receiver on and allow it to operate for approximately fifteen minutes in order for each part to reach normal operating temperature. Tune in a weak station near 1200 Kc. With a small screwdriver adjust the antenna trimmer (Fig. 1.), for maximum volume.

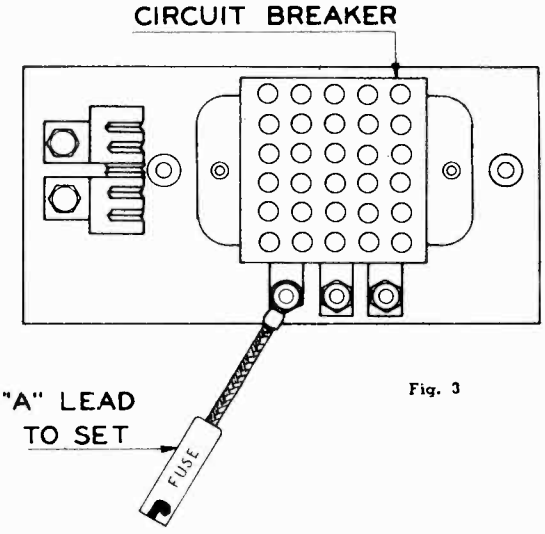


Fig. 3

Setting The Adjust-O-Matic Tuning

Pressing the station selector touch-bar six times will cause the tuning mechanism to change through a cycle of six positions. Five of these Adjust-O-Matic positions, at which numbers appear in the station indicator window, may be set for five favorite local stations while the sixth position, at which the letter M appears in the station indicator window, may be used for selecting stations manually.

The five positions, at which numbers appear in the station indicator window, may be adjusted in succession to any desired dial settings. However, in order to simplify the identification of the stations, it is advisable to set the Adjust-O-Matic mechanism in sequence according to frequencies of the stations, beginning with the station broadcasting on the lowest frequency, and progressing to the station broadcasting on the highest frequency.

Turn the receiver on and allow it to operate for at least fifteen minutes in order for each part to reach normal operating temperature before making the following Adjust-O-Matic settings:

1—Press the station selector touch bar repeatedly until No. 1 appears in the station indicator window.

2—Pull the manual tuning knob outward engaging the Adjust-O-Matic mechanism with the dial. (Fig. 1.)

3—Select the station desired and tune it in by turning the tuning knob in the same manner as when tuning the radio manually. Tune very carefully for clearest reception.

CAUTION: Do not attempt to force the tuning knob in. The knob will return to the "in" position when the station selector touch bar is again depressed.

4—Press the station selector touch bar, pull the manual tuning knob outward, and tune in the station desired for No. 2 position. Use the same procedure for adjusting positions Nos. 3, 4, and 5.

When the five positions have been adjusted to the five desired stations, it is only necessary to press the station selector touch bar to return to manual tuning or to any one of the stations on the Adjust-O-Matic.

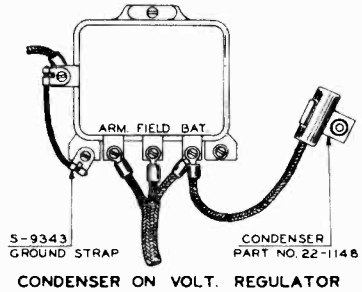
NOTE: When the letter M appears in the station indicator window, the manual tuning knob must be pulled outward and turned in order to select stations manually.

Interference Elimination

Important

Use the utmost care in the following operations to insure freedom from interference. Clean away paint and dirt to make good contacts between condensers and the car. Tighten all bolts and nuts securely.

1—Install a condenser, Part No. 22-1148, and a ground strap, Part No. S-9343, on the voltage regulator (Fig. 4.)



CONDENSER ON VOLT. REGULATOR

Fig. 4

2—Mount a condenser, Part No. 22-1326, on the ignition coil and connect the lead to the battery terminal (Fig. 5.)

3—Cut the high tension wire, that runs from the ignition coil to the distributor, three quarters of an inch from the point where it enters the soft rubber high tension wire housing. Shorten the wire one inch. Remove the wire from the coil, and screw the suppressor into the wire ends (Fig. 6). Replace the wire in the coil.

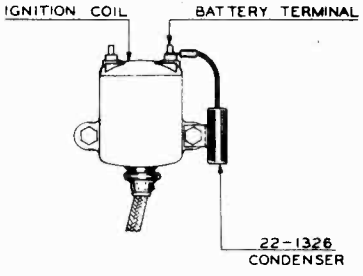


Fig. 5

If ignition interference is still present, check to make sure that the inside center windshield trim strip is grounded to the car body, and does not touch the antenna roof tube nut. Be certain the antenna wing nut and all the instrument panel bolts are tight.

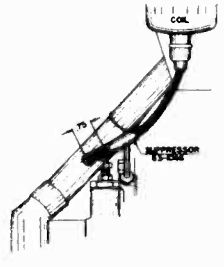
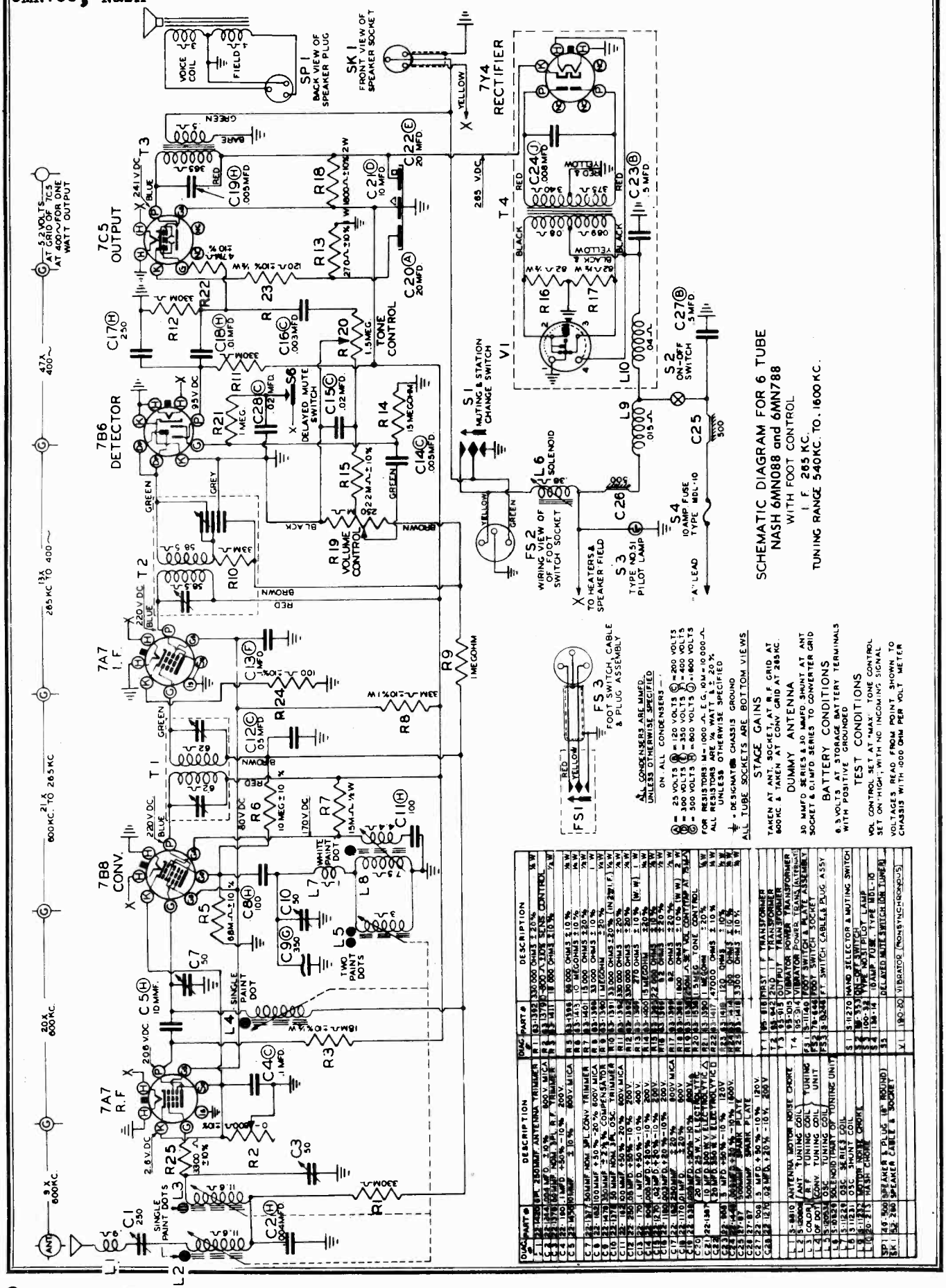


Fig. 6

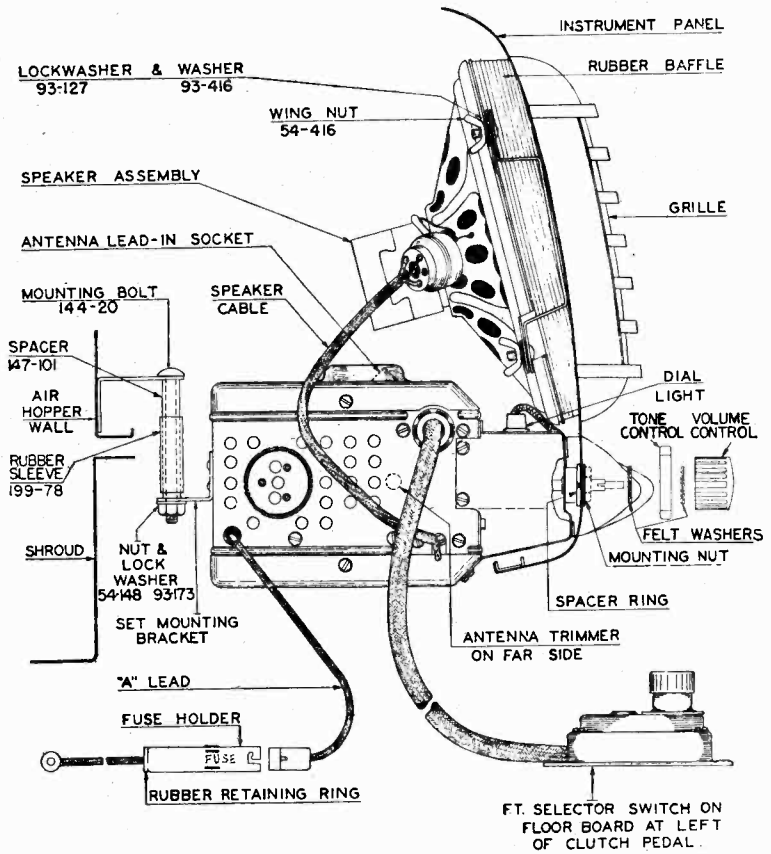
MODELS 6MN088, 6MN788, Nash

ZENITH RADIO CORP.



DIAG. #	PART #	DESCRIPTION
		ANTENNA MOTOR NOISE CHOKE
L1	3-8810	ANT. TUNING COIL
L2	3-12804	R.F. TUNING COIL
L3		COUPLING COIL
L4		OSC. TUNING COIL
L5	3-8809	SOLENOID PRIMARY OF TUNING UNIT
L6	3-11239	035 SERIES COIL
L7	3-11231	OSC. SHUNT COIL
L8	3-11232	MOTOR NOISE CHOKE
L9	3-11233	MASH CHOKE
L10		
SP1	245-500	SPEAKER & PLUG (8" ROUND)
SK1	52-280	SPEAKER CABLE & SOCKET

DIAG. #	PART #	DESCRIPTION
R1	63-3392	330,000 OHMS ± 20% ½ W
R2	63-1379	300 Δ 10% SENS. CONTROL
R3	63-1411	1,000 OHMS ± 10% ½ W
R4		
R5	63-1399	68,000 OHMS ± 10% ½ W
R6	63-1415	10 MEGOHMS ± 10% ½ W
R7	63-1401	15,000 OHMS ± 20% ½ W
R8	63-1390	33,000 OHMS ± 20% ½ W
R9	63-1391	1 MEGOHM ± 20% ½ W
R10	63-1384	330,000 OHMS ± 20% ½ W
R11	63-1384	330,000 OHMS ± 20% ½ W
R12	63-1384	330,000 OHMS ± 20% ½ W
R13	63-1387	270 OHMS ± 10% (W. W.) 1 W
R14	63-1400	15 MEGOHM ± 20% ½ W
R15	63-1397	2.2 MEGOHM ± 10% ½ W
R16	63-1382	82 OHMS ± 20% 2 W
R17	63-1382	82 OHMS ± 20% 2 W
R18	63-1389	1500 OHMS ± 10% (W. W) 2 W
R19	63-1396	2 MEGOHM A. V. VOL CONTROL AT 285 KC
R20	63-1398	1.5 MEG. TONE CONTROL ± 20% ½ W
R21	63-1390	1 MEGOHM ± 20% ½ W
R22	63-1417	47000 OHMS ± 10% ½ W
R23	63-1410	120 OHMS ± 10% ½ W
R24	63-1414	3300 OHMS ± 10% ½ W
R25	63-1414	3300 OHMS ± 10% ½ W
T1	195-818	1ST I. F. TRANSFORMER
T2	195-842	2ND I. F. TRANSFORMER
T3	195-815	OUTPUT TRANSFORMER
T4	195-1015	VIBRATOR POWER TRANSFORMER
	195-1014	VIBRATOR POWER TRANSFORMER (ALTERNATE)
FS1	178-644	FOOT SWITCH & PLATE ASSEMBLY
FS2	178-646	FOOT SWITCH SOCKET
FS3	53-1248	FT. SWITCH CABLE & PLUG ASSY
S1	51-11270	HAND SELECTOR & MUTING SWITCH
S2	160-953	ON-OFF SWITCH
S3	160-98	PILOT LAMP
S4	160-14	10 AMP FUSE TYPE MDL-10
S5		DELAYED MUTE SWITCH (ON TUNER)
V1	190-20	VIBRATOR (NONSYNCHRONOUS)



SETTING THE AUTOMATIC TUNER

Pressing the Push-Bar at the right below the dial repeatedly will cause the tuning mechanism to change through a cycle of six positions. Five of the automatic positions may be set for favorite local stations while the sixth position, at which "M" appears on the indicator drum, is used for selecting stations manually.

Allow the receiver to operate for at least fifteen minutes to bring the operating temperature up to normal before making the following automatic tuning settings.

Using "M" position as a reference point, the remaining five positions may be adjusted in succession to any desired dial setting. Setting these stations in sequence according to their frequencies beginning at the lowest frequency for number 1, and progressing through to the high frequency end of the dial for number 5 is the recommended practice to simplify the identification of each automatic tuned station.

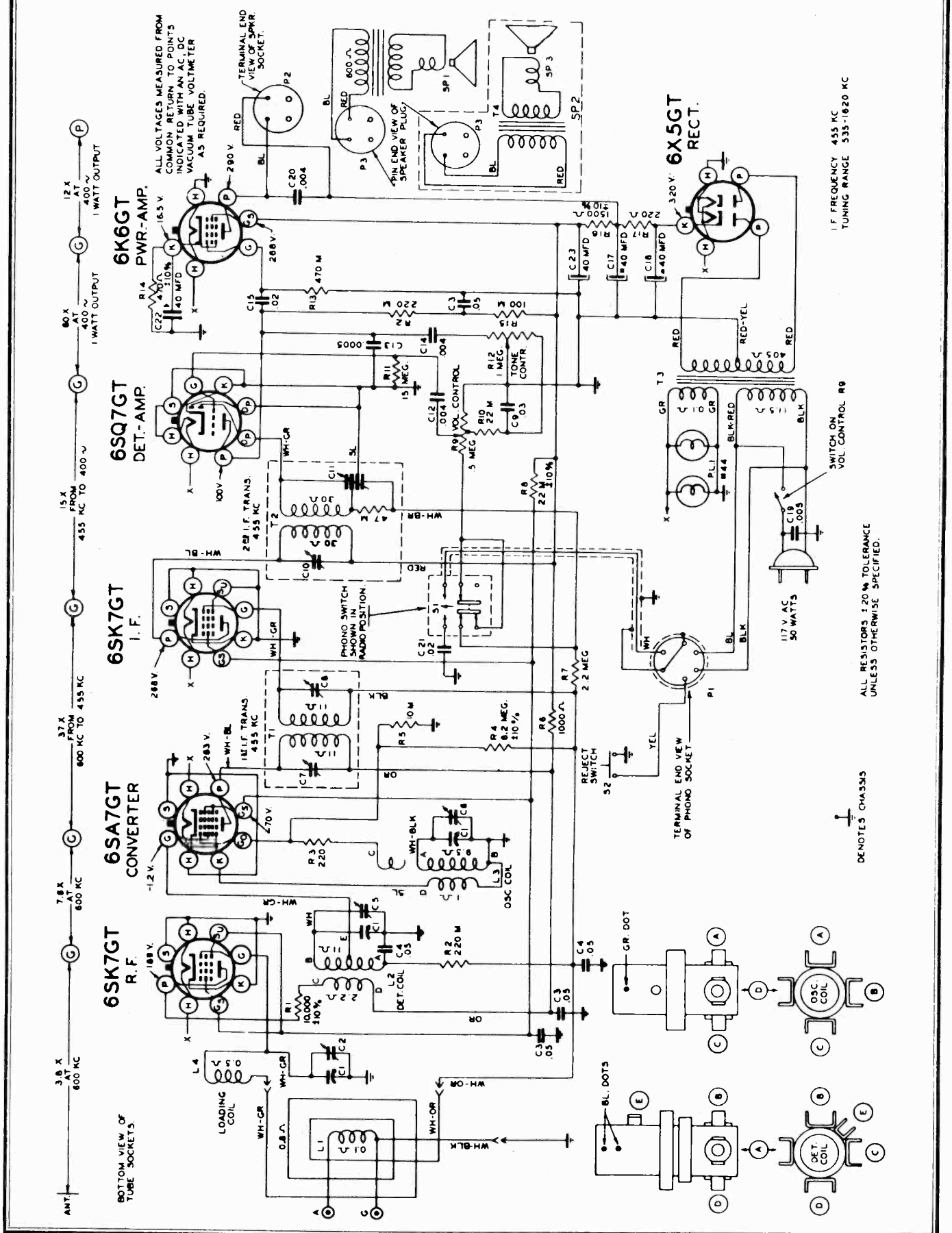
1. Press station selector bar until number 1 appears in station indicator window.
2. Pull manual tuning knob outward to engage the automatic mechanism.
3. Select the station desired and tune to its frequency by turning tuning knob. Tune very carefully for clearest reception.
4. Press station selector bar, pull manual tuning knob outward, and tune in station desired for No. 2 position. Use same procedure for positions No. 3, 4 and 5.

NOTE: When "M" appears in the station indicator window, the manual tuning knob must be pulled outward and rotated to select the stations manually.

IMPORTANT: Turn the receiver on and allow it to operate for approximately 15 minutes. Tune in a weak station at approximately 1200 kc. Adjust the antenna trimmer condenser (see Fig. 2) with a small screw driver for maximum signal.

MODEL 6R087Z,
Chassis 6C22Z

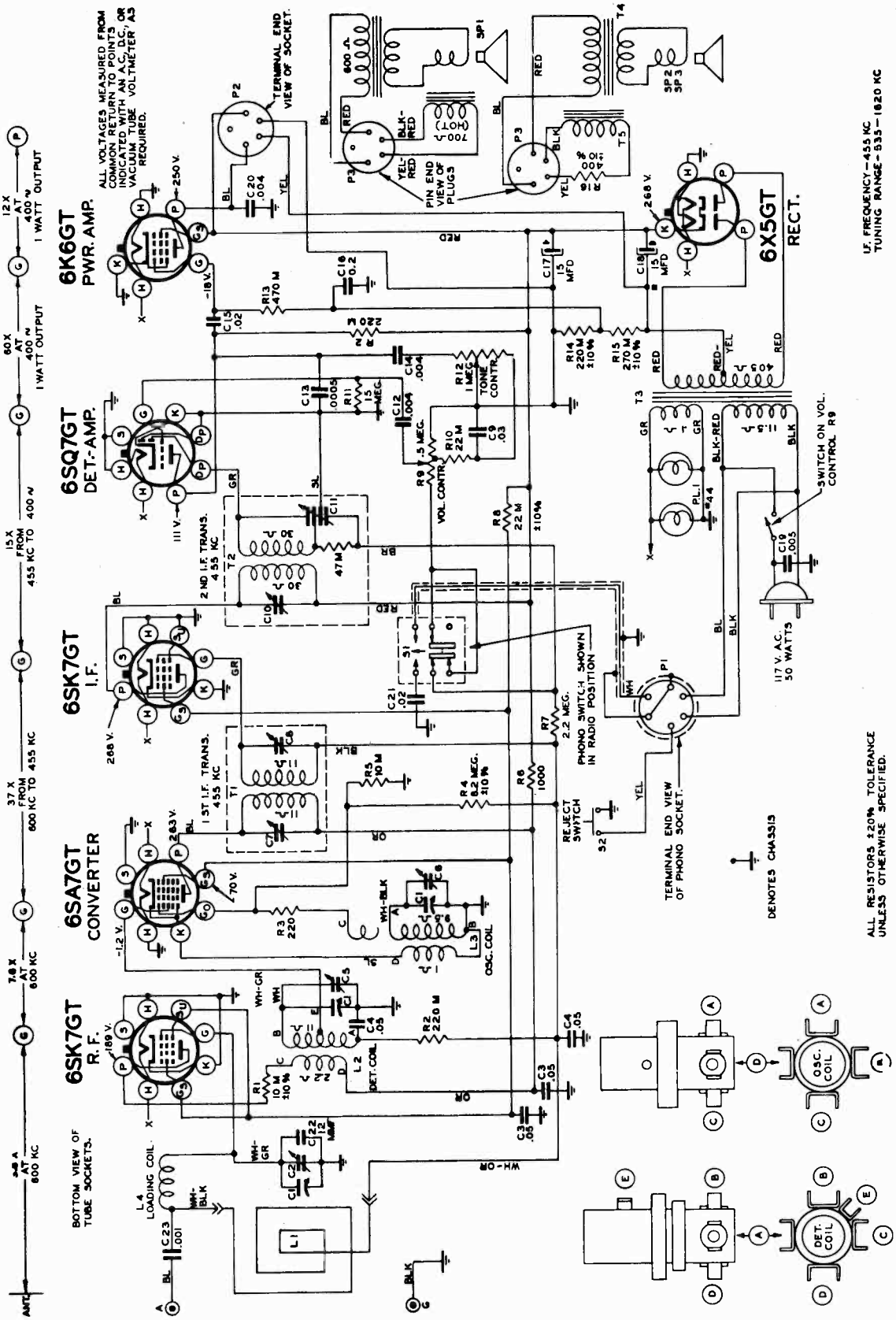
ZENITH RADIO CORP.



RECORD CHANGER: Zenith Model S-11468, RCD. CH. 15-1

ZENITH RADIO CORP.

MODEL 6R087ZZ,
Chassis 6C22ZZ



RECORD CHANGER: Zenith Model S-11468, RCD. CH. 15-1

A feature of chassis 6C22Zand 6C22ZZis a high gain tuned R.F. stage ahead of the conventional superheterodyne circuit.

When making repairs or adjustments on the chassis be sure to have the Phono-Radio switch in Radio position (button out).

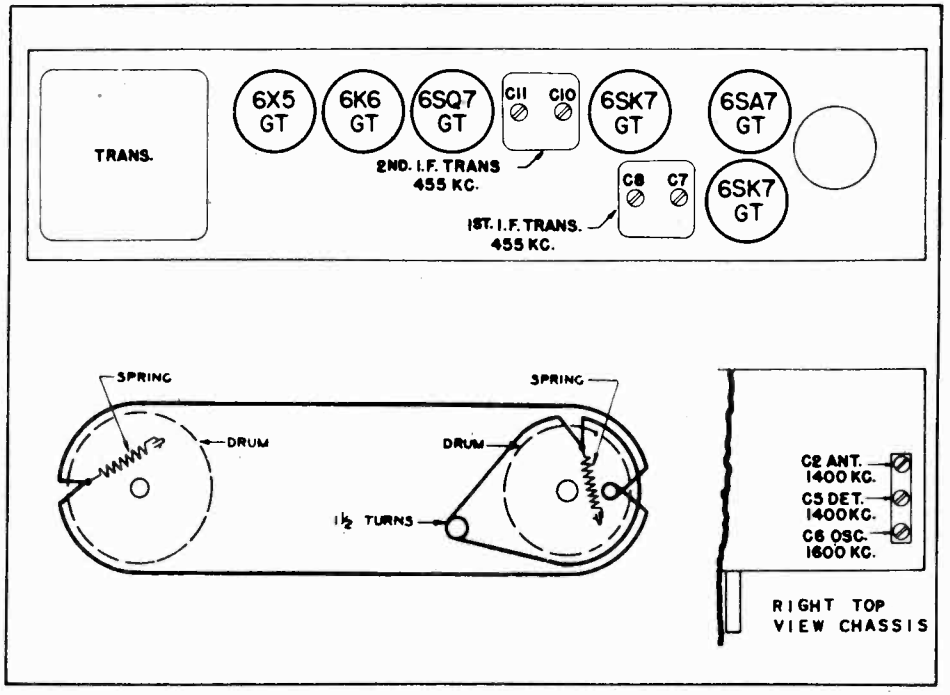
The Tone Control circuit used inthis chassis is unusual. Attenuation or control occurs in both the grid and plate circuit of the triode section of the 6SQ7 tube. To increase the bass response Resistor R10 and Capacitor C9 boost the bass in the grid circuit.

Capacitor C14 and the Variable Tone Control R12 attenuate the highs in the plate circuit.

When the tone control R12 is in the treble position attemuation to highs are greatly reduced in the plate circuit and minimum bass boost takes place in the grid circuit.

When the tone control is in bass position, attenuation to the highs takes place in the plate circuit with maximum bass boost in the grid circuit.

The result of this arrangement allows a smooth tone control over the audio frequency range.



TUBE TRIMMER LOCATION AND DIAL CABLE DRAWING

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 Mfd.	455 Kc.	600 Kc.	C-7, C-8, C-10, C-11	Align I. F.
2	One turn loop coupled loosely to Wave Magnet	--	1600 Kc.	1600 Kc.	C-6	Set Oscillator to Dial Scale
3		--	1400 Kc.	1400 Kc	C-5	Align Det.
4		--	1400 Kc.	1400 Kc.	C-2	Align Ant.

ZENITH RADIO CORP.

MODEL 6R087Z
MODEL 6R087ZZ

PARTS LIST

DIAL ASSEMBLY

26-334	Dial Scale.
46-522	Control Knob (Dummy).
46-538	Tuning Knob
46-548	Radio-Phono Reject Knob
57-1071	Escutcheon Plate.
59-161	Dial Pointer.
76-413	Tuning Control Shaft.
78-504	Dial Light Socket & Wire.
80-365	Tuning Shaft Tension Spring
80-402	Dial Cord Tension Spring.
100-36	Dial Light Bulb 6.3 Volts
159-50	Plug Button (Dial Scale Mtg.)
188-30	Retaining Ring (Tuning Shaft)
188-32	Retaining Ring (Dial Pulley).
188-34	Retainer Ring
188-54	Knob Clamping Ring.
192-94	Dial Crystal.
S11161	Dial Pulley Cord & Eyelet Assem
S11162	Pointer Pulley Cord & Eyelet Assem.
S11168	Condenser Pulley & Bushing Assem.
S11292	Dial Pulley & Bushing Assem
S11558	Tone & Volume Control Knob & Ring Assem.

CHOKES & COILS

95-909	1st I.F. Transformer.
95-910	2nd I.F. Transformer.
S11163	Detector Coil Assem
S11164	Oscillator Coil Assem
S13478	Antenna Loading Coil Assem. 6C22ZZ.
S11896	Antenna Loading Coil Assem. 6C22Z

CONDENSERS

22-138	.2 Mfd. (C16) .200 V.
22-171	.05 Mfd. (C3) .600 V.
22-448	.004 Mfd. (C14 & C20) .600 V.
22-530	12 Mmfd. 6C22ZZ .600 V.
22-1444	.001. 6C22ZZ .200 V.
22-829	.05 Mfd. (C4) .200 V.
22-830	.02 Mfd. (C15). .600 V.
22-854	.0005 Mfd. (C13). .600 V.
22-1041	.005 Mfd. (C19) .400 V.
22-1157	.03 Mfd. (C9) .200 V.
22-1362	.004 Mfd. (C12) .600 V.
22-1369	3 Section Gang Cond. (C1)
22-1372	Dry Electrolytic 15 Mfd.-450V.X 15 Mfd.-350V.X (C17 & C18) 6C22ZZ
22-1382	Dry Electrolytic 40 x 40 Mfd. 450V. x 40 Mfd.-25 V. 6C22Z (C17. 18. 22).
22-1386	.02 Mfd. (C21). .600 V.
22-1611	Dry Electrolytic 40 Mfd-450V (C23-6C22Z)

RESISTORS

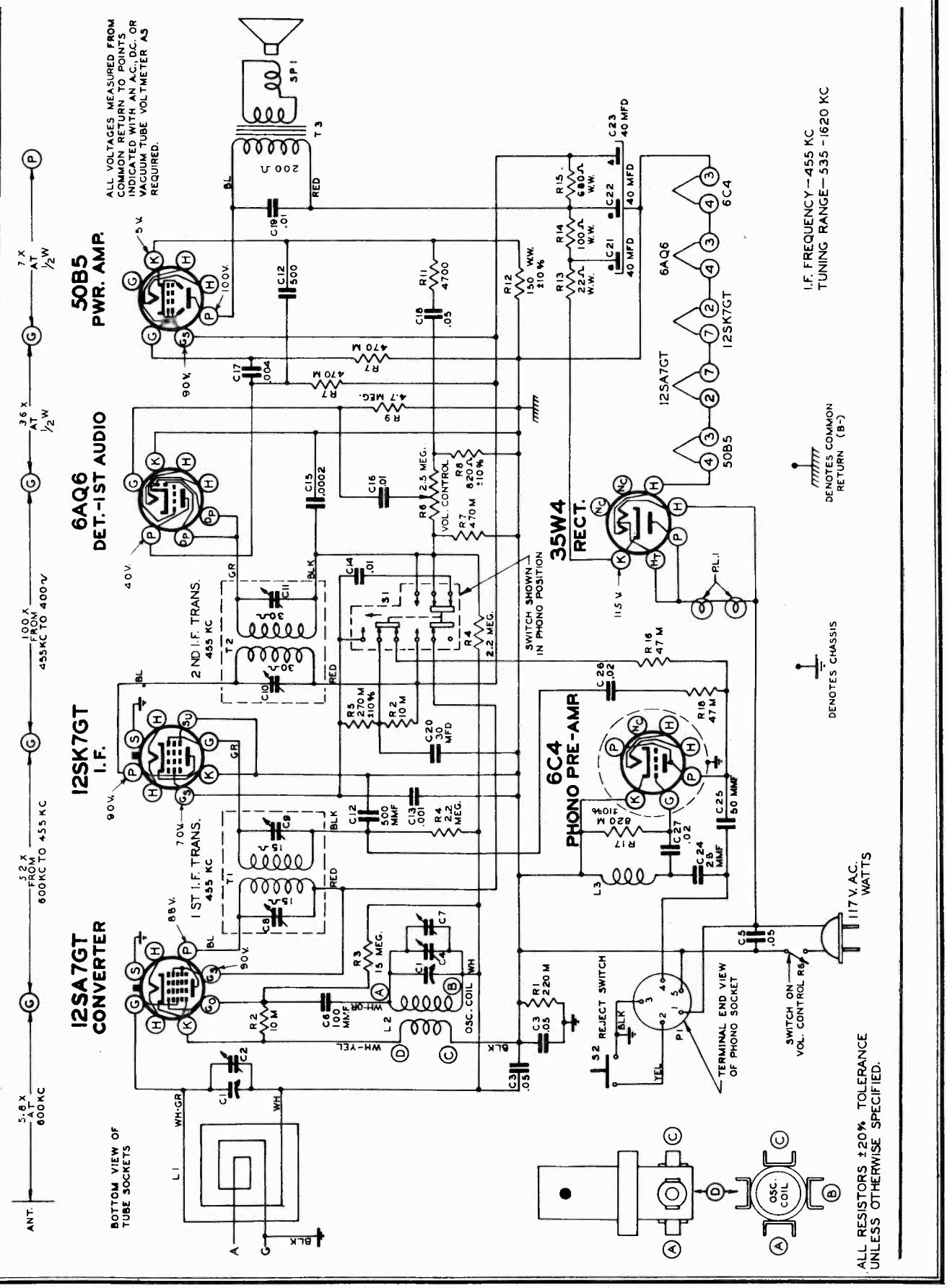
63-156	10M Ohm (R1). 1 Watt
63-296	220M Ohm (R2) 1/4 Watt
63-579	220 Ohm (R3). 1/4 Watt
63-589	10M Ohm (R5). 1/4 Watt
63-591	22M Ohm (R10) 1/4 Watt
63-595	100M Ohm (R15-6C22Z) 1/4 Watt
63-597	470M Ohm (R13). 1/4 Watt
63-600	2.2 Megohm (R7) 1/4 Watt
63-605	1M Ohm (R6) 1/2 Watt
63-655	220M Ohm (R14-6C22ZZ) 1/4 Watt
63-656	270M Ohm (R15-6C22ZZ) 1/4 Watt
63-673	8.2 Megohm (R4) 1/4 Watt
63-976	15 Megohm (R11) 1/4 Watt
63-1170	1500 Ohm W.W. (R16-6C22Z) 2 Watt
63-1222	470 Ohm W.W. (R14-6C22Z) 1 Watt
63-1227	220 Ohm W.W. (R17-6C22Z) 1 Watt
63-1340	Volume Control & Switch (R9)
63-1341	Tone Control (1 Megohm) (R12)
63-1545	400 Ohm 10W (R16-6C22)

MISCELLANOUS

2-121	Cabinet Back.
11-85	Line Cord & Plug.
11-87	Line Cord & Plug (Z Models)
12-1138	Wavemagnet Mtg. Brkt.
15-23	Plug Cap & Insulator (used on S11456).
15-62	Plug Cap & Insulator (used on S11456).
19-123	Phono Unit Mtg. Clip.
27-81	Mounting Flange (Shaft Bearing Disc)
36-31	Record Changer Pull-out Handle.
45-526	10" Dynamic Speaker
	206-526 Output Transformer.
	207-526 Field Coil (not replaceable)
	208-526 Cone & voice coil
49-563	10" Dynamic Speaker (Alt. for 49-526)
	206-563 Output Transformer.
	207-563 Field Coil (not replaceable)
	208-563 Cone & voice coil
49-581	10" P.M. speaker (also see s-132571). 6C22Z.
	output transformer (see 95-1011)
	208-581 cone & voice coil
49-585	10" P.M. speaker 6C22Z
	296-585 output transformer
	208-585 cone & voice coil
52-377	Speaker cable (49-563).
58-88	Wavemagnet Plug (3 prong)
58-132	Six prong plug (used on S11456)
58-152	Speaker plug. 6C22Z.
58-156	Speaker plug (49-585) 6C22Z
70-83	#6 x 1/2 washer hd. wood screw (Cabinet Back)
72-55	#6 x 3/8 Flat Phillips Hd. Wood Screw
72-59	#2 x 2-1/2 Phillips flat hd. wood. Screw (esc. mtg.).
78-128	Speaker plug socket
78-349	Wavemagnet plug socket.
78-373	Octal Base Tube sokcet (5 contact).
78-374	Octal Base Tube socket (6 contact).
78-376	Octal Base Tube socket (8 contact).
78-555	Six Prong Socket (used on S11456)
78-611	Octal Base Tube Socket (Z Model). (8 contact).
78-623	Phono Socket (6 prong).
78-732	Speaker Plug Socket (Z Model)
89-463	Phono Mtg. Spring
83-1218	Insulating Strip (gang cond.)
83-1240	Black vinylite Trim Strip (record changer)
85-337	Phono-Radio Switch.
85-349	Record Reject switch.
94-295	Bushing-Switch Mtg. (Z Model)
94-334	Bushing-Switch Mtg.
95-911	Power Transformer, 117V. 50-60.
95-1007	Output Transformer. 6C22Z.
95-1011	spkr. output transformer (49-581) 6C22Z
95-1019	Filter Choke. 6C22Z.
112-420	Phono Mtg. Screw.
112-489	Handle Mtg. Screw (36-31)
114-58	6-32 x 3/8 Hex Accrn Hd. M.S. Screw
114-128	Chassis Mtg. Self Tapping Screw
114-193	#8 x 3/16 Hex Accrn Hd. S.T. Screw.
114-202	#8-32 x 1-1/8 slotted Hex. Washer Hd S.T. Screw (used on 12.1138)
125-17	Switch Mtg. Grommets.
125-45	Condenser Mtg. Grommets
196-80	Dust Gasket
202-381	Phono Instruction Sheet
202-388	Instruction Book.
237-1	Cable Clamp
S13479	Loop Antenna. 6C22Z.
S13391	12" PM Speaker Assembly 6C22Z.
S13406	10" PM Speaker Assembly 6C22Z.
S11450	wavemagnet assem. (30A) 6C22Z.
S11456	inter connecting cable assem.
S11468	record changer assem.
S11920	record changer mtg. frame assem.
S12864	drive wheel & pin assem. (rec. chang.)
S13257	10" P.M. spkr. & transformer assem. (alt. for 49-585) (Z model) 6C22Z.

MODEL 6R886,
Chassis 6E02

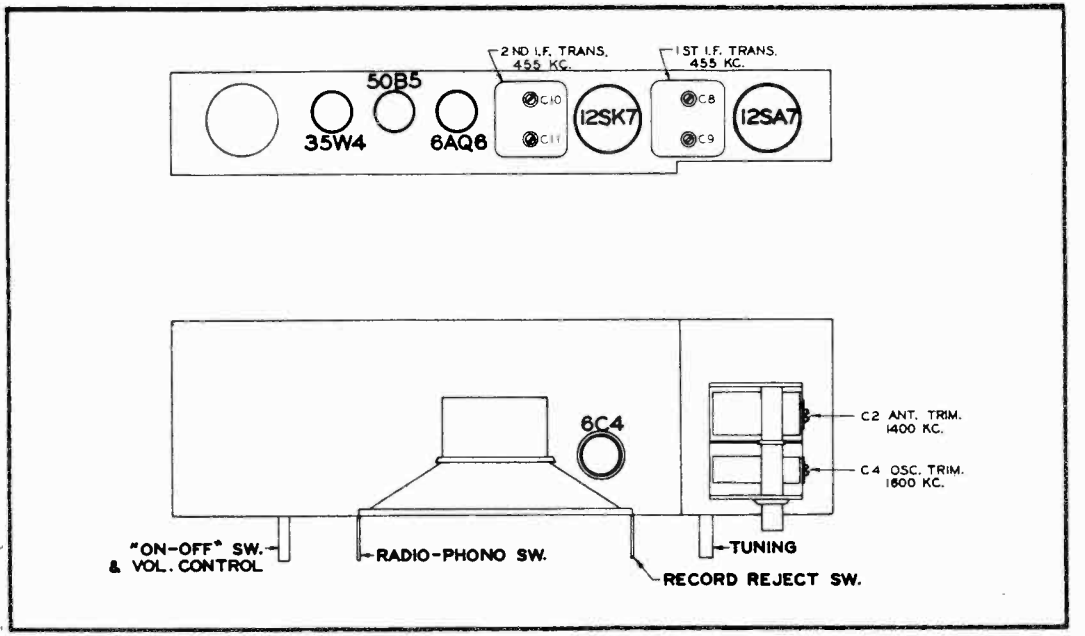
ZENITH RADIO CORP.



PARTS LIST

REFERENCE NUMBER	DIAGRAM NUMBER	DESCRIPTION
		CONDENSERS
22-1657	C1	2-Gang Variable
ON C1	C2	Bc. Ant. Trim
22-829	C3	.05 Mfd .200 V.
ON C1	C4	Bc. Osc. Trimmer
22-1017	C5	.05 Mfd .400 V.
22-162	C6	100 Mmfd. .500 V.
ON C1	C7	Bc. Osc. Trim
ON T1	C8	1st. I.F. Trans. Pri. Trim.
ON T1	C9	1st. I.F. Trans. Sec. Trim.
ON T2	C10	2nd. I.F. Trans. Pri. Trim.
ON T2	C11	2nd. I.F. Trans. Sec. Trim.
22-716	C12	.0005 Mfd .500 V.
22-1444	C13	.001 Mfd. .200 V.
22-243	C14	.01 Mfd .400 V.
22-953	C15	.0002 Mfd .600 V.
22-196	C16	.01 Mfd .600 V.
22-448	C17	.004 Mfd. .600 V.
22-178	C18	.05 Mfd .200 V.
22-1182	C19	.01 Mfd .400 V.
	C20	30 Mfd. Electro .150 V.
	C21	40 Mfd. Electro .150 V.
22-1707	C22	40 Mfd. Electro .150 V.
	C23	40 Mfd. Electro .150 V.
22-127	C24	25 Mmfd .500 V.
22-1532	C25	50 Mmfd .500 V.
22-188	C26	.02 Mfd .400 V.
22-327	C27	.02 Mfd .200 V.
		RESISTORS
63-1884	R1	220 M Ohm .1/2 W.
63-1828	R2	10 M Ohm. .1/2 W.
63-1961	R3	15 Megohm .1/2 W.
63-1926	R4	2.2 Megohm. .1/2 W.
63-1887	R5	270 M Ohm .1/2 W.
63-1555	R6	2.5 Meg. Vol. Control
63-1898	R7	470 M Ohm .1/2 W.
63-1782	R8	820 Ohm .1/2 W.
63-1940	R9	4.7 Megohm. .1/2 W.
63-1814	R11	4700 Ohm. .1/2 W.
63-686	R12	150 Ohm W. W. .1/2 W.
63-1219	R13	22 Ohm W. W .1/2 W.
63-1220	R14	100 Ohm W. W. 1 W.
63-1221	R15	680 Ohm W. W. 1 W.
63-1856	R16	47 M Ohm. .1/2 W.
63-1908	R17	820 M Ohm .1/2 W.
		COILS
813817	L1	Wavemagnet Assem.
813799	L2	Osc. Coil Assem
812603	L3	Osc. Coil Assem
95-919	T1	1st. I.F. Trans
95-906	T2	2nd. I.F. Trans
95-1025	T3	Output Trans.
		MISCELLANEOUS
100-90	P.L.1	Pilot Light 3.2 V
78-592	P1	5 Prong Phono Socket.
85-421	S1	Phono-Radio Switch.
85-422	S2	Reject Switch
49-602	SP1	5-1/4" P.M. Speaker
813815		Hinge Assembly.
813829		Dial Pointer and Pulley Assembly.
814196		Escutcheon and Grille Cloth Assembly.
2-122		Cabinet Back.
13-1382		Hinge Support Bracket
14-1086		Table Cabinet
26-387		Dial Scale.
27-99		Felt Disc
46-687		Tuning Control Knob
46-689		Phono Switch Knob
57-1105		Wavemagnet Lead Spacer Strip.
57-1320		Chassis Cover Plate
80-407		Record Changer Mounting Spring.
80-669		Dial Scale Retaining Spring
110-129		Grille Cloth.
112-544		Record Changer Mounting Screw
139-71		Speaker Baffle.
166-13		Rubber Bumper

11-1-47



TUBE AND TRIMMER LOCATION

Chassis 6E02 has a Record Reject push button switch on the receiver control panel to reject records.

The socket P1 is used to connect the automatic record changer to the receiver. The record player is connected to the receiver by a shielded cable and socket arrangement.

The Phono-Radio switch is a two position double acting push-button switch and when in the "in" position connects the changer for playing records.

ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid	.5 MFD	455 Kc.	1600 Kc.	C8, C9, C10, C11	Align I.F.
2	Single Turn Loop Loosely Coupled to Wavemagnet	------	1600 Kc.	1600 Kc.	C4	Set Oscillator to Dial Scale.
3		------	1400 Kc.	1400 Kc.	C2	Align Antenna.