NRI
SERVICE MANUAL

NATIONAL RADIO INSTITUTE
WASHINGTON, D. C.

N. R. I. SERVICE MANUAL

VOLUME 2

NATIONAL RADIO INSTITUTE
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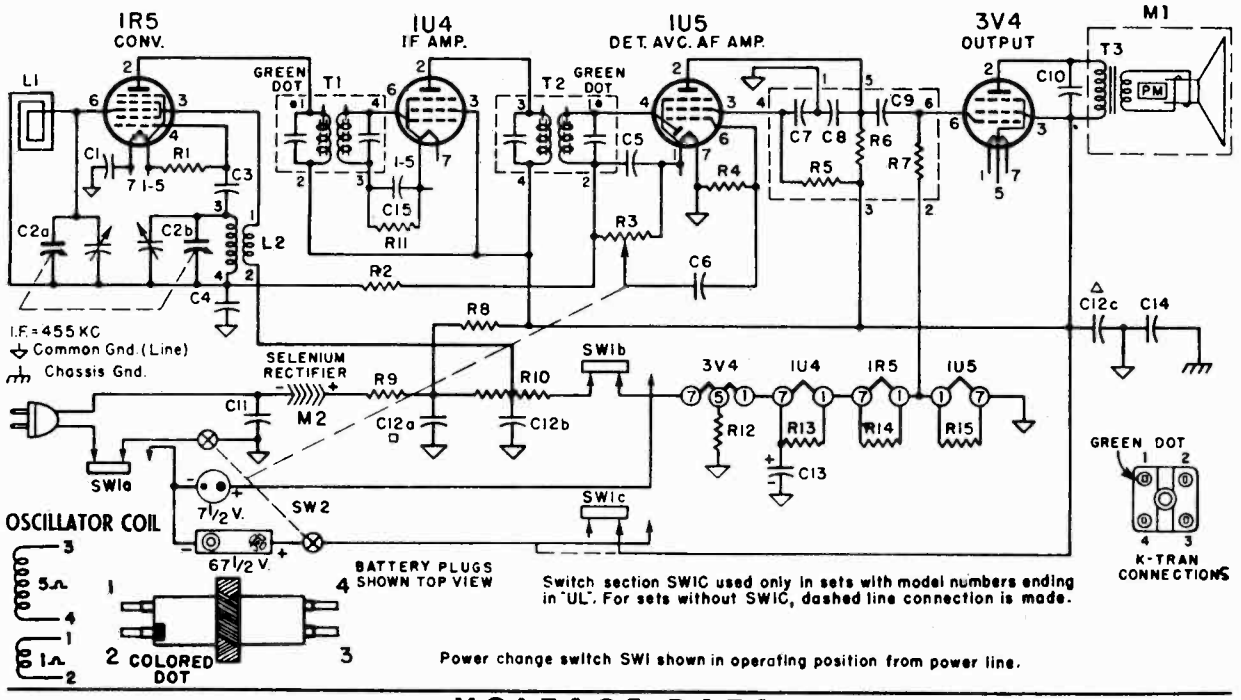
An NRI *Service*

Everyone who repairs receivers needs service information and wiring diagrams. To aid NRI men get started, and having been started, to continue active, we have maintained for years what is perhaps the most complete collection of diagrams in the world and have furnished copies of these diagrams at moderate cost, to our students and graduates. We still do this; however, many NRI men have expressed an interest in acquiring the most popular diagrams in bound volumes. NRI, too, has long felt that abridged manuals covering what we knew to be the most frequently requested diagrams would give many servicemen exactly what they want.

With this in mind we present this NRI Service Manual, Volume 2, which covers in abridged form receivers manufactured between 1946 and 1949. Thus this manual gives the NRI student or graduate the diagrams and essential servicing information he needs to fix the great majority of receivers, produced during the period indicated above, that will come to his bench.

MODELS 5F11, 5F12,
CHASSIS 5F1

ADMIRAL CORPORATION

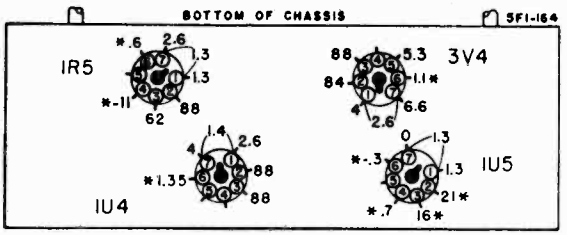


Switch section SW1C used only in sets with model numbers ending in "UL". For sets without SW1C, dashed line connection is made.

Power change switch SW1 shown in operating position from power line.

VOLTAGE DATA

- Voltage readings taken between tube socket terminals and B minus (metal shell of electrolytic condenser).
- Dial set to low frequency, no signal, and volume control minimum.
- Measurements made from 117 volts AC line. If measured from DC line, voltages may be slightly lower.
- Voltage readings taken with a vacuum tube voltmeter. Socket terminals marked with an asterisk * indicate much lower voltage or zero voltage if measured with a 1000 ohm-per-volt meter.
- If measurements are made on battery operation, tube filament and B plus voltages will vary with the condition of the batteries. These voltages will equal the terminal voltage of the A or B battery less the voltage drop through components.



* If taken with a 1000 ohm-per-volt meter, readings will be lower or zero.

RESISTORS

Symbol	Description	Part No.
R1	100,000 Ohms, ¼ Watt	60B 27-104
R2	3.3 Megohms, ¼ Watt	60B 27-335
R3	1 Megohm, Volume Control and On-Off Switch	75B 1-21
R4	10 Megohms, ¼ Watt	60B 27-106
†R5	4.7 Megohms	
†R6	1 Megohm	
†R7	2.2 Megohms	
R8	2,700 Ohms, 1 Watt	60B 14-272
R9	47 Ohms, 1 Watt	60B 14-470
R10	2,400 Ohms, 2.5 Watt (Tapped Candohm)	61A 5-3
R11	10 Megohms, ¼ Watt (R11 not used in early production)	60B 27-106
R12	2,200 Ohms, ¼ Watt	60B 26-222
R13	390 Ohms, ¼ Watt	60B 26-391
R14	180 Ohms, ¼ Watt	60B 26-181
R15	120 Ohms, ¼ Watt	60B 26-121

CONDENSERS

Symbol	Description	Part No.
C1	.25 mfd., 200 Volts, Paper	64B 1-28
C2a	Gang, 420 mmfd. (max) }	68B 14
C2b	Gang, 126 mmfd., (max) }	
C3	100 mmfd., Ceramic	65B 6-3
C4	.01 mfd., 400 Volts, Paper	64B 1-25
C5	100 mmfd., Ceramic	65B 6-3
C6	.001 mfd., Ceramic (tolerance — 0%, + 20%)	65B 6-41
†C7	.005 mfd., Ceramic	
†C8	100 mmfd., Ceramic	
†C9	.005 mfd., Ceramic	
C10	.001 mfd., Ceramic (tolerance — 0%, + 20%)	65B 6-41
C11	.05 mfd., 400 Volts, Paper	64B 1-22
C12a	30 mfd., 150 Volts }	
C12b	20 mfd., 150 Volts } Elect.	67C 7-1
C12c	20 mfd., 150 Volts }	
C13	100 mfd., 25 Volts, Elect.	67A 4-6
C14	.1 mfd., 200 Volts, Paper	64B 1-30
C15	.001 mfd., Ceramic (tolerance — 0%, + 20%) (C15 not used in early production)	65B 6-41

COILS, TRANSFORMERS, ETC.

Symbol	Description	Part No.
L1	Antenna, Loop	69B 40
L2	Coil, Oscillator	69A 59
T1	Transformer, 1st I.F.	72B 28-11
T2	Transformer, 2nd I.F.	72B 28-11
T3	Transformer, Output	98A 21
M1	Speaker (4"PM) and Output Transformer	78B 34-2
M2	Rectifier, Selenium	93A 1-4
SW1	Switch, Power Change DPDT, for "N" models	77A 19-2
	4PDT, for "UL" models	77A 19-1
SW2	Switch, On-Off	(Part of R3)
	†Couplate (Includes C7, C8, C9, R5, R6, R7)	63A4-3

PLASTIC CABINET PARTS

Description	Part No.
Body, Cabinet (less all other parts)	
Maroon 5F11	34D 20-1
Ebony 5F12	34D 20-5
Lid, Cabinet (less all other parts)	
Maroon 5F11	34D 20-2
Ebony 5F12	34D 20-6
Cover, Antenna (for inside lid)	
Maroon 5F11	34D 20-4
Ebony 5F12	34D 20-8
Escutcheon & Grille (front)	
Maroon 5F11	23C 32-1
Ebony 5F12	23C 32-2
Handle, Carrying (less all other parts)	
Maroon 5F11	34D 20-3
Ebony 5F12	34D 20-7
Knobs	
"Volume" Maroon 5F11	33B 30-1
"Tuning" Maroon 5F11	33B 30-2
"Volume" Ebony 5F12	33B 30-3
"Tuning" Ebony 5F12	33B 30-4

MISCELLANEOUS

Baffle Board, Speaker	43A 57
Bracket, Battery Support	15A 286
Bracket, Chassis Support	15A 288
Bag, Waxed Paper Shipping	45A 4-7
Carton and Fillers	44B 111
Catch Pin, Lid (on Monogram)	23B 31-2
Clip, "B" Battery	90A 5-2
Clip, IF Transformer Mounting	72B 28-10
Contact Strip, Antenna	10A 11-1
Cover, Chassis (metal)	15B 267
Cover and Latch Assembly (Metal Cabinet Bottom)	AB141
Grille Cloth (7½"x4¼")	36B 3-7
Hinge and Bracket, Cover (Left Side)	A1660
Hinge and Bracket, Cover (Right Side)	A1661
Monogram (Admiral)	23B 31-1
Pin Tip (for Antenna Leads)	86A 2-1
Plate, Electrolytic Mounting	67A 2-1
Plug, "A" Battery	88A 4-6
Pointer, Dial Tuning	25A 29-1
Shield Plate (for Selenium Rectifier)	15A 304
Snap Buttons	13A 1-3-47
Speed Nut (Monogram mounting)	2B 10-23-68
Speed Nut ("U" type)	2A 9-5
Spring, Lid Catch Pin	19A 29
Tube Socket	87A 3-4

† C7, C8, R5, R6, R7 are contained in a multiple-unit component called a couplate (part number 63A4-3). Although a defective section of the couplate can sometimes be replaced by individual components, we recommend replacing the entire couplate.

Note that numerals 1, 2, 3, 4, 5, and 6 shown at schematic connections, correspond to couplate lead numbers printed on body of couplate directly above the leads.

ALIGNMENT PROCEDURE

- Use battery power for alignment if fresh batteries are available.
- When using AC power, an isolation transformer should be used if available. If not using an isolating transformer, connect a .1 mfd. condenser in series with the signal generator low side to B minus of radio chassis.
- Connect loop antenna and maintain same relative position as when in cabinet.
- Set volume control full on.
- Connect output meter across speaker voice coil.
- Use lowest setting of signal generator capable of producing adequate output meter indication and then proceed as outlined below.
- Repeat adjustments to insure good results.

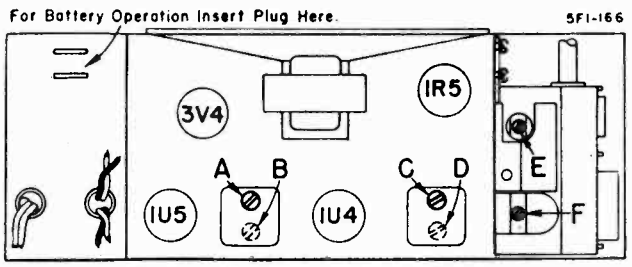
NOTE

To avoid splitting the slotted head of powdered iron core tuning slugs in I.F. transformer, use an alignment tool with a screw driver blade ⅛" wide.

Step	Dummy Antenna in Series with Signal Generator	Connection of Signal Generator (High Side)	Signal Generator Frequency	Receiver Gang Setting	Trimmer Description	Trimmer Designation	Type of Adjustment
1	.001 mfd. when using A. C. .1 mfd. when using Battery	Tuning condenser, antenna stator	455 KC	Gang fully open	2nd IF 1st IF	A, B C, D (see note below)	Maximum output
2	.001 mfd. when using A. C. .1 mfd. when using Battery	Tuning condenser, antenna stator	1620 KC	Gang fully open	Oscillator (on gang)	E	Maximum output
Install chassis in cabinet. Connect loop antenna.							
3	Loop of several turns of wire, or place generator lead close to receiver loop for adequate signal.	No physical connection (signal by radiation)	1400 KC	Tune in generator signal	Antenna (on gang)	F	Maximum output
Mount dial pointer. Set pointer at 1400 KC with gang condenser tuned to 1400 KC signal.							

NOTE: Adjustments B and D are made from underside of chassis.

TUBE AND TRIMMER LOCATION



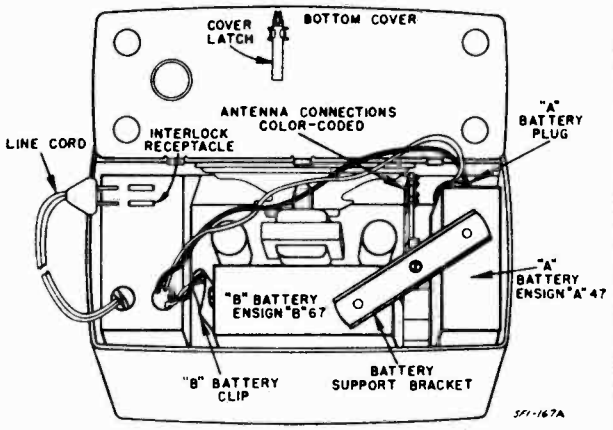
REPLACEMENT OF BATTERIES

Use replacement A and B batteries of the following types:
A Battery: Ensign A47 or equivalent.
B Battery: Ensign B67, Burgess XX45, Eveready 467 or equivalent.

Electrical characteristics of recommended batteries for these models provide for equal life for both the A and B batteries. A batteries may give satisfactory performance as low as 5.5 volts; B batteries as low as 49.5 volts. Replace batteries when reception is weak and voltage has dropped below values given above.

To install replacement batteries, slide the cover latch and open the hinged bottom cover. Then remove the screw which holds the battery support bracket in place. This bracket holds the batteries in place.

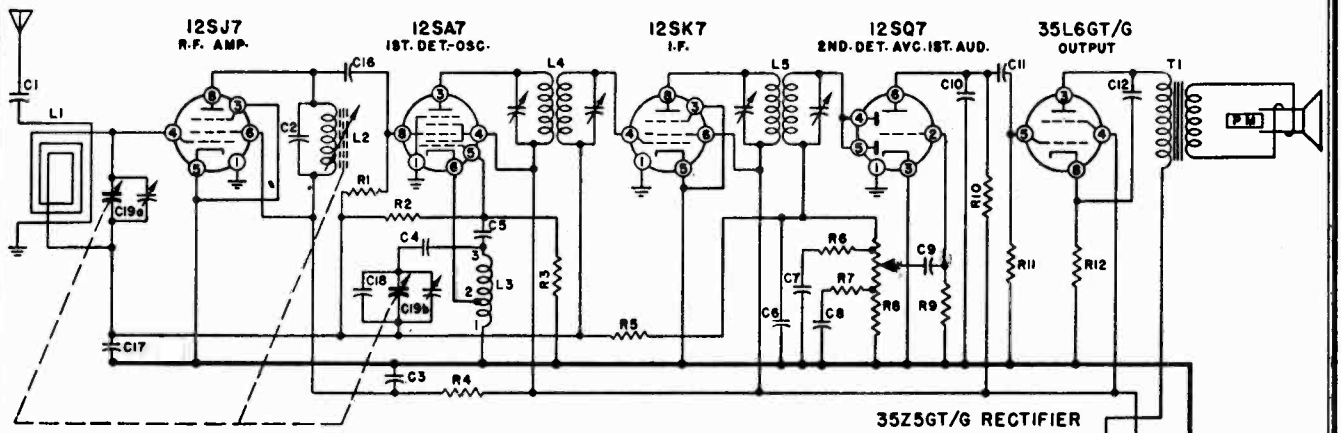
Remove the clip which fastens to the "B" battery by means of snap buttons. Remove the "A" battery plug and replace the batteries. Connect the new batteries and re-install the battery support bracket.



PRODUCTION CHANGE

In later production, knobs with longer shanks were used to eliminate the possibility of the knobs sticking or rubbing. The dial pointer has also been modified for use with this revised knob.

ADMIRAL CORPORATION — MODEL 6A1, Issue B



ISSUE B 1946
SUPERSEDES ISSUE A

NOTE: 1. In later production R14 and C13a are disconnected from pin #8 of the 35Z5 and a 33-ohm 1W resistor (R16) is connected from pin #8 to the junction of R14 and C13a. 2. The jumper between pins 4 and 5 on the 12SQ7 is removed and one pin is connected to the secondary of the second I.F. (L5) and the other pin is connected directly to the junction point of R5 and the secondary of the 1st I.F. (L4).

CONDENSERS

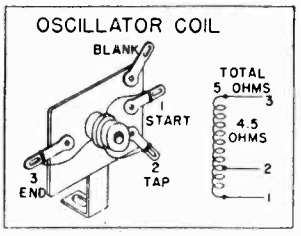
Symbol	Capacity	Type
C-1	.005 mfd	600 V.
C-2	785. mmfd	Mica
C-3	.05 mfd	400 V.
C-4	.02 mfd	400 V.
C-5	50. mmfd	Mica
C-6	250. mmfd	Mica
C-7	.01 mfd	400 V.
C-8	.01 mfd	400 V.
C-9	.01 mfd	400 V.
C-10	500. mmfd	Mica
C-11	.01 mfd	400 V.
C-12	.02 mfd	400 V.
C-13a	30. mfd	Elect. 150 V.
C-13b	30. mfd	Elect. 150 V.
C-13c	20. mfd	Elect. 150 V.
C-14	.05 mfd	400 V.
C-15	.2 mfd	400 V.
C-16	250. mmfd	Mica
C-17	.1 mfd	200 V.
C-18	20. mmfd	Mica
C-19a	420. mmfd	(max). Var.
C-19b	180. mmfd	(max.). Var.
C-20a	30. mfd	Elect. 150 V.
C-20b	50. mfd	Elect. 150 V.

COILS

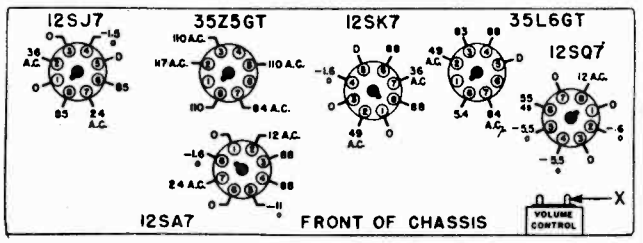
Symbol	Description
L-1	(Sec. 2.3 ohms) Loop
L-2	(2.5 ohms) R. F. Coil
L-3	Osc. Coil
L-4	1st I. F. Trans.
L-5	2nd I. F. Trans.
L-6	(325 ohms) Choke, Filter

RESISTORS

Symbol	Resistance	Type
R-1	10,000 ohms	C½W
R-2	10 meg ohm	C½W
R-3	22,000 ohms	C½W
R-4	100 ohms	C½W
R-5	1 meg ohm	C½W
R-6	47,000 ohms	C½W
R-7	27,000 ohms	C½W
R-8	500,000 ohm Volume Control, (Tapped at 1/3 and 2/3 of Rotation which is 100,000 ohms and 200,000 ohms from the start, due to the taper).	
R-9	5 meg ohm	C½W
R-10	270,000 ohms	C½W
R-11	470,000 ohms	C½W
R-12	150 ohms	C½W
R-13	150,000 ohms	C½W
R-14	150 ohms	C1W
R-15	1,000 ohms	C1W
R-16	33 ohms	C1W



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.

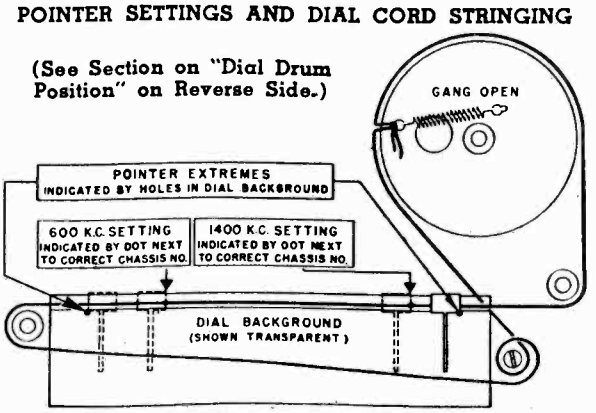
—Dial tuned to low frequency end, no signal.

—Voltages indicated 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.

POINTER SETTINGS AND DIAL CORD STRINGING

(See Section on "Dial Drum Position" on Reverse Side.)



SPECIFICATIONS

POWER SUPPLY:—

110-120 Volts A.C. or D.C.
Frequency 50-60 cycles.
Power Consumption—30 watts.

CIRCUIT:—

Chassis 6A1 A.C.—D.C. 6 Tube Superheterodyne, with R.F. stage; Single tuning range, 540 Kc. to 1630 Kc., covering standard broadcast band; built-in AEROSCOPE loop antenna, with provision for connecting an external antenna.

MODELS 7P32, 7P33, 7P34
CHASSIS 5H1

ALIGNMENT PROCEDURE

1. Disconnect Loop Antenna leads from clips on set and remove chassis from cabinet.
2. Make alignment using a battery whenever possible.
3. Connect a fresh battery to the set.

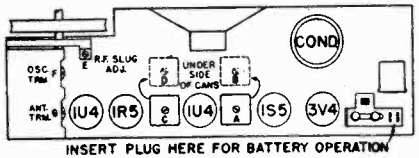
IMPORTANT: Check dial drum position on shaft. Tuner arm should just complete downward travel when gang is fully meshed. At this point, tuner arm should be on short flat part of cam. Check pointer. It should be at last dial scale mark just below 550 K.C. when gang is fully meshed. If not, move pointer on dial cord

Step	Dummy Antenna Used in Series with Signal Generator	Connect High Side Signal Generator to	Signal Generator Frequency	Receiver Gang Setting	Trimmer Designation and Description	Type of Adjustment
(1)	.00025 Mfd. when using A.C. .1 Mfd. when using Battery	Grid of 1R5 (Pin 6)	455 K.C.	Any point where it does not affect Signal	2nd I.F. (A), (B). 1st I.F. (C), (D).	Maximum Deflection Then repeat
(2)	.00025 Mfd. when using A.C. .1 Mfd. when using Battery	Stator lug of rear variable condenser section	1620 K.C.	Tuning Gang Wide Open	Oscillator Trimmer (F)	Maximum Deflection
(3)	.00025 Mfd. when using A.C. .1 Mfd. when using Battery	Stator lug of rear variable condenser section	1400 K.C.	Tune in Generator Signal	R.F. Slug (E)	Maximum Deflection
(4)	Replace Set in Cabinet					
(5)	.00025 Mfd.	Antenna and Ground Leads	1400 K.C.	Tune in Generator Signal	Antenna Trimmer (G)	Maximum Deflection

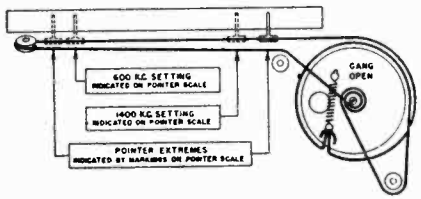
REPLACING R.F. TUNING SLUG

If the R.F. Tuning Slug has to be changed use the following procedure. Set the gang condenser to the point where the plates are fully meshed. Screw the slug adjusting screw about halfway down. Place the slug in the coil in such a position that the top of the slug is flush with the top of the coil. Solder the slug wire to the adjusting screw. Be sure that the position of the slug does not change during the soldering and that the slug wire is straight. Proceed to realign the set as shown in the chart.

TUBE AND TRIMMER LAYOUT

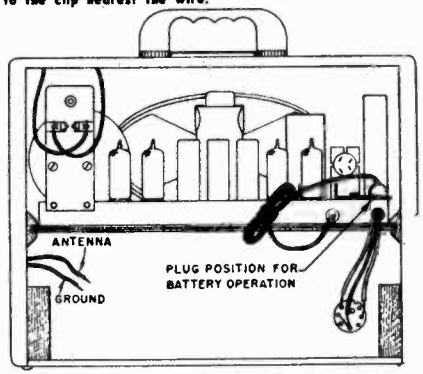


DIAL CORD STRINGING



INTERNAL ANTENNA CONNECTIONS

Note: Antenna connections cross over as shown above for 7P32 only. The 7P33, 7P34 antenna connections are made to the clip nearest the wire.



DIAL DRUM POSITION — MODEL 6A1 - ISSUE B

If the dial drum position is disturbed, it should be carefully re-positioned to insure correct tuning of the permeability tuned coil. When the gang condenser is fully open, the drum will be properly positioned if the center of the condenser shaft and the dial cable hole on the drum are in a straight line parallel to the chassis base. Note that the dial cable hole should be on the left side (looking at front) of the chassis.

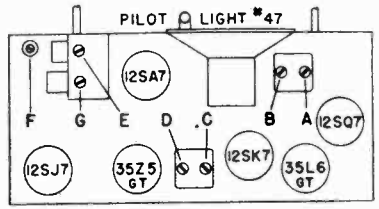
ALIGNMENT PROCEDURE

1. Be sure Radio Receiver and Signal Generator are thoroughly warmed up before starting alignment procedure.
2. Check setting of Pointer Extremes and note correct 600 K.C. and 1400 K.C. positions on Dial Background. (See Dial Diagram on reverse side.)
3. Connect Output Meter across Voice Coil.
4. Turn Receiver Volume Control full on.
5. Use lowest Output setting of Signal Generator capable of producing adequate Output Meter indication and then proceed as outlined in chart below.
6. Repeat adjustments to insure final overall maximum results.

R. F. SLUG POSITION

If the tuned coil slug needs replacing or re-positioning, first see that the dial drum is in its proper position. Then with the threaded stud half-way through the bakelite, note that the top of the slug is flush with the top of coil form. Then re-align.

TOP VIEW — TUBE & TRIMMER LOCATION



BACK OF CHASSIS

Connect Signal Generator To—	Dummy Antenna Between Radio and Generator	Set Generator Frequency To—	Set Receiver Dial Frequency To—	Adjust Following Trimmers	Type of Adjustment
12SA7 Control Grid	250 mmfd. Mica Condenser	455 KC.	High frequency end of Dial	A and B—2nd I. F. C and D—1st I. F.	Adjust to maximum Output
External Antenna Wire on Loop	250 mmfd. Mica Condenser	1630 KC.	High frequency end of Dial	E—Osc.	Adjust to maximum Output
External Antenna Wire on Loop	250 mmfd. Mica Condenser	1400 KC.	Tune in Generator signal	F—R. F. (Iron Core)	See Note Below
Loop radiator (or place pickup lead from gen. close to loop of set to obtain adequate signal).	No actual connection between set and generator.	1400 KC.	Tune in Generator signal	G—Ant.	Adjust to maximum Output

NOTE: Adjustment F is the threaded stud at the top end of the slug wire. Screw stud up or down in the bakelite for maximum output. Alignment is correct if the output is reduced when the position of the lever arm is changed slightly in either direction (up or down).

PAPER CONDENSERS

Part No.	Symbol	Description
6481-12	C-1	.005 mfd 600 V.
6481-22	C-3, C-14	.05 mfd 400 V.
6481-24	C-4, C-12	.02 mfd 400 V.
6481-25	C-7, C-8, C-9, C-11	.01 mfd 400 V.
6481-30	C-17	.1 mfd 200 V.
64A2-1	C-15	.2 mfd 400 V.

CERAMIC or MICA CONDENSERS

6585-5	C-18	20 mmfd ±10%
6587-11	C-5	30 mmfd ±20%
6587-22	C-6, C-16	250 mmfd ±20%
6587-27	C-10	500 mmfd ±20%
6581-8	C-2	785 mmfd ±3% (silver)

VARIABLE RESISTORS

7583-2	R-8	Volume Control (½ megohm) and Switch (Tapped)

TRANSFORMERS, COILS, & CORES

6984	L1	Aerascope (Loop)
A1052	L2	R. F. Coil and Mounting
71B1-2		Slug, R.F. Iron Core
69A5	L3	Oscillator Coil
7283	L4	1st I. F. Transformer
72B4	L5	2nd I. F. Transformer
74A1	L6	Choke, Filter
*	T1	Transformer, Output

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

ELECTROLYTIC CONDENSERS

Part No.	Symbol	Description
67A8	C-13a	30 mfd 150 V.
	C-13b	30 mfd 150 V.
or	C-13c	20 mfd 150 V.
67A3	C-20a	30 mfd 150 V.
	C-20b	50 mfd 150 V.

VARIABLE CONDENSERS

68A2	C-19a, C-19b	Condenser, Gang

RESISTORS

60828-3	R-16	33 ohm ±10%,	1 W.
6088-101	R-4	100 ohm ±10%,	½ W.
6088-151	R-12	150 ohm ±10%,	½ W.
60814-151	R-14	150 ohm ±10%,	1 W.
60814-102	R-15	1,000 ohm ±10%,	1 W.
6088-103	R-1	10,000 ohm ±10%,	½ W.
6088-223	R-3	22,000 ohm ±10%,	½ W.
6088-273	R-7	27,000 ohm ±10%,	½ W.
6088-473	R-6	47,000 ohm ±10%,	½ W.
6088-154	R-13	150,000 ohm ±10%,	½ W.
6088-274	R-10	270,000 ohm ±10%,	½ W.
6088-474	R-11	470,000 ohm ±10%,	½ W.
6088-105	R-5	1 meg ohm ±10%,	½ W.
6088-475	R-9	4.7 meg ohm ±10%,	½ W.
6088-106	R-2	10 meg ohm ±10%,	½ W.

MISCELLANEOUS

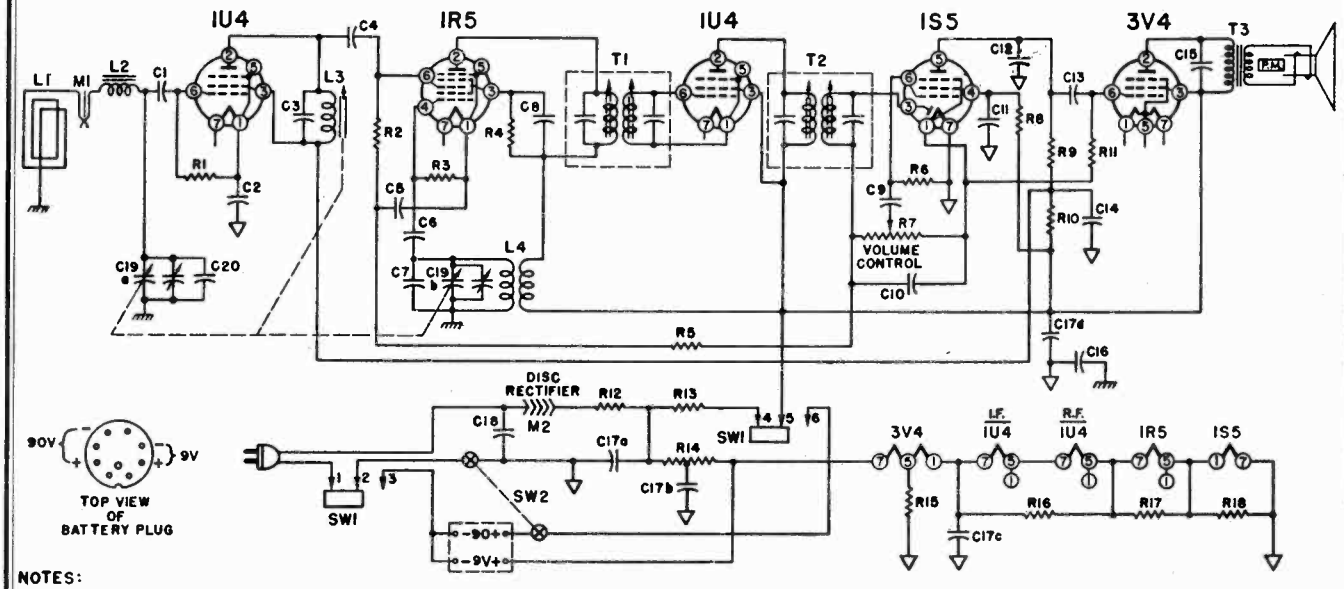
Part No.	Description
2287-1	Background, Dial (Plastic)
13A1-2-47	Buttons, Snap (For Cabinet Back)

MISCELLANEOUS (Cont'd)

Part No.	Description
13A1-3-2	Buttons, Snap (Dial & R.F. Coil)
15A14	Bracket Plate, Loop Retainer
34D1-1	Cabinet, Plastic (6T01 Ivory)
34D1-2	Cabinet, Plastic (6T01 Mahog.)
4385	Cover, Chipboard Back (For 6T01 Plastic)
4383	Cover, Chipboard Back (For 6T05 Wood)
50A1-1	Cord, Dial (42")
A1049	Drum & Cam Assembly
12A1-2	Grommet, Rubber (3/16"x5/16")
33A1-1	Knob (Ivory)
33A1-2-2	Knob (Walnut or Mahog.)
A1050	Lever Arm Assembly (R.F.)
81A1-8	Pilot Light #47
82A2-1	Pilot Light Socket & Leads
AA106	Pointer and Slide (order pointer or pointer slide as needed)
25A3	Pointer (less slide)
25A2	Pointer Slide
17A1-3	Pulley, Fibre 1/8x1/2 O.D.
21B4-1	Scale, Dial (Plastic)
28A1-1	Shaft Tuning
75B4-2	Speaker & Trans. 5" P.M.
19A1-3	Spring, Tension (Dial)
19A4	Spring, Lever Arm (R.F.)
29A2-3-21	Spacer, T (R.F.)
87A10-2	Socket, Octal Tube
27A4	Stud, Threaded Slug Adj. (R.F.)
4A4-1	Washer, C (Tuning Shaft)
5A1-6	Washer, Flat Fibre Insulating
5A2-5	Washer, Flat Fibre Insulating
4A6-3-0	Washer, Spring (Tuning Shaft)

ADMIRAL CORPORATION

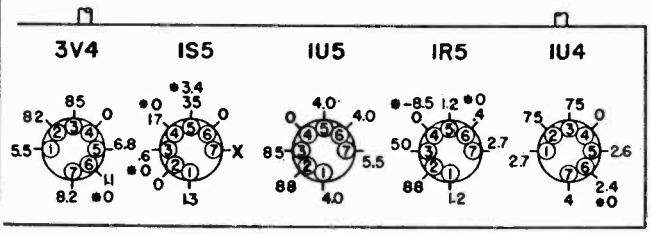
MODELS 7P32, 7P33, 7P34,
Chassis 5H1



NOTES:
I.F. = 455 K.C.
COMMON (LINE GROUND)
CHASSIS GROUND

5-47

VOLTAGE CHART



***Indicates reading taken with 1000 ohm-per-volt meter.**

VOLTAGE DATA

- All readings made between Tube Socket Terminals and Terminal No. 7 on the 1S5 (Point "X" on Voltage Chart).
- A.C. Voltages measured on a 117 Volt A.C. line.
- Dial turned to low frequency end, no signal.
- All Voltages measured with a VoltOhmyst.
- A second voltage reading (marked with an asterisk *) indicates readings made with a 1000 ohm-per-volt meter when use of this instrument would result in appreciably lower readings.

REPLACEMENT PARTS

RESISTORS

Symbol	Description	Part No.
R1	2.2 Megohms, ¼ Watt	60B 3-225
R2	1 Megohm, ¼ Watt	60B 3-105
R3	100,000 Ohms, ¼ Watt	60B 3-104
R4	18,000 Ohms, 1/3 Watt	60B 2-183
R5	3.3 Megohms, ¼ Watt	60B 2-335
R6	10 Megohms, ¼ Watt	60B 3-106
R7	1 Megohm Volume Control and Switch SW2 (DPST)	75B 1-18
R8	4.7 Megohms, ¼ Watt	60B 2-475
R9	470,000 Ohms, ¼ Watt	60B 3-474
R10	10,000 Ohms, ¼ Watt	60B 3-103
R11	2.2 Megohms, ¼ Watt	60B 3-225
R12	47 Ohms, 1 Watt	60B 14-470
R13	2700 Ohms, 1 Watt	60B 14-272
R14	2600 Ohms, 5 Watt	61A 6-1
R15	1500 Ohms, ¼ Watt	60B 2-152
R16	820 Ohms, ¼ Watt	60B 2-821
R17	220 Ohms, ¼ Watt	60B 2-221
R18	150 Ohms, ¼ Watt	60B 2-151

CONDENSERS

Symbol	Description	Part No.
C1	250 Mmfd., Mica	65B 7-22
C2	.25 Mfd., 200 Volts, Paper	64B 1-28
C3	420 Mmfd., Mica	65B 1-13
C4	250 Mmfd., Mica	65B 7-22
C5	.01 Mfd., 400 Volts, Paper	64B 1-25
C6	100 Mmfd., Mica	65B 7-17
C7	15 Mmfd., Ceramic	65B 6-18
C8	.01 Mfd., 400 Volts, Paper	64B 1-25
C9	.01 Mfd., 400 Volts, Paper	64B 1-25
C10	250 Mmfd., Mica	65B 7-22
C11	.01 Mfd., 400 Volts, Paper	64B 1-25

CONDENSERS

Symbol	Description	Part No.
C12	100 Mmfd., Mica	65B 7-17
C13	.01 Mfd., 400 Volts, Paper	64B 1-25
C14	4 Mfd., 150 Volts, Electrolytic	67A 4-2
C15	.002 Mfd., 600 Volts, Paper	64B 1-14
C16	.18 Mfd., 200 Volts, Paper	64A 2-2
C17a	50 Mfd., 150 Volts, Elect.	67C 7-5
C17b	20 Mfd., 150 Volts, Elect.	
C17c	200 Mfd., 25 Volts, Elect.	
C17d	20 Mfd., 150 Volts, Elect.	
C18	.05 Mfd., 400 Volts, Paper	64B 1-22
C19a	0 to 420 Mmfd., Gang	68B 6
C19b	0 to 162 Mmfd., Gang	
C20	10 Mmfd., Ceramic	65B 6-24

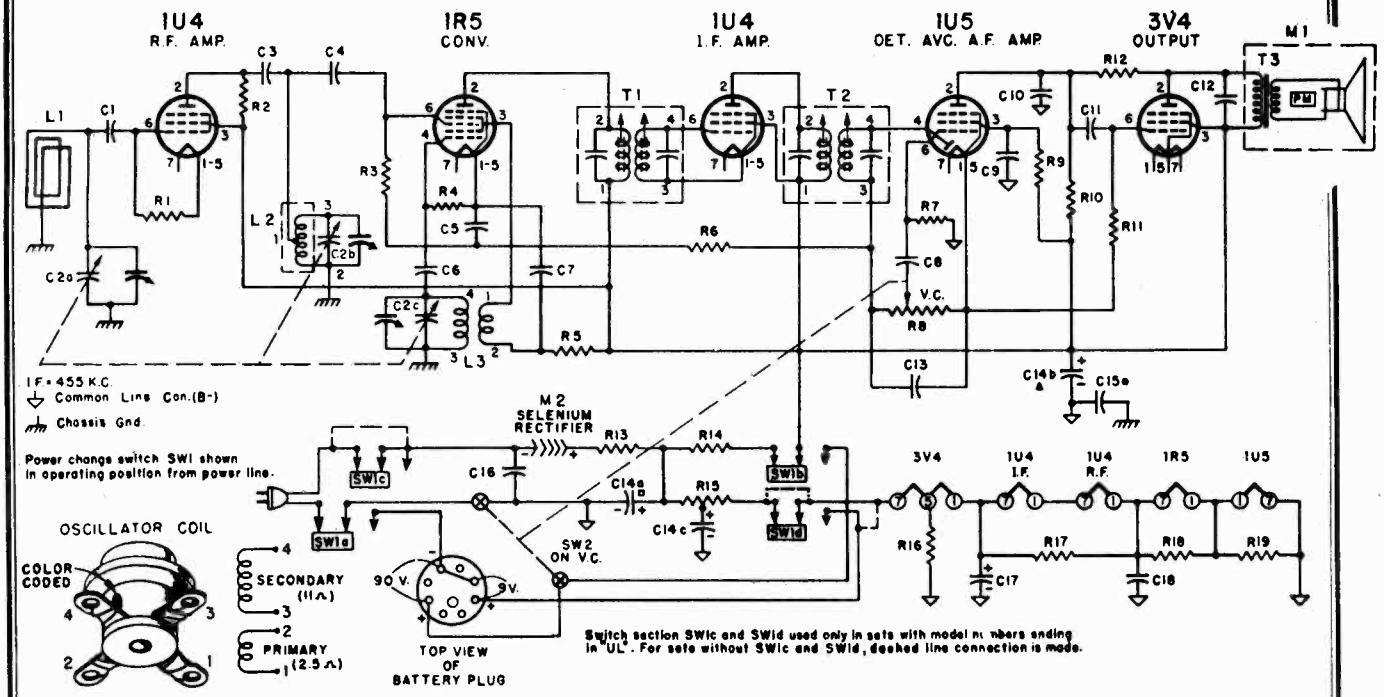
COILS, TRANSFORMERS, SWITCHES, ETC.

L1	Antenna, Loop (Part of cabinet —not supplied separately)	
L2	Coil, Loading	AA 121
L3	Coil, R. F.	AB 100-7
L4	Coil, Oscillator	69A 15
P1	Plug, Battery (9 prong)	88A 3-3
SW1	Switch, Power Change	77A 2-4
SW2	Switch, On-Off (Part of volume control R7)	
T1	Transformer, 1st I. F.	72B 28-1
T2	Transformer, 2nd I.F.	72B 28-1
T3	Transformer, Output	98A 21
	Slug, Tuning (R.F.)	71B 1-3
	Adjustment Screw for Slug	27A 4
	Speaker 6" P.M. & Output Transformer	78B 17-3

MISCELLANEOUS

Description	Part No.
M1 Jack for External Loop Antenna	
M2 Rectifier, Selenium	93A 1-2
Buttons, Snap (for dial scale)	13A 1-1-2
Cabinet (Black 7P32)	35D 58-1
Cabinet (Black 7P33)	35D 50-1
Cabinet (Brown 7P34)	35D 50-2
Cord, Dial	50A 1-3
Dial Window, Plastic (7P33, 7P34)	24B 2
Dial Window and Speaker Grill (7P32)	23C 26
Drum & Cam Assembly	A 1313
Escutcheon, Plastic (7P33, 7P34)	23D 24
Grommet (for mounting R.F. coil)	12A 1-12
Handle, Plastic (7P32, 7P33)	37C 11-1
Knob (7P32)	33A 18-3
Knob (7P33, 7P34)	33A 18-1
Latch, Cover (7P33, 7P34)	37B 2-1
Mounting Clip (for I.F. transformer)	72B 28-10
Mounting Plate (for R.F. coil)	32A 40
Pointer, Dial	25A 24
Scale, Dial (metal)	21B 44
Spring	19B 1-13
Spring, Tension (Dial Cord)	19B 1-5
Tube Shield	87A 7-7
Tube Socket	87A 3-2
Tuner Arm (for R.F. slug tuner)	A1314
Washer, Felt (¾") (for knobs)	5A 4-3
Washer, Spring (for tuner arm)	4A 6-3-0

MODEL 6C11, CHASSIS 6C1 ADMIRAL CORPORATION



VOLTAGE DATA

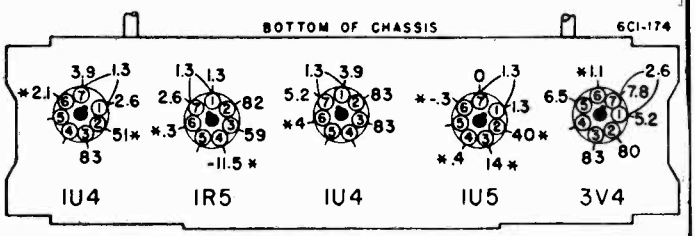
Voltage readings taken between tube socket terminals and B minus (metal shell of electrolytic condenser).

Dial set to low frequency, no signal, and volume control minimum.

Measurements made from 117 volts AC line. If measured from DC line, voltages may be slightly lower.

Voltage readings taken with a vacuum tube voltmeter. Socket terminals marked with an asterisk * indicate much lower voltage or zero voltage if measured with a 1000 ohm-per-volt meter.

If measurements are made on battery operation, tube filament and B plus voltages will vary with the condition of the batteries. These voltages will equal the terminal voltage of the A or B battery minus the voltage drop through components.



* If taken with a 1000 ohm-per-volt meter, readings will be lower or zero.

RESISTORS

Symbol	Description	Part No.
R1	2.2 Megohms, 1/4 Watt	60B 27-225
R2	27,000 Ohms, 1/4 Watt	60B 26-273
R3	1 Megohm, 1/4 Watt	60B 27-105
R4	100,000 Ohms, 1/4 Watt	60B 27-104
R5	8,200 Ohms, 1/4 Watt	60B 26-822
	Note: In some sets, R5 was 10,000 Ohms; other sets used pair of 18,000 Ohm resistors in parallel.	
R6	3.3 Megohms, 1/4 Watt	60B 27-335
R7	10 Megohms, 1/4 Watt	60B 27-106
R8	1 Megohm, Volume Control and On-Off Switch	75B 1-26
R9	4.7 Megohms, 1/4 Watt	60B 27-475
R10	470,000 Ohms, 1/4 Watt	60B 27-474
R11	2.2 Megohms, 1/4 Watt	60B 27-225
R12	5.6 Megohms, 1/4 Watt	60B 26-565
R13	47 Ohms, 1 Watt	60B 14-470
R14	2,700 Ohms, 1 Watt	60B 14-272
R15	2,400 Ohms, 2.5 Watt Tapped Candohm	61A 5-3
R16	1,500 Ohms, 1/4 Watt	60B 26-152
R17	820 Ohms, 1/4 Watt	60B 26-821
R18	220 Ohms, 1/4 Watt	60B 26-221
R19	150 Ohms, 1/4 Watt	60B 26-151

CONDENSERS

C1	250 mmfd., Ceramic	65B 6-5
C2a	Gang, 420.0 mmfd. (max.) Ant. Section	
C2b	Gang 193.8 mmfd. (max.) RF Section	68B 10
C2c	Gang, 90.0 mmfd. (max.) Osc. Section	

Symbol	Description	Part No.
C3	100 mmfd., Ceramic	65B 6-3
C4	250 mmfd., Ceramic	65B 6-5
C5	100 mmfd., Ceramic	65B 6-3
C6	.05 mfd., 200 Volts, Paper	64B 1-32
C7	.001 mfd., Ceramic (tolerance — 0%, + 20%)	65B 6-41
C8	.005 mfd., 600 Volts, Paper	64B 1-12
C9	.05 mfd., 200 Volts, Paper	64B 1-32
C10	100 mmfd., Ceramic	65B 6-3
C11	.005 mfd., 600 Volts, Paper	64B 1-12
C12	.001 mfd., Ceramic (tolerance — 0%, + 20%)	65B 6-41
C13	250 mmfd., Ceramic	65B 6-5
C14a	30 mfd., 150 Volts	
C14b	40 mfd. 150 Volts } Elect.	67C 7-52
C14c	20 mfd., 150 Volts	
C15	.18 mfd., 200 Volts, Paper	64A 2-2
	Note: In sets with model numbers ending in "UL", C15 is .1 mfd., 400 V.	
C16	.05 mfd., 400 Volts, Paper	64B 1-22
C17	100 mfd., 25 Volts, Elect.	67A 4-6
C18	.25 mfd., 200 Volts, Paper	64B 1-28

COILS, TRANSFORMERS, ETC.

L1	Antenna, Loop	69B 61
L2	Coil, RF	69B 58
L3	Coil, Oscillator	69A 57
T1	Transformer, 1st IF	72B 55
T2	Transformer, 2nd IF	72B 56
T3	Transformer, Output	98A 21
M1	Speaker (4"x6" PM) and Output Transformer	78B 38-1
M2	Rectifier, Selenium	93A 1-4
SW1	Switch, Power Change DPDT, for "N" models	77A 19-2
	4PDT, for "UL" models	77A 19-1
SW2	Switch, On-Off	(Part of R8)

PLASTIC CABINET PARTS

Description	Part No.
Body, Cabinet (less all other parts)	34D 21-1
Lid, Cabinet (less all other parts)	34D 21-2
Cover, Antenna (for inside lid)	34D 21-3
Escutcheon & Grille (front)	23D 33-1
Handle, Carrying (less all other parts)	34D 21-4
Knobs	
"Volume"	33B 35-1
"Tuning"	33B 35-2

MISCELLANEOUS

Baffle Board, Speaker	43A 52
Bag, Waxed Paper Shipping	45A 4-8
Carton and Fillers	44B 113
Catch Pin, Lid (on Monogram)	23B 31-2
Clip, Antenna	90A 2-3
Cover & Hinge Assembly, Bottom	A1773
Cover, Chassis (metal)	15C 301
Grille Cloth (10½"x4½")	36B 3-11
Hinge and Bracket, Cover (Right side)	A1670
Hinge and Bracket, Cover (Left side)	A1669
Hinge and Spring (Bottom Cover)	37A 14
Monogram, Admiral	23B 31-1
Plate, Electrolytic Mounting	67A 2-1
Plug, Battery	88A 3-3
Pointer, Dial Tuning	25A 32
Snap Button	13A 1-1-47
Speed Nut (for Battery Strap)	2A 9-5
Speed Nut (Monogram mounting)	2B 10-23-68
Spring, Lid Catch Pin	19A 29
Tube Socket	87A 3-4

ALIGNMENT PROCEDURE

- Use battery power for alignment if fresh batteries are available.
- When using AC power, an isolation transformer should be used if available. If not using an isolating transformer, connect a .1 mfd. condenser in series with the signal generator low side to B minus of radio chassis.
- Connect loop antenna and maintain same relative position as when in cabinet.
- Set volume control full on.
- Connect output meter across speaker voice coil.
- Use lowest output setting of signal generator capable of producing adequate output meter indication and then proceed as outlined below.
- Repeat adjustments to insure good results.

NOTE

To avoid splitting the slotted head of powdered iron core tuning slugs in I.F. transformer, use an alignment tool with a screw driver blade ⅛" wide.

Step	Dummy Antenna in Series with Signal Generator	Connection of Signal Generator (High Side)	Signal Generator Frequency	Receiver Gang Setting	Trimmer Description	Trimmer Designation	Type of Adjustment
1	.001 mfd. when using A. C. .1 mfd. when using Battery	Grid of 1R5 (Pin 6)	455 KC	Gang fully open	2nd IF 1st IF	A, B C, D (see note below)	Maximum output
2	.001 mfd. when using A. C. .1 mfd. when using Battery	Grid of 1R5 (Pin 6)	1620 KC	Gang fully open	Oscillator (on gang)	E	Maximum output
3	.001 mfd. when using A. C. .1 mfd. when using Battery	Tuning condenser, antenna stator	1400 KC	Tune in generator signal	R. F. (on gang)	F	Maximum output
Install chassis in cabinet. Connect loop antenna.							
4	Loop of several turns of wire, or place generator lead close to receiver loop for adequate signal.	No physical connection (signal by radiation)	1400 KC	Tune in generator signal	Antenna (on gang)	G	Maximum output
Mount dial pointer. Set pointer at 1400 K.C. with gang condenser tuned to 1400 K.C. signal.							

NOTE: Adjustments B and D are made from underside of chassis.

REPLACEMENT OF BATTERY PACK

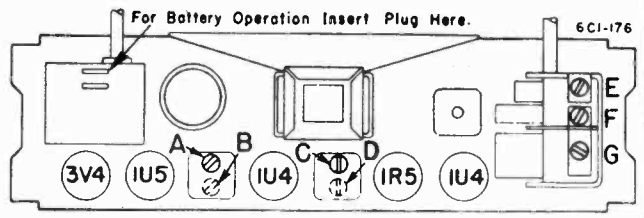
Replace A-B battery pack with Ensign type AB50 pack, Ray-O-Vac AB994, General 60A-6F6-5, Burgess F6A60 or other equivalent.

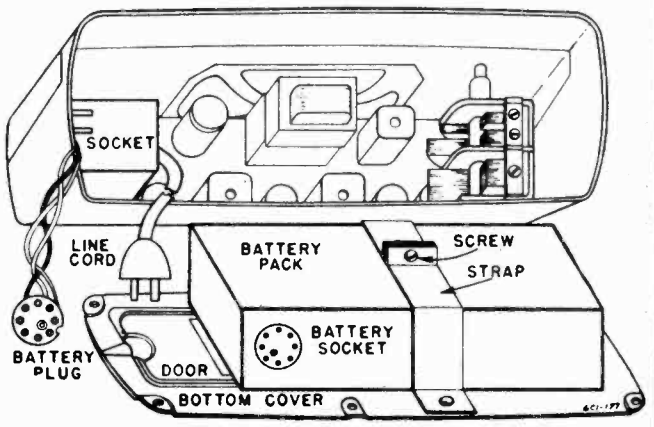
Electrical characteristics of the recommended battery packs provide for equal life for both the A and B sections. The A section may give satisfactory performance as low as 6.6 volts, the B section as low as 60 volts. Replace battery pack when reception is weak and voltage has dropped below values given above.

To install a replacement battery pack, first remove the six screws that hold the metal bottom cover to the cabinet. (See illustration.) The battery pack is strapped to the bottom cover and will come out when the cover is removed. Pull out the battery plug, loosen the screw which holds the battery strap tight, and slide out the old battery pack.

Slip a new battery pack into place, tighten the screw which tightens the strap around the battery, plug in the battery plug and re-install the bottom cover.

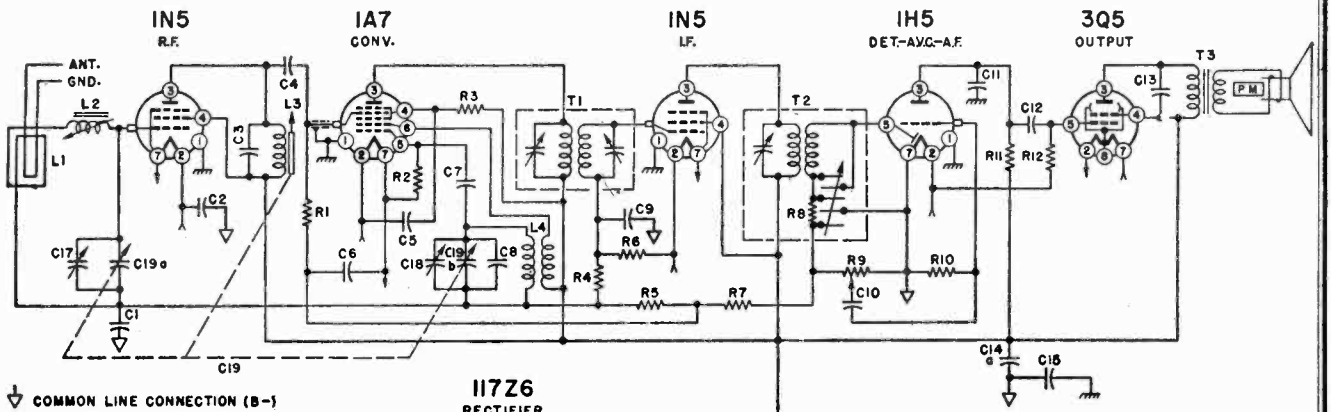
TUBE AND TRIMMER LOCATION



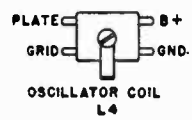


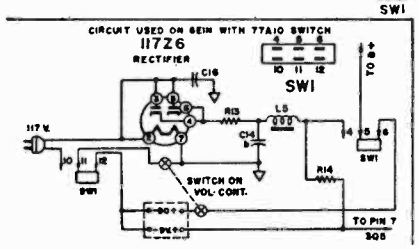
MODELS 6E1, 6E1N

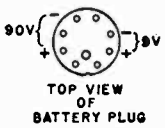
ADMIRAL CORPORATION

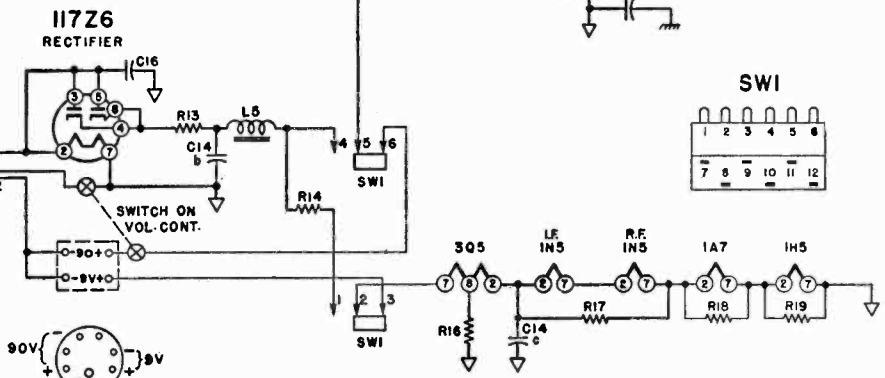


COMMON LINE CONNECTION (B-)
CHASSIS GROUND





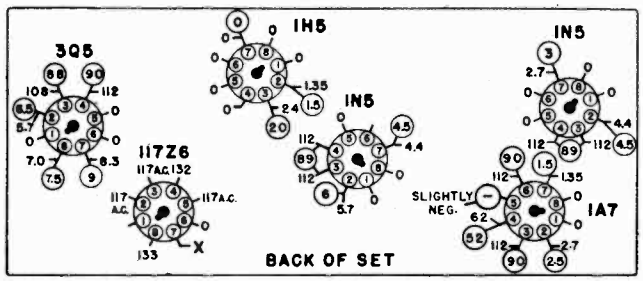




NOTES: I.F.= 455 K.C.
Power change switch (SWI) shown in battery operation position.
In earlier models (L2) was fixed.

ISSUE A 1946

VOLTAGE CHART



VOLTAGE DATA

1. Voltage readings circled (O) are for Battery Operation.
2. All reading made between Tube Socket Terminals and Terminal No. 7 on the 117Z6 (Point (X) on Voltage Chart).
3. A.C. Voltages measured on a 117 Volt A.C. line.
4. Battery Voltages measured with a fresh battery.
5. Dial turned to low frequency end, no signal.
6. All Voltages measured with a 1000 ohm per volt meter.

CONDENSERS

Symbol	Description	Part No.
C1	.05 Mfd. 200 Volt Paper	64B1-32
C2	.25 Mfd. 200 Volt Paper	64B1-28
C3	.00042 Mfd. Mica	65B1-9
C4-C11	.00025 Mfd. Mica	65B5-22
C5, C6, C9, C10, C12	.01 Mfd. 400 Volt Paper	64B1-25
C7	.00005 Mfd. Mica	65B5-11
C8	.000015 Mfd. Mica	65B5-3
C13	.002 Mfd. 600 Volt Paper	64B1-9
C14a	50 Mfd. 150 Volt Elect.	67C7-42
C14b	30 Mfd. 150 Volt Elect.	67C7-42
C14c	100 Mfd. 25 Volt Cond.	67C7-42
C15	.2 Mfd. 400 Volt Paper	64A2-1
C16	.05 Mfd. 400 Volt Paper	64B1-22
C17	Antenna Trimmer	66A12-5
C18	Oscillator Trimmer (Part of Gang)	
C19 (C19a, C19b)	Condenser Gang	68B4

RESISTORS

Symbol	Description	Part No.
R1	100,000 Ohms ½ Watt Carbon	60B8-104
R2	220,000 Ohms ½ Watt Carbon	60B8-224
R3	47,000 Ohms ½ Watt Carbon	60B8-473
R4, R5	4.7 Megohms ½ Watt Carbon	60B2-475

RESISTORS

Symbol	Description	Part No.
R6	4.7 Megohms ½ Watt Carbon	60B2-475
R7	3.3 Megohms ½ Watt Carbon	60B2-335
R8	50,000 Ohms ½ Watt Carbon	60B8-503
R9	1 Megohm Volume Control	75B1-100
R10	15 Megohms ½ Watt Carbon	60B2-156
R11	1 Megohm ½ Watt Carbon	60B2-105
R12	2.2 Megohms ½ Watt Carbon	60B2-225
R13	22 Ohms Wire Wound ½ watt	61A2-2
R14	2,450 Ohms Wire Wound 5 watt	61A3-5
R16	1,500 Ohms ½ Watt Carbon	60B8-152
R17	560 Ohms ½ Watt Carbon	60B8-561
R18	220 Ohms ½ Watt Carbon	60B8-221
R19	120 Ohms ½ Watt Carbon	60B8-121

COILS & TRANSFORMERS

Symbol	Description	Part No.
L2	Coil, Loop Loading, (fixed) (early)	AA114
	Coil, Loop Loading, (variable) (late)	AA115
L3	Iron Slug for plate coil	71B1-3
	Coil, Plate	70A1-30
L4	Oscillator Coil	69A7
L5	Choke Filter	74A5
T1	1st I.F. Transformer	72B9-2

COILS & TRANSFORMERS

Symbol	Description	Part No.
T2	2nd I.F. Transformer	72B10-2
T3	Transformer, Output (When ordering furnish all numbers appearing on both the speaker and the transformer.)	
SW1	Switch, Power Change (6EI)	77A6
	Switch, Power Change (6EIN)	77A10

MISCELLANEOUS

Dial background	21A18-2
Dial Cord, 12"	50A1-3
Dial Cord Tension Spring	19A1-2
Dial Scale, Glass	23C11-1
Escutcheon	23C11-2
Knob, Tuning	33A14-4
Knob, Volume	33A14-3
Plug, Battery (9 prong)	88A3-3
Pointer, Tan Tenite	25A14-2
Rubber liner for Dial Scale	23C11-3
Speaker Grill	36A2
Speaker & Output Transformer	78B8
Tube Shields	87A8

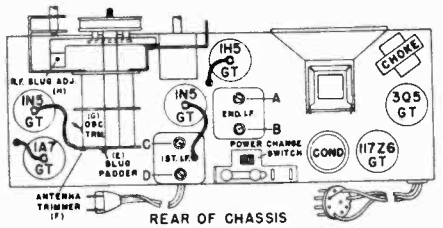
ALIGNMENT PROCEDURE

1. Be sure both set and signal generator are thoroughly warmed up before starting alignment.
2. Make alignment using a battery whenever possible.
3. Disconnect Loop Antenna leads from clips on set and remove chassis from cabinet.
4. Connect a 50,000 ohm carbon resistor across the two clips from which the Loop Antenna was removed.
5. Connect Output Meter across the Voice Coil.
6. Connect a fresh battery to the set.
7. Turn receiver Volume Control full on.

Dummy Antenna Used in Series with Signal Generator	Connect High Side Signal Generator to	Signal Generator Frequency	Receiver Gang Setting	Trimmer Designation and Description	Type of Adjustment
(1) .00025 Mfd. when using A.C. .1 Mfd. when using Battery	Grid Cap 1A7	455 K.C.	Any point where it does not affect Signal	2nd I.F. (A), (B). 1st I.F. (C), (D).	Maximum Deflection Then repeat
(2) .00025 Mfd. when using A.C. .1 Mfd. when using Battery	Grid Cap 1N5	1620 K.C.	Tuning Gang Wide Open	Oscillator Trimmer (G)	Maximum Deflection
(3) .00025 Mfd. when using A.C. .1 Mfd. when using Battery	Grid Cap 1N5	1400 K.C.	Tune in Generator Signal	R.F. Slug (H)	Maximum Deflection
(4)	Replace Set in Cabinet				
(5) .00025 Mfd.	Antenna and Ground Leads	1400 K.C.	Tune in Generator Signal	Antenna Trimmer (F)	Maximum Deflection
(6) Disregard the next two steps if the set being aligned is one of the earlier models with a fixed loop loading coil (L2)					
(7) .00025 Mfd.	Antenna and Ground Leads	600 K.C.	Tune in Generator Signal	Loop Loading Coil Slug (E)	Maximum Deflection
(8) .00025 Mfd.	Antenna and Ground Leads	1400 K.C.	Tune in Generator Signal	Reset Antenna Trimmer (F)	Maximum Deflection

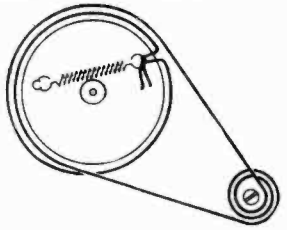
Seal adjusting screw on the loop loading coil with any quick drying cement.

TUBE AND TRIMMER LAYOUT



REAR OF CHASSIS

DIAL CORD STRINGING



CIRCUIT CHANGE TO ELIMINATE HUM IN PORTABLE 6E1 CHASSIS

Early production 6E1 chassis sometimes have a rough modulation hum whenever the user's hand is near to or touches certain parts of the cabinet. This happens only when the set is operated on AC power lines.

In most cases this hum can be eliminated or greatly reduced by reversing the power cord plug at the electric outlet. However, we have reports that some sets in some locations still hum excessively even though the line cord plug is reversed.

As soon as this condition was discovered, we changed the circuit slightly on our production line. This change completely eliminates the difficulty. The change is as follows:

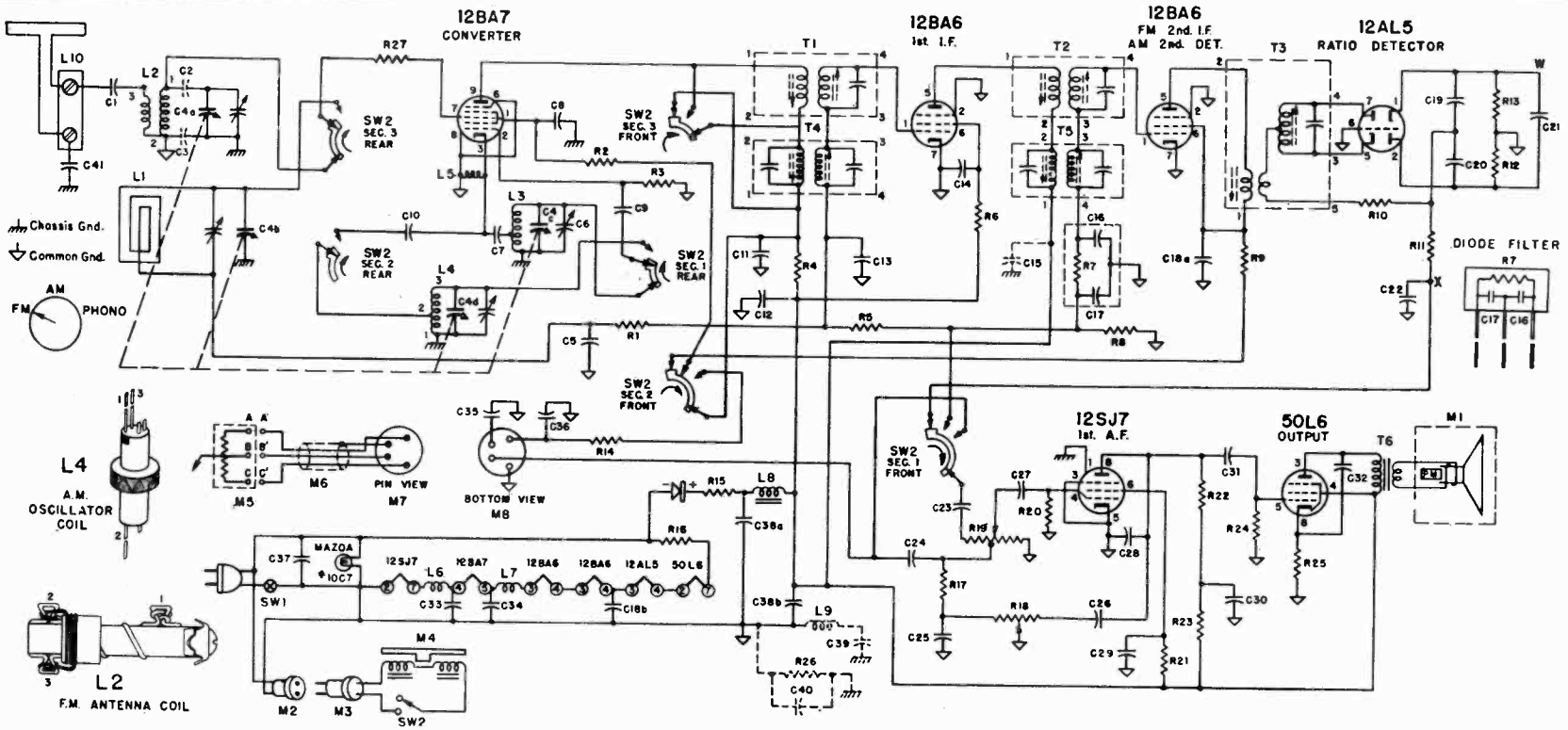
The low ends of the loop aerial and variable condenser are disconnected from the AVC circuit and connected to the chassis. A .00025 mica condenser is connected in series with the grid of the 1N5 R.F. tube, and the grid is connected to the AVC circuit through a one megohm resistor.

If any sets are giving this trouble in the field, the circuit change can be easily made without removing the chassis by mounting a small terminal strip for the new parts on the back of the plate which is on the gang condenser. The procedure is as follows:

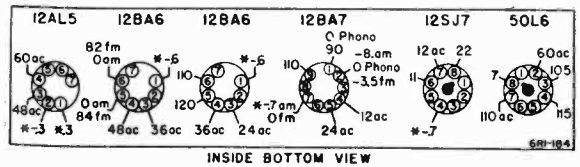
1. Remove the 1A7GT tube.
2. Remove the left hand screw that holds the mounting plate to the gang condenser. Install the terminal strip with this screw.
3. Mount the condenser (.00025 mfd.) and resistor (1 meg.) on strip. Connect them in series.
4. Remove the green grid lead of the 1N5GT tube from the trimmer condenser and connect it to the junction of the .00025 mfd. condenser and the 1 megohm resistor.
5. Connect the other end of the .00025 mfd. condenser to the trimmer terminal from which the green lead was removed.
6. Disconnect the orange wire that now goes to the lug on the tuning condenser and connect it to the open end of the 1 meg. resistor.
7. Connect a short wire from the tuning condenser stator to chassis.

REPLACING R.F. TUNING SLUG

If the R.F. Tuning Slug has to be changed use the following procedure. Set the gang condenser to the point where the plates are fully meshed. Screw the slug adjusting screw about halfway down. Place the slug in the coil in such a position that the top of the slug is flush with the top of the coil. Solder the slug wire to the adjusting screw. Be sure that the position of the slug does not change during the soldering and that the slug wire is straight. Proceed to realign the set as shown in the chart.



VOLTAGE DATA



* If taken with a 1000 ohm-per-volt meter, readings will be lower or zero.

- Line Voltage 117.
- Voltages measured with a vacuum tube voltmeter.
- Voltages read between socket terminals and B minus (terminal of ON-OFF switch).
- Band switch in FM position.
- Dial turned to low frequency end.
- Volume Control-minimum.

RECORD CHANGER SERVICE DATA

Complete service information and parts list for the record changer is contained in a separate manual. Check record changer for model number. Refer to the proper manual for all record changer service information.

In case of distortion or low volume on phono operation only, check as follows:

1. Replace cartridge and check operation. Cartridge resistance should be from 0.3 to 2 megohms.
2. With the volume control at maximum, touch the needle with the finger. If a loud hum is heard, then the circuit from the needle to the grid of the audio amplifier tube is not open or shorted. If hum is not heard, check the circuit from "B" to the grid. (See schematic.)
3. If a hum is heard, check the voltage across outer terminals "A" and "C" on the bottom of cartridge. Generally it should measure from 80 to 100 volts D.C. If it does not, check the circuit for fault.

IMPORTANT PRELIMINARY ALIGNMENT STEPS

In FM alignment, it is essential that every step be followed. Especially important is picking the center of the IF curve (step 4 in the FM-IF alignment instructions). During this portion of the alignment it is necessary to tune the signal generator very carefully; it may necessitate having to estimate the dial readings to a tenth of a division.

Under normal operating conditions or use, misalignment of RF or IF circuits with age will be slight. Lack of sensitivity and poor tone quality may be due to causes other than alignment. Do not attempt to realign the receiver until all other possible causes have first been thoroughly investigated.

If complete alignment is necessary, it is essential that proper sequence be followed as tabulated in the alignment chart. However, if only the AM band or a portion of the FM circuit are to be aligned, proceed from that point on the chart being sure to follow all remaining steps.

Adjustments made to FM-IF's at 10.7 MC, will require realignment of AM-IF slug adjustments.

Check pointer position. With tuning gang closed, the tip of the pointer clip should be over the 1/16" circular punch at the extreme left end of the dial background (see stringing diagram).

Use an isolation transformer if available, otherwise connect a .1 mfd. condenser in series with low side of signal generator and attach to B minus of chassis.

Be sure both the set and the signal generator are thoroughly warmed up before starting alignment.

FM I.F. AND RATIO DETECTOR ALIGNMENT

- Keep output indicator leads well separated from signal generator leads and chassis wiring.
- Band switch in FM position (fully to the left).
- While peaking IF's, keep reducing signal generator output so VTVM reading is approximately +1.5 volts DC with exception of Step #5.
- To avoid splitting the slotted head of iron core tuning slugs in the IF transformers, use an insulated alignment tool with a ⅛" wide screwdriver blade. Do not exert undue pressure as threads of slugs may strip.
- Speaker must be connected during alignment.
- FM antenna disconnected during alignment.

Before proceeding, be sure to follow all steps listed above, under "Important Preliminary Alignment Steps."

	Connect Signal Generator	Generator Frequency	Receiver Dial Setting	Output Indicator and Special Connections	Adjust as Follows (very carefully)
1	Thru .001 cond. to 2nd IF grid (pin #1 of 12BA6 2nd IF)	10.7 MC unmodulated.	Tuning gang wide open	Connect VTVM (DC probe) from point "W" to B minus ("Y"). (See Fig. 7.)	"A" (ratio detector primary) for maximum reading on VTVM.
2	**Thru .001 cond. to 1st IF grid (pin #1 of 12BA6 1st IF)	"	"	" "	Iron cores "B" and "C" (2nd IF trans.) for maximum reading on VTVM.
3	High side FM antenna terminal	"	"	" "	Iron cores "D" and "E" for maximum on VTVM. Readjust A, B, C, D, E, for maximum. (Keep reducing generator output to keep VTVM at 1.5 volts)
4	"	a. Reduce output of signal generator until VTVM reads exactly +1.5 volts DC. b. Tune generator frequency above 10.7 MC until VTVM reads exactly +1.0 volt. Note exact generator frequency. Extreme care in reading this is essential. c. Tune generator frequency below 10.7 MC until VTVM reads exactly +1.0 volt. Note exact generator frequency. Extreme care in reading this is essential. d. Add generator frequency in step c to generator frequency in step d and divide by 2. The result is the center frequency of the IF curve to be used in step 5. See example on next page. e. Tune generator frequency above and below 10.7 MC and note voltage reading on VTVM at different frequency points until you have a good impression of the shape of the selectivity curve. If you have two peaks as in Figures 5 or 6, note readings (voltage) of both peaks. If one peak is over 20% higher than the other one, it will be necessary to realign IF's. A selectivity curve that would require realignment is illustrated by Figure 6.			
5	"	Center of IF selectivity curve per step 4d above. See "EXAMPLE" on next page.	Tuning gang wide open	Connect VTVM (DC probe) from point "X" to B minus ("Y"). (See Fig. 7.)	Iron core "F" (ratio detector secondary) for zero voltage reading on VTVM. (The correct zero point is located between a positive and a negative maximum.)

If any adjustments were very far off, it is desirable to repeat steps 3. 4 and 5.

**Do not feed I.F. signal into converter grid as this will cause mis-alignment.

SETTING SIGNAL GENERATOR TO CENTER OF I.F. SELECTIVITY CURVE

CAUTION: Due to the difficulty of setting a signal generator to the accuracy required by this operation, extreme care must be exercised in making each setting. Otherwise, improper alignment of the ratio detector and consequent audio distortion will result.

EXAMPLE: (See Figures 1 and 2)

Voltage reading in Step 4a is + 1.5 volts.

Generator frequency on low side of 10.7 MC for a reading of + 1 volt DC = 10.640 MC.

Generator frequency on high side of 10.7 MC for a reading of + 1 volt DC = 10.800 MC.

Center frequency is obtained by adding 10.640 and 10.800, then dividing by 2. For these readings it will be 10.72 MC.

Set generator frequency to 10.72 MC as this is center of selectivity curve as shown in Figure 2.

Note: Numerical vernier dial readings may be used instead of MC.

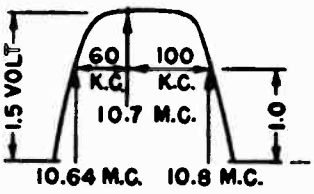


Fig. 1

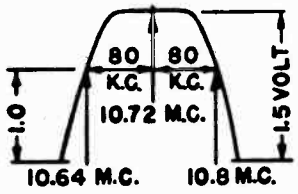


Fig. 2

TYPICAL SELECTIVITY CURVES

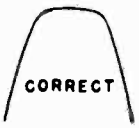


Fig. 3

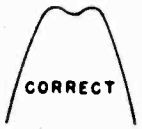


Fig. 4

Fig. 5

Fig. 6

FM RF ALIGNMENT PROCEDURE

	Connect Signal Generator	Generator Frequency	Receiver Dial Setting	Output Indicator and Connections	Adjust as Follows
6	Thru 270 ohm carbon resistor to high side FM antenna terminal	109 MC† (unmodulated).	Tuning gang wide open	Connect VTVM (DC probe) from point "W" to ground.	*G for maximum VTVM reading.
7		102 MC† (unmodulated).	102 MC	"	*Tune in generator signal on receiver. Adjust H for max. VTVM reading.

* It is advisable to adjust generator output so VTVM readings do not exceed approximately + 1.5 V. DC after peaking.
† If your signal generator does not reach this frequency, use harmonics as described in "FM Alignment Equipment."

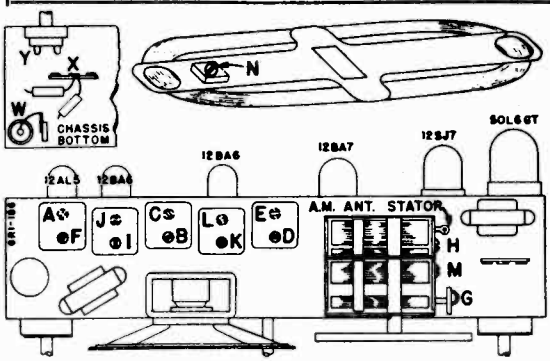
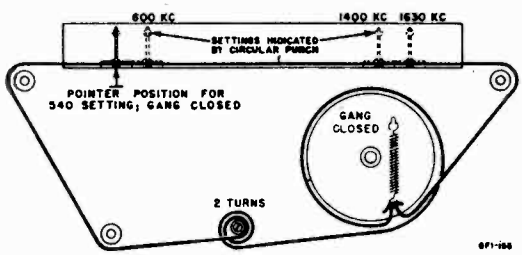


Fig. 7. Trimmer Location



With the gang fully closed, the tip of the pointer clip should be in line with the 1/16" circular punch at the extreme left end of the dial background.

Fig. 8. Dial Stringing and Pointer Setting

AM ALIGNMENT PROCEDURE

- Use regular output meter connected across speaker voice coil.
- Turn receiver Volume Control full on; Tone Control full treble.
- AM loop antenna must be connected and placed in the same relative position to the chassis as when in cabinet.
- Use lowest output setting of signal generator that gives a satisfactory reading on meter.

	Connect Signal Generator	Dummy Antenna Between Radio and Signal Generator	Signal Generator Frequency	Receiver Dial Setting	Adj. Trimmers in Following Order to Max.
	Set Band Switch to Broadcast Position (center) and be sure to follow instructions under heading "Important Preliminary Alignment Steps." Loop antenna must be connected.				
1	Gang condenser antenna stator	.1 MFD	455 KC	Tuning gang wide open	I, J, K, L
2	AM Antenna Stator	Direct connection	1620 KC	Tuning gang wide open	M
	Install chassis and AM loop in cabinet.				
3	Place generator lead close to loop of set to obtain adequate signal. No actual connection (signal by radiation).		1400 KC	Tune in signal	N

RESISTORS

Symbol	Description	Part No.
R1	470,000 Ohms, 1/4 Watt	60B 2-474
R2	1,000 Ohms, 1/4 Watt	60B 2-102
R3	22,000 Ohms, 1/4 Watt	60B 2-223
R4	470 Ohms, 1/4 Watt	60B 2-471
R5	470,000 Ohms, 1/4 Watt	60B 2-474
R6	1,000 Ohms, 1/4 Watt	60B 2-102
†R7	47,000 Ohms, 1/4 Watt	
R8	220,000 Ohms, 1/4 Watt	60B 2-224
R9	1,000 Ohms, 1/4 Watt	60B 2-102
R10	390 Ohms, 1/4 Watt	60B 2-391
R11	27,000 Ohms, 1/4 Watt	60B 2-273
R12	6,800 Ohms, 1/4 Watt, 5%	60B 1-682
R13	6,800 Ohms, 1/4 Watt, 5%	60B 1-682
R14	100,000 Ohms, 1/4 Watt	60B 2-104
R15	33 Ohms, 1 Watt	60B 14-330
R16	47 Ohms, 1 Watt	60B 14-470
R17	27,000 Ohms, 1/4 Watt	60B 2-273
R18	2 Megohms Tone Control and ON-OFF Switch SW2	75B 1-12
R19	1 Megohm Volume Control (Tapped at 500,000 Ohms)	75B 2-12
R20	4.7 Megohms, 1/4 Watt	60B 3-475
R21	1.8 Megohms, 1/4 Watt	60B 3-185
R22	470,000 Ohms, 1/4 Watt	60B 2-474
R23	47,000 Ohms, 1/4 Watt	60B 2-473
R24	470,000 Ohms, 1/4 Watt	60B 2-474
R25	150 Ohms, 1/2 Watt	60B 8-151
§R26	150,000 Ohms, 1/2 Watt	60B 2-154
R27	10 Ohms, 1/4 Watt (Added in later production to prevent parasitic oscillations.)	60B 2-100

CONDENSERS

Symbol	Description	Part No.
C1	200 mmfd., Ceramic	65B 9-15
§C2	.0015 mfd., Ceramic	65B 9-63
§C3	.005 mfd. min., Ceramic	65A 10-1
C4a	15 mmfd. (max.), FM RF	A1814 Gang
C4b	485.8 mmfd. (max.) AM RF	
C4c	15 mmfd. (max.) FM osc.	
C4d	142.6 mmfd. (max.) AM Osc.	
C5	.01 mfd., 400 Volts, Paper	64B 1-25
C6	3-12 mmfd. Trimmer (Silver mico)	66A 19-2
C7	50 mmfd., Ceromic	65B 6-4
C8	.005 mfd. min., Ceramic	65A 10-1
C9	35 mmfd., 10% Zero Temp. Coeff., Ceromic	65B 6-57
C10	.005 mfd. min., Ceramic	65A 10-1
C11	.005 mfd. min., Ceramic	65A 10-1
C12	.005 mfd. min., Ceramic	65A 10-1
C13	.005 mfd. min., Ceramic	65A 10-1
C14	.01 mfd. min., Ceramic	65A 10-3
§C15	.005 mfd. min., Ceramic	65A 10-1
†C16	100 mmfd., Mica	
†C17	100 mmfd., Mica	
C18a	.004 mfd. min. } Dual Ceramic	65A 17-1
C18b	.004 mfd. min. }	
C19	100 mmfd. 5%,—.00075 Temp. Coeff., Ceramic	65B 6-7
C20	100 mmfd. 5%,—.00075 Temp. Coeff., Ceramic	65B 6-7
C21	4 mfd., 50 Volts, Elect	67A 4-8
C22	.002 mfd., 600 Volts, Paper	64B 1-14
C23	.001 mfd., Ceramic	65B 9-31
C24	500 mmfd., Ceramic (Used in early production only; removed to prevent detuning on FM.)	65B 9-24
C25	.005 mfd., 600 Volts, Paper	64B 1-12
C26	.002 mfd.,600 Volts, Paper	64B 1-14
C27	.01 mfd., 400 Volts, Paper	64B 1-25
C28	50 mmfd., Ceromic	65B 6-4
C29	.1 mfd., 200 Volts, Paper	64B 1-30
C30	.1 mfd., 200 Volts, Paper	64B 1-30
C31	.01 mfd., 400 Volts, Paper	64B 1-25
C32	.01 mfd., 400 Volts, Paper	64B 1-25
C33	.0015 mfd. min., Ceramic	65A 14-2
C34	.0015 mfd. min., Ceramic	65A 14-2
C35	.01 mfd., 400 Volts, Paper	64B 1-25
C36	.18 mfd., 200 Volts, Paper	64A 2-2
C37	.05 mfd., 200 Volts, Paper	64B 1-32
C38a	70 mfd., 150 Volts } Elect.	67C 6-40
C38b	30 mfd., 150 Volts }	
§C39	.1 mfd., 200 Volts, Paper	64B 1-30
§C40	.01 mfd. min., Ceramic	65A 10-3
C41	.0015 mfd. min., Ceramic (Used only in sets with model numbers ending in "N".)	65A 14-2

COILS, TRANSFORMERS, ETC.

Symbol	Description	Part No.
L1	Antenna, Loop (AM)	69B 73
L2	Coil, RF (FM)	69A 68
L3	Coil, Oscillator (FM)	69A 69
L4	Coil, Oscillator (AM)	69A 20-3
L5	Choke, Cathode RF	AA139-5
L6	Choke, Heater RF	73A 2-3
L7	Choke, Heater RF	73A 2-3
L8	Choke, Filter	74A 15-2
§L9	Coil, IF Trap Approx. 5 turns (18") of solid No. 22 hook-up wire wound on C39. Solder one end to inside foil lead of C39.	
L10	Antenna, Built in FM	AB155
T1	Transformer, 1st IF (FM)	72B 64
T2	Transformer, 2nd IF (FM)	72B 65
T3	Transformer, Ratio Detector	72B 39
T4	Transformer, 1st IF (AM)	72B 66
T5	Transformer, 2nd IF (AM)	72B 66
T6	Transformer, Output	79A 14-2
M1	Speaker 5" P.M. Dynamic	78B 39-1
M2	Socket and Leads, Phono-Motor	89A 6-1
M8	Socket, Phono input	88A 8-6
M9	Rectifier, Selenium	93A 1-2
SW1	Switch, On-Off	Part of R18
SW2	Switch, Band (FM, AM, Phono)	77B 22

† Part of encased Diode Filter Unit 63A3-1. This unit consists of R7, C16, C17 (see schematic). If a section of the unit becomes defective, it may be replaced with a component of proper value.

§ Used only in sets with model numbers ending in "UL".

PHONOGRAPH PARTS

Note—See Record Changer Manual for complete parts list.

M3	Plug, AC Phono-Motor	88B 8-1
M4	Motor, 60 Cycles 115 Volts AC	407B 3-2
M5	Cartridge and Needle, Pickup	A1372-13
M6	Cable, Pickup (3 conductor)	89A 18-4
M7	Plug, Pickup Cable	88A 8-5
SW3	Switch, Motor On-Off (See caution in changer manual)	408A 1
	Centerpost (includes speed-nut)	G400B 137-1
	Idler Wheel (407B 3-2 Motor)	G400A 23
	Idler Wheel (407B 1-2 Motor)	G400A 57

CABINET PARTS

Bracket, Dial Scale Mtg.	15A 169
Cabinet, Plastic	
Bottom Less Lid	34D 11-12
Lid only	34D 11-13
Dial Scale, Glass	21B 51
Escutcheon Overlay	23C 23-2
Grille Cloth and Baffle	A1688
Hinge	37A 8-1
Knobs, Radio	
"Volume" and "Tone"	33A 21-5
"Tuning"	33B 34-2
"Radio-Phono"	33B 34-1
Rubber Strip, Dial Scale Mtg. (8 1/2")	12A 9-3
Spring Clip, FM Antenna Mtg.	19A 44
Stay Arm, Lid	37A 9-1

MISCELLANEOUS

Background, Dial	22B 9-2
Bracket, Tuning Sleeve	15A 289
Bracket, Dial Light	15A 369
Carton and Fillers	44B 112
Dial Cord	50A 1-3
Pilot Light, Mazda No. 10C7	81A 2-2
Pilot Light, Socket and Leads	82A 9-1
Pointer, Dial	25A 21-1
Sleeve, Tuning (Brass)	27A 61
Spring, Dial Drum Tension	19B 1-3
Washer, Felt ("Volume" and "Tone")	5A 4-8
Washer, Felt (Center Knob)	5A 4-9

FM SERVICE

Much of FM service is similar to the usual service necessary for AM receivers such as voltage analysis, parts replacement, etc. The chief differences arise because of the considerably higher frequencies used in FM operation, and because of the different type of second detector needed in FM.

Before attempting to service the 6R1 chassis, read the description of the Ratio Detector on page 2 of the 9A1 service manual.

The higher frequencies involved means that more care must be exercised in location and length of leads. Leads tend to act as small inductances or capacities at high frequency and hence may appreciably alter the electrical characteristics of a circuit. For this reason, ground connections should always be maintained as originally made in the set. Also note that in certain circuits, the type by-pass condenser used is critical at the high FM frequencies. When replacing condensers it is important that they be replaced with condensers of identical capacity values, tolerances, temperature coefficients and construction. For example: C19 is a 100 mmfd ± 5%, — .00075 temperature coefficient, ceramic capacitor. If defective it should be replaced with a 100 mmfd ± 5%, — .00075 temperature coefficient, ceramic capacitor.

CAUTION

Do not connect a ground wire to the 6R1 radio chassis.

FM ALIGNMENT EQUIPMENT

The model 6R1 chassis should be aligned only with an AM signal generator and a vacuum tube voltmeter. Any standard brand vacuum tube voltmeter with a DC scale of not over 5 volts is suitable. A 3-volt zero center scale is desirable. A signal generator with a frequency range up to 110 MC. is desirable. It is possible however, to align the receiver with a signal generator going to 20 or 30 megacycles, by using the harmonics of these lower frequencies. To do this merely set the signal generator dial as follows and align exactly as explained in the alignment instructions.

Where alignment chart specifies 109 MC., set signal generator to highest available frequency of the following:

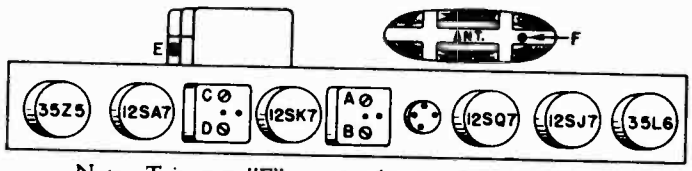
109. MC	27.25 MC
54.50 MC	21.80 MC
36.33 MC	18.17 MC

Where alignment chart specifies 102 MC., set signal generator to highest available frequency of the following:

102. MC	25.50 MC
51. MC	20.40 MC
34. MC	17. MC

Signal generators which do not tune to 110 MC or whose harmonics are not strong enough, cannot be used for FM alignment.

TUBE and TRIMMER LOCATION



Note: Trimmer "F" not used in early production.

TOP VIEW

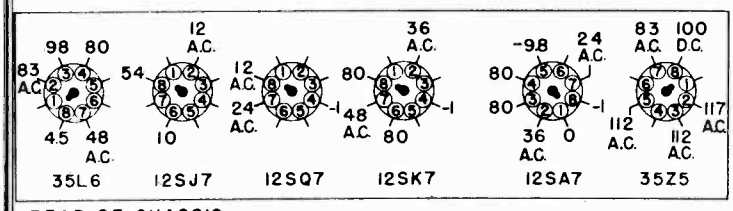
ALIGNMENT PROCEDURE

- Check pointer position. With tuning gang closed, the left edge of the pointer clip should be over the $\frac{1}{16}$" hole at the extreme left end of the dial background (see stringing diagram).
- Connect Output Meter across Voice Coil.
- Turn Receiver Volume Control—full on.
- Use lowest Output setting of Signal Generator capable of producing adequate Output Meter indication and then proceed in the following sequence.
- Repeat adjustments to insure good results.

Connect Signal Generator to—	Dummy Antenna Between Radio and Generator	Set Generator Frequency to—	Set Receiver Dial Frequency to—	Adjust Following Trimmers	Type of Adjustment
Tuning Condenser Antenna Stator	250 mmfd. Condenser	455 K.C.	High frequency end of Dial	A-B—2nd I. F. C-D—1st I. F.	Adjust to maximum Output
Tuning Condenser Antenna Stator	250 mmfd. Condenser	1630 K.C.	High frequency end of Dial	E—Osc.	Adjust to maximum Output
Loop radiator (or place lead from generator close to loop of set to obtain adequate signal)	No actual connection between set and generator.	1400 K.C.	Tune in generator signal	F—Ant. (See Note)	Adjust to maximum Output

Note: Antenna Trimmer "F" must be aligned after chassis and loop are mounted in cabinet. Trimmer "F" was not used in early production.

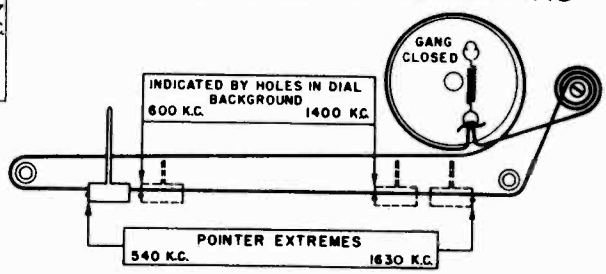
VOLTAGE DATA



REAR OF CHASSIS

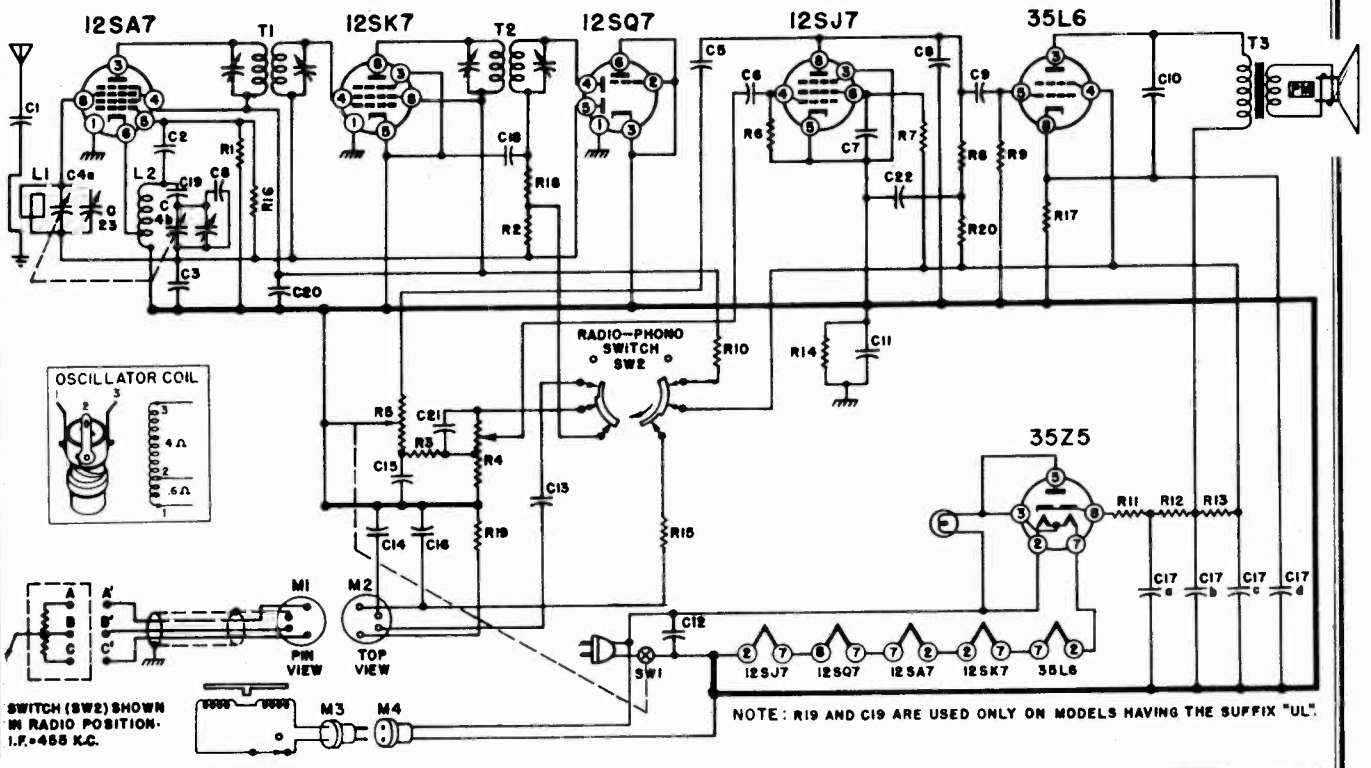
- All readings made between Tube Terminals and B minus (lug on SW1).
- Measured on 117 Volt A.C. line.
- Dial turned to low frequency end, no signal.
- Voltage obtained on Vacuum Tube Voltmeter.
- Switch SW2 in "Radio" position.

DIAL STRINGING and POINTER SETTING



ADMIRAL CORPORATION

MODELS 7C60,7C60UL
Chassis 6B1,Early,
Late



REPLACEMENT PARTS

RESISTORS

Symbol		Part No.
R1	22,000 Ohms, ½ Watt	60B 8-223
R2	1 Megohm, ½ Watt	60B 8-105
R3	27,000 Ohms, ½ Watt	60B 8-273
R4	1 Megohm Volume Control (Tapped at 500,000 ohms)	75B 2-6
R5	2 Megohm Tone Control and Switch SW1	75B 1-12
R6	4.7 Megohms, ½ Watt	60B 8-475
R7	1.8 Megohms, ½ Watt	60B 8-185
R8	100,000 Ohms, ½ Watt	60B 8-104
R9	470,000 Ohms, ½ Watt	60B 8-474
R10	100 Ohms, ½ Watt	60B 8-101
R11	33 Ohms, 1 Watt	60B 28-3
R12	220 Ohms, 1 Watt	60B 28-7
R13	1,000 Ohms, 1 Watt	60B 28-2
R14	150,000 Ohms, ½ Watt	60B 8-154
R15	22,000 Ohms, ½ Watt	60B 8-223
R16	10 Megohms, ½ Watt	60B 8-106
R17	150 Ohms, 1 Watt	60B 14-151
R18	100,000 Ohms, ½ Watt	60B 8-104
R19	33,000 Ohms, ½ Watt (Used only on "UL" models)	60B 8-333
R20	47,000 Ohms, ½ Watt	60B 8-473

CONDENSERS

Symbol		Part No.
C1	.005 mfd., 600 Volts, Paper (Used only in early production)	64B 1-12
C2	50 mmfd. ±20%, Ceramic	65B 6-4
C3	.1 mfd., 200 Volts, Paper	64B 1-30
C4a, C4b	Gang, 0 to 420 mmfd. / Gang, 0 to 162 mmfd. (Spotwelded to drum)	A1341
C5	.002 mfd., 600 Volts, Paper	64B 1-14
C6	.01 mfd., 400 Volts, Paper	64B 1-25
C7	.05 mfd., 400 Volts, Paper	64B 1-22
C8	15 mmfd. ±20%, Ceramic	65B 6-18
C9	.01 mfd., 400 Volts, Paper	64B 1-25
C10	.03 mfd., 400 Volts, Paper	64B 1-23
C11	.18 mfd., 200 Volts, Paper	64A 2-2
C12	.05 mfd., 400 Volts, Paper	64B 1-22
C13	.001 mfd., 600 Volts, Paper	64B 1-15
C14	.05 mfd., 400 Volts, Paper	64B 1-22
C15	.01 mfd., 400 Volts, Paper	64B 1-25
C16	.1 mfd., 200 Volts, Paper	64B 1-30
C17a	30 mfd., 150 Volts	Elect. 67A 14-1
C17b	30 mfd., 150 Volts	
C17c	20 mfd., 150 Volts	
C17d	20 mfd., 25 Volts	
C18	250 mmfd. ±20%, Ceramic	65B 6-5
C19	.02 mfd., 400 Volts, Paper (Used only on "UL" models)	64B 1-24
C20	.05 mfd., 400 Volts, Paper	64B 1-22
C21	500 mmfd. ±20%, Ceramic	65B 6-6
C22	.1 mfd., 200 Volts, Paper	64B 1-30
C23	3-30 mmfd., Trimmer (Used only in later production)	Part of L1

COILS, TRANSFORMERS, Etc.

		Part No.
L1	Antenna, Loop	69B 13
L2	Coil, Oscillator	69A 14
T1	Transformer, 1st I.F.	72B 3
T2	Transformer, 2nd I.F.	72B 4
T3	Transformer, Output	98A 33-10
	Speaker (6") & Output Transformer	78B 31-2
SW1	Switch, On-Off	Part of R5
SW2	Switch, Radio-Phono	77A 16-1

CABINET PARTS

Description	Part No.
Arm, Cabinet Lid Stay	
for 7C60W, 7C60M	98A 33-6
for 7C60B	98A 33-8
*Cabinet	
Walnut (7C60W)	35E 69-1
Mahogany (7C60M)	35E 69-2
Blond (7C60B)	35E 69-3
Dial Escutcheon, Plastic	23A 9-2
Dial Scale, Glass	21B 48-1

CABINET PARTS

Description	Part No.
Grille Cloth	
for 7C60W	98A 33-11
for 7C60M	98A 33-12
for 7C60B	98A 33-13
Grille, Metal (for 7C60M, 7C60B)	98A 33-4
Hinge, Cabinet Lid	
for 7C60W, 7C60M	98A 33-5
for 7C60B	98A 33-9
Knob	33A 19-6
Lid, Cabinet	
for 7C60W	98A 33-1
for 7C60M	98A 33-2
for 7C60B	98A 33-3
Washer, Felt (under knobs)	5A 4-4

PHONOGRAPH PARTS

Note: See record changer manual for complete parts list.

		Part No.
M1	Plug, Pickup	88A 8-5
M2	Socket, Phono	88A 8-6
M3	Plug, Motor	88A 8-1
M4	Phono-Motor Socket & Leads (Female connector)	89A 6-3
	Cartridge and Needle, Pickup	A 1372
	Centerpost	G4008137-1
	Drive Disc Assembly	G 400A 179
	Idler Wheel (407B3 Motor)	G 400A 23
	Idler Wheel (407B1 Motor)	G 400A 57
	Motor, 60 Cycle 115 Volt A.C.	407B 3-2
	Pickup Cable and Plug	A 1322

MISCELLANEOUS

	Part No.
Background, Dial	22B 16
Cord, Dial (44")	50A 1-3
Grommet, Rubber	12A 1-2
Pilot Light Socket and Leads	82A 2-4
Pointer	25A 27
Pulley (Fibre) and Bracket Assembly	A 1014
Shaft, Tuning	28A 11-4
Spring, Dial Drum Cord Tension	19B 1-3

*** Supplied only if old cabinet cannot be repaired. When ordering, describe condition of old cabinet in detail.**

F.M. ALIGNMENT

The model 8B1 chassis should be aligned only with an AM signal generator and a vacuum tube voltmeter. Any standard brand vacuum tube voltmeter with a DC scale of not over 5 volts is suitable. A 3-volt zero center scale is desirable. A signal generator with a frequency range up to 110 MC. is desirable. It is possible however, to align the receiver with a signal generator going to 20 or 30 megacycles, by using the harmonics of these lower frequencies. To do this merely set the signal generator dial as follows and align exactly as explained in the alignment instructions.

Where alignment chart specifies 109 *MC.*, set signal generator to highest available frequency of the following:

109. MC	27.25 MC
54.50 MC	21.80 MC
36.33 MC	18.17 MC

Where alignment chart specifies 104 *MC.*, set signal generator to highest available frequency of the following:

104. MC	26.00 MC
52.00 MC	20.80 MC
34.67 MC	17.33 MC

Signal generators which do not tune to 110 MC or whose harmonics are not strong enough, cannot be used for FM alignment.

In FM alignment, it is essential that every step be followed. Especially important is picking the center of the I.F. curve (step 4 in the FM-IF alignment instructions). During this portion of the alignment it is necessary to tune the signal generator very carefully; it may necessitate having to estimate the dial readings to a tenth of a division.

TRIMMER IDENTIFICATION CHART

Trimmer Symbol		Function
A	T3	Discriminator transformer
B	T2	2nd IF transformer (FM)
C	T2	2nd IF transformer (FM)
D	T1	1st IF transformer (FM)
E	T1	1st IF transformer (FM)
F	T3	Discriminator transformer
G	L6	FM oscillator coil
H	L5	FM RF coil
I	L3	FM antenna coil
J	T5	2nd IF transformer (AM)
K	T5	2nd IF transformer (AM)
L	T4	1st IF transformer (AM)
M	T4	1st IF transformer (AM)
N	C2b	AM oscillator trimmer
O	L4	AM RF coil
P	C2a	AM antenna trimmer

POINTER SETTING

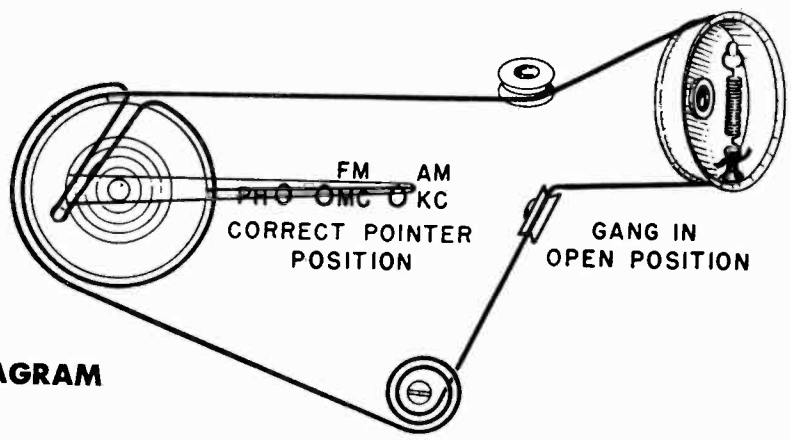
With the gang open, the pointer should be at the position as shown in the stringing diagram, that is, the tip of the pointer should point to the space between the "AM KC" lettering on the dial scale. If the pointer is in a different position, move it by hand while keeping the gang open.

REPLACING TUNING SLUGS

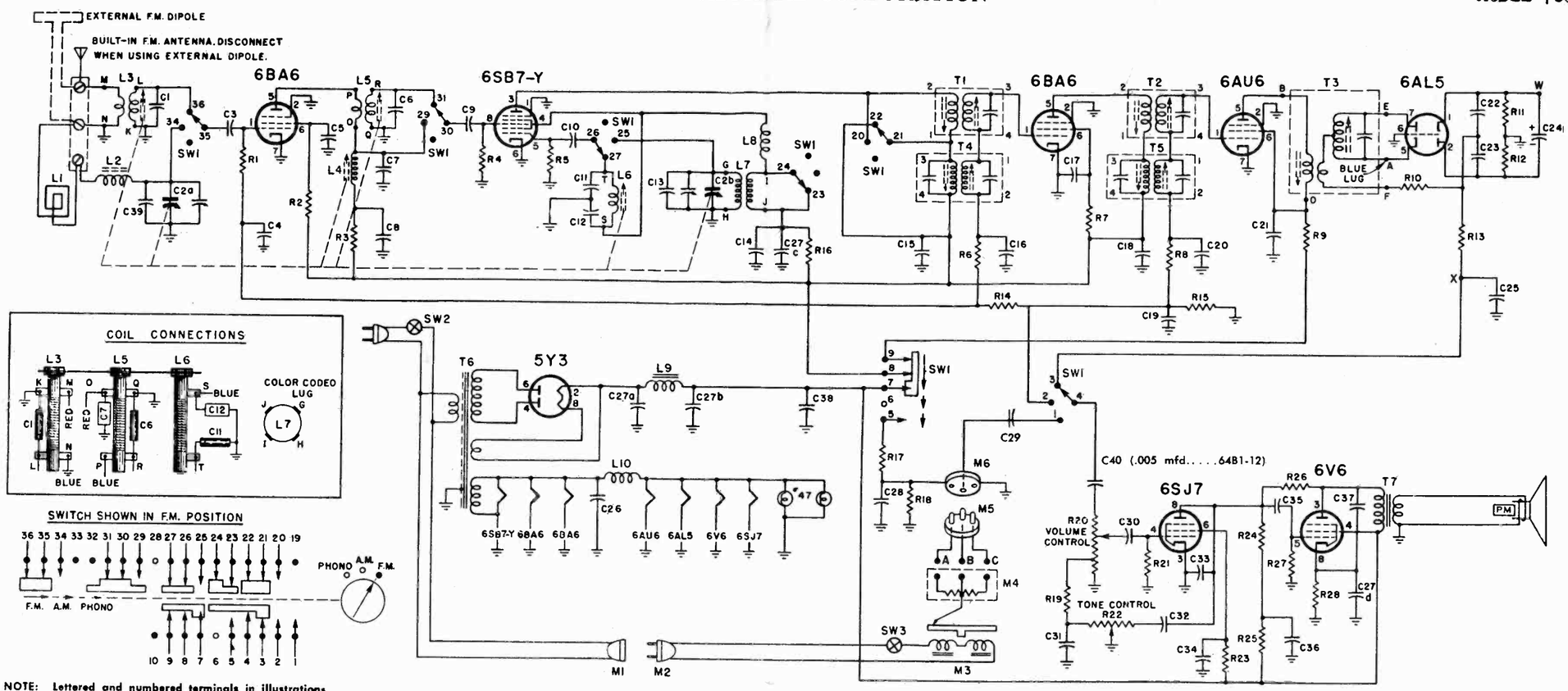
With the gang wide open, all three FM tuning slugs should be ⅜ inch out of their coil forms. The AM-RF tuning slug (adjustment "0" in the trimmer location diagram) should be 1 inch out of its coil form.

If it becomes necessary to change a tuning slug, proceed as follows: Set the gang to its wide open position. Unsolder and remove the old slug. Set the slug adjusting screw about half way down. Place the new slug in its correct position. Solder in place making sure that it does not slip during the operation and that the slug wire is straight.

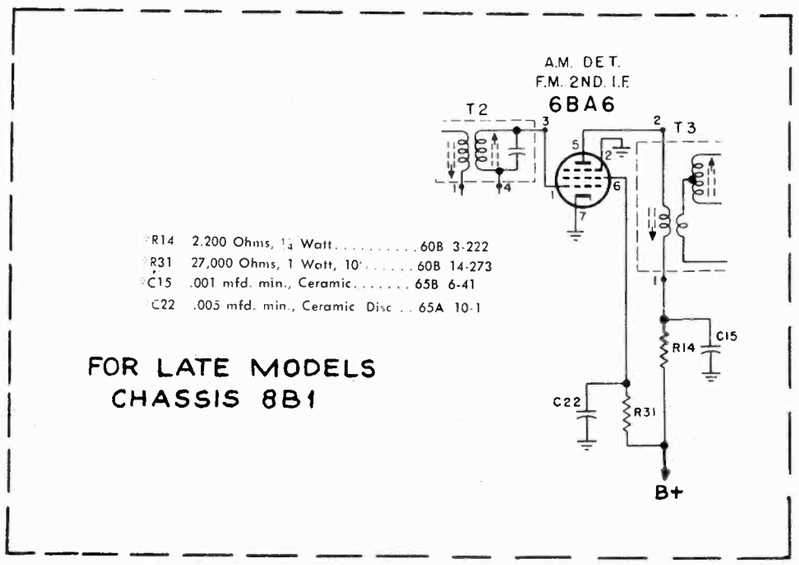
Realignment is necessary after slug replacement.



STRINGING DIAGRAM



NOTE: Lettered and numbered terminals in illustrations correspond to identical designations in the schematic.



CIRCUIT DESCRIPTION

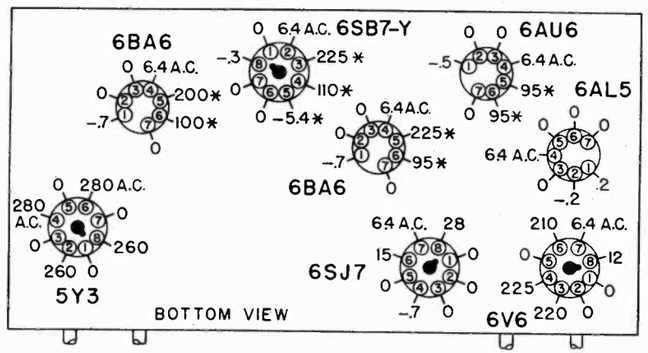
FM Second IF Amplifier, AM Second Detector

A 6AU6 tube is used as a second IF amplifier for FM operation. Self-bias is developed in the grid resistor (R15 and R8 in series) of this stage. Since this DC bias voltage is dependent on signal strength, it is used for AVC purposes.

In the AM setting of the band switch, plate and screen voltages are removed from this tube. The grid and cathode of this tube then function as an AM second detector (diode) and AVC tube in a conventional manner.

VOLTAGE CHART

- Measured on 117 Volt A.C. line.
- Volume control turned low.
- No station tuned in. Dial turned to low frequency end.
- Voltages measured between point indicated and chassis.
- Voltages measured with a vacuum-tube voltmeter. Many readings will be lower if measured with a 1000 ohm-per-volt meter.
- Readings with bandswitch in F.M. position.



*If voltages are measured with band switch in phono position, reading will be zero or practically zero.

IMPORTANT PRELIMINARY ALIGNMENT STEPS

- With the gang open, the pointer should be at the position as shown in the stringing diagram, that is, the tip of the pointer should point to the space between the "AM KC" lettering on the dial scale. If the pointer is in a different position, move it by hand while keeping the gang open.
- Check the set screws that hold the tuning drum to the shaft to see that they are tight and that the drum has not slipped on the shaft. The correct position of the drum can be seen on the stringing diagram.
- With the gang wide open, all FM tuning slugs should be ⅜ inch out of their coil forms. The AM-RF tuning slug (adjustment "O" in the trimmer location diagram) should be 1 inch out of its coil form. If there is any serious deviation, or if there has been any tampering, turn the adjusting screw until this distance is corrected. (See paragraph on tuning slug replacement.)

FM IF AND RATIO DETECTOR ALIGNMENT

- Solder output indicator leads in place and keep them well separated from signal generator leads and chassis wiring.
- Band switch in FM position (red signal at MC on dial).
- While peaking IF's, keep reducing signal generator output so VTVM reading is approximately +1.5 volts DC with exception of Step #5.
- Speaker must be connected during alignment.

I.F. SLUG INFORMATION

To avoid splitting the slotted head of the powdered iron core tuning slug in the I. F. transformers, use a screw-driver with a blade ⅛" wide for I.F. alignment.

Under normal operating conditions, mis-alignment of slug-tuned circuits with age is slight. Therefore, realignment of the I.F. transformers should be accomplished by only a slight adjustment of the slugs.

Due to the probability of breaking off the wire leads on the coils, slug replacement in the AM-IF transformers is not recommended. Replace entire IF transformer.

The slug-tuning cores in the FM-IF transformers can be replaced. Remove the transformer from the chassis and the unit from its case. The top slug can then be removed from the coil form. The top slug must first be removed in order to remove the bottom slug. The bottom slug will then pass through the length of the coil form and out the top. (The slug will not pass through the bottom end of the coil form).

For slug replacement in the ratio detector transformer, see the I.F. slug information on page 9 of the 9A1 service manual.

Before proceeding, be sure to follow all steps listed above, under "Important Preliminary Alignment Steps."
Steps 1 and 2 may be omitted if set is not badly out of alignment so signal comes through in Step 3

	Connect Signal Generator	Generator Frequency	Receiver Dial Setting	Output Indicator and Special Connections	Adjust as Follows (very carefully)
1	Thru .01 cond. to 2nd IF grid (Pin #1 of 6AU6 2nd IF)	10.7 MC unmodulated.	Tuning gang wide open	Connect 3300 ohm carbon resistors across secondaries of both FM-IF transformers. Connect VTVM (DC probe) from point "W" to ground. (See Fig. 7.)	"A" (ratio detector primary) for maximum reading on VTVM.
2	Thru .01 cond. to 1st IF grid (Pin #1 of 6BA6 1st IF)	"	"	" "	Iron cores "B" and "C" (2nd IF trans.) for maximum reading on VTVM.
3	To pin # 1 of 6BA6 R.F. amplifier**	"	"	" " If not enough IF signal comes thru during this step, ground pin #5 on the 6SB7-Y. Leave generator set at 10.7 MC until step 4c.	Iron cores "D" and "E" for maximum on VTVM. Readjust A, B, C, D, E, for maximum. (Keep reducing generator output to keep VTVM at 1.5 volts).
4	"	a. Remove 3300 ohm resistors from IF transformers. b. Reduce output of signal generator until VTVM reads exactly +1.5 volts DC. c. Tune generator frequency above 10.7 MC until VTVM reads exactly +1.0 volt. Note exact generator frequency. Extreme care in reading this is essential. d. Tune generator frequency below 10.7 MC until VTVM reads exactly +1.0 volt. Note exact generator frequency. Extreme care in reading this is essential. e. Add generator frequency in step c to generator frequency in step d and divide by 2. The result is the center frequency of the IF curve to be used in step 5. See example on next page. f. Tune generator frequency above and below 10.7 MC and note voltage reading on VTVM at different frequency points until you have a good impression of the shape of the selectivity curve. If you have two peaks as in Figures 5 or 6, note readings (voltage) of both peaks. If one peak is over 20% higher than the other one, it will be necessary to realign IF's. A selectivity curve that would require realignment is illustrated by Figure 6.			
5	"	Center of IF selectivity curve per step 4e above. See "EXAMPLE" on next page.	Set pointer to upper limit on dial.	Connect VTVM (DC probe) from point "X" to ground. (See Fig. 7).	Iron core "F" (ratio detector secondary) for zero voltage reading on VTVM. (The correct zero point is located between a positive and a negative maximum.)

If any adjustments were very far off, it is desirable to repeat steps 3, 4 and 5.
**Do not feed I.F. signal into converter grid as this will cause mis-alignment.

SETTING SIGNAL GENERATOR TO CENTER OF IF SELECTIVITY CURVE

CAUTION: Due to the difficulty of setting a signal generator to the accuracy required by this operation, extreme care must be exercised in making each setting. Otherwise, improper alignment of the ratio detector and consequent audio distortion will result.

EXAMPLE: (See Figures 1 and 2.)

Voltage reading in Step 4b is + 1.5 volts.

Generator frequency on low side of 10.7 MC for a reading of + 1 volt DC = 10.640 MC.

Generator frequency on high side of 10.7 MC for a reading of + 1 volt DC = 10.800 MC.

Center frequency is obtained by adding 10.640 and 10.800, then dividing by 2. For these readings it will be 10.72 MC.

Set generator frequency to 10.72 MC as this is center of selectivity curve as shown in Figure 2.

Note: Numerical verner dial readings may be used instead of MC.

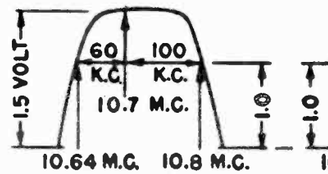


FIGURE 1.

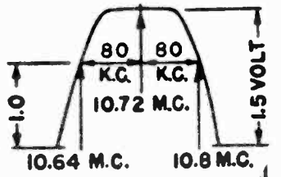


FIGURE 2.

TYPICAL SELECTIVITY CURVES

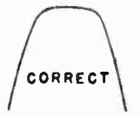


FIGURE 3.

FIGURE 4.

FIGURE 5.

FIGURE 6.

TRIMMER LOCATION

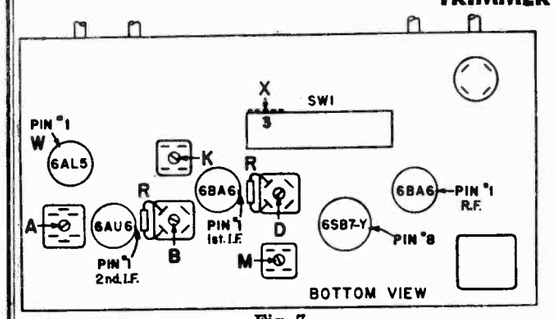


Fig. 7

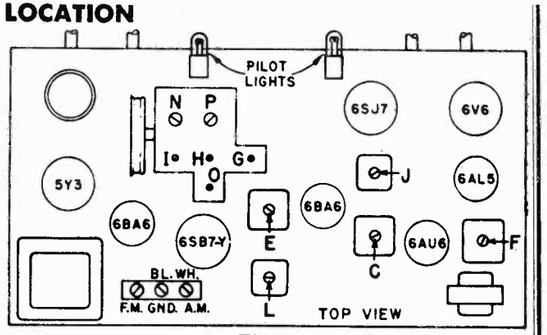


Fig. 8

FM RF ALIGNMENT PROCEDURE

	Connect Signal Generator	Generator Frequency	Receiver Dial Setting	Output Indicator and Connections	Adjust as Follows
6	Thru 250 ohms to FM ant. terminal.	109 MC† (unmodulated).	Tuning gang wide open	Connect VTVM (DC probe) from point "W" to ground.	*G for maximum VTVM reading.
7	"	104 MC† (unmodulated).	104 MC	"	*Tune in generator signal on receiver. Adjust H and I for max. VTVM reading.

* It is advisable to adjust generator output so VTVM readings do not exceed approximately + 1.5 V. DC after peaking.
† If your signal generator does not reach this frequency, use harmonics as described in "FM Alignment"

AM ALIGNMENT PROCEDURE

- Use regular output meter connected across voice coil.
- Be sure both the set and the signal generator are thoroughly warmed up before starting alignment.
- Turn receiver Volume Control full on.
- Use lowest output setting of signal generator that gives a satisfactory reading on meter.

	Connect Signal Generator	Dummy Antenna Between Radio and Signal Generator	Signal Generator Frequency	Receiver Dial Setting	Adj. Trimmers in Following Order to Max.
Set Band Switch to Broadcast Position (center) and be sure to follow instructions under heading "Important Preliminary Alignment Steps." Loop antenna can be disconnected from chassis in Steps 1, 2 and 3.					
1	6SB7-Y (Pin #8)	.1 MFD	455 KC	Tuning gang wide open	J, K, L, M
2	To loop ant. terminal	Direct connection	1620 KC	Tuning gang wide open	N
3	To loop ant. terminal	Direct connection	1400 KC	Tune in signal	O
Set Receiver Chassis on table next to back of cabinet. Connect Loop Antenna to Receiver.					
4	To loop ant. terminal	10 MMFD (Or wrap several turns of generator lead around white loop lead.)	1400 KC	Tune in signal	P

RESISTORS

Symbol	Description	Part No.
R1	470,000 Ohms, ¼ Watt	60B 3-474
R2	27,000 Ohms, 1 Watt	60B 14-273
R3	2,200 Ohms, ¼ Watt	60B 3-222
R4	56,000 Ohms, ¼ Watt	60B 2-563
R5	22,000 Ohms, ¼ Watt	60B 3-223
R6	470,000 Ohms, ¼ Watt	60B 3-474
R7	27,000 Ohms, 1 Watt	60B 14-273
R8	47,000 Ohms, ¼ Watt	60B 3-473
R9	15,000 Ohms, 2 Watt	60B 21-153
R10	390 Ohms, ¼ Watt	60B 2-391
R11	6,800 Ohms, 5%, ¼ Watt	60B 1-682
R12	6,800 Ohms, 5%, ¼ Watt	60B 1-682
R13	27,000 Ohms, ¼ Watt	60B 3-273
R14	470,000 Ohms, ¼ Watt	60B 3-474
R15	220,000 Ohms, ¼ Watt	60B 3-224
R16	15,000 Ohms, 2 Watt	60B 21-153
R17	120,000 Ohms, ¼ Watt	60B 2-124
R18	100,000 Ohms, ¼ Watt	60B 2-104
R19	47,000 Ohms, ¼ Watt	60B 3-473
R20	2 Megohms Volume Control (Tapped at 1 Megohm. Includes Switch SW2)	75B 2-8
R21	4.7 Megohms, ¼ Watt	60B 3-475
R22	2 Megohms Tone Control	75B 1-20
R23	2.2 Megohms, ¼ Watt	60B 3-225
R24	470,000, ¼ Watt	60B 3-474
R25	47,000, ¼ Watt	60B 3-473
R26	3.3 Megohms, ¼ Watt	60B 3-335
R27	470,000 Ohms, ¼ Watt	60B 3-474
R28	390 Ohms, 1 Watt	60B 14-391

*TRANSFORMERS, COILS, ETC.

Symbol	Description	Part No.
T1	Transformer, 1st I.F. (F.M.)	72B 37
T2	Transformer, 2nd I. F. (F.M.)	72B 38
	Slug, (used in T1 and T2)	98A 31-19
T3	Transformer, Discriminator	72B 27
	Slug, (used in T3)	71C 1-22
T4	Transformer, 1st I.F. (A.M.)	72B 28-12
T5	Transformer, 2nd I.F. (A.M.)	72B 28-12
T6	Transformer, Power	80B 5
T7	Transformer, Output	79A 5
	Speaker 10" P.M. Dynamic	78B 28
L1	Loop Antenna (A.M. 11")	95A 18-2
L2	Coil, Loop Loading (A.M.)	69A 25
L3	Coil, Antenna (F.M.)	69A 23
L4	Coil, R.F. (A.M.)	A 1475
	Slug (used in L4)	71C 1-2
L5	Coil, R.F. (F.M.)	69A 21
L6	Coil, Oscillator (F.M.)	69A 22
	Slug (used in L3, L5, L6)	71C 1-25
L7	Coil, Oscillator (A.M.)	69A 24
L8	Choke, Oscillator (F.M.)	73A 1
L9	Choke, Filter	74A 10
L10	Choke, R.F. (Approx. 10 turns of solid #22 hook-up wire wound on C26)	
SW1	Switch, Band (FM, AM, Phono)	77B 14
SW2	Switch, Power	(Part of R20)
SW3	Switch, Phono Motor (Part of record changer assembly)	G400A 162

CONDENSERS

Symbol	Description	Part No.
C1	30 mmfd., ±2%, Zero Temp. Coeff. Silver Ceramic	65B 6-31
C2a	440 mmfd. (max.) Antenna Section	Cond. Gang 68B 8
C2b	160 mmfd. (max.) Osc. Section	
C3	50 mmfd., Ceramic	65B 6-4
C4	.05 mfd., 200 Volts, Paper	64B 1-32
C5	.01 mfd. Ceramic (Disc)	65A 10-1
C6	22 mmfd., ±2%., Zero Temp. Coeff. Silver Ceramic	65B 6-30
C7	955 mmfd., ±3%, Mica	65B 1-51
C8	.1 mfd., 400 Volts, Paper	64B 1 20
C9	50 mmfd., Ceramic	65B 6-4
C10	50 mmfd., Ceramic	65B 6-4
C11	45 mmfd., ±2%, —.00015 temp. Coeff. Silver Ceramic	65B 6-32
C12	180 mmfd., ±3%, Mica	65B 1-29
C13	10 mmfd., Ceramic	65B 6-24
C14	.01 mfd. Ceramic (Disc)	65A 10-1
C15	.01 mfd. Ceramic (Disc)	65A 10-1
C16	.01 mfd., 400 Volts, Paper	64B 1-25
C17	.01 mfd. Ceramic (Disc)	65A 10-1
C18	.01 mfd. Ceramic (Disc)	65A 10-1
C19	.0001 md., Ceramic	65B 6-3
C20	.0001 mfd., Ceramic	65B 6-3
C21	.01 mfd. Ceramic (Disc)	65A 10-1
C22	.0001 mfd., 5%, Ceramic	65B 6-7
C23	.0001 mfd., 5% Ceramic	65B 6-7
C24	4 mfd., 150 volts, Electrolytic	67A 4-2
C25	.002 mfd., 600 Volts, Paper	64B 1-14
C26	.01 mfd., 400 Volts, Paper	64B 1-25
C27a	30 mfd., 350 Volts	Elect. 67C 7-10
C27b	30 mfd., 350 Volts	
C27c	10 mfd., 350 Volts	
C27d	20 mfd., 25 Volts	
C28	.2 mfd., 200 Volts, Paper	64B 1-29
C29	.001 mfd., 600 Volts, Paper	64B 1-15
C30	.005 mfd., 600 Volts, Paper	64B 1-12
C31	.01 mfd., 400 Volts, Paper	64B 1-25
C32	.01 mfd., 400 Volts, Paper	64B 1-25
C33	.50 mmfd., Cermic	65B 6-4
C34	.05 mfd., 400 Volts, Paper	64B 1-22
C35	.005 mfd., 600 Volts, Paper	64B 1-12
C36	.1 mfd., 400 Volts, Paper	64B 1-20
C37	.01 mfd., 600 Volts, Paper	64B 1-10
C38	.05 mfd., 400 Volts, Paper	64 B 1-22
C39	15 mmfd., Ceramic	65B 6-18

TUNER PARTS

Description	Part No.
Ball Bearing (2 used with top plate)	30A 1-1
Drum and Cam Assembly	A1502
Grommet, Osc. Coil (L6) Mounting	12A 1-15
Grommet, R.F. & Antenna Coil (L3 and L5) Mounting	12A 1-14
Grommet, R.F. Cail (L4) Mounting	12A 1-12
Insulator, Mounting Plate (for AM-RF coil slug adiusting Screw)	32A 50
Insulator, Mounting Plate (for FM coils)	32A 52
Insulator, Mounting Plate (for FM slug adjusting screws)	32A 51
Screw, Slug Adjusting	27A 4
Slug Drive (top plate) Assembly	A1503
Spring, Slug Drive Plate Tension	19B 1-13
Spring Washer (for Tuning Shaft)	4A 5-3-0
Tuning Shaft	28A 1-5
Washer ("C" for Tuning Shaft)	4A 4-1-0

PHONOGRAPH PARTS

Note: See RC170A record changer manual for complete parts list.

Symbol	Description	Part No.
M1	Cable and Socket, Phono Motor	89A 6-6
M2	Plug, AC Phono Motor (Male)	88A8-1
M3	Motor	407B 3-2
M4	Cartridge & Needle, Pickup	A1372
M5	Pickup Cable & Plug Assembly	A1415
M6	Socket, Phano Pickup	88A 5-8
	Centerpost	G400B 137-1
	Drive Disc Assembly (under Turntable)	G400A 179
	Idler Wheel (407B3 Motor)	G400A 23
	Idler Wheel (407B1 Motor)	G400A 57
	Nut, Wing (For Fastening record changer during shipment)	2A 5-9-2
	Shoulder Eye Bolt (for Tilt Out Spring)	1A 87-1
	Strip, Sponge Rubber (1/16x¼x1"),	12A 5-5
	Tilt Out Hinge Assembly (Pickup Arm Side)	AC118-2
	Tilt Out Hinge Assembly (Record Support Side)	AC118-1
	Tilt Out Spring (2¼" long)	19A 15-1
	Tilt Out Tie Bar	15B 126
	Tilt Out Tie Rod	28A 22

DIAL PARTS

Description	Part No.
Bracket, Dial Background Mounting	15B 141
Dial Bulb, #47	91A 1-8
Dial Bulb Socket (with leads)	82A 3-3
Dial Cord (36")	50A 1-3
Dial Pointer	A1487
Dial Scale and Indicator Assembly	A1506
Drum and Hub Assembly (Pointer Shaft)	A1504
Dial Escutcheon and Window (less rectangular insert)	23E 20-1
Escutcheon Insert	23C 25-1
Indicator Arm and Hub (on Band Switch Shaft)	A1508
Indicator Link	15A 176
Lever Arm (band switch drive)	A1493
Pointer Shaft	28A 19
Pulley Bracket Assembly	A1496
Shaft, Band Switch	28B 21-2
Snap Button (used with Indicator Link)	13A 1-4-47
Spring, Band Switch Shaft	18A 14
Spring, Dial Cord	19B 1-7
Spring, Hair Pin (for Pointer Shaft)	19A 2-2-O
Spring Washer (for Pointer Shaft)	4A 6-11-0
Washer ("C" used with Band Switch	4A 4-3-0

MISCELLANEOUS

Description	Part No.
Hinge, Butt (Radio Comp.) (pair for 7C64W, 7C64M)	98A 31-14
Hinge, Butt (Radio Comp.) (pair for 7C64B)	98A 31-16
Hinge, Butt (Record Comp.) (pair for 7C64W, 7C64M)	98A 31-15
Hinge, Butt (Record Comp.) (pair for 7C64B)	98A 31-17
*Cabinet, Walnut (7C64W)	35E 64-1
*Cabinet, Mahagany (7C64M)	35E 64-2
*Cabinet, Blond (7C64B)	35E 64-3
Chassis Shock Mounting (with "L" bracket)	A1490
Compartment Door Catch and Strike Plate	98A 31-18
Door, Record Storage Comp. (less grille, lining and hardware) for 7C64M	98A 31-5
Door, Record Storage Comp. (less grille, lining and hardware) for 7C64W	98A 31-4
Door, Record Storage Comp. (less grille, lining and hardware) for 7C64B	98A 31-6
*Door, Radio and Phono Tilt-Out (pair for 7C64M)	98A 31-2
*Door, Radio and Phono Tilt-Out (pair for 7C64W)	98A 31-1
*Door, Radio and Phono Tilt-Out (pair for 7C64B)	98A 31-3
Door Handle, Record Storage Comp. (for 7C64W, 7C64M)	98A 31-10
Door Handle, Record Storage Comp. (for 7C64B)	98A 31-12
Door Handle, Radio and Phono Comp. (for 7C64M, 7C64W)	98A 31-9
Door Handle, Radio and Phono Comp. (for 7C64B)	98A 31-11
Knob	33A 13■4
Grille Cloth	98A 31-8
Hinge, Knife (concealed type; pair for 7C64W, 7C64M)	98A 31-13
Metal Grille (Speaker and Compartment)	98A 31-7
Screw, Chassis Mounting (¼"-20x1").	1A 98-11-2
Set Screw, #6-32x¼" (used with Dial and Tuning Assembly Hubs).	1A 5-54
Socket, Miniature Tube	87A 3-4
Socket, Octal	87A 5-1
Speaker, 10" P.M. Dynamic	78B 28
Transmission Line*(300 Ohms for Outdoor F.M. Antenna. Order length needed)	95A 16-5
Washer (Felt, for Knobs)	5A 4-2
Washer,, Flat (Chassis Mounting)	4B 1-142-2
Washer, Lock (Chassis Mounting)	3B 1-7-2

*Supplied only if old part cannot be repaired. When ordering, describe condition of old part in detail.

MODELS 7RT41, 7RT42, 7RT43

ADMIRAL CORPORATION

REPLACEMENT PARTS

RESISTORS

Symbol	Description	Part No.
R1	22,000 Ohms, ½ Watt	60B 8-223
R2	1 Megohm, ½ Watt	60B 8-105
R3	27,000 Ohms, ½ Watt	60B 8-273
R4	1 Megohm Volume Control (Tapped at 500,000 ohms)	75B 2-6
R5	2 Megohm Tone Control and Switch SW1	75B 1-12
R6	4.7 Megohms, ½ Watt	60B 8-475
R7	1.8 Megohms, ½ Watt	60B 8-185
R8	100,000 Ohms, ½ Watt	60B 8-104
R9	470,000 Ohms, ½ Watt	60B 8-474
R10	100 Ohms, ½ Watt	60B 8-101
R11	33 Ohms, 1 Watt	60B 28-3
R12	220 Ohms, 1 Watt	60B 28-7
R13	1,000 Ohms, 1 Watt	60B 28-2
R14	150,000 Ohms, ½ Watt	60B 8-154
R15	22,000 Ohms, ½ Watt	60B 8-223
R16	10 Megohms, ½ Watt	60B 8-106
R17	150 Ohms, 1 Watt	60B 14-151
R18	100,000 Ohms, ½ Watt	60B 8-104
R19	33,000 Ohms, ½ Watt	60B 8-333

CONDENSERS

Symbol	Description	Part No.
C1	.005 mfd., 600 Volts, Paper	64B 1-12
C2	50 mmfd. ±20%, Ceramic	65B 6-4
C3	.1 mfd., 200 Volts, Paper	64B 1-30
C4a	Gang, 0 to 420 mmfd.	68B 5
C4b	Gang, 0 to 162 mmfd.	
C5	.002 mfd., 600 Volts, Paper	64B 1-14
C6	.01 mfd., 400 Volts, Paper	64B 1-25
C7	.05 mfd., 400 Volts, Paper	64B 1-22
C8	15 mmfd. ±20%, Ceramic	65B 6-18
C9	.01 mfd., 400 Volts, Paper	64B 1-25
C10	.03 mfd., 400 Volts, Paper	64B 1-23
C11	.18 mfd., 200 Volts, Paper	64A 2-2
C12	.05 mfd., 400 Volts, Paper	64B 1-22
C13	.001 mfd., 600 Volts, Paper	64B 1-15
C14	.05 mfd., 400 Volts, Paper	64B 1-25
C15	.01 mfd., 400 Volts, Paper	64B 1-24
C16	.1 mfd., 200 Volts, Paper	64B 1-30
C17a	30 mfd., 150 Volts	Elect. 67A 14-1
C17b	30 mfd., 150 Volts	
C17c	20 mfd., 150 Volts	
C17d	20 mfd., 25 Volts	
C18	250 mmfd. ±20%, Ceramic	65B 6-5
C19	.02 mfd., 200 Volts, Paper	64B 1-24
C20	.05 mfd., 400 Volts, Paper	64B 1-22
C21	500 mmfd. ±20%, Ceramic	65B 6-6

COILS, TRANSFORMERS, ETC.

L1	Antenna, Loop	69B 13
L2	Coil, Oscillator	69A 14
T1	Transformer, 1st I.F.	72B 3
T2	Transformer, 2nd I.F.	72B 4
T3	Transformer, Output	98A 17
	Speaker (5") & Output Transformer	78B 19-1

SWITCHES, PLUGS & SOCKETS

P1	Plug, Pickup	88A 8-5
P3	Plug, Motor	88A 8-1
S1	Socket, Phono	88A 8-6
S3	Phono-Motor Socket & Leads (Female connector)	89A 6-3
SW1	Part of Tone Control R5	
SW2	Switch, Radio-Phono	77A 16-1

CABINET PARTS

Description	Part No.
Cabinet Body Less Lid (7RT41)	34D 11-11
Cabinet Lid (7RT41)	34D 11-10
*Cabinet, Wood (7RT42)	35D 47
*Cabinet, Wood, Walnut (7RT43)	35D 48-1
*Cabinet, Wood, Mahogany (7RT43)	35D 48-2
Clip, Dial Glass Mounting (7RT43)	18A 12
Dial Scale, Glass (7RT41-7RT42)	21B 35-1
Dial Scale, Glass (7RT43)	21B 33-1
Escutcheon, Overlay (7RT41-7RT42)	23C 23-1
Grille, Inside	16C 1

PHONOGRAPH PARTS

Note: See record changer manual for complete parts list.

Cartridge and Needle, Pickup	A 1372
Centerpost	G400B137-1
Drive Disc Assembly	G 400A 179
Idler Wheel (407B3 Motor)	G 400A 23
Idler Wheel (407B1 Motor)	G 400A 57
Motor, 60 Cycle 115 Volt A.C.	407B 3-2
Pickup Cable and Plug	A 1322

MISCELLANEOUS

Background, Dial	22B 9-1
Bracket, Tuning Shaft	15A 152
Bracket, Dial	15B 151
Cord, Dial (48")	50A 1-3
Drum, Dial	17A 14
Grommet, Rubber	12A 1-2
Knob	33A 19-1
Pilot Light #47	81A 1-8
Pilot Light Socket and Leads	82A 2-3
Pointer	25A 21
Pulley, Fibre Dial 1⅛"x½" O.D.	17A 1-3
Shaft, Tuning	28A 11-4
Spring, Dial Drum Cord Tension	19B 1-7

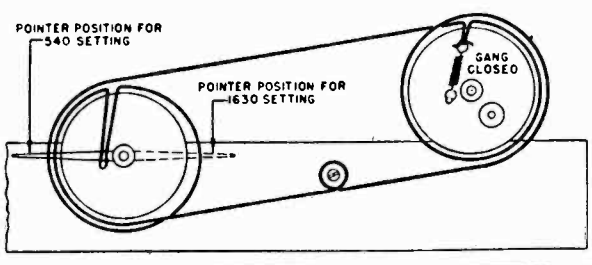
*** Supplied only if old cabinet cannot be repaired. When ordering, describe condition of old cabinet in detail.**

ALIGNMENT PROCEDURE

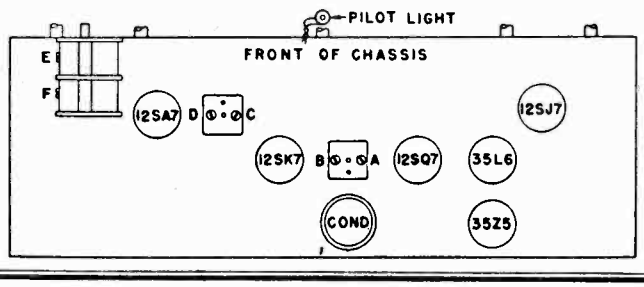
1. Connect Output Meter across Voice Coil.
2. Turn Receiver Volume Control—full on.
3. Use lowest Output setting of Signal Generator capable of producing adequate Output Meter indication and then proceed in the following sequence.
4. Repeat adjustments to insure good results.

Connect Signal Generator to—	Dummy Antenna Between Radio and Generator	Set Generator Frequency to—	Set Receiver Dial Frequency to—	Adjust Following Trimmers	Type of Adjustment
Tuning Condenser Antenna Stator	250 mmfd. Condenser	455 K.C.	High frequency end of Dial	A-B—2nd I. F. C-D—1st I. F.	Adjust to maximum Output
Tuning Condenser Antenna Stator	250 mmfd. Condenser	1630 K.C.	High frequency end of Dial	E—Osc.	Adjust to maximum Output
Loop radiator (or place lead from generator close to loop of set to obtain adequate signal)	No actual connection between set and generator.	1400 K.C.	Tune in generator signal	F—Ant.	Adjust to maximum Output

DIAL CORD STRINGING & POINTER SETTING



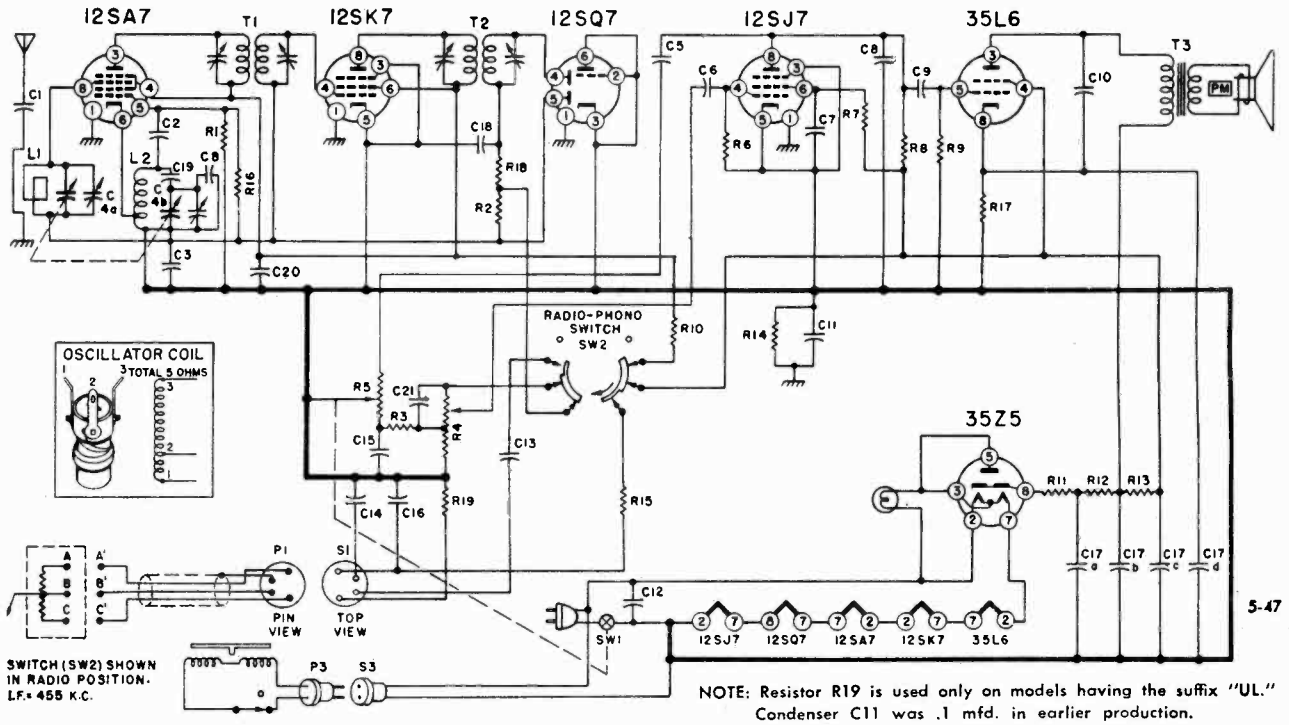
TOP VIEW



TUBE & TRIMMER LOCATION

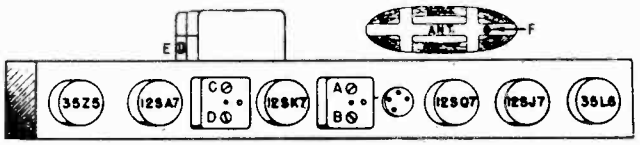
ADMIRAL CORPORATION

MODELS 7RT41, 7RT42, 7RT43
Chassis 6L1



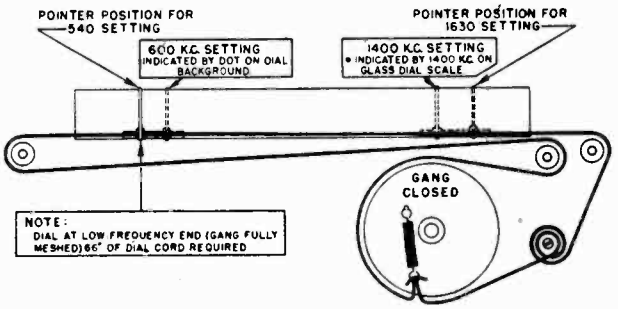
NOTE: Resistor R19 is used only on models having the suffix "UL." Condenser C11 was .1 mfd. in earlier production.

TUBE & TRIMMER LOCATION



TOP VIEW

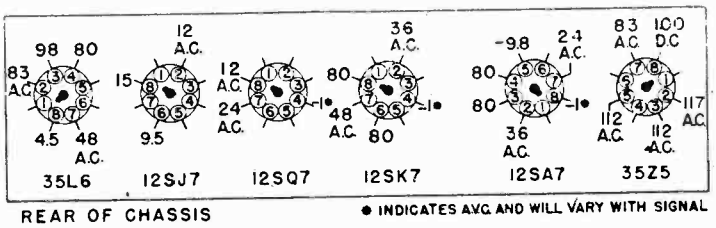
DIAL CORD STRINGING & POINTER SETTING



VOLTAGE DATA

- All readings made between Tube Socket Terminals and B minus.
- Measured on a 117 Volt A.C. line.
- Volume control full on.
- Dial tuned to low frequency end, no signal.
- Voltage obtained on Vacuum Tube Voltmeter.

VOLTAGE CHART



MODELS 8C11, 8C12, 8C13, 8C14, 8C15, 8C16, 8C17, CHASSIS 8C1 — ADMIRAL CORPORATION

RESISTORS

Symbol	Description	Part No.
R1	390 Ohms, 1/4 Watt	60B 2-391
R2	470,000 Ohms, 1/4 Watt	60B 2-474
R3	22,000 Ohms, 1 Watt	60B 14-223
R4	1 Megohm, 1/4 Watt	60B 3-105
R5	47,000 Ohms, 1/4 Watt	60B 2-473
R6	47,000 Ohms, 1/4 Watt	60B 2-473
R7	15,000 Ohms, 2 Watt	60B 20-153
R8	470 Ohms, 1/4 Watt	60B 2-471
R9	470,000 Ohms, 1/4 Watt	60B 2-474
R10	27,000 Ohms, 1 Watt	60B 14-273
R11	470 Ohm, 1/4 Watt	60B 2-471
*R12	47,000 Ohms, 1/4 Watt	
R13	220,000 Ohms, 1/4 Watt	60B 2-224
R14	220,000 Ohms, 1/4 Watt	60B 2-224
R15	15,000 Ohms, 2 Watt	60B 20-153
R16	27,000 Ohms, 1/4 Watt	60B 2-273
R17	390 Ohms, 1/4 Watt	60B 2-391
R18	27,000 Ohms, 1 Watt	60B 14-273
R19	6,800 Ohms, 1/4 Watt, 5%	60B 1-682
R20	6,800 Ohms, 1/4 Watt, 5%	60B 1-682
R21	120,000 Ohms, 1/4 Watt	60B 2-124
R22	100,000 Ohms, 1/4 Watt	60B 2-104
R23	47,000 Ohms, 1/4 Watt	60B 2-473
R24	2 Megohms Tone Control (Includes ON-OFF Switch SW2)	75B 1-24
R25	1 Megohm Volume Control (Tapped at 500,000 Ohms)	75B 2-10
R26	10 Megohms, 1/4 Watt	60B 3-106
R27	22,000 Ohms, 1/4 Watt	60B 2-223
R28	470,000 Ohms, 1/4 Watt	60B 2-474
R29	470,000 Ohms, 1/4 Watt	60B 2-474
R30	390 Ohms, 1 Watt	60B 14-391

*Part of encased Diode Filter Unit 63A3-1. This unit consists of R12, C17, C18 (see schematic). If a section of the unit becomes defective, replace with component of proper value.

CONDENSERS

Symbol	Description	Part No.
C1	105 mmfd., 5%, —.00075 Temp. Coeff. Ceramic	65B 6-9
C2	.01 mfd., 400 Volts, Paper	64B 1-25
C3	.0015 mfd., "Hi-K" Ceramic	65A 14-1
C4	140 mmfd., 3%, Silver Mica	65B 1-26
C5a	486 mmfd. (max.) AM RF	Gang Cond. 68B 16
C5b	15 mmfd. (max.), FM RF	
C5c	15 mmfd. (max.), FM Osc.	
C5d	143 mmfd. (max.), AM Osc.	
C6	22 mmfd., 5%, Ceramic	65B 6-47
C7	7 mmfd, ±1 mmfd. .00047 Temp. Coeff., Ceramic	65B 6-45
C8	.01 mfd., 400 Volts, Paper	64B 1-25
C9	35 mmfd., 5%, Ceramic	65B 6-46
C10	105 mmfd., 5%, —.00075 Temp. Coeff. Ceramic	65B 6-9
C11	7 mmfd., ±1 mmfd., —.00047 Temp. Coeff., Ceramic	65B 6-45
C12	.0015 mfd., "Hi-K" Ceramic	65A 14-1
C13	.01 mfd., 400 Volts, Paper	64B 1-25
C14	.01 mfd., 400 Volts, Paper	64B 1-25
C15	.005 mfd. min., Ceramic (Disc)	65A 10-1
C16	.01 mfd., 400 Volts, Paper	64B 1-25
*C17	100 mmfd., Mica	
*C18	100 mmfd., Mica	
C19	.01 mfd., 400 Volts, Paper	64B 1-25
C20	.005 mfd. min., Ceramic (Disc)	65A 10-1
C21	105 mmfd., 5%, —.00075 Temp. Coeff., Ceramic	65B 6-9
C22	4 mfd., 150 Volts, Electrolytic	67A 4-2
C23	105 mmfd., 5%, —.00075 Temp. Coeff., Ceramic	65B 6-9
C24	.002 mfd., 600 Volts, Paper	64B 1-14
C25a	30 mfd., 350 Volts	Elect. 67C 6-25
C25b	30 mfd., 350 Volts	
C25c	20 mfd., 25 Volts	
C26	.01 mfd., 400 Volts, Paper	64B 1-25
C27	.2 mfd., 200 Volts, Paper	64B 1-29
C28	.001 mfd., 600 Volts, Paper	64B 1-15
C29	.005 mfd., 600 Volts, Paper	64B 1-12
C30	500 mmfd., 10%, Mica	65B 5-27
C31	.005 mfd., 600 Volts, Paper	64B 1-12
C32	.01 mfd., 400 Volts, Paper	64B 1-25
C33	.1 mfd., 400 Volts, Paper	64B 1-20
C34	.01 mfd., 400 Volts, Paper	64B 1-25
C35	200 mmfd., 20%, Ceramic	65B 7-21
C36	.01 mfd., 400 Volts, Paper	64B 1-25
C37	.005 mfd., 600 Volts, Paper	64B 1-12
C38	2 1/2 to 6 mmfd., Trimmer, Silver Ceramic	66A 24-2

*Part of encased Diode Filter Unit 63A3-1. This unit consists of R12, C17, C18 (see schematic). If a section of the unit becomes defective, replace with component of proper value.

COILS, TRANSFORMERS, ETC.

Symbol	Description	Part No.
L1	Antenna, FM (90" of #22 wire)	
L2	Antenna, Loop (AM)	95A 24-2
L3	Choke, RF	AB103-33
L4	Coil, Loop Loading (AM)	69A 56
L5	Coil, RF (FM)	69A 55
L6	Coil, Oscillator (FM)	69A 54
L7	Coil, Oscillator (AM)	69A 20-1
L8	Choke, Filter	74A 10
L9	Choke, Filament Approx. 10 turns (1B") of solid #22 hook-up wire wound on C26 Solder one end to inside foil lead of C26	
T1	Transformer, 1st IF (FM)	72B 37
T2	Transformer, 2nd IF (FM)	72B 38
T3	Transformer, Ratio Detector	72B 39
T4	Transformer, 1st IF (AM)	72B 54
T5	Transformer, 2nd IF (AM)	72B 49
T6	Transformer, Power	80B 5
T7	Transformer, Output	79A 9
M7	Speaker 10" P.M. Dynamic	78B 28
SW1	Switch, Band (FM, AM, Phono)	77B 18
SW2	Switch, Power	Part of R24
SW3	Switch, Phono Motor (see Record Changer Manual)	
	Diode Filter (consists of R12, C17 and C18)	63A 3-1

DIAL PARTS

Description	Part No.
Dial Bulb, #47	81A 1-8
Dial Bulb Socket (with leads)	82A 8-3
Dial Cord (18")	50A 1-3
Dial Escutcheon and window (Radio)	23D 29-2
Dial Escutcheon, Television (8C11, 8C12, 8C13 only)	23D30-1
Dial Pointer, Plastic	A1685
Dial Scale Assembly	A1676
Drum and Hub Assembly	A-1318
Rubber Channel (Inner edge of Dial Scale — 29 1/2")	12A 20-3
Set Screw, Dial Drum, 8-32x1/4"	1A 5-59-0
Spring, Dial Cord	19B 1-3
Sleeve, Dial Tuning (brass)	27A 45

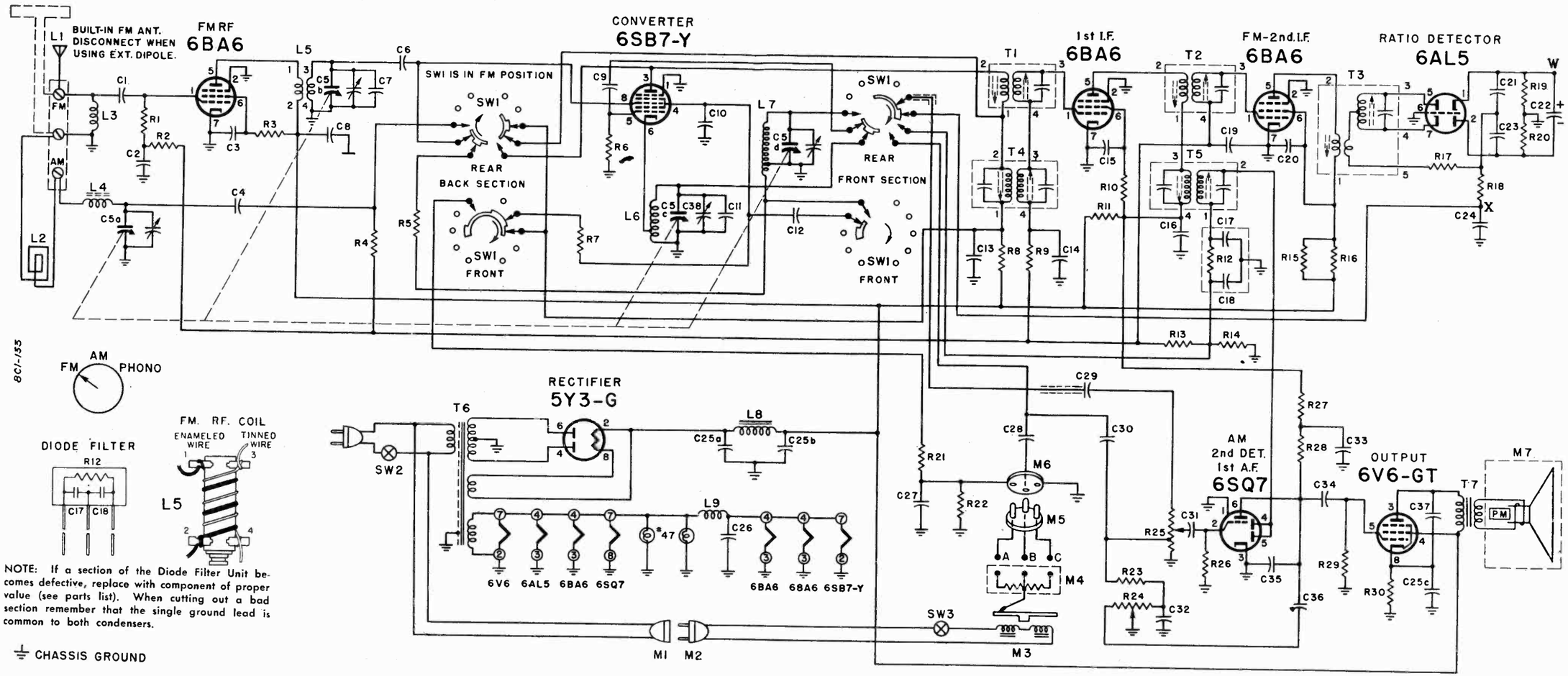
PHONOGRAPH PARTS

Note: See RC181 Record Changer

Symbol	Description	Part No.
M1	Cable and Socket, Phono Motor	89A 6-6
	Phono Motor Extension Cable (used on 8C11, 8C12, 8C13)	89A 6-32

ADMIRAL CORPORATION

MODELS 8C11, 8C12, 8C13, 8C14, 8C15, 8C16, 8C17, CHASSIS 8C1



8C1-153

NOTE: If a section of the Diode Filter Unit becomes defective, replace with component of proper value (see parts list). When cutting out a bad section remember that the single ground lead is common to both condensers.

⏚ CHASSIS GROUND

MISCELLANEOUS

Description	Part No.
*Cabinet	
Walnut (8C11)	35E 80-1
Mahogany (8C12)	35E 80-2
Blond (8C13)	35E 80-3
Walnut (8C14)	35E 76-1
Mahogany (8C15)	35E 76-2
Mahogany (8C17)	35E 82-1
Carton complete with fillers for 8C14, 8C15	44B 108
for 8C17	44B 109
Carton complete with fillers, less crate (for 8C11, 8C12, 8C13)	44B 115
Crate, less carton (for 8C11, 8C12, 8C13)	44B 117
*Door, Radio or Phono Tilt-Out pair for Walnut (8C11)	98A 41-1
pair for Mahogany (8C12)	98A 41-2
pair for Blond (8C13)	98A 41-3
pair for Walnut (8C14)	98A 41-4
pair for Mahogany (8C15)	98A 41-5
pair for Mahogany (8C17)	98A 41-6
*Door, Record Compartment Complete for Walnut (8C14)	98A 41-7
for Mahogany (8C15)	98A 41-8
Door Arm (near center of cabinet; see Ref. =5 in Fig. 1)	A1440
Door Arm (nearest side of cabinet; see Ref. =5 in Fig. 1)	A1441
Door Bracket (near center of cabinet; see Ref. =7 in Fig 1)	A1438
Door Bracket (nearest side of cabinet; see Ref. =7 in Fig 1)	A1439
Door Catch and Strike Plate for Record Compartment Door	98A 41-9
Door Handle (Tilt-Out Doors) for Walnut (8C11), Mahogany (8C12 and 8C17)	33A 33-1
for Blond (8C13)	33A 33-2
for Walnut (8C14) & Mahogany (8C15)	98A 41-10
Door Hinge, Record Storage Compartment for Walnut (8C14) & Mahogany (8C15)	98A 41-11
Door Knob, Record Storage Compartment for Walnut (8C14) & Mahogany (8C15)	98A 41-12
Grille, Metal for Walnut (8C11), Mahogany (8C12) and Blond (8C13)	36A 7-3
Grille Cloth for Walnut (8C11) & Mahogany (8C12)	98A 41-13
for Blond (8C13)	98A 41-14
for Walnut (8C14) & Mahogany (8C15)	98A 41-15
for Mahogany (8C17)	98A 41-16
Grommet, Rubber for mounting Chassis	12A 1-11

VOLTAGE CHART

- Line Voltage 117.
- Voltages measured with a vacuum tube voltmeter. Second voltage readings and A.C. voltages measured with a 1000 ohm-per-volt meter.
- Voltages read between socket terminals and ground, unless otherwise indicated.
- Band switch in FM position.
- Dial turned to low frequency end.
- Volume Control—minimum.

*If measured with band switch in phono position, reading will be zero.

ALIGNMENT PROCEDURE

FM ALIGNMENT EQUIPMENT

The model 8C1 chassis should be aligned only with an AM signal generator and a vacuum tube voltmeter. Any standard brand vacuum tube voltmeter with a DC scale of not over 5 volts is suitable. A 3-volt zero center scale is desirable. A signal generator with a frequency range up to 110 MC. is desirable. It is possible however, to align the receiver with a signal generator going to 20 or 30 megacycles, by using the harmonics of these lower frequencies. To do this merely set the signal generator dial as follows and align exactly as explained in the alignment instructions.

Where alignment chart specifies 109 *MC.*, set signal generator to highest available frequency of the following:

109. MC	27.25 MC
54.50 MC	21.80 MC
36.33 MC	18.17 MC

Where alignment chart specifies 102 *MC.*, set signal generator to highest available frequency of the following:

102. MC	25.50 MC
51. MC.	20.40 MC
34. MC	17. MC

Signal generators which do not tune to 110 MC or whose harmonics are not strong enough, cannot be used for FM alignment.

POINTER SETTING

With the gang closed, the pointer should be at the position as shown in the stringing diagram (Fig. 4), that is, the bottom edge of the pointer should line up with the top of the "MC" lettering on the dial scale. If the pointer is in a different position, move it by hand while keeping the gang closed.

TRIMMER IDENTIFICATION CHART

Trimmer Symbol		Function
A	T3	Ratio Detector transformer
B	T2	2nd IF transformer (FM)
C	T2	2nd IF transformer (FM)
D	T1	1st IF transformer (FM)
E	T1	1st IF transformer (FM)
F	T3	Ratio Detector transformer
G	C38	FM oscillator trimmer
H	C5b	FM RF trimmer
I	T5	2nd IF transformer (AM)
J	T5	2nd IF transformer (AM)
K	T4	1st IF transformer (AM)
L	T4	1st IF transformer (AM)
M	C5d	AM oscillator trimmer
N	C5a	AM antenna trimmer

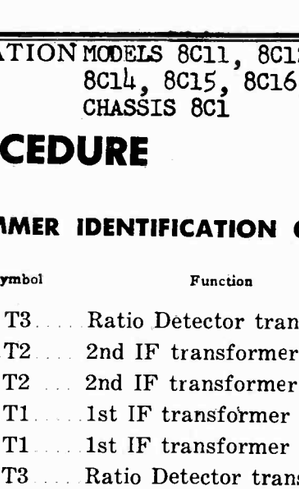


Fig. 4. Stringing Diagram

IMPORTANT PRELIMINARY ALIGNMENT STEPS

In FM alignment, it is essential that every step be followed. Especially important is picking the center of the I.F. curve (step 4 in the FM-I.F. alignment instructions). During this portion of the alignment it is necesary to tune the signal generator very carefully; it may necessitate having to estimate the dial readings to a tenth of a division.

- Check the set screws that hold the tuning drum to the shaft to see that they are tight and that the drum has not slipped on the shaft. The correct position of the drum can be seen in the stringing diagram.
- With the gang closed, the pointer should be at the position as shown in the stringing diagram, that is, the bottom edge of the pointer should line up with the top of the "MC" lettering on the dial scale. If the pointer is in a different position, move it by hand while keeping the gang closed.
- Be sure both the set and the signal generator are thoroughly warmed up before starting alignment.

FM I.F. AND RATIO DETECTOR ALIGNMENT

- Keep output indicator leads well separated from signal generator leads and chassis wiring.
- Band switch in FM position (fully to the left).
- While peaking IF's, keep reducing signal generator output so VTVM reading is approximately +1.5 volts DC with exception of Step #5.
- Speaker must be connected during alignment.
- FM antenna disconnected during alignment.

I.F. SLUG INFORMATION

To avoid splitting the slotted head of the powdered iron core tuning slug in the I.F. transformers, use a screw-driver with a blade ⅛" wide for I.F. alignment.

Under normal operating conditions, mis-alignment of slug-tuned circuits with age is slight. Therefore, realignment of the I.F. transformers should be accomplished by only a slight adjustment of the slugs.

Before proceeding, be sure to follow all steps listed above, under "Important Preliminary Alignment Steps."

	Connect Signal Generator	Generator Frequency	Receiver Dial Setting	Output Indicator and Special Connections	Adjust as Follows (very carefully)
1	Thru .001 cond. to pin # 1 of 6BA6 RF amplifier**	10.7 MC unmodulated.	Tuning gang wide open	Connect VTVM (DC probe) from point "W" to ground. (See Fig. 11.)	"A" (ratio detector primary) for maximum reading on VTVM.
2	"	"	"	" "	Iron cores "B" and "C" (2nd IF trans.) for maximum reading on VTVM.
3	"	"	"	" "	Iron cores "D" and "E" for maximum on VTVM. Readjust A, B, C, D, E, for maximum. (Keep reducing generator output to keep VTVM at 1.5 volts).
4	"	a. Reduce output of signal generator until VTVM reads **exactly** +1.5 volts DC. b. Tune generator frequency above 10.7 MC until VTVM reads **exactly** +1.0 volt. Note **exact** generator frequency. Extreme care in reading this is essential. c. Tune generator frequency below 10.7 MC until VTVM reads **exactly** +1.0 volt. Note **exact** generator frequency. Extreme care in reading this is essential. d. Add generator frequency in step c to generator frequency in step d and divide by 2. The result is the center frequency of the IF curve to be used in step 5. See example on next page. e. Tune generator frequency above and below 10.7 MC and note voltage reading on VTVM at different frequency points until you have a good impression of the shape of the selectivity curve. If you have two peaks as in Figures 9 or 10, note readings (voltage) of both peaks. If one peak is over 20% higher than the other one, it will be necessary to realign IF's. A selectivity curve that would require realignment is illustrated by Figure 10.			
5	"	Center of IF selectivity curve per step 4d above. See "EXAMPLE" on next page.	Tuning gang wide open	Connect VTVM (DC probe) from point "X" to ground. (See Fig. 11.)	Iron core "F" (ratio detector secondary) for zero voltage reading on VTVM. (The correct zero point is located between a positive and a negative maximum.)

If any adjustments were very far off, it is desirable to repeat steps 3, 4 and 5.
**Do not feed I.F. signal into converter grid as this will cause mis-alignment.

FM RF ALIGNMENT PROCEDURE

	Connect Signal Generator	Generator Frequency	Receiver Dial Setting	Output Indicator and Connections	Adjust as Follows
6	FM ant. terminal.	109 MC† (unmodulated).	Tuning gang wide open	Connect VTVM (DC probe) from point "W" to ground.	*G for maximum VTVM reading.
7	"	102 MC† (unmodulated).	102 MC	"	*Tune in generator signal on receiver. Adjust H for max. VTVM reading

* It is advisable to adjust generator output so VTVM readings do not exceed approximately + 1.5 V. DC after peaking.
† If your signal generator does not reach this frequency, use harmonics as described in "FM Alignment"

SETTING SIGNAL GENERATOR TO CENTER OF I.F. SELECTIVITY CURVE

CAUTION: Due to the difficulty of setting a signal generator to the accuracy required by this operation, extreme care must be exercised in making each setting. Otherwise, improper alignment of the ratio detector and consequent audio distortion will result.

EXAMPLE: (See Figures 5 and 6)

Voltage reading in Step 4a is + 1.5 volts.

Generator frequency on low side of 10.7 MC for a reading of + 1 volt DC = 10.640 MC.

Generator frequency on high side of 10.7 MC for a reading of + 1 volt DC = 10.800 MC.

Center frequency is obtained by adding 10.640 and 10.800, then dividing by 2. For these readings it will be 10.72 MC.

Set generator frequency to 10.72 MC as this is center of selectivity curve as shown in Figure 6.

Note: Numerical vernier dial readings may be used instead of MC.

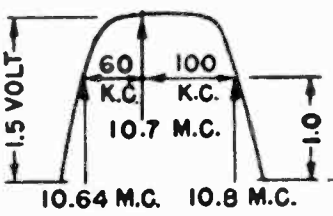


Fig. 5

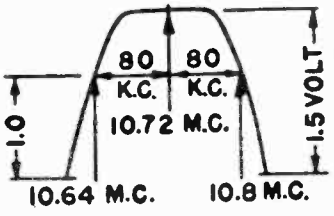


Fig. 6

TYPICAL SELECTIVITY CURVES

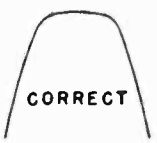


Fig. 7.

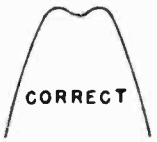


Fig. 8.

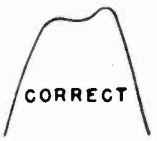


Fig. 9.

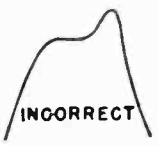


Fig. 10.

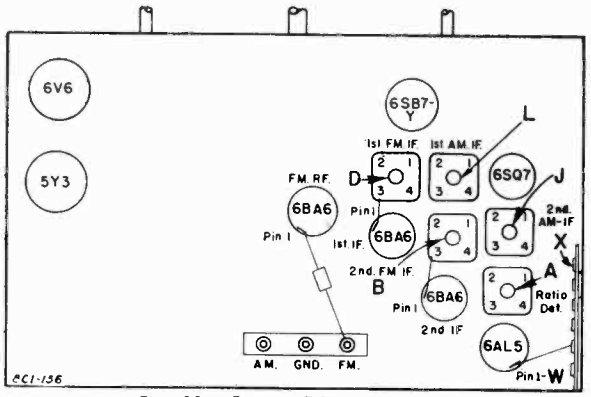


Fig. 11. Bottom Trimmer Location

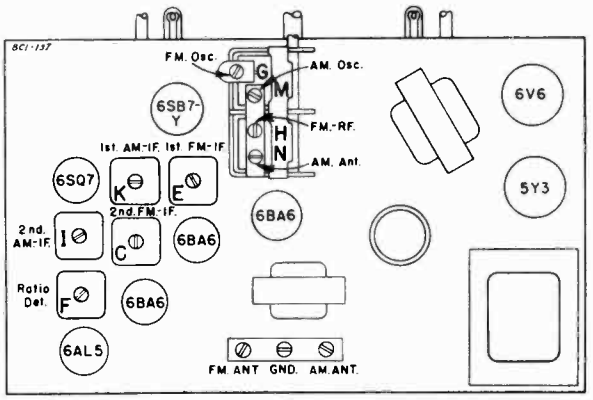


Fig. 12. Top Trimmer Location

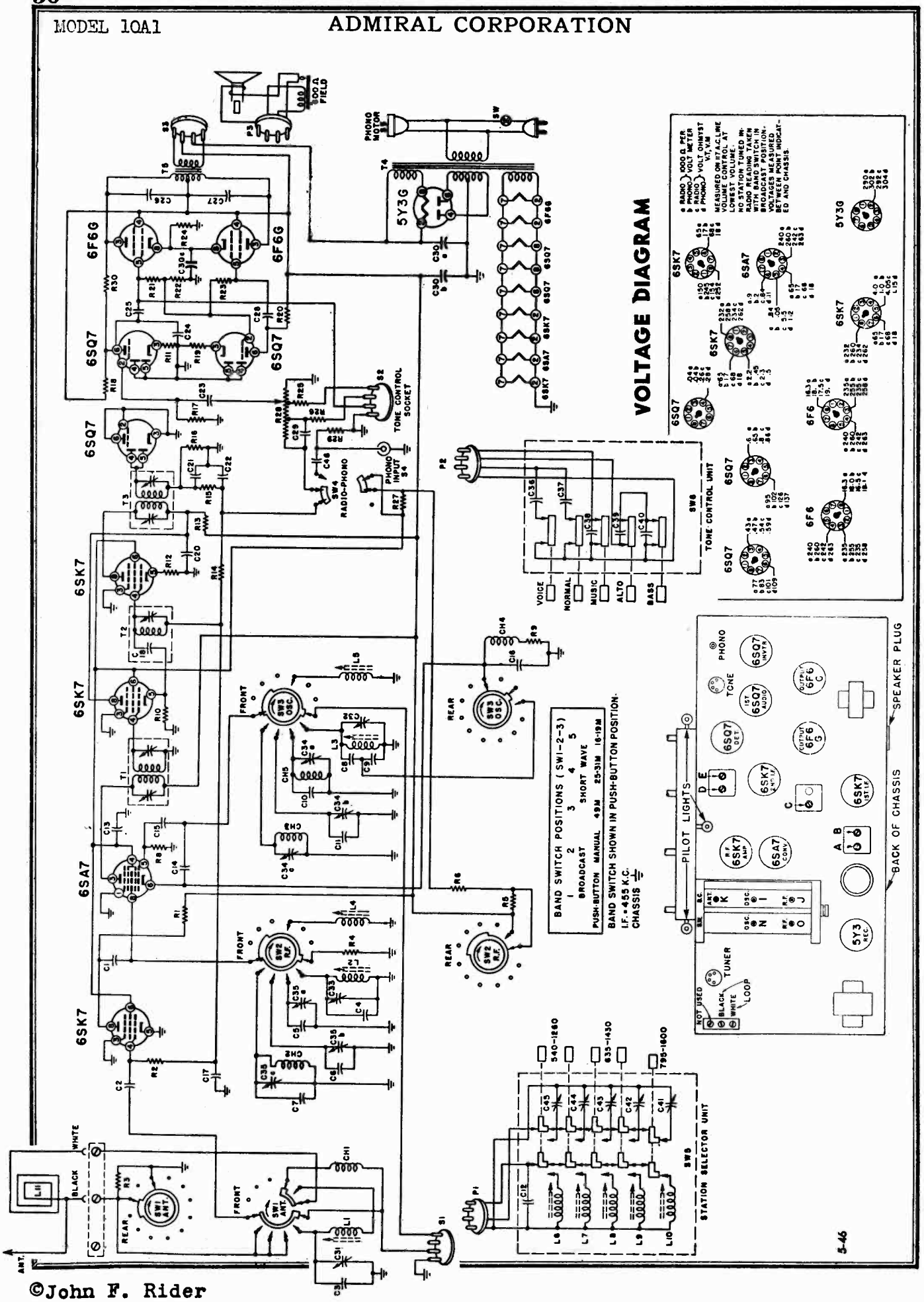
AM ALIGNMENT PROCEDURE

- Use regular output meter connected across speaker voice coil.
- Turn receiver Volume Control full on; Tone Control full treble.
- Band Switch in center position.
- Use lowest output setting of signal generator that gives a satisfactory reading on meter.

	Connect Signal Generator	Dummy Antenna Between Radio and Signal Generator	Signal Generator Frequency	Receiver Dial Setting	Adj. Trimmers in Following Order to Max.
Set Band Switch to Broadcast Position (center) and be sure to follow instructions under heading "Important Preliminary Alignment Steps." Loop antenna can be disconnected from chassis in Steps 1 and 2.					
1	6SB7-Y (Pin #8)	.1 MFD	455 KC	Tuning gang wide open	I, J, K, L
2	To loop ant. terminal	Direct connection	1620 KC	Tuning gang wide open	M
Set Receiver Chassis on table next to back of cabinet. Connect Loop Antenna to Receiver.					
3	Place generator lead close to loop of set to obtain adequate signal. No actual connection (signal by radiation).		1400 KC	Tune in signal	N

MODEL 10A1

ADMIRAL CORPORATION

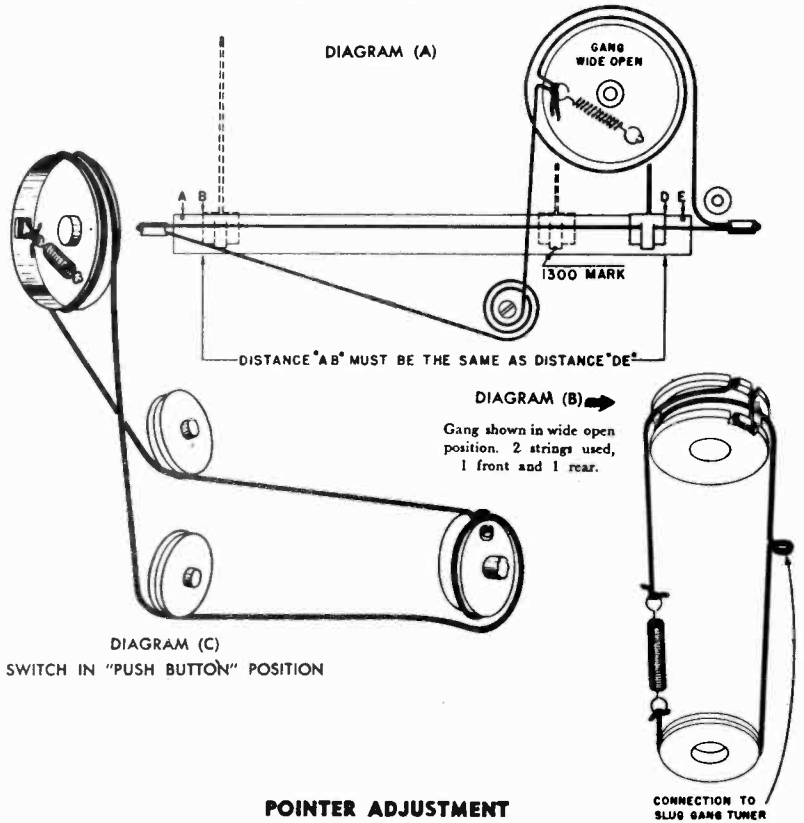


ALIGNMENT PROCEDURE

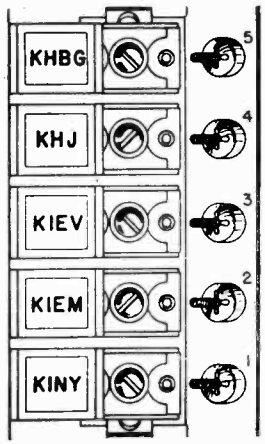
1. Loop must be connected during alignment. Check the set screws that hold the tuning drum to the shaft to see that they are tight and that the drum has not slipped on the shaft. The correct position of the drum can be seen on stringing diagram (A).
2. In the wide open position the stop on the rear of the dial drum must be against the stop post.
3. With the gang wide open, all slugs should be 1⅜ inches out of their coil forms. If there is any serious deviation of if there has been any tampering, turn the adjusting screws until this distance is corrected. (See paragraph on Tuning Slug Replacement.)
4. Be sure both the set and the signal generator are thoroughly warmed up before starting alignment.
5. Turn receiver Volume Control full on.
6. Use lowest output setting of signal generator that gives a satisfactory reading on meter.
7. Proceed in sequence as outlined below.

Step	Connect Signal Generator To	Dummy Antenna Between Radio and Signal Generator	Signal Generator Frequency	Tuning Gang Setting	Adj. Trimmers in Following Order To Max.
1	6SA7 Grid (Pin #8)	.1 MFD.	455 K.C.	Pointer to upper limit	E, D, C, B, A
2	Before proceeding to step 3 check pointer travel as outlined under paragraph below headed "Pointer Adjustment." Set Band Change Switch to Broadcast Position.				
3	White Loop Lead	10 MMFD. If not available wrap several turns of the generator lead around the white loop lead.	1605 K.C.	Pointer to upper limit	F, G, H
4	White Loop Lead		1300 K.C.	Set Pointer to 1300 mark on slide rail (See Dial Diagram A)	I, J, K
5	Set Band Change Switch to 49 Meter Position.				
6	White Loop Lead	400 Ohms	7.5 Mc.	Pointer to upper limit	L, M
7	White Loop Lead	400 Ohms	7.2 Mc.	Set Pointer to 1300 mark on slide rail	N, O
8	Set Band Change Switch to 31-25 Meter Position.				
9	White Loop Lead	400 Ohms	12.5 Mc.	Pointer to upper limit	P, Q
10	Set Band Change Switch to 19-16 Meter Position.				
11	White Loop Lead	400 Ohms	18.0 Mc.	Pointer to upper limit	R, S

STRINGING DIAGRAMS



PROCEDURE FOR SETTING UP PUSH BUTTONS



Push Button	Frequency Range
1	795 K.C. - 1600 K.C.
2 & 3	635 K.C. - 1430 K.C.
4 & 5	540 K.C. - 1260 K.C.

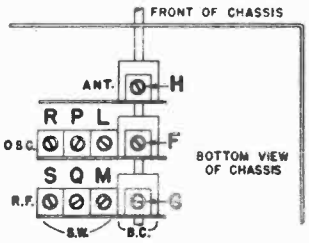
Remove the escutcheon covering the push button control unit. Pick the first of the 5 chosen stations. This should be of the proper frequency for button number 5. Set the band switch to broadcast and accurately tune in the station. Now turn the band switch to the push button position and adjust slug screw number 5 until the same station comes in with its loudest volume. Reduce the volume by means of the volume control and adjust the trimmer screw which is adjacent and to the left of the coil just adjusted. Again bring the station to its maximum volume. Set the rest of the push buttons in a like manner, one for each of the stations chosen.

NOTE: *Since each oscillator (slug) in the push button unit will tune over the entire broadcast band, (540 K.C.-1600 K.C.), care should be taken to set up stations within the frequency ranges associated with each button.*

POINTER ADJUSTMENT

Move the dial pointer by means of the tuning control knob to see that it reaches the upper and lower limits as shown on stringing diagram (A). In the upper limit position measure the distance D-E and in the lower limit position measure the distance A-B. The distance from A and B must be the same as the distance from D to E. If these distances are not equal, unclamp and move the pointer slide on the string until they are the same. The pointer should be checked again at the upper and lower limit to be sure that it is right. Take care to see that the pointer does not slip during this operation. Reclamp the pointer slide tightly to the string and seal with any quick-drying cement. Set the tuning gang wide open and proceed with operation 3.

TRIMMER LAYOUTS



REPLACING TUNING SLUG

If it becomes necessary to change a tuning slug proceed in the following manner: Set the gang to its wide open position, unsolder and remove the old slug. Set the slug adjusting screw about half way down. Place the new slug in such a position that 1⅜ inches of its length is above the coil form. Solder it in this position making sure that it does not slip during the operation and that the slug wire is straight. Proceed to realign the set as shown in the chart.

REPLACEMENT PARTS

RESISTORS

Symbol	Description	Part Number
R1	10,000 Ohms, 1 Watt	60B14-103
R2	470,000 Ohms, ½ Watt	60B8-474
R3	47,000 Ohms, ½ Watt	60B8-473
R4	470,000 Ohms, ½ Watt	60B8-474
R5	8,200 Ohms, 1 Watt	60B14-822
R6	10,000 Ohms, 5 Watt	61A1-3
R8	22,000 Ohms, ½ Watt	60B8-223
R9	100 Ohms, ½ Watt	60B8-101
R10	1,500 Ohms, ½ Watt	60B8-152
R11	1,500 Ohms, ½ Watt	60B8-152
R12	470 Ohms, ½ Watt	60B8-471
R13	1,000 Ohms, ½ Watt	60B8-102
R14	470,000 Ohms, ½ Watt	60B8-474
R15	47,000 Ohms, ½ Watt	60B8-473
R16	270,000 Ohms, ½ Watt	60B8-274
R17	1.0 Megohm, ½ Watt	60B8-105
R18	270,000 Ohms, ½ Watt	60B8-274
R19	1,000 Ohms, ½ Watt	60B8-102
R20	270,000 Ohms, ½ Watt	60B8-274
R21	470,000 Ohms, ½ Watt	60B8-474
R22	470,000 Ohms, ½ Watt	60B8-474
R23	470,000 Ohms, ½ Watt	60B8-474
R24	270 Ohms, 2 Watt	60B20-271
R25	47,000 Ohms, ½ Watt	60B8-473
R26	100,000 Ohms, ½ Watt	60B8-104
R27	150,000 Ohms, ½ Watt	60B8-154
R28	1 Megohm Volume Control	75B3-3
R29	1 Megohm, ½ Watt	60B8-105
R30	1 Megohm, ½ Watt	60B8-105

CONDENSERS

Symbol	Description	Part Number
C1	20 mmfd. Mica	65B7-5
C2	200 mmfd. Mica	65B7-21
C3	35 mmfd. Silver Mica	65B1-30
C4	390 mmfd. Silver Mica	65B1-34
C5	250 mmfd. Silver Mica	65B1-35
C6	65 mmfd. Silver Mica	65B1-27
C7	40 mmfd. Silver Mica	65B1-36
C8	140 mmfd. Silver Mica	65B1-26
C9	1000 mmfd. Mica	65B7-33
C10	200 mmfd. Silver Mica	65B1-14
C11	15 mmfd. Silver Mica	65B5-3
C12	60 mmfd. Silver Mica	65B5-13
C13	.1 mfd. 400 Volts	64B1-20
C14	50 mmfd. Mica	65B5-11
C15	50 mmfd. Mica	65B5-11
C16	250 mmfd. Mica	65B5-22
C17	.05 mfd. 200 Volts	64B1-32
C18	20 mmfd. Mica	65B5-5
C20	.1 mfd. 400 Volts	64B1-20
C21	50 mmfd. Mica	65B5-11
C22	50 mmfd. Mica	65B5-11
C23	.002 mfd. 600 Volts	64B1-14
C24	500 mmfd. Mica	65B5-27
C25	.005 mfd. 600 Volts	64B1-12
C26	.005 mfd. 600 Volts	64B1-12
C27	.005 mfd. 600 Volts	64B1-12
C28	.005 mfd. 600 Volts	64B1-12
C29	250 mmfd. Mica	65B5-22
C30a C30b C30c	30 mfd. 350 Volts 30 mfd. 350 Volts 20 mfd. 25 Volts	Electrolytic 67C6-25
C31 C32 C33	3-40 mmfd. 3-40 mmfd. 3-40 mmfd.	Trimmer 66A12-5
C34a C34b C34c	3-40 mmfd. 3-40 mmfd. 3-40 mmfd.	Trimmer 66B8-3
C35a C35b C35c	3-40 mmfd. 3-40 mmfd. 3-40 mmfd.	Trimmer 66B8-3
C36	.002 mfd., 600 Volts	64B1-14
C37	.001 mfd., 600 Volts	64B1-15
C38	.005 mfd., 600 Volts	64B1-12
C39	.01 mfd., 400 Volts	64B1-25
C40	.005 mfd., 600 Volts	64B1-12
C41	12-170 mmfd. Trimmer	66A12-1
C42 C43	25-290 mmfd. Trimmer	66A12-2
C44 C45	40-400 mmfd. Trimmer	66A12-3
C46	.002-600 volts	64B1-14

CHOKES, COILS & TRANSFORMERS

Symbol	Description	Part Number
CH1	Choke, Antenna	AB103-6
CH2	Choke, R.F. S.W.	AB103-31
CH3	Choke, Oscillator, S. W.	AB103-31
CH4	Choke, Oscillator, Cathode	AB103-1
CH5	Choke, Oscillator, 49 Meter Shunt	AB103-5
L1	Coil, Tuning (Antenna B.C.)	AC105-2
L2	Coil, Tuning (B.C., R.F.)	AB100-1
L3	Coil, Tuning (B.C., Oscillator)	AC101-2
L4	Coil, Tuning (S.W., R.F.)	AD102-2
L5	Coil, Tuning (S.W., Oscillator)	AD102-4
L6 L7 L8 L9 L10	Coils, Push Button, Tuning	AB100-4
L11	Loop (B.C. Antenna)	AC112
T1	Transformer, 1st I.F.	72B7
T2	Transformer, 2nd I.F.	72B12
T3	Transformer, 3rd I.F.	72B8
T4	Transformer, Power	80B2
T5	Transformer, Output	79A1

SWITCHES, PLUGS & SOCKETS

SW1	Switch, Antenna Circuit	76B6-2
SW2	Switch, R.F. Circuit	76B6-4
SW3	Switch, Oscillator Circut	76B6-3
SW4	Switch, Phono Radio	76A3
SW5	Switch in Station Selector Unit	76B5
SW6	Switch in Tone Control Unit	76B4
S1	Socket, Station Selector Unit	87A4-1
P1	Plug, Station Selector Unit	88A3-1
S2	Socket, Tone Control Unit	87A4-1
P2	Plug, Tone Control Unit	88A3-1
S3	Socket, Speaker	87A6-1
P3	Plug, Speaker	98A2
S4	Socket, Phono Connector	88A1
S5	Phono Motor Cord & Socket	89A6-9

CABINET & SLIDE-A-WAY PARTS

Left Door Bracket	15B70-1
Right Door Bracket	15B70-2
Slide Rail	15A71
Bracket Stop	15A72
Hub, Door Bracket	27A13
Roller, Door Bracket	27A14
Hub, Slide Roller (Slide-A-Way)	27A11
Roller, Slide (Slide-A-Way)	27A12
Bracket Assembly (Slide-A-Way)	G400C42
Switch & Cover (Slide-A-Way)	77B1-44
Plug, Alden 20" Leads (Slide-A-Way)	89A6-18
Escutcheon, Cover Plate (left)	23B4-1
Escutcheon, Cover Plate (right)	23B4-2
Escutcheon, Dial Mounting	23C3
Escutcheon, Lower Rail	23B5-2
Escutcheon, Switch (Slide-A-Way)	401A67

PHONOGRAPH PARTS

See Record Changer Service Manual for Detailed List

Centerpost	G400A12-2
Crystal Cartridge	409A1
Idler Wheel (407B3 Motor)	G400A23
Idler Wheel (407B2 Motor)	G400A59
Idler Wheel (407B1 Motor)	G400A57
Plug, Phonograph Output	88A2-1

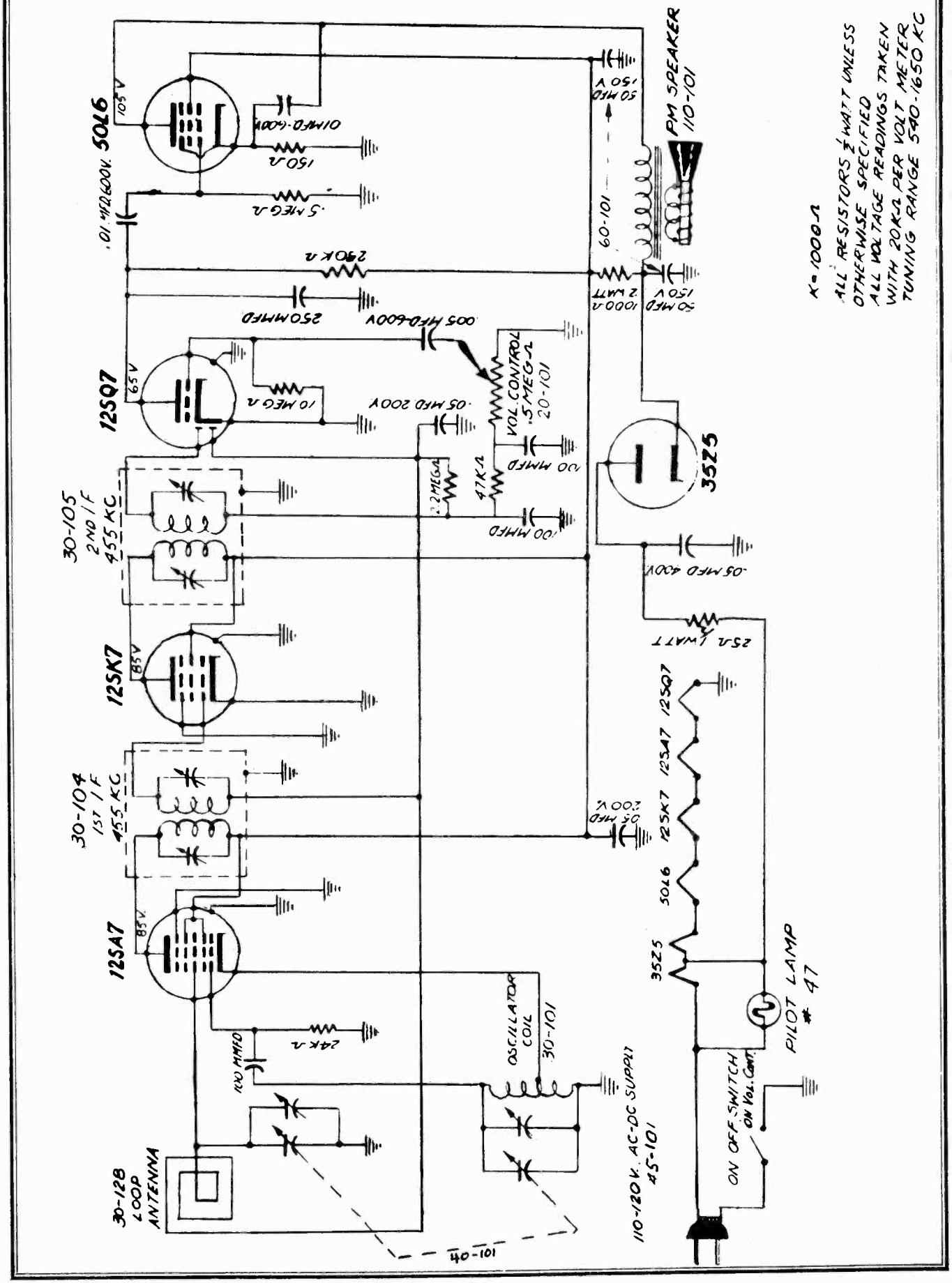
MISCELLANEOUS

Bulbs, Pilot Light, Mazda No. 47	81A1-8
Dial Cord, 100 inches	50A1-3
Dial, Scale Glass	21C21
Drum, Band Indicator	A1200
Drum, Dial Tuning	A1194
Knobs (Walnut)	33A12-1
Letter, Call Push Button	42A1
Plug, Coil Mounting	32A3-1
Pointer, Dial	25A6-1
Push Button, Numbers 1 and 5	33B6-1
Push Button, Numbers 2 and 4	33B6-2
Push Button, Number 3	33B6-3

When Ordering Slugs Specify Color Code

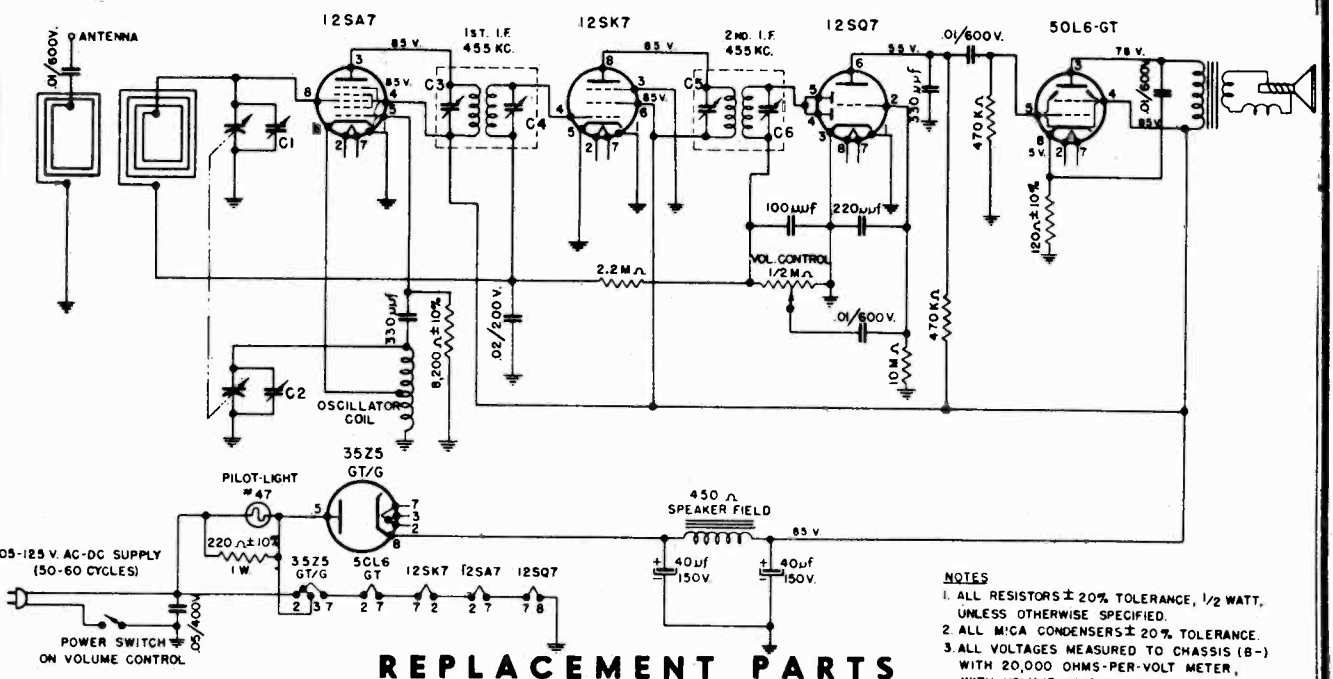
Slug, Tuning (B.C., R.F.) (B.C., Osc.)	71B1-3
Slug, Tuning (B.C. Antenna)	71B1-13
Slug, Tuning (S.W., R.F.) (S.W., Osc.)	71B1-9
Slug, Push Button Unit	71B1-14
Socket, Pilot Light	82A2-1
Speaker, 10" Dynamic	78B12
Spring, Hairpin for mounting coils	19A3-1
Stud, Slug Adjusting	27A4
Tube, Pilot Light Cover	82A5-1

AFFILIATED RETAILERS, INC. MODEL AR-205



MODELS R-046, R-1046, R-1046M

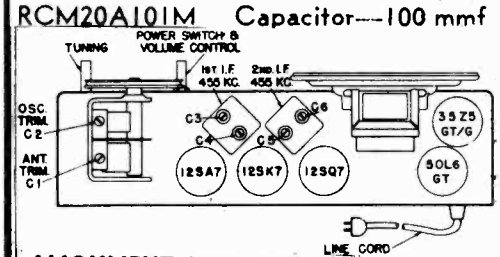
AFFILIATED RETAILERS, INC.



NOTES
1. ALL RESISTORS ± 20% TOLERANCE, 1/2 WATT, UNLESS OTHERWISE SPECIFIED.
2. ALL MICA CONDENSERS ± 20% TOLERANCE.
3. ALL VOLTAGES MEASURED TO CHASSIS (B-) WITH 20,000 OHMS-PER-VOLT METER, WITH VOLUME CONTROL FULL ON.

REPLACEMENT PARTS

Part No.	Description
BU-187	Pilot light bulb 6.3V (#47 Mazda)
CA-350W	Cabinet—Walnut bakelite cabinet
CA-350V	Cabinet—Ivory bakelite cabinet
CL-159	Coil—oscillator coil
CO-107	Capacitor—Electrolytic 40+40/150WV
CR-169	Crystal—dial crystal
CV-501	Condenser—2 gang variable tuning condenser
KN-470	Knob—Walnut knob
KN-471	Knob—Ivory knob
KN-622	Knob—Walnut knob for model R-1046M only
LP-163	Loop
PO-259	Pointer—moulded pointer
PT-102	Volume control and power switch
RCM20A101M	Capacitor—100 mmf 20% mica
RCM20A221M	Capacitor—220 mmf ± 20% mica
RCM20A331M	Capacitor—330 mmf ± 20% mica
RCP10W2203A	Capacitor—.02 mfd., 200 volts tubular
RCP10W4503A	Capacitor—.05 mfd., 400 volts tubular
RCP10W6103A	Capacitor—.01 mfd., 600 volts tubular
REB106M	Resistor— 10 meg., ± 20% 1/2 watt
REB121K	Resistor—120 ohms ± 10% 1/2 watt
REB225M	Resistor—2.2 meg., ± 20% 1/2 watt
REB474M	Resistor—470,000 ohms ± 20% 1/2 watt
REB822K	Resistor—8200 ohms ± 10% 1/2 watt
REC221K	Resistor—220 ohms ± 10% 1 watt
SK-110	Speaker—5" Dynamic with output transformer
SO-190	Socket—Dial light socket assembly
SP-191	Spring—Tuning drive lock spring
TR-186	Transformer—1st or 2nd I.F. transformer



ALIGNMENT PROCEDURE CHART

STEP	CONNECT HIGH SIDE OF SIGNAL GENERATOR TO -	SET SIGNAL GENERATOR TO -	TURN RECEIVER DIAL TO -	ADJUST THE FOLLOWING FOR MAXIMUM OUTPUT. (KEEP SIGNAL FROM SIGNAL GENERATOR AS LOW AS POSSIBLE.)
1	ANTENNA SECTION TUNING CONDENSER IN SERIES WITH .1 MFD COND.	455 KC.	FULL CLOCKWISE POSITION (CONDENSER PLATES FULLY OPEN)	C6, C5, C4, C3 AND REPEAT IN SAME ORDER (1st. AND 2nd. I.F. TRANSFORMERS.)
2	ANTENNA TERMINAL OF ANTENNA LOOP IN SERIES WITH 50 MMFD. COND.	1700 KC.	1700 KC. (170 ON DIAL)	C2 (OSCILLATOR)
3		1400 KC.	MAXIMUM SIGNAL (APPROX. 140 ON DIAL)	C1 (ANTENNA)
4		REPEAT STEPS 2 AND 3		

ALIGNMENT INSTRUCTIONS

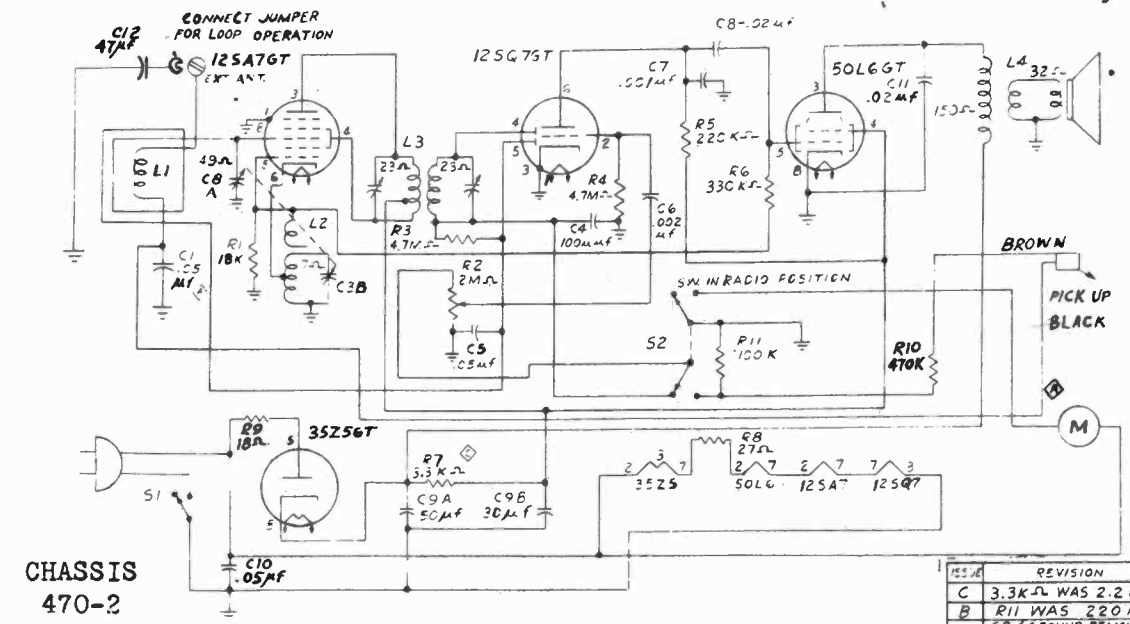
Modulated R.F. signal generator; output meter; insulated screw-driver; two .1 mfd 400 volt and one 50 mmfd 400 volt condensers.

To align the receiver it is necessary to remove the chassis from the cabinet, check that the pointer is horizontal and coincides with the two horizontal reference lines on the dial. In this position the condenser should be completely closed. Connect the output meter and signal generator as follows:

Output meter — Connect across voice coil and turn volume control to maximum.

Signal generator — Connect the low side of the signal generator to the receiver chassis thru a .1 mfd condenser and keep the output as low as possible, then proceed in the sequence shown on the alignment chart.

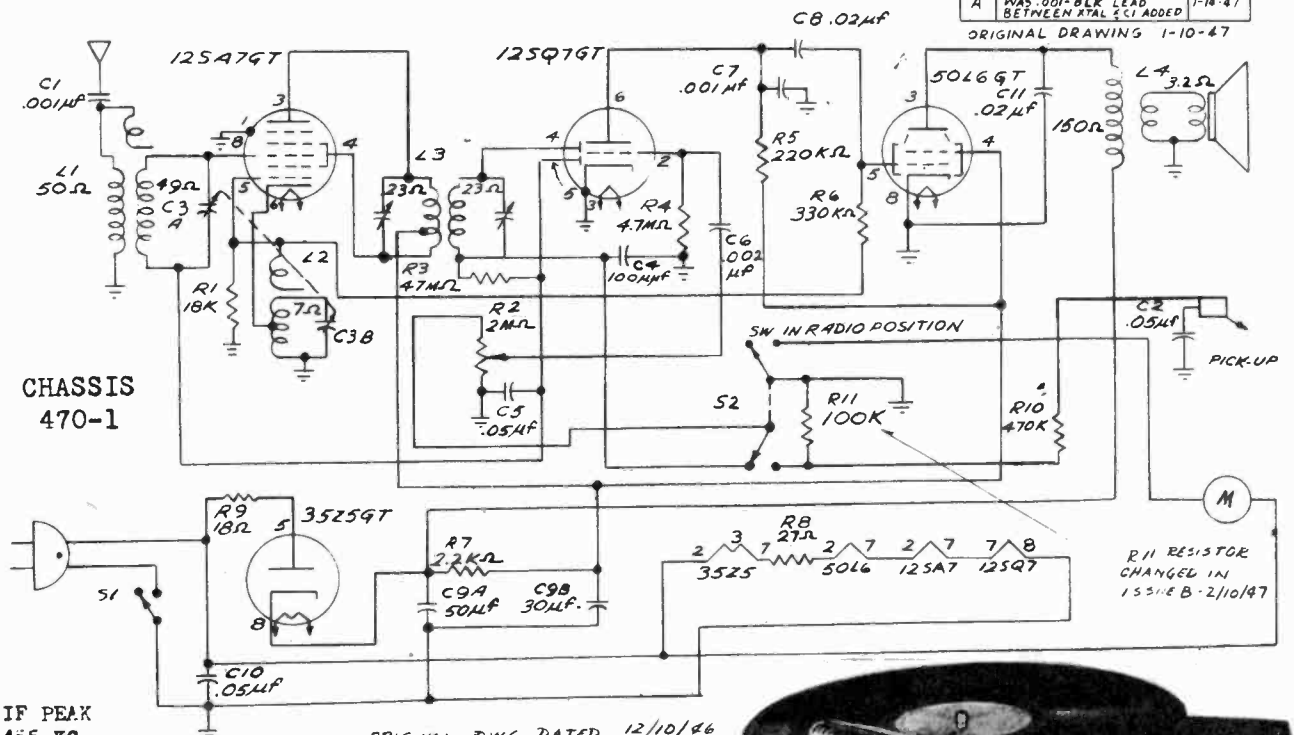
AIR KING PRODUCTS CO., INC. MODEL A-403 COURT JESTER
Chassis 470-1, 470-2



CHASSIS 470-2

ISSUE	REVISION	DATE
C	3.3KΩ WAS 2.2KΩ	3-11-47
B	R11 WAS 220K	1-21-47
A	C2 [GROUND REMOVED-C1 WAS .001- BLK LEAD BETWEEN XTAL & C1 ADDED	1-14-47

ORIGINAL DRAWING 1-10-47

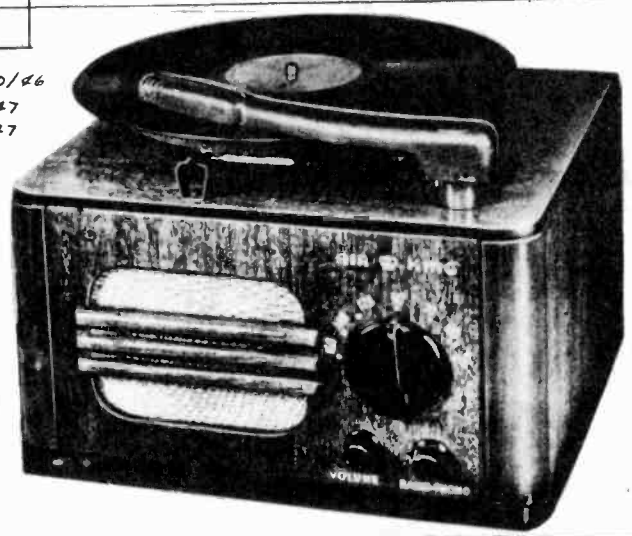


CHASSIS 470-1

IF PEAK 455 KC

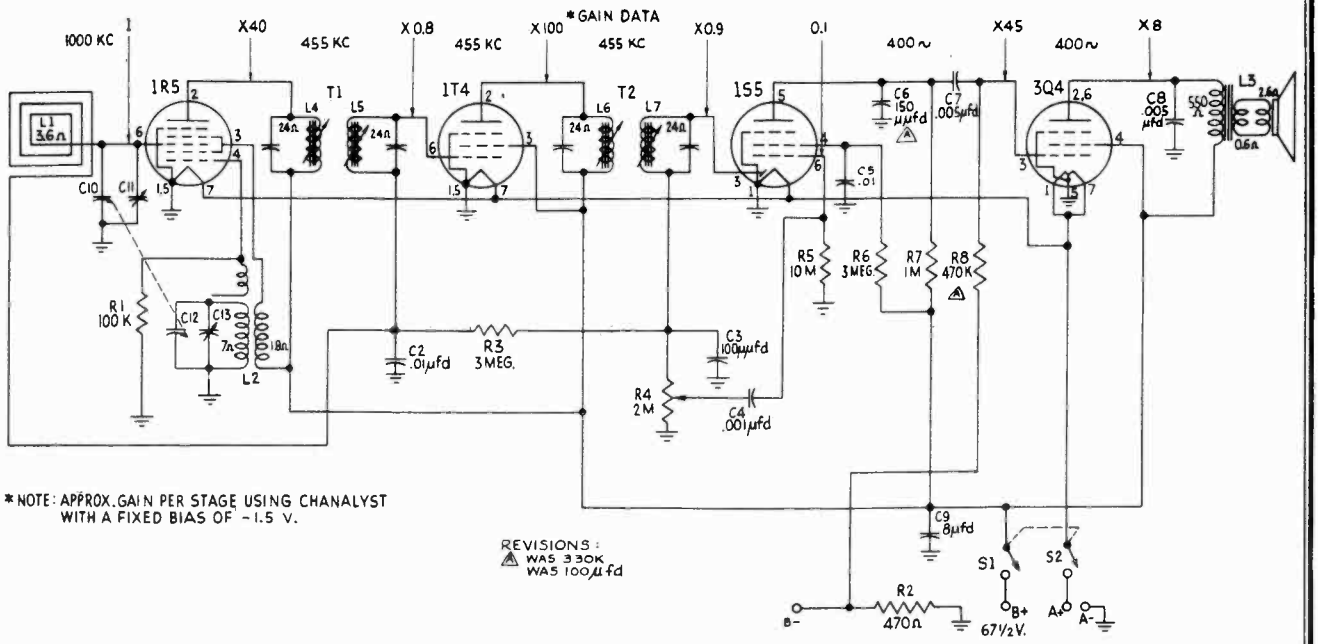
ORIGINAL DWG. DATED 12/10/46
ISSUE A REVISION 1/10/47
ISSUE B REVISION 2/10/47

A403	Cabinet, wood less lid
5977	Speaker and output transformer
39150	Knob, tuning wood
39161	Knob, (volume, phono-radio)
59307	Instruction book
1875	Variable condenser
2073	Electrolytic condenser unit 50-30 mf/150 v.
2093	Volume control 2 meg with switch
29184	Oscillator coil
29185	Antenna coil (chassis 470-1)
3376	I.F. transformer
29186	
29189	Loop and loading coil (chassis 470-2)
5559	Line cord
3928	Switch radio/phono
6343	Pick-up arm and rest
6418	Motor and turntable 8"
	Lifetime needle
	Paper condenser .05 mf 400 v.
	" " .002 200 v.
	" " .02 "
	" " .05 "
	" " .001 "
	Ceramic 100 mmf 500 volts
	16K ohms ½ w.
	4.7 meg ohms ½ w.
	220K " ½ w.
	2200 " 2 w.
	1A " ½ w.
	47 " 1 w.
	330K " ½ w.
	470K " ½ w.



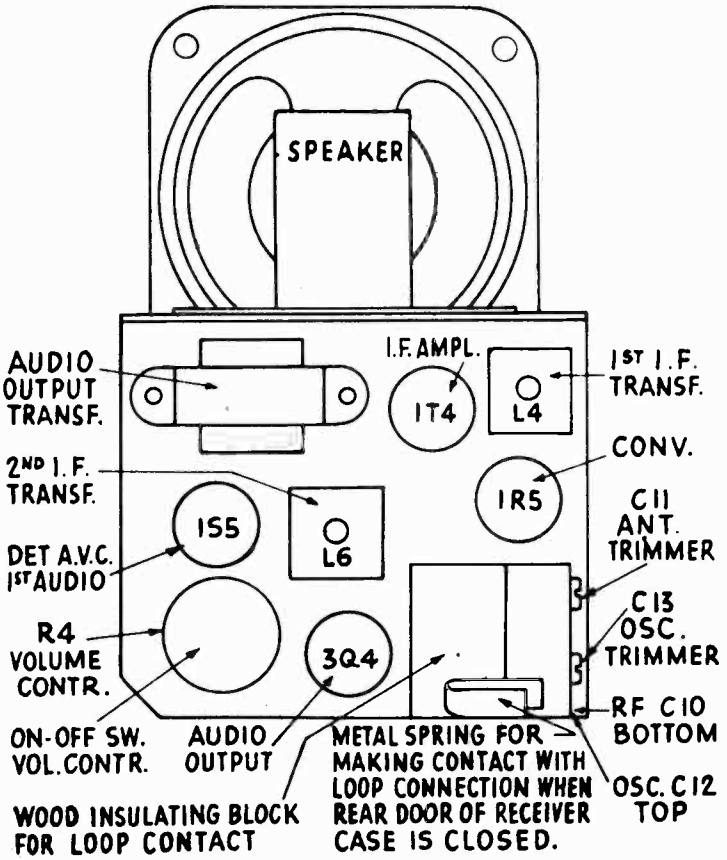
PARTS LIST AND CABINET ARE THE SAME FOR BOTH CHASSIS 470-1 and 470-2

MODEL A410 AIR KING PRODUCTS CO., INC.

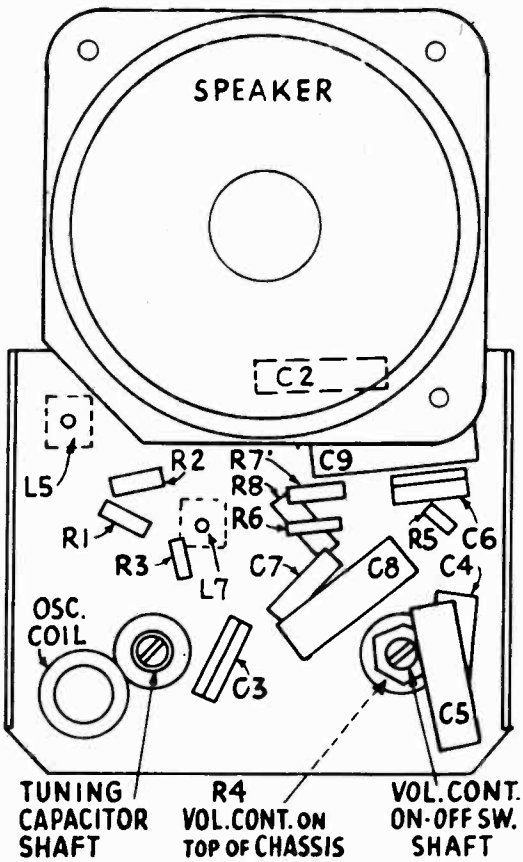


TUBE	PIN	VTVM	20,000 OHM/V	1,000 OHM/V	RESISTANCE
1R5	1	0	0	0	0
CONVERTER	2	65	65	65	OVER 500K
	3	65	65	65	OVER 500K
	4				
	550 KC	-13	-7	-2.5	100K
	1600 KC	-17	-8	-3.5	100K
	5	0	0	0	0
	6	0	0	0	5MEG
	7	1.4	1.4	1.4	4.5 OHM
1T4	1	0	0	0	0
IF AMPL.	2	65	65	65	OVER 500K
	3	65	65	65	OVER 500K
	4	-5	-5	-5	480 OHM
	5	0	0	0	0
	6	0	0	0	5 MEG
	7	1.4	1.4	1.4	4.5 OHM
1S5	1	0	0	0	0
DET AVC	2	--	--	--	--
1st AUDIO	3	0	0	0	1.6 MEG
	4	15	3.5	0.2	OVER 3 MEG
	5	10	4.5	0.5	OVER 1 MEG
	6	0	0	0	10 MEG
	7	1.4	1.4	1.4	4.5 OHM
3Q4	1	1.4	1.4	1.4	4.5 OHM
AUDIO	2	65	65	65	OVER 500K
OUTPUT	3	5	5	5	1 MEG
	4	65	65	65	OVER 500K
	5	0	0	0	0
	6	65	65	65	OVER 500K
	7	1.4	1.4	1.4	4.5 OHM

ALL VOLTAGE AND RESISTANCE MEASUREMENTS MADE WITH RESPECT TO CHASSIS GROUND, AND WITH A SUPPLY VOLTAGE OF 67½ V.D.C.



TOP VIEW



BOTTOM VIEW

ALIGNMENT PROCEDURE

IF ALIGNMENT (REMOVE RECEIVER FROM CABINET)

CONNECT AN OUTPUT METER ACROSS THE VOICE COIL. CONNECT THE SIGNAL GENERATOR TO THE STANDARD HAZELTINE LOOP MODEL 1150 AND COUPLE IT LOOSELY TO THE RECEIVER.

SET THE SIGNAL GENERATOR TO 455KC AND FULLY MESH THE RECEIVER TUNING CAPACITOR.

KEEP THE RECEIVER VOLUME CONTROL AT MAX. AND THE OUTPUT OF THE SIGNAL GENERATOR SUFFICIENT TO GIVE A READABLE DEFLECTION ON THE OUTPUT METER. ADJUST FOR MAX. IF TUNING SLUGS L7, L6, L5, L4.

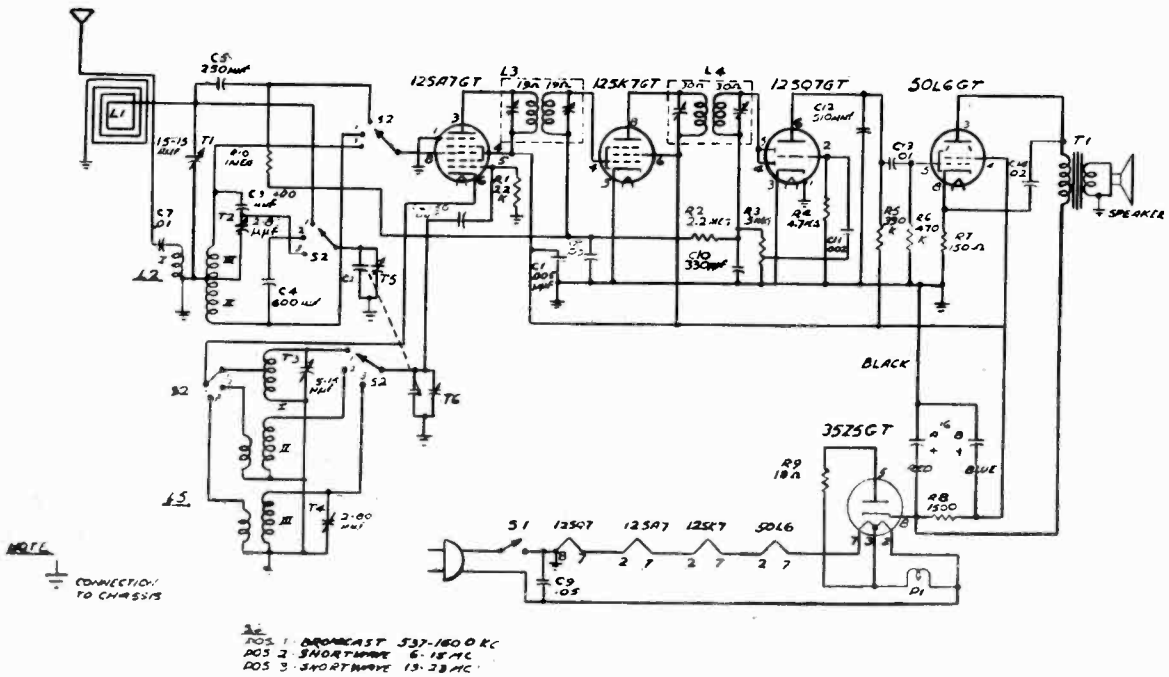
RF OSCILLATOR ADJUSTMENT

PLACE CHASSIS IN CABINET AND SET DIAL POINTER TO 1500 KC. REMOVE KNOB AND REMOVE CHASSIS FROM CABINET. KEEPING THE SAME SETUP AS USED FOR IF ALIGNMENT, SET THE SIGNAL GENERATOR TO 1500 KC AND ADJUST OSCILLATOR TRIMMER C13 FOR MAX. OUTPUT.

SET THE SIGNAL GENERATOR AND RECEIVER TO 1300 KC AND ADJUST ANTENNA TRIMMER C11 FOR MAX. OUTPUT.

MODELS A501, A502, Chassis 465-4

AIR KING PRODUCTS CO., INC.



ALIGNMENT PROCEDURE

Output meter connection.....Across voice coil

Output meter reading to indicate ½ watt.....1.25V for 3.2 Ohm voice coil

Connection of generator ground.....Receiver chassis

Generator modulation.....Approximately 30% @ 400 cycles

Position of volume control.....Fully clockwise

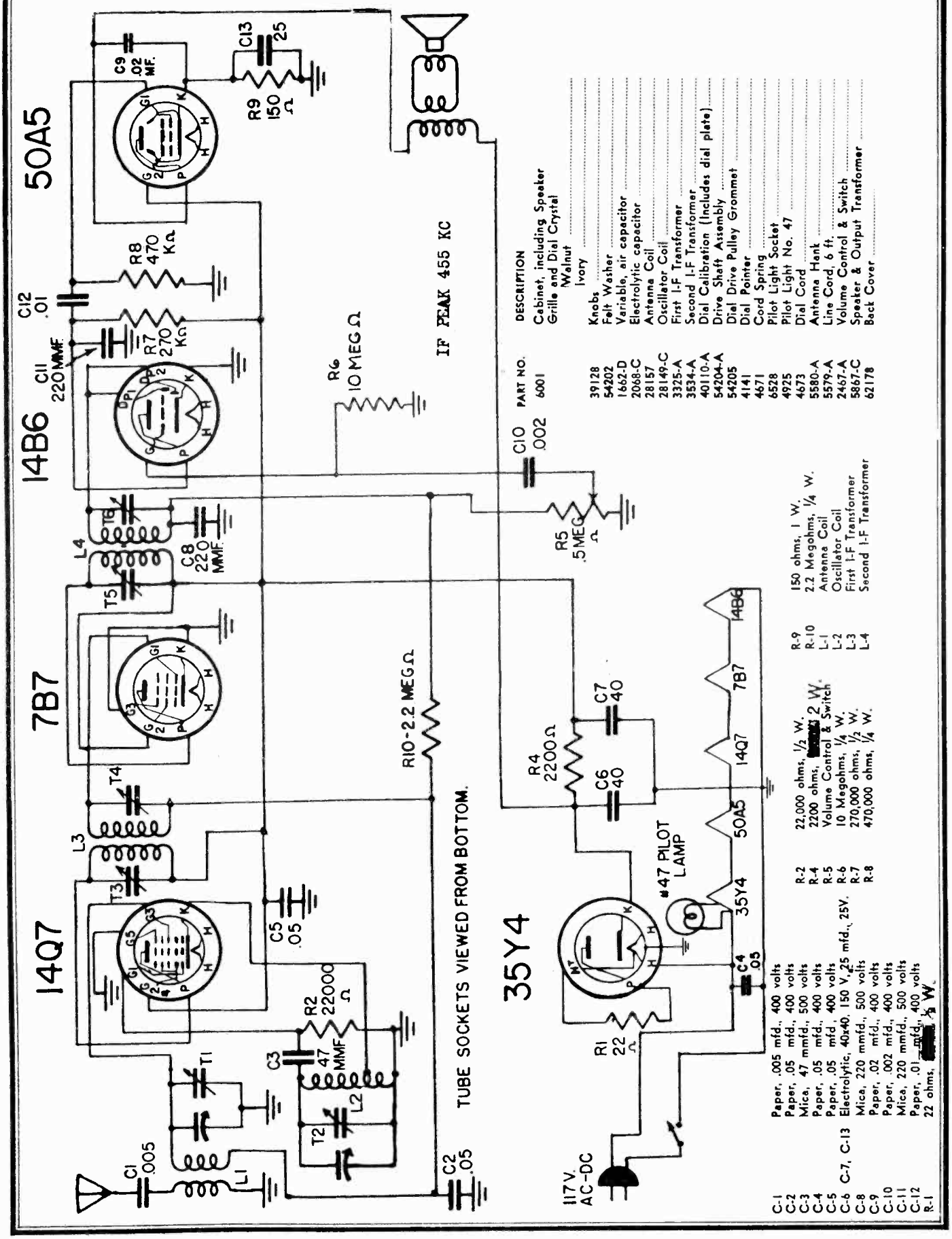
WAVE BAND SW.	POSITION OF DIAL POINTER	GEN. FREQ.	GEN. CONN.	DUMMY ANT.	TRIMMERS ADJ. IN ORDER	TRIMMER FUNCTION
B. C.	550	455	12SA7 Grid	.1 mfd.	I. F. Trimmers	I. F.
S. W. 1	14	14	Ant. Post	R.M.A. Std.	T6*	Osc.
	14	14	Ant. Post	R.M.A. Std.	T5	Osc.
S. W. 2	23	23	Ant. Post	R.M.A. Std.	T4*	Osc.
	23	23	Ant. Post	R.M.A. Std.	T2	R. F.
B. C.	1500	1500	Ant. Post	R.M.A. Std.	T3	R. F.
	1500	1500	Ant. Post	R.M.A. Std.	T1	R. F.

NOTE:

* If two peaks can be had the correct one is with the trimmer screw further out, the other peak is the image. Align set in order shown.

AIR KING PRODUCTS CO., INC.

MODEL 4601

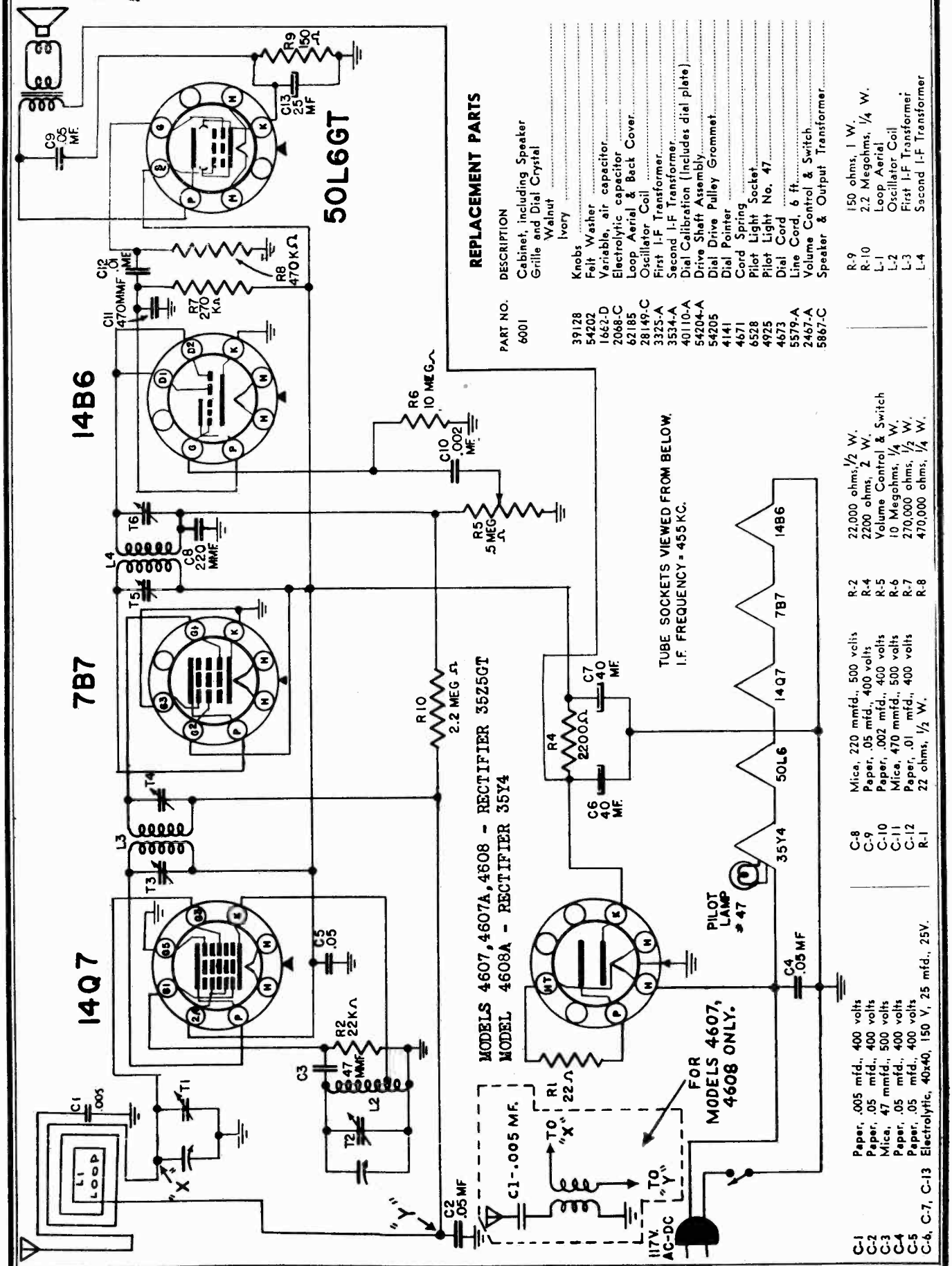


	DESCRIPTION	PART NO.
	Cabinet, including Speaker	6001
	Grille and Dial Crystal	
	Walnut	39128
	Ivory	54202
	Knobs	1662-D
	Felt Washer	2068-C
	Variable, air capacitor	28157
	Electrolytic capacitor	28149-C
	Antenna Coil	3325-A
	Oscillator Coil	3534-A
	First I-F Transformer	40110-A
	Second I-F Transformer	54204-A
	Dial Calibration (Includes dial plate)	54205
	Drive Shaft Assembly	4141
	Dial Drive Pulley Grommet	4671
	Dial Pointer	6528
	Cord Spring	4925
	Pilot Light Socket	4673
	Pilot Light No. 47	5580-A
	Dial Cord	5579-A
	Antenna Hank	2467-A
	Line Cord, 6 ft.	5867-C
	Volume Control & Switch	62178
	Speaker & Output Transformer	
	Back Cover	

C-1	Paper, .005 mfd., 400 volts	R-2	22,000 ohms, ½ W.	R-9	150 ohms, 1 W.
C-2	Paper, .05 mfd., 400 volts	R-4	2200 ohms, ½ W.	R-10	2.2 Megohms, ¼ W.
C-3	Mica, 47 mmfd., 500 volts	R-5	Volume Control & Switch	L-1	Antenna Coil
C-4	Paper, .05 mfd., 400 volts	R-6	10 Megohms, ¼ W.	L-2	Oscillator Coil
C-5	Paper, .05 mfd., 400 volts	R-7	270,000 ohms, ½ W.	L-3	First I-F Transformer
C-6 C-7, C-13	Electrolytic, 40-40, 150 V., 25 mfd., 25V.	R-8	470,000 ohms, ¼ W.	L-4	Second I-F Transformer
C-8	Mica, 220 mmfd., 500 volts				
C-9	Paper, .02 mfd., 400 volts				
C-10	Paper, .002 mfd., 400 volts				
C-11	Mica, 220 mmfd., 500 volts				
C-12	Paper, .01 mfd., 400 volts				
R-1	22 ohms, [redacted] W.				

MODELS 4607, 4607A, 4608, 4608A

AIR KING PRODUCTS CO., INC.

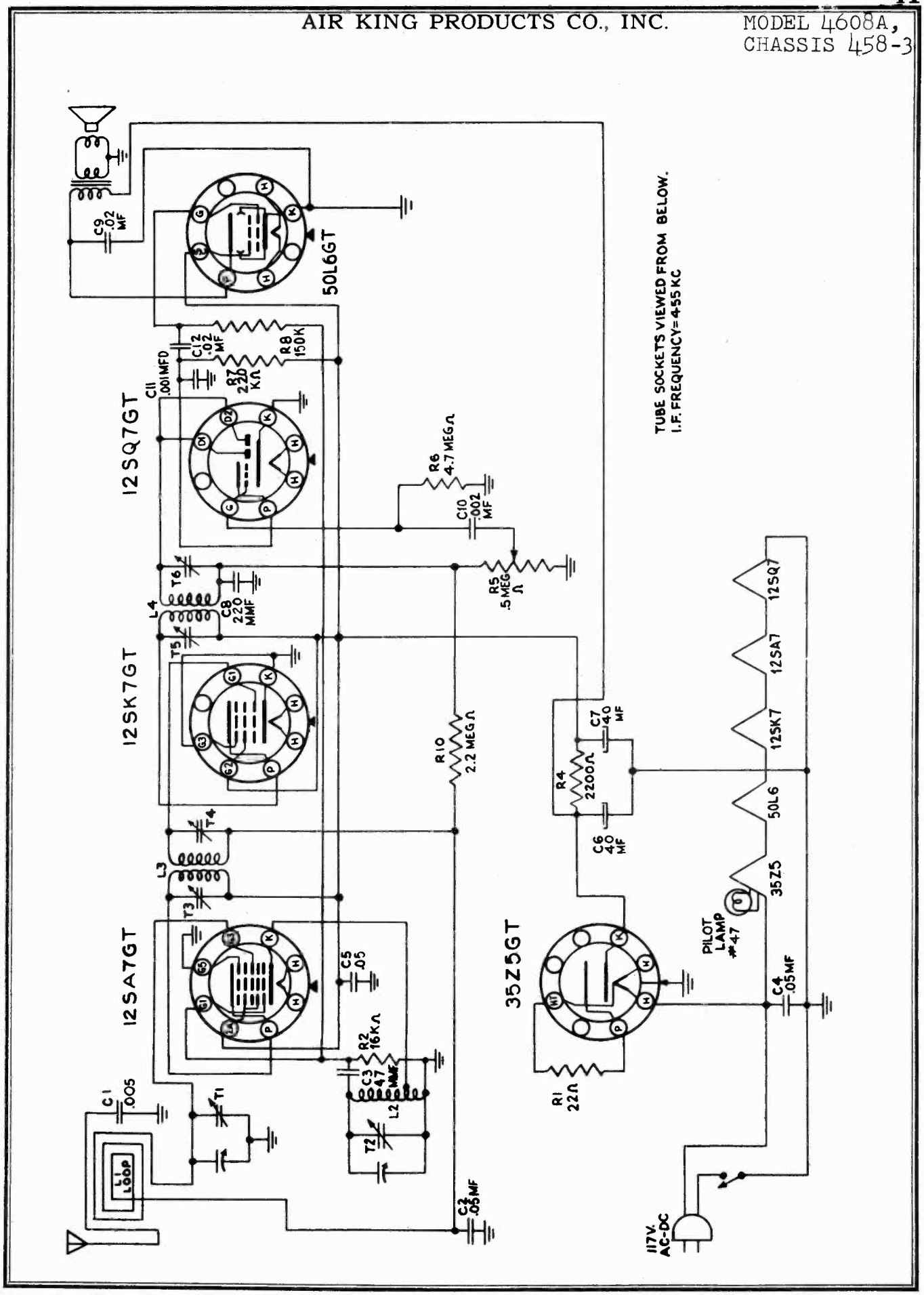


REPLACEMENT PARTS

PART NO.	DESCRIPTION
6001	Cabinet, including Speaker Grille and Dial Crystal
	Walnut
	Ivory
39128	Knobs
54202	Felt Washer
1662-D	Variable, air capacitor
2068-C	Electrolytic capacitor
62185	Loop Aerial & Back Cover
28149-C	Oscillator Coil
3325-A	First I-F Transformer
3534-A	Second I-F Transformer
40110-A	Dial Calibration (Includes dial plate)
54204-A	Drive Shaft Assembly
54205	Dial Drive Pulley Grommet
4141	Dial Pointer
4671	Cord Spring
6528	Pilot Light Socket
4925	Pilot Light No. 47
4673	Dial Cord
5579-A	Line Cord, 6 ft.
2467-A	Volume Control & Switch
5867-C	Speaker & Output Transformer

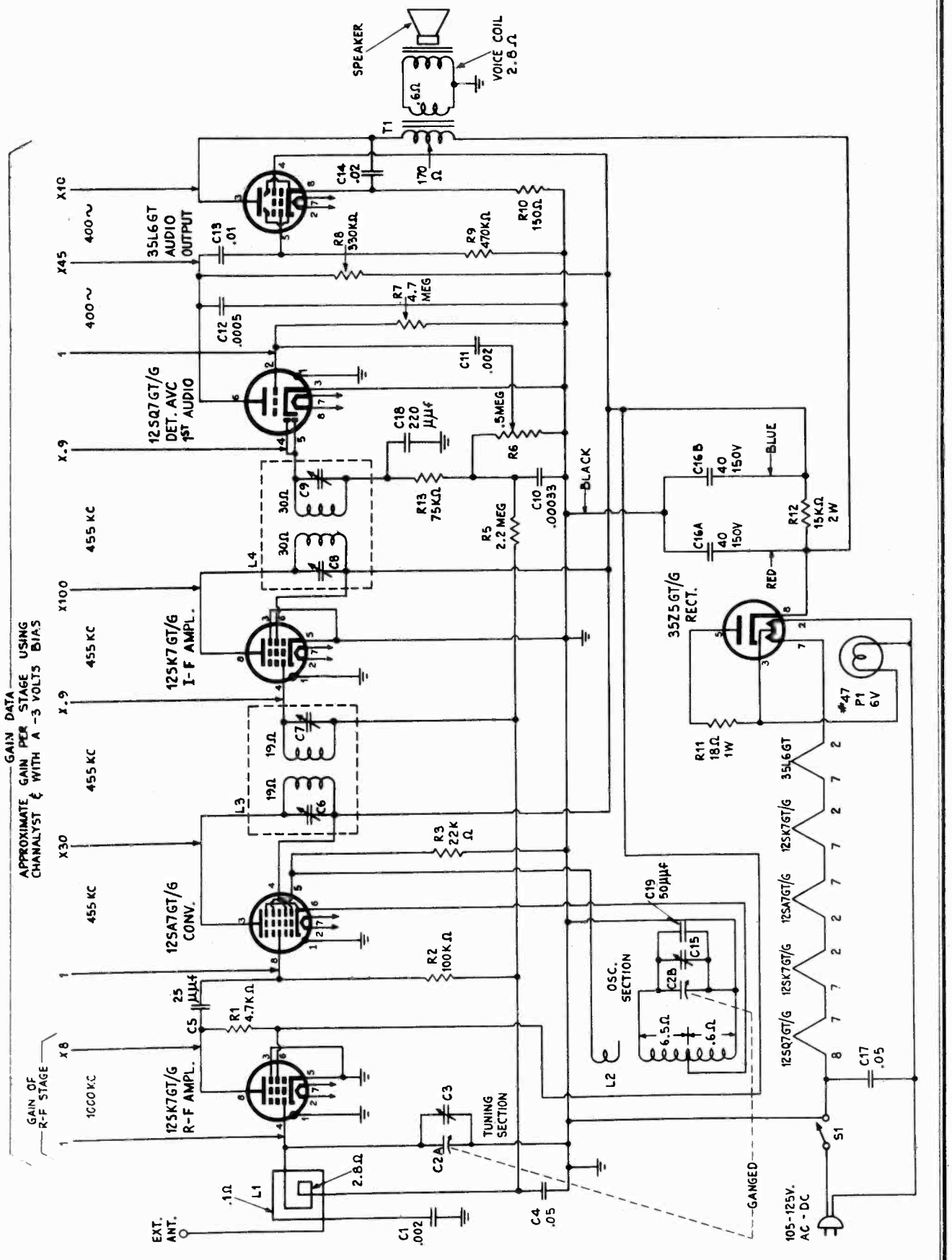
C-1	Paper, .005 mfd., 400 volts	C-8	Mica, 220 mmfd., 500 volts	R-2	22,000 ohms, ½ W.
C-2	Paper, .05 mfd., 400 volts	C-9	Paper, .05 mfd., 400 volts	R-4	2200 ohms, 2 W.
C-3	Mica, 47 mmfd., 500 volts	C-10	Paper, .002 mfd., 400 volts	R-5	Volume Control & Switch
C-4	Paper, .05 mfd., 400 volts	C-11	Mica, 470 mmfd., 500 volts	R-6	10 Megohms, ¼ W.
C-5	Paper, .05 mfd., 400 volts	C-12	Paper, .01 mfd., 400 volts	R-7	270,000 ohms, ½ W.
C-6, C-7, C-13	Electrolytic, 40x40, 150 V, 25 mfd., 25V.	R-1	22 ohms, ½ W.	R-8	470,000 ohms, ¼ W.
				R-9	150 ohms, 1 W.
				R-10	2.2 Megohms, ¼ W.
				L-1	Loop Aerial
				L-2	Oscillator Coil
				L-3	First I-F Transformer
				L-4	Second I-F Transformer

AIR KING PRODUCTS CO., INC. MODEL 4608A, CHASSIS 458-3



MODELS 4705, 4706

AIR KING PRODUCTS CO., INC.

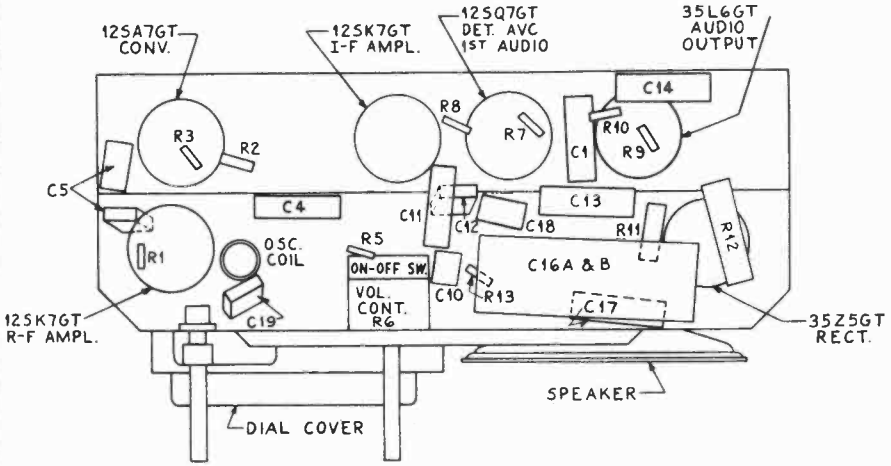


IF ALIGNMENT

CONNECT OUTPUT METER ACROSS THE VOICE COIL. CONNECT THE SIGNAL GENERATOR TO THE STANDARD HAZELTINE LOOP MODEL 1150 AND COUPLE IT LOOSELY TO THE RECEIVER LOOP.

SET THE SIGNAL GENERATOR TO 455 KC AND FULLY MESH THE RECEIVER TUNING CAPACITOR.

KEEP RECEIVER VOLUME CONTROL AT MAXIMUM AND THE OUTPUT OF THE SIGNAL GENERATOR SUFFICIENT TO GIVE A READABLE DEFLECTION ON THE OUTPUT METER. ADJUST FOR MAXIMUM IF TRIMMERS C9, C8, C7, C6.

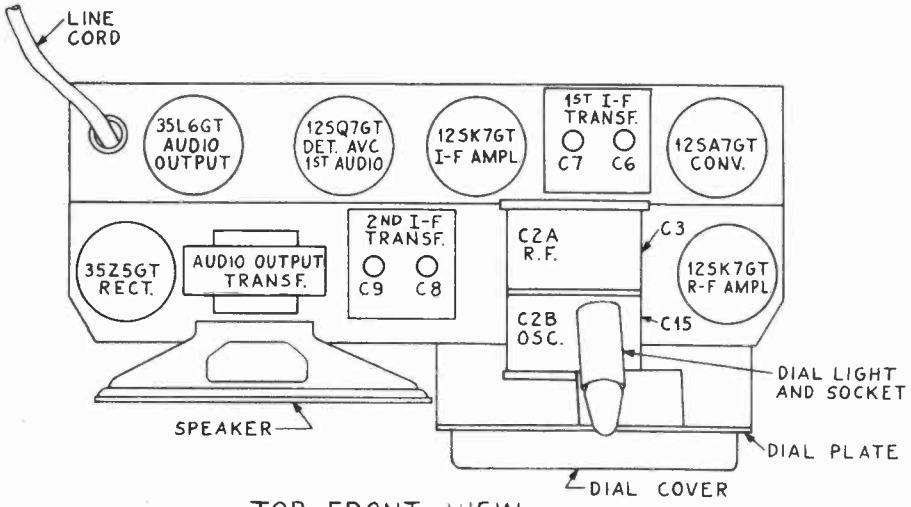


BOTTOM FRONT VIEW

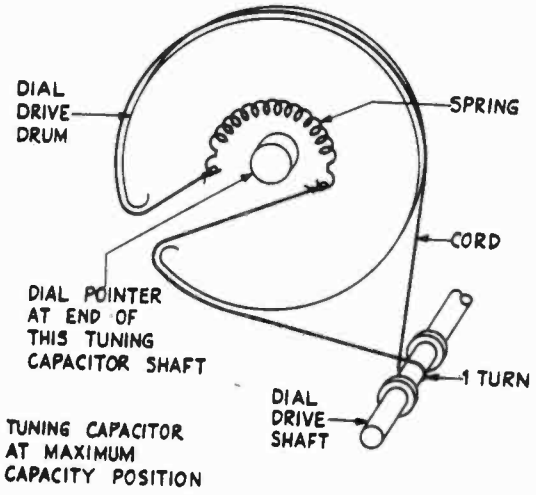
RF ALIGNMENT

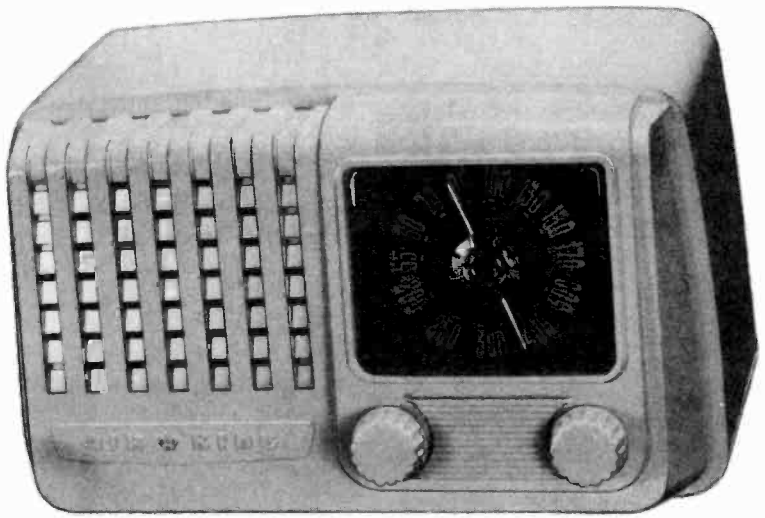
KEEPING THE SAME SETUP AS USED FOR THE IF ALIGNMENT, SET THE SIGNAL GENERATOR AT 1600 KC AND ADJUST FOR MAXIMUM OSCILLATOR TRIMMER C15.

SET THE SIGNAL GENERATOR AND RECEIVER FOR 1400 KC AND ADJUST ANTENNA TRIMMER C3 FOR MAXIMUM OUTPUT.



TOP FRONT VIEW

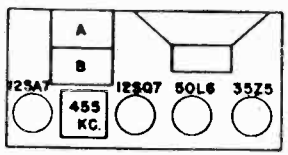




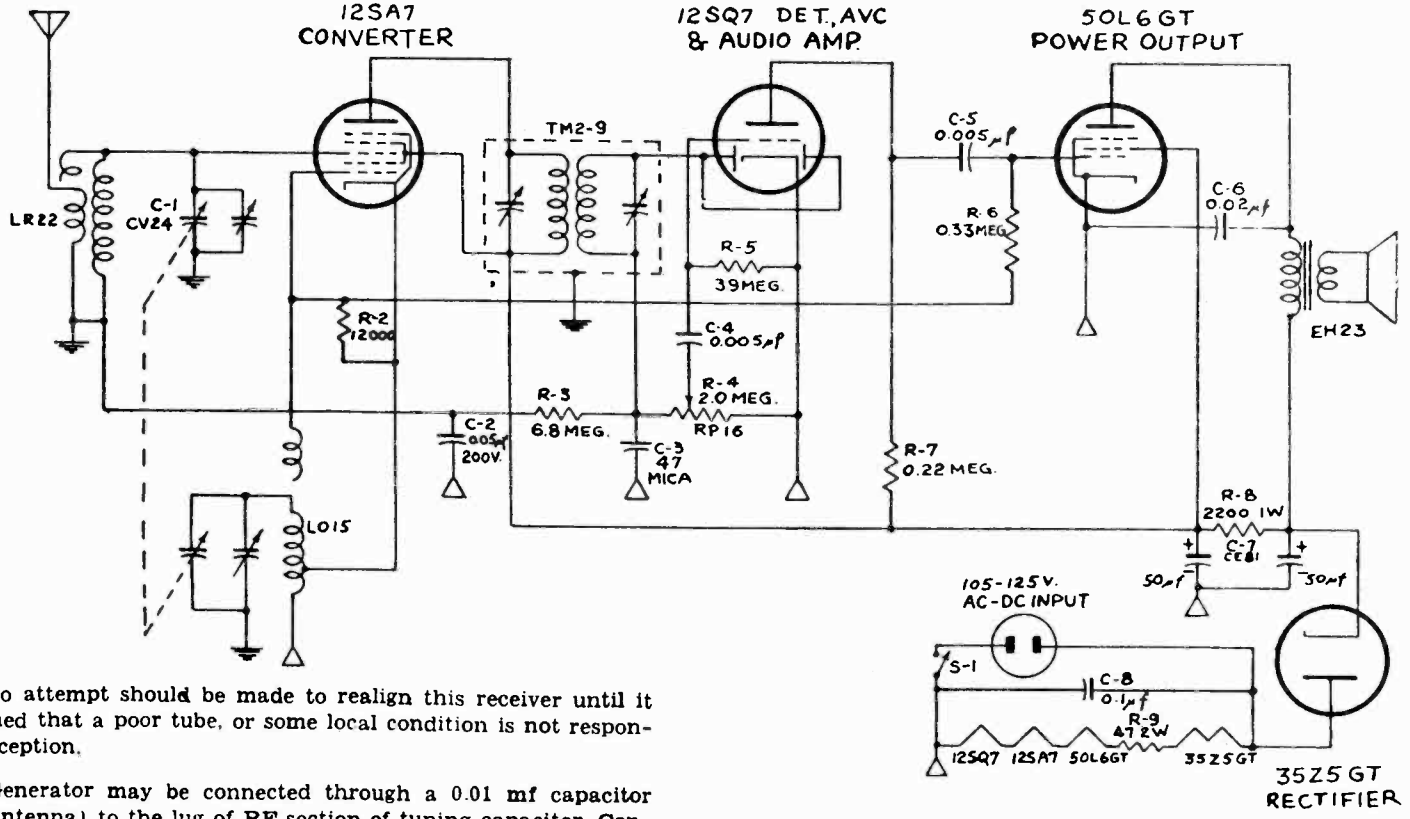
MODELS 4705, 4706

AIR KING PRODUCTS CO., INC.

TUBE	PIN	VTVM	20,000 OHM V	1,000 OHM V	RESISTANCE
12SK7	1	0	0	0	0
RF AMP.	2	AC	AC	AC	80 OHM
	3	0	0	0	0
	4	-0.1	-0.5	-0.2	2.5 MEG
	5	0	0	0	0
	6	+76	+76	+76	OVER 500 K
	7	AC	AC	AC	65 OHM
	8	+40	+40	+40	OVER 500 K
12SA7	1	0	0	0	0
CONV.	2	AC	AC	AC	40 OHM
	3	+76	+76	+76	OVER 500 K
	4	+76	+76	+76	OVER 500 K
	5				
OSC. VOLT	550 KC	-5	-4	-1.6	20 K
	1600 KC	-6	-5	-2.2	20 K
	6	0	0	0	0.6 OHM
	7	AC	AC	AC	50 OHM
	8	-1.3	-0.5	-0.2	2.8 MEG
12SK7	1	0	0	0	0
IF AMP.	2	AC	AC	AC	32 OHM
	3	0	0	0	0
	4	-1.3	-0.5	-0.2	2.6 MEG
	5	0	0	0	0
	6	+76	+76	+76	OVER 500 K
	7	AC	AC	AC	16 OHM
	8	+76	+76	+76	OVER 500 K
12SQ7	1	0	0	0	0
DET. AVC	2	-1.1	-0.6	-0.4	4.6 MEG
1st AF	3	0	0	0	0
	4	-1.3	-0.6	-0.4	400 K
	5	-1.3	-0.6	-0.4	400 K
	6	+52	+50	+18	OVER 500 K
	7	AC	AC	AC	16 OHM
	8	0	0	0	0
35L6	1	0	0	0	0
AUDIO OUTPUT	2	AC	AC	AC	100 OHM
	3	+115	+115	+115	OVER 500 K
	4	+76	+76	+76	OVER 500 K
	5	0	0	0	460 K
	6	0	0	0	INFINITE
	7	AC	AC	AC	55 OHM
	8	+4	+4	+4	170 OHM
35Z5	1	--	--	--	--
	2	AC	AC	AC	120 OHM
	3	AC	AC	AC	118 OHM
	4	--	--	--	--
	5	AC	AC	AC	140 OHM
	6	--	--	--	--
	7	AC	AC	AC	90 OHM
	8	+120	+120	+120	OVER 500 K



LOCATION OF TUBES



Alignment: No attempt should be made to realign this receiver until it has been determined that a poor tube, or some local condition is not responsible for faulty reception.

The Signal Generator may be connected through a 0.01 mf capacitor (used as dummy antenna) to the lug of RF section of tuning capacitor. Connect ground clip of generator to a convenient B-minus point such as one of the switch terminals on the back of the volume control. An output meter may be clipped directly across the voice coil lugs. Align the IF trimmers to 455 kc using least possible input from signal generator to avoid developing A. V. C. voltage which would make the tuning adjustments very broad.

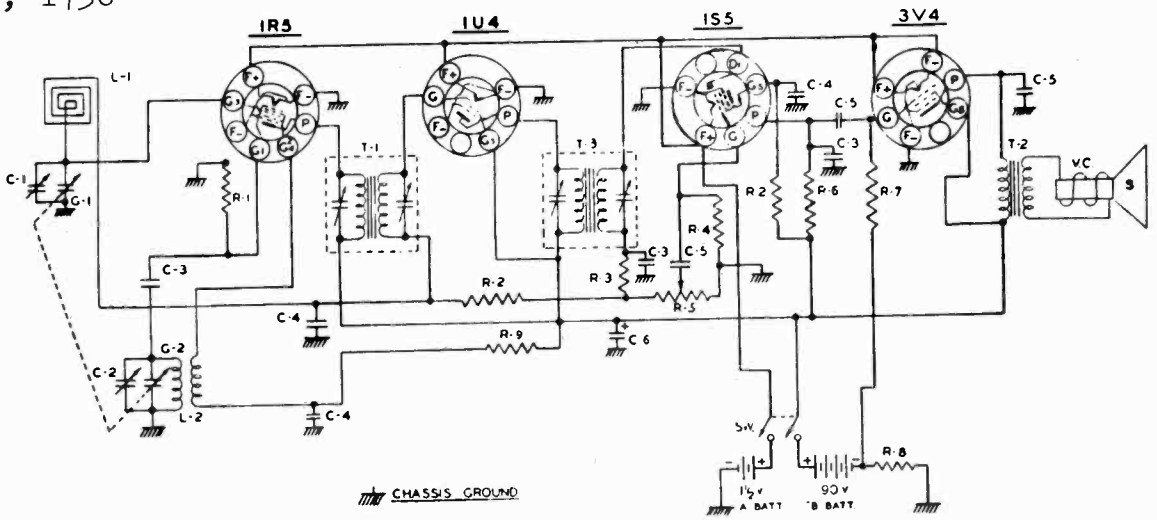
To align RF trimmer, remove the 0.01 mf capacitor and connect the signal generator hot lead to a 68 mmf mica condenser. Connect the dummy antenna thus formed to the antenna lug on the antenna coil (lug to which the antenna hank is soldered). Again, use the least possible input from the signal generator. With the tuning capacitor plates completely out of mesh, and pointed at extreme clockwise position, adjust the oscilator trimmer on front section of tuning capacitor to 1700 kc. Readjust both signal generator and tuning capacitor to 1550 kc and adjust the RF trimmer on rear section for maximum response.

NOTES:

1. RESISTORS ARE IN OHMS AND ARE ½ WATT; CAPACITORS ARE 400V AND IN μμf UNLESS OTHERWISE SPECIFIED.
2. SWITCH S-1 IS MOUNTED ON REAR OF VOLUME CONTROL.
3. SYMBOL Δ DENOTES B- AND SYMBOL ⏚ DENOTES CHASSIS.
4. I.F. FREQUENCY IS 455Kc.
5. TUNING RANGE IS 532Kc. TO 1700Kc.

MODELS 1755, 1756, 1757, 1758

ALDEN, INC.



PART NO		DESCRIPTION
1R-20	R-1	220M Ω RESISTOR 1/2W 20 %
1R-23	R-2	3.3MEG RESISTOR 1/2W 20 %
1R-31	R-3	82M Ω RESISTOR 1/2W 10 %
1R-3	R-4	10MEG RESISTOR 1/2W 20 %
VC-8	R-5	1MEG VOLUME CONTROL
1R-12	R-6	1MEG RESISTOR 1/2W 20 %
1R-13	R-7	2.2MEG RESISTOR 1/2W 20 %
1H-39	R-8	620 Ω RESISTOR 1/2W 5 %
1R-37	R-9	10M Ω RESISTOR 1/2W 20 %
TC-7	C-1	ANT TRIMMER
	C-2	OSC TRIMMER ON GANG
MC-2	C-3	100MMFD MICA CONDENSER
PC-7	C-4	.01 MFD 400 V CONDENSER
PC-6	C-5	.005MFD 600 V CONDENSER
EC-7	C-6	20MFD 80WV ELECTROLYTIC
GC-5	G-1 G-2	GANG CONDENSER
LL-5	L-1	LOOP ANTENNA
LO-12	L-2	OSC COIL
LI-3	T-1	I.F. TRANSFORMER INPUT
	SW	DPST SWITCH ON VOLUME CONTROL
	T-2	SPEAKER TRANSFORMER
SPK-5	VC	VOICE COIL
	S	PM SPEAKER
LI-4	T-3	I.F. TRANSFORMER OUTPUT
TU-30		1R5 1U4 1S5 3V4

ALIGNMENT AND SERVICE DATA

Remove chassis from cabinet for alignment. A signal generator is required having the following frequencies: 455 KC and 1400 KC. An output meter should be connected across the speaker.

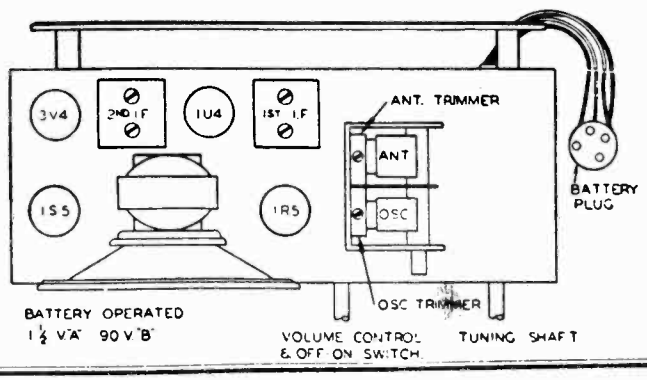
FIRST STEP: Connect the hot lead from the generator to the ANT. section of the gang condenser, through a .1 MFD. condenser. The ground lead from the generator may be connected to any spot on the metal chassis. Turn the gang condenser to complete minimum capacity. Set the generator to 455 KC. Adjust the movable trimmers in the IF cans, until a maximum reading is noted on the output meter.

The volume control of the receiver should be turned to maximum during the IF and all subsequent alignment and the generator output as low as possible to prevent the AVC from working and giving false readings.

SECOND STEP: With the leads from the generator still connected as in IF alignment, adjust the generator to 400 KC. Set the dial pointer to 1400 KC on the dial scale. Adjust the oscillator trimmer until the signal is tuned in.

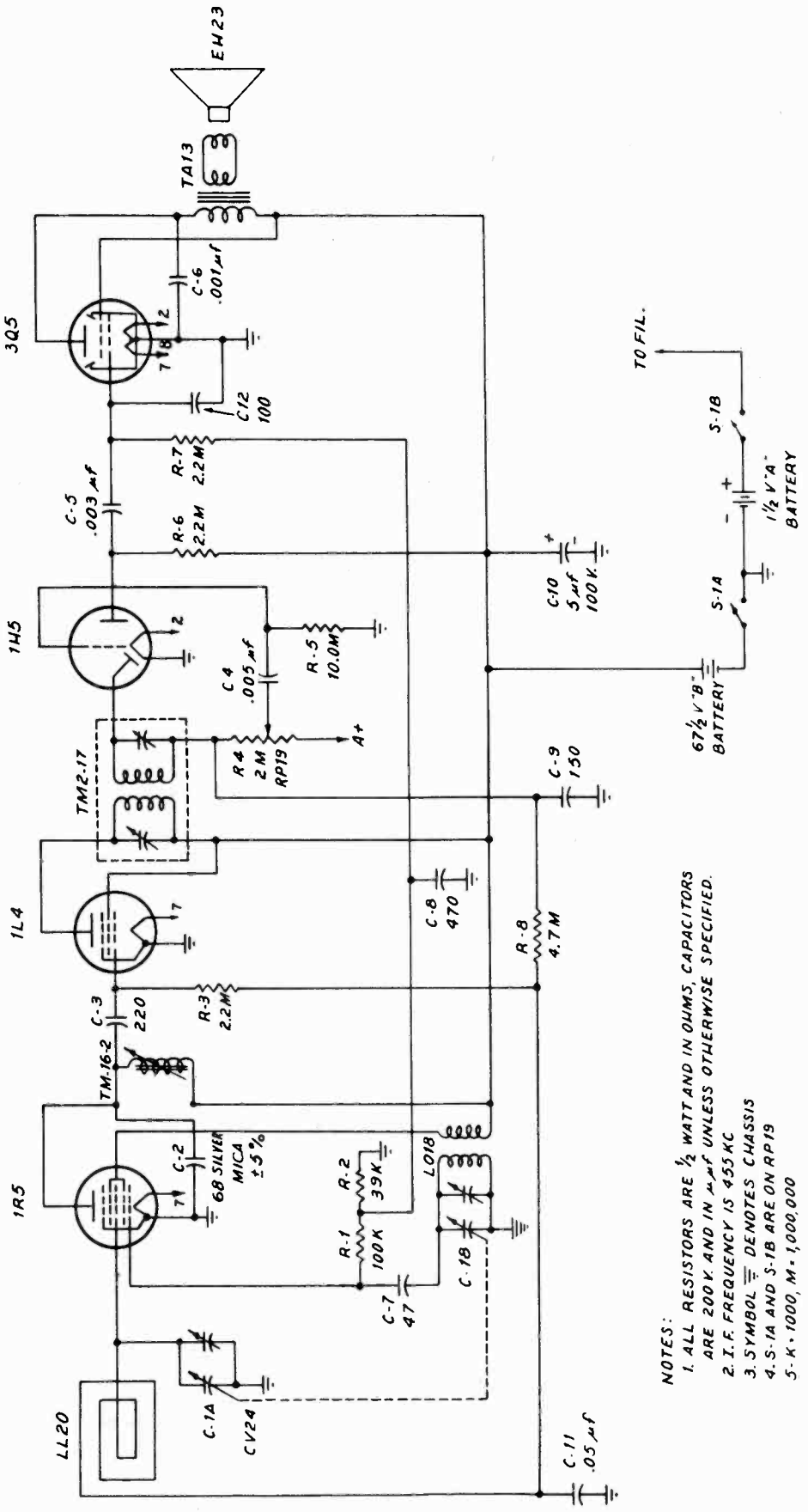
THIRD STEP: Remove the generator leads from the condenser. Connect the hot lead from the generator through a 200 MMFD. condenser to one of the leads which project from the back of the loop antenna. Connect the ground lead of the generator to the remaining lead. With the generator and the receiver still tuned to 1400 KC, adjust the antenna trimmer until a maximum reading is noted on the output meter.

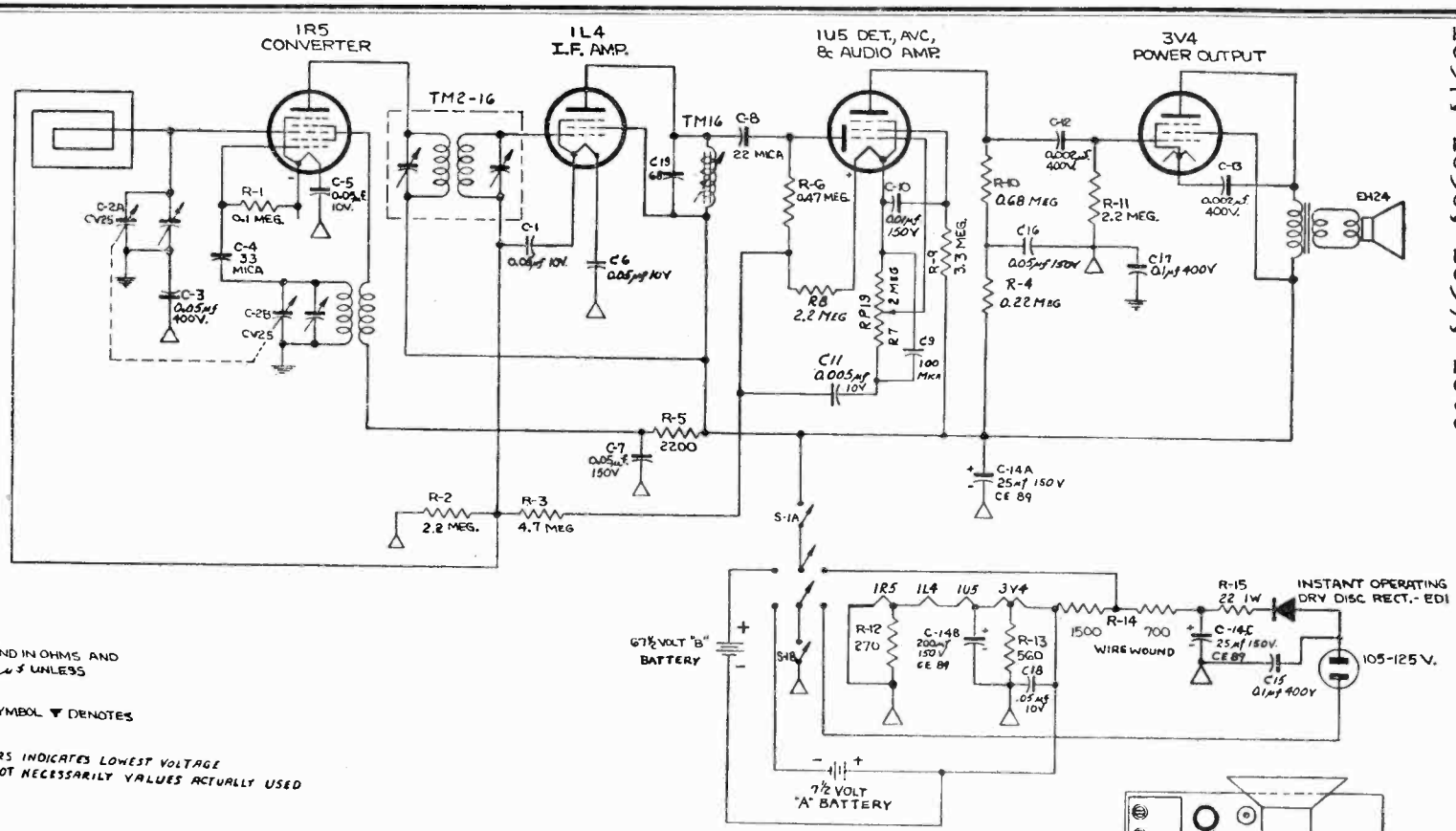
TUBE AND TRIMMER LOCATION



ALDEN INC.

MODELS 1800, 1801, 1802, 1803





NOTES:
1. ALL RESISTORS ARE ½ WATT AND IN OHMS AND CAPACITORS ARE 500V. AND IN mmf UNLESS OTHERWISE SPECIFIED.
2. I.F. FREQUENCY IS 455KC.
3. SYMBOL △ DENOTES B- AND SYMBOL ▼ DENOTES CHASSIS.
4. S-1A AND S-1B ARE ON RP19.
5. VOLTAGE RATING NEAR CAPACITORS INDICATES LOWEST VOLTAGE CAPACITORS THAT MAY BE USED, NOT NECESSARILY VALUES ACTUALLY USED

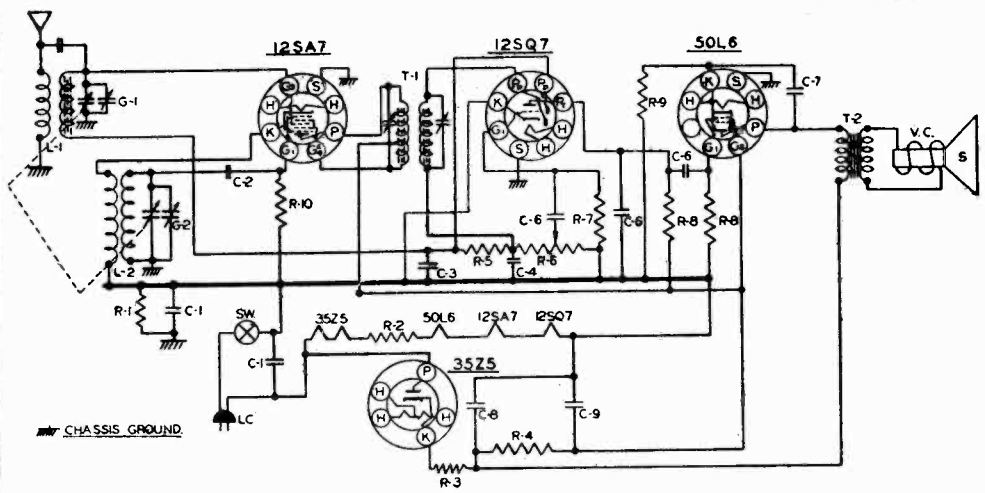
LOCATION OF TUBES

Alignment: No attempt should be made to realign this receiver until it has been determined that a poor tube, or some local condition is not responsible for faulty reception.

The Signal Generator may be connected throught a 0.01 mf capacitor (used as dummy antenna) to the lug on RF section of the tuning capacitor. Connect ground clip of generator to the B— terminal. An output meter may be clipped directly across the voice coil lugs. Align the I.F. trimmers and iron core to 455 kc, using least possible input from Signal Generator to avoid developing A.V.C. voltage which would make the tuning adjustments broad.

Provisions are made to align the R.F. trimmers with the receiver in the metal cabinet. Remove the two plug buttons on the right side of the cabinet and connect the Signal Generator leads to two or three turns of heavy wire, forming a self-supporting loop of about 7 or 8 inches diameter, placed about a foot away from the receiver's loop antenna. Again, use the least possible input from the Signal Generator. With the tuning capacitor plates completely out of mesh, and the pointer at the extreme right end of its travel, adjust the oscillator trimmer (on front section of tuning capacitor) to 1625 kc. Readjust both Signal Generator and tuning capacitor to 1550 kc and adjust the RF trimmer (on rear section) for maximum response.

SD-65



PART NO.		DESCRIPTION	PART NO.		DESCRIPTION
1R-20	R-1	220M RESISTOR 1/2W. 20	LA-3	L-1	ANT. COIL
1R-41	R-2	47 RESISTOR 1 W. 10	LO-14	L-2	OSC. COIL
1R-17	R-3	33 RESISTOR 1/2W. 20			
1R-25	R-4	2200 RESISTOR 1 W. 10			
1R-23	R-5	3.3 MEG. RESISTOR 1/2W. 20	LI-8	T-1	I.F. TRANSFORMER
VC-9	R-6	1 MEG. VOLUME CONTROL		T-2	OUTPUT TRANSFORMER
1R-3	R-7	10 MEG. RESISTOR 1/2W. 20	SPK-10	S	4" P.M. SPEAKER
1R-11	R-8	470M RESISTOR 1/2W. 20		VC	VOICE COIL
1R-14	R-9	150 RESISTOR 1/2W. 20			
1R-9	R-10	22M RESISTOR 1/2W. 20			
PC-5	C-1	.05 MFD. CONDENSER 400 V.	GC-7X	G-1 G-2	TUNING CONDENSER
MC-4	C-2	50MMFD. MICA			
PC-2	C-3	.05 MFD. CONDENSER 200V	CO-1	LC	LINE CORD
MC-2	C-4	100MMFD. MICA			
MC-5	C-5	500MMFD. MICA			
PC-6	C-6	.005 MFD. CONDENSER 600 V.			
PC-7	C-7	.01 MFD. CONDENSER 400 V.	TU-32		35Z5-50L6-12SA7-12SQ7
EC-15	C-8	30MFD ELECTROLYTIC COND.			
	C-9	20MFD.			

Operating Instructions

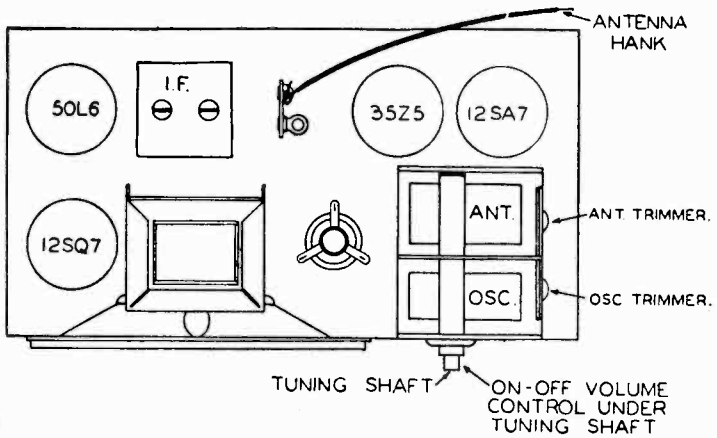
POWER SOURCES: This receiver may be operated on alternating current (AC) of 110 to 125 volts at 60 cycles or on direct current (DC) of 110 to 125 volts. When used on DC, if the tubes light up but set does not play, reverse the cord plug in the power outlet.

CAUTION: Always predetermine voltage of power sources. Never try to plug this receiver into a 220 volt line, as this will cause serious damage.

INSTALLATION: Unwind the power cord and plug into a convenient outlet. This receiver is equipped with an antenna hank, which should be uncoiled and stretched out to its full length for best reception. However, in steel constructed buildings or in distant isolated locations, better results may be obtained by connecting an outdoor antenna to the end of the antenna hank wire. The outdoor antenna should be about 50 feet long, including the lead-in wire.

MODELS 4E-515, 4E-516, 4F-515, 4F-516 ALLIED RADIO CORP.

TUBE AND TRIMMER LOCATION



TL-65

CONTROLS: Two knobs control the operation of this receiver. The lower knob is used to turn the set off and on. It is also used to control volume. Rotate this knob to the right in a clockwise direction and a click will be heard. This turns the receiver on. Allow about thirty seconds for tubes to heat up, then continue to rotate the knob to the right to increase volume. The upper knob is the station selector. Rotate this knob to the right or left to locate your station. By mentally adding a zero to the numbers on the dial, the result will be read directly in kilocycles. To turn off, turn the lower knob to the left in a counterclockwise direction as far as it will go and a click will be heard. The power switch will then be turned off.

ALIGNMENT AND SERVICE DATA

(See Fig. No. 1 For Trimmer Location)

Remove chassis from cabinet for alignment.

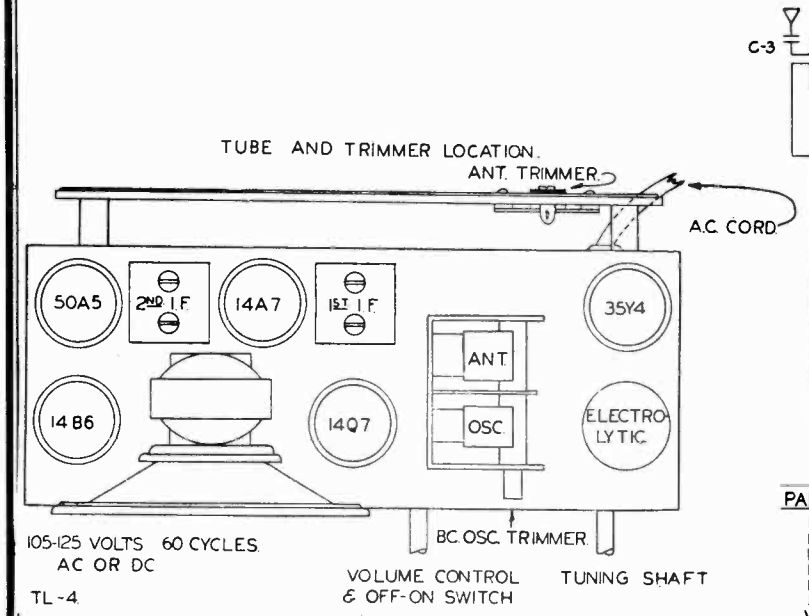
A Signal Generator is required having the following frequencies: 455 KC, 1400 KC, 1650 KC. An output meter should be connected across the speaker.

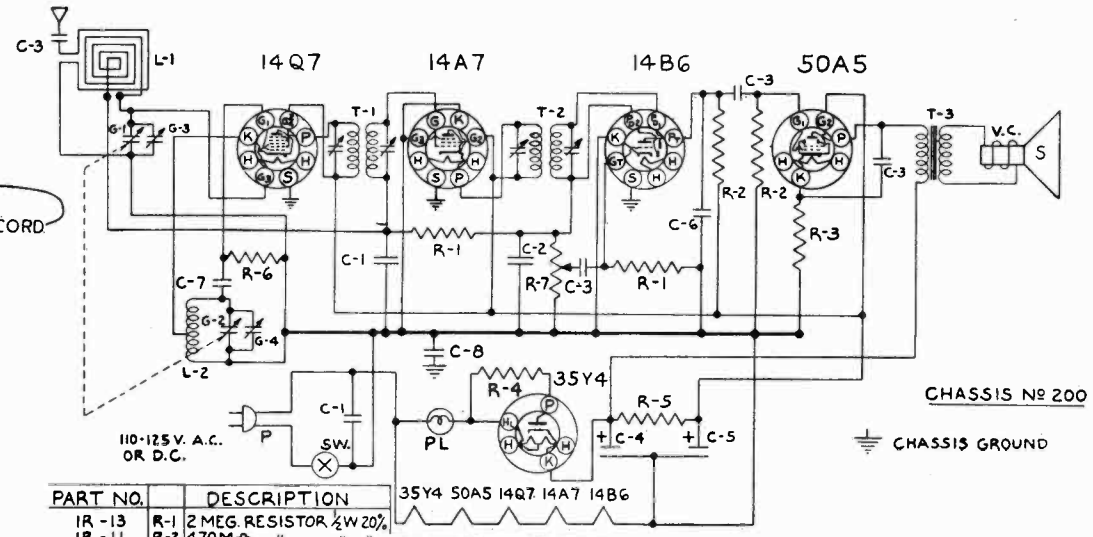
The volume control of the receiver should be turned to maximum during the I. F. and all subsequent alignment and the generator output as low as possible to prevent the A. V. C. from working and giving false readings.

FIRST STEP: Connect the hot lead from the generator to the ANT. section of the gang condenser through a .1 MFD. condenser. The ground lead from the generator must be connected to "B" minus under the chassis. Turn the gang condenser to complete minimum capacity. Set the generator to 455 KC. Adjust the trimmers of the I. F. transformer until a maximum reading is noted on the output meter.

SECOND STEP: With the leads from the generator still connected in the same manner, adjust the Signal Generator to 1650 KC. Adjust the OSC. trimmer until the 1650 KC signal is tuned in. The gang condenser must be at complete minimum capacity for this adjustment.

THIRD STEP: Remove the generator hot lead and connect it to the antenna hank terminal strip through a 200 MMFD. condenser. With the receiver and generator set at 1400 KC, increase the generator output. Adjust the ANT. trimmer until a maximum signal is noted on the output meter. No further adjustment should be made as the coils and gang condenser in this receiver have been specially handled at the factory to insure proper alignment at the lower frequencies.





PART NO.		DESCRIPTION
IR-13	R-1	2 MEG. RESISTOR ½W 20%
IR-11	R-2	470M ~ " " "
IR-14	R-3	150 ~ " " "
IR-4	R-4	47 ~ " " "
IR-15	R-5	2200 ~ " " "
IR-16	R-6	33000 ~ " " "
V.C.-3	R-7	1 MEG. VOLUME CONTROL
GC-2	G-1, G-2	GANG COND.
TC-7	G-3	ANT. TRIMMER COND.
TC-6	G-4	OSC. TRIMMER COND.
PC-5	C-1	.05 MFD. COND. 400 V.
MC-2	C-2	.0001 MFD. MICA 20%
PC-7	C-3	.01 MFD. COND. 400 V.
EC-3	C-4	40 MFD. 150 V.
	C-5	20 MFD./ELECTROLYTIC

PART NO		DESCRIPTION
MC-5	C-6	.0005 MFD. COND. 20%
MC-4	C-7	.000056 MFD. MICA 20%
PC-9	C-8	.1 MFD COND. 400 V.
LL-1	L-1	LOOP ANTENNA
LO-2	L-2	OSC. COIL
LI-1	T-1	INPUT I.F. TRANSFORMER
LI-2	T-2	OUTPUT I.F. TRANSFORMER
SPK-4	T-3	OUTPUT SPK. TRANSFORMER
	V.C.	VOICE COIL
	S	P.M. SPEAKER
PB-1	PL	#47 PILOT BULB
	SW	A.C. SWITCH ON VOL. CONTROL
CO-1	P	LINE CORD
TU-6		14Q7 14A7 14B6 50A5 35Y4

IF PEAK
455 KC

Remove chassis from cabinet for alignment.

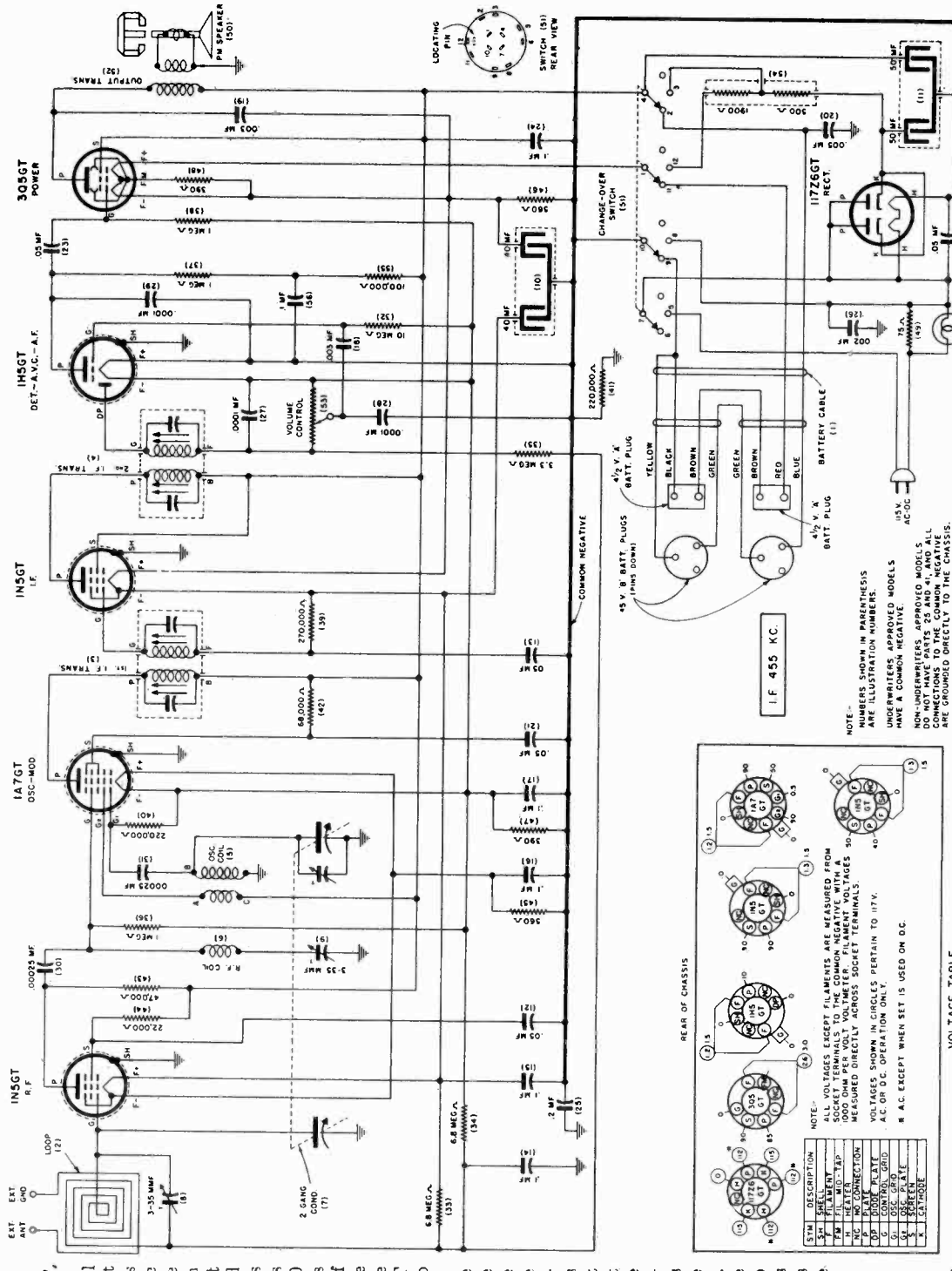
A Signal Generator is required having the following frequencies: 455 KC, 1400 KC, 1720 KC. An output meter should be connected across the speaker.

FIRST STEP: Connect the hot lead from the generator to the ANT. section of the gang condenser, through a .1 MFD condenser. The ground lead from the generator must be connected to the metal frame of the gang condenser. Turn the gang condenser to complete minimum capacity. Adjust the generator to 455KC and adjust the trimmers of the 1st and 2nd I.F. transformers until a maximum reading is noted on the output meter.

SECOND STEP: With the leads from the generator still connected in the same manner, adjust the Signal Generator to 1720 KC. The OSC. trimmer is located on the front of the chassis between the volume and tuning controls. Adjust this trimmer until the 1720 KC signal is tuned in.

THIRD STEP: Remove the hot lead of the generator from the ANT section of the gang condenser. Connect this lead to the antenna lead wire that projects from the back of the loop antenna through a 200 MMFD condenser. Adjust the Signal Generator to 1400 KC. Rotate the tuning control until this signal is tuned in. The ANT trimmer is located on the back of the loop antenna. Adjust this trimmer until a maximum reading is noted on the output meter. No further adjustment should be necessary, unless the set has been damaged, as the coils and condenser in this receiver have been specially handled at the factory to insure proper alignment at the lower frequencies.

MODELS 6A-127,6A-127Rev. 6B-127,6C-127 ALLIED RADIO CORP.



Allied Radio 6A-127 Revised, 6B-127, 6C-127

This model is the same as Model 6A-127 - - - - - - - - - except for the following changes. Part 36 has been changed in value from one megohm to 220,000 ohms and the bottom side of this resistor has been moved from the negative filament line (junction of parts 34 and 17 and 47) to the avc bus (junction of parts 33, 34, 14, and 35). Part 40 has been changed in value from 220,000 ohms to 100,000 ohms. Part 13 is now connected from the junction of resistor 39 and the secondary of the first i-f transformer to the positive side of the filament of the IN5GT tube instead of from the junction to the common negative as previously.

Part 28 is now connected from the negative side of the filament of the 1H5GT tube to the grid of that tube instead of from the center arm of the volume control to the common negative. The bottom side of part 19 is now connected to the junction of part 48 and the center tap of the filament of the 3Q5GT tube, and thence to the left-hand side as shown on the schematic) of capacitor 10. This part was formerly connected directly to the right-hand side of the same capacitor. The connection from the negative side of the filament of the IN5GT tube to the left-hand side of capacitor 10 has been removed. A 68-ohm resistor has been inserted in the high side of the 45-volt battery lead.

The following changes have been made in the parts list.

Illus. No.	*Part No.*	*Description*
36	27E224	Carbon, 220,000 Ohm, ½ W.
40	27E104	Carbon, 100,000 Ohm, ⅓ W.

Before starting alignment:

(a) Check tuning dial adjustment by tuning gang condenser until plates touch maximum capacity stop (completely in mesh) at which point the dial needle must be exactly even with the last line at the low frequency end of the dial calibration. If dial needle does not point exactly to last line move to correct position.

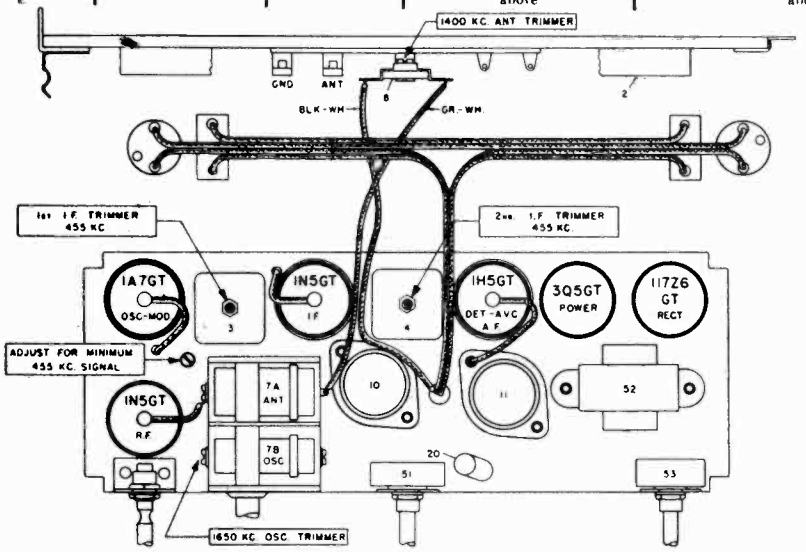
(b) Use an accurately calibrated test oscillator with some type of output measuring device.

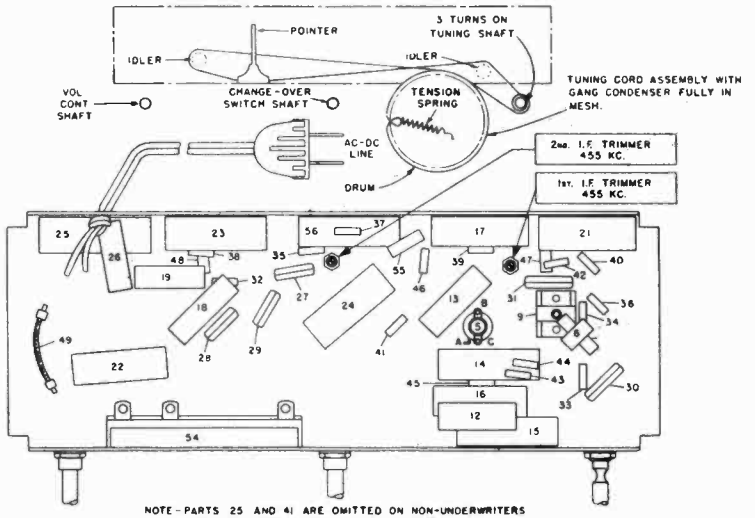
(c) WHEN ADJUSTING 1650 KC OSCILLATOR TRIMMER AND 455 KC TRIMMER remove chassis from cabinet and disconnect the white-green and white-black loop connection wires from the 1400 KC loop antenna trimmer. Attach a 1 megohm resistor across these wires and feed output of test oscillator across the 1 megohm resistor.

(d) THE 1400 KC LOOP ANTENNA TRIMMER is accessible through hole in cabinet back. It should be adjusted only after all other adjustments have been made and with the set mounted in the cabinet and the back IN CLOSED position. When aligning the 1400 KC trimmer connect test oscillator output to the "ANT" and "GND" clips that are attached to the inside of the cabinet back.

TEST OSCILLATOR

Steps	Set receiver dial to:	Adjust test oscillator frequency to:	Use dummy antenna in series with output of test oscillator consisting of:	Attach output of test oscillator to	Refer to parts layout diagram for location of trimmers mentioned below:
1	Any point where no interfering signal is received	Exactly 455 K. C.	0.2 Mfd. Condenser	High side to grid of 1A7GT tube, Low side to chassis (if non-Underwriter Approved) or Common Negative (if Underwriter Approved).	Adjust each of the 2nd I.F. transformer trimmer adjustment screws for maximum output, then adjust each of the 1st I.F. transformer trimmer adjustment screws for maximum output.
2	Rotate gang condenser to maximum capacity	Exactly 455 K. C.	See paragraph (C) above	See paragraph (C) above	Adjust R. F. coil trimmer for minimum 455 K. C. signal.
3	Rotate gang condenser to minimum capacity	Exactly 1650 K. C.			Adjust 1650 K. C. oscillator trimmer for maximum output.
4	Approximately 1400 K. C.	Approx. 1400 K. C.	See paragraph (D) above	See paragraph (D) above	Adjust 1400 K. C. antenna trimmer for maximum output.

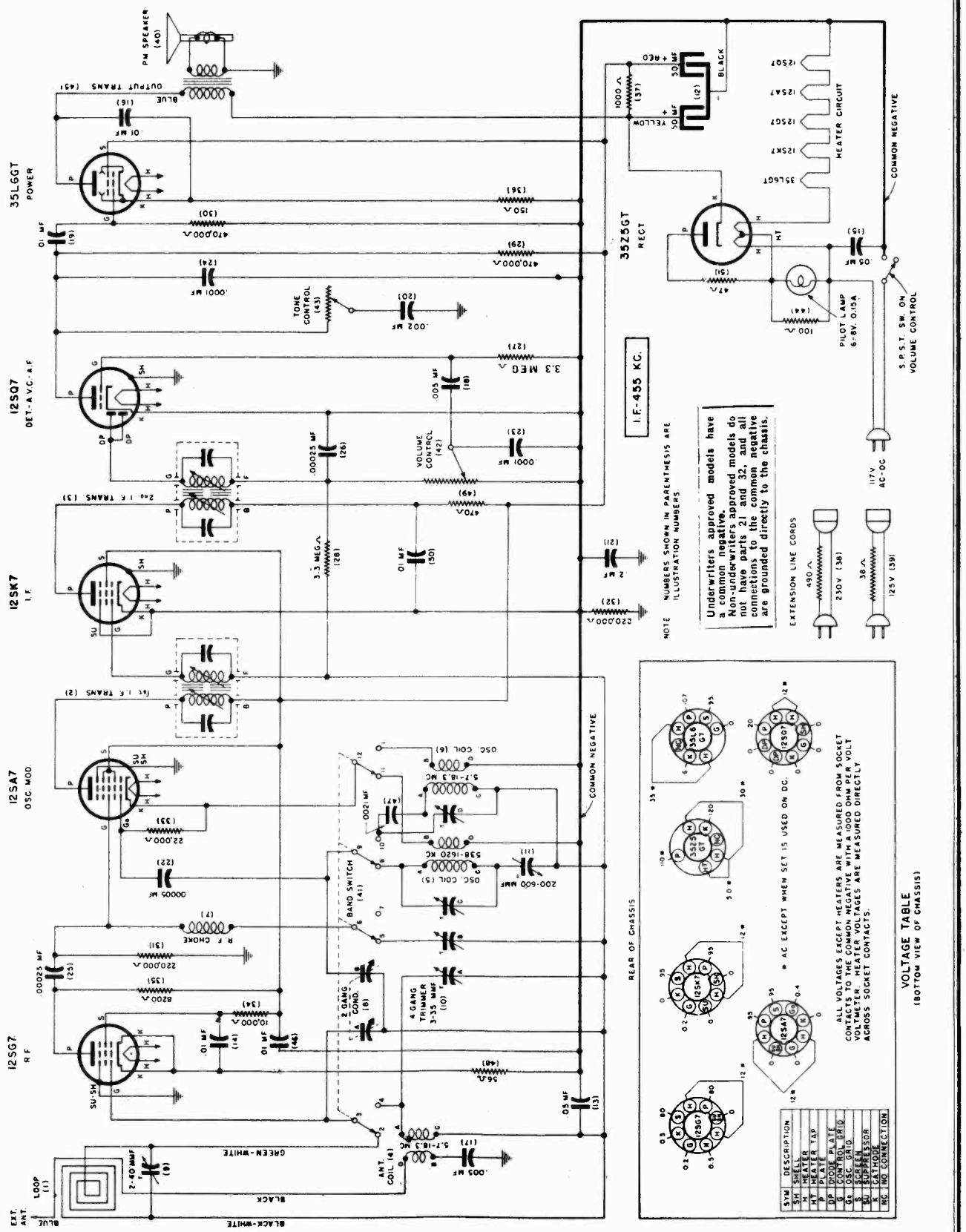




NOTE - PARTS 25 AND 41 ARE OMITTED ON NON-UNDERWRITERS APPROVED MODELS, SEE WIRING DIAGRAM.

MODELS 6B-122, 6C-122

ALLIED RADIO CORP.



ALIGNMENT PROCEDURE

Be sure to follow procedure carefully and in the order given—otherwise the receiver will be insensitive and the dial calibration incorrect. For alignment procedure read tabulations from left to right. Make the adjustment marked (1) first, (2) next, (3) third, etc.

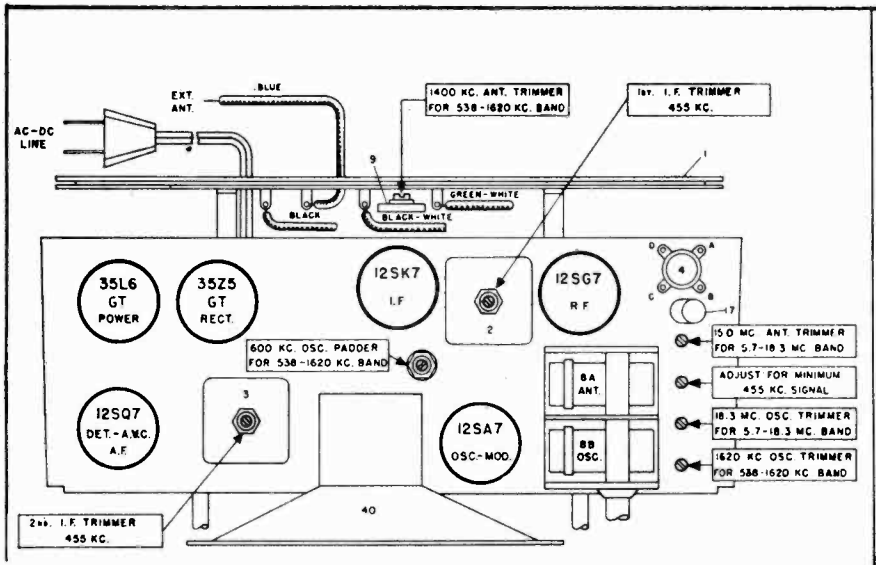
Before starting alignment:

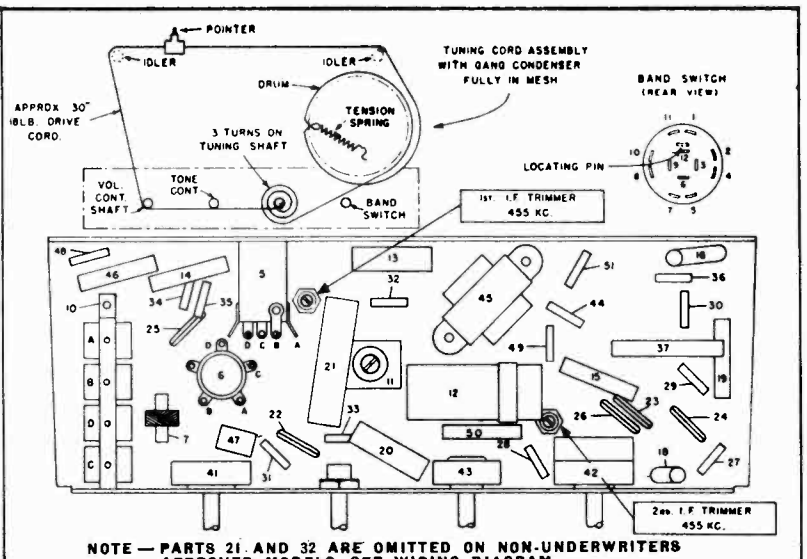
(a) Check tuning dial adjustment by tuning gang condenser until plates touch maximum capacity stop (completely in mesh) at which point the dial needle must be exactly even with the last line at the low frequency end of the dial calibration. If dial needle does not point exactly to last line move to correct position.

(b) Use an accurately calibrated test oscillator with some type of output measuring device.

(c) Place loop antenna in the same position it will be in when set is in the cabinet.

Steps	Place band switch for operation on:	Set receiver dial to:	TEST OSCILLATOR: Adjust test oscillator frequency to:	TEST OSCILLATOR: Use dummy antenna in series with output of test oscillator consisting of	TEST OSCILLATOR: Attach output of test oscillator to:	Refer to parts layout diagram for location of trimmers mentioned below:
1	I.F. alignment use any band position.	Any point where no interfering signal is received	Exactly 455 K.C.	0.2 Mfd. condenser	High side to rear stator plates of tuning condenser. Low side to frame of condenser through .01 Mfd. condenser	Adjust each of the second I.F. transformer trimmers for maximum output, then adjust each of the first I.F. transformer trimmers for maximum output.
2	1620 to 538 K.C. Band	Rotate gang condenser to Maximum Capacity	Exactly 455 K.C.	.00025 Condenser	High side to BLUE Antenna Lead. Low side to chassis through a .01 mfd. condenser.	Adjust R.F. coil trimmer for minimum 455 K.C. signal.
		Exactly 1620 K.C.	Exactly 1620 K.C.			Adjust 1620 K.C. oscillator trimmer for maximum output.
		Approx. 1400 K.C.	Approx. 1400 K.C.			While rocking gang condenser adjust 1400 K.C. loop trimmer for maximum output.
		Approx. 600 K.C.	Approx. 600 K.C.			While rocking gang condenser adjust 600 K.C. oscillator padder for maximum output.
3	5.7 to 18.3 M.C. Band	Exactly 18.3 M.C.	Exactly 18.3 M.C.	400 Ohm carbon resistor		Adjust 18.3 M.C. oscillator trimmer for maximum output.
		Approx. 15 M.C.	Approx. 15 M.C.	400 Ohm carbon resistor		While rocking gang condenser adjust 15 M.C. antenna trimmer for maximum output.





NOTE — PARTS 21 AND 32 ARE OMITTED ON NON-UNDERWRITERS APPROVED MODELS, SEE WIRING DIAGRAM

PARTS LIST

Illus. No.	Part No.	Part Name	Description
1	20E105	Coil	Antenna Loop
2	20E21	Coil	1st I. F. Transformer
3	20E22	Coil	2nd I. F. Transformer
4	20E72	Coil	Antenna
5	20E102	Coil	Oscillator, Broadcast Band
6	20E103	Coil	Oscillator, Short Wave Band
7	2E19	Coil	R. F. Choke
8	24E9	Condenser	Tuning, 2 gang with pulley
9	24E3	Capacitor	Trimmer, 2-40 MMF (On Loop)
10	24E15	Capacitor	Trimmer, 4 Gang Strip
11	24E16	Capacitor	Padder, 200-600 MMF
12	25E6	Capacitor	50-50 Mfd. 150 Volt Dry Electrolytic
13	23E216	Capacitor	Tubular, .05 Mfd.—200 Volt
14	23E211	Capacitor	Tubular, .01 Mfd.—200 Volt
15	23E416	Capacitor	Tubular, .05 Mfd.—400 Volt
16	23E411	Capacitor	Tubular, .01 Mfd.—400 Volt
17	23E408	Capacitor	Tubular, .005 Mfd.—400 Volt
18	23E208	Capacitor	Tubular, .005 Mfd.—200 Volt
19	23E411	Capacitor	Tubular, .01 Mfd.—400 Volt
20	23E205	Capacitor	Tubular, .002 Mfd.—200 Volt
21	23E421	Capacitor	Tubular, .2 Mfd. 400 Volt (Und. App'd Only)
22	23E37	Capacitor	Mica, .00005 Mfd.
23	23E39	Capacitor	Mica, .0001 Mfd.
24	23E39	Capacitor	Mica, .0001 Mfd.
25	23E42	Capacitor	Mica, .00025 Mfd.
26	23E42	Capacitor	Mica, .00025 Mfd.
27	27E335	Resistor	Carbon, 3.3 Megohm, 1/3 Watt
28	27E335	Resistor	Carbon, 3.3 Megohm, 1/3 Watt
29	27E474	Resistor	Carbon, 470,000 Ohm, 1/3 Watt
30	27E474	Resistor	Carbon, 470,000 Ohm, 1/3 Watt
31	27E224	Resistor	Carbon, 220,000 Ohm, 1/3 Watt
32	27E224	Resistor	Carbon, 220,000 Ohm, 1/3 Watt (Und. App'd Only)
33	27E223	Resistor	Carbon, 22,000 Ohm, 1/3 Watt
34	27E103	Resistor	Carbon, 10,000 Ohm, 1/3 Watt
35	27E822	Resistor	Carbon, 8,200 Ohm, 1/3 Watt
36	27E151	Resistor	Carbon, 150 Ohm, 1/3 Watt
37	27E102-3	Resistor	Carbon, 1,000 Ohm, 1 Watt
38		Resistor	230 Volt Extension Line Cord Used Only in in Models Not Having Common Ground
39		Resistor	125 Volt Extension Line Cord Used Only in Models Not Having Common Ground
40	1E1	Speaker	Elliptical Shape 4" x 6"
41	29E8	Switch	Band
42	28E7	Resistor	Volume Control with S.P.S.T. Switch
43	28E8	Resistor	Tone Control
44	27E101-2	Resistor	Carbon, 100 Ohm, 1/2 Watt
45	22E8	Transformer	Output, Speaker
46	23E211	Capacitor	Tubular, .01 Mfd., 200 Volt
47	23E2000	Capacitor	Mica, .0021 Mfd.
48	27E560	Resistor	Carbon, 56 Ohm, 1/3 Watt
49	27E471	Resistor	Carbon, 470 Ohm 1/3 Watt
50	23E211	Capacitor	Tubular, .01 Mfd. 200 Volt
51	27E470-2	Resistor	Carbon 47 Ohm, 1/2 Watt

MISCELLANEOUS PARTS

Part No.	Part Name	Description
40E1	Bulb	6-8 Volt .150 Amp. Dial light, No. 47
7E100	Cabinet	Wood Table Model
7E61	Cabinet Back	For Wood Table Model
65E2	Dial Cord Spring	Tension Spring
4E1	Dial Cord	36" of 18 lb. Drive Cord
68E1	Dial Shaft	Drive Shaft
19E3	Dial Shaft Bearing	Bearing for Drive Shaft
12E103-F10	Dial Shaft Washer	"C" Retainer Washer for Drive Shaft
20E65	Dial Back Plate	Back Plate Assem. less Calibrated Scale
36E28-1	Dial Scale	Calibrated Glass Scale
32E4	Dial Scale Clip	For Mounting Dial Scale
35E13	Dial Pointer	Dial Indicator
9E5	Dial Crystal	
37E21-10	Knob	Marked "OFF-ON-VOLUME" for Wood Table Cabt.
37E21-11	Knob	Marked "TONE" for Wood Table Cabt.
37E21-12	Knob	Marked "TUNING" for Wood Table Cabt.
37E21-13	Knob	Marked "SW-BC" for Wood Table Cabt.

OUTSIDE AERIAL

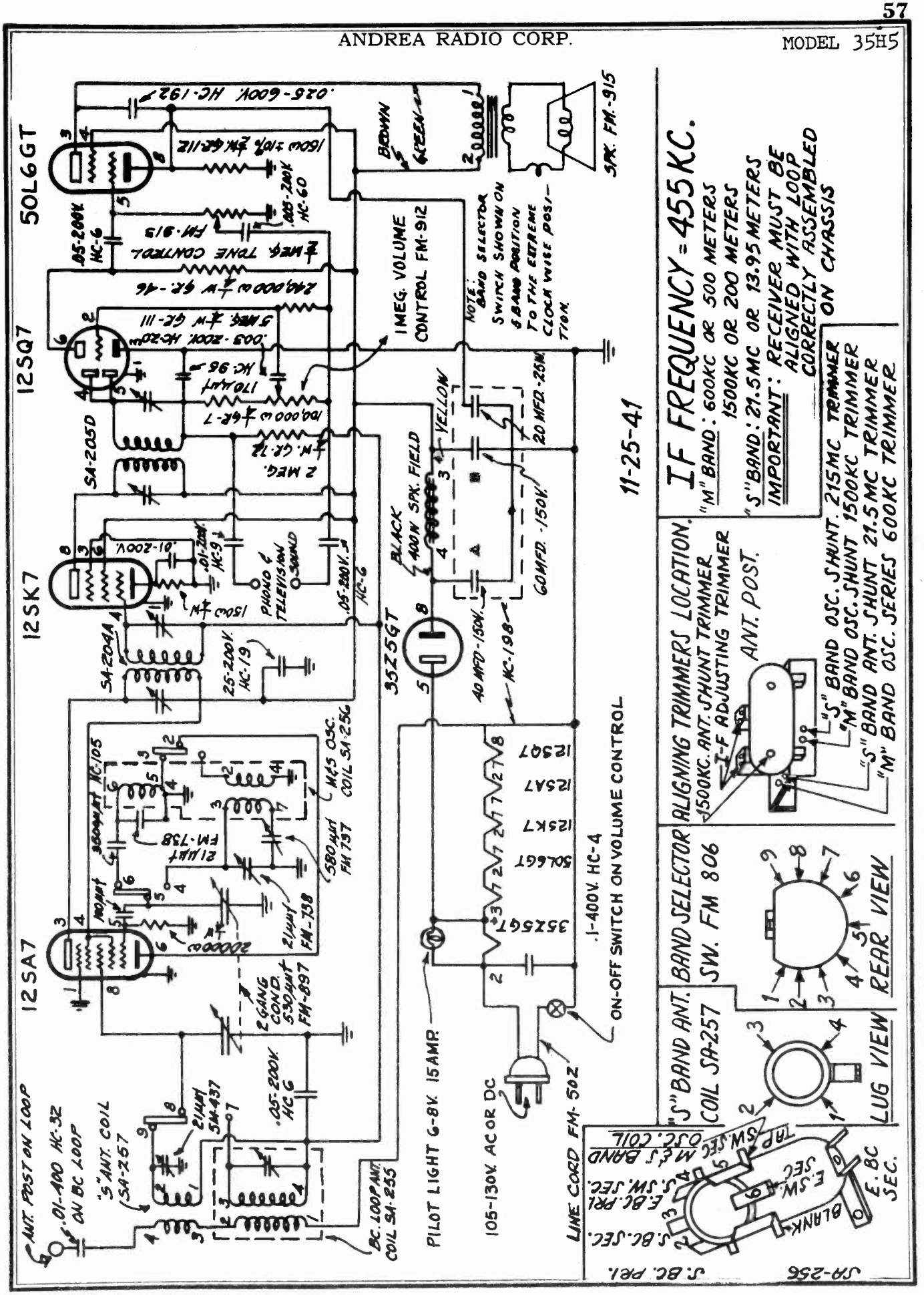
A 50 TO 75 FOOT AERIAL must be connected to the receiver WHEN TUNING FOR SHORT WAVE STATIONS or when the volume of 538-1620 KC band stations is not satisfactory. Attach this external aerial to the blue lead coming out of the rear of the chassis.

WARNING—DO NOT ATTACH A GROUND TO THE RADIO—ANY EXTERNAL GROUND CONNECTION TO ANY METAL PART OF THE CHASSIS WILL CAUSE A SHORT AND POSSIBLE DAMAGE.

5.7 - 18.3 M.C. BAND OPERATING INSTRUCTIONS

BE SURE TO ATTACH A REGULAR AERIAL TO BLUE ANTENNA LEAD COMING OUT OF REAR OF CHASSIS WHEN TUNING FOR SHORT WAVE STATIONS.

TURN WAVE BAND SWITCH KNOB to the left hand position. Use section of dial that is calibrated from 5.7 - 18.3 M.C.


ANDREA RADIO CORP.
MODEL 35H5
50L6GT
12SQ7
12SK7
12SA7
35Z5GT
11-25-41
IF FREQUENCY = 455 KC.
"M" BAND: 600KC OR 500 METERS
1500KC OR 200 METERS
"S" BAND: 21.5MC OR 13.95 METERS
IMPORTANT: RECEIVER MUST BE ALIGNED WITH LOOP CORRECTLY ASSEMBLED ON CHASSIS
ALIGNING TRIMMERS LOCATION.
1500KC. ANT. SHUNT TRIMMER
I-F ADJUSTING TRIMMER
ANT. POST.
"S" BAND OSC. SHUNT. 215MC TRIMMER
"M" BAND OSC. SHUNT 1500KC TRIMMER
"S" BAND ANT. SHUNT 21.5MC TRIMMER
"M" BAND OSC. SERIES 600KC TRIMMER
BAND SELECTOR SW. FM 806
REAR VIEW
"S" BAND ANT. COIL SA-257
LUG VIEW
SA-256
1MEG. VOLUME CONTROL FM-912
SPK. FM-915
ON-OFF SWITCH ON VOLUME CONTROL
105-130V. AC OR DC
PILOT LIGHT 6-8V. 15AMP.
LINE CORD FM-502
ANT. POST ON LOOP
BC. LOOP ANT COIL SA-255
PHONO & TELEVISION SOUND
BLACK
YELLOW
BROWN
GREEN
NOTE: BAND SELECTOR SWITCH SHOWN ON S BAND POSITION TO THE EXTREME CLOCK WISE POSITION.

Alignment Instructions - Model 32,32A

1. It is not necessary to remove the RF and IF/Audio Chassis from the housing to align the RF section. The IF section can be aligned, while in the case, by using an offset screwdriver.

2. After removing the metal case from the cabinet, the interlock switch, located on the IF/Audio chassis, must be closed. This can be done by jamming a wooden block between the chassis and the switch button.

3. Connect output meter across the voice coil. The simplest way of accomplishing this is to clip the meter leads on pins # 1 & 5 of the speaker plug socket - on the underside of the chassis.

4. Insert power plug in socket and turn volume control switch on.

5. Padder adjustments can be made by inserting a long thin - insulated shank - screwdriver, from the front, up under the RF chassis to the padder adjustment screw. Trimmer adjustments can be made directly from the front of the set. Location of the various trimmers from left to right (facing front of set) is as follows: SW Ant. Trimmer, SW RF Coil Trimmer, BC RF Coil Trimmer, SW Oscillator Coil Trimmer and BC Oscillator Coil Trimmer.

6. It is not necessary to connect the loop when aligning the set. To align the Broadcast band, connect the signal generator output across the green wire on the antenna terminal strip and bus. To align the Short Wave band, connect signal generator across the blue wire on the antenna terminal strip and bus.

7. Align set in accordance with the table below (Note: Signal generator should be set for 400 cycle 30% modulated output, receiver volume control is set at maximum, and all adjustments are made for maximum reading).

Dummy Antenna	Sig.Gen. Connection	Sig.Gen. Frequency	Band Sw. Position	Tuning Points	Remarks
.05 MFD	Mixer Grid and Bus	456KC	BC	IF Trimmers	Tuning Cond. at Max.
.05 MFD	Green Wire and Bus	620KC	BC	BC OSC Padder	Set Dial at 62 See Below **
.05 MFD	Green Wire and Bus	1620KC	BC	BC OSC Trimmer	Set Dial at 162 See Below **
.05 MFD	Green Wire and Bus	1620 KC	BC	BC RF Trimmer	Set Dial at 162 See Below *
400 ohms	Blue Wire and Bus	17.6	SW	SW OSC Trimmer	Set Dial at 17.6
400 ohms	Blue Wire and Bus	17.6	SW	SW RF Ant. Trimmers	Set Dial at 17.6 See Below *

* When aligning the SW band use caution not to align on the image frequency, which will be found lower on the dial.

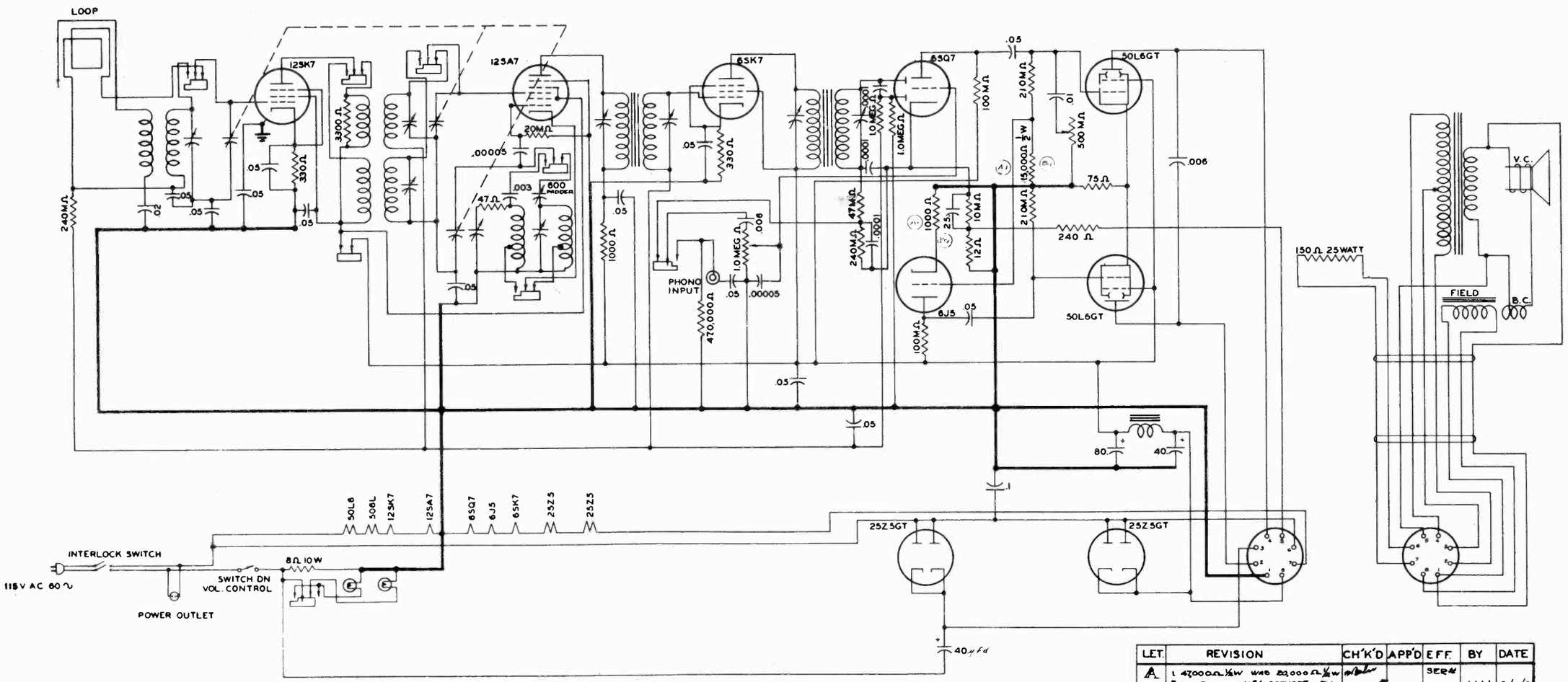
** Repeat these steps as often as necessary until both ends of Broadcast Band are tracking perfectly.

8. Tracking Check Points are:

	620KC		6.7 MC
BC	- 1120KC	SW	- 12.2 MC
	1620KC		17.6 MC

ANSLEY RADIO CORP.

MODELS 32,32A



LET.	REVISION	CH'K'D	APP'D	EFF.	BY	DATE
A	1. 47000Ω ½W WAS 20,000Ω ½W 2. DELETE 25μfd CATHODE BY-PASS CONDENSER			SER# A1700	H.H.	9/9/40
B	1. 15,000Ω ½W WAS 47,000Ω ½W 2. 1000Ω ½W WAS 5000Ω ½W 3. ADD 470,000Ω ½W			SER# A-2701	H.H.	9/9/40

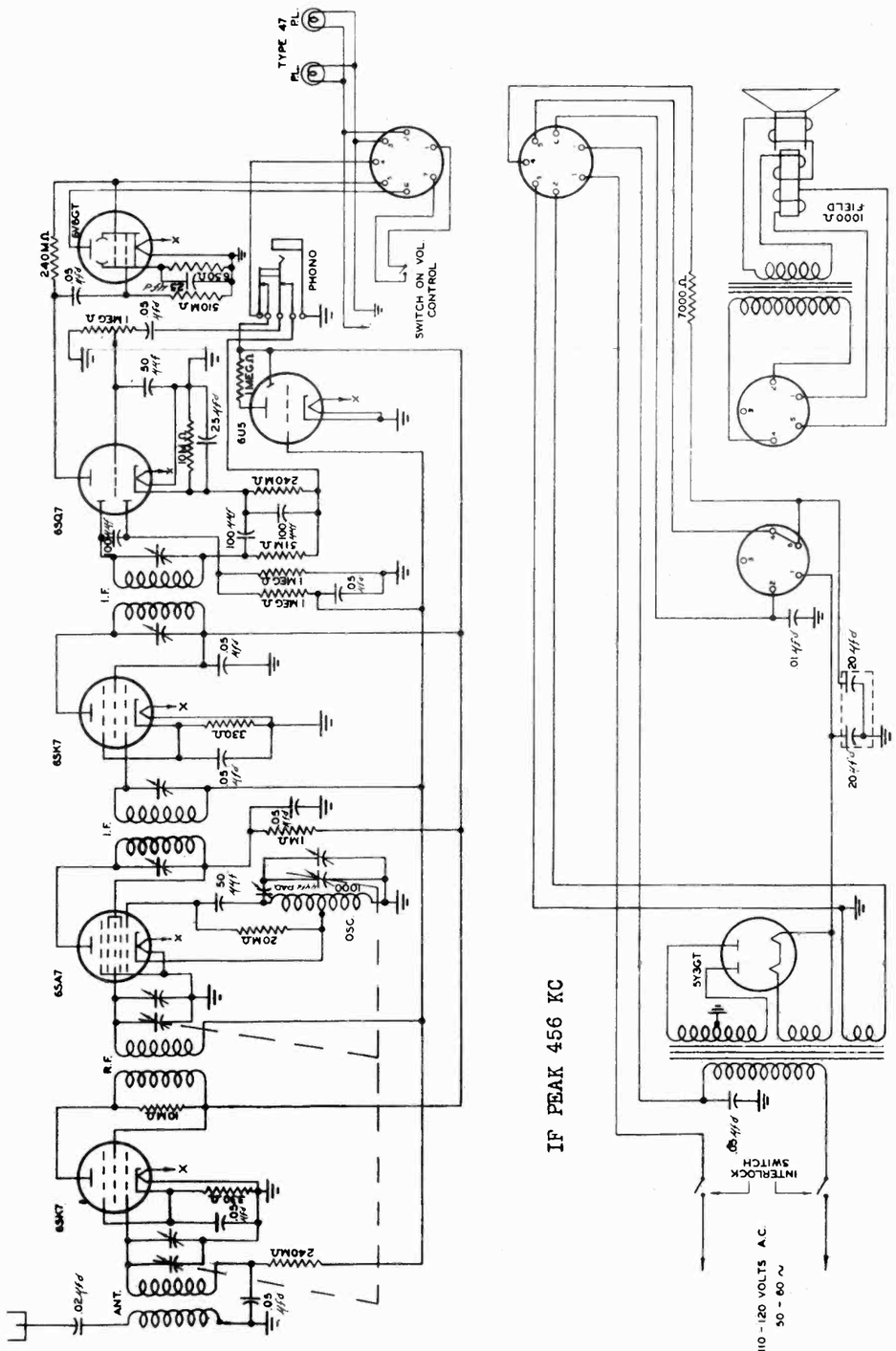
VALUE	QUAN.	DESCRIPTION	PART NO.
.00005 μfd	2	CAPACITOR MICA	CM-1
.0001 μfd	3	MICA	CM-4
.003 μfd	1	MICA	CM-5
.006 μfd	2	MICA	CP-9
.01 μfd	1	PAPER	CP-3
.02 μfd	1	DOMINO	CP-13
.05 μfd	7	PAPER	CP-8
.1 μfd	1	PAPER	CP-10
40 X 80 μfd	1	ELECTROLYTIC	CE-4
40 MFD	1	ELECTROLYTIC	CE-5
25 MFD	1	ELECTROLYTIC	CE-2
.05 MFD	6	CAPACITOR DOMINO	CM-11
200 TO 600 MMFD	1	PADDER CONDENSER	CT-4
4 TO 35 MMFD	1	3 GANG TRIMMER COND.	CT-5
0 TO 420 MMFD	1	3 GANG VARIABLE COND.	CV-3
1.0 MEGOHM	2	RESISTOR	RM-2
8Ω 10W	1		RW-9
12Ω 1/2 WATT	1		RW-19
240Ω 1/2 WATT	1		RM-19
75Ω 2 WATT	1		RW-12
150Ω 25 WATT	1		RW-15
330Ω 1/2 WATT	2		RW-14
1000Ω	2		RM-9
3300Ω	1		RM-15
10,000Ω	1		RM-13
15,000Ω	1		RM-23
20,000Ω	1		RM-7
47,000Ω	1		RM-6
100,000	2		RM-5
210,000	2		RM-4
240,000	2		RM-3
470,000 1/2 WATT	1	RESISTOR	RM-26
	1	LOOP ANTENNA	LP-6
10 H 350 OHM DC	1	FILTER REACTOR	LI-1
8" 10 WATT	1	DYNAMIC SPEAKER	QS-4
#47	2	PILOT LIGHTS	IL-2
12SK7	1	TUBE	V-15
12SA7	1		V-17
6SK7	1		V-5
6SQ7	1		V-7
50L6GT	2		V-16
6J5	1		V-3
25Z5GT	2	TUBE	V-2
	1	POWER OUTLET	PP-1
1.0 MEGOHM	1	VOLUME CONTROL SWITCH	RP-7
	1	PHONO INPUT JACK	J-2
500,000Ω	1	TONE CONTROL	RP-8
	1	BAND CHANGE SWITCH	SB-2
	1	INTERLOCK SWITCH	SP-2
	1	I.F. TRANS. W/TRIMMER	TI-1
	1	I.F. TRANS. W/TRIMMER	TI-3
	1	BROADCAST OSC. COIL	LO-4
	1	SHORTWAVE OSC. COIL	LO-6
	1	BROADCAST R.F. COIL	LR-4
	1	SHORTWAVE R.F. COIL	LR-6
	1	SHORTWAVE R.F. COIL	LA-4

NOTE

1. BAND SWITCH IN BROADCAST POSITION.
2. ALL CAPACITORS ARE MARKED IN MICROFARADS.
3. IN SERIAL NO'S. 3701 THRU 4700 THE VOLUME CONTROL, NORMALLY A 1 MEGOHM POTENTIOMETER, IS .5 MEGOHM AND THE 470,000Ω 1/2 W RESISTOR ACROSS THE PHONO JACK TO BUS IS 1 MEGOHM 1/2 W.

The model 32A is the same as the model 32. with the following exceptions: the 240-ohm resistor connected to prong 5 of the plug is deleted as is also the 12-ohm resistor connected to the one just mentioned. The 10,000-ohm resistor that was in series with the deleted 12-ohm resistor is now connected to ground.

A permanent-magnet loudspeaker has replaced the dynamic speaker and the following changes have been made in this circuit: as there is now no field or bucking coils, the leads to these coils from terminals 1, 5, and 8 have been removed. Instead of the bucking coil (B.C. in the schematic), the voice coil is connected directly across the secondary of the output transformer.



Alignment Instructions - Model 41 & 41A (Paneltone)

To align the Models 41 & 41A, it is not necessary to remove the chassis from the panel. However, the interlock switch - located on the rectifier chassis must be closed. This can best be done by using a U clamp placed over the button and body of the switch. Such a clamp can be made of a piece of steel 3" x 3/4" x 3/33" bent to form a U with a width of 1 3/8".

To align the IF stages proceed as follows:

a. Connect signal generator across Mixer trimmer and chassis. Signal generator should be set for 456 kc, 400 cycle, 30% modulated output. The mixer section of the tuning condenser is the section nearest the tuning dial.

b. Connect output meter across voice coil.

c. Turn set on.

d. Adjust IF trimmers for maximum output.

To align the RF section proceed as follows:

a. Connect signal generator across antenna and ground terminals. Set generator for 620 kc. output (400 cycles, 30% modulated).

b. Set tuning dial at 62.

c. Peak oscillator padder at 620 kc. The oscillator padder is located directly under the tuning dial therefore it is necessary to tune the padder from the underside of the chassis, using either a flexible shaft or offset screwdriver.

d. Retune signal generator for 1670 kc. output and set tuning dial at 167.

e. Peak Oscillator and Mixer trimmers at 1670 kcs.

f. Repeat steps a, b, c, d, & e as often as necessary until set is tracking correctly.

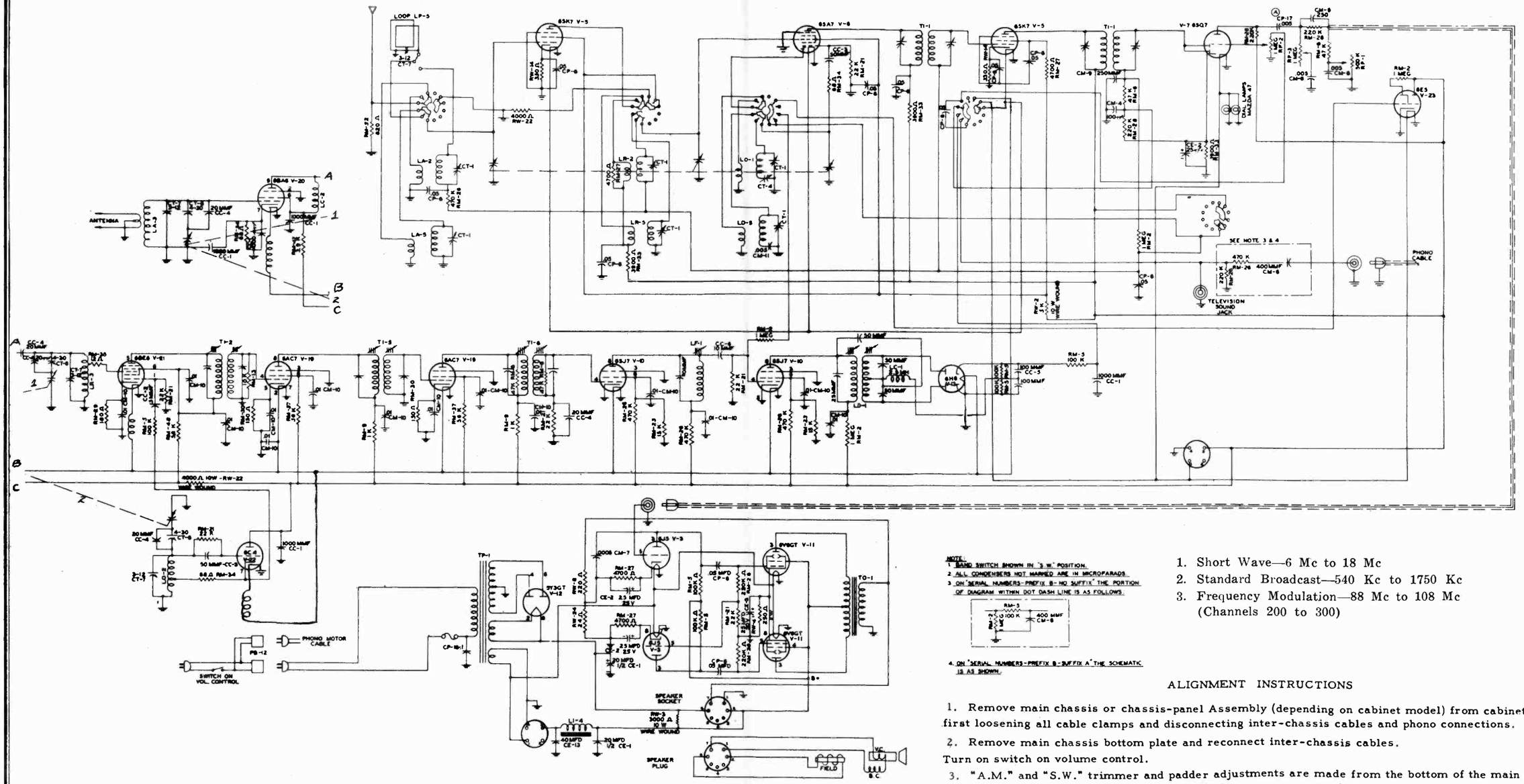
g. Peak Antenna Trimmer at 1670 kcs.

Tracking check points are:- 620, 1140, and 1670 kcs.

Oscillations which develop during alignment of the RF section can usually be cured by keeping the lead from the Antenna Tuning Condenser to the Antenna coil close to the chassis.

ANSLEY RADIO CORP.

MODEL 53



NOTE:
1. BAND SWITCH SHOWN IN "S.W." POSITION.
2. ALL CONDENSERS NOT MARKED ARE IN MICROFARADS.
3. ON "SERIAL NUMBERS-PREFIX B-NO SUFFIX" THE PORTION OF DIAGRAM WITHIN DOT DASH LINE IS AS FOLLOWS:

4. ON "SERIAL NUMBERS-PREFIX B-SUFFIX A" THE SCHEMATIC IS AS SHOWN.

1. Short Wave—6 Mc to 18 Mc
2. Standard Broadcast—540 Kc to 1750 Kc
3. Frequency Modulation—88 Mc to 108 Mc (Channels 200 to 300)

ALIGNMENT INSTRUCTIONS

1. Remove main chassis or chassis-panel Assembly (depending on cabinet model) from cabinet, first loosening all cable clamps and disconnecting inter-chassis cables and phono connections.

2. Remove main chassis bottom plate and reconnect inter-chassis cables. Turn on switch on volume control.

3. "A.M." and "S.W." trimmer and padder adjustments are made from the bottom of the main chassis. All trimmers for "A.M." and "S.W." bands are mounted on top of the coil forms (six in number) with the exception of the "A.M." loop trimmer which is mounted directly on the loop itself. When adjusting the loop trimmer, the "ANT.-LOOP" switch must be in "LOOP" position. F.M. trimmers and padders are reached through the holes in the top of the small chassis which is attached to the tuning condenser. All I.F. adjustments are made from the top of the main chassis.

4. Align according to the table below. Make sure the dial pointer is set at the absolute left end of the scale when the tuning condenser is fully closed. Use insulated screwdriver for all padder and F.M. discriminator adjust ments.

5. Make sure that the heavy braid connected between the two chassis is tightly fastened when the set is reinstalled. Failure to do this will result in excessive hum.

6. If there is still appreciable hum when the volume control is turned up, reverse the power cable plug (audio chassis to main chassis).

7. Before aligning the F.M. circuits, allow the set to warm up for at least twenty minutes with the band switch on "F.M." position.

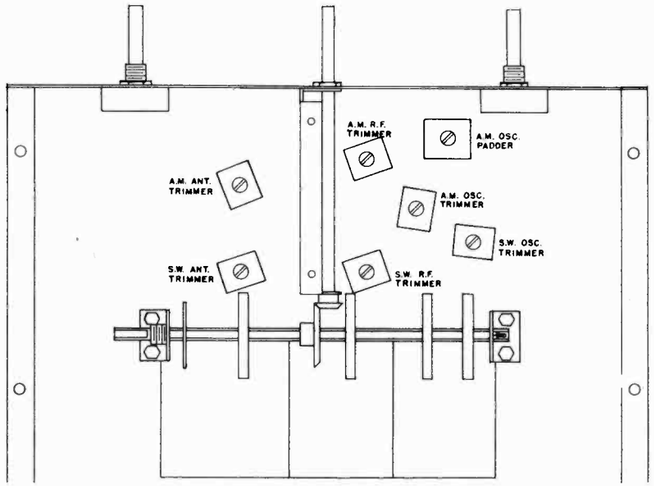
8. When replacing the type 6SQ7 tube, use a metal envelope type tube to insure low hum output.

ANSLEY RADIO CORP.

MODEL 53

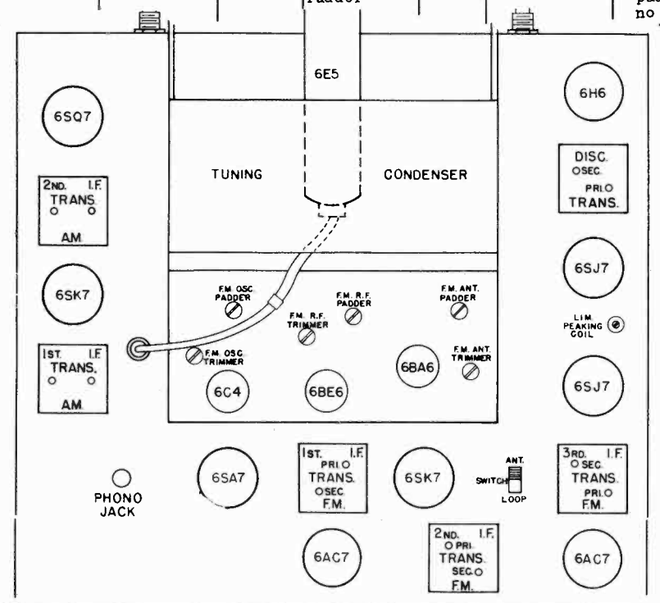
DUMMY ANT.	SIG. GEN. CONNECTION	SIG. GEN. FREQ.	BAND SWITCH POSITION	TUNING POINT	OUTPUT METER	OUTPUT METER CONNECTION	REMARKS
.05 mf.	6SK7 I.F. Grid	455 KC (Mod. 400 Cy.)	"A.M."	2nd I.F.T. A.M.	A.C.	Spk'r. Voice Coil	Set volume, bass, and treble controls fully clockwise. Set signal generator output no higher than necessary for output reading. Adjust for maximum output.
"	6SA7 Grid No. 3	"	"	1st I.F.T. A.M.	"	"	"
"	6SK7 R.F. Grid	1600 KC. Mod.	"	A.M. Osc. Trimmer	"	"	Set dial pointer to 1600 Kc.
"	"	"	"	A.M. R.F. Trimmer	"	"	"
R.M.A. St'd.	A.M. Ant. Term.	"	"	A.M. ANT. Trimmer	"	"	"
"	"	600 KC. Mod.	"	A.M. Osc. Padder	"	"	Set dial pointer to 600 Kc. Adjust for maximum output. Recheck A.M. Osc. trimmer at 1600 KC.
.05 mf.	6SK7 R.F. Grid	12 MC. Mod.	"S.W."	S.W. Osc. Trimmer	"	"	Set dial pointer at 12.0 Mc. Adjust for maximum output.
.05 mf.	"	"	"	S.W. R.F. Trimmer	"	"	"
400 ohm	A.M. Ant. Term.	"	"	S.W. Ant. Trim.	"	"	"
—	Loop	1600 KC. Mod.	"A.M."	Loop Trimmer	"	"	Couple sig. gen. to loop with 2 turns of wire - adjust for maximum output. (Dial pointer at 1600 Kc.)
Direct	6AC7 (2nd F.M. I.F.) Grid	10.7 MC. No. Mod.	"F.M."	3rd I.F.T. F.M.	High Res. D.C. V.T.V.M.	Connect Thru 1 meg. Res. to 1st lim. Grid Resistor	Shunt both sides of 3rd I.F. Trans. with 22000 OHMS. Use only enough sig. gen. input for adequate meter indication. Leave 22000 ohm shunts on after aligning. Adjust for max. output.
"	6AC7 (1st F.M. I.F.) Grid	"	"	2nd I.F.T. F.M.	"	"	Shunt 2nd I.F. trans. same as in previous step. Use only enough input for usable meter indication.
"	"	"	"	1st Lim. Plate peaking coil	"	Connect to 1 megohm resistor from 2nd lim. grid	Adjust for max. output. Use only enough input for usable meter indication.

BOTTOM VIEW OF MAIN CHASSIS

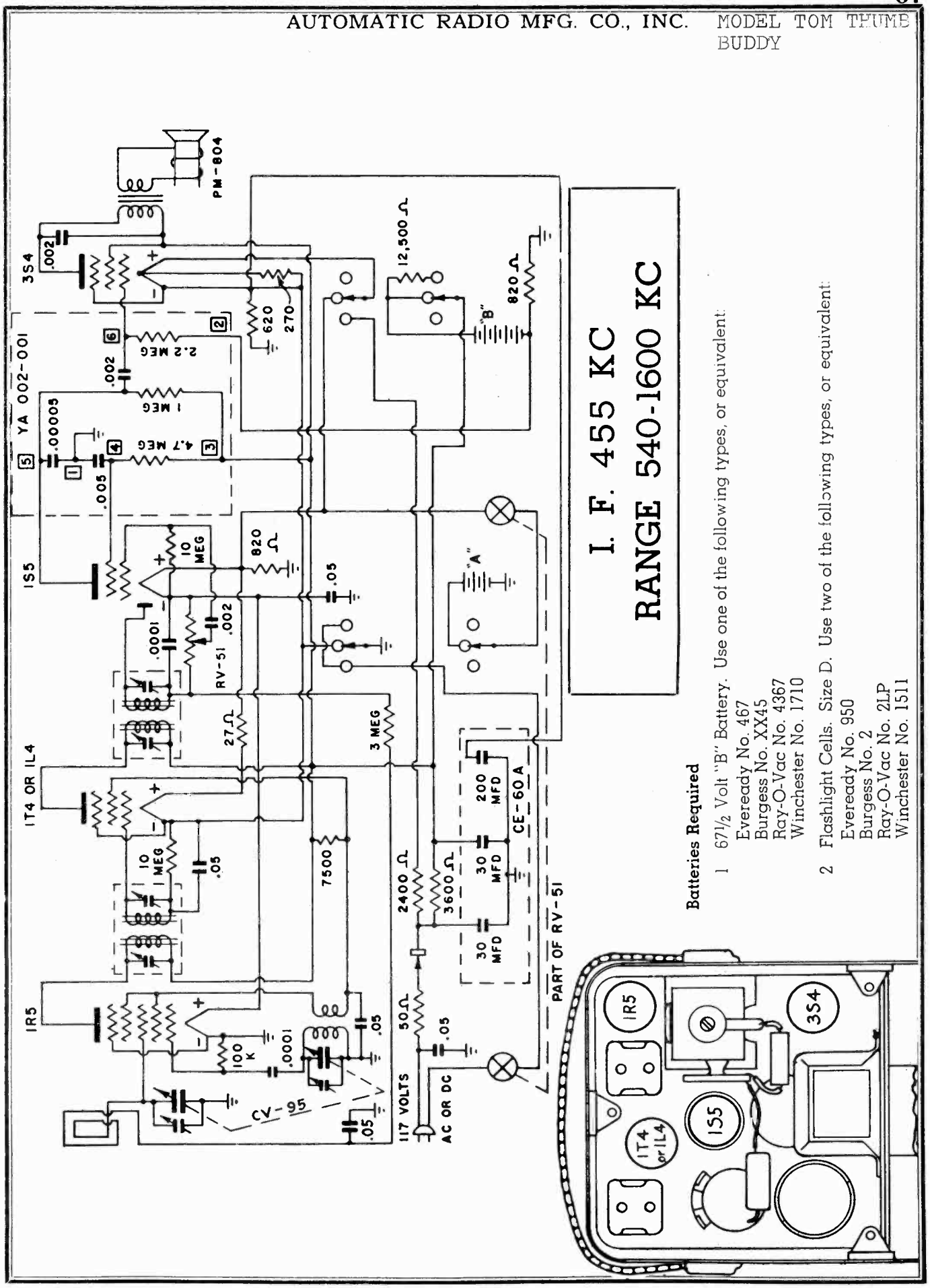


MODEL 53 — ANSLEY RADIO CORP.

DUMMY ANT.	SIG. GEN. CONNECTION	SIG. GEN. FREQ.	BAND SWITCH POS.	TUNING POINT	OUT-PUT METER	OUTPUT METER CONNECTION	REMARKS
"	"	"	"	Disc. Primary	"	Connect to mid-point of 6H6 100,000 ohm Cathode resistors	Adjust for max. output with min. input from signal gen.
"	"	"	"	Disc. Second-ary	"	Connect to 100,000 ohm re-sistor and 1000 mmf. cond. from 6H6 Cathode	Adjust for zero output. Set sig.gen. 75 kc. higher (10.775 Mc.) and 75 kc. lower (10.625 Mc.) and record + and - voltage readings. If not equal, repeat the above 2 steps until they are. (Use enough sig. gen. output to saturate limiters well.
"	6BE6 Grid #3	"	"	1st I.F.T. F.M.	"	1 meg. res. to 1st lim. grid res.	Shunt primary of this transformer with 22000 ohm. resistor. Adjust for max. output with min. sig. gen. input.
High side of generator thru 100 ohms to left F.M. ant. strip terminal (looking at chassis from rear) low side of gen. to right term. thru 100 ohms		107.9 Mc. No Mod.	"	F.M. Osc. Trimmer	"	"	Adjust for max. output (keep below 3 volts on D.C. V.T.V.M.) with min. sig. gen. input. (remove all I.F. shunts before doing this) Check for image. Set dial pointer to F.M. channel #300. for this step. Image should be at approx. 86.5 Mc. generator freq.
"		107.9 Mc No Mod.	"	F.M. R.F. Trimmer	"	"	Adjust for max. output with min. gen. input.
"		107.9 Mc No. Mod.	"	F.M. Ant. Trimmer	"	"	"
"		87.9 Mc No Mod.	"	F.M. Osc. padder	"	"	Set dial pointer to F.M. channel #200. Adjust for max. output with min. gen. input.
"		87.9 Mc No Mod.	"	F.M. R.F. Padder	"	"	"
"		"	"	F.M. Ant. Padder	"	"	Repeat F.M. trimmer and padder adjustments until no further need exists.



AUTOMATIC RADIO MFG. CO., INC. MODEL TOM THUMB BUDDY



Batteries Required

1 67½ Volt "B" Battery. Use one of the following types, or equivalent:
Eveready No. 467
Burgess No. XX45
Ray-O-Vac No. 4367
Winchester No. 1710

2 Flashlight Cells. Size D. Use two of the following types, or equivalent:
Eveready No. 950
Burgess No. 2
Ray-O-Vac No. 2LP
Winchester No. 1511

MODEL TOM THUMB BUDDY — AUTOMATIC RADIO MFG. CO., INC.

BATTERY INSTALLATION INSTRUCTIONS

Flashlight Cell Installation

1.) Open Back door.
2.) Insert flashlight cells on each side of speaker frame as indicated in figure 2.

"B" Battery Installation

1.) Snap connector strip over "B" battery terminals.
2.) Insert bottom end of "B" battery to the extreme right under frame of back cover.
3.) Drop top of battery into position over flashlight cells.
4.) Slide battery slightly to the left to locate centrally under back door frame.

NOTE: "B" battery can be removed by lifting top of battery by the connector strip terminal leads and reversing the above procedure.
Batteries that have become badly swollen can be taken out by removing the back cover and door assembly.

BATTERY CHARGING

The "Charge" feature contained in this model is only applied to the "B" battery. The inexpensive flashlight cells are not subjected to a charge.

Failure of the radio to operate on battery power will first be due to exhausted flashlight cells. The radio will operate again on battery power when these cells have been replaced.

The "B" battery under normal operating conditions without charge will last approximately three times as long as the flashlight cells.

The normal operating life of the "B" battery can be extended from two to three times with charging as outlined below.

The following procedure should be followed when a battery charge is required. (Refer to figure 1 for switch detail.)

1. Plug power line cord into AC or DC 117 Volt power line.
2. Turn "Off-On" Volume knob to the right until a click is heard.
3. Slide 3-position Operation Selector Switch to "AC-DC" position. If radio operates, power outlet is working satisfactorily.
4. Slide 3-position Operation Selector Switch to "Charge" position. The battery is now on charge.

The best possible performance on battery operation can be realized if the battery is periodically charged for about as long a period as it has been in use, rather than wait until it has run down. For example, if the radio has been operated for four hours on battery, it should be on charge for at least four hours afterwards. In this manner the quality and sensitivity of the radio will be at a maximum since the fully charged "B" battery will insure "new battery" performance.

This charge can be repeated many times until finally the "B" battery is completely dissipated and will no longer respond to a charge.

DO NOT REPLACE "B" BATTERY UNTIL RADIO FAILS TO OPERATE ON BATTERY POWER WITH NEW FLASHLIGHT CELLS.

Power Line Cord

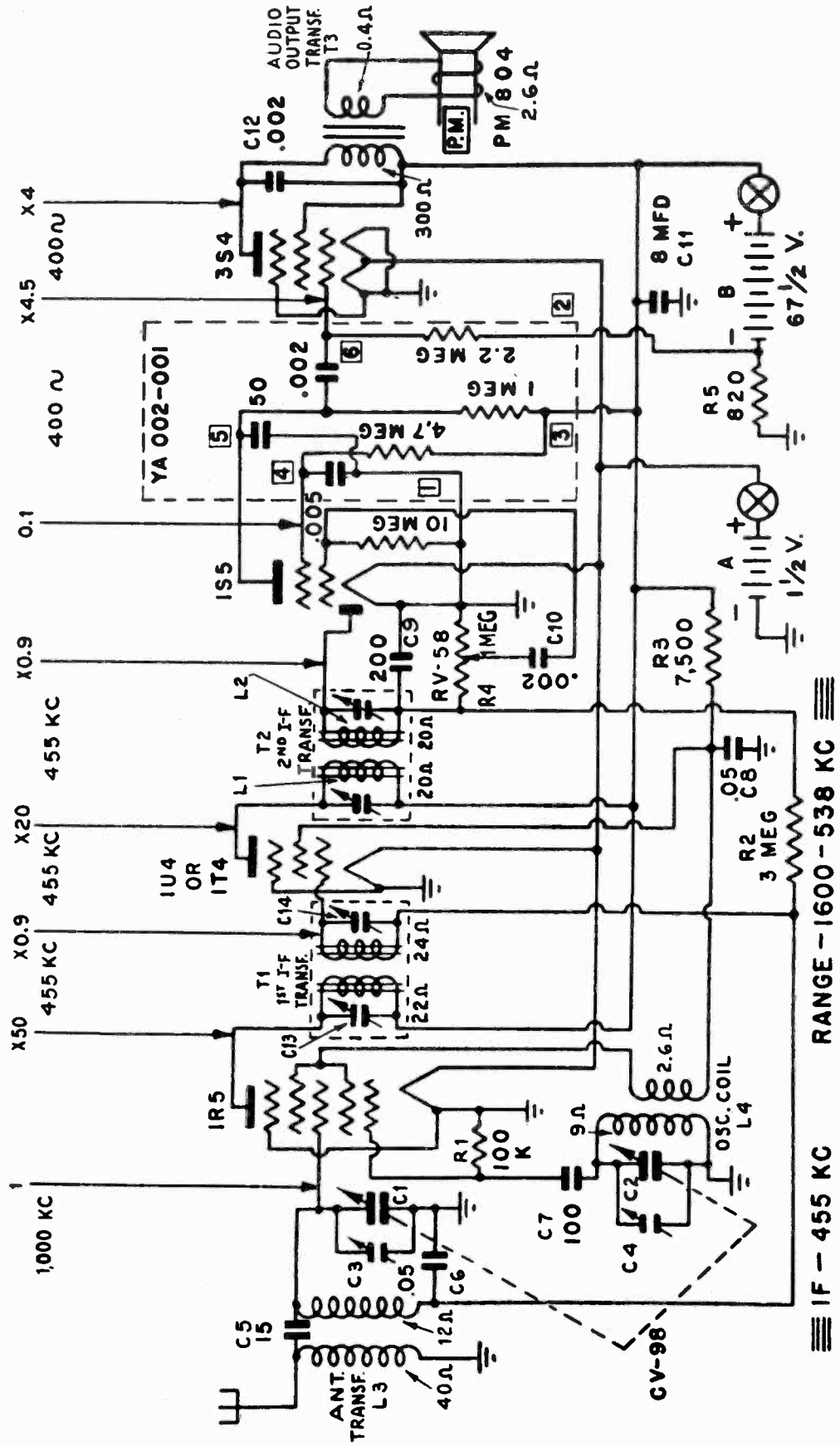
The Power line cord is contained in the spiral groove on the inside of the back cover. For "AC-DC" or "Charge" operation, remove plug from post holder and unwind required length of cord necessary to reach available outlet. Wind back in spiral groove when not in use. If entire length of cord has been unwound, start rewinding from outside groove and work in towards the center. Put plug back into post holder.

THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED TO REMOVE CHASSIS FROM CABINET FOR REPAIRING

1.) Remove knobs.
2.) Remove tri-mount snap fasteners securing loop cover (contained in front door) and unsolder loop leads.
3.) Remove three screws holding back frame and cover assembly in position.
4.) Slip off back frame and cover assembly.
5.) Remove cabinet body.
6.) Remove the mounting screws that secure chassis to three mounting brackets.
7.) Slide chassis out carefully spreading mounting brackets slightly if necessary.

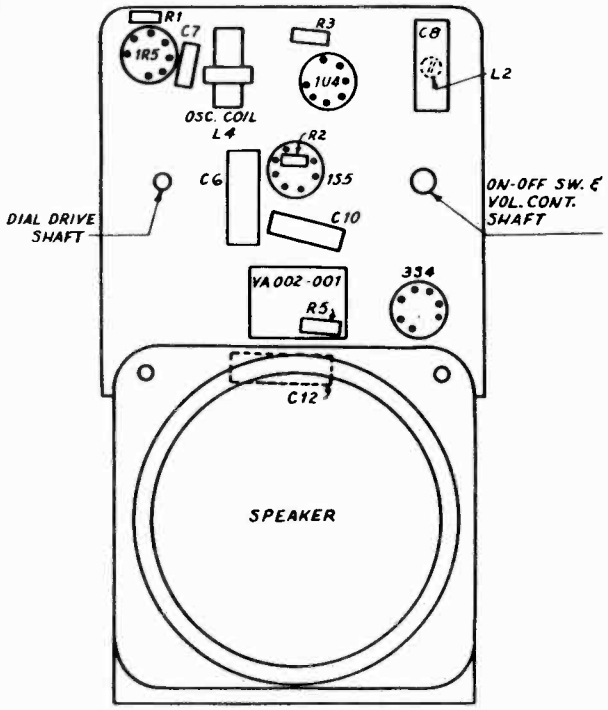
AUTOMATIC RADIO MFG. CO., INC.

MODEL B-44
Bike Radio



MODEL B-44
Bike Radio

AUTOMATIC RADIO MFG. CO., INC.

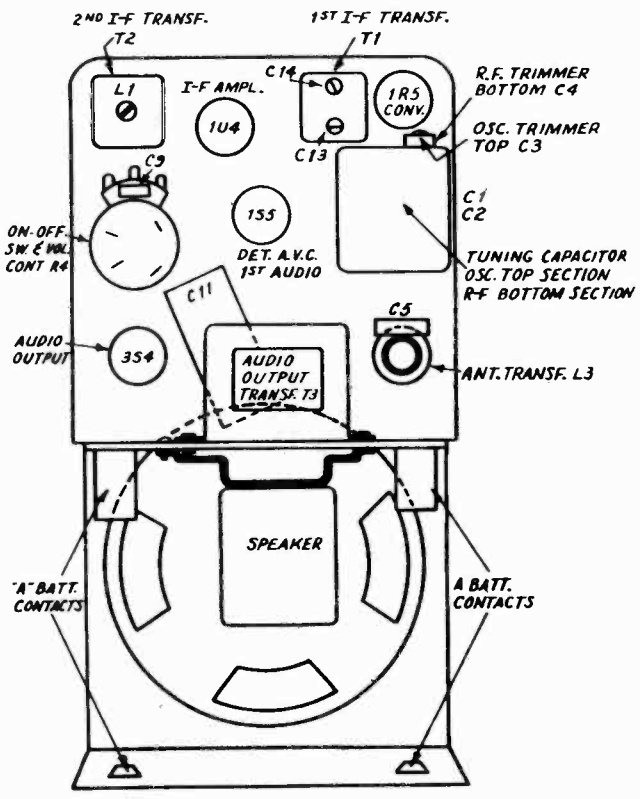


BOTTOM VIEW

TUBE	PIN	V.T.V.M.	20,000 Ω/v.	RESISTANCE
1R5	1	GND.	GND.	GND.
CONV.	2	+58	+58	OVER 1 MEG.
	3	+44	+44	OVER 1 MEG.
	4	-10	-6.5	175K
	5	0	0	LESS THAN 0.1 Ω
	6	0	0	INFINITE
	7	+1.5	+1.5	5Ω
1U4	1	GND.	GND.	GND.
or	2	+58	+58	OVER 1 MEG.
1T4	3	+44	+44	OVER 1 MEG.
I.F.	4	N.C.	N.C.	N.C.
AMPL.	5	GND.	GND.	GND.
	6	0	0	4 MEG.
	7	+1.5	+1.5	5Ω
1S5	1	GND.	GND.	GND.
DET.	2	0	0	INFINITE
A.V.C.	3	0	0	28Ω*
1st	4	+14	+10	OVER 5 MEG.
AUDIO	5	+20	+16	OVER 1 MEG.
	6	0	0	10 MEG.
	7	+1.5	+1.5	5Ω
3S4	1	GND.	GND.	GND.
AUDIO	2	+56	+56	OVER 1 MEG.
OUTPUT	3	-7	-1	2.2 MEG.
	4	+58	+58	OVER 1 MEG.
	5	+1.5	+1.5	5Ω
	6	+56	+56	OVER 1 MEG.
	7	GND.	GND.	GND.

Voltage and resistance measurements were made with respect to chassis ground, and with a B supply voltage of 65 V.D.C.

*With Vol. Cont. full counter clockwise the resistance is 28Ω
With Vol. Cont. full clockwise the resistance is 1 MEG.



TOP VIEW

ALIGNMENT PROCEDURE

Connect output meter across voice coil.

Connect the signal generator to the standard Hazeltine Loop Model 1150 and couple it loosely to the receiver loop. Set the volume control at maximum, and fully mesh the tuning capacitor.

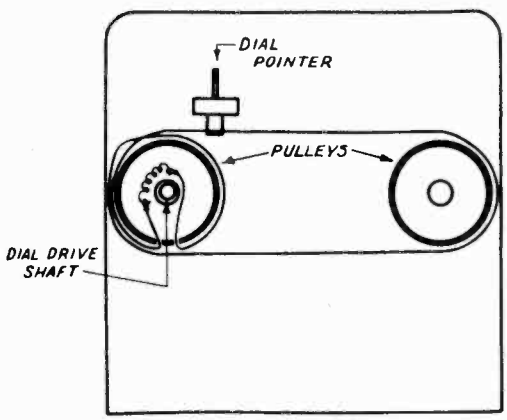
The output of the signal generator should be just sufficient to give a readable deflection on the output meter.

Set the signal generator to 455 kc and adjust i-f trimmers and slugs for maximum output in the following order: L2, L1, C14, C13. Repeat sequence if trimmers were badly maladjusted.

Set the signal generator and receiver to 1500 kc and adjust the oscillator trimmer C4 for maximum output.

Set the signal generator and receiver to 1400 kc and adjust the antenna trimmer C3 for maximum output.

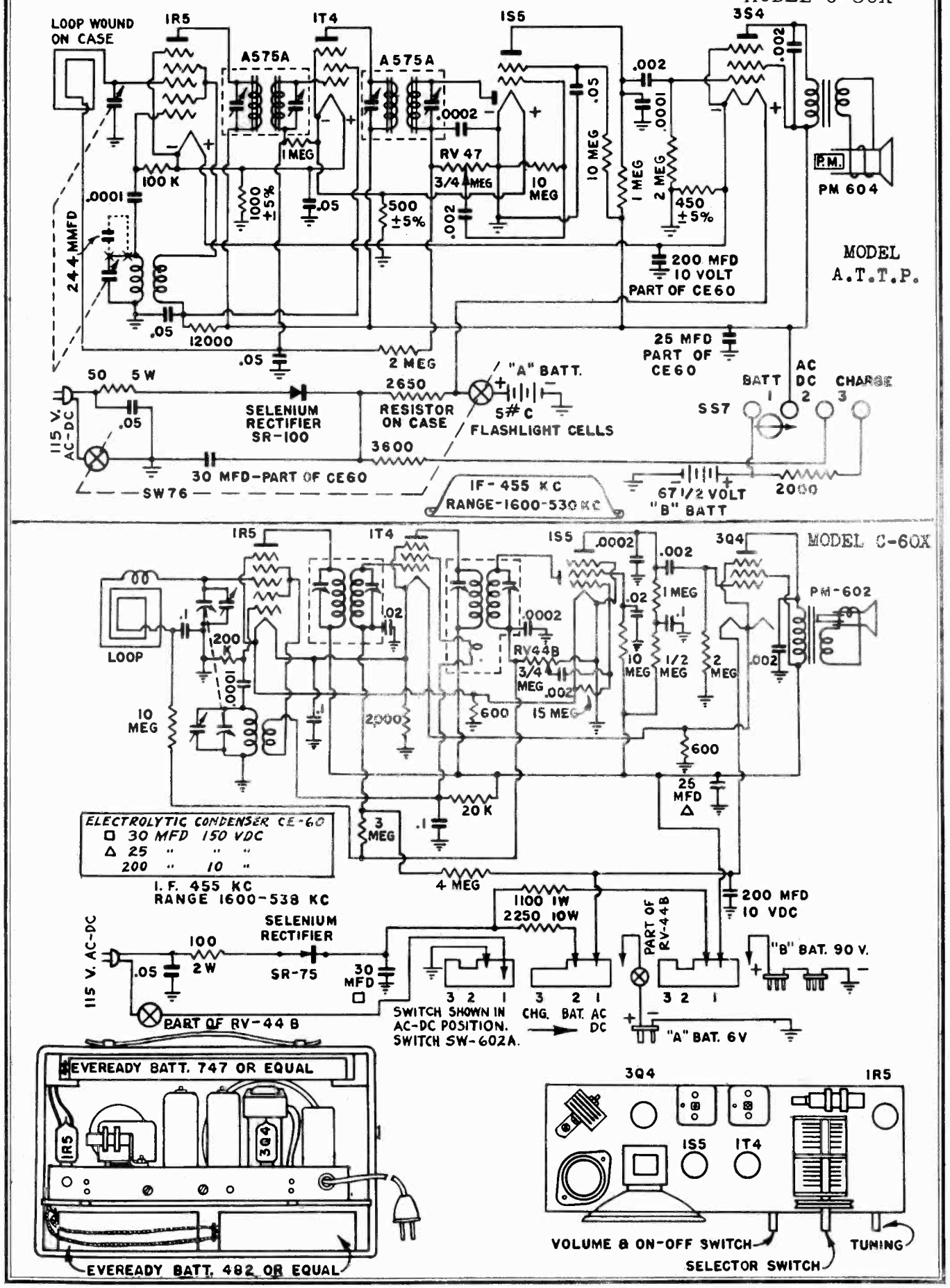
Set the signal generator and receiver to 1500 kc and readjust oscillator trimmer C4 for maximum output



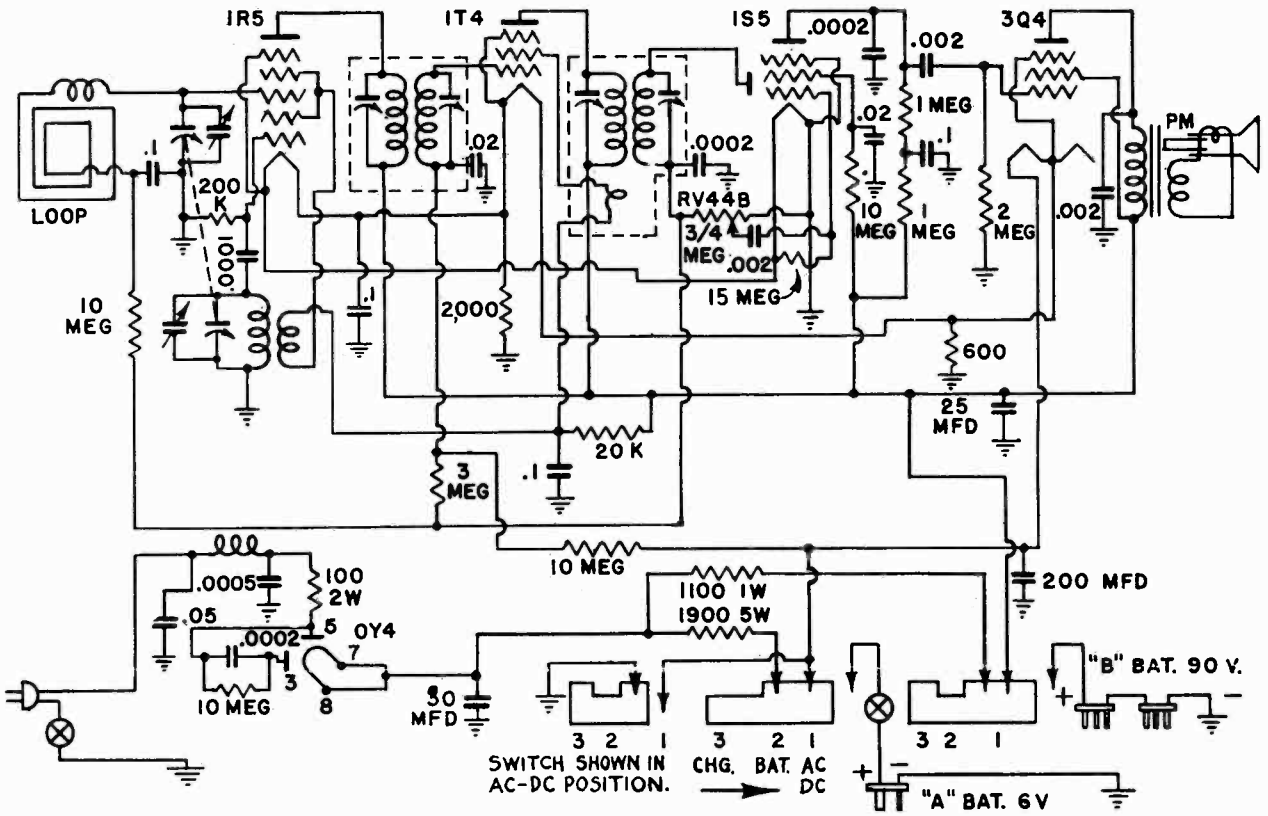
NOTE: TUNING CAPACITOR IN MAXIMUM CAPACITY POSITION

AUTOMATIC RADIO MFG. CO., INC.

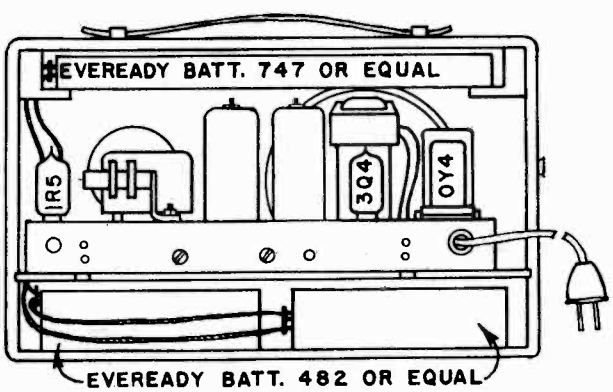
MODEL A.T.T.P.
MODEL C-60X

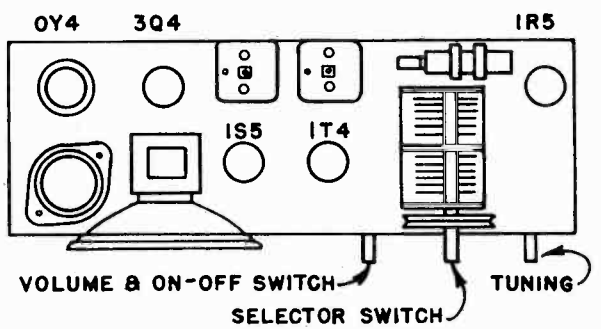


MODEL NO. C-60



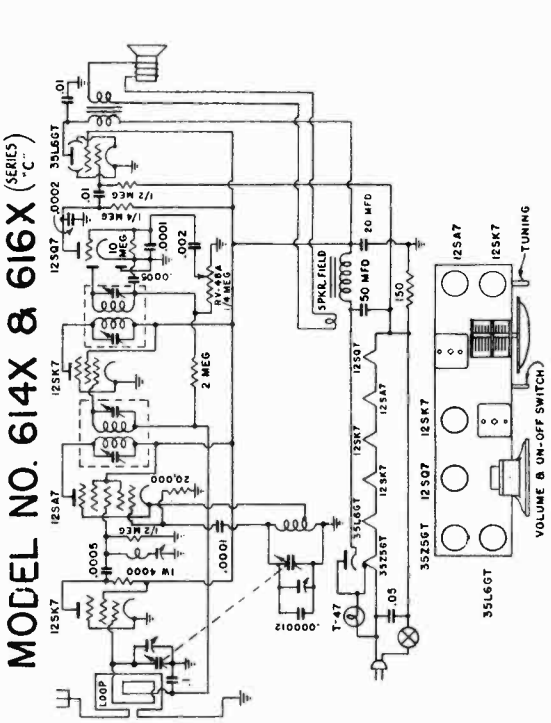
IF PEAK 455 KC

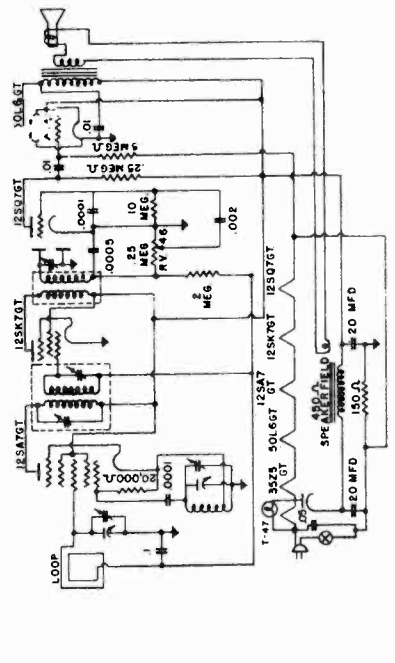


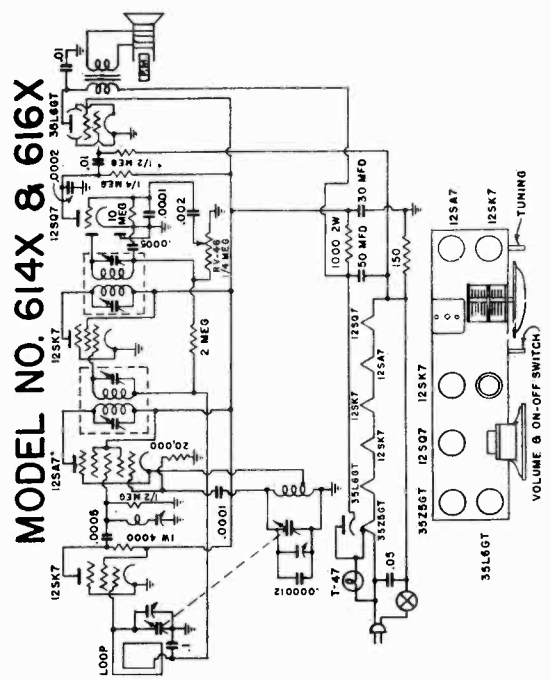


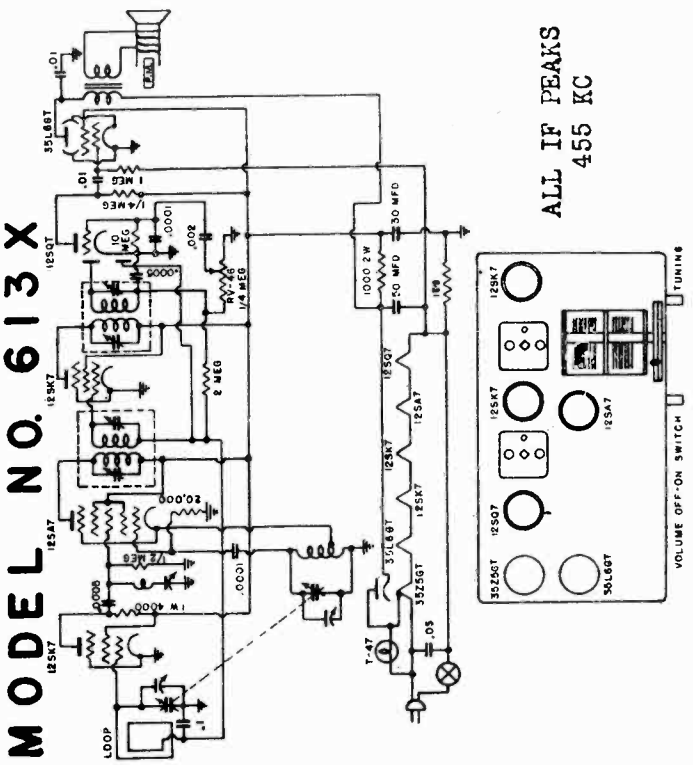
AUTOMATIC RADIO MFG. CO., INC.

MODEL 613X
MODELS 614X,616X,
Early and Series C
MODELS 601,602



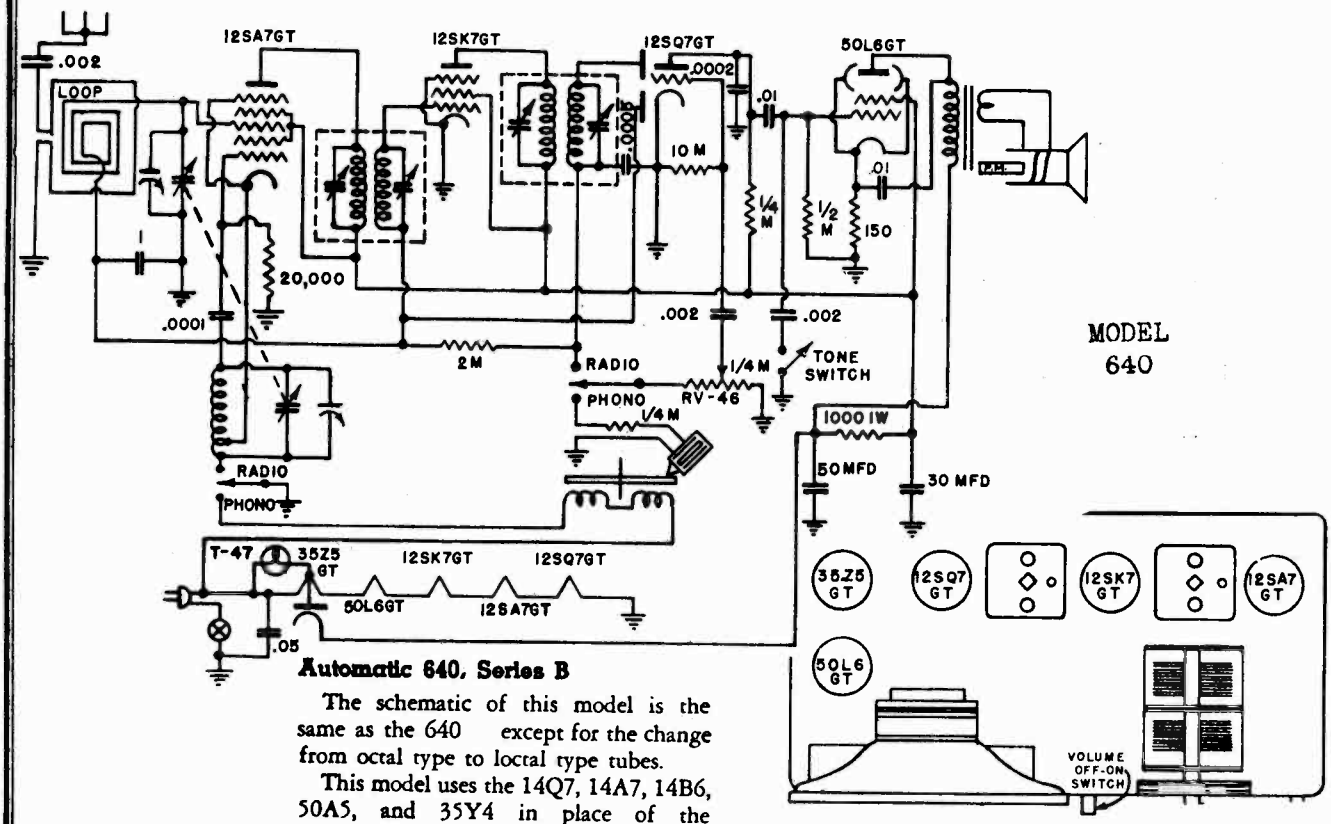






MODEL 640,
640 Series B

AUTOMATIC RADIO MFG. CO., INC.



MODEL 640

Automatic 640, Series B

The schematic of this model is the same as the 640 except for the change from octal type to loctal type tubes.

This model uses the 14Q7, 14A7, 14B6, 50A5, and 35Y4 in place of the 12SA7GT, 12SK7GT, 12SQ7GT, 50L-6GT, and 35Z5GT tubes.

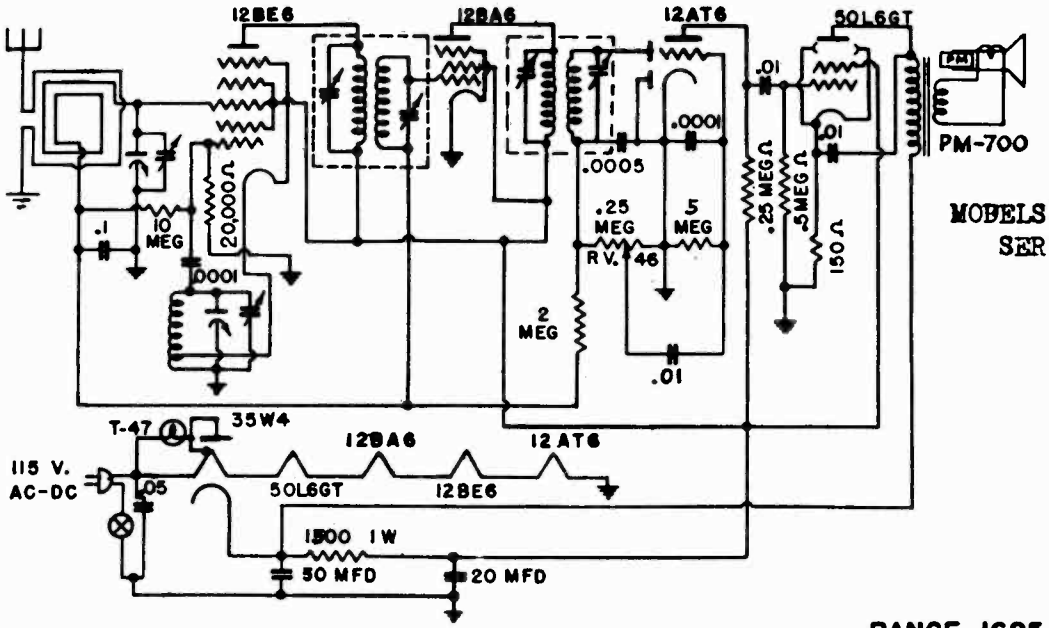
MODELS 601,602,613X,614X,616X,640,677

1. Connect signal generator, set at 455 KC, through a .1 mfd coupling condenser to the grid of the 12SA7GT tube.
2. Connect an output meter across speaker voice coil.
3. Adjust trimmers on I. F. transformers for a maximum output as indicated on the output meter.
   NOTE:
   a. Volume Control should be set at the full position.
   b. Keep signal generator output at a low value so that receiver AVC action will not affect alignment.
4. Connect signal generator, still set at 455 KC, to grid of 12SK7 R. F. tube.
5. Adjust wave trap trimmer, located under chassis, for minimum output.
6. Set signal generator to 1685 KC.
7. Turn tuning condenser to the minimum capacity position, plates out.
8. Adjust front (oscillator) trimmer on tuning condenser until generator signal is picked up.
9. Set signal generator to 1400 KC.
10. Connect output leads of signal generator in the form of a single turn loop and place this loop several inches away from the receiver loop antenna.
11. Tune receiver until generator signal is picked up. (It may be necessary to adjust the signal generator output to a maximum in order for the receiver to pick the signal up in this fashion.)
12. Adjust rear (antenna) trimmer on tuning condenser for maximum output.

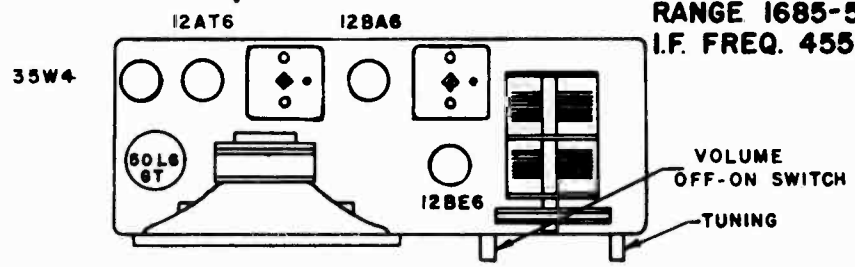
AUTOMATIC RADIO MFG. CO., INC.

MODELS 601,602,
Series B & C

2-8-47

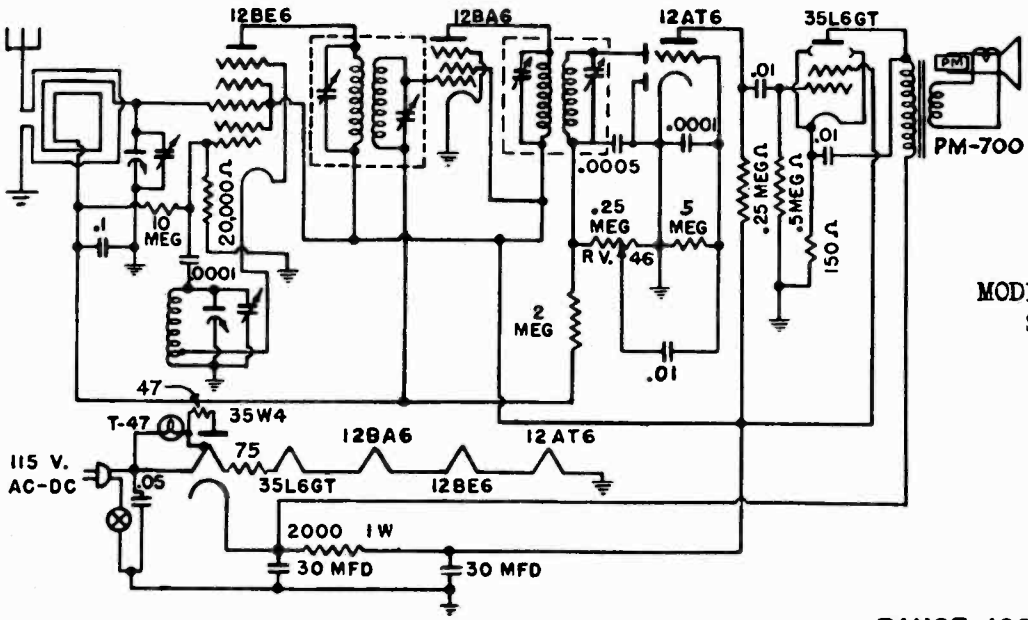


MODELS 601, 602
SERIES B

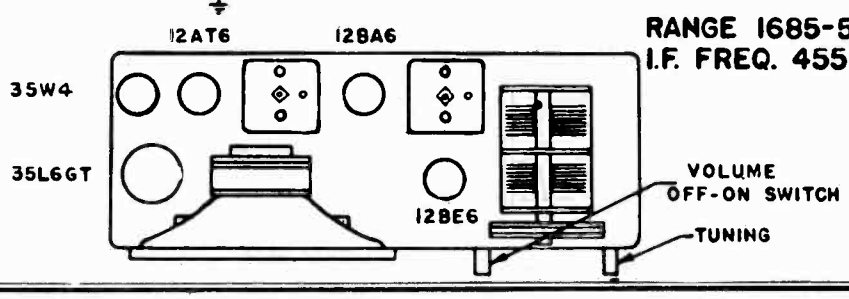


RANGE 1685-538 KC
I.F. FREQ. 455 KC

4-14-47



MODELS 601, 602
SERIES C

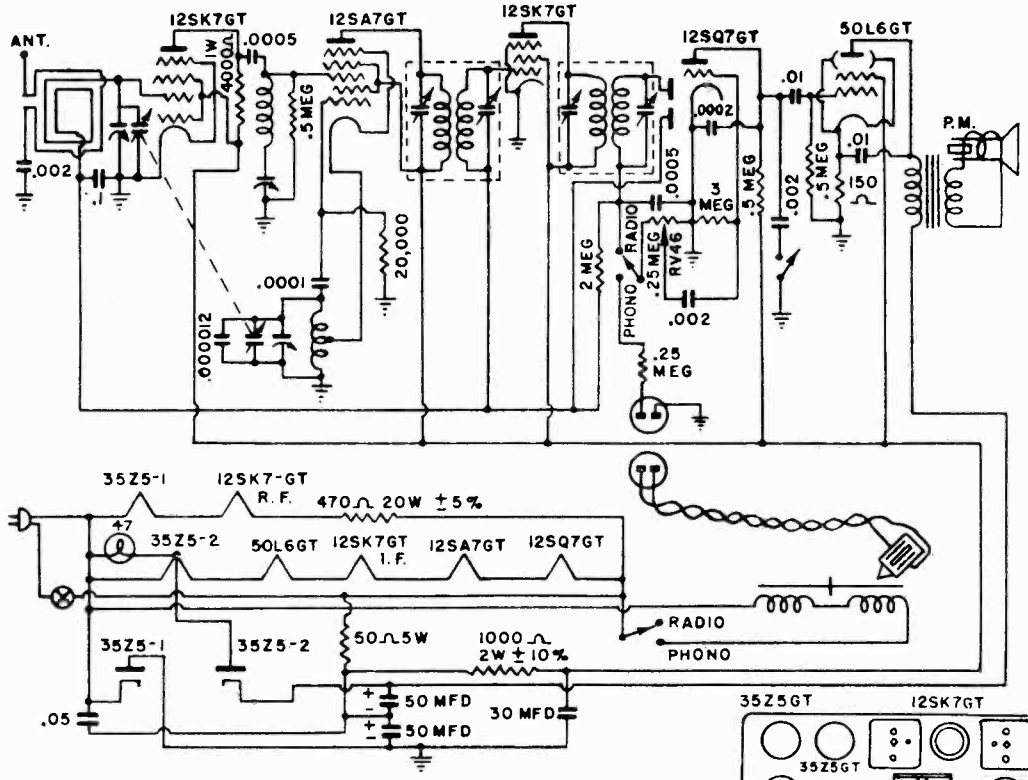


RANGE 1685-538 KC
I.F. FREQ. 455 KC

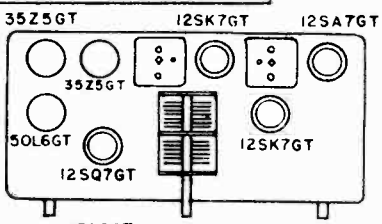
MODEL 677
MODEL 677 Series B

AUTOMATIC RADIO MFG. CO., INC.

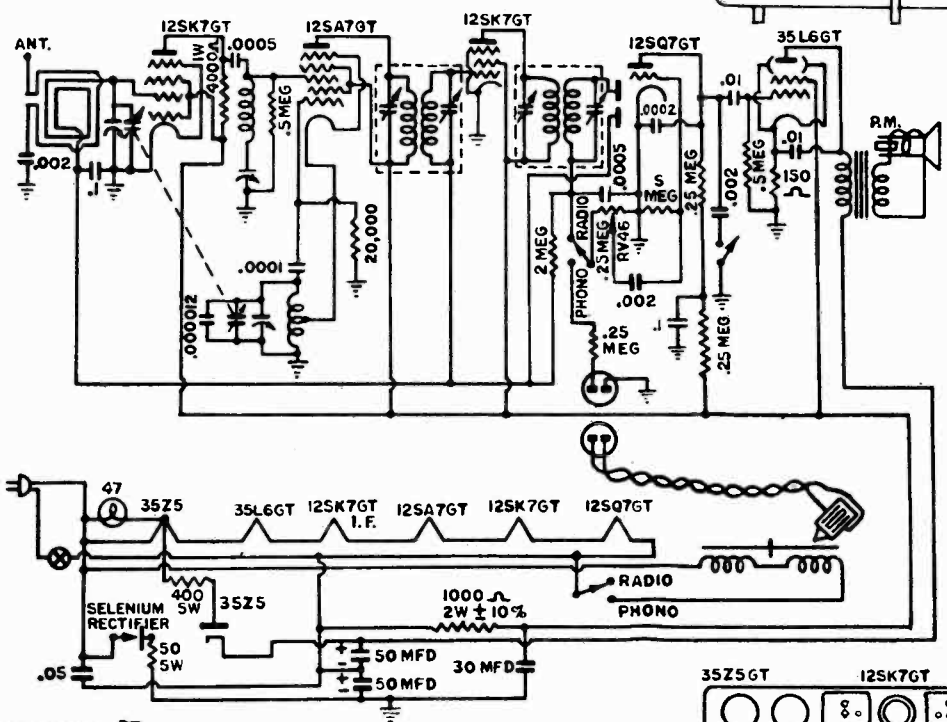
MODEL NO. 677

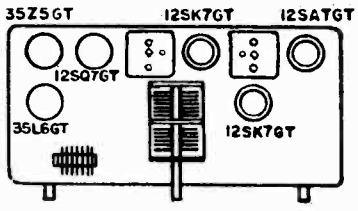


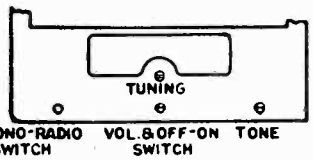
IF PEAK
455 KC



7-26-46



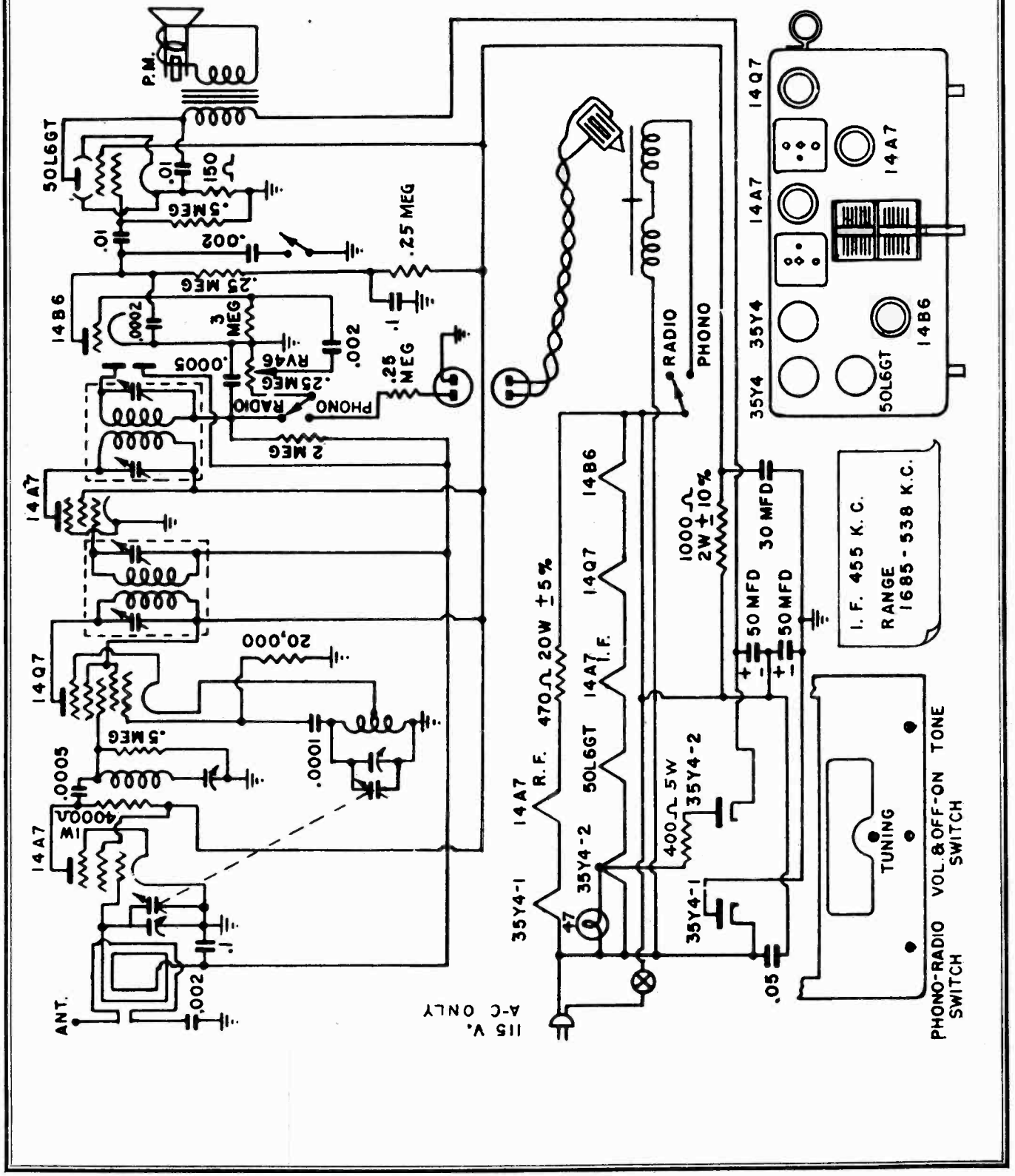




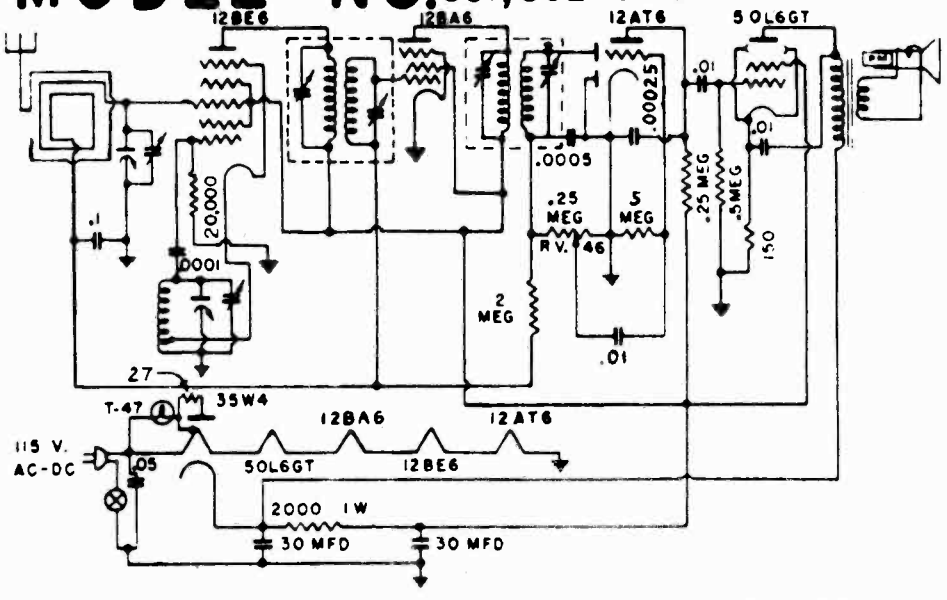
MODEL 677 SERIES B

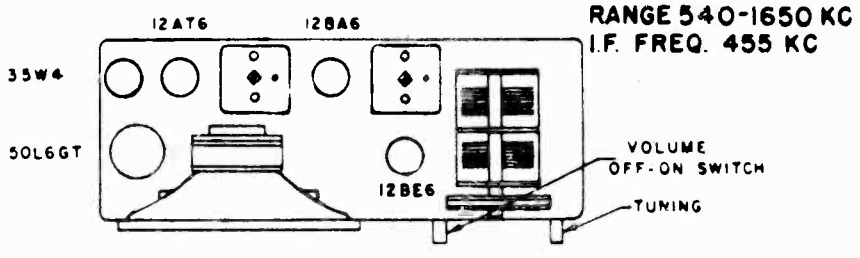
MODEL 677
SERIES C

AUTOMATIC RADIO MFG. CO., INC.



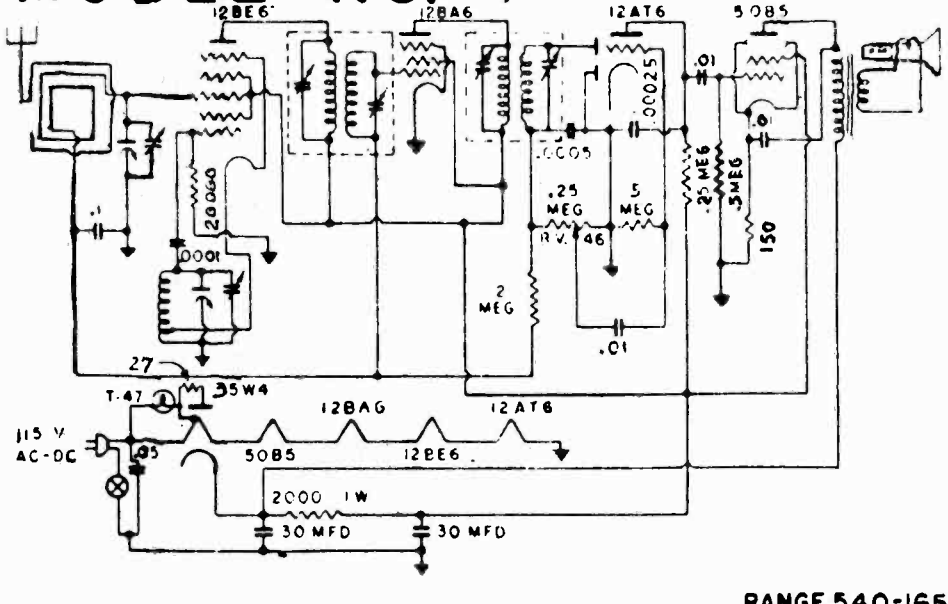
MODEL NO. 801, 802 & 803

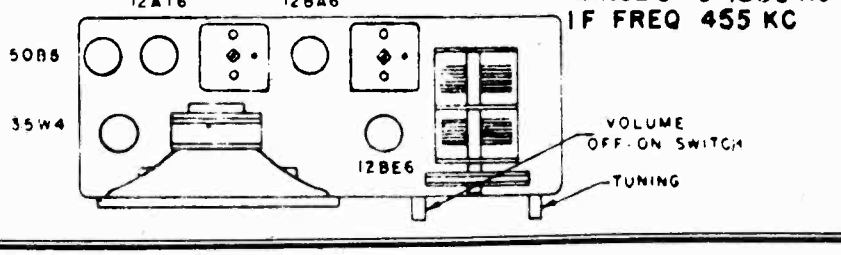




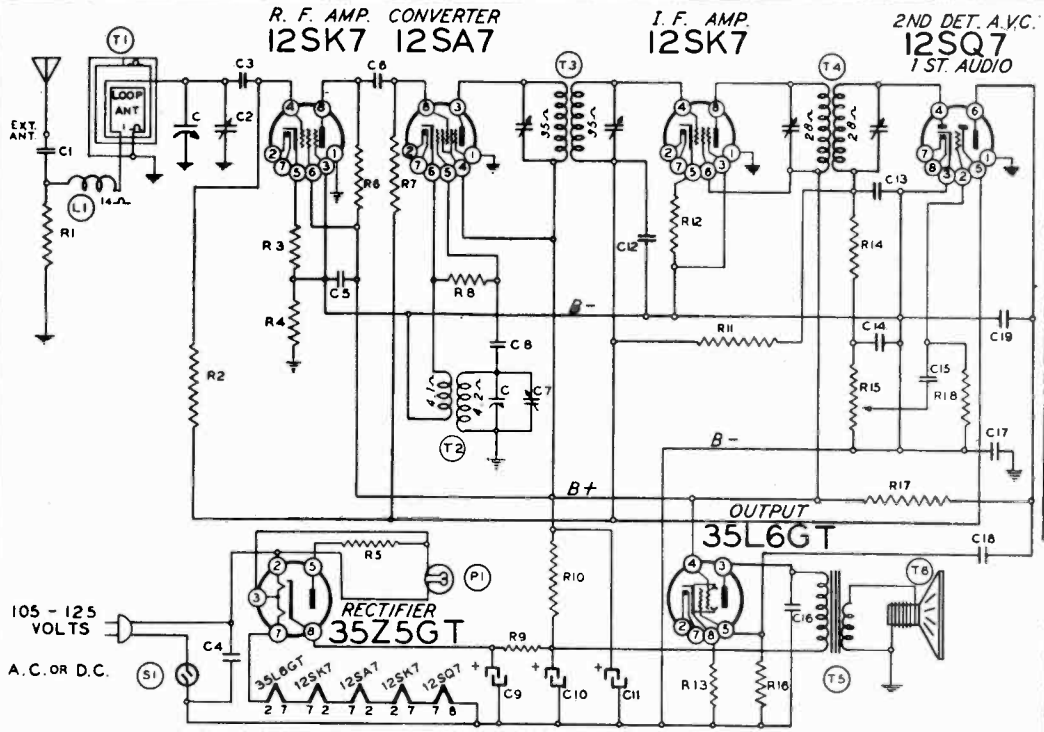
RANGE 540-1650 KC
I.F. FREQ. 455 KC

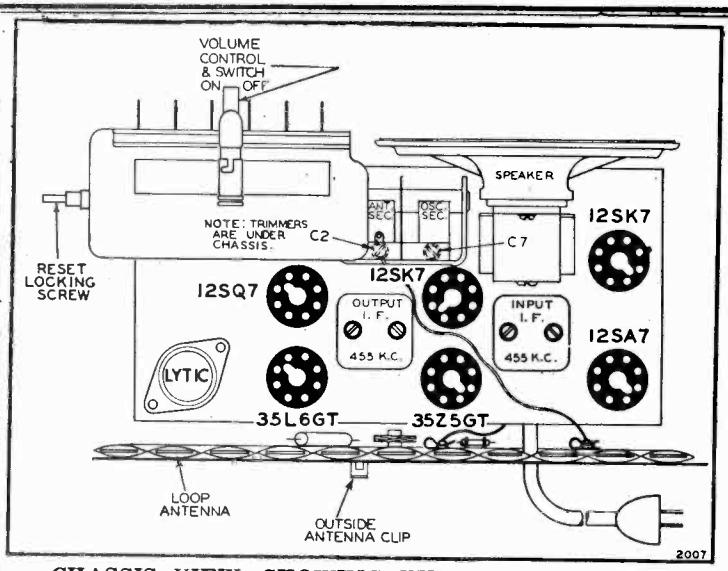
MODEL NO. 801, 802 & 803 (SERIES B)





RANGE 540-1650 KC
IF FREQ 455 KC

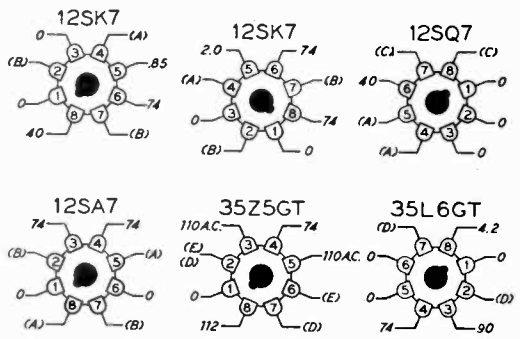




CHASSIS VIEW, SHOWING TUBE LOCATIONS

A - CANNOT BE MEASURED WITH VOLTMETER.
B - 12 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.
C - 12 VOLTS A.C. MEASURED ACROSS PINS 7 & 8.
D - 30 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.
E - 117 VOLTS A.C. MEASURED ACROSS PINS 2 & 6.

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS & B-. LINE VOLTAGE 117 VOLTS AC. VOLUME CONTROL AT MINIMUM.



BOTTOM VIEW OF CHASSIS

2008

VOLTAGES AT TUBE SOCKET TERMINALS

RESISTORS

R1	4700 ohms, ½ w., ±10%
R2	1 megohm, ½ w., ±20%
R3	100 ohms, ½ w., ±10%
R4	150,000 ohms, ½ w., ±20%
R5	22 ohms, ½ w., ±10%
R6	4700 ohms, ½ w., ±20%
R7	100,000 ohms, ½ w., ±20%
R8	47,000 ohms, ½ w., ±20%
R9	180 ohms, 1 w., ±10%
R10	1200 ohms, 1 w., ±10%
R11	3.3 megohms, ½ w., ±20%
R12	390 ohms, ½ w., ±10%
R13	150 ohms, ½ w., ±10%
R14	47,000 ohms, ½ w., ±20%
R15	Volume control, 1 megohm
R16	470,000 ohms, ½ w., ±20%
R17	220,000 ohms, ½ w., ±20%
R18	4.7 megohms, ½ w., ±20%

CONDENSERS

C	2 gang variable
C1	.002 x 600 volts
C2	Antenna trimmer on gang
C3	.0005 mica
C4	.1 x 400 volts
C5	.25 x 200 volts
C6	.0001 mica
C7	Oscillator trimmer on gang
C8	.0001 mica
C9	40 mfd lytic x 150 w.v.
C10	20 mfd lytic x 150 w.v.
C11	20 mfd lytic x 150 w.v.

NOTE: C9, C10, C11 are in same unit. In 25-cycle sets, values are 60 mfd., 40 mfd., 40 mfd.

C12	.05 x 200 volts
C13	.0001 mica
C14	.0001 mica
C15	.002 x 600 volts
C16	.02 x 400 volts
C17	.2 x 400 volts
C18	.004 x 600 volts
C19	.0001 mica

MISCELLANEOUS

L1	Loading coil
P1	Pilot light bulb, type T-47
S1	On-off switch on volume control
T1	Loop antenna, complete
T2	Oscillator coil
T3	Input I.F. coil, 455 Kc.
T4	Output I.F. coil, 455 Kc.
T5	Output transformer for speaker
T6	5-inch P.M. speaker

Sensitivity (for 0.05 watt output) ..... 10 microvolts average

Intermediate frequency ..... 455 Kc.
Power consumption ..... 35 Watts

Selectivity ..... 55 Kc. broad at 1000 x signal at 1000 Kc.
Power output (in voice coil)
Undistorted ..... 0.8 watt
Maximum ..... 1.0 watt
Voice coil impedance ..... 3.2 ohms

ALIGNMENT PROCEDURE

- No aligning adjustments should be attempted until all other possible causes of trouble have been checked.
- Chassis must be removed from cabinet for proper alignment. Slight adjustments of the oscillator and antenna circuits can be made, without removing the chassis, through two holes provided on the bottom of the cabinet. The two adjustment screws can be reached with a long insulated screwdriver.
- It is important that during alignment the loop antenna be maintained at the same distance from the chassis as when the chassis is installed in the cabinet.
- Turn volume control to maximum for all adjustments.
- Connect ground post of signal generator to B— of radio through a 0.1 mfd. condenser.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.

Band	Signal Generator Frequency Setting	Dummy Antenna	Connection to Radio	Tuning Condenser Setting	Adjust for Maximum Output (see chassis view)
I.F.	455 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	4 trimmers on input and output I.F. transformers
Broadcast	1650 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	Oscillator trimmer C7 on bottom of radio
	1400 Kc.	None	See note A	Set dial at 1400 Kc.	Antenna trimmer C2 on bottom of radio

Note A: Lay output lead of generator in back of loop antenna. Turn up generator output. Loop antenna will pick up energy.

REPLACEMENT PARTS LIST

When ordering parts, specify part number, schematic symbol when applicable, receiver model number, and series. Use only genuine factory replacement parts.

Part No.	Schematic Symbol	Description
		CONDENSERS
10025	C1, C15	.002 x 600 volts, ±25%
1292	C3	.0005, mica, ±20%
1001	C4	.1 x 400 volts, +50%, −10%
1006	C5	.25 x 200 volts, ±20%
1295	C6, C8, C19	.0001, mica, ±20%
11994	C9, C10, C11	Electrolytic (for 60-cycle sets), 40 mfd. x 150 volts, 20 mfd. x 150 volts, 20 mfd. x 150 volts.
11995	C9, C10, C11	Electrolytic (for 25-cycle sets), 60 mfd. x 150 volts, 40 mfd. x 150 volts, 40 mfd. x 150 volts.
1009	C12	.05 x 200 volts, ±25%
129161	C13, C14	Dual .0001, mica, ±10%
10026	C16	.02 x 400 volts, ±25%
100110	C17	.2 x 400 volts, +30%, −10%
100106	C18	.004 x 600 volts, ±10%
		RESISTORS*
A-9B1-70	R1	4700 ohms, ½ watt, ±10%
A-9B1-31	R2	1 megohm, ½ watt, ±20%
A-9B1-50	R3	100 ohms, ½ watt, ±10%
A-9B1-26	R4	150,000 ohms, ½ watt, ±20%
A-9B1-42	R5	22 ohms, ½ watt, ±10%
A-9B1-17	R6	4700 ohms, ½ watt, ±20%
A-9B1-25	R7	100,000 ohms, ½ watt, ±20%
A-9B1-23	R8, R14	47,000 ohms, ½ watt, ±20%
A-9B2-53	R9	180 ohms, 1 watt, ±10%
A-9B2-63	R10	1200 ohms, 1 watt, ±10%
A-9B1-24	R11	3.3 megohms, ½ watt, ±20%
A-9B1-57	R12	390 ohms, ½ watt, ±10%
A-9B1-52	R13	150 ohms, ½ watt, ±10%
A-9B1-29	R16	470,000 ohms, ½ watt, ±20%
A-9B1-27	R17	220,000 ohms, ½ watt, ±20%
A-9B1-35	R18	4.7 megohms, ½ watt, ±20%
		COILS
12310	L1	Load coil
B-13E-10242	T1	Loop antenna assembly, complete on back
A-13D-10215	T2	Oscillator coil
108140	T3	Input I.F. coil in can, 455 Kc.
103145	T4	Output I.F. coil in can, 455 Kc.
		SOCKETS
121210		8-prong octal tube sockets, molded
121171		8-prong socket for 12SK7, laminated
121216		Socket base, bakelite
107271		Pilot light socket assembly
		SPEAKER
114197	T6	5-inch P.M. speaker
105104	T5	Output transformer for speaker
		DIAL PARTS
115448		End plate (right hand bracket)
115448C		End plate (left hand bracket)
115146		Cams

NOTE ON TUBE REPLACEMENT

Replace a defective metal 12SK7 tube with another metal tube. Replace a glass 12SK7 tube with either a metal tube or with an exact duplicate of the tube now in the set.

Part No.	Schematic Symbol	Description
		DIAL PARTS (Contd.)
115143		Key washer (13 used on cam shaft)
117528		Brass spacer (one used on cam shaft
117602		Brass spacer (four used on cam shaft
131181		Spring washers, for locking collar
117604		Locking collar
117302		Brass spacer (next to locking collar)
115592		Key washer (holds drive cord on end of tuner shaft)
117600		Lever shaft
115361		Lever with roller
120283		Return spring for levers
115449B		Dial bracket assembly
112785		Pointer
1209		Drive cord, 6 inches used
120143		Take-up spring for drive cord
B-6D-10241		Dial scale
112659		Crystal, clear, for dial scale
A-2M-7758		Cinch buttons for fastening scale to bracket
117566-1		Brass spacer (at end of tuner shaft)
117833		Brass spacer (for spacing pointer from dial)
		MISCELLANEOUS
10798		Line cord and plug
101218	R15	Volume control and switch, 1 megohm
B-8A-10211	C	2-gang variable condenser
107249	P1	Pilot light bulb, type T-47
132108		Chassis screws, No. 6 x ¼" hex. head
134123		Rubber bumper (bottom of cabinet)
128495		Cardboard back, brown
128495B		Cardboard back, ivory
131193		Cinch buttons, for fastening back to cabinet
13141		Cinch buttons, to cover trimmer holes in cabinet
128292-17		Pushbuttons, walnut
128292-8		Pushbuttons, ivory
112784		Station call letters, set
112606		Acetate tabs for call letters
128473-18		Cabinet, bakelite, walnut
128473-9		Cabinet, bakelite, ivory
128496-17		Knob, volume, walnut
128496-8		Knob, volume, ivory
128527-18		Knob, tuning, walnut
128527-9		Knob, tuning, ivory
117421		Locking screw for tuning knob. (Specify walnut or ivory.)
120388		Locking spring for tuning knob

REPLACING DIAL POINTER DRIVE CORD

Six inches of cord are required in the set. Use a piece slightly longer so that knots may be tied at each end. Numbers below correspond to circled numbers in diagram.

1. Rotate tuning knob to extreme clockwise position. This closes tuning condenser. Knob should remain in this position until installation is completed.

2. Tie knot at one end of cord and place it in key washer as shown. Wind cord one turn around shaft in direction shown.

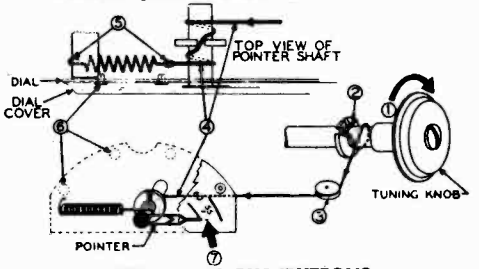
3. Pass cord over idler pulley.

4. Pass cord over pointer shaft; wind it one turn around shaft; pass it through key washer; wind it one more turn around shaft.

5. Hook spring over end of dial support. Tie cord to spring. **IMPORTANT:** Before tying knot stretch spring enough so that full contraction of spring will rotate pointer shaft at least one-half turn.

6. Remove dial crystal by removing Cinch buttons.

7. Make sure tuning knob is in extreme clockwise position. Then rotate pointer clockwise, against friction of shaft, until it is in horizontal position, as shown.



SETTING THE PUSHBUTTONS

The pushbuttons may be used, after proper adjustment, for the automatic tuning of any six stations which you select. They can be set up in any order.

1. Turn on the radio. Allow it to warm up for at least one minute.

2. Push out the call letters of the six stations from the call-letter sheets supplied with this manual. Press an acetate tab (supplied in small envelope) into each of the pushbuttons.

3. Insert one call-letter tab in the rectangular opening in each of the pushbuttons, in any sequence.

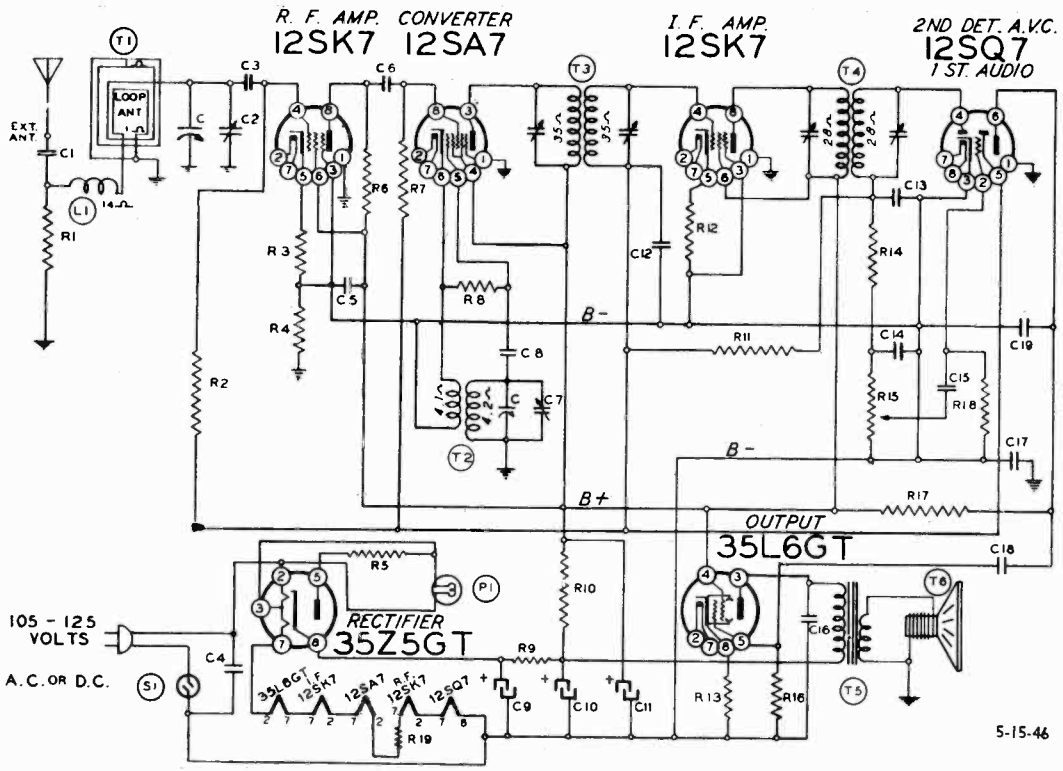
4. Check to see that the locking screw in the center of the tuning knob (see illustration) is loose. If it is not, turn it several turns to the left (counterclockwise). A coin may be used for this purpose.

5. Press the first pushbutton down all the way. With one hand hold the button down firmly and with the other carefully tune in the desired station. Release the pushbutton.

6. Follow this procedure for each of the five other buttons, adjusting each one for a different station.

7. Rotate the tuning knob on the side of the cabinet as far to the right as it will go. Tighten the locking screw in the center of the knob. IT IS IMPORTANT THAT THIS SCREW BE TIGHTENED VERY FIRMLY.

BELMONT RADIO CORP. MODEL 6D111, Series B



Tuning range	530 to 1650 Kc.
Intermediate frequency	455 Kc.
Power consumption	35 Watts
Sensitivity (for 0.05 watt output)	10 microvolts average
Selectivity	55 Kc. broad at 1000 x signal at 1000 Kc.
Power output (in voice coil)	
Undistorted	0.8 watt
Maximum	1.0 watt
Voice coil impedance	3.2 ohms

DIAL PARTS

115448		End plate (right hand bracket)
115448C		End plate (left hand bracket)
115146		Cams
115143		Key washer (13 used on cam shaft)
117528		Brass spacer (one used on cam shaft
117602		Brass spacer (four used on cam shaft)
131181		Spring washers, for locking collar
117604		Locking collar
117600		Lever shaft
115361		Lever with roller
120283		Return spring for levers
115449B		Dial bracket assembly
112785		Pointer
A-53A-10989		Drive cord, 6 inches used
A-49A-11087		Spring on tuning shaft, for cord
A-3N-11086		Spacer under above spring
120143		Take-up spring for drive cord
B-6D-10241		Dial scale
112659		Crystal, clear, for dial scale
A-2M-7758		Cinch buttons for fastening scale to bracket
117833		Brass spacer (for spacing pointer from dial)

MISCELLANEOUS

10798		Line cord and plug
101218	R15	Volume control and switch, 1 megohm
B-8A-10211	C	2-gang variable condenser
107249	P1	Pilot light bulb, type T-47
134123		Rubber bumper (bottom of cabinet)
128495B		Cardboard back
131193		Cinch buttons, for fastening back to cabinet
13141		Cinch buttons, to cover trimmer holes in cabinet
128292B-8		Pushbuttons
112784		Station call letters, set
112606		Acetate tabs for call letters
128473-9		Cabinet, bakelite
128496-8		Knob, volume
A-5B-10994-9		Knob, tuning
A-3F-10995		Locking screw for tuning knob.
120388		Locking spring for tuning knob
A-2H-10715		Tube shield (for metal-base 12SA7GT)
A-2H-11271		Tube shield (for bakelite-base 12SA7GT)

CONDENSERS

C-8D-10778	C1, C15	.002 x 600 volts, +40%, −15%
1292	C3	.0005, mica, ±20%
1001	C4	.1 x 400 volts, +50%, −10%
1006	C5	.25 x 200 volts, ±20%
1295	C6, C8, C19	.0001, mica, ±20%
11994	C9, C10, C11	Electrolytic (for 60-cycle sets), 40 mfd. x 150 volts, 20 mfd. x 150 volts, 20 mfd. x 150 volts.
A-8C-10946	C9, C10, C11	Electrolytic (for 25-cycle sets), 60 mfd. x 150 volts, 40 mfd. x 150 volts, 40 mfd. x 150 volts.
1009	C12	.05 x 200 volts, ±25%
129161	C13, C14	Dual .0001, mica, +25%, −10%
10026	C16	.02 x 400 volts, ±25%
100110	C17	.2 x 400 volts, +5%, −20%
100106	C18	.004 x 600 volts, ±10%

RESISTORS *

C-9B1-70	R1	4700 ohms, ½ watt, ±10%
C-9B1-31	R2	1 megohm, ½ watt, ±20%
C-9B1-50	R3	100 ohms, ½ watt, ±10%
C-9B1-26	R4	150,000 ohms, ½ watt, ±20%
C-9B1-42	R5	22 ohms, ½ watt, ±10%
C-9B1-17	R6	4700 ohms, ½ watt, ±20%
C-9B1-25	R7	100,000 ohms, ½ watt, ±20%
C-9B1-23	R8, R14	47,000 ohms, ½ watt, ±20%
C-9B2-53	R9	180 ohms, 1 watt, ±10%
C-9B2-63	R10	1200 ohms, 1 watt, ±10%
C-9B1-34	R11	3.3 megohms, ½ watt, ±20%
C-9B1-52	R12, R13	150 ohms, ½ watt, ±10%
C-9B1-29	R16	470,000 ohms, ½ watt, ±20%
C-9B1-27	R17	220,000 ohms, ½ watt, ±20%
C-9B1-35	R18	4.7 megohms, ½ watt, ±20%
C-9B2-44	R19	33 ohms, 1 watt, ±10%

COILS

12310	L1	Load coil
B-13E-10242	T1	Loop antenna assembly, complete on back
A-13D-10215	T2	Oscillator coil
108140H	T3	Input I.F. coil in can, 455 Kc.
108145	T4	Output I.F. coil in can, 455 Kc.

SOCKETS

121210	8-prong octal tube sockets, molded
121171	8-prong socket for 12SK7, laminated
121216	Socket base, bakelite
107271	Pilot light socket assembly

SPEAKER

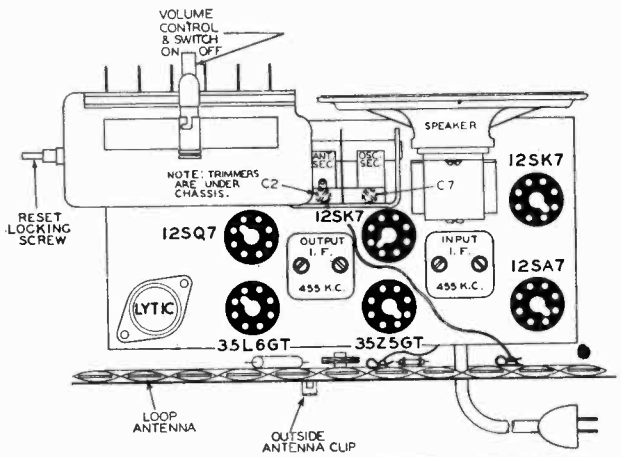
114197	T6	5-inch P.M. speaker
105104	T5	Output transformer for speaker

ALIGNMENT PROCEDURE

- No aligning adjustments should be attempted until all other possible causes of trouble have been checked.
- Chassis must be removed from cabinet for proper alignment. Slight adjustments of the oscillator and antenna circuits can be made, without removing the chassis, through two holes provided on the bottom of the cabinet. The two adjustment screws can be reached with a long insulated screwdriver.
- It is important that during alignment the loop antenna be maintained at the same distance from the chassis as when the chassis is installed in the cabinet.
- Turn volume control to maximum for all adjustments.
- Connect ground post of signal generator to B— of radio through a 0.1 mfd. condenser.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.

Band	Signal Generator Frequency Setting	Dummy Antenna	Connection to Radio	Tuning Condenser Setting	Adjust for Maximum Output (see chassis view)
I.F.	455 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	4 trimmers on input and output I.F. transformers
Broadcast	1650 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	Oscillator trimmer C7 on bottom of radio
	1400 Kc.	None	See note A	Set dial at 1400 Kc.	Antenna trimmer C2 on bottom of radio

Note A: Lay output lead of generator in back of loop antenna. Turn up generator output. Loop antenna will pick up energy.



CHASSIS VIEW, SHOWING TUBE LOCATIONS

SETTING THE PUSHBUTTONS

The pushbuttons may be used, after proper adjustment, for the automatic tuning of any six stations which you select. They can be set up in any order.

1. Turn on the radio. Allow it to warm up for at least one minute.

2. Push out the call letters of the six stations from the call-letter sheets supplied with this manual.

3. Insert one call-letter tab in the rectangular opening in each of the pushbuttons, in any sequence. Press an acetate tab (supplied in small envelope) into each of the pushbuttons.

4. With the screwdriver supplied, check to see that the locking screw in the center of the tuning knob (see illustration) is loose. If it is not, turn it several turns to the left (counterclockwise).

5. Press the first pushbutton down all the way. With one hand hold the button down firmly and with the other carefully tune in the desired station. Release the pushbutton.

6. Follow this procedure for each of the five other buttons, adjusting each one for a different station.

7. Rotate the tuning knob on the side of the cabinet as far to the right as it will go. Tighten the locking screw in the center of the knob. IT IS IMPORTANT THAT THIS SCREW BE TIGHTENED VERY FIRMLY.

8. The pushbuttons are now properly set for automatic tuning. Any of the six stations may now be tuned in simply by pressing the proper button down as far as it will go. If it is desired to reset any of the buttons for a new station, loosen the locking screw in the center of the tuning knob, set the pushbutton as described above, and re-tighten the locking screw.

REPLACING DIAL POINTER DRIVE CORD

Six inches of cord are required in the set. Use a piece slightly longer so that knots may be tied at each end. Numbers below correspond to circled numbers in diagram.

1. Rotate tuning knob to extreme clockwise position. This closes tuning condenser. Knob should remain in this position until installation is completed.

2. Tie cord to loop in spring as shown. Wind cord one turn around shaft in direction shown.

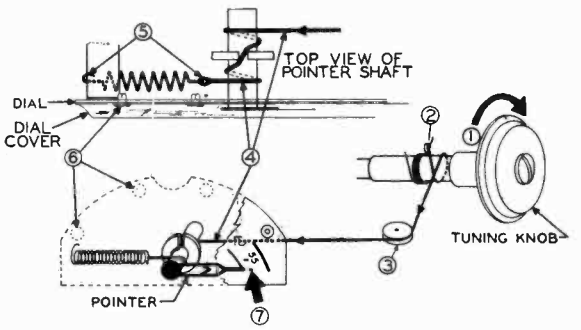
3. Pass cord over idler pulley.

4. Pass cord over pointer shaft; wind it one turn around shaft; pass it through key washer; wind it one more turn around shaft.

5. Hook spring over end of dial support. Tie cord to spring. IMPORTANT: Before tying knot stretch spring enough so that full contraction of spring will rotate pointer shaft at least one-half turn.

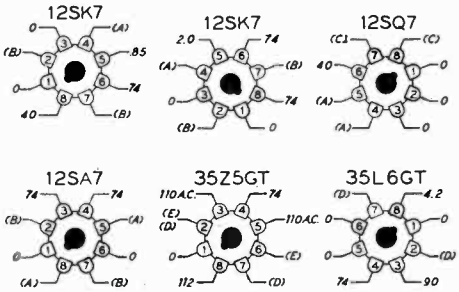
6. Remove dial crystal by removing Cinch buttons.

7. Make sure tuning knob is in extreme clockwise position. Then rotate pointer clockwise, against friction of shaft, until it is in horizontal position, as shown.



A - CANNOT BE MEASURED WITH VOLTMETER.
B - 12 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.
C - 12 VOLTS A.C. MEASURED ACROSS PINS 7 & 8.
D - 30 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.
E - 117 VOLTS A.C. MEASURED ACROSS PINS 2 & 6.

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS & B-. LINE VOLTAGE 117 VOLTS AC. VOLUME CONTROL AT MINIMUM.

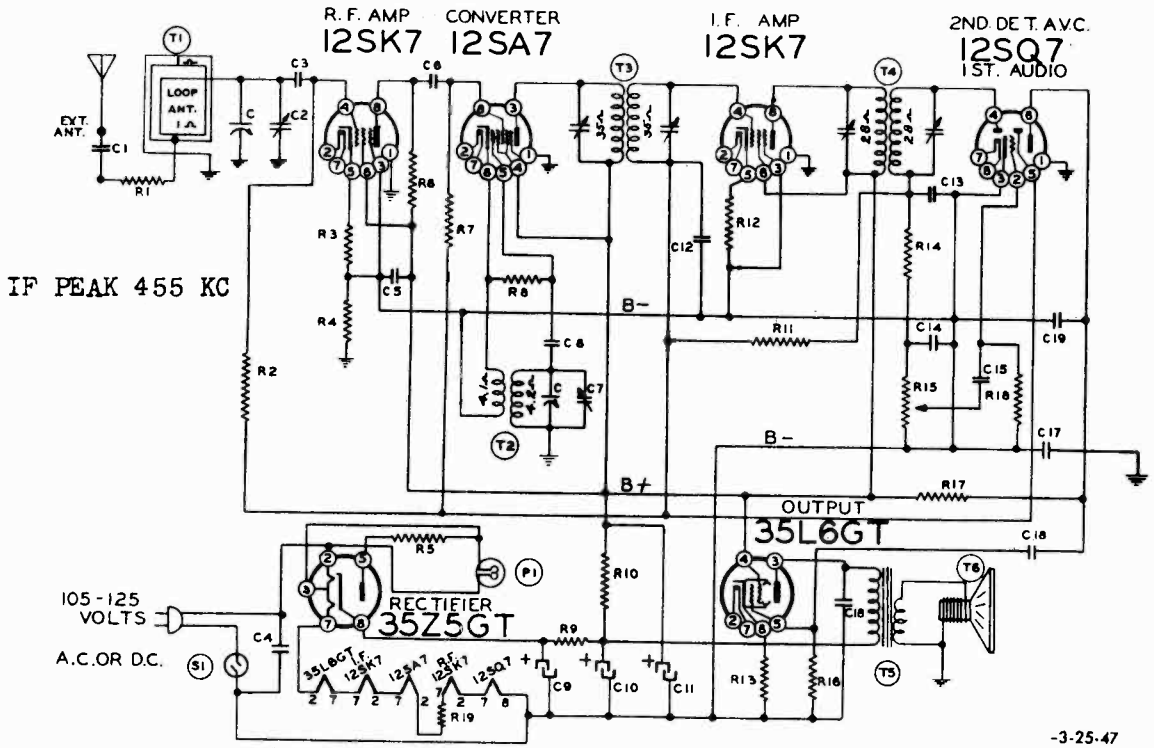


BOTTOM VIEW OF CHASSIS

VOLTAGES AT TUBE SOCKET TERMINALS

BELMONT RADIO CORP.

MODEL 6D121
Series A



Part No.	Schematic Symbol	Description
CONDENSERS		
C-8D-10953	C17	.15 MFD x 400 volts.
C-8D-10778	C1, C15	.002 x 600 volts, +40%, −15%
C-8F3-12	C3	.470 mmfd., mica, ±20%
C-8D-10760	C4	.1 x 400 volts, +20%
C-8D-10775	C5	.25 x 200 volts, ±20%
C-8F3-8	C6, C8, C19	.001, mica, ±20%
11994 or A-8C-10077	C9, C10, C11	Electrolytic (for 50-60-cycle sets), 40 mfd. x 150 volts, 20 mfd. x 150 volts, 20 mfd. x 150 volts.
C-8D-10770	C12	.05 x 200 volts, ±20%
129161	C13, C14	Dual .0001, mica, ±10%
C-8D-10774	C16	.02 x 400 volts, ±20%
C-8D-10778	C18	.004 x 600 volts, ±20%
RESISTORS		
C-9B1-13	R1	1000 ohms, ½ watt, ±20%
C-9B1-31	R2	1 megohm, ½ watt, ±20%
C-9B1-50	R3	100 ohms, ½ watt, ±10%
C-9B1-26	R4	150,000 ohms, ½ watt, ±20%
C-9B1-42	R5	22 ohms, ½ watt, ±10%
C-9B1-70	R6	4700 ohms, ½ watt, ±10%
C-9B1-25	R7	100,000 ohms, ½ watt, ±20%
C-9B1-23	R8, R14	47,000 ohms, ½ watt, ±20%
C-9B2-53	R9	180 ohms, 1 watt, ±10%
C-9B2-63	R10	1200 ohms, 1 watt, ±10%
C-9B1-34	R11	3.3 merohms, ½ watt, ±20%
C-9B1-52	R12, R13	150 ohms, ½ watt, ±10%
C-9B1-29	R16	470,000 ohms, ½ watt, ±20%
C-9B1-27	R17	220,000 ohms, ½ watt, ±20%
C-9B1-35	R18	4.7 megohms, ½ watt, ±20%
C-9B2-44	R19	33 ohms, 1 watt, ±10%
COILS		
C-212-11565	T1	Loop antenna assembly, complete on back
A-13D-10215	T2	Oscillator coil
108140H or B-13A-12023	T3	Input I.F. coil in can, 455 Kc.
108145 or B-13B-12022	T4	Output I.F. coil in can, 455 Kc.
(See note on page 3)		
SOCKETS		
121210		8-prong octal tube sockets, molded
121171		8-prong socket for 12SK7, laminated
121216		Socket base, bakelite
107271 or A-47A-11470		Pilot light socket assembly
SPEAKER		
114197	T6	5-inch P.M. speaker
105104	T5	Output transformer for speaker
DIAL PARTS		
115448		End plate (right hand bracket)
115448C		End plate (left hand bracket)

Part No.	Schematic Symbol	Description
115146		Cams
115143		Key washer (13 used on cam shaft)
117528		Brass spacer (one used on cam shaft)
117602		Brass spacer (four used on cam shaft)
131181		Spring washers, for locking collar
117604		Locking collar
117600		Level shaft
115361		Lever with roller
120283		Return spring for levers
115449B		Dial bracket assembly
112785		Pointer
A-53A-10989		Drive cord, 6 inches used
A-49A-11087		Spring on tuning shaft, for cord
A-3N-11086		Spacer under above spring
120143		Take-up spring for drive cord
B-6D-10241		Dial scale
112-659-1		Crystal, clear, for dial scale
A-2M-7758		Cinch buttons for fastening scale to bracket
117833		Brass spacer (for spacing pointer from dial)
MISCELLANEOUS		
10798		Line cord and plug
101218 or A-10A-10626	R15, S1	Volume control and switch, 1 megohm
B-8A-10211	C, C2, C7	2-gang variable condenser
107249	P1	Pilot light bulb, type T-47
134123		Rubber bumper (bottom of cabinet)
B-23J-11464		Cardboard back (specify color)
A-2M-10096		Cinch buttons, for fastening back to cabinet (4 used)
13141		Cinch buttons, to cover trimmer holes in cabinet
B-5B-11463-8		Pushbuttons (6 used)
A-23L-11900		Station call letters, set
A-6C-11899		Acetate tabs for call letters
5C-11228-9		Cabinet, bakelite, ivory color
128-686-8		Knob, volume, ivory color
A-5B-10994-9		Knob, tuning, ivory color
A-3F-10995		Locking screw for tuning knob.
120388		Locking spring for tuning knob
A-2H-10996		Reset key

NOTE: On some sets slug tuned I.-F.s are used instead of trimmer tuned I.-F.s. 108-140H and 108-145 are trimmer tuned. B-13A-12023 and B-13B-12022 are slug tuned. The slug tuned I-F.s are tuned from the top and bottom (secondary on top, primary on bottom).

Slug tuned I.-F.s cannot be used to substitute trimmer tuned I.-F.s but trimmer tuned I.-F.s can be used to substitute slug tuned I.-F.s.

REPLACING DIAL POINTER DRIVE CORD

Six inches of cord are required in the set. Use a piece slightly longer so that knots may be tied at each end. Numbers below correspond to circled numbers in diagram.

1. Rotate tuning knob to extreme clockwise position. This closes tuning condenser. Knob should remain in this position until installation is completed.

2. Tie cord to loop in spring as shown. Wind cord one turn around shaft in direction shown.

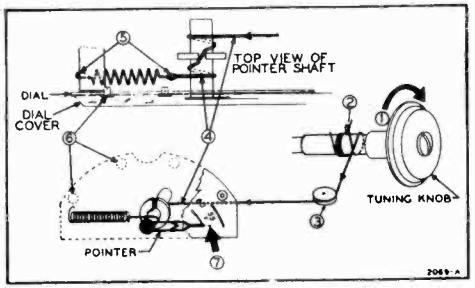
3. Pass cord over idler pulley.

4. Pass cord over pointer shaft; wind it one turn around shaft; pass it through key washer; wind it one more turn around shaft.

5. Hook spring over end of dial support. Tie cord to spring. **IMPORTANT**: Before tying knot stretch spring enough so that full contraction of spring will rotate pointer shaft at least one-half turn.

6. Remove dial crystal by removing Cinch buttons.

7. Make sure tuning knob is in extreme clockwise position. Then rotate pointer clockwise, against friction of shaft, until it is in horizontal position, as shown.

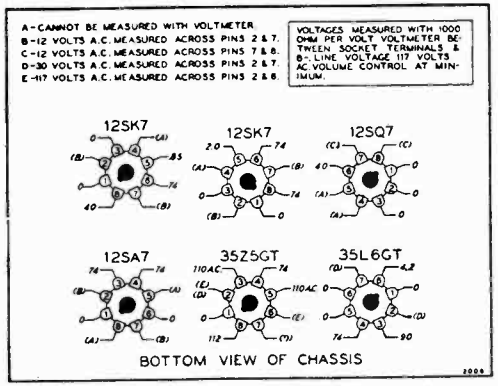


ALIGNMENT PROCEDURE

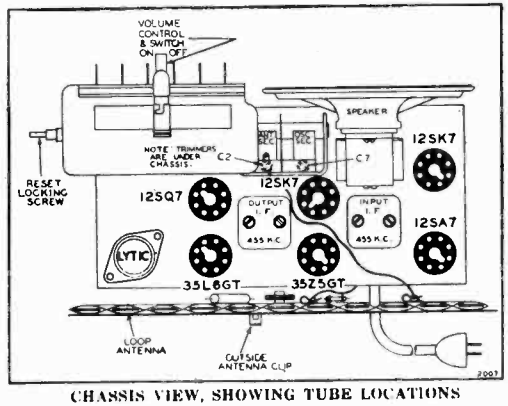
- No aligning adjustments should be attempted until all other possible causes of trouble have been checked.
- Chassis must be removed from cabinet for proper alignment. Slight adjustments of the oscillator and antenna circuits can be made, without removing the chassis, through two holes provided on the bottom of the cabinet. The two adjustment screws can be reached with a long insulated screwdriver.
- It is important that during alignment the loop antenna be maintained at the same distance from the chassis as when the chassis is installed in the cabinet.
- Turn volume control to maximum for all adjustments.
- Connect ground post of signal generator to B— of radio through a 0.1 mfd. condenser.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.

Band	Signal Generator Frequency Setting	Dummy Antenna	Connection to Radio	Tuning Condenser Setting	Adjust for Maximum Output (see chassis view)
I.F.	455 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	4 trimmers on input and output I.F. transformers (See note on page 3)
Broadcast	1650 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	Oscillator trimmer C7 on bottom of radio
	1400 Kc.	None	See note A	Set dial at 1400 Kc.	Antenna trimmer C2 on bottom of radio

Note A: Lay output lead of generator in back of loop antenna. Turn up generator output. Loop antenna will pick up energy.



VOLTAGES AT TUBE SOCKET TERMINALS



CHASSIS VIEW, SHOWING TUBE LOCATIONS

NOTE ON TUBE REPLACEMENT

Replace a defective metal 12SK7 tube with another metal tube. Replace a glass 12SK7 tube with either a metal tube or with an exact duplicate of the tube now in the set.

SETTING THE PUSHBUTTONS

The pushbuttons may be used, after proper adjustment, for the automatic tuning of any six stations which you select. They can be set up in any order.

1. Turn on the radio. Allow it to warm up for at least one minute.

2. Push out the call letters of the six stations from the call-letter sheets supplied with this manual.

3. Insert one call-letter tab in the rectangular opening in each of the pushbuttons, in any sequence. Press an acetate tab (supplied in small envelope) into each of the pushbuttons.

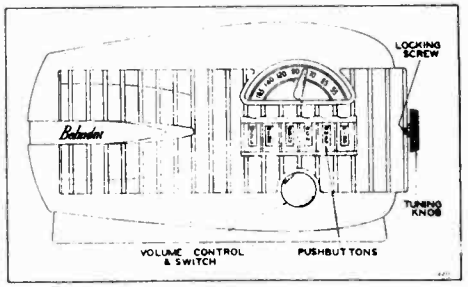
4. With the screwdriver supplied, check to see that the locking screw in the center of the tuning knob (see illustration) is loose. If it is not, turn it several turns to the left (counterclockwise).

5. Press the first pushbutton down **all the way**. With one hand hold the button down firmly and with the other carefully tune in the desired station. Release the pushbutton.

6. Follow this procedure for each of the five other buttons, adjusting each one for a different station.

7. Rotate the tuning knob on the side of the cabinet as far to the right as it will go. Tighten the locking screw in the center of the knob. IT IS IMPORTANT THAT THIS SCREW BE TIGHTENED VERY FIRMLY.

8. The pushbuttons are now properly set for automatic tuning. Any of the six stations may now be tuned in simply by pressing the proper button down as far as it will go. If it is desired to reset any of the buttons for a new station, loosen the locking screw in the center of the tuning knob, set the pushbutton as described above, and re-tighten the locking screw.

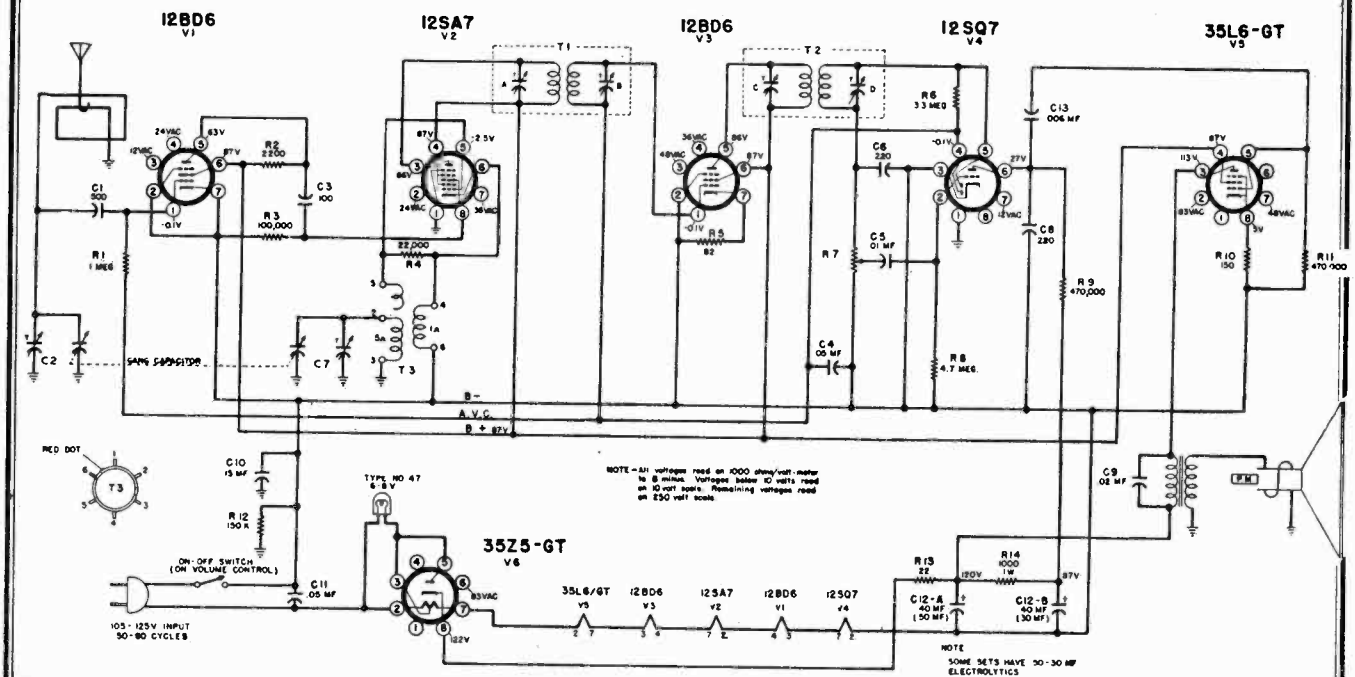


TECHNICAL DATA

Tuning range	530 to 1650 Kc.
Intermediate frequency	455 Kc.
Power consumption	35 Watts
Sensitivity (for 0.05 watt output)	13 microvolts average
Selectivity	55 Kc. broad at 1000 x signal at 1000 Kc.
Power output (in voice coil)	
Undistorted	0.8 watt
Maximum	1.0 watt
Voice coil impedance	3.2 ohms

BELMONT RADIO CORP.

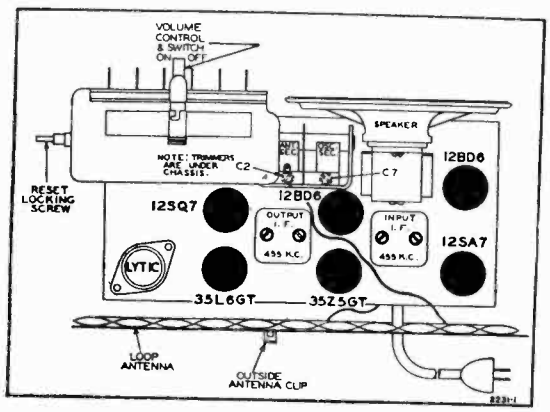
MODEL 6D130
SERIES A



Tuning range	530 to 1650 Kc.
Intermediate frequency	455 Kc.
Power consumption	35 Watts
Sensitivity (for 0.05 watt output)	40 microvolts average
Selectivity	55 Kc. broad at 1000 x signal at 1000 Kc.
Power output (in voice coil)	
Undistorted	0.8 watt
Maximum	1.0 watt
Voice coil impedance	3.2 ohms

NOTE: On some sets slug tuned I. F.'s are used instead of trimmer tuned I. F.'s. 108-140Q and 108-145H are trimmer tuned. B-13A-12023-1 and B-13B-12022-1 are slug tuned. The slug tuned I. F.'s are tuned from the top and bottom (secondary on top, primary on bottom).

When trimmer tuned I. F.'s are used, R5 is 270 ohms.



Chassis View, showing tube locations

ALIGNMENT PROCEDURE

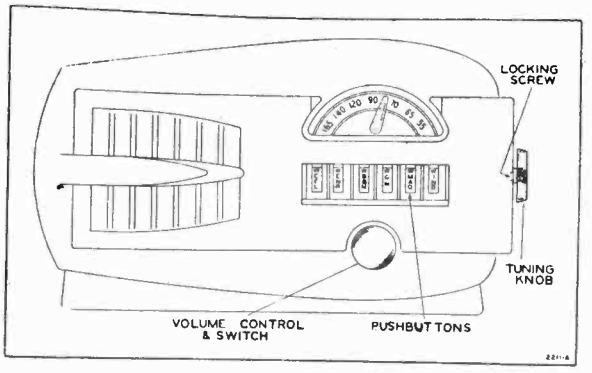
- No aligning adjustments should be attempted until all other possible causes of trouble have been checked.
- Chassis must be removed from cabinet for proper alignment. Slight adjustments of the oscillator and antenna circuits can be made, without removing the chassis, through two holes provided on the bottom of the cabinet. The two adjustment screws can be reached with a long insulated screwdriver.
- It is important that during alignment the loop antenna be maintained at the same distance from the chassis as when the chassis is installed in the cabinet.
- Turn volume control to maximum for all adjustments.
- Connect ground post of signal generator to B— of radio through a 0.1 mfd. condenser.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.

Band	Signal Generator Frequency Setting	Dummy Antenna	Connection to Radio	Tuning Condenser Setting	Adjust for Maximum Output (see chassis view)
I.F.	455 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	4 trimmers on input and output I.F. transformers
Broadcast	1650 Kc.	0.1 mfd.	Grid of 12SA7	Rotor full open (plates out of mesh)	Oscillator trimmer C7 on bottom of radio
	1400 Kc.	None	See note A	Set dial at 1400 Kc.	Antenna trimmer C2 on bottom of radio

Note A: Lay output lead of generator in back of loop antenna. Turn up generator output. Loop antenna will pick up energy.

IMPORTANT!

This receiver, unless otherwise marked, must be operated on an AC voltage of 105 to 125 volts, 50 to 60 cycles, or on a DC voltage of 105 to 125 volts. If you are in doubt as to the voltage of your power supply, consult your local power company. DO NOT INSERT THE PLUG IN THE POWER RECEPTACLE UNLESS YOU ARE SURE THAT THE CORRECT VOLTAGE IS AVAILABLE. Receivers of this same model which are for use on voltages other than those specified above are so marked.



SETTING THE PUSHBUTTONS

The pushbuttons may be used, after proper adjustment, for the automatic tuning of any six stations which you select. They can be set up in any order.

1. Turn on the radio. Allow it to warm up for at least one minute.
2. Push out the call letters of the six stations from the call-letter sheet supplied with this manual.
3. Insert one call-letter tab in the rectangular opening in each of the pushbuttons, in any sequence. Press an acetate tab (supplied in small envelope) into each of of the pushbuttons.
4. With the screwdriver supplied, check to see that the locking screw in the center of the tuning knob (see illustration) is loose. If it is not, turn it several turns to the left (counterclockwise).
5. Press the first pushbutton down *all the way*. With one hand hold the button down *firmly* and with the other carefully tune in the desired station. Release the pushbutton.
6. Follow this procedure for each of the five other buttons, adjusting each one for a different station.
7. Rotate the tuning knob on the side of the cabinet as far to the right as it will go. Tighten the locking screw in the center of the knob. IT IS IMPORTANT THAT THIS SCREW BE TIGHTENED VERY FIRMLY.
8. The pushbuttons are now properly set for automatic tuning. Any of the six stations may now be tuned in simply by pressing the proper button down as far as it will go. If it is desired to reset any of the buttons for a new station, loosen the locking screw in the center of the tuning knob, set the pushbutton as described above, and re-tighten the locking screw.

ANTENNA AND GROUND

The antenna (aerial) built into the rear of the cabinet is sufficient for receiving programs from strong local stations and from powerful nearby stations. This antenna may be somewhat directional, that is, reception is improved when the antenna is facing in certain directions. Therefore tune in a station and try the radio in several positions.

In locations remote from broadcasting stations or where receiving conditions are poor, an outside antenna, 50 to 75 feet long, will give best results. The antenna should be erected as high as possible, as far from surrounding objects as is practical, and at right angles to street car lines and power lines. Connect the antenna lead-in wire to the antenna clip at the rear of the radio

Periodic inspection of the antenna is recommended to make sure that all connections are clean and tight and that the antenna is well insulated from the ground at all points.

No ground wire is required with this radio.

1. Check the power at the receptacle by inserting the plug of a lamp cord and noticing whether the lamp lights. If the radio is being operated on direct current, try reversing the plug of the radio line cord.
2. If an outside antenna is being used, check all connections to be sure they are clean and tight. Make sure that the antenna is insulated from the ground at all points.
3. Take out the tubes and have them tested. The tubes may be removed as follows: First disconnect the line cord from the power receptacle. Then remove the four buttons which hold the back of the cabinet in place. Unclip the two leads connected to the loop antenna on the inside of the back. Remove each tube by holding it near its base, rocking it back and forth, and pulling upward. WHEN REPLACING TUBES, BE SURE THAT THE TYPE NUMBER OF EACH TUBE CORRESPONDS TO THE TYPE NUMBER STAMPED ON THE CHASSIS ALONGSIDE THE TUBE SOCKET.

If for any reason it is found necessary to remove the chassis, proceed as follows: Make sure the line cord is disconnected from the power receptacle. Remove the back as described above. Pull the volume knob off its shaft. Unscrew the locking screw in the center of the tuning knob and pull the tuning knob off its shaft. Remove the four chassis mounting screws from the bottom of the cabinet. Move the chassis toward the back of the cabinet so that the control shafts and tuner assembly clear the holes. The chassis can then be slipped out. After the chassis is replaced the automatic pushbuttons will probably have to be reset.

APPLYING POWER TO RADIO

Insert the line plug in the power receptacle. If no sound is heard after one minute, and the set is operating on direct current (DC), reverse the plug. If the set is operating on alternating current (AC), a low steady hum may be noticeable after the set warms up. Reverse the plug and notice whether or not there is any difference. Leave the plug in the position which gives less hum.

The power consumption of this radio is 35 watts, slightly less than that of a 40-watt electric light bulb.

BELMONT RADIO CORP. MODEL 6D130 SERIES A

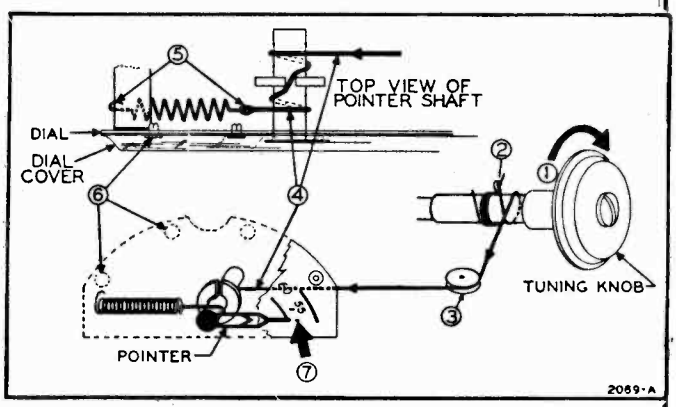
Ref. No.	Part No.	Description
		Condensers
C-12A, C-12B	A-8C-11375 or	Filter cond., 40 mfd., x 40 mfd., x 150 volts
	A-8C-15030 or	Filter cond., 40 mfd., x 40 mfd., x 150 volts
	A-8C-15262	Filter cond., 50 mfd., x 30 mfd., x 150 volts
C4	C-8D-10770	.05 x 200 volts, tubular
C9	C-8D-10774	.02 x 400 volts, tubular
C5	C-8D-11738	.01 x 200 volts, tubular
C11	C-8D-10813	.05 x 400 volts, tubular
C10	C-8D-10953	.15 x 400 volts, tubular
C13	C-8D-10785	.006 x 600 volts, tubular
C6, C8	C-8G-11733	220 mmf., ceramic
C1	C-8G-11822	500 mmf., ceramic
C3	C-8G-11734	100 mmf., ceramic
		Resistors
R14	C-9B2-62	1000 ohms, 1 watt, 10%
R9, R11	C-9B1-94	470K ohms, ½ watt, 20%
R8	C-9B1-35	4.7 megohms, ½ watt, 20%
R6	C-9B1-34	3.3 megohms, ½ watt, 20%
R4	C-9B1-78	2.2K ohms, ½ watt, 20%
R13	C-9B1-42	22 ohms, ½ watt, 10%
R3	C-9B1-25	100K ohms, ½ watt, 20%
R2	C-9B1-66	2200 ohms, ½ watt, 10%
R12	C-9B1-26	150K ohm, ½ watt, 20%
R1	C-9B1-31	1 megohm, ½ watt, 20%
R10	C-9B1-52	150 ohms, ½ watt, 10%
R5	C-9B1-49 or	82 ohms, ½ watt, 10%
	C-9B1-55	270 ohms, ½ watt, 10%
		Coils
	C-13E-15280 or C-13E-15293	Loop antenna assembly, complete on back
T3	B-13D-15277	Oscillator coil
T1	108-140Q or B-13A-12023-1	Input I. F. coil in can, 455 Kc.
T2	108-145H or B-13B-12022-1	Output I. F. coil in can, 455 Kc.
		Sockets
	A-15C-15189	7-prong, tube socket
	121171	8-prong socket, laminated
	121216	Socket base, bakelite
	A-47A-11470	Pilot light socket assembly

Ref. No.	Part No.	Description
		Speaker
	114197	5-inch, P.M. speaker
	B-12C-15278	Output transformer for speaker
		Dial Parts
	115448	End plate (right hand bracket)
	115448C	End plate (left hand bracket)
	115146	Cams
	115143	Key washer (13 used on cam shaft)
	117528	Brass spacer (1 used on cam shaft)
	117602	Brass spacer (4 used on cam shaft)
	131181	Spring washers for locking collar
	117604	Locking collar
	117600	Level shaft
	115361	Lever with roller
	120283	Return spring for levers
	115449B	Dial bracket assembly
	112785	Pointer
	A-53A-10989	Drive cord, 6 inches used
	A-49A-11087	Spring on tuning shaft, for cord
	A-3N-11086	Spacer under above spring
	120143	Take-up spring for drive cord
	B-6D-10241-2	Dial scale
	112-659-1	Crystal, clear, for dial scale
	A-2M-7758	Cinch buttons for fastening scale to bracket
	117833	Brass spacer (for spacing pointer from dial)
		Miscellaneous
	10798	Line cord and plug
R7	101218 or A-10A-10626	Volume control and switch, 1 megohm
C1-A, C1-B	B-8A-10211	2- gang, variable condenser
	107249	Pilot light bulb, type T-47
	134123	Rubber bumper (bottom of cab.)
	13141	Cinch buttons, to cover trimmer holes in cabinet
	B-5B-14298-8	Pushbuttons (6 used), Ivory
	A-23L-11900	Station call letters, set
	A-6C-14299	Acetate tabs for call letters
	5C-15128-9	Cabinet, bakelite, ivory color
	128-686-8	Knob, volume, ivory color
	A-5B-10994-9	Knob, tuning, ivory color
	A-3F-10995	Locking screw for tuning knob
	120388	Locking spring for tuning knob
	A-2H-10996	Reset key
	5C-15128-36	Cabinet, walnut
	128-686-37	Knob, volume, walnut
	A-5B-10994-36	Knob, tuning, walnut
	B-5B-14298-37	Pushbuttons, walnut

REPLACING DIAL POINTER DRIVE CORD

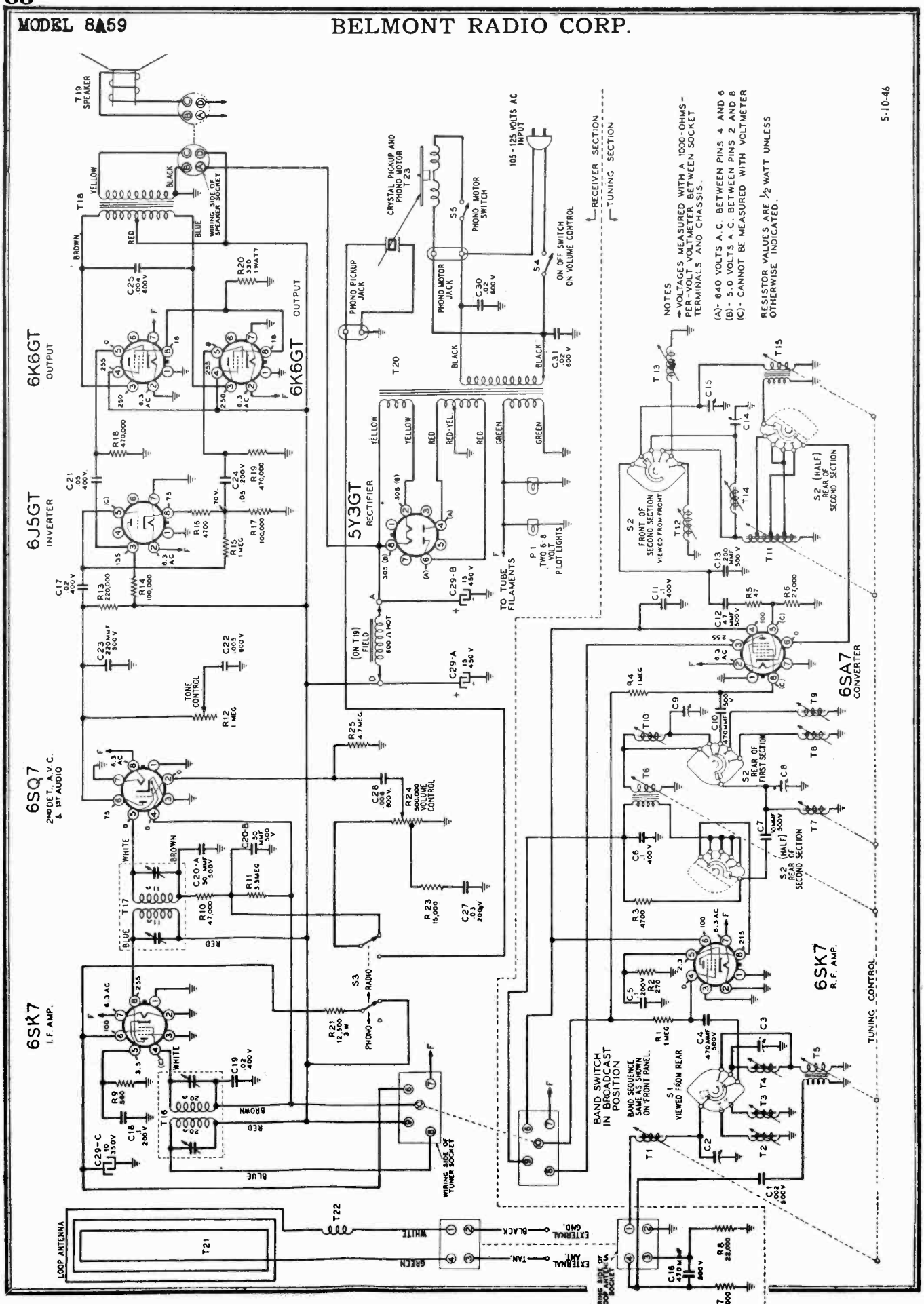
Six inches of cord are required in the set. Use a piece slightly longer so that knots may be tied at each end. Numbers below correspond to circled numbers in diagram.

1. Rotate tuning knob to extreme clockwise position. This closes tuning condenser. Knob should remain in this position until installation is completed.
2. Tie cord to loop in spring as shown. Wind cord one turn around shaft in direction shown.
3. Pass cord over idler pulley.
4. Pass cord *over* pointer shaft; wind it one turn around shaft; pass it through key washer; wind it one more turn around shaft.
5. Hook spring over end of dial support. Tie cord to spring. IMPORTANT: Before tying knot stretch spring enough so that full contraction of spring will rotate pointer shaft at least one-half turn.
6. Remove dial crystal by removing Cinch buttons.
7. Make sure tuning knob is in extreme clockwise position. Then rotate pointer clockwise, against friction of shaft, until it is in horizontal position, as shown.



MODEL 8A59

BELMONT RADIO CORP.



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.

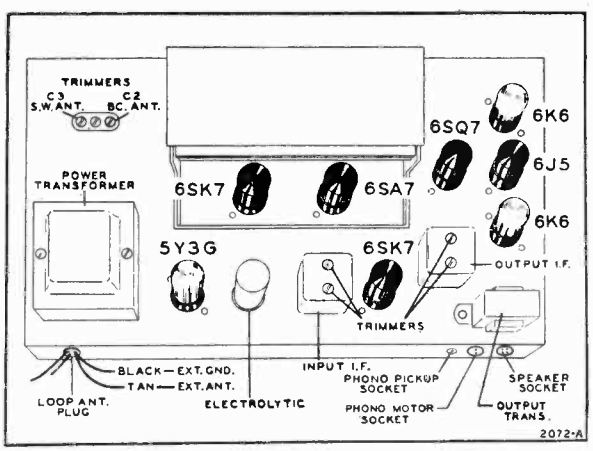
Rotate each of the three broadcast coils (see illustration) until the end of the coil is 1-5/32" from the end of the coil form. Rotate the three 9-mc coils until this dimension is 1-1/16" for these coils. After these adjustments have been made, the unit can be aligned electrically.

ELECTRICAL ADJUSTMENT—To align the set make the following preliminary adjustments: Set the tone pushbutton 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.

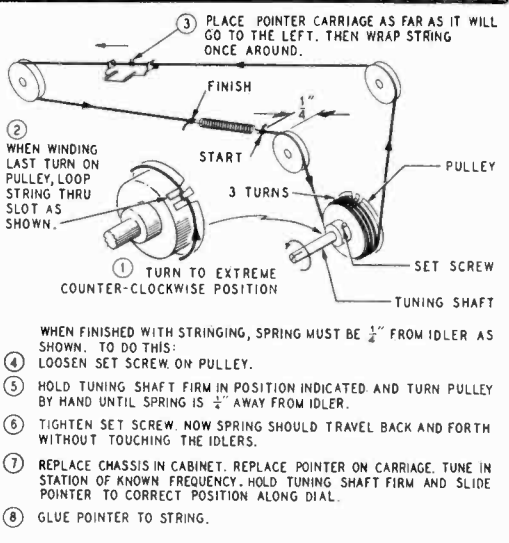
Align the set according to the sequence given in the chart. The indicated dummy antenna is to be connected in series between the signal generator output lead and the receiver. Adjust the set for maximum output; reduce the input as needed to keep the output near 1.3 volts.

Locations of all the trimmers and coils are shown in the illustrations below. 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

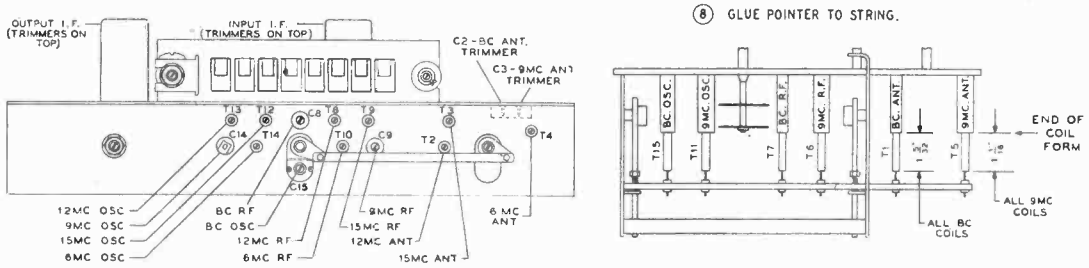


Chassis View



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.



Coils and Trimmers

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%

Tubes are coded and guaranteed by the tube manufacturer. Better service can be rendered on adjustments if defective tubes are returned directly to the manufacturer rather than through our factory.

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

*The values of all 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—50,000 ohms, ±10%, 1/2 watt
RMA value—47,000 ohms, ±10%, 1/2 watt

Ref. No.	Part No.	Description
		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
		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
	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
	120366	Spring, pushrod return
	121281	Plug, 5-prong
	128759-14	Pushbutton, walnut
	128759-41	Pushbutton, mahogany
	131210	Washer, "C", on end plate

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

MAIN CHASSIS

CAPACITORS*

Ref. No.	Part No.	Description
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%
C20-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%

RESISTORS*

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-phono switch
R13	C-9B1-27	220,000 ohms, ½ watt, 20%
R14, R17	C-9B1-86	100,000 ohms, ½ watt, 10%
R15	C-9B1-41	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-9B1-55	2.7 megohms, ½ watt, 20%

COILS AND TRANSFORMERS

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-10254	Output transformer
T20	104202B	Power transformer
		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.)
	121275	Socket, octal, laminated (for 6SK7, IF amplifier)
	B-47A-10808	Socket assembly for dial light
		MISCELLANEOUS
T19	B-18B-10617	Speaker, 10-inch, electrodynamic
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-10984	Dial scale
	10794	Dial light, 6-8 volts, type T-44 (2 used)
	B-2G-10588-1	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)
	112985-14	Escutcheon (for walnut cabinet)
	112985-41	Escutcheon (for mahogany cabinet)
	A-5B-10893-14	Knob, band switch or radio-phono-tone (for walnut cabinet)
	A-5B-10893-41	Knob, band switch or radio-phono-tone (for mahogany cabinet)
	128523-14	Knob, tuning or volume (for walnut cabinet)
	128523-41	Knob, tuning or volume (for mahogany cabinet)
	A-2L-11293	Bandswitch link
	112961	Station call letters

ELECTRICAL SPECIFICATIONS

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.

Intermediate Freq....455 kc.

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

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

Speaker.....10" electrodynamic. Voice coil impedance 3.2 ohms.

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.

Tube and Lamp Complement.....6SK7, tuned RF amplifier
6SA7, converter
6SK7, IF amplifier
6SQ7, detector, AVC, 1st audio
6J5GT, phase inverter
6K6GT, push-pull output
6K6GT, push-pull output
5Y3G, rectifier
T-44, dial lamp (2 used)

SETTING THE PUSHBUTTONS—The six pushbuttons may be used, after proper adjustment, for the automatic tuning of any six stations which you select. All the stations need not be in the same band, but probably you will want to set them up in the standard broadcast band. Proceed as follows:

1. Turn the radio on and turn the band switch to the "B.C." position.

2. From the call-letter sheets supplied with this manual, push out the call letters of your favorite six stations. Drop these into the six pushbuttons, preferably but not necessarily in order of frequency (as listed in your newspaper).

3. Next pull a button out as far as it will come.

4. *Very carefully* tune in the station corresponding to the pushbutton call letters.

5. Now push the button in *as far as it will go.*

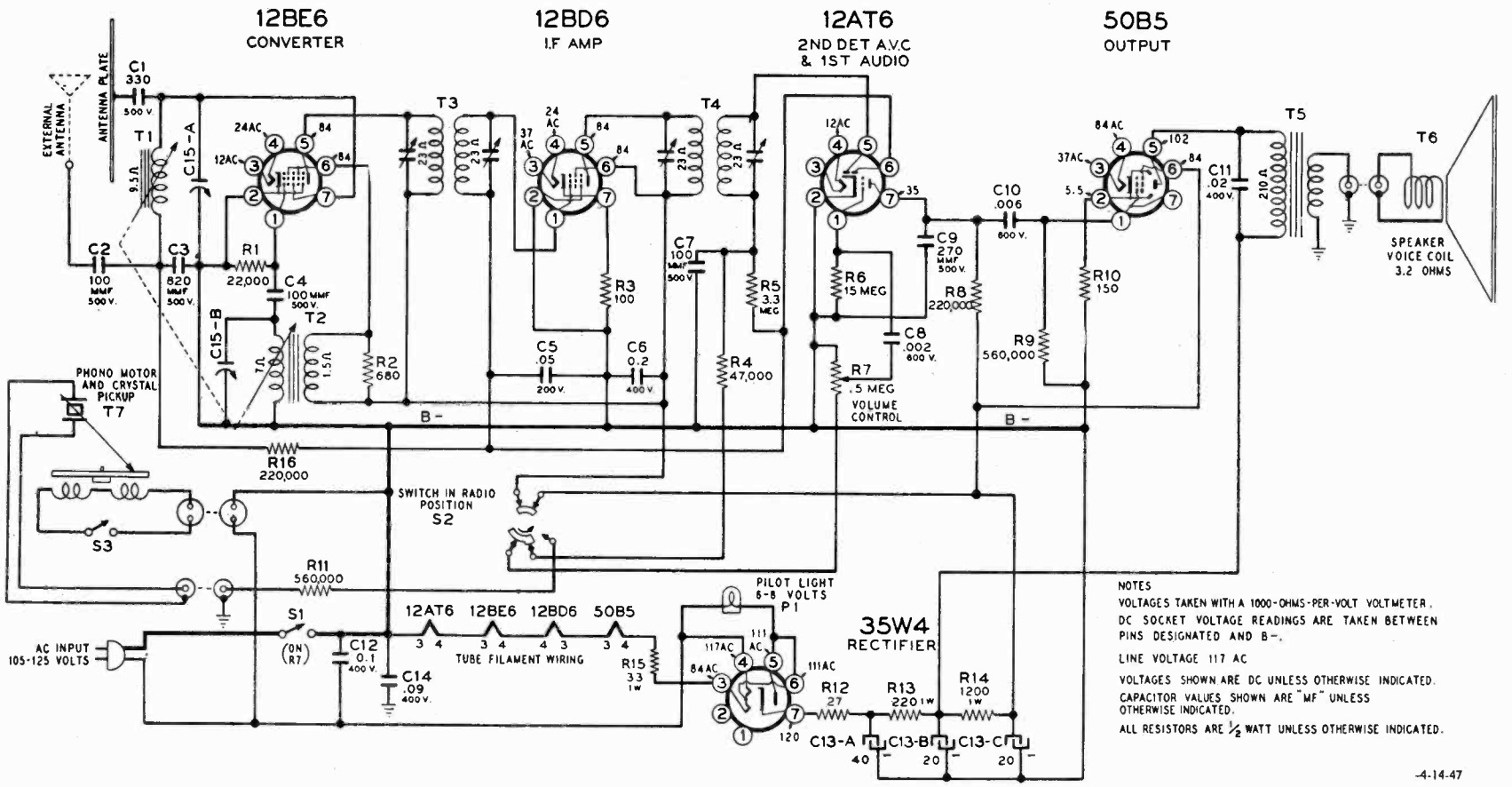
6. Follow this procedure for each of the five other buttons, setting each one for a different station.

7. The setting of any pushbutton can be changed by following the procedure given above.

If any of the buttons is to be set for a short-wave station, turn the band switch to the proper position before adjustment. The switch must be turned to this position also whenever the pushbutton is used, since pressing the button does not change bands.

RECORD CHANGER

D-21H-10417	Model 204 (with automatic stop)
D-21H-10132	Model 205



NOTES

VOLTAGES TAKEN WITH A 1000-OHMS-PER-VOLT VOLTMETER.

DC SOCKET VOLTAGE READINGS ARE TAKEN BETWEEN PINS DESIGNATED AND B−.

LINE VOLTAGE 117 AC

VOLTAGES SHOWN ARE DC UNLESS OTHERWISE INDICATED.

CAPACITOR VALUES SHOWN ARE "MF" UNLESS OTHERWISE INDICATED.

ALL RESISTORS ARE ½ WATT UNLESS OTHERWISE INDICATED.

-4-14-47

ELECTRICAL SPECIFICATIONS

Power Supply.....105-125 volts, 60 cycle AC, 55 watts.

Frequency Range.....535-1720 kc.

Intermediate Freq.....455 kc.

Antenna.....Built-in plate; provisions also for external antenna connection.

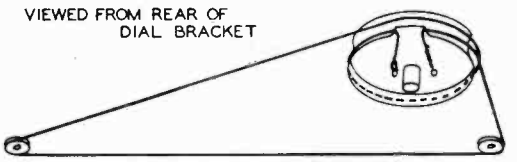
Tuning.....Permeability.

Speaker.....4 x 6-inch, P.M., voice coil impedance 3.2 ohms.

Power Output.....0.75 watt undistorted. 1.1 watts maximum.

Sensitivity.....34 microvolts average for 50-milliwatt output.

Selectivity.....55 kc broad at 1000 times signal at 1000 kc.



DIAL BRACKET ASSEMBLY MUST BE REMOVED TO REPLACE DIAL STRING.

DIAL STRINGING VIEW

MODEL 5240, Series A **BELMONT RADIO CORP.**

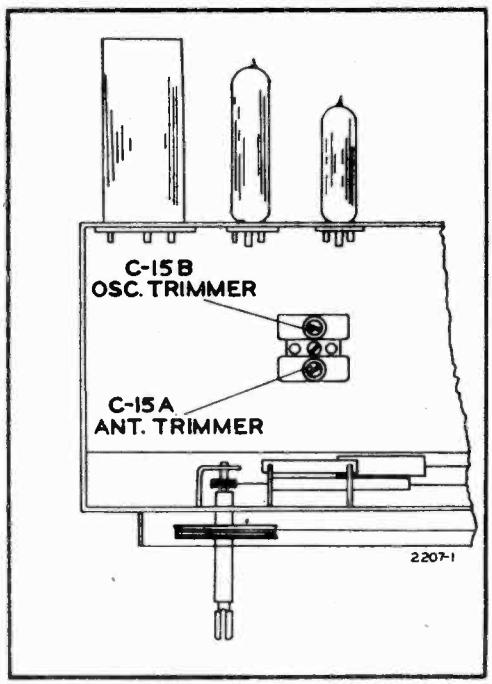
ALIGNMENT PROCEDURE

(Refer to Chassis and Coil Views on Page 2)

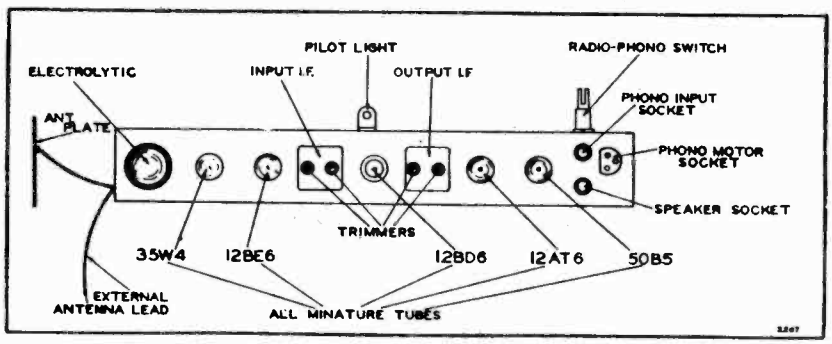
- Output meter across 3.2-ohm output load.
- Align for maximum output. Reduce input as needed to keep output near 0.4 volts.
- Volume control at maximum for all adjustments.
- Connect ground post of signal generator to B− of radio.

SIGNAL GENERATOR			*TUNER SETTING*	*ADJUST FOR MAXIMUM OUTPUT (in order shown)*
Frequency	*Dummy Antenna*	*Connection to Radio*		
455 kc	.1 mf	Grid (pin 7) of 12BE6	Iron cores all the way out	Trimmers on output and input I.F. cans
1720 kc	.1 mf	Grid (pin 7) of 12BE6	Iron cores all the way out	Oscillator trimmer C-15B
1720 kc	200 mmf	Antenna lead	Iron cores all the way out	Antenna trimmer C-15A
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.

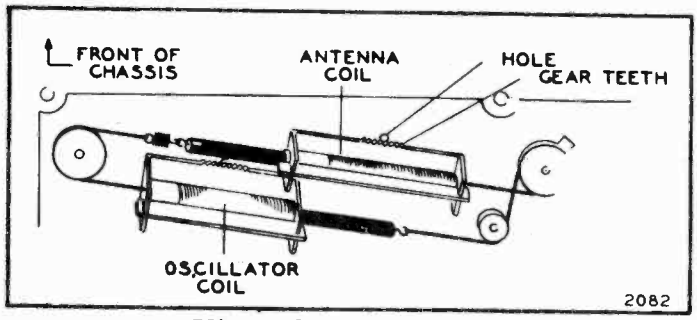


TRIMMER VIEW



CHASSIS VIEW

DIAL LIGHT—If the dial lamp burns out the set should not be operated until a new lamp has been installed. Failure to heed this caution may result in a burned-out 35W4 tube. Use only a type T-47 lamp for replacement.



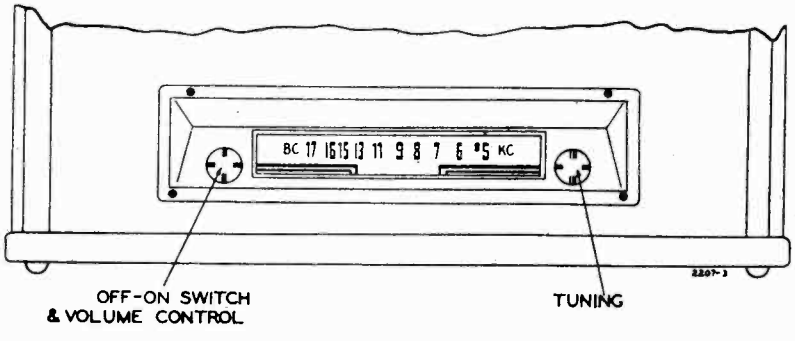
View of Coil Assembly

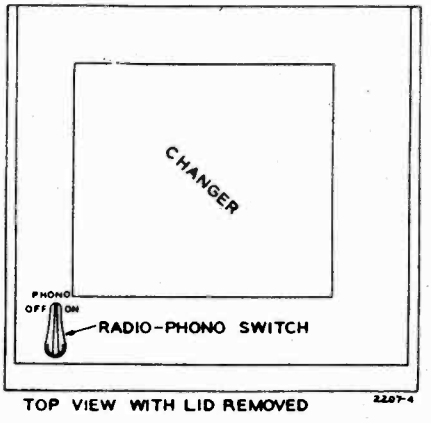
The antenna coil assembly is movable left to right. When making the adjustment as required in the alignment procedure, move the coil assembly very slowly, either by hand or by pivoting one edge of a screwdriver blade in the hole and engaging the blade in the gear teeth of the coil form.

REPLACEMENT PARTS LIST

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

Ref. No.	*Part No.*	*Description*
		CAPACITORS
C13-A, C13-B, C13-C	A-8C-10077	Electrolytic, 40x20x20, 150 volts
C15-A, C15-B	A-8E-10723	Trimmer condenser, dual, antenna and oscillator
C14	C-8D-11251	.09 mf x 400 volts 10% tubular
C6	C-8D-10942	.2 mf x 400 volts 10% tubular
C5	C-8D-10770	.05 mf x 200 volts 20% tubular
C10	C-8D-10785	.006 mf x 600 volts 20% tubular
C8	C-8D-10789	.002 mf x 600 volts 20% tubular
C11	C-8D-10774	.02 mf x 400 volts 20% tubular
C12	C-8D-10760	.1 mf x 400 volts 10% tubular
C1	C-8F3-119	330 mmf x 500 volts 10% mica
C3	C-8F3-247	820 mmf x 500 volts 5% mica
C9	C-8F3-118	270 mmf x 500 volts 10% mica
C2, C4 C7	C-8F3-113	100 mmf x 500 volts 10% mica
		RESISTORS
R7 S1	A-10A-10720	Volume control (500M ohms) and switch
R15	C-9B2-44	33 ohms, 1 watt, 10%
R8, R16	C-9B1-90	220k ohms, ½ watt, 10%
R13	C-9B2-54	220 ohms, 1 watt, 10%
R14	C-9B2-63	1200 ohms, 1 watt, 10%
R12	C-9B1-43	27 ohms, ½ watt, 10%
R4	C-9B1-82	47k ohms, ½ watt, 10%
R3	C-9B1-50	100 ohms, ½ watt, 10%
R5	C-9B1-34	3.3 megohms, ½ watt, 20%
R9 R11	C-9B1-95	560k ohms, ½ watt, 10%
R10	C-9B1-52	150 ohms, ½ watt, 10%
R6	C-9B1-302	15 megohms, ½ watt, 10%
R2	C-9B1-60	680 ohms, ½ watt, 10%
R1	C-9B1-78	22k ohms, ½ watt, 10%
		COILS AND TRANSFORMERS
T1 T2	C-211-10171	Tuner unit, permeability tuned, Ant. and Osc. coils
T3	B-13A-10728	Input I.F. transformer
T4	B-13B-10729	Output I.F. transformer
T5	B-12C-10074-1	Output speaker transformer
		DIAL AND TUNING PARTS
	B-6D-10968	Dial Scale
	A-6D-10163	Dial Crystal
	C-5C-10009-48	Escutcheon for dial
	A-5B-10170-1	Knobs for radio
	B-200-10980	Dial and bracket assembly
	A-55A-10093	Pilot light and bracket
P1	A-46A-10793	Pilot light bulb, 6-8 volt type
		MISCELLANEOUS
T6	B-18A-11089	4x6 oval P.M. speaker
	A-15C-10717	Tube socket
	A-2H-10718	Shield base
	A-2H-10974	Tube shield
	B-15B-10076	Mounting base for electrolytic
S2	A-20A-10722	Radio-phono switch
	A-19B-10727	Phono motor socket
	A-55A-7386-1	Phono input socket
	A-19B-11044	Speaker socket
	A-23A-10344	Line cord lock
	B-14M-11085	A.C. line cord and plug
	A-2E-12192	Needle cup
	B-2E-11038	Antenna plate
	A-5B-11239-1	Knob for radio-phono switch
	A-3A-12263	Extension shaft for radio-phono switch
	A-2M-11074	Spring clamp for shaft
	A-2C-10972	Indicator plate
		RECORD CHANGER
S3 T7	B-201-12262-1	Russel record changer, 105-125 volts AC, 60 cycles





TOP VIEW WITH LID REMOVED

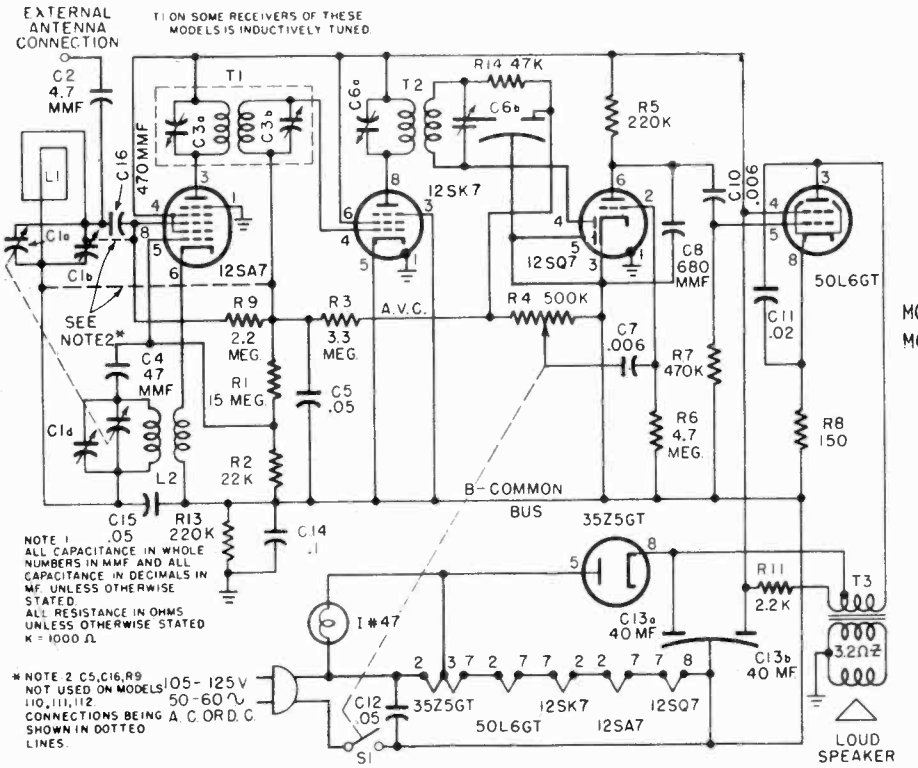


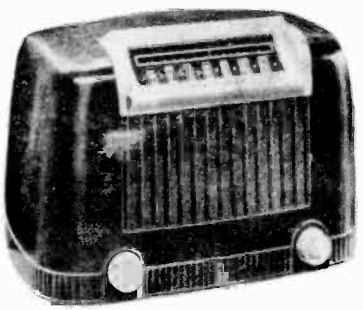
FIG. 1 - SCHEMATIC DIAGRAM MODELS 110, 110W, 111, 111W, 112, 114, 115

MODEL 110 - Walnut Finish Plastic
MODEL 110W - Ivory Plastic

On recent models of this series a circuit change has been made which adds a coupling plate, stock number AC0C00, between the first audio tube, 12SQ7, and the output tube, 50L6, in lieu of the following components used on earlier receivers:

Plate-load resistor, R5, stock no. RC1H54; grid resistor, R7, stock no. RC1H58; Plate r-f bypass capacitor, C8 stock CP4T20.

These parts are eliminated when coupling plate, stock no. AC0C00 is used, although installation is otherwise interchangeable. To use the coupling plate may cause a slight increase in the plate voltage of the 12SQ7 tube, but no adverse effect is made on the receiver. The resistance measured from the grid of the 50L6 tube to common B- is approximately 450K, while the resistance measured from the plate of the 12SQ7 tube to common B- will give a reading which increases approximately 10 megohms in magnitude, caused by the charging of the filter capacitors since the receivers have no d-c return to ground.

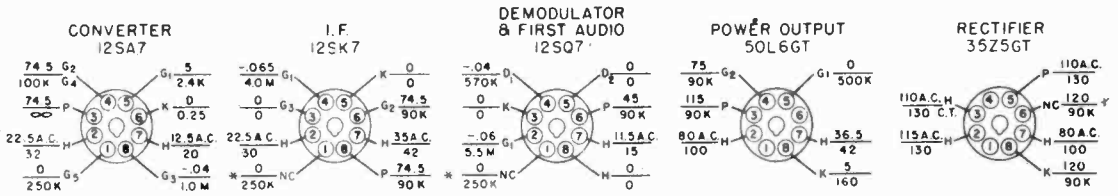


MODEL 111 - Walnut Finish Plastic
MODEL 111W - Ivory Plastic

MODEL 114 - Tan & Brown Polystrene
MODEL 115 - Ivory & Burgundy Polystrene

CONDITIONS OF MEASUREMENTS

LINE VOLTAGE 117 A-C. ZERO SIGNAL INPUT VOL CONT MIN. SOCKET VOLTAGE / RESISTANCE TO COMMON B MINUS D.C. AT 20,000 Ω/V A.C. AT 1,000 Ω/V



* NO INTERNAL TUBE CONNECTION LUG CONNECTION ONLY

I.F. FREQUENCY 455 KC

SPECIFICATIONS

5 Tube AC-DC Superheterodyne

Power	
Voltage	105-125 V. A.C. or D.C.
Frequency	50-60 Cycles per Second
Power Consumption	30 Watts
I.F. Frequency	455 K.C.
Tuning Range	540-1620 K.C.
Max. Power Output	1.8 Watts
Loud Speaker	P.M.
Cone Diameter	4 Inches
Voice Coil Impedance	180 Cycles, 3.2 Ohms

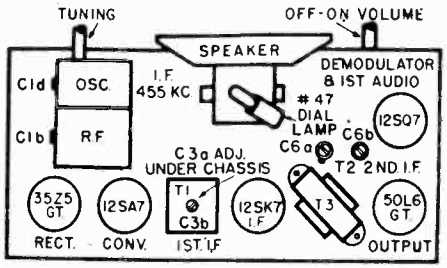


FIG. 2 - TRIMMER LOCATION

ALIGNMENT CHART

CIRCUITS ALIGNED	DIAL POINTER	INPUT FREQUENCY	APPLY THROUGH	ADJUST
I. F.	Max. to Right	+ 455 K.C.	.01 Mfd	C3a, C3b, C6a, C6b,
Broadcast	1475 Ref. Mark	1475 K.C.	50 Mmf	C1d C1b
Broadcast	965 Ref. Mark	965 K.C.	50 Mmf	Check Calibration*
Broadcast	580 Ref. Mark	580 K.C.	50 Mmf	Check Calibration*

* If calibration does not check within the frequency mark, both oscillator and antenna sections of the gang condenser must be bent to correct tracking.

\+ Signal Generator connected to external antenna connection for complete alignment.

GENERAL

Before making any alignment adjustments, turn the receiver and all power operated test equipment on and allow to warm up, if at all possible, for at least five minutes. Turn tuning gang fully closed and set dial pointer directly over Reference mark on dial. See Fig. 3.

After receiver has warmed up and dial pointer has been properly set, turn volume control full on and rotate tuning gang to full open (high frequency end of broadcast band) position. Connect low range of output meter across voice coil and refer to ALIGNMENT CHART

Signal generator to be connected to external antenna connection through an isolating capacitor as given in ALIGNMENT CHART. Keep input signal as low as practical at all times and make all adjustments for maximum output meter reading.

PRECAUTIONS

An isolating transformer should be used between the AC power line and the receiver for protection of any test equipment that must be operated from the same power line.

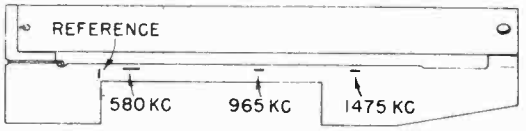


FIG. 3 - DIAL REFERENCE POINTS

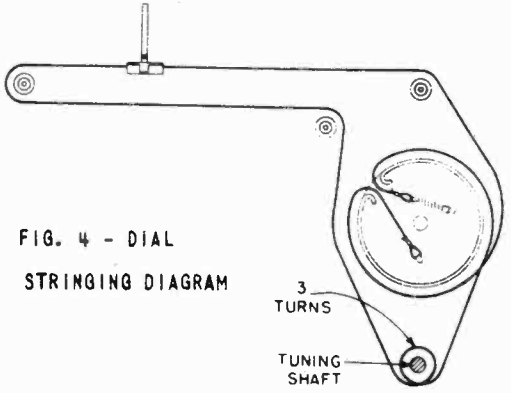


FIG. 4 - DIAL STRINGING DIAGRAM

Stock Number	*Description*
	ELECTRICAL COMPONENTS
CC8A30	CAPACITOR-Ceramicon 47 mmf (C4)...
CC8A18+	CAPACITOR-Ceramicon 4.7 mmf (C2)..
CC9K44	CAPACITOR-Ceramicon 680 mmf 300V (C8).....
CE2D01	CAPACITOR-40-40 mf, 150V. 2 sectio Electrolytic (C13a, C13b).....
CP4T20+	CAPACITOR-Tubular Paper .006 mfd 400V (C7) (C10).....
CP4T34+	CAPACITOR-Tubular Paper .02 mfd 400V (C11).....
CP4T40+	CAPACITOR-Tubular Paper .05 mfd 400V (C12) (C5).....
CP4T51+	CAPACITOR-Tubular Paper .01 mfd 400V (C14).....
CT2A05	CAPACITOR-2 section Trimmer (C6a, C6b).....
CV0B05	CAPACITOR-Variable (C1).....
LO5B03	COIL-Osc. (L2).....
RC1H40+	RESISTOR-Comp. 22,000 ohms ½W (R2).
RC1H44	RESISTOR-Comp. 47,000 ohms ½W (R14).
RC1H54+	RESISTOR-Comp. 220,000 ohms ½W (R5) (R13).....
RC1H58+	RESISTOR-Comp. 470,000 ohms ½W (R7).
RC1H68+	RESISTOR-Comp. 3.3 Meg. ½W (R3)....
RC1H70+	RESISTOR-Comp. 4.7 Meg. ½W (R6)....
RC1H76+	RESISTOR-Comp. 15 Meg. ½W (R1).....
RC4H28	RESISTOR-Comp. 2200 ohms 2W (R11)..
RV0S02	POTENTIOMETER-(with switch S1) (R4).
RW1B28+	RESISTOR-Wirewound 150 ohms 1W (R8)
SP4R00	SPEAKER-4" P.M. Rd (less Trans.)..
TA0010	TRANSFORMER-Output (T3).....
TI0C09	TRANSFORMER-1st. IF (T1).....
TI0D12	TRANSFORMER-IF Output (T2).....
#47 +	LAMP-Bayonet Base.....

BENDIX RADIO DIV.

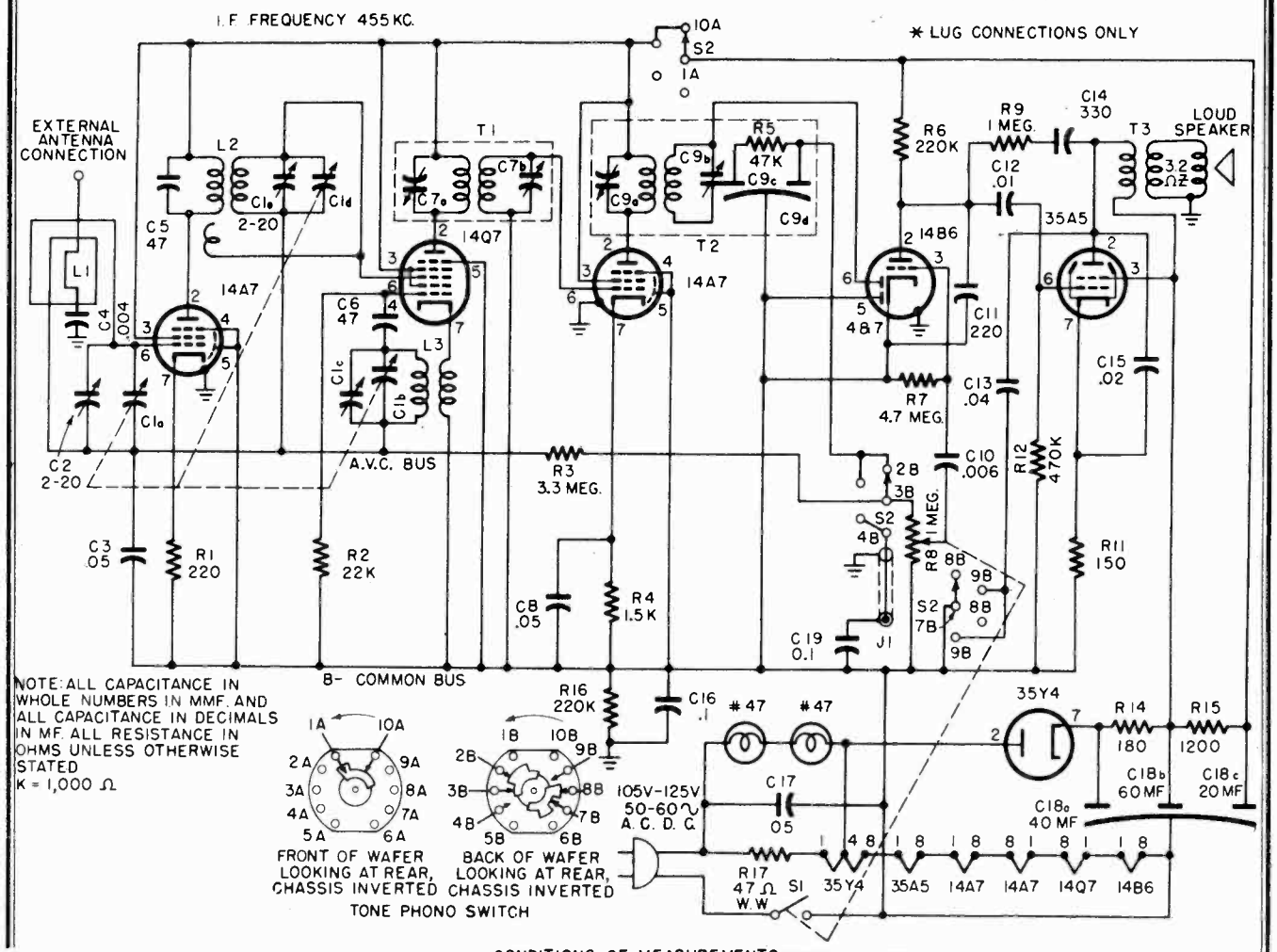
MODELS 110, 110W, 111, 111W, 112, 114, 115

Stock Number	Description
	GENERAL MECHANICAL COMPONENTS
AD0B02	PLATE–Dial Back.....
BT4S04	BOARD–Terminal (4 terminal – 1 Mtg.).....
BT4S05	BOARD–Terminal (4 terminal – 1 Mtg.).....
CL2A06+	CORD–AC Power (Ivory).....
CL2A07+	CORD–A.C. Power (Brown).....
HR0S02+	RIVET–.118 x .218 Shoulder.....
HS0C00+	SPRING–Coil Dial Cable.....
HC0C03+	CLAMP–Dial Cable.....
HC0S00+	CLIP–Tuning Shaft Spring.....
HC0S60	CLIP–1st. IF Mtg.....
HC0S61	SPRING–Dial Back Plate Window.....
HZ0S08+	STUD–Trimount (Window).....
ID0M14	INDICATOR–Dial.....
MB0B00	BEARING–Tuning Shaft.....
MP0I00+	PULLEY–Dial Cord Idler.....
MS0T00+	SHAFT–Tuning.....
PI0P03	PLATE–Line Cord Insulator.....
S00D00+	SOCKET–Dial Light.....
S08S01+	SOCKET–Octal Tube.....
WP0D01	WINDOW–Dial.....
XS0C00+	STRIP–Dial Cable Protector.....
	CABINET COMPONENTS FOR MODEL 110
AL0Z10	ANTENNA–Loop (L1).....
BZ0D14	BAFFLE–Speaker.....
DS0A23	DIAL–Scale.....
HC0S01+	SPRING–Baffle Retainer.....
HK0R00+	RING–Control Knob Retainer.....
HP0B02	PLATE–Base.....
HZ0S00+	STUD–Trimount Dial Scale.....
KC0L00	KNOB–Beige Control.....
ZP0B01+	CABINET–Brown Plastic.....
	CABINET COMPONENTS FOR MODEL 110W
DS0A22	DIAL–Scale.....
KC0M00	KNOB–Maroon Control.....
ZP0I01+	CABINET–Ivory.....
	CABINET COMPONENTS FOR MODEL 111
BZ0D18	BAFFLE–Cloth and Speaker.....
DS0A25	DIAL–Scale.....
ED0M02	ESCUTCHEON–Dial.....
HC0D07	SPRING–Escutcheon Retainer.....
HC0S63	CLIP–Spring Baffle Retainer.....
HH0D01	HOLDER–Dial & Escutcheon.....
HK0R00+	RING–Control Knob Retainer.....
HP0B02	PLATE–Base.....
KC0B12	KNOB–Control.....
PI0P01	COVER–Asbesto Base Plate.....
ZP0B03	CABINET–Brown.....

Stock Number	Description
	CABINET COMPONENTS FOR MODEL 111W
DS0A30	DIAL–Scale.....
KC0M01	KNOB–Maroon Control.....
ZP0I02	CABINET–Ivory.....
	CHASSIS COMPONENTS FOR MODEL 112
ID0M17	INDICATOR–Dial.....
WP0D05	WINDOW–Dial Back.....
	CABINET COMPONENTS FOR MODEL 112
AL0Z11	BACK–Loop and.....
BZ0D21	BAFFLE–Grille Assy. &.....
ED0M03	ESCUTCHEON–Dial.....
HH0D02	HOLDER–Dial & Escutcheon.....
HP0B03	PLATE–Base.....
KC0B01	KNOB–Control.....
ZW5A01	CABINET–Wood.....
	CHASSIS COMPONENTS FOR MODELS 114 - 115
CP4T40+	CAPACITOR–Paper .05 mfd 400V (C15).
ID0M18	INDICATOR–Dial.....
RC1H58	RESISTOR–Comp. 470,000 ohms ½W (R9).
WP0D04	WINDOW–Dial Back.....
	CABINET COMPONENTS FOR MODELS 114-115
AL0Z12	LOOP–Back and.....
DS0A28	DIAL–Scale.....
GC0D00	GASKET–Dial Mounting Cork.....
GR0D00+	GASKET–Dial Mounting Rubber.....
HK0R00+	RING–Control Knob Retainer.....
HP0B03	PLATE–Base.....
HZ0S01	STUD–Loop & Back Mtg.....
	CABINET COMPONENTS FOR MODEL 114
KC0B13	KNOB–Control (Brown).....
ZP0T01	CABINET–Plastic (Dark Brown & Light Brown).....
ZC0B05	BOTTOM & SIDE SECTIONS–(Light Brown).....
ZC0T02	TOP & SIDE SECTIONS–(Dark Brown)..
	CABINET COMPONENTS FOR MODEL 115
KC0I00	KNOB–Ivory Control.....
ZP0T00	CABINET–Plastic (Ivory & Maroon)..
ZC0B04	BOTTOM–Front Sections (Maroon)....
ZC0T01	TOP–& Side Sections Ivory.....

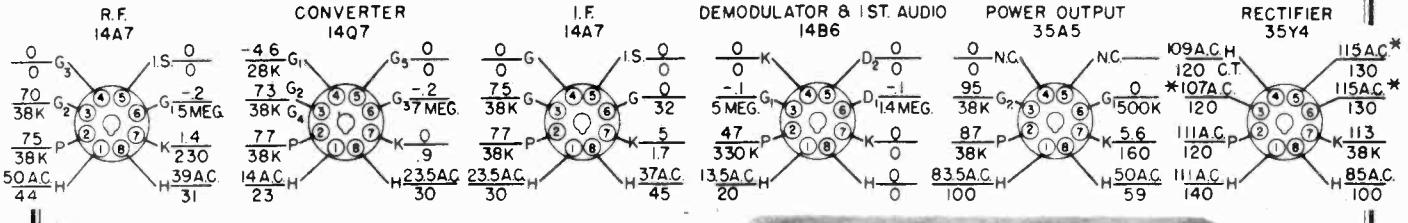
BENDIX RADIO DIV.

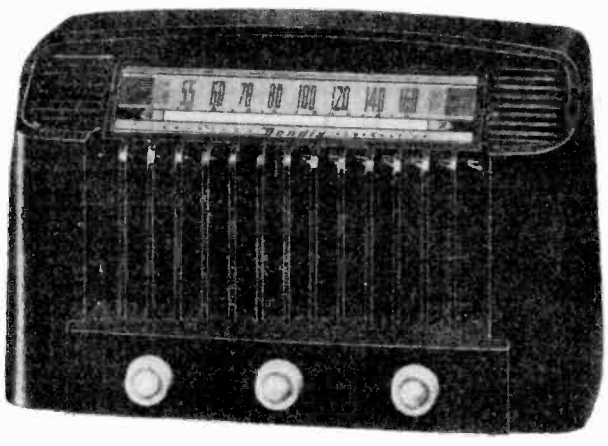
MODELS 300, 300W, 301, 302



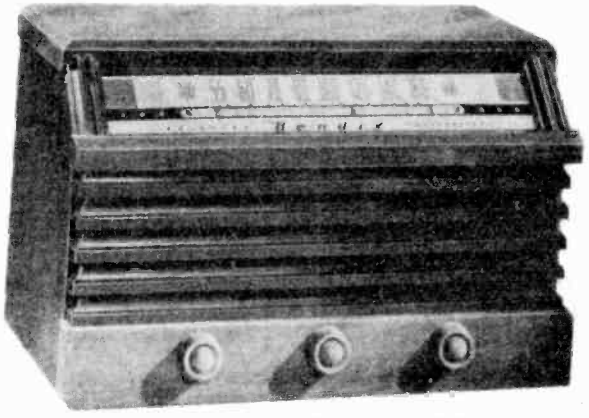
CONDITIONS OF MEASUREMENTS

LINE VOLTAGE 117 A.C. ZERO SIGNAL VOL. CONT. MIN. SOCKET VOLTAGE / RESISTANCE TO COMMON B MINUS D. C. AT 20,000 Ω A. C. AT 1,000 Ω / V.





Model 300 Brown Plastic
Model 300W Ivory Plastic



Model 301 Maple, with Mahogany finish grille
Model 302 Mahogany finish with Maple grille

MODELS 300, 300W, 301, 302

BENDIX RADIO DIV.

ALIGNMENT PROCEDURE

Connect line cord plug to 117 volt, 60 cycles AC power source. Set volume control at maximum clockwise position and tone control (S2) in counterclockwise position. Connect output meter across voice coil. Adjust dial pointer by turning tuning control fully counterclockwise and sliding dial pointer on dial cord to Reference Mark on dial back plate, (See Fig. 5). Make all adjustments in order given in ALIGNMENT CHART on opposite page and for maximum output. Keep input as low as possible at all times.

PRECAUTIONS

An isolating transformer should be used between the power supply and the receiver if any of the test equipment is AC operated. The use of isolating capacitors is not recommended as AC though the capacitor may introduce hum modulation, and if the capacitors should break down the test instruments will likely be damaged.

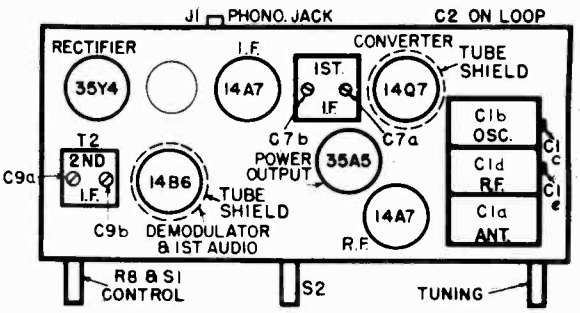
ALIGNMENT CHART

Circuit Aligned	*Input Freq.*	*Dial Pointer Position*	*Adjustments*
IF	*455 KC	Max. to right	C9b, C9a, C7b, C7a
OSC.	**1475 KC	1475 Ref. Mark	C1c
RF	**1475 KC **965 KC **580 KC	1475 965 580	C1e, C2 +Check Calibration

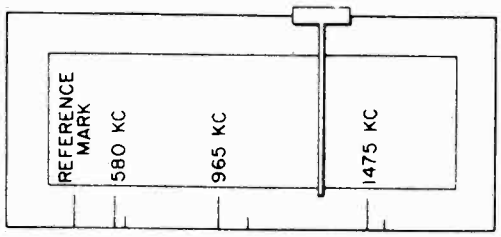
* Applied to Antenna input through .1 mfd. or less.

** Applied to Antenna input through 50 mmf. or less.

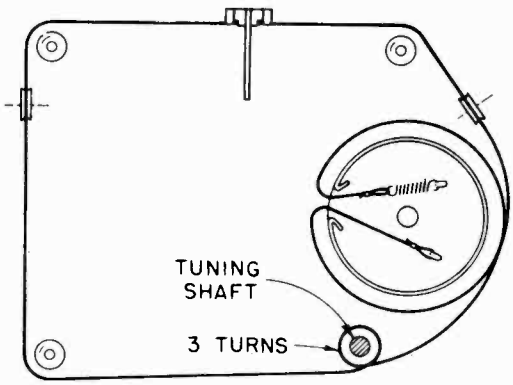
\+ If dial pointer calibration is not within plus or minus 10 KC the gang rotor plates must be bent to cause correct tracking.



Trimmer Location Diagram



Dial Reference Points



Dial Cord Stringing Diagram

SPECIFICATIONS

Model 300 Series

POWER

Voltage Rating, AC or DC.....105-125

Frequency-Cycles per second.....50-60

Power Consumption-Watts.....30

TUNING RANGE-FREQUENCY IN KC.....540-1620

INTERMEDIATE FREQUENCY (KC).....455

MAXIMUM POWER OUTPUT IN WATTS.....1.2

LOUD SPEAKER-PM OVAL

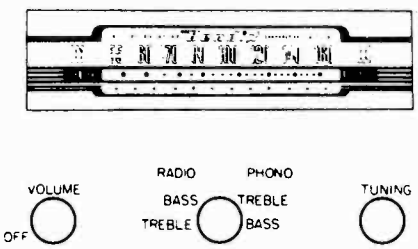
Cone diameter-inches.....4 x 6

Voice Coil Impedance (ohms at 400 cycles).....3.2

TUBE COMPLEMENT

2 - 14A7, 1-14Q7, 1 - 14B6, 1 - 35A5, 1 - 35Y4

Two #47 dial lamps



Control Layout

Stock Number	Description

ELECTRICAL COMPONENTS

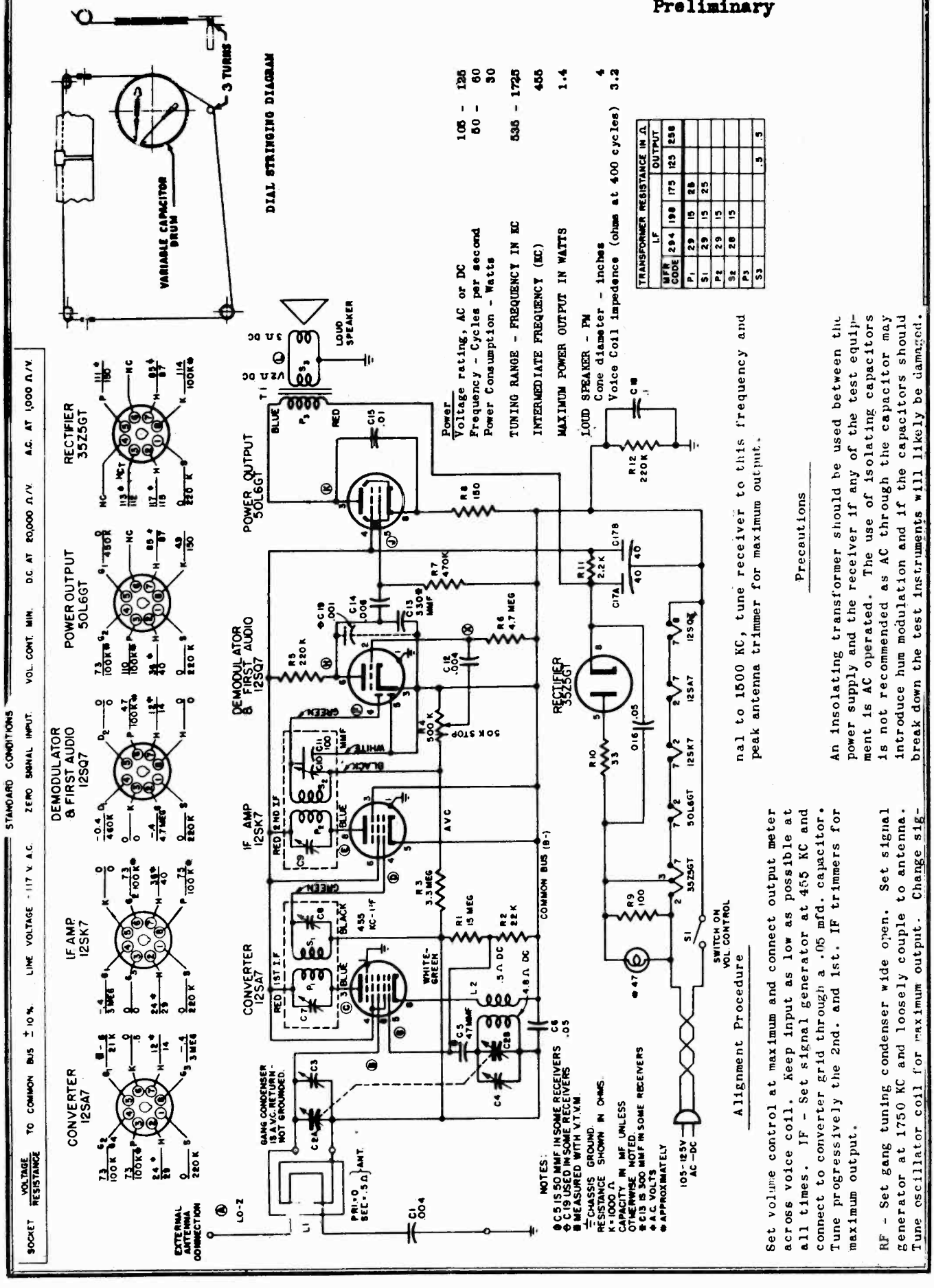
CC8F40	+	CAPACITOR-Ceramic 330 mmf (C14)..
CE3A00	+	CAPACITOR-Electrolytic, 40,60, 20 mfd. (C18A,B,C).....
CM5A14	+	CAPACITOR-Mica 47 mmf (C5(C6)....
CM5A30	+	CAPACITOR-Mica 220 mmf (C11).....
CP4T20	+	CAPACITOR-Paper .006 mfd 400V (C10).....
CP4T31	+	CAPACITOR-Paper ,01 mfd 400V (C12).....
CP4T34	+	CAPACITOR-Paper .02 mfd 400V (C15).....
CP4T38	+	CAPACITOR-Paper .04 mfd 400V (C13).....
CP4T40	+	CAPACITOR-Paper .05 mfd 400V (C3) (C8) (C17).....
CP4T51	+	CAPACITOR-Paper .1 mfd 400V (C19) (C16).....
CP6T16	+	CAPACITOR-Paper .004 mfd 600V (C4).....
CT2A06		CAPACITOR-Trimmer (C7a, b).....
CT3A00		CAPACITOR-Trimmer (C9a, b).....
CV0C04	+	CAPACITOR-Variable (C1).....
LO5B01	+	COIL-Oscillator (L3).....
RC4D14	+	RESISTOR-Comp. 200 ohms 2W (R14).
RC1H16	+	RESISTOR-Comp. 220 ohms ½w (R1)..
RC1H26	+	RESISTOR-Comp. 1500 ohms ½w (R4).
RC1H40	+	RESISTOR-Comp. 22,000 ohms ½w (R2).....
RC1H44	+	RESISTOR-Comp. 47,000 ohms ½w (R5).....
RC1H54	+	RESISTOR-Comp. 220K ohms ½w (R16) (R6).....
RC1H58	+	RESISTOR-Carbon 470K ohms ½w (R12).....
RC1H62	+	RESISTOR-Comp. 1 Meg ½w (R9).....
RC1H68	+	RESISTOR-Comp 3.3 Meg. ½w (R3)...
RC1H70	+	RESISTOR-Comp. 4.7 Meg. ½w (R7)..
RC3H25	+	RESISTOR-Comp. 1200 ohms 1w (R15).
RV4S03		POTENTIOMETER-1 Meg. (with switch) (R8) (S1).....
RW1B28	+	RESISTOR-Wirewound 150 ohms 1w (R11).....
RW2S07		RESISTOR-Wirewound 47 ohms 2w ±10% (R17).....
SP4000		SPEAKER-4" x 6" P.M.....
SR4C00	+	SWITCH-3 Pole 4 Position (S2)....
TA0001		TRANSFORMER-output (T3).....
TI0C01	+	TRANSFORMER-I.F. input (T1).....
TI0D03	+	TRANSFORMER-I.F. output.....
TR6L00	+	COIL-R.F. Interstage (L2).....
#47	+*	LAMP-Bayonet Base.....

MECHANICAL COMPONENTS

AD0C07		ASSEMBLY-Dial Back Plate.....
AL0C06	+*	ANTENNA-Loop.....
BT1S00	+	BOARD-Terminal.....
BT2S00	+	BOARD-Terminal.....
BT4S01	+	BOARD-Terminal.....
BZ0R00	+	FOOT-Rubber.....
CD0C16		CABLE-Dial 46½".....
GR0S00	+	GROMMET-Capacitor Shockmount....
HB0M00	+	BRACKET-Variable Capacitor.....
HC0C00	+	CLIP-Coil Mtg.....
HC0C03	+	CLAMP-Cable.....
HC0D00	+	FASTENER-Dial (R.H.).....
HC0D01	+	FASTENER-Dial (L.H.).....
HC0S00	+	CLIP-Spring.....
HC0S01	+	CLIP-Baffle Spring Retainer.....
HC0S62		CLIP-Window Spring.....
HC0T00	+	CLIP-Tube Shield Ring.....
HK0R00		CLIP-Knob Retainer.....
HP0B01	+	PLATE-Base.....
HR0S01	+	RIVET-Shoulder.....
HS0C00	+	SPRING-Dial Cord.....
HS6F01	+	SLEEVE-Spacer.....
HZ0S08		STUD-Trimount (Dial back window mounting).....
ID0M15		INDICATOR-Dial.....
JR1S00	+	RECEPTACLE-Phono (J1).....
MB0B00	+	BEARING-Tuning Shaft.....
MP0I00	+	PULLEY-Dial Cord Idler.....
MS0T02	+	SHAFT-Tuning.....
PI0C00	+	PLATE-Filter Capacitor Mtg.....
PI0P02	+	PLATE-Line Cord Insulating.....
RD0A00		REFLECTOR-Dial (Fishpaper).....
SM0T00	+	SHIELD-Tube.....
SO0D11		SOCKET-Dial Light.....
SO8L03		SOCKET-Loktal Tube.....
WP0D02		WINDOW-Dial Back Plate.....

BENDIX RADIO DIV.

MODELS 526A,-B,-C,-D,-E
Preliminary



Alignment Procedure

Set volume control at maximum and connect output meter across voice coil. Keep input as low as possible at all times. IF - Set signal generator at 455 KC and connect to converter grid through a .05 mfd. capacitor. Tune progressively the 2nd. and 1st. IF trimmers for maximum output.

RF - Set gang tuning condenser wide open. Set signal generator at 1750 KC and loosely couple to antenna. Tune oscillator coil for maximum output. Change signal to 1500 KC, tune receiver to this frequency and peak antenna trimmer for maximum output.

Precautions

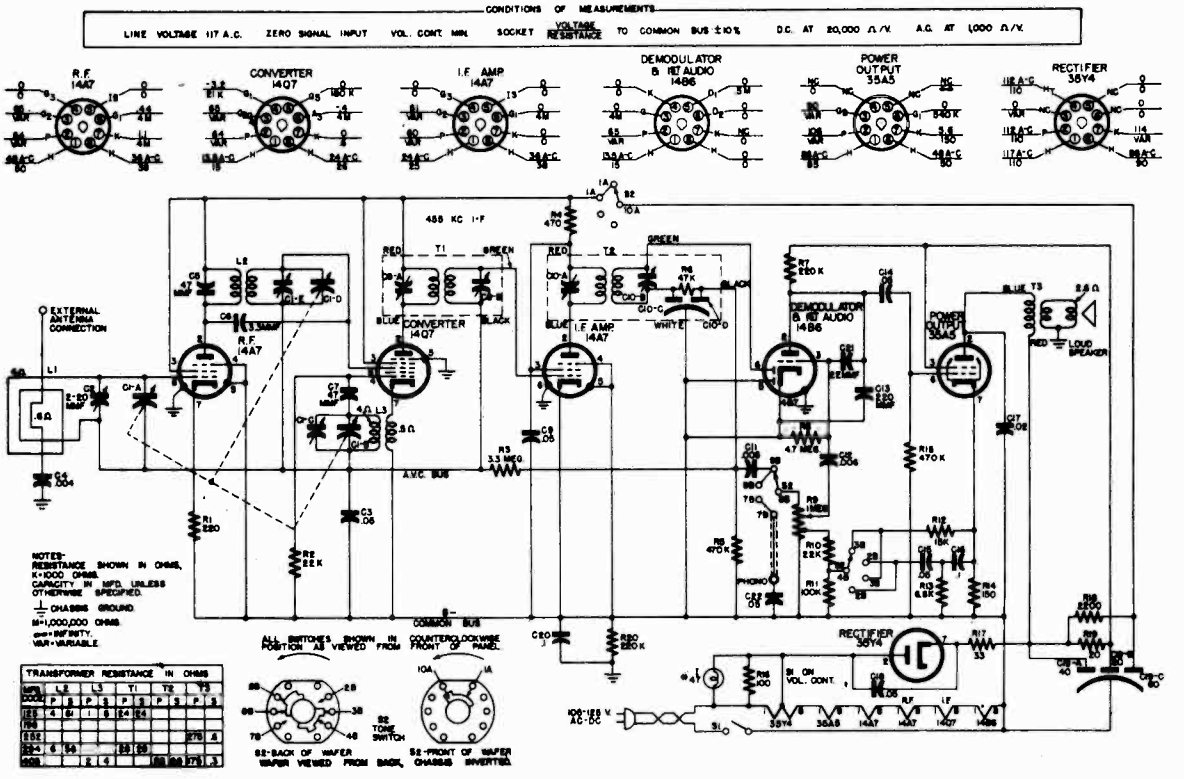
An insulating transformer should be used between the power supply and the receiver if any of the test equipment is AC operated. The use of isolating capacitors is not recommended as AC through the capacitor may introduce hum modulation and if the capacitors should break down the test instruments will likely be damaged.

MODELS 526A,-B,-C,-D,-E BENDIX RADIO DIV.
Preliminary

REPLACEMENT PARTS LIST

Stock No.	Description	List Price
ALOC00	ANTENNA - Loop Assembly (L1).....	
CE2A00	CAPACITOR - Electrolytic - 40-40-150 W.V. (C17A, C17B).....	
CL2A00	CORD - AC Power.....	
CM5A14	CAPACITOR - 47 mmf. mica (C5).....	
CM5A34	CAPACITOR - 330 mmf. mica (C13).....	
CM5A46	CAPACITOR - .001 mmf mica 500 V.D.C. (C19)..	
CP4T20	CAPACITOR - .006 mfd. - 400 V.D.C. Paper (C14).....	
CP4T31	CAPACITOR - .01 mfd. - 400 V.D.C. Paper (C15).....	
CP4T40	CAPACITOR - .05 mfd. - 400 V.D.C. Paper (C6)	
CP4T51	CAPACITOR - .1 mfd. - 400 V.D.C. Paper (C18)	
CP6T16	CAPACITOR - .004 mfd. - 600 V.D.C. Paper (C1, C12).....	
CP6T40	CAPACITOR - .05 mfd. - 600 V.D.C. Paper (C16)	
CV0B01	CAPACITOR - Variable (C2A, C2B, C3RF - 25 mmf max. C4 Osc. 25 mmf. max.).....	
L01B00	COIL - Oscillator (L2).....	
RC1H40	RESISTOR - 22 K ohms, 1/4 W. Comp. (R2).....	
RC1H54	RESISTOR - 220 K ohms, 1/4 W. Comp. (R5,R12)	
RC1H58	RESISTOR - 470 K ohms, 1/4 W. Comp. (R7)....	
RC1H68	RESISTOR - 3.3 meg. 1/4 W. Comp. (R3).....	
RC1H70	RESISTOR - 4.7 meg. 1/4 W. Comp. (R6).....	
RC1H76	RESISTOR - 15 meg. 1/4 W. Comp. (R1).....	
RC3H12	RESISTOR - 100 ohms, 1 W. Comp. (R9).....	
RC4G28	RESISTOR - 2200 ohms, 2 W. Comp. (R11).....	
RV0S00	POTENTIOMETER - with switch - 500 K ohms (R4)	
RW1A06	RESISTOR - 33 ohms,1 W. W. W. (R10).....	
RW1B14	RESISTOR - 150 ohms, 1 W.W.W. (R8).....	
S00D00	SOCKET - Dial Lamp.....	
S08S00	SOCKET - Octal Tube.....	
TI0C00	TRANS. - Converter I.F. (1st).....	
TI0D00	TRANS. - Diode I.F. (2nd).....	
	SPEAKER AND COMPONENTS	
SP4R00	SPEAKER - 4" P.M.....	
CS4R00	CONE - 4" Cone & V.C. Assy. - Spkr. SP4R00, Code 252.....	
CS4R01	CONE - 4" Cone & V.C. Assy. - Spkr. SP4R00, Code 328.....	
CS4R02	CONE - 4" Cone & V.C. Assy. - Spkr. SP4R00, Code 277.....	
CS4R03	CONE - 4" Cone & V.C. Assy. - Spkr. SP4R00, Code 258.....	
CS4R04	CONE - 4" Cone & V.C. Assy. - Spkr. SP4R00, Code 191.....	
TA0000	TRANSFORMER - Output Trans.....	
	MECHANICAL COMPONENTS	
AD0B00	PLATE ASSEMBLY - Dial Back.....	
BT4S00	BOARD - Strip Terminal - 4 lugs.....	
CD0C01	CABLE - Dial 40½".....	
GR0S00	GROMMET - Cond. Shockmount.....	
HB0A00	BRACKET - Loop Antenna.....	
HC0C03	CLAMP - Cable Dial.....	
HC0S00	CLIP - Tuning Shaft Spring.....	
HN0P00	NUT 3/8 X 32 Palnut.....	
HR0S02	RIVET - Shoulder (.218).....	
HS0C00	SPRING - Dial Cable Tension.....	
HS6F00	SLEEVE - Spacer - Tuning Cond. Mtg.....	
IT0C00	TUBE - Capacitor Insulating.....	
MP0F00	PULLEY - Idler (Fiber).....	
MS0T00	SHAFT TUNING.....	
PI0C00	PLATE - Mounting Elect. Cap.....	
PI0P00	PLATE - Power Cord Insulator.....	

Stock No.	Description	List Price
	PARTS COMMON TO MODEL 0526A & B	
BTIT00	POST - Binding (Base Plate).....	
BZ0D00	BAFFLE - Corrugated Paper Speaker.....	
DS0A03	DIAL - Plastic Scale (54-170).....	
FZ0R00	FOOT - Rubber (Vinylite) Mtg.....	
HK0R00	RING - Knob Retainer Spring (.015).....	
HP0B00	PLATE - Base Assy.....	
HZ0S00	STUD - Trimount.....	
ID0M00	INDICATOR - Metal Dial (Pointer).....	
PI0B01	PLATE - Asbestos Base Insulator.....	
	PARTS FOR MODEL 0526A	
KC0B01	KNOB- Mottled Brown - Push on.....	
ZP0B01	CABINET - Mottled Brown Plastic.....	
	PARTS FOR MODEL 0526B	
KC0B03	KNOB - Mottled Brown - Push On.....	
ZP0101	CABINET - Ivory Plastic.....	
	PARTS COMMON TO MODELS 0526C & D	
BZ0B00	BACK - Teakwood - Catalin Cabinet.....	
GF0S00	GASKET - Felt 3/16" X 3-1/4" ID (spkr.).....	
FZ0R01	FOOT - Cabinet (Rubber).....	
GR0D00	GASKET - Rubber Dial (1/16" X 1/8" X 4").....	
GR0D01	GASKET - Rubber Dial (3/16" X 1/32" X 1/4")..	
HK0C00	CLIP - Knob Retainer Spring.....	
HZ0S01	STUD - Trimount.....	
ID0M01	INDICATOR - Metal Dial (Pointer).....	
	PARTS FOR MODEL 0526C	
DS0A00	DIAL - Glass Scale (54 - 170).....	
DX0R00	RETAINER - Dial, R.H. (Trim).....	
DX0R01	RETAINER - Dial, L.H. (Trim).....	
KC0000	KNOB - Plain Push-on (Green).....	
ZC0000	CABINET - Green & Black Catalin.....	
	PARTS FOR MODEL 0526D	
DS0A05	DIAL - Glass (54 - 170).....	
DX0R02	RETAINER - Dial, R.H. (Trim).....	
DX0R03	RETAINER - Dial, L.H. (Trim).....	
KC0001	KNOB - Drown Push-ON.....	
ZC0B00	CABINET - Two-Tone Brown Catalin.....	
	PARTS FOR MODEL 0526E	
BZ0B01	BACK - Cabinet Teakwood.....	
BZ0D00	BAFFLE - Corrugated Card Board.....	
BZ0D02	BAFFLE - Paper.....	
DS0A07	DIAL GLASS (54-170 K.C.).....	
DX0R06	RETAINER - Metal Dial.....	
FZ0R02	FOOT - Black Rubber.....	
GF0S06	GASKET - Blk. Felt (1/16 X 1/4 X 5/8).....	
GF0S07	GASKET - Blk. Felt (1/16 X 3/16 X 8½).....	
GF0S08	GASKET - Blk. Felt (1/16 X 1/4 X 13/16).....	
GZ0C01	GRILL-CLOTH - (Dk. Br.).....	
HK0R00	RING - Retainer Spring (.015).....	
ID0M03	INDICATOR - Metal Dial Pointer.....	
KC0B07	KNOB - Dk. Mottled Brown (Cont'l).....	
PI0B01	PLATE - Asbestos Base Insulator.....	
ZW5A00	CABINET ASS'Y - (Wood) BW76.....	



Power Consumption-Watts. 30

TUNING RANGE—FREQUENCY IN KC 535-1725

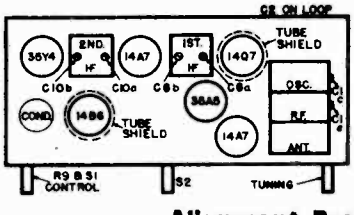
INTERMEDIATE FREQUENCY (KC). 455

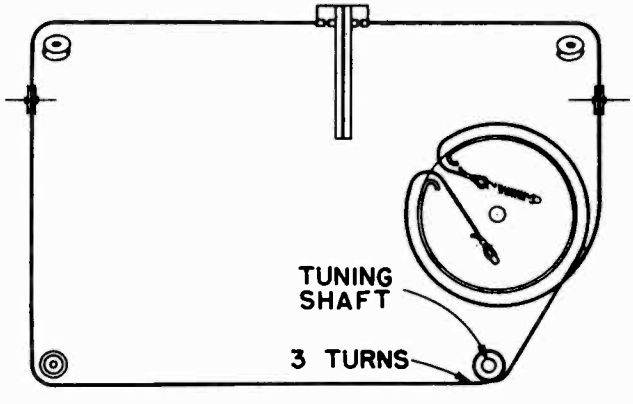
MAXIMUM POWER OUTPUT IN WATTS. 1.2

LOUD SPEAKER—PM-OVAL

Cone diameter—inches. 4x6

Voice Coil Impedence (ohms at 400 cycles) 3.2





Alignment Procedure

Connect line cord plug to 117 volt, 60 cycles AC power source. Set volume control at maximum clockwise position and tone control (S2) in counterclockwise position. Connect output meter across voice coil. Adjust dial pointer by turning tuning control fully counterclockwise and sliding dial pointer on dial cord until it is exactly 2 3/16" from left end of dial back plate. Make all adjustments in order given in table and for maximum output. Dial Pointer Positions given measured from left hand end of dial back plate. Keep input as low as possible at all times.

Circuit Aligned	Input Freq.	Dial Pointer Position	Adjustments
IF	*455 KC	Max. to right	C10b, C10a C8b, C8a
OSC.	**1475 KC	6 3/4"	C1c
RF	**1475 KC	6 3/4"	C1e, C2
	**965 KC	5	Check
	**580 KC	2-23/32"	Calib.

* Applied to Antenna input .1 mfd. or less.

** Applied to Antenna input through 50 mmf. or less.

Precautions

An isolating transformer should be used between the power supply and the receiver if any of the test equipment is AC operated. The use of isolating capacitors is not recommended as AC through the capacitor may introduce hum modulation, and if the capacitors should break down the test instruments will likely be damaged.

MODEL 636A, -C, -D

Model 636

Stock No.	Description
	ELECTRICAL COMPONENTS
AL0C03*	ANTENNA-Loop
CC9A16	CAPACITOR-Ceramic 3.3 mmf. (C6)
CE3A00	CAPACITOR-Electrolytic 20 x 40 x 60 mfd. 150 V
CL2A01	CORD-Power line
CM5A05	CAPACITOR-Mica. 220 mmfd. (C13)
CM5A14	CAPACITOR-Mica 47 mmfd. (C5, C7)
CP2T51	CAPACITOR-Paper .1 mfd. 200 V (C16)
CP4T20	CAPACITOR-Paper .006 mfd. 400 V (C11, C12)
CP4T34	CAPACITOR-Paper .02 mfd. 400 V (C17)
CP4T40	CAPACITOR-.05 mfd. 400 V (C18, C3, C9, C14, C15, C22)
CP4T51	CAPACITOR-Paper .1 mfd. 440 V (C20)
CP6T16	CAPACITOR-Paper .004 mfd. 600 V (C4)
CV0C00	CAPACITOR-Variable (C1a, C1b, C1c, C1d, C1e)
JR1S00	JACK-Phono (J1)
LO6B00	COIL-Oscillator (L3)
RC1H16	RESISTOR-220 ohms 1/4 W. Comp (R1)
RC1H20	RESISTOR-470 ohms 1/4 W. Comp (R4)
RC1H32	RESISTOR-4700 ohms 1/4 W. Comp (R19)
RC1H34	RESISTOR-6800 ohms 1/4 W. Comp (R13)
RC1H38	RESISTOR-15 K ohms 1/4 W. Comp (R12)
RC1H40	RESISTOR-22 K ohms 1/4 W. Comp (R2, R10)
RC1H51	RESISTOR-100 K ohms 1/4 W. Comp (R11)
RC1H54	RESISTOR-220 K ohms 1/4 W. Comp (R7, R20)
RC1H58	RESISTOR-470 K ohms 1/4 W. Comp (R15, R5)
RC1H68	RESISTOR-3.3 meg. ohms 1/4 W. Comp (R3)
RC1H70	RESISTOR-4.7 meg. ohms 1/4 W. Comp (R8)
RC4G28	RESISTOR-2200 ohms 2 W. Comp (R18)
RV4S00	Potentiometer-1 meg. ohms (R9, S1)
RW1A06	RESISTOR-100 ohms 1 W.W.W. (R16)
RW1B14	RESISTOR-150 ohms 1 W.W.W. (R14)
SO0D01	SOCKET-Dial Lamp
SO9S00	SOCKET-Locktal Tube
SR4C00	SWITCH 3 pole, 4 position
T10C01	TRANSFORMER-I. F. 1st. (T1)
T10D01	TRANSFORMER-I. F. 2nd. (T2)
TR6L00	TRANSFORMER-R. F. Interstage (L2)
	SPEAKER AND COMPONENTS
SP4O00	Speaker—4" x 6" P.M. Oval
CS4O00	CONE & V.C. ASS'Y. for SP4O00 Code 252
CS4O01	CONE & V. C. ASS'Y. for SP4O00 Code 328
CS4O02	CONE & V. C. ASSY. for SP4O00 Code 270
CS4O06	CONE & V. C. ASS'Y. for SP4O00 Code 191
CS4O07	CONE & V. C. ASS'Y. for SP4O00 Code 371
TA0O01	TRANSFORMER—Audio Output (T3)
	MECHANICAL COMPONENTS
AD0C00	ASSEMBLY-Dial Back
BT1S00	BOARD-Terminal 1 lug
BT2S00	BOARD-Terminal 2 lugs
BT4S01	BOARD-Terminal 4 lugs
CD0C02	CABLE-Dial (47 13/16")
GR0S00	GROMMET-Variable Capacitor shockmount
HB0A01	BRACKET-Loop
HC0C00	CLIP-Coil mt'g.
HC0C03	CLAMP-Dial Cable
HC0S00	CLIP-Tuning shaft spring
HC0T00	CLAMP-Tube Shield
HN9P45	NUT-3/8 x 32 Pal-nut
HR0S01	RIVET-Shoulder
HS0C00	SPRING-Dial Cable tension
HS0P01	SPACER-Wood antenna
HS0F00	SPACER-Flared Variable Capacitor mt'g.
ID0M02	INDICATOR-Metal Dial pointer
IT0C01	INSULATOR-Elect. Cap. paper tube
MB0B00	BEARING-Tuning shaft
MP0F00	PULLEY-Idler Fiber
MS0T02	SHAFT-Tuning Capacitor
PI0C00	PLATE-Capacitor mt'g. Insulator
PI0P00	PLATE-Power Cord Insulator
SM0T00	SHIELD-Metal tube
	CABINET COMPONENTS
BZ0B02	BACK-Cabinet (Tekwood)
BZ0B02	BACK-Cabinet (Tekwood)
DS0A01	DIAL-Glass (54-170 kc)
DX0R04	RETAINER-Dial (Spring)
FZ0R02	FOOT-Rubber cabinet
GC0D01	GASKET-Dial (cork 12 7/8")
GZ0M02	GRILLE-Metal (cu. oxide)
HK0R00	RING-Knob Retainer Spring (.015)
KC0B05	KNOB-Plain Push On Brown
PI0B00	PLATE-Insulating Base Asbestos
WF0Z02	WASHER-Felt (Brown)
ZW6A02	CABINET-Walnut Table Model

MODELS 676B, C, D

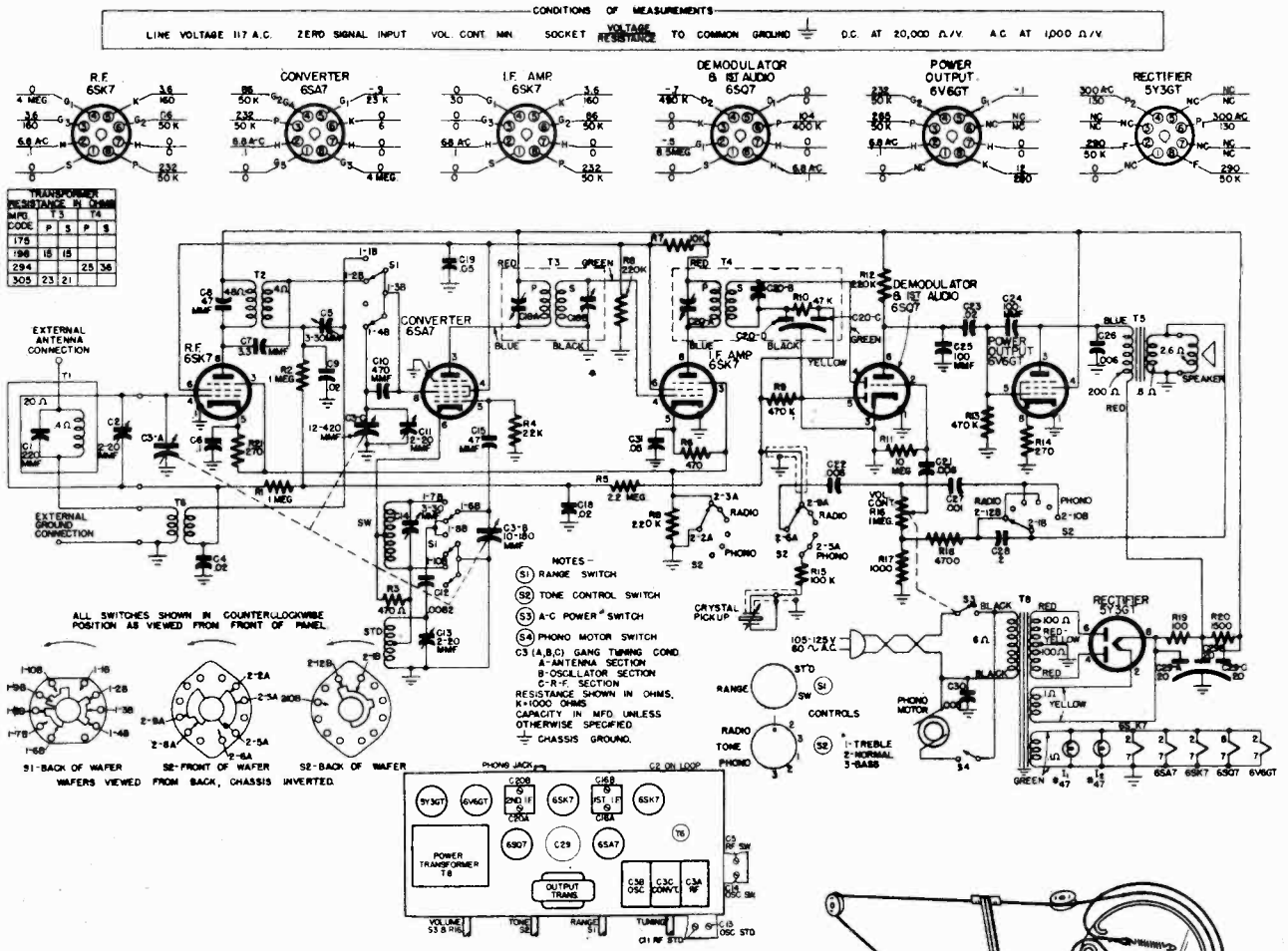
Stock No.	Description
	Electrical Components
AL0Z00*	ANTENNA-Loop
CC9A16	CAPACITOR-Ceramic 3.3 mmf. 500 V (C7)
CE3A01	CAPACITOR-Electrolytic 20 x 20 x 20 mfd. 450 V (C29)
CL2A02	CORD-A. C. line (Brown)
CM3E00	CAPACITOR-Mica. 0082 mfd. 300 V (C12)
CM5A14	CAPACITOR-Mica. 47 mmfd. 500 V (C8,C15)
CM5A22	CAPACITOR-Mica. 100mmfd. 500 V (C24,C25)
CM5A46	CAPACITOR-Mica. 1000 mmfd. 500 V (C27)
CM8S50	CAPACITOR-Mica. 470 mmfd. 500 V (C10)
CP2T51	CAPACITOR-Paper .1 mfd. 200 V (C6)
CP2T56	CAPACITOR-Paper .2 mfd. 200 V (C28)
CP4T34	CAPACITOR-Paper .02 mfd. 400 V (C4 C9, C18, C23)
CP4T40	CAPACITOR-Paper .05 mfd. 400 V (C17, C19)
CP6T18	CAPACITOR-Paper .005 mfd. 600 V (C 30)
CP6T20	CAPACITOR-Paper .006 mfd. 600 (C21,C22,C26)
CT2A02	CAPACITOR-Trimmer 3-30 mmfd. (C5)
CT2A03	CAPACITOR-Trimmer 2 @ 20 mfd. (C11)
CV0C01	CAPACITOR-Variable (C3a, C3b, C3c)
LO6G00	Oscillator Coil (T7)
RC1G14	RESISTOR-150 ohms 1/4 W. Comp (R6)
RC1G24	RESISTOR-1000 ohms 1/4 W. Comp (R17)
RC1G32	RESISTOR-4.7 K ohms 1/4 W. Comp (R18)
RC1G40	RESISTOR-22 K ohms 1/4 W. Comp (R1)
RC1H20	RESISTOR-470 K ohms 1/4 W. Comp. (R3)
RC1H51	RESISTOR-100 K ohms 1/4 W. Comp (R15)
RC1H54	RESISTOR-220 K ohms 1/4 W. Comp (R8, R12)
RC1H58	RESISTOR-470 K ohms 1/4 W. Comp (R9, R13)
RC1H62	RESISTOR-1 meg. ohms 1/4 W. Comp (R1, R2)
RC1H66	RESISTOR-2.2 meg. ohms 1/4 W. Comp (R5)
RC1H74	RESISTOR-10 meg. ohms 1/4 W. Comp (R11)
RC3C17	RESISTOR-270 ohms 1/2 W. Comp (R14, R21)
RC4G12	RESISTOR-100 ohms 2 W. (R19)
RC4G26	RESISTOR-1500 ohms 2 W. (R20)
RC4G72	RESISTOR-10 K ohms 2 W (R7)
RV0S01	Potentiometer with switch 1 meg. (R16)
S00D03	SOCKET-Dial lamp
S08S00	SOCKET-Tube st'd.
T10C02	TRANSFORMER-I.F. 1st (T3)
T10D02	TRANSFORMER-I.F. 2nd (T4)
TP0F00	TRANSFOMER-Power (T8)
TR6C00	TRANSFORMER-R. F. S.W. (T6)
TR6L01	TRANSFORMER-R.F. Int. (T2)
#47	LAMP-Bayonet Type Base
	Speaker and Components
SP6R00*	Speaker P. M. 6"
CS6R00	CONE & V.C. ASS'Y. for SP6R00 Code 285
CS6R01	CONE & V.C. ASS'Y. for SP6R00 Code 159
CS6R02	CONE & V.C. ASS'Y. for SP6R00 Code 270
CS6R03	CONE & V.C. ASS'Y. for SP6R00 Code 258
CS6R04	CONE & V.C. ASS'Y. for SP6R00 Code 191
CS6R05	CONE & V.C. ASS'Y. for SP6R00 Code 188
CS6R06	CONE & V.C. ASS'Y. for SP6R00 Code 371
TA0O02	TRANSFORMER-Output
	Mechanical Components
AD0C05	ASSEMBLY-Dial Back Plate
BT1S00	BOARD-Terminal strip 1 soldering lug
BT1S01	BOARD-Terminal strip 1 soldering lug
BT2S00	BOARD-Terminal strip 2 soldering lug
BT3S00	BOARD-Terminal Strip 3 soldering lug
BT4S01	BOARD-Terminal strip 4 soldering lug
CD0C05	CABLE-Dial (51 3/16")
GR0S00	GROMMET-Condenser shockmount
HC0C00	CLIP-Coil mt'g.
HC0C02	CLIP-Coil mt'g.
HC0C03	CLAMP-Dial Cable
HC0S00	CLIP-Spring
HN9P45	NUT-3/8 x 32
HR0S01	RIVET-Shoulder
HS0C00	SPRING-Cable tension
HS6F00	SLEEVE-#6 Spaced flared
HS6S01	SCREW-Self tapping #6 x 1/4"
HS6S02	SCREW-Self tapping #6 x 1/4"
HW2F00	WASHER-Flat #2 N.F.
ID0L00	INDICATOR-Dial lucite
JP2M00	JACK-Plug 2 Contacts
JR1S00	JACK-Receptacle 1 Contact
JR2S03	JACK-Receptacle 2 Contacts
JR4S00	JACK-Receptacle 4 Contacts
MB0B00	BEARING-Brass Bushing
MP0F00	PULLY-Idler Fiber
MS0T03	SHAFT-Tuning
PI0P00	PLATE-line cord insulator
SR2B00	SWITCH-Rotary 2 P.2 P.
SR6C00	SWITCH-Rotary 3 P.6 P.
	Cabinet Parts
BZ0A01	BOTTOM-Motorboard (Chipboard)
BZ0B03	BACK-Cabinet 1
BZ0D05	BAFFLE-Dial (Fishpaper)
DS0C02	DIAL-Glass, 2 band
DX0R05	RETAINER-Dial (metal)
DZ0F03	DECAL-Functional (Panel)
FZ0R04	STOP-Rubber door
GR0D03	GASKET-Rubber Dial (7")
GZ0C03	GRILLE-Cloth
GZ0M04	GRILLE-Metal
HK0R00	RING-Knob Retainer Spring
HS4W26	SCREW-Wood #5 x 5/8 Rd. Hd.
HS5Q84	SCREW-1/4" - 20 x 1 1/4 Phillips (Antique")
HS6W26	SCREW-Wood #6 x 1/2" F.H. (Stat. Br.)
HS6W28	SCREW-Wood #6 x 3/4" F.H. (Stat. Br.)
HS8W26	SCREW-Wood #8 x 5/8" F.H. (Stat. Br.)
HS8W27	SCREW-Wood #8 x 7/8" F. H.
HS8W28	SCREW-Wood #8 x 1/2" c. p.
HS8W29	SCREW-Wood #8 x 5/8 copper-flash
HS8Y60	SCREW-Speaker #8-32 x 1 1/4
HS0R50	SCREW-10-24 x 3/4 R. H. C. A.
HW8C02	WASHER-#8 cup type (Dk. oxidized)
HW8F03	WASHER-#8 x 1/32 flat steel c.p.
HZ0C00	CATCH-Door (Bullet)
HZ0G01	GLIDE-Metal
HZ0H00	HINGE-Lid (Statuary Bronze)
HZ0H03	HINGE-Door
HZ0L00	SUPPORT-Lid
HZ0P00	PADS Brown felt
JP4M00	JACK-Plug—4 contacts
JR2S01	JACK-Receptacle 2 contacts
KZ0S00	KNOB-Door Cabinet
XS0Z02	STRIP—Fishpaper (Clamp)
XS0Z03	STRIP—Fishpaper
	Parts Common to Models 676 B & D
KC0B06	KNOB-Cont'l.
KB0B01	KNOB-Cont'l. Indexed
	Parts for Model 676B
ZW6G01*	CABINET—Consolette (Walnut)
	Parts for Model 676C
GZ0M03	GRILLE-Metal
KB0B02	KNOB-Indexed (Brown)
KC0B07	KNOB-Cont'l. (Brown)
ZW6G02*	CABINET-Consolette (Knotty Pine)
	Parts for Model 676D
GC0D02	GASKET-Cork Dial
ZW6G00*	CABINET-Consolette (mahogany)

BENDIX RADIO DIV.

MODEL 736-B

Stock No.	Description
	ELECTRICAL COMPONENTS
AL0Z02*	ANTENNA—Loop (T1)
CC9A01	CAPACITOR—Ceramic 10 mmf. (C38)
CC9A16†	CAPACITOR—Ceramic 3.3 mmf. 500 V (C7)
CE2A01	CAPACITOR—Electrolytic 20, 20 mfd. 450 V (C14a, 14b)
CM3A46	CAPACITOR—Mica .001 mfd. 300V (C27)
CM5A14	CAPACITOR—Mica 47 mmf. 500 V (C6)
CM5A30†	CAPACITOR—Mica 220 mmf. 500V (C16)
CM5A38	CAPACITOR—Mica 470 mmf. 550V (C3)
CM6A14	CAPACITOR—Mica 47 mmf. 500 V (C9)
CM8S47	CAPACITOR—360 mmf. (C31)
CM8S50	CAPACITOR—Silver Mica 470 mmf. 500V (C21)
CP2T56†	CAPACITOR—Paper .2 mfd. 200 V (C28)
CP4T31†	CAPACITOR—Paper .01 mfd. 400 V (C15, C17, C26)
CP4T34†	CAPACITOR—Paper .02 mfd. 400V (C5, C39)
CP4T40†	CAPACITOR—Paper .05 mfd. 400V C11, C12, C22) (C40)
CP6T12	CAPACITOR—Paper .002 mfd. 600V (C30)
CP6T18†	CAPACITOR—Paper .005 mfd. (C29, C32)
CP6T31	CAPACITOR—Paper .01 mfd. 600V (C18)
CT1A00	TRIMMER & BRACKET—1.6—18 mmf. (C8)
CT5A00	TRIMMER—Strip (C19, C20, C23, C24, C25)
CL2A05	CORD—A.C. Power
CP2T36	CAPACITOR—.03 mfd. (C39)
CV0C03	CAPACITOR—Variable 3 Gang (C4a, C4b, C4c)
JP1O00	PLUG—Connector J3, J4, J5 (P.B. Ass.)
JP4O01	PLUG—Connector, 4 contact Antenna (J7)
JR1S00	JACK—Receptacle, 1 Contact, Phono Jack (J1)
JR2O04	JACK—Receptacle, 2 contacts, Phono Motor (J6)
JR5O00	JACK—Receptacle, 5 Contacts, Speaker (J2)
L07J00	OSCILLATOR—Coil (T7)
RC1G16	RESISTOR—220 ohms 1/4W Comp. (R2)
RC1G20	RESISTOR—470 ohms 1/4W Comp. (R19, R20, R23)
RC1G28	RESISTOR—2200 ohms. 1/4W Comp. (R11)
RC1G32†	RESISTOR—4700 ohms. 1/4W Comp. (R3, R24)
RC1G37	RESISTOR—12,000 ohms. 1/4W Comp. (R15)
RC1G40†	RESISTOR—22,000 ohms. 1/4W Comp. (R5, R25)
RC1G44	RESISTOR—47,000 ohms. 1/4W Comp. (R9, R18)
RC1G54	RESISTOR—220,000 ohms. 1/4W Comp. (R10, R12, R13, R21)
RC1H00	RESISTOR—10 ohms. 1/4W Comp. (R28)
RC1H51†	RESISTOR—100,000 ohms. 1/4W Comp. (R26)
	SPEAKER COMPONENTS
SE0R00*	SPEAKER—Electrodynamic 10"
CS0R00	CONE & VOICE COIL ASS'Y—Code 191
CS0R01	CONE & VOICE COIL ASS'Y—Code 285
TA0O05	TRANSFORMER—Output (T5)
RC1H58†	RESISTOR—470,000 ohms. 1/4W Comp. (R4, R14, R17, R27)
RC1H62†	RESISTOR—1 meg. 1/4W Comp. (R1, R7)
RC1H74†	RESISTOR—10 meg. 1/4W Comp. (R6)
RC4G36†	RESISTOR—10,000 ohms. 2W Comp. (R8)
RV4S04	POTENTIOMETER—1 meg. with Switch (R22, S6)
RW1B14†	RESISTOR—150 ohms. WW. 1W (R16)
SO0D02	SOCKET—Dial Lamp
SO8S00	SOCKET—Octal Tube
SR4E00	SWITCH—Rotary 4 Pos. (Band)
SR6C01	SWITCH—Rotary 6 pos. (Tone Cont'l)
T10C04	TRANSFORMER IF—1st (T3)
T10D05	TRANSFORMER IF—2nd (T4)
TP0F01	POWER TRANSFORMER—(T8)
TR6L04	TRANSFORMER B.C.—R.F.—Interstage (T2)
TR7I00	TRANSFORMER—Short Wave Antenna (T6)
#44	LAMP—Pilot
	PUSHBUTTON ASS'Y & COMPONENTS
AB0C00	ASS'Y—Complete Pushbutton Ass'y
BT3R00	BOARD—Receptacle Terminal
CM8S47	CAPACITOR—360 mmf. 500V (C31)
CT1A02	CAPACITOR—Auto Tune 4-70 mmf. (C37)
CT1A03	CAPACITOR—Auto Tune 12-160 mmf. (C36)
CT1A04	CAPACITOR Auto Tune 45-370 mmf. (C34) (C35)
CT1A05	CAPACITOR—Auto-Tune 120-580 mmf. (C33)
HB0M01	BRACKET—Pushbutton, mtg.
HCDC09	FASTENER—Coil, Pushbutton Clip mtg. (Auto Tune)
LT0A00	COIL—Auto-Tune Blue Dot (540-925 KC) (L1)
LT0A01	COIL—Auto-Tune White Dot (650-1250KC) (L2, L3)
LT0A02	COIL—Auto-Tune Red Dot (900-1600KC) (L4, L5)
SS5P00	SWITCH—Pushbutton
ST0100	SLUG—Iron Tuning
	MECHANICAL COMPONENTS
AD0D00	ASSEMBLY—Dial Back Plate
BT1S00†	BOARD—Terminal Strip and 1 Lug
BT2S00	BOARD—Terminal Strip and 2 Lugs
BT4S01	BOARD—Terminal Strip and 4 Lugs
CD0C06	CABLE—Dial
FC0R00	FOOT—Chassis Mtg.
GR0S01	GROMMET—Tuning Condenser Shockmount
GR0S02	GROMMET—Chassis Shockmount
HB0M02	BRACKET—Osc. Coil Mounting
HC0C00	CLIP—Osc. & R. F. Coil Mtg.
HC0C02	CLIP—Ant. Coil Mtg.
HC0S00	CLIP—Tuning Shaft Spring
HK0R00	RING—Knob Retainer Spring
HK0R01	RING—Knob Retainer Spring
HN8H25	NUT—Hex #8-32
HN9P45	PALNUT—3/8 x 32
HP8T00	PIN—Threaded Rear Chassis Mounting
HR0S01	RIVETS—Shoulder
HS0C00	SPRING—Dial Cable
HS6F01	SPACER—Tuning Cond. Mtg.
ID0L01	INDICATOR—Lucite Tuning
MB0T00	BEARING—Tuning Shaft
ML0M01	LINK—Band Switch
MP0F00	PULLEY—Fiber Dial Cord
MS0S00	SHAFT—Band Switch Control
MS0T05	SHAFT—Tuning
PI0P00	PLATE—Power Cord Insulator
	CABINET COMPONENTS
BP0B00	PUSHBUTTON—(Brown)
DS0E00	DIAL-Glass
DX0R07	RETAINER-Dial Metal
EB0C00	ESCUTCHEON—Pushbutton
ED7E00	ESCUTCHEON—Dial
GZ0C04	GRILLE—Cloth & Cardboard Ass.
HC0S06	CLIP—Fahnstock
HS2Q00	SCREW—Wood #2 x 3/8 Phillips Antique Bronze (Escutcheon)
HS6W25	SCREW—Wood #6 x 5/8" F. H (Stat. Br.) Hinge
HS8Y60	SCREW—#8 x 1 1/4" Speaker Mtg.
HZ0G01	GLIDE—Metal (Cabinet Foot)
HZ0H00	HINGE—Lid (Stat. Br.)
HZ0S02	LID SUPPORTS—Bronze
KB0B01	KNOB—Indexed, Brown
KC0B06	KNOB—Brown
PF0B00	PAD—Felt (Lid)
ZW7G00*	CABINET—Console Comb.
ZL7G00	LIDS—Cabinet, Pair

MODEL 676B, -C, -D
MODEL 736B



Power

Voltage Rating, 60 cycles AC 105-125
Power Consumption, including record changer — Watts 95

Tuning Range

Standard Broadcast—Frequency in KCS 540-1620
Shortwave—Frequency in MCS 6-12
Intermediate Frequency—KCS 455
Maximum Power Output—Watts 4
LOUD SPEAKER—Electro dynamic Cone diameter—inches 6
Voice Coil Impedence—(ohms of 400 cycles) 3.2

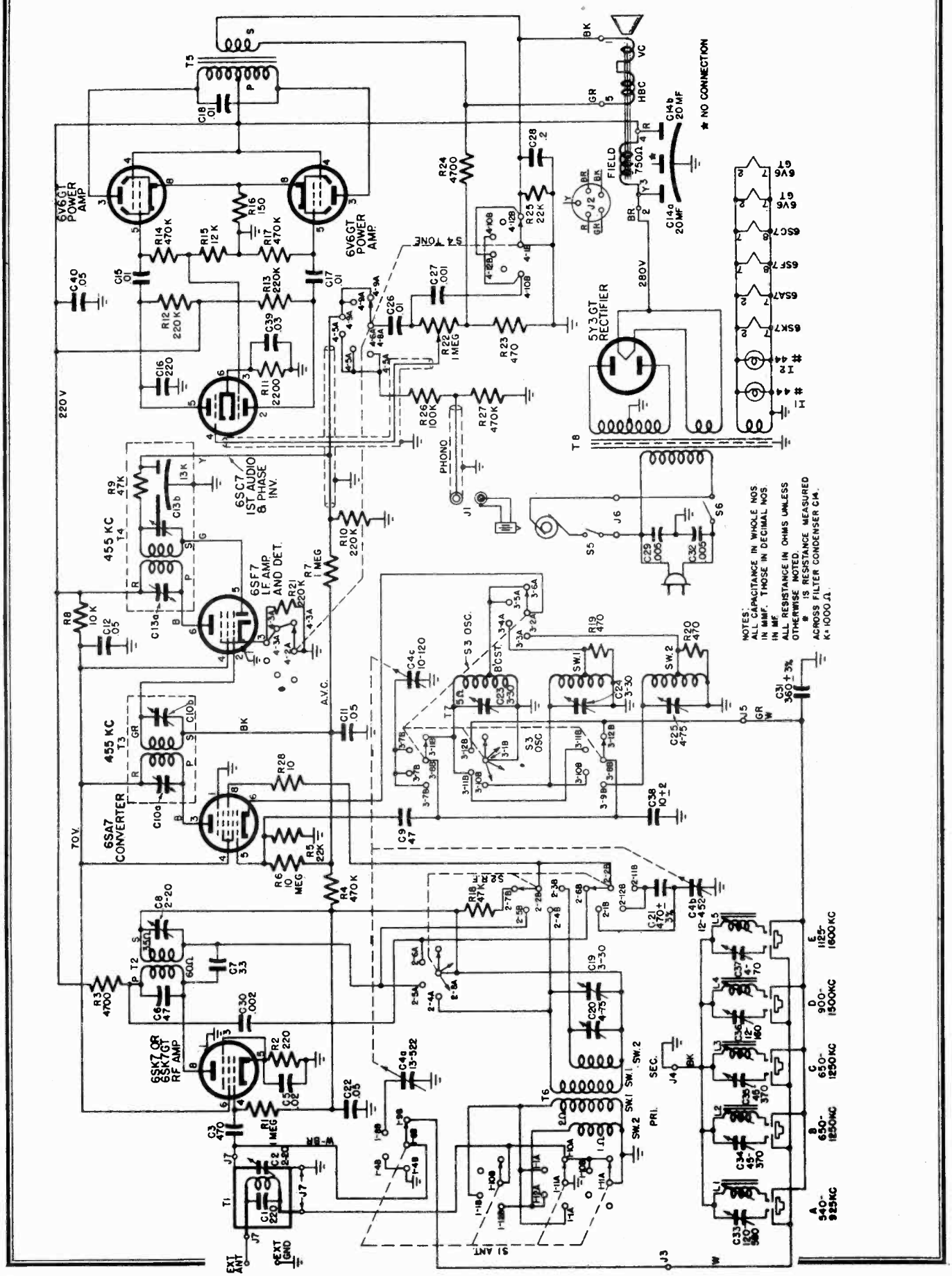
Alignment Procedure

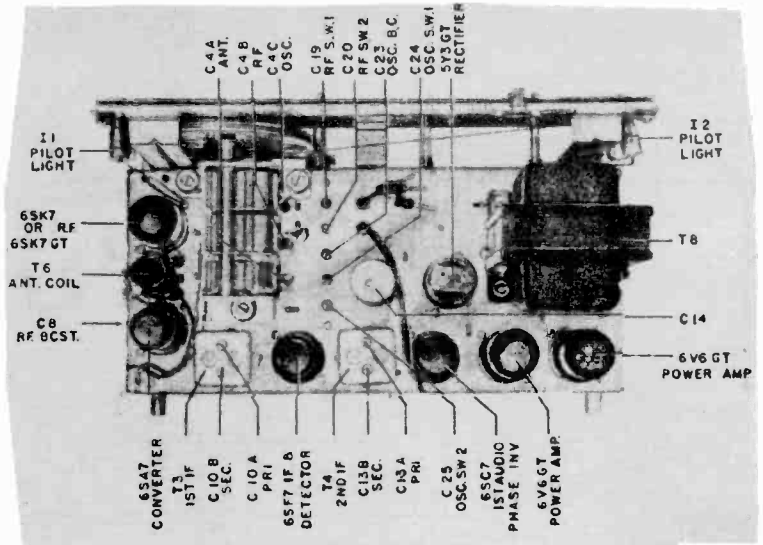
Connect line cord plug to 117 volt, 60 cycles AC power source. Set volume control at maximum clockwise position and tone control (S2) in counterclockwise (Radio 1) position. Connect output meter across voice coil. Adjust dial pointer by turning tuning control fully counterclockwise and sliding dial pointer on dial cord until it is exactly 2 3/4" from left end of dial back plate. Make all adjustments in order given in table and for maximum output. Dial Pointer Positions given measured from left hand end of dial back plate. Keep input as low as possible at all times. Range switch (S1) in ST'D position except as noted in table.

Circuit Aligned	Input Frequency	Dial Pointer Position	Adjustments
IF	* 455KCS	Max. to right	C20B, C20A C16B, C16A
OSC Broadcast	**1475KCS	7 3/4"	C13
RF Broadcast	**1475KCS **965KCS+ **580KCS	7 3/4" 5 15/16" 3 3/8"	C11, C2 Check Calib.
+OSC Shortwave	**11MCS	7 3/4"	C14
+RF Shortwave	**11MCS 9MCS 6MCS	7 3/4" 6 9/16" 3 1/2"	C5 Check Calib.

*Applied to antenna through .1 mfd. or less.

**Applied to antenna through 200 mmf. or less.
+Range switch (S1) in SW position.


6V6GT POWER AMP
6V6GT POWER AMP
6SC7 1ST AUDIO & PHASE INV.
6SF7 I.F. AMP AND DET.
6SA7 CONVERTER
6SK7 OR 6SK7GT R.F. AMP
5Y3GT RECTIFIER
455 KC
455 KC
S3 OSC.
S4 TONE
FIELD
PHONO
A.V.C.
220 V
110 V.
280V
NOTES:
ALL CAPACITANCE IN WHOLE NOS IN MMF. THOSE IN DECIMAL NOS IN MF.
ALL RESISTANCE IN OHMS UNLESS OTHERWISE NOTED.
* IS RESISTANCE MEASURED ACROSS FILTER CONDENSER C14.
K=1000 Ω.
★ NO CONNECTION
EXT ANT
EXT GND
ANT
SEC.
PRI.



Chassis—Top View

Fig. 6

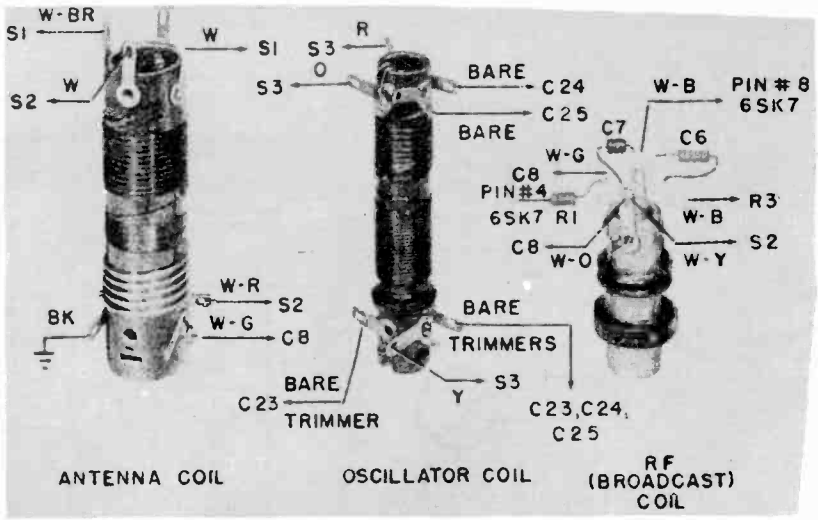


Fig. 8 Coil Connections

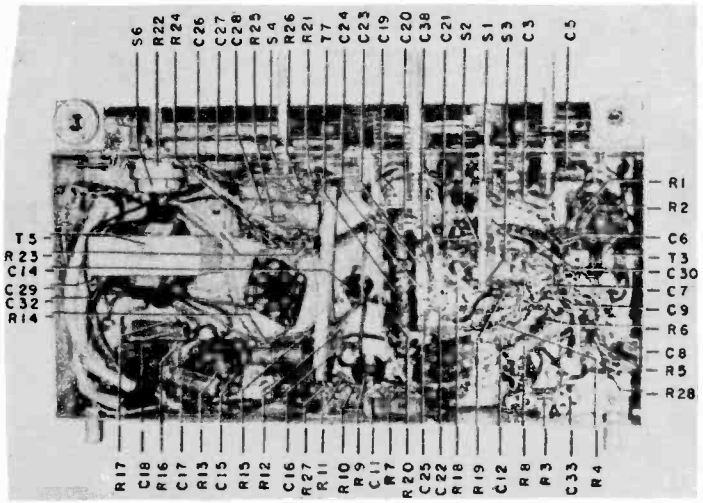


Fig. 7 Chassis—Bottom View

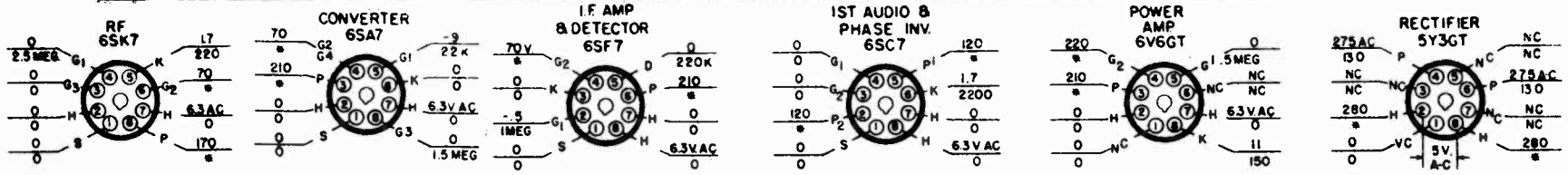
ALIGNMENT PROCEDURE

CIRCUIT	CONTROL POSITIONS	APPLY	THRU	TO	ADJUST
I. F.	Volume—Maximum Tone—Radio Treble Band Switch—Manual Broadcast Tuning Condenser--Fully Meshed (Adjust pointer to reference mark)	455KC	.01 mfd.	Grid 6SF7 I.F. Amp. Grid 6SA7 Conv.	C13b C13a C10b C10a
Broadcast	Pointer at Mark D	1450	200 mmf.	External Antenna Connection	C23 C8 C2
Short Wave Band No. 1	Band Switch—Short Wave No. 1 Pointer at Mark E	12 mc	400 ohms. in series with .01 mfd.	External Antenna Connection	C24 C19
Short Wave Band No. 2	Band Switch—Short Wave No 2 Pointer at Mark F	22mc	400 ohms. in series with .01 mfd.	External Antenna Connection	C25 C20

1. Alignment markers placed along bottom of dial back plate and left edge of pointer used as reference point.
2. Minimum input signal used for perceptible output.
3. After alignment, repeat process for possible slight readjustments.
4. Check calibration of Point A for 600 KC, Point B for 6mc and Point C for 11.5mc. If calibration is inaccurate check gang plates for bending or failure of components.

CONDITIONS OF MEASUREMENTS

LINE VOLTAGE 117 A.C. ZERO SIGNAL INPUT VOL CONT MIN SOCKET VOLTAGE / RESISTANCE TO COMMON GROUND ⏚ DC AT 20,000 Ω/V AC AT 1,000 Ω/V



TRANSFORMER RESISTANCE IN OHMS						
	I.F.				POWER	OUTPUT
SYMBOL	T3		T4		T2	T5
CODE	125	294	125	305	125	125
PRI	22	30	23	25	7	500
SEC.	22	30	23	25	KV260	

RESISTANCES OF COILS LESS THAN 1 Ω NOT SHOWN

Pushbuttons — The first counterclockwise position of the band switch provides pushbutton operation on the broadcast band. Pushbutton frequency ranges are as indicated in following diagram. The Pushbuttons may be removed by pulling from shaft thereby giving access to adjustment screws. The Osc. and Ant. adjustment screws are indicated in figure 3.

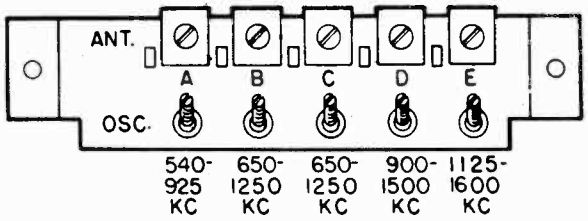
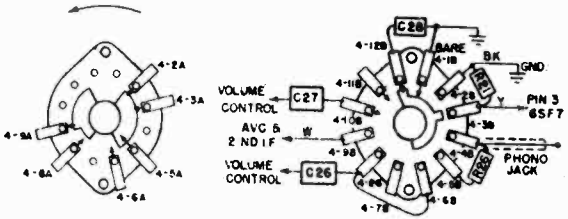


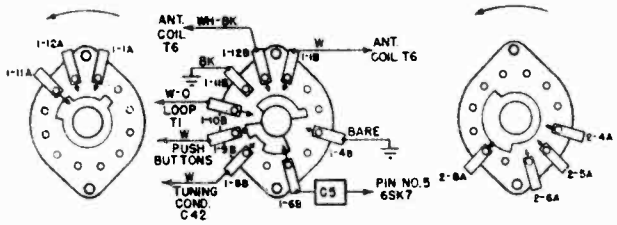
Fig. 3



DIAL STRINGING DIAGRAM

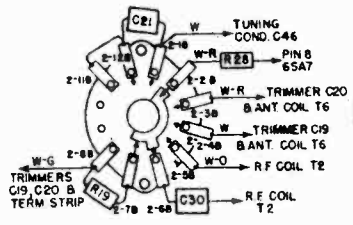
Fig. 4

S4 TONE SWITCH

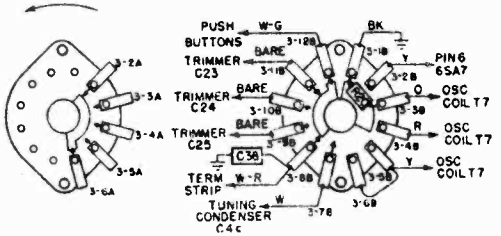


S1 ANTENNA DECK

S2 R.F. DECK



BAND SWITCH

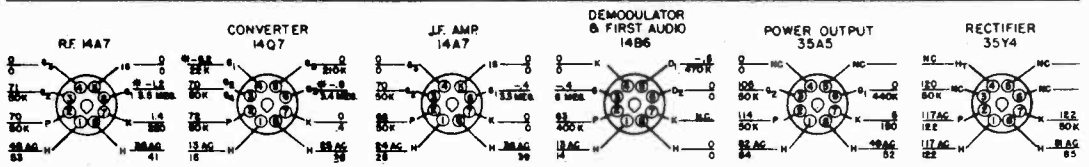


S3 OSCILLATOR DECK

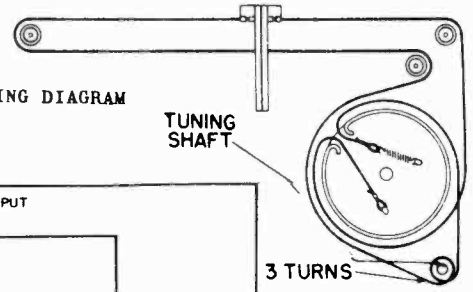
POWER	
Voltage Range	105-125
Frequency—Cycles	60
Consumption—Watts	110
TUNING RANGE	
Broadcast—KCs.	540-1620
Shortwave No. 1—Mcs.	6-12
Short Wave No. 2—Mcs.	11.3-22
POWER OUTPUT—WATTS	
Maximum	7
At 10% Distortion	5
INTERMEDIATE FREQUENCY (KCs)	455
TUNING RATIO	12:1
POINTER TRAVEL	6 in.
LOUDSPEAKER—Electrodynamic	
Cone Diameter-Inches	10
Voice Coil Impedance (Ohms at 400 cycles)	3.2
RECORD PLAYER	Model G-205

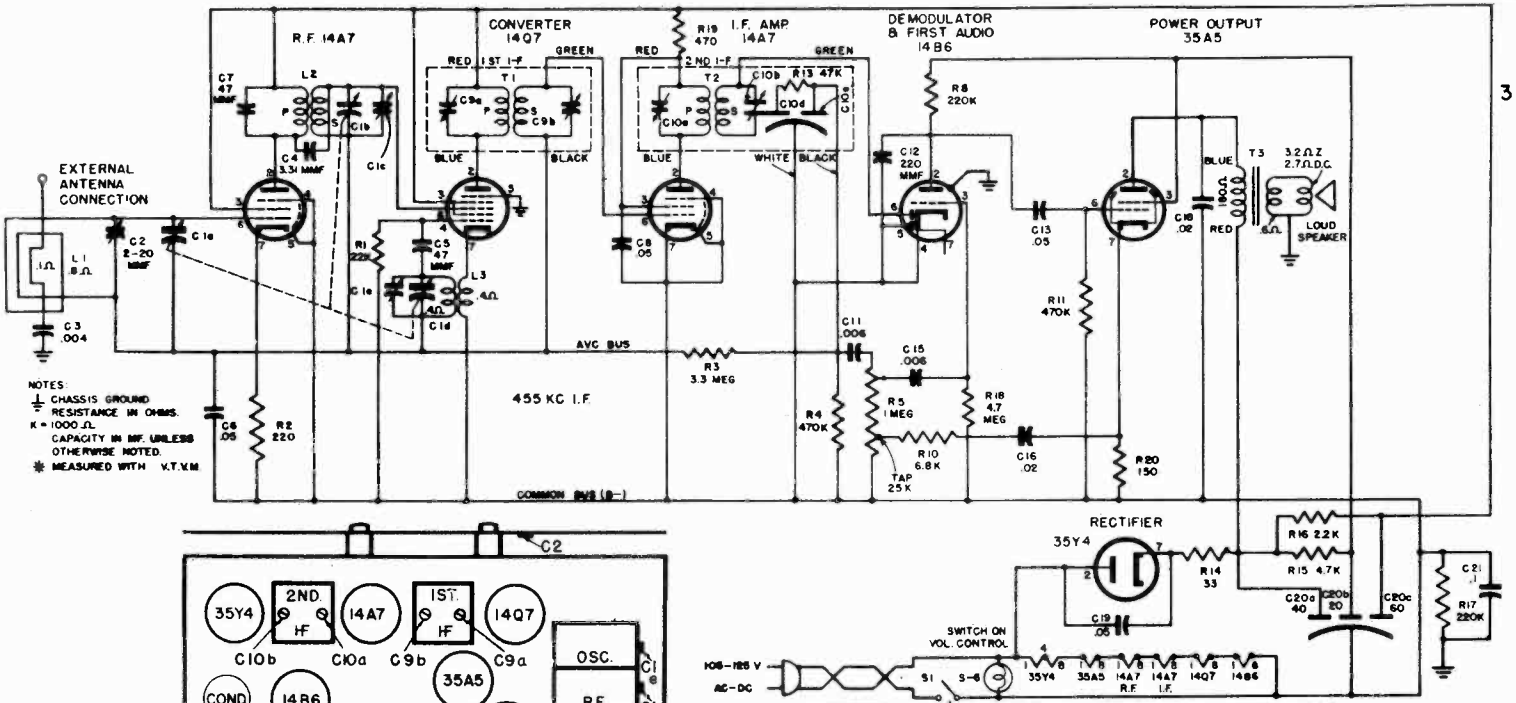
CONDITION OF MEASUREMENTS

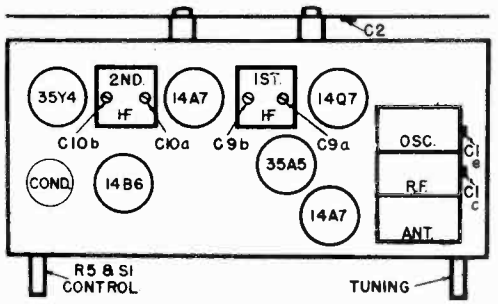
LINE VOLTAGE 117 V.A.C. ZERO SIGNAL INPUT VOL. CONT. MIN. SOCKET VOLTAGE / RESISTANCE TO COMMON BUS ±10% D.C. AT 20000 Ω/V. A.C. AT 1000 Ω/V.



DIAL STRINGING DIAGRAM







Alignment Procedure

Connect line cord plug to 117 volt AC power source. Set volume control at maximum and connect output meter across voice coil. Adjust dial pointer by turning tuning control fully counterclockwise and sliding dial pointer on dial cord until it is exactly 2-3/32" from left end of dial back plate. Make all adjustments in order given in table and for maximum output. Dial pointer position given in inches measured from left hand end of dial back plate. Keep input as low as possible at all times.

An isolating transformer should be used between the power supply and the receiver if any of the test equipment is AC operated. The use of isolating capacitors is not recommended as AC through the capacitor may introduce hum modulation, and if the capacitors should break down the test instruments will likely be damaged.

Circuit Aligned	Input Freq.	Dial Pointer Position	Adjustments
IF	*455 KC	Max. to right	C10B, C10A C9B, C9A
OSC.	**1550 KC	6-21/32"	Cle,
RF	**1550 KC **965 KC **580 KC	6-21/32 4-29/32 2-23/32	Cle, C2 Check Calib.

* Applied to Antenna input through .1 mfd. or less.
** Applied to antenna input through 50 mmf. or less.

TRANSFORMER RESISTANCE IN Ω

MFG. CODE	L2		T1		T2	
	P	S	P	S	P	S
294	58	5	27	27	24	24
403	63	3.5				
198			15	15	15	15
175			24	24		
125						

BENDIX RADIO DIV.

MODEL 646A

Power			
Voltage Rating, AC or DC	105 - 125	MAXIMUM POWER OUTPUT IN WATTS	1.2
Frequency - Cycles per second	50 - 60		
Power Consumption - Watts	37	LOUD SPEAKER - PM	
		Cone diameter - inches	6
TUNING RANGE - FREQUENCY IN KC	535 - 1725	Voice Coil Impedence (ohms at 400 cycles)	3.2
INTERMEDIATE FREQUENCY (KC)	455		

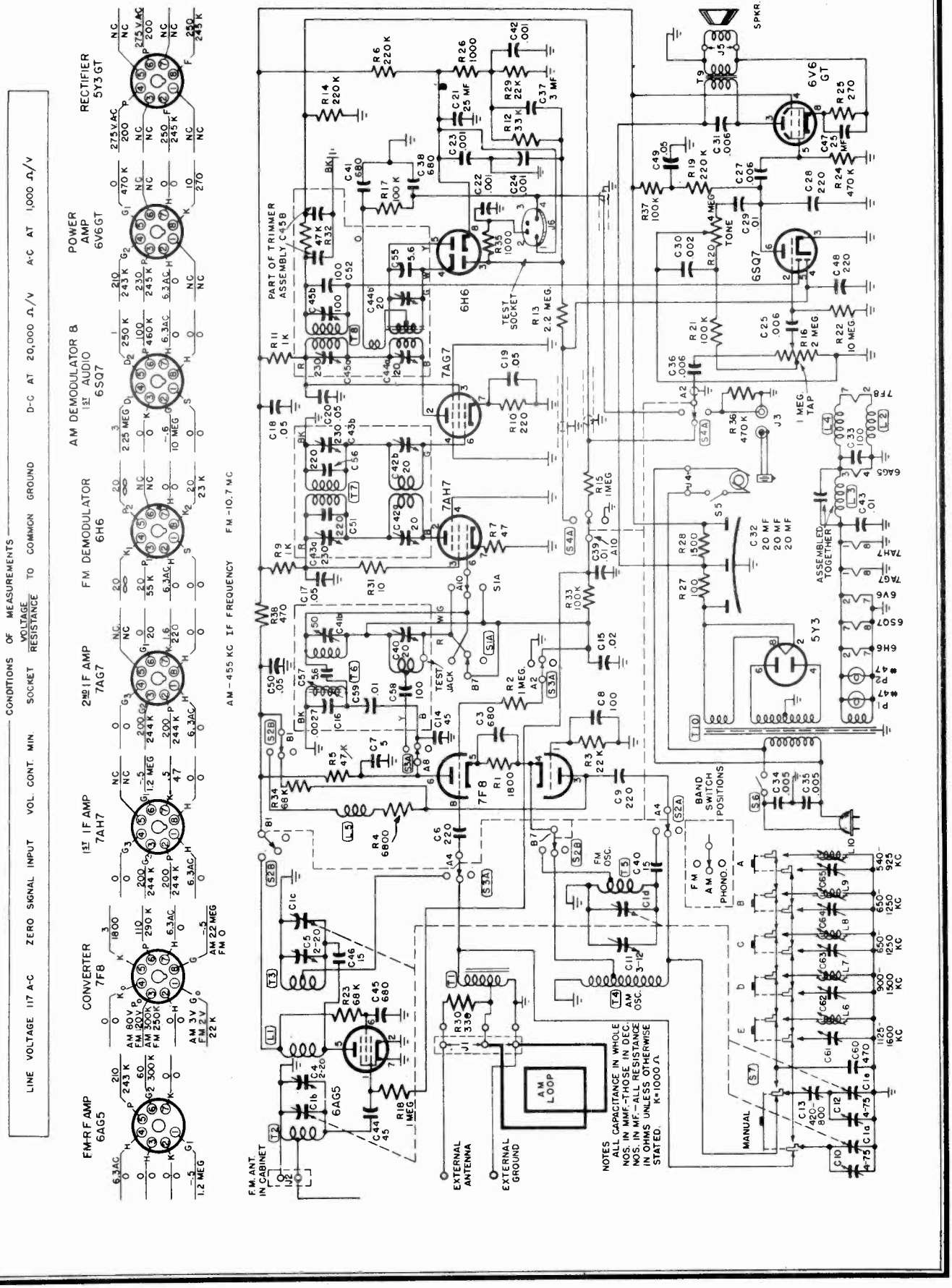
REPLACEMENT PARTS LIST

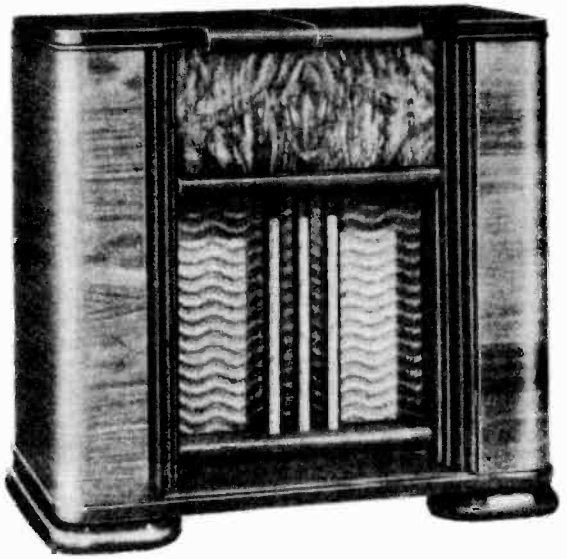
Stock No.	Description
	ELECTRICAL COMPONENTS
AL0C03*	ANTENNA - Loop
CC9A16	CAPACITOR - Ceramic 3.3 mmf. (C4)
CE3A00	CAPACITOR - Electrolytic (20-40-60 mfd.) 150V.D.C. (C20A, B, C)
CL2A01	CORD - A.C. Power Line
CM5A14	CAPACITOR - Mica 47 mmf. (C5,C7)
CM5A30	CAPACITOR - Mica 220 mmf. 500V (C12)
CP4T20	CAPACITOR - Paper .006 mfd. 400V (C11,C15)
CP4T34	CAPACITOR - Paper .02 mfd. 400V (C16,C18)
CP4T40	CAPACITOR - Paper .05 mfd. 400V (C6,C8,C13, C19)
CP4T51	CAPACITOR - Paper .1 mfd. 400V (C21)
CP6T16	CAPACITOR - Paper .004 mfd. 600V (C3)
CT2A01	TRIMMER - 2-20 mmfd. (C2)
CV0C00	CAPACITOR - Variable (C1a,1b,1d)
LO6B00	OSCILLATOR - Coil Ass'y. (L3)
RC1H16	RESISTOR -220Ω ±W Comp. (R2)
RC1H20	RESISTOR -470Ω ±W Comp. (R19)
RC1H32	RESISTOR - 4700Ω ±W Comp. (R15)
RC1H34	RESISTOR - 6800Ω ±W Comp. (R10)
RC1H40	RESISTOR - 22KΩ ±W Comp. (R1)
RC1H54	RESISTOR - 220KΩ ±W Comp. (R17, R8)
RC1H58	RESISTOR - 470KΩ ±W Comp. (R4, R11)
RC1H68	RESISTOR - 3.3 Meg. ±W Comp. (R3)
RC1H70	RESISTOR - 4.7 Meg. ±W Comp. (R18)
RC4G28	RESISTOR - 2200Ω 2W Comp. (R16)
RV4S02	POTENTIOMETER - with switch 1 Meg. (R5)
RW1B14	RESISTOR - 150Ω 1W.W.W. (R20)
RW2A06	RESISTOR - 33Ω 2W.W.W. (R14)
SO0D03	SOCKET - Dial Light
SO9S00	SOCKET - Locktal Tube
TI0C01	I. F. TRANSFORMER - 1st (T1)
TI0D01	I. F. TRANSFORMER - 2nd (T2)
TR6I00	R. F. TRANSFORMER ASS'Y. - Interstage (L2)
	MECHANICAL COMPONENTS
AD0C03	PLATE ASS'Y - Dial Back
BT1S00	TERMINAL STRIP - 1 Soldering Lug
BT2S00	TERMINAL STRIP - 2 Soldering Lugs
BT4S01	TERMINAL STRIP - 4 Soldering Lugs
CD0C03	CABLE - Dial (47 3/8")
GR0S00	GROMMET - Cap Shockmount
HB0A01	BRACKET - Loop
HC0C00	CLIP - Coil Mtg
HC0C03	CLAMP - Cable
HC0S00	CLIP - Spring
HC0T00	CLAMP - Tube Shield

Stock No.	Description
HN9P45	PALNUT - 3/8 X 32
HR0S01	RIVET - Shoulder
HS0C00	SPRING - Coil
HS0P01	SPACER - Antenna
HS6F00	SLEEVE - Spacer Flared
HS6S01	SCREW - Self-Tapping 6 X ¼
ID0M05	INDICATOR - Metal Dial
IT0C01	TUBE - Insulating (Cap)
MP0F00	PULLEY - Idler (Fiber)
MS0T04	SHAFT - Steel Tuning
PI0C00	PLATE - Insulator Mtg
PI0P00	PLATE - Insulating Power Cord
SM0T00	SHIELD - Metal Tubing
	SPEAKER AND COMPONENTS
SP6R00*	SPEAKER - 6 P.M. less transf
CS6R00	CONE & V.C. ASS'Y - Code 285
CS6R01	CONE & V.C. ASS'Y - Code 159
CS6R02	CONE & V.C. ASS'Y - Code 270
CS6R03	CONE & V.C. ASS'Y - Code 258
CS6R04	CONE & V.C. ASS'Y - Code 191
CS6R05	CONE & V.C. ASS'Y - Code 188
CS6R06	CONE & V.C. ASS'Y - Code 371
TA0003	TRANSFORMER - Output (T3)
	CABINET COMPONENTS
BZ0D04	BAFFLE - Board (wood)
DS0A04	DIAL - Glass (54-170)
GF0S04	GASKET - Felt (1/16 X 1/4 X 3-3/4)
GZ0C02	GRILLE - Cloth
HC0C04	CLAMP - Dial Light
HK0R00	RING - Knob Retainer Spring
HS6W25	SCREW - #6 X 5/8" F.H. (Statuary Br.)
HS6W26	SCREW - #6 X 1/2" F.H. (Statuary Br.)
HS8S50	SCREW - Self-Tapping #8 X1"
HS8W51	SCREW - Wood F.H. #8 (Red iridete)
HW8C00	WASHER - #8 Cup Type (D.K. oxidized)
HZ0G00	GLIDE - Metal N.P.
HZ0H01	HINGE - Table (D.K. oxidized)
HZ0S04	SUPPORT - Table Drop Leaf
JR2S01	RECEPTACLE - 2 contacts
KY0M00	KNOB - Control (Engl. Antique)
KY0M01	KNOB - Dummy (Engl. Antique)
PI0B00	PLATE - Asbestos Insulator
PI0B02	PLATE - Asbestos Insulator
WF0Z00	WASHER - Felt
XS0Z00	REFLECTOR - Strip Ass'y
ZW6A04*	CABINET - Mahogany

MODEL 847-B

BENDIX RADIO DIV.





MODEL 847-B

8 Tube Phono-radio Combination

SPECIFICATIONS

POWER
Voltage.....105-125 VAC
Frequency.....60 Cycles
Consumption.....100 Watts

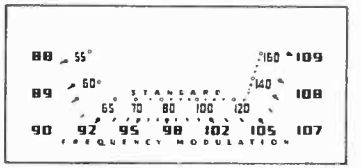
TUNING RANGE
AM.....540-1620 KC
FM.....88-108 MC

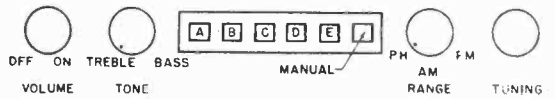
INTERMEDIATE FREQUENCY
AM.....455 KC
FM.....10.7 MC

POWER OUTPUT
Maximum.....4.2 Watts

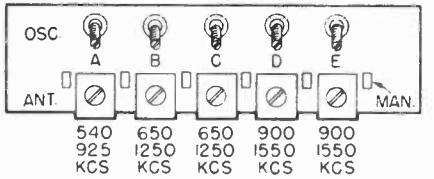
LOUDSPEAKER - PM.
Cone diameter.....10 inches
VC impedance at 400 cycle.....3.2 ohms

CABINET
33" high, 34-1/2" wide, 18-3/16" deep
Shipping Weight.....95 pounds



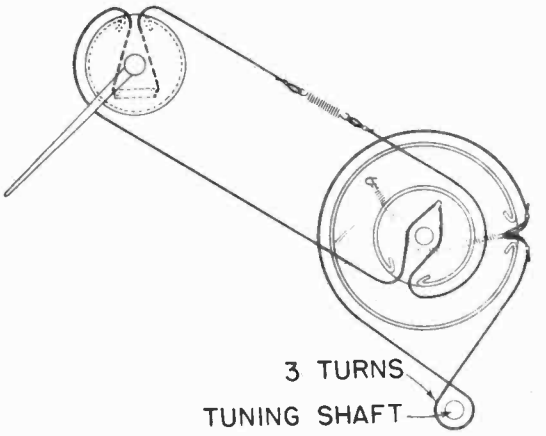


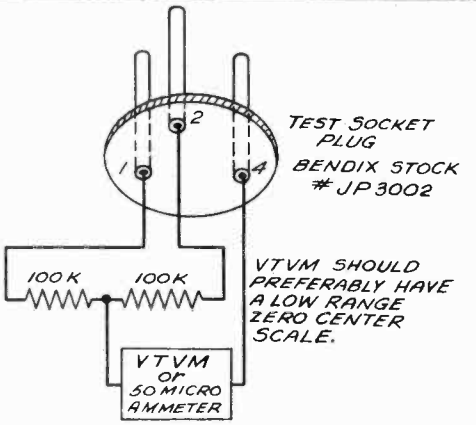
Controls--The various controls are shown in the above drawing. Controls as arranged from left to right are: Volume control, Tone control, Pushbuttons, Range control, and Tuning control. Tone Control rotates to the Bass position in a clockwise direction, to the Treble position in the counterclockwise direction. The range switch is in F.M. position at maximum CCW, broadcast position is mid-position, and phono position is maximum clockwise.



Pushbuttons--The adjustment position of the pushbutton assembly is shown below. Pushbutton operation is provided by rotating the band switch to the center position and depressing the desired Pushbutton. The extreme right hand pushbutton is depressed when MANUAL tuning operation is desired.

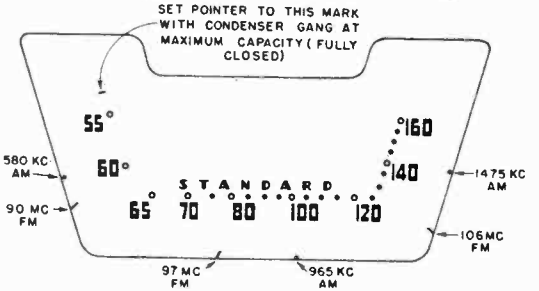
Access to the adjustment screws is obtained by pulling the Pushbuttons off the shaft vertically. The osc. and antenna adjustment screws, with the Pushbutton frequency ranges, is shown in the above diagram.



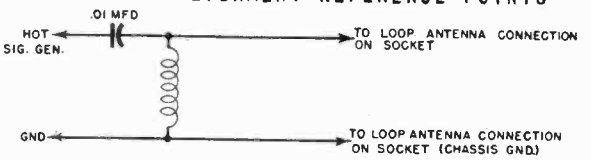


TEST CIRCUIT FOR DEMODULATOR TRANSFORMER ALIGNMENT

TEST CIRCUIT FOR FM ALIGNMENT

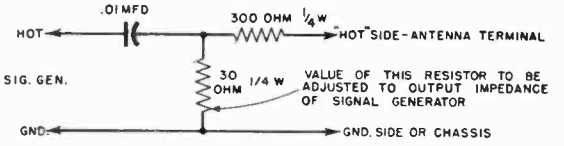


ALIGNMENT REFERENCE POINTS



A.M.

COIL FOR 847B IS 3.7 MICRO-HENRY



F.M. DUMMY ANTENNA

DUMMY ANTENNA FOR 847-B

FM ALIGNMENT

For reference marks see Fig. 3
Rotate gang condenser fully closed and set pointer to reference mark
Trimming screwdriver must be 100% insulated

A - CW METER METHOD

Generator output - pure RF or amplitude modulated
VTVM must not be AC-DC, or with GND. connected to AC line or through resistor

Gen. Freq.	Dummy Ant.	Gen. To	Band Sw. Position	Pointer Setting	Special Conditions	VTVM Connections	Adjust	Remarks
10.7 mc.	.01 mfd	Term. #3 on gang & chassis	FM-Full counter-clock-wise	-------	Short FM osc.term. #5 to chassis	Test socket pins #1 (+) & #2 (-) Low Scale	1st IF-C40 2nd IF-C42A C42B 3rd IF-C44A for max.out-put on VTVM	Realign several times to assure max. output Signal may be fed into "Test Jack" in 1st IF can for prel. align. of C44A, C42A & C42B.
10.7 mc.	"	"	"	------	"	"Center of jumper res-istors & test sock. Pin #4 - Fig. #2.	3rd IF-C44B To zero reading on VTVM	**Alternate step #1 (C44A for max. output) & step #2 (C44B for zero) several times to assure correct alignment
106 mc.	Std. FM Fig. #4	FM ant input term's.	"	106 mc. refer. mark	Remove short from osc. term. #5	Test socket pins #1 (+) & #2 (-) Low scale	***Osc.-C11 RF -C5 Ant -C4 for max.out-put on VTVM	"Rock" tuning control during alignment
97 mc.	"	"	"	Approx. 97 mc ref. mark	---------	"	----------	****Check Calibra-tion
90 mc.	"	"	"	Approx. 90 mc. refer. mark	---------	"	----------	****Check Calibra-tion

* See Fig. #2 "Test Circuit for FM Alignment".

** A VTVM with a zero center scale is very convenient for use in this alignment step. A50 microammeter may be used in place of the VTVM, but is not as accurate.

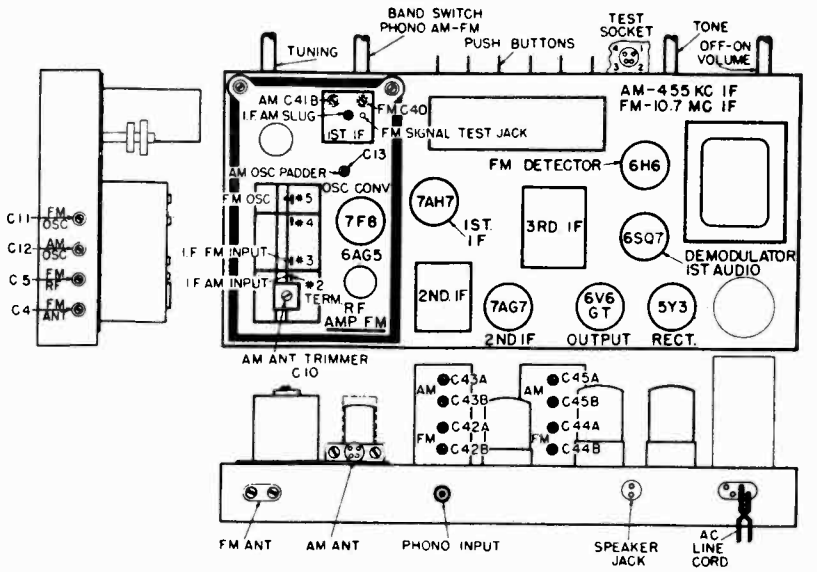
*** The oscillator circuit has been designed to operate on the high freq. side of the incoming signal. It is possible to adjust the trimmer (C11) at 106 MC such that the osc. is operating on the "image" or low freq. side of the signal. To check the osc. (C11) adjustment, set sig. gen. to 84.6 MC, freq. modulated, dial pointer at 106 MC. If signal is NOT heard, adjustment of C11 is correct, but if signal IS heard, osc. trimmer C11 has been incorrectly adjusted on the "image" frequency. Readjust C11 to other setting at 106 MC and recheck with gen. freq. at 84.6 MC. Signal MUST NOT be heard with pointer at 106 MC and sig. gen., freq. modulated, set at 84.6 MC.

**** If calibration is not within reasonable tolerance at these points, the osc. coil inductance must be adjusted. If dial pointer reading is on low freq. side, inductance is too low, and turns must be compressed slightly. If pointer reading is on high freq. side, osc. coil is too high and coil turns must be spread slightly.

To check and adjust inductance of ant. and RF coils, tune receiver to 90 MC signal and observe AVC reading. Insert iron core end of "tuning wand" into RF coil, at same time rocking tuning control to max. AVC. If reading increases as wand is inserted, RF coil inductance is too low and turns must be compressed slightly. If reading decreases, reverse wand and insert metal end into coil, again rocking tuning control to max. AVC. If reading decreases, (after iron core check), inductance is properly adjusted. If reading increases, inductance is too high and turns must be spread slightly.

Ant coil is checked and adjusted exactly like RF coil.

NOTE: THE LATTER OPERATIONS ARE VERY DELICATE AND DIFFICULT PROCEDURE AND MUST BE ATTEMPTED ONLY BY TECHNICIANS WITH CONSIDERABLE HIGH FREQUENCY EXPERIENCE.



CHASSIS TRIMMER LOCATION

HBOM17		Bracket, Tuning Shaft Bearing....	SS6P00		Switch, 6 Pushbutton SW-2.....
HBOM18		Bracket, Antenna Plug Mtg.....	TBOP00		Call Letter Tabs.....
HBOM19		Bracket, Shockmount.....	WP0B00	+	Windows, Pushbutton.....
HBOM20		Bracket, Terminal.....	WP0D00		window, Dial.....
HBOM21		Bracket, Bearing Pointer Support.	XS0C01		Strip, Copper .004 x 5/16 x 1-3/16.
HBOM22		Bracket, Variable Condenser.....	XS0C02		Strip, Copper .004 x 5/16 x 1-5/8..
HC0C00	+	Clip, Retainer.....	XS0Z01	+	Strip, Fishpaper.....
HC0C03	+	Clamp, Dial Cable.....	XS0Z02	+	Strip, Fishpaper.....
HC0C06	+	Clip, Coil.....	XS0Z09		Strip, Fishpaper.....
HC0S08	+	Clip, Binding Post Spring.....	ZL6G00		Lid, Console AM, FM.....
HC0S09	+	Clip, Retainer, Ring Knob.....	ZW8G00	*	Cabinet, Platt 0026 (Walnut).....
HC0S28		Clip, Washer "C" Blued Finish....			STANDARD HARDWARE
HK0R00	+	Clip, Retainer, Ring.....		+	Palnut (6-32).....
HP8T01		Pin, Threaded 6-32.....		+	Nut, Hexagon 4-40.....
HS0C00	+	Spring.....		+	Nut, Hexagon 8-32 Steel.....
HS0P16		Sleeve, Spacer.....		+	Nut #8-32 N.P.....
HS0P17		Spacer 3/8" OD 1/4" ID 1/2" Lg Steel.....		+	Nut 10-32 Hex (C.P.).....
				+	Lockwasher, #8.....
HS0S05		Spacer, Thread Shoulder.....		+	Screw, Self-Tapping #8 x 1/4" Lg..
HZ0G01	+	Glides, Metal.....		+	Screw #8 (1/2" Self Tapping).....
HZ0H00	+	Hinges, Statuary Brze (2 Lids)...		+	Screw, 5/16 #6-32.....
HZ0S06		Lid Support L.H. Stat. Brze.....		+	Screw, 1/2" #8-32.....
HZ0S07		Lid Support, RH Stat. Brze.....		+	Screw 1/2" #1/4-20.....
ID0W10		Indicator, Dial.....		+	Screw, 3/4" #4-40.....
JP1002	+	Plug 1 Contact, Male.....		+	Screw, 1" - 1/4-20.....
JP2004		Plug 2 Contact.....		+	Screw Binder Head 6-32 x 1/4.....
JP3000		Cable, Assy., Ant Loop.....	HR0P01	+	Rivet, Tubular .121 Dia. x 1/8" Lg
JP3002		Plug, 3 Contact.....	HR0P00	+	Rivet, Tubular .121 Dia. x 13/64"Lg
JR2006		Receptacle 2 Contact.....	HR0P06	+	Rivet, Tubular .121 Dia.x14/64"Lg
JR3000		Receptacle 3 Contact.....		+	Washer, Flat.....
KB0P01	+	Knob, Control Indexed Push On....	WF0F14	+	Washer, Insulating.....
KC0R06	+	Knob, Control, Brown.....		+	Washer, Flat.....
MA0T00		Adapter, Slug Adj. Screw 4-40....	HL6804	+	Lug, Soldering.....
MB0B02		Bushing, Tuning Shaft.....		+	Screw, #6 5/8" Lg Statuary Brze..
MS0T06		Shaft, Tuning.....		+	Screw, #6 Rd.Hd.Steel Bright Finish
NP0M01	+	Needle, Reproducing.....		+	Lockwasher #4.....
PF0B00	+	Pads, Felt Bumper.....		+	Lockwasher #6.....
SM0B00		Shield Base Min. Tube.....		+	Washer, Lock.....
SM0T03		Shield Miniature Tube.....		+	Washer, Lock.....
SO0D04	+	Socket, Dial Light.....		+	Palnut 3/8 x 32.....
SO0D05	+	Socket, Dial Light.....		+	Screws, Speaker.....
SO7M05		Socket, Miniature Tube Zip in Type		+	Teenuts, Chassis Board.....
SO8L01	+	Socket, Moulded Locktal.....		+	Teenuts, Motor Board.....
SO8S01		Socket, Octal.....		+	Lockwasher.....
SR3G00		Switch, Rotary 3 Position 4 Wafer..			

FM ALIGNMENT

B - Visual Method.

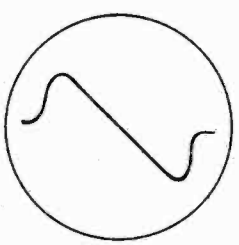
Gen. Freq.	Gen. Mod.	Dummy Ant.	Generator to	Band SW. Position	Special Conditions	Dial Setting	VTVM Conn	Oscillo-scope	Adjust	Remarks
10.7 MC	Pure RF or Amplitude	.05 mfd	High side to Term. #3 Gang Cond. Low side to chassis	FM-Max. CCW.	Short Osc. Stator-Term. #5 to Chassis Gnd.	-------	Test Socket Pins #1 (+) & #2 (-) Low Scale	No conn.	1st IF C40 2nd IF C42A, C42B 3rd IF C44A	Adjust for max-imum output on low range of VTVM - Realign each Cond. several times to assure max. out-put. Signal may be fed into "test jack" in 1st IF can for Prelim. Alignment of C44A, C42A & C42B.
Approx. 10.7 MC Adjust until Ratio Detector curve is cen-tered on Horiz Scope Sweep Line	Freq. Mod. 60 Cy-Sweep width max. possible (should be 200 KC Min)	"	"	"	"	-------	No con-nection	Connect vert. in-put to Test Socket Pins #4 & Chassis Gnd.	3rd IF C44B	*Adjust for max. symmetrical "S" curve similar to Fig. 5. Alternate adjs. of C44A & C44B to obtain Max desired curve.
106 MC	"	Std. FM Fig. 4	FM Ant. Terms's thru dummy	"	Remove short from Term #5.	106 MC ref. mark	No con-nection	"	FM Osc. C11	**Adjust until "S" curve is centered on Horiz. Sweep scope line.
106 MC	"	"	"	"	----------	"	"	"	FM RF Trimmer C5. FM Ant. Trimmer C-4.	Adj. for Max. height of "S" pattern-"rock" tuning control at same time to keep "S" curve centered on Scope.
97 MC	"	"	"	"	---------	Approx. 97 MC ref. mark	"	"	------	***Check Cal-ibration
90 MC	"	"	"	"	---------	Approx. 90 MC ref. mark	"	"	------	***Check Cal-ibration

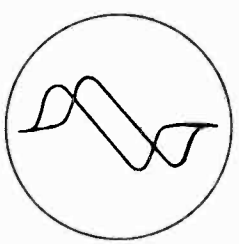
* Some phase shift between the Signal Generator and the scope horizontal sweep may be encountered, resulting in a double trace pattern, shown in Fig. 6. In some Oscilloscopes, provision is made for connecting this phase shift directly in the oscilloscope circuit. If so, rotate the "phase shift" control until the curves coincide as in Fig. 5. If no provision is made in the scope, the connection might be accomplished by inserting a condenser of suitable value in series with the signal generator "Synchronized Sweep Voltage" output. The condenser value will depend upon the amount of phase shift and the horizontal input impedance of the scope - approximate condenser range .01 to .1 mfd. See Fig. 7 for instrument connection diagram.

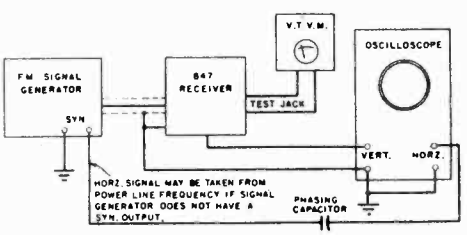
** See *** Page 5.

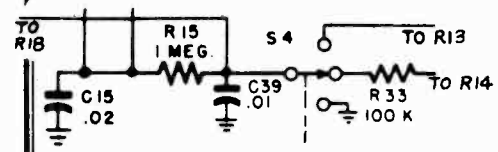
*** If calibration is not within tolerance at these points, the inductance of local FM oscillator coil, RF and antenna coils must be adjusted. See **** Page 5.

NOTE: The latter operation is a very delicate and difficult procedure, and must be attempted only by technicians of considerable high frequency experience.

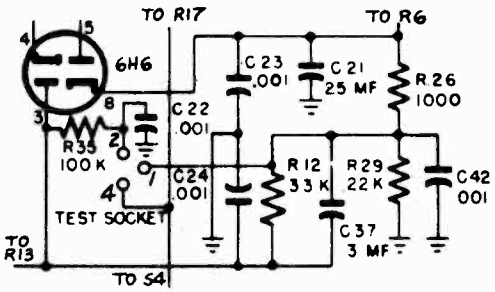




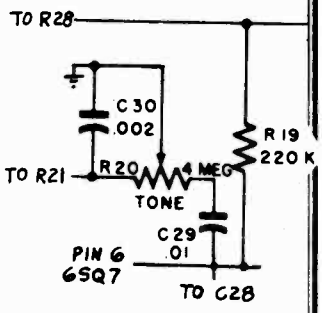




Values of R15 & R33 Changed

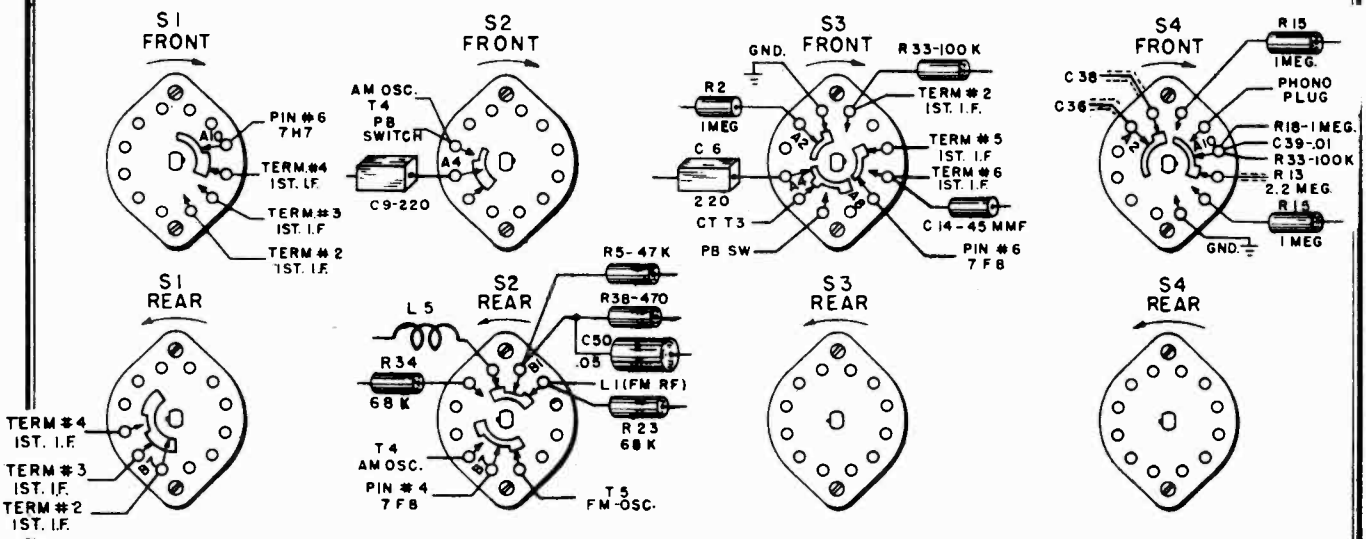


Test Socket Connection Changed



R37 Not Used

CIRCUITS USED ON EARLY MODELS



BAND SWITCH SECTIONS

BROADCAST BAND ALIGNMENT

See Fig. 1 for trimmer locations.
Rotate gang condenser until full closed. Set pointer to reference mark. See Fig. 3.
Connect output meter across voice coil on lowest scale.
Signal Generator amplitude modulated.
Rotate volume control full ON. Keep generator output low as practical.

Apply	Thru	To	Band Switch Position	Dial Setting	Adjust
455 KC	.05 mfd.	Term. #2 gang cond. & chassis	AM-mid-position	Gang cond. full open	IF slug, C41B, C43A, C43B, C45A, C45B for max output
580 KC	Bendix dummy loop AD0L00	Dummy loop plugged in AM ant. socket on rear of chassis	"	580 KC ref. mark	C13 for max. output
1475 KC	"	"	"	1475 KC ref. mark	*C12, C10 for max. output
580 KC	"	"	"	Approx. 580 KC ref. mark	C13 for max. output "Rock" gang during adjustment
965 KC	"	"	"	Approx. 965 KC ref. mark	**Check Calibration
580 KC	"	"	"	Approx. 580 KC ref. mark	**Check Calibration

* Repeat 1475 KC and following 580 KC adjustment in rotation several times until receiver is properly aligned.

** If calibration does not check within 10 KC, "knife" oscillator and antenna gang sections. The latter operation must be attempted by experienced technicians only.

Stock Number	Description
AL0Z08*	Assy. Antenna FM Loop.....
AR0B00	Assy. R.F. Osc. Chassis Assy....
CC8A24	Capacitor, Ceramic 15 mmf 500V (C46).....
CC8A30	Capacitor, Ceramic 45 mmf 500V (C14, C44).....
CC0F18	Capacitor, Ceramic 4.7 mmf 500V (C7).....
CC0F19	Capacitor, Ceramic 5.6 mmf 500V (C55, C57).....
CE3A01 +	Capacitor, Electrolytic 3 x 20 mfd 450V (C32).....
CE1T00	Capacitor, Electrolytic 25 mmf 25 V.D.C. (C21, C47).....
CE1T01	Capacitor, Electrolytic 3 mfd 50V (C37).....
CL2A02 +	Cord, A C Line Brown.....
CM4A42	Capacitor, Mica 680 mmf 300V (C38, C41, C45).....
CM5A22 +	Capacitor, Mica 100 mmf 500V (C33).....
CM5A30 +	Capacitor, Mica 220 mmf 500 V.D.C. (C28, C48).....
CM6A22	Capacitor, Mica 100 mmf 500V (C52).....
CM7A30	Capacitor, Mica 220 mmf 500V (C51, C56).....
CM4L42	Capacitor, Mica (Low Loss) 680 mmf 300V (C3).....
CM5L03	Capacitor, Mica (Low Loss) 15 mmf 500V (C40).....
CM5L22	Capacitor, Mica (Low Loss) 100 mmf 500V (C8).....
CM5L30	Capacitor, Mica (Low Loss) 220 mmf 500V (C6, C9).....
CM8S50 +	Capacitor, Mica 470 mmf 500V. D.C. (C60).....
CP2M10	Capacitor, Paper .001 mfd. 200V (C22, C23, C24, C42).....
CP4M34	Capacitor, Paper .02 mfd 400V (C15).....
CP4M51	Capacitor, Paper .1 mfd 400V (C59).....
CP4T31 +	Capacitor, Tubular Paper .01 mf 400V 10% (C29).....
CP4T40 +	Capacitor, Tubular Paper .05 mf 400V (C17, 18, 19,20, 49, 50)
CP6T12 +	Capacitor, Tubular Paper .002 m 600V (C30).....
CP6T18 +	Capacitor, Paper .005 mfd 600V D.C. (C34, C35).....
CP6T20 +	Capacitor, Paper .006 mfd 600V (C25, 27, 31, 36).....
CP6T31 +	Capacitor, Paper .01 mfd 600V (C39, 43).....
CT1A03 +	Capacitor, Trimmer 12 - 160 mmf (C61, 62).....
CT1A04 +	Capacitor, Trimmer 45 - 370 mmf (C63, 64).....
CT1A05 +	Capacitor, Trimmer 120 - 580 mmf (C65).....
CT1A09	Capacitor, Trimmer 3 - 13 mmf (C11).....
CT1A10	Capacitor, Trimmer 4 - 75 mmf (C10).....
CT1A11	Capacitor, Trimmer 475-1000 mmf (C13).....
CT1C00	Capacitor, Trimmer 2 - 20 mmf (Ceramic Insulator) (C4, 5)...
CT1C01	Capacitor, Trimmer 4 - 75 mmf (Ceramic Insulator) (C12)....
CV0D00	Capacitor, Variable (2 Section AM - 3 Section FM) (C1).....
LF0A00	Coil RF Choke (T11, T12).....
LF0A01	Coil, Choke R.F. (L1, L5).....
LF0C00	Coil, Filament Choke Assy (L3).
LO8B00	Coil, Oscillator A.M. (T-4)....
LO8F00	Coil, Oscillator F.M. (T-5)....
LT0A03	Coil, Pushbutton Osc. Assy. Col Code Yellow (L-10).....
LT0A04	Coil, Pushbutton, Osc. Assy. Co Code Green (L8, L9).....
LT0805	Coil, Pushbutton Osc. Assy. Co Code Black (L6, L7).....
RC4D26	Resistor. Comp. 1500 Ohm, 2W (R-28).....
RC2G16	Resistor, Comp. 220 Ohms 1/2W....
RC2G27	Resistor, Comp. 1800 Ohms 1/2W (R1).....
RC1H18	Resistor, Comp. 330 Ohms 1/4W (R30).....
RC1H20 +	Resistor, Comp. 470 Ohms 1/4W (R38).....
RC1H24 +	Resistor, Comp. 1000 Ohms 1/4W (R35).....
RC1H40 +	Resistor, Comp. 22,000 Ohms 1/4W (R3, R29).....
RC1H42 +	Resistor, Comp. 33,000 Ohms 1/4W (R12).....
RC1H44	Resistor, Comp. 47,000 Ohms 1/4W (R32).....
RC1H51 +	Resistor, Comp. 100,000 Ohms 1/4W (R17, 21, 33, 37).....
RC1H54 +	Resistor, Comp. 220,000 Ohms 1/4W (R6, 14, 19).....
RC1H58 +	Resistor, Comp. 470,000 Ohms 1/4W (R24, 36).....
RC1H62 +	Resistor, Comp. 1 Meg 1/4W (R2, 15, 18).....
RC1H66 +	Resistor, Comp. 2.2 Meg. 1/4W (R13).....
RC1H74 +	Resistor, Comp. 10 Meg. 1/4W (R22).....
RC2R00	Resistor, Comp. 10 Ohms 1/2W (R31).....
RC2H08	Resistor, Comp.47 Ohms 1/2W (R7).
RC2H16	Resistor, Comp. 220 Ohms 1/2W (R10).....
RC2H24	Resistor, Comp. 1,000 Ohms 1/2W (R9, 11, 26).....
RC2H34	Resistor, Comp. 6,800 Ohms 1/2W (R4).....
RC2H44	Resistor, Comp. 47,000 Ohms 1/2W (R5).....
RC2H46	Resistor, Comp. 68,000 Ohms 1/2W (R23, 34).....
RV4C00	Potentiometer, Tone 4 Meg. (R20)..
RV4S10	Potentiometer, 2 Meg. (R16).....
RW2A12	Resistor, Wirewound 100 Ohms 2W (R27).....
RW1B34	Resistor, Wirewound 270 Ohms 1W (R25).....
SP0R00*	Speaker, PM 10" Round.....
ST0100	Core, Iron.....
TA0007	Transformer, Audio Output (T9)....
TI0C08	Transformer, I.F. 1st T6.....
TI0D08	Transformer, I.F. 3rd T8.....
TI0100	Transformer, I.F. 2nd T7.....
TP0J00	Transformer, Power T10.....
TR8B00	Transformer, Ant. Coil T1.....
TR8F00	Transformer, Ant. R.F. (FM).....
TR8P00	Transformer Interstage FM Mixer Coil T3.....
#44 +	Lamp, Pilot.....
	MECHANICAL COMPONENTS
AB0C01	Assy. Pushbutton Switch.....
AD0E00	Assy. Dial Back Plate.....
AS0P00	Assy. Shaft & Pulley.....
BP0B00	Pushbutton.....
BT1S00 +	Strip Terminal (1 Terminal).....
BT1S01 +	Strip Terminal.....
BT1S03	Strip Terminal (1) Mtg. 1 Lug.....
BT2S00 +	Strip Terminal.....
BT3S00 +	Strip Terminal.....
BZ0D08	Baffle & Cloth Assy.....
CD0C09	Dial, Cord (Indicator).....
CD0C10	Dial, Cord (Tuning).....
DS0A19	Dial, Scale (88-109 MC) Paper.....
DS0A20	Dial, Standard Broadcast.....
DZ0F08	Decal, Nameplate.....
DZ0F09	Decal, Volume.....
DZ0F10	Decal, Tone.....
DZ0F11	Decal, Range.....
DZ0F12	Decal, Tuning.....
EB0M02	Escutcheon 6 Pushbutton.....
ED0M01	Escutcheon, Dial.....
GR0100	Grommet, Rubber Insulating.....
GR0101	Grommet, (Color Code Black).....
GR0S09	Grommet, Shockmount.....
GR0S10	Grommet, Rubber Shockmount.....
HB0M15	Bracket, Pointer Bearing Mtg.....
HB0M16	Bracket, Pushbutton Mtg.....

MODELS N5-RD-250,Chas.9022N;
N5-RD-251,Chas.9022H

BUTLER BROS.

ALIGNMENT PROCEDURE

1. Remove chassis and loop from cabinet. Solder approximately 8" of insulated wire to any B— connection (see voltage chart on opposite side for convenient B— location). Then reinstall chassis and loop in cabinet. The B— lead should extend from under the chassis at the back.
2. Connect ground lead of signal generator to B— lead.
3. Connect output meter across the speaker voice coil (terminals at back of speaker.)
4. Turn the tuning control knob clockwise as far as it will go (tuner mechanism is now in maximum open position with tuning slugs almost completely withdrawn from coils). Dial pointer should then point to 1600 Kc mark on scale. If it is set incorrectly, release pointer clip on dial cord and reposition pointer.
5. Set volume control at maximum volume position and use a weak signal from the signal generator.

DUMMY ANT. IN SERIES WITH SIGNAL GENERATOR	CONNECT HIGH SIDE OF GENERATOR TO	SIGNAL GENERATOR FREQUENCY	RECEIVER DIAL SETTING	TRIMMER NUMBER	TRIMMER DESCRIPTION	TYPE OF ADJUSTMENT
Set tuner mechanism to maximum open position by turning the tuning control knob clockwise as far as it will go (Dial pointer at 1600 Kc). Then check whether the positions of the tuning slugs correspond to the positions shown in Fig. 1 below. If settings are incorrect, rotate the individual core and threaded stem until desired position is reached. Note that threaded stem is prevented from moving by a dab of speaker cement at top.						
.1 MFD. Condenser	Ungrounded terminal of trimmer No. 6 (see Fig. 2 below for location of trimmer.)	455 KC	Any point where it does not affect the signal.	1-2	2nd I.F.	Adjust for maximum output. Then repeat adjustment.
				3-4	1st I.F.	
300 MMFD. Mica Condenser	External Antenna Clip on Loop Frame	1600 KC	1600 KC	5	Broadcast Oscillator (Shunt)	Adjust for maximum output.
300 MMFD. Mica Condenser	External Antenna Clip on Loop Frame	1600 KC	Tune to 1600 KC generator signal	6	Broadcast R.F.	Adjust for maximum output.
				7	Broadcast Antenna	Adjust for maximum output.
300 MMFD. Mica Condenser	External Antenna Clip on Loop Frame	1400 KC	Tune to 1400 KC generator signal	Ant. coil tuning slug		Adjust position of slug for maximum output.
				R.F. coil tuning slug		Adjust position of slug for maximum output.
300 MMFD. Mica Condenser	External Antenna Clip on Loop Frame	1600 KC	Tune to 1600 KC generator signal	6	Broadcast R.F.	Recheck adjustment for maximum output.
				7	Broadcast Antenna	Recheck adjustment for maximum output.
Apply a coating of speaker cement at top of each tuning core stem to prevent movement.						

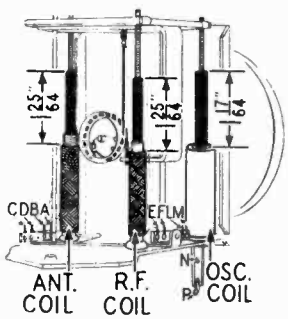


FIG. 1

SLUG TUNER ASSEMBLY
(Drive Parts)

117057 Cord (8")
114955 Clip on cord
504012 Spring

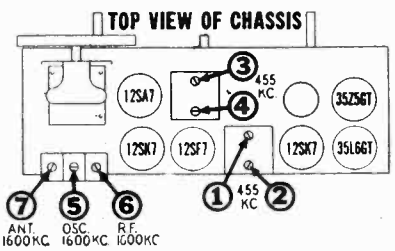


FIG. 2

AUDIO OSCILLATION

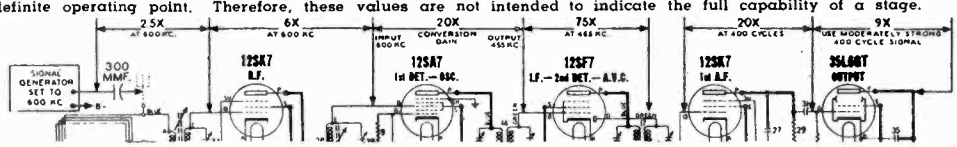
The audio system of this receiver utilizes a two stage type of inverse feed-back arrangement and, should it ever be necessary to replace the speaker or output transformer, it is important to maintain a definite phase relationship in the feed-back circuit. If the connections to the output transformer are reversed or if the feed-back connection is made to the wrong side of the output transformer secondary, the system will become regenerative instead of degenerative. Under those conditions audio oscillation may result. If that occurs, oscillation may be prevented by reversing the connections to the secondary of the output transformer.

APPROXIMATE STAGE GAIN DATA

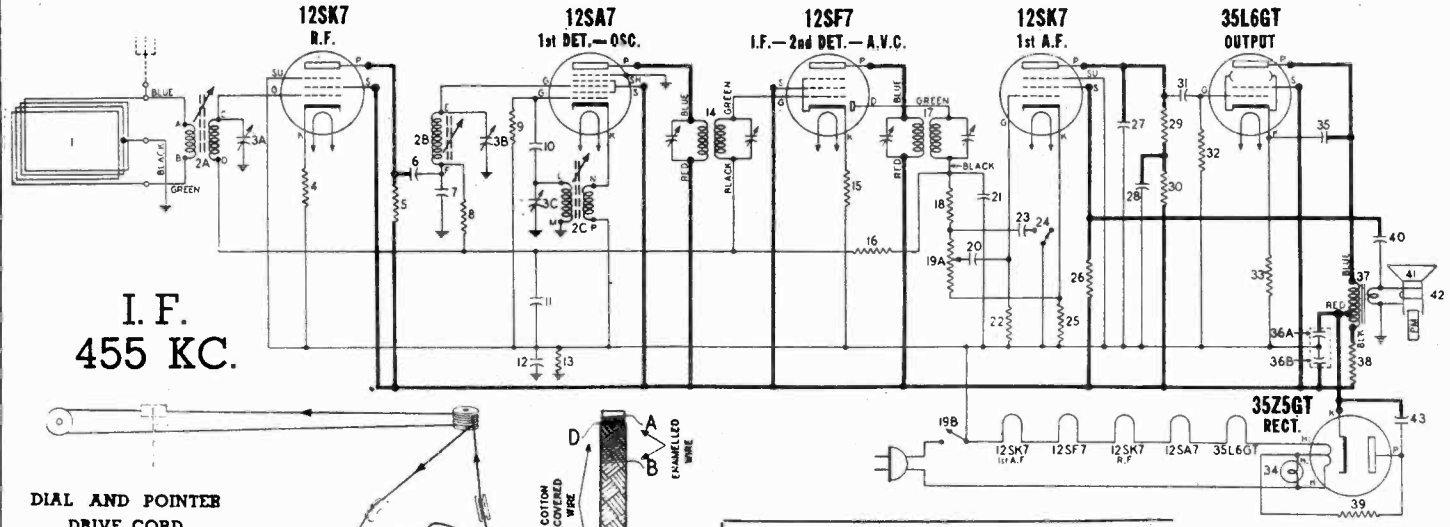
Be sure R.F. and I.F. stages are accurately aligned before measuring gain. R.F. gains can be measured with a "channel" type instrument containing a tuned and calibrated R.F. amplifier. A vacuum tube voltmeter may be used for audio gain measurements. Observe following precautions:

1. For all gain measurements connect signal generator as shown. Use 600 KC. signal with 400 cycle modulation (use nearby frequency if local station interferes.)
2. For R.F. and I.F. measurements connect negative terminal of a 3 volt battery (two 1½ volt cells in series) to A.V.C. lead and positive terminal to B—. This provides a definite operating point. IMPORTANT: Disconnect battery when measuring audio stage gains.
3. Be sure radio is carefully tuned to generator signal (use weak signal for sharp tuning.)
4. When using a "channel" type instrument carefully tune it for maximum output at desired frequency before making measurements.

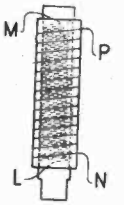
The R.F. and I.F. stage gains shown below are less than under normal operating conditions due to the use of 3 volts fixed bias in order to establish a definite operating point. Therefore, these values are not intended to indicate the full capability of a stage.



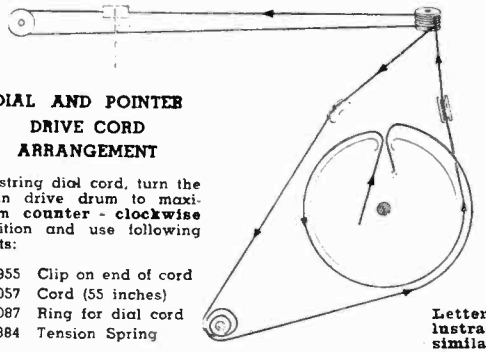
Differences in tube characteristics, tolerance of parts, adjustment of tuned circuits, and variations of line voltage will influence stage gain. Accuracy of measurements is dependent upon careful tuning of receiver to generator signal and experience in using your test equipment. These factors may create considerable variation in gain measurements.



R.F. COIL 504214



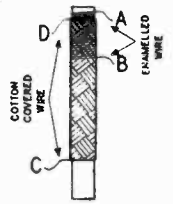
OSCILLATOR COIL 504212



DIAL AND POINTER DRIVE CORD ARRANGEMENT

To string dial cord, turn the main drive drum to maximum **counter - clockwise** position and use following parts:

114955	Clip on end of cord
117057	Cord (55 inches)
119087	Ring for dial cord
161384	Tension Spring



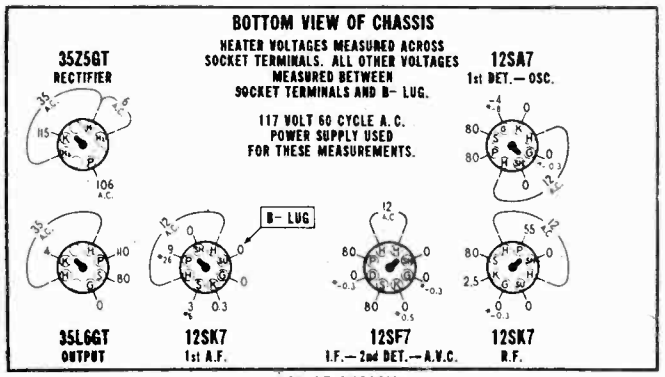
ANTENNA COUPLING COIL 504210

Lettered terminals in illustrations correspond to similarly lettered terminals on the circuit diagram.

SOCKET VOLTAGES

Measured with voltmeter having sensitivity of 1000 ohms per volt except where indicated by (*).

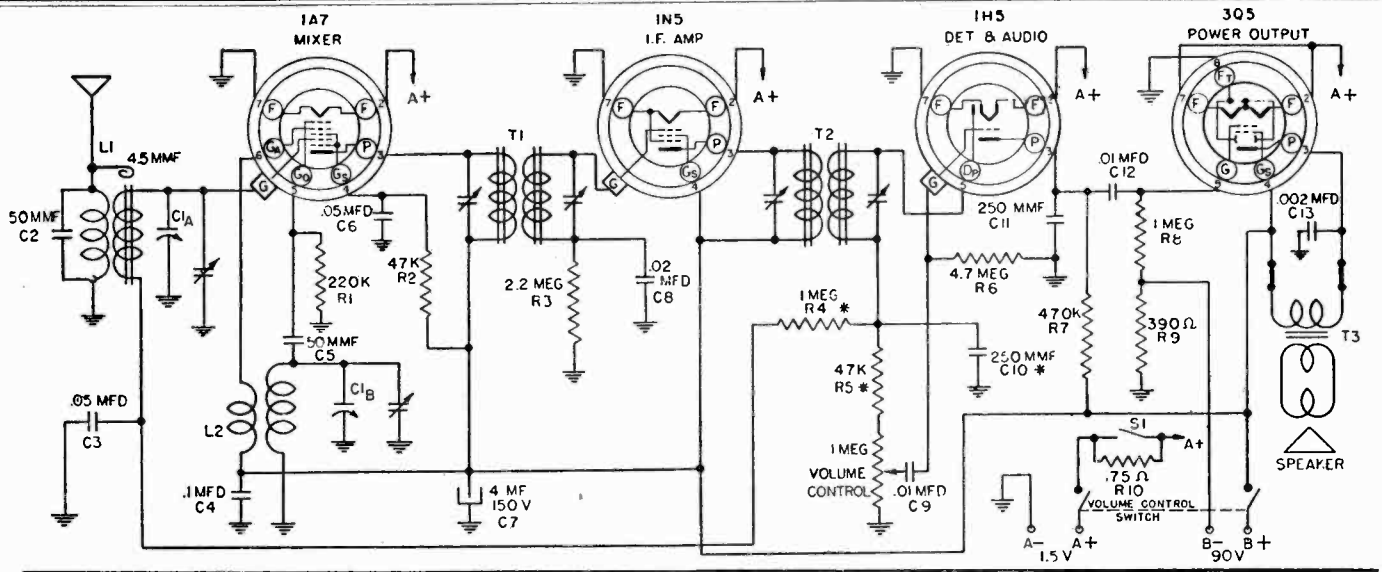
VOLUME ON FULL WITH NO SIGNAL — DIAL TUNED TO 540 KC.



REAR OF CHASSIS

—Measured with vacuum tube voltmeter

DIAGRAM NO.	PART NO.	DESCRIPTION
		CONDENSERS
3-A, B, C	504086	Condenser trimmer assembly A 10 to 160 Mmfd. B 20 to 270 Mmfd. C —20 to 270 Mmfd.
6	502271	Condenser—mica 260 Mmfd. 500 volt
7	502165	Condenser—mica 1,000 Mmfd. 500 volt
10	502159	Condenser—mica 50 Mmfd. 500 volt
11	502155	Condenser—.1 Mfd. 200 volt
12	502158	Condenser—.2 Mfd. 400 volt
20	502453	Condenser—.002 Mfd. 400 volt
21	5C2160	Condenser—mica 110 Mmfd. 500 volt
23	502470	Condenser—.0008 Mfd. 400 volt
27	502160	Condenser—mica 110 Mmfd. 500 volt
28	502153	Condenser—.05 Mfd. 200 volt
31	502156	Condenser—.004 Mfd. 400 volt
35	502151	Condenser—.01 Mfd. 400 volt
36-A, B	500256	Condenser—electrolytic A—40 Mfd. 150 volt B—20 Mfd. 150 volt
40	502152	Condenser—.02 Mfd. 400 volt
43	502157	Condenser—.05 Mfd. 400 volt
		RESISTORS
4	502140	Resistor—carbon 390 ohms ¼ watt
5	502291	Resistor—carbon 4700 ohms ¼ watt
8	502134	Resistor—carbon 470,000 ohms ¼ watt
9	502130	Resistor—carbon 22,000 ohms ¼ watt
13	502133	Resistor—carbon 220,000 ohms ¼ watt
15	502264	Resistor—carbon 47 ohms ¼ watt
16	502269	Resistor—carbon 3.3 Meg. ¼ watt
18	502131	Resistor—carbon 47,000 ohms ¼ watt
19-A, B	502145	Volume control 500,000 ohms (with switch)
22	502136	Resistor—carbon 10 Meg. ¼ watt
25	502128	Resistor—carbon 2200 ohms ¼ watt
26	502135	Resistor—carbon 2.2 Meg. ¼ watt
29, 30	502133	Resistor—carbon 220,000 ohms ¼ watt
32	502134	Resistor—carbon 470,000 ohms ¼ watt
33	502138	Resistor—carbon 130 ohms ¼ watt
38	502469	Resistor—carbon 1500 ohms 1 watt
39	502574	Resistor—carbon 33 ohms ½ watt
		COIL & TRANSFORMERS
1	502246	Loop antenna
2-A, B, C	504096	Tuning unit; complete assembly
2-A	504210	Coil—antenna (less slug)
2-B	504214	Coil—R.F. (less slug)
2-C	504212	Coil—oscillator (less slug)
	504211	Slug core for Ant. coil (yellow end)
	504213	Slug core for Osc. coil (white end)
	504215	Slug core for R.F. coil (purple end)
14	502102	Transformer—1st I.F.
17	502103	Transformer—2nd I.F.
37	502213	Transformer—output (for R-502998 spkr.)
	502904	Transformer—output (for A-502998 spkr.)
	504244	Transformer—output (for W-502998 spkr.)
		OTHER ELECTRICAL PARTS
24	500546	Switch—tone control
34	502473	Lamp—dial (Mazda 47) 6-8 V. 150 Ma.
41	502214	Cone & voice coil for R-502998 spkr.
	502903	Cone & voice coil for A-502998 spkr.
42	504245	Cone & voice coil for W-502998 spkr.
	502998	Speaker—P.M. dynamic (5 inch)
		MISCELLANEOUS PARTS
	502185	Back for cabinet
	116467	Base for mtg. electrolytic condenser
	502556	Cabinet—ivory (Model 9022-H)
	502557	Cabinet—mahogany (Model 9022-N)
	500261	Clamp—dial scale mtg.
	500497	Clip—retainer for cabinet back
	114955	Clip—retainer on end of dial cord
	116563	Connector—for antenna leads
	117057	Cord—dial drive (55 in. required)
	500324	Cover—cardboard, for elect. cond.
	504145	Dial scale—glass
	501186	Grounding plate (under I.F. trans. can)
	502553	Knob—ivory (Model 9022-H)
	502551	Knob—mahogany (Model 9022-N)
	502367	Pointer
	81145	Retaining ring for tuning shaft
	85078	Rubber grommet; Ant. & R.F. coil mtg.
	504045	Rubber grommet; Osc. coil mtg.
	119087	Ring for dial cord
	17064	Screw—No. 4 x 7/32
	114628	Screw—No. 8 x ½ chassis mtg.
	502173	Shaft—tuning control
	116690	Socket—octal base
	160392	Socket—octal (rectifier)
	500499	Socket—dial lamp (with leads)
	504012	Spring for tuning slug drive cord
	161384	Spring—dial cord tension
	111456	Washer—spring washer for tuning shaft



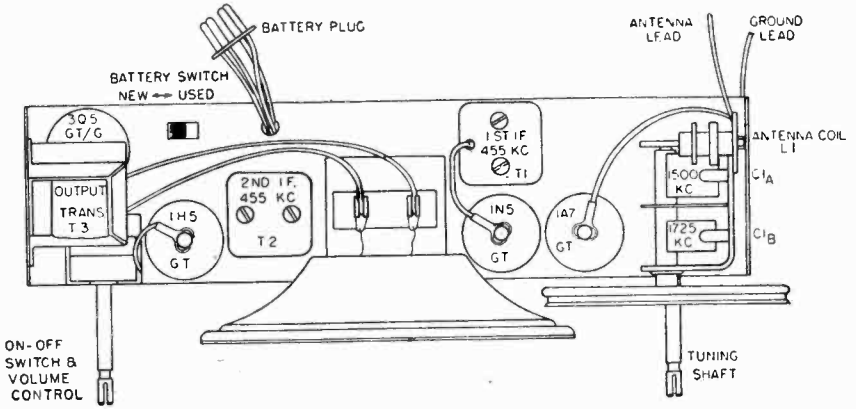
Code	Part No.	DESCRIPTION	Code	Part No.	DESCRIPTION	Code	Part No.	DESCRIPTION
C1A-C1B	B19-185	Variable Condenser	R3	A60-684	2.2 Megohm ½ watt Carbon Resistor	T2	B10-417	2nd I.F. Transformer
C2		50 MMFD Mica Condenser (Part of L-1)	R4		1 Megohm ½ watt Carbon Resistor (Part of T-2)	T3	A80-226	Speaker Output Transformer
C3-C6	A16-152	.05 MFD. 200 V Tubular Condenser	R5		47 K Ohm ½ watt Carbon Resistor (Part of T-2)		B79-348	Speaker
C4	A16-157	.1 MFD 200 V Tubular Condenser	R6	A60-669	4.7 Megohm ½ watt Carbon Resistor		B79-345	Alternate Speaker
C5	A15-175	50 MMFD Mica Condenser	R7	A60-662	470 K Ohm ½ watt Carbon Resistor		B67-487	Dial Scale
C8	A16-150	.02 MFD 400 V Tubular Condenser	R8	A60-668	1 Megohm ½ watt Carbon Resistor		A58-42	Dial Pointer
C7	A18-273	4 MFD 150 V. Electrolytic Condenser	R9	A60-665	390 Ohm ½ watt Carbon Resistor		A52-182	Knob
C9-C12	A16-156	.01 MFD 400 V Tubular Condenser	R10	A60-691	.75 Ohm 1 watt Resistor		A83-277	Dial Scale Retainer
C10		250 MMFD Mica Condenser (Part of T-2)	L1	A10-414	Antenna Coil		D42-384	Wood Cabinet
C11	A15-176	250 MMFD Mica Condenser	L2	A10-415	Oscillator Coil		A84-35	Dial Drive Shaft Assembly
C13	A16-155	.002 MFD 600 V Tubular Condenser	T1	B10-416	1st I.F. Transformer	S1	A69-164	Battery Thriftmaster Switch
R1	A60-667	220 K Ohm ½ watt Carbon Resistor					A24-165	Volume Control and Switch
R2	A60-685	47 K Ohm ½ watt Carbon Resistor						

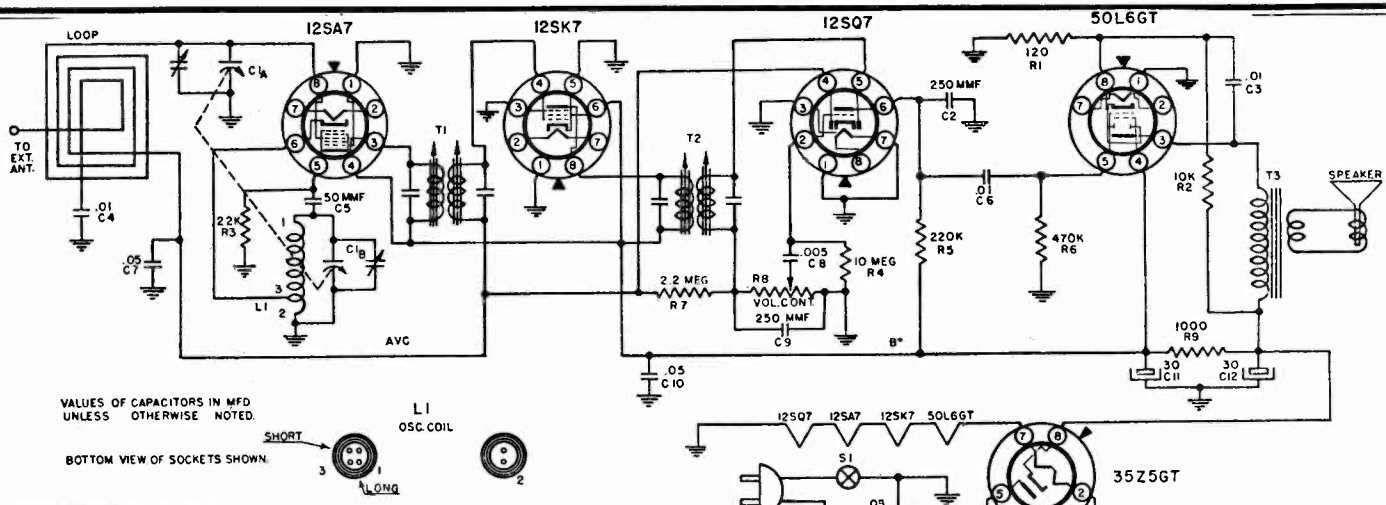
ALIGNMENT PROCEDURE

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. Follow through the procedure as outlined below for proper alignment.

Connect the signal generator to the grid cap of the 1A7 GT Tube through a .1 MFD. Condenser. Connect the ground lead of the generator to the chassis. Adjust the signal generator to 455 K.C. and set the variable condenser of the receiver to minimum capacity (fully opened). With the volume control full on and minimum output from the signal generator adjust the two trimmers on top of the first and second I.F. transformers for maximum output.

Now connect the signal generator to the antenna connection of the receiver through a .00025 condenser. Adjust the signal generator frequency to 1725 K. C. and set the variable condenser to minimum capacity (fully opened), and adjust the oscillator trimmer (C1B) for maximum output. Set signal generator to 1500 K. C. and tune receiver to signal. Adjust the antenna trimmer (C1A) on the variable condenser for maximum output.





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.

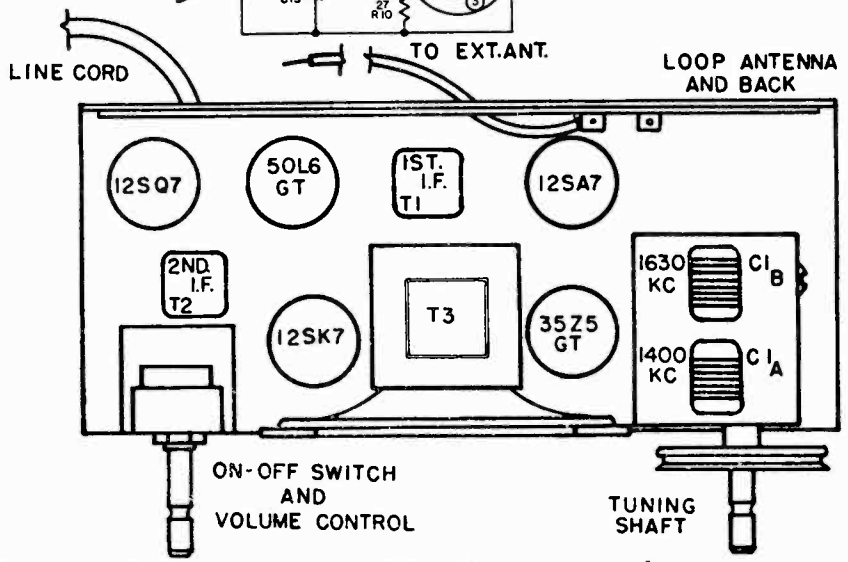
With the output meter connected across the voice coil of the speaker, the output meter reading for 50 milli-watts is .4 volts using a signal which is modulated 400 c.p.s.

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.

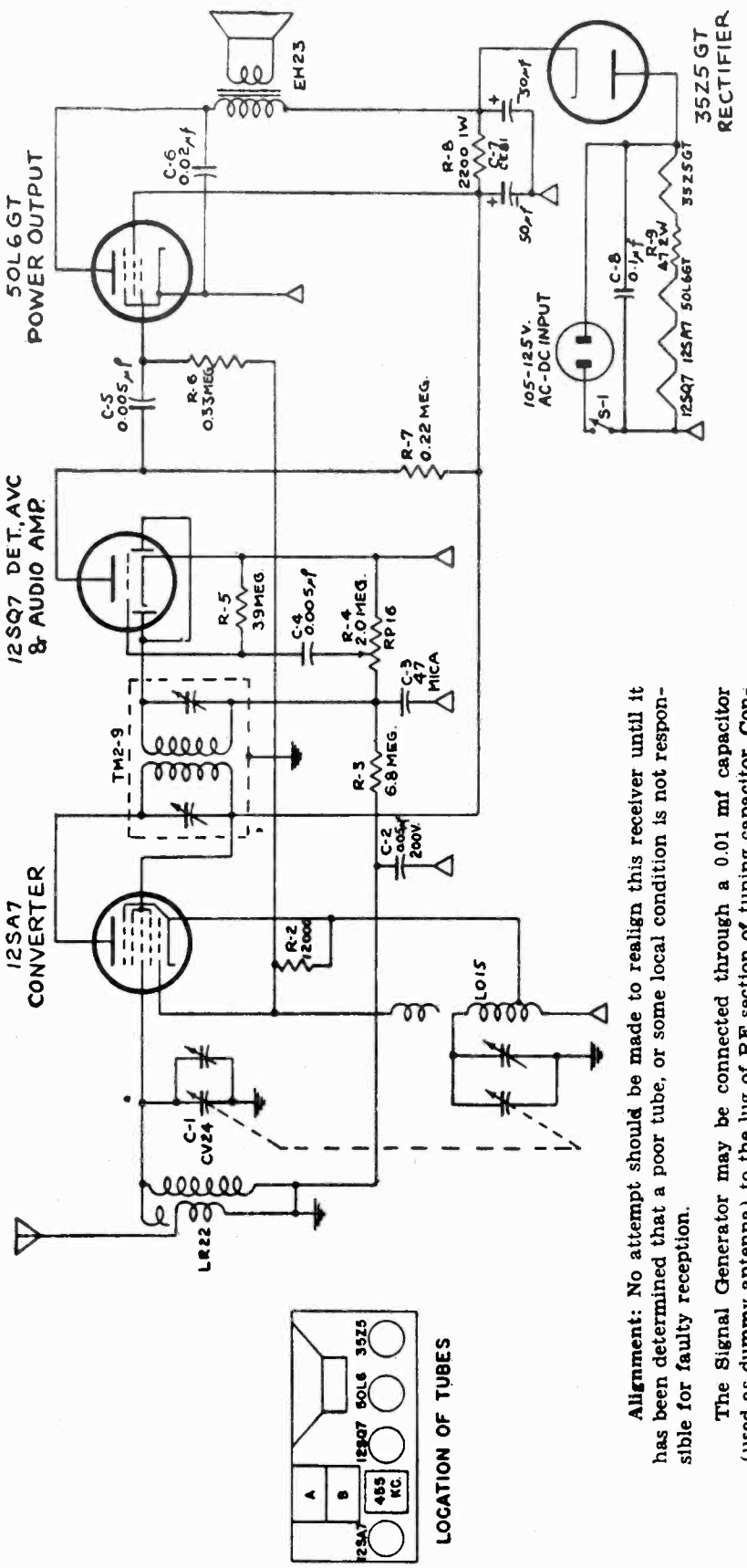


CODE	PART NO.	DESCRIPTION
C1A, C1B	19-173	Variable Condenser
C2, C9	A-15-176	250 MMFD. Mica Condenser
C3, C4, C6	A16-156	.01 MFD. 400 volt Condenser
C5	A15-175	50 MMFD. Mica Condenser
C7, C10	A16-152	.05 MFD. 200 volt Condenser
C8	A16-153	.005 MFD. 600 volt Condenser
C11, C12	B18-283	30x30 MFD. 150 volt 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

CODE	PART NO.	DESCRIPTION
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
	C83-449	Cabinet Back
	B82-46	Loop Antenna
	83-254	Baffle
	A42-421	Cabinet, Molded Ivory
	B67-505	Dial Scale
	36-116	Grille Cloth
	A52-222	Knob, Ivory

COAST TO COAST STORES

MODELS MD28, MD29



NOTES:

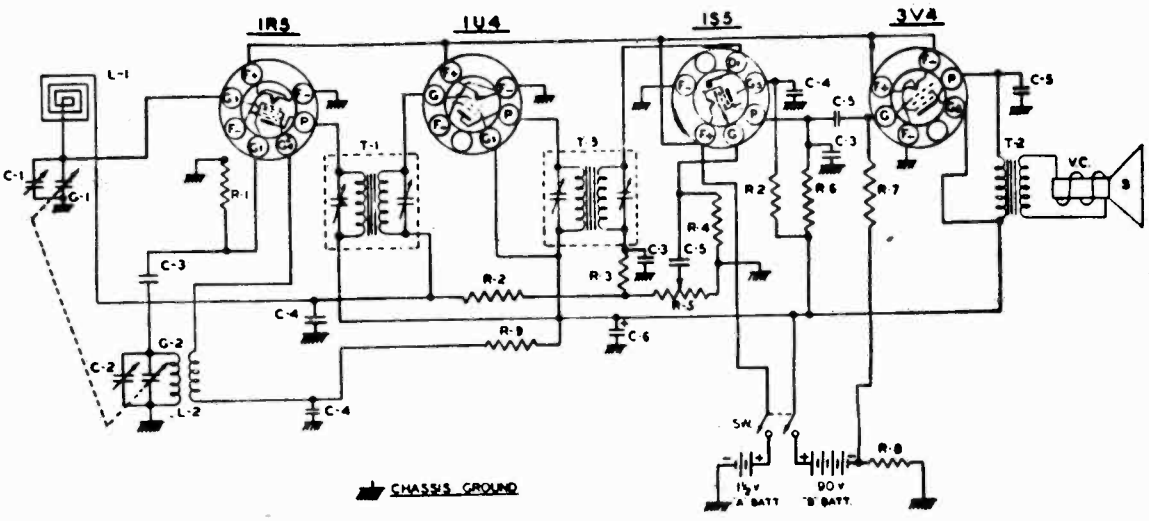
1. RESISTORS ARE IN OHMS AND ARE ½ WATT; CAPACITORS ARE 400V AND IN mf UNLESS OTHERWISE SPECIFIED.
2. SWITCH S-1 IS MOUNTED ON REAR OF VOLUME CONTROL.
3. SYMBOL Δ DENOTES B- AND SYMBOL ⏚ DENOTES CHASSIS.
4. I.F. FREQUENCY IS 455Kc.
5. TUNING RANGE IS 532Kc. TO 1700Kc.

Alignment: No attempt should be made to realign this receiver until it has been determined that a poor tube, or some local condition is not responsible for faulty reception.

The Signal Generator may be connected through a 0.01 mf capacitor (used as dummy antenna) to the lug of RF section of tuning capacitor. Connect ground clip of generator to a convenient B-minus point such as one of the switch terminals on the back of the volume control. An output meter may be clipped directly across the voice coil lugs. Align the IF trimmers to 455 kc using least possible input from signal generator to avoid developing A. V. C. voltage which would make the tuning adjustments very broad.

To align RF trimmer, remove the 0.01 mf capacitor and connect the signal generator hot lead to a 68 mmf mica condenser. Connect the dummy antenna thus formed to the antenna lug on the antenna coil (lug to which the antenna hank is soldered). Again, use the least possible input from the signal generator. With the tuning capacitor plates completely out of mesh, and pointed at extreme clockwise position, adjust the oscillator trimmer on front section of tuning capacitor to 1700 kc. Readjust both signal generator and tuning capacitor to 1550 kc and adjust the RF trimmer on rear section for maximum response.

CONCORD RADIO CORP. MODELS 1-404, 1-405



PART NO		DESCRIPTION
IR-20	R-1	220M Ω RESISTOR 1/2W 20 %
IR-23	R-2	3.3MEG RESISTOR 1/2W 20 %
IR-31	R-3	82M Ω RESISTOR 1/2W 10 %
IR-3	R-4	10MEG RESISTOR 1/2W 20 %
VC-8	R-5	1MEG VOLUME CONTROL
IR-12	R-6	1MEG RESISTOR 1/2W 20 %
IR-13	R-7	2.2MEG RESISTOR 1/2W 20 %
IR-39	R-8	620 Ω RESISTOR 1/2W 5 %
IR-37	R-9	10M Ω RESISTOR 1/2W 20 %
TC-7	C-1	ANT TRIMMER
	C-2	OSC TRIMMER ON GANG
MC-2	C-3	100MMFD MICA CONDENSER
PC-7	C-4	.01 MFD 400 V. CONDENSER
PC-8	C-5	.005MFD 400 V. CONDENSER
EC-7	C-6	20MFD 80WV ELECTROLYTIC
GC-5	G-1	GANG CONDENSER
	G-2	
LL-5	L-1	LOOP ANTENNA
LO-12	L-2	OSC COIL
LI-3	T-1	I.F. TRANSFORMER INPUT
	SW	DPST SWITCH ON VOLUME CONTROL
	T-2	SPEAKER TRANSFORMER
SPK-5	VC	VOICE COIL
	S	PM SPEAKER
LI-4	T-3	I.F. TRANSFORMER OUTPUT
TU-30		1R5 1U4-1S5-3V4

ALIGNMENT AND SERVICE DATA

Remove chassis from cabinet for alignment. A signal generator is required having the following frequencies: 455 KC and 1400 KC An output meter should be connected across the speaker.

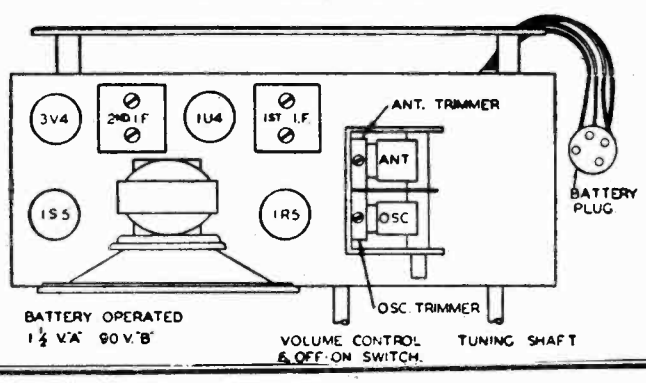
FIRST STEP: Connect the hot lead from the generator to the ANT. section of the gang condenser, through a .1 MFD. condenser. The ground lead from the generator may be connected to any spot on the metal chassis. Turn the gang condenser to complete minimum capacity. Set the generator to 455 KC. Adjust the movable trimmers in the IF cans, until a maximum reading is noted on the output meter.

The volume control of the receiver should be turned to maximum during the IF and all subsequent alignment and the generator output as low as possible to prevent the AVC from working and giving false readings.

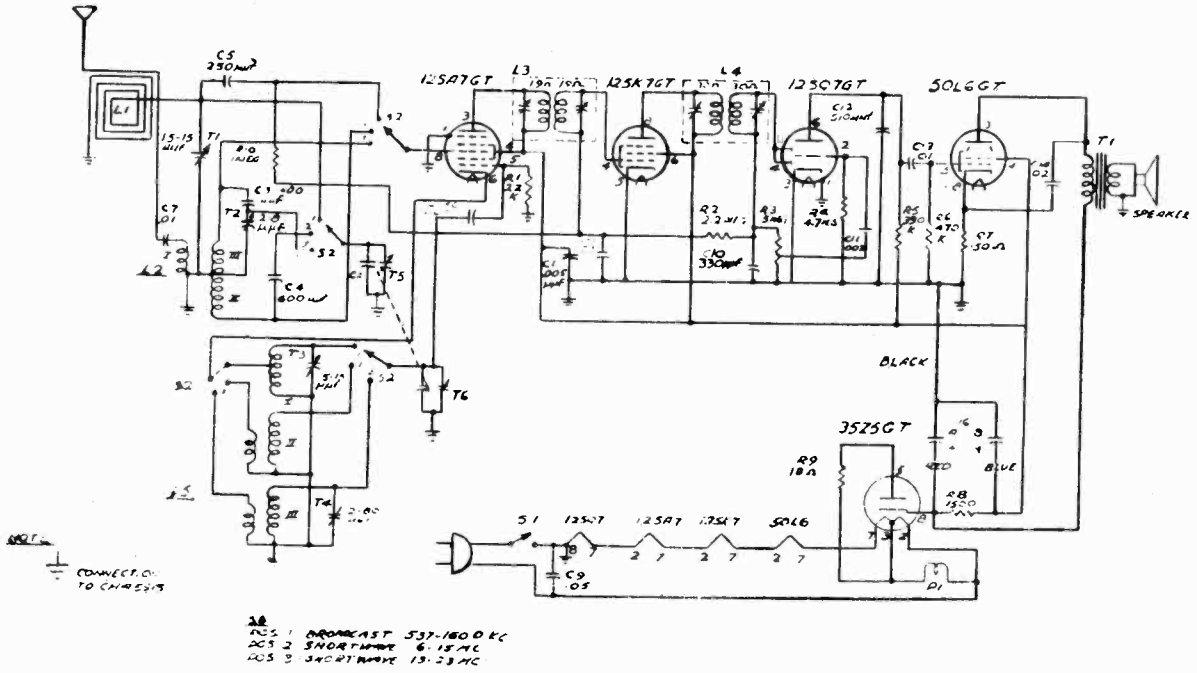
SECOND STEP: With the leads from the generator still connected as in IF alignment, adjust the generator to 400 KC. Set the dial pointer to 1400 KC on the dial scale. Adjust the oscillator trimmer until the signal is tuned in.

THIRD STEP: Remove the generator leads from the condenser. Connect the hot lead from the generator through a 200 MMFD. condenser to one of the leads which project from the back of the loop antenna. Connect the ground lead of the generator to the remaining lead. With the generator and the receiver still tuned to 1400 KC, adjust the antenna trimmer until a maximum reading is noted on the output meter.

TUBE AND TRIMMER LOCATION



CONCORD RADIO CORP. MODELS 1-507, 1-508



ALIGNMENT PROCEDURE

Output meter connection ..... Across voice coil

Output meter reading ½ watt ..... 1.25V for 3.2 Ohm voice coil

Connection of generator ground ..... Receiver chassis

Generator modulation ..... Approximately 30% @ 400 cycles

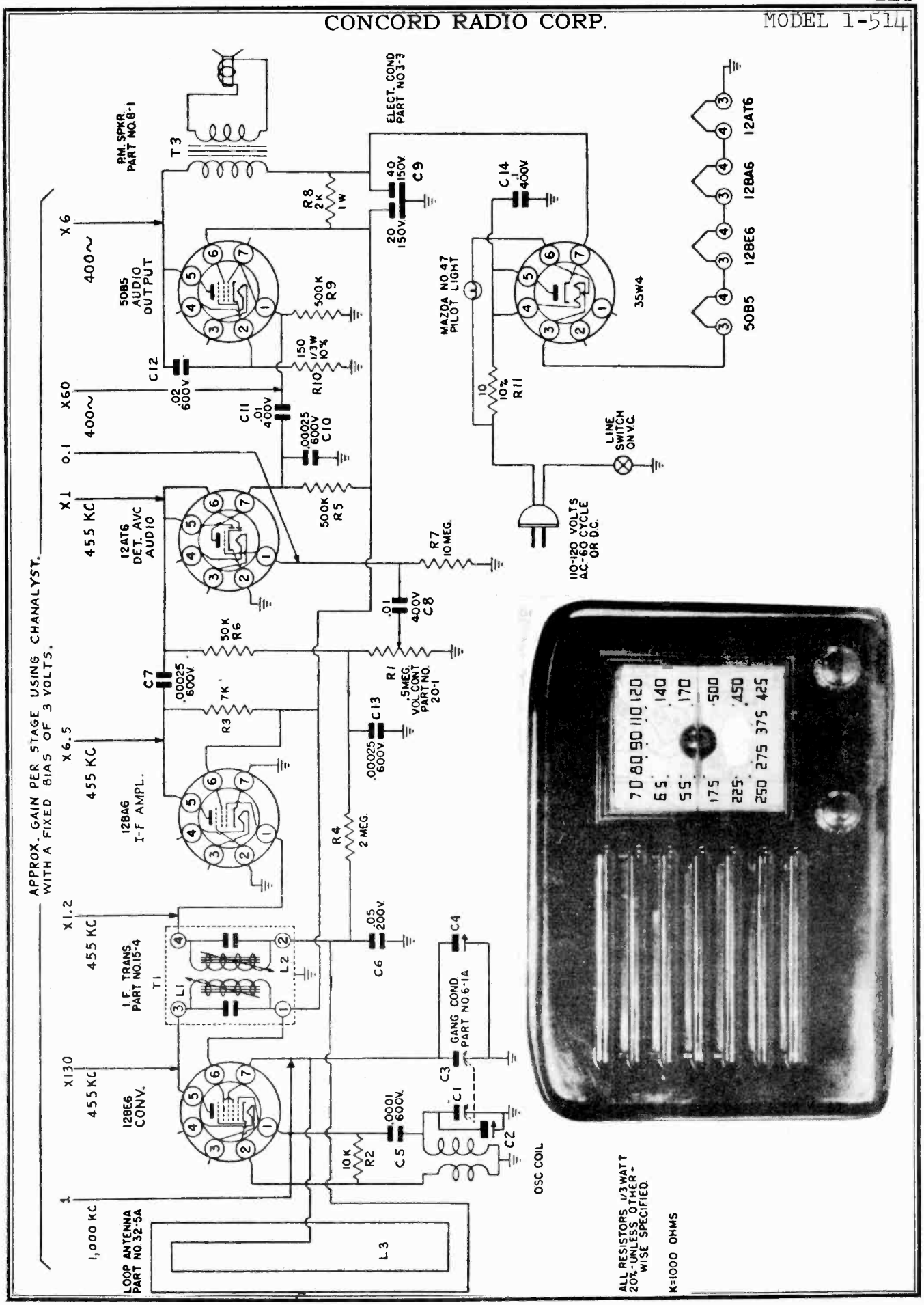
Position of volume control ..... Fully clockwise

WAVE BAND SW.	POSITION OF DIAL POINTER	GEN. FREQ.	GEN. CONN.	DUMMY ANT.	TRIMMERS ADJ. IN ORDER	TRIMMER FUNCTION
B. C.	550	455	12SA7 Grid	.1 mfd.	I. F. Trimmers	I. F.
S. W. 1	14	14	Ant. Post	R.M.A. Std.	T6*	Osc.
	14	14	Ant. Post	R.M.A. Std.	T5	Osc.
S. W. 2	23	23	Ant. Post	R.M.A. Std.	T4*	Osc.
	23	23	Ant. Post	R.M.A. Std.	T2	R. F.
B. C.	1500	1500	Ant. Post	R.M.A. Std.	T3	R. F.
	1500	1500	Ant. Post	R.M.A. Std.	T1	R. F.

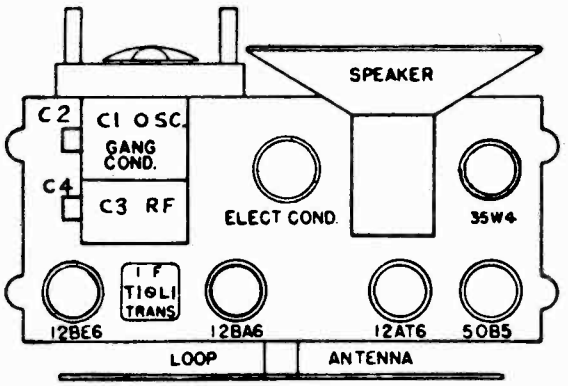
NOTE:

* If two peaks can be had the correct one is with the trimmer screw further out, the other peak is the image. Align set in order shown.

CONCORD RADIO CORP. MODEL 1-514

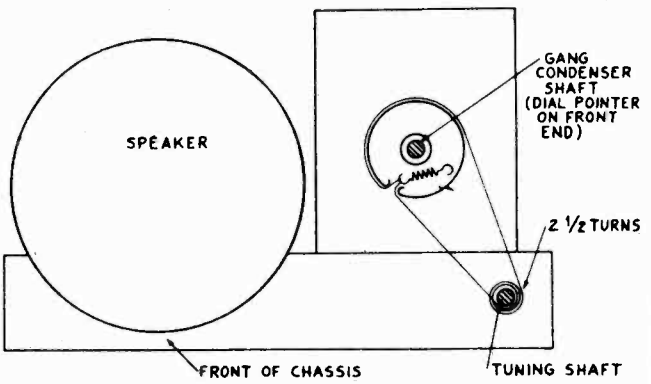


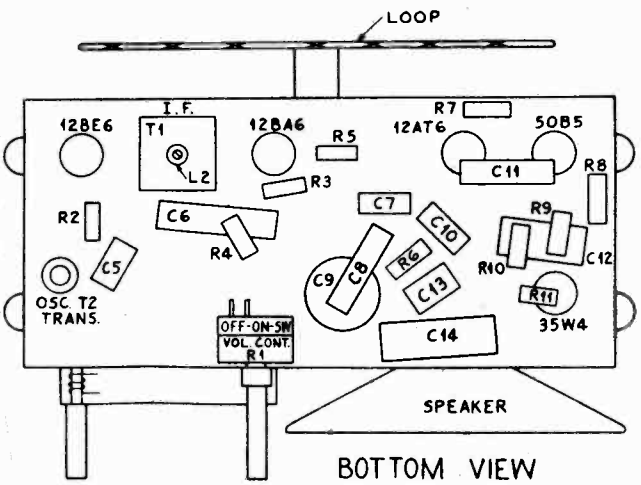
MODEL 1-514 CONCORD RADIO CORP.



TUBE LAYOUT

DIAL CORD DRIVE





BOTTOM VIEW

SOCKET	PIN	VTVM	20,000Ω/P.V.	1,000Ω/P.V.	RESISTANCE
12BE6	1	-6	-6	-5 ON 100V SCALE	10K
CONV.				-3.5 ON 10V SCALE	
	2	0	0	0	0
	3	AC	AC	AC	45 Ω
	4	AC	AC	AC	30 Ω
	5	+82	+82	+82	OVER 5 MEGS
	6	+82	+82	+82	OVER 5 MEGS
	7	-1.0	-0.5	-0.2	3 MEGS
12BA6	1	-1.0	-0.5	-0.2	3 MEGS
I.F. AMPL.	2	0	0	0	0
	3	AC	AC	AC	25 Ω
	4	AC	AC	AC	15 Ω
	5	+25	+24	+22	OVER 5 MEGS
	6	+82	+82	+82	OVER 5 MEGS
	7	0	0	0	0
12AT6	1	-0.5	-0.2	0	10 MEGS
DET. AVC	2	0	0	0	0
AUDIO	3	0	0	0	0
	4	AC	AC	AC	15 Ω
	5	-0.5	-0.2	0	500K
	6	-0.5	-0.2	0	500K
	7	+40	+38	+15	OVER 5 MEGS
50B5	1	0	0	0	500K
AUDIO	2	+5	+5	+5	150 Ω
OUTPUT	3	AC	AC	AC	85 Ω
	4	AC	AC	AC	35 Ω
	5	+120	+120	+120	OVER 5 MEGS
	6	+82	+82	+82	OVER 5 MEGS
	7	--	--	--	--
35W4	1	AC	AC	AC	110 Ω
RECT	2	--	--	--	--
	3	AC	AC	AC	85 Ω
	4	AC	AC	AC	115 Ω
	5	AC	AC	AC	115 Ω
	6	AC	AC	AC	110 Ω
	7	+125	+125	+125	OVER 5 MEGS

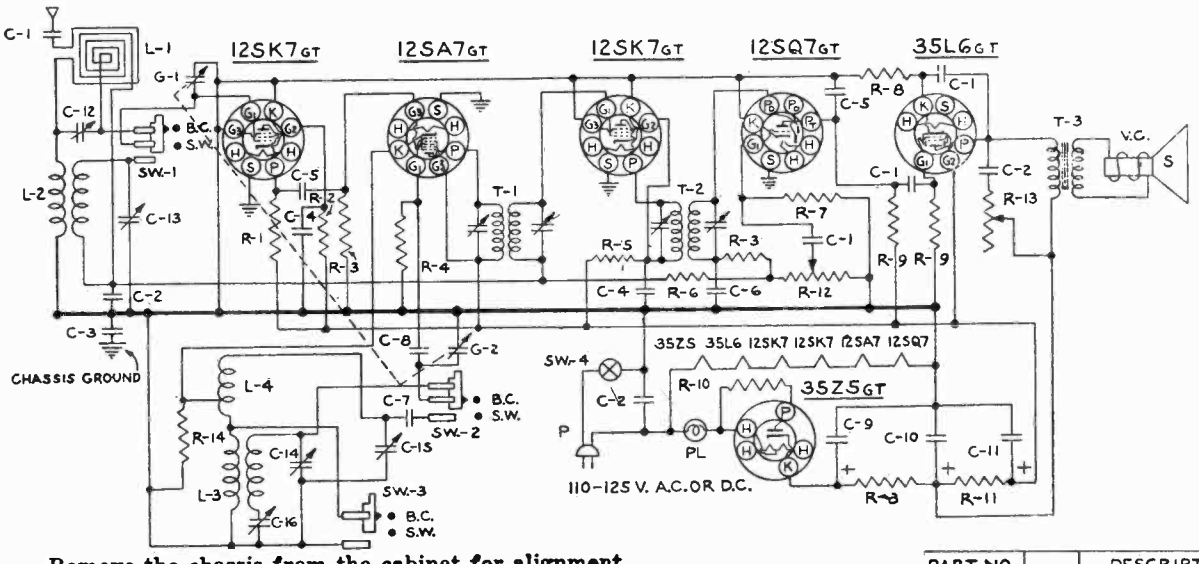
ALL VOLTAGE AND RESISTANCE MEASUREMENT MADE WITH RESPECT TO CHASSIS GROUND AND WITH A LINE VOLTAGE OF 116 V. A. C.

A L I G N M E N T

THE CHASSIS MUST BE REMOVED FROM THE CABINET IN ORDER TO ALIGN THE RECEIVER. CONNECT THE OUTPUT METER ACROSS THE VOICE COIL. CONNECT THE SIGNAL GENERATOR TO THE STANDARD HAZELTINE MODEL 1150 LOOP, AND COUPLE LOOSELY TO THE RECEIVER LOOP. SET THE RECEIVER VOLUME CONTROL AT MAXIMUM.

THE TUNING CONDENSER PLATES SHOULD BE FULLY MESHED WHEN THE DIAL POINTER IS AT THE INDEX MARK AT THE LOW FREQUENCY END OF THE DIAL. THE SIGNAL GENERATOR OUTPUT SHOULD BE SUFFICIENT TO GIVE HALF SCALE DEFLECTION ON THE LOWEST SCALE OF THE OUTPUT METER. SET THE SIGNAL GENERATOR TO 455 KC. ADJUST THE I.F. TUNING SLUGS FOR MAXIMUM METER DEFLECTION IN THE FOLLOWING SEQUENCE: L2, L1. SET THE GENERATOR AND RECEIVER TO 700 KC AND ADJUST OSCILLATOR TRIMMER C2 FOR MAXIMUM OUTPUT. SET THE GENERATOR AND RECEIVER TO 1400 KC AND ADJUST LOOP TRIMMER C4 FOR MAXIMUM OUTPUT.

MODEL 1-608 CONCORD RADIO CORP.



Remove the chassis from the cabinet for alignment.

A signal generator is required, having the following frequencies: 455 KC, 1400 KC, 1730 KC. 6 MC, 16 MC, and 18.3 MC. An output meter should be connected across the speaker.

I. F. ALIGNMENT: — Connect the generator lead through a .1 MFD Condenser to the terminal lug on the "Antenna" section of the gang condenser. The ground lead from the generator should be connected to the gang frame. Set the generator at 455 KC. Adjust the trimmer screws in the 1st and 2nd I. F. cans (See Fig. 1) until a maximum reading is noted on the output meter.

The receiver volume control should be turned to maximum during the I. F. and all subsequent alignments, to keep the AVC from working and giving false readings. Keep the generator output as low as possible to prevent overloading.

BC. OR BROADCAST ALIGNMENT: — With the generator leads still connected as in I. F. Alignment, rotate the tuning condenser to complete minimum capacity. Set the generator to 1730 KC. Adjust the BC. oscillator trimmer until the signal is tuned in. Next remove the hot lead of the generator from the "Ant" section of the gang condenser. Connect this lead to the antenna lead wire that projects from the back of the loop antenna through a 200 MMFD condenser. Set the generator to 1400 KC and rotate the tuning condenser until the signal is tuned in. Adjust the BC. antenna trimmer until a maximum reading is noted on the output meter. Set the generator to 600 KC and turn the tuning control until the signal is tuned in. Rock the tuning control back and forth slowly and at the same time adjust the 600 KC pad, slowly to the right or left until a maximum reading is noted on the output meter. It is advisable to return to the 1730 KC adjustment and re-check that setting to make sure it has not changed while padding at 600 KC.

S. W. OR SHORT WAVE ALIGNMENT: — Set the generator at 18.3 MC. Turn the receiver band switch to short band position. Turn the tuning condenser to complete minimum capacity. The generator leads should be connected to the antenna lead wire that projects from the back of the loop antenna through a 400 Ohm resistor. Adjust the S. W. oscillator trimmer slowly until the 18.3 MC signal is tuned in. At this point, it will be well to make sure that the fundamental signal is turned in. Turn up the generator output and tune the receiver to approximately 17.3 MC. At this point the 18.3 MC signal will be heard again but much weaker. This is the image frequency. If the image is not heard, then turn the tuning condenser back to complete minimum and readjust the S. W. oscillator trimmer. Remember, the image must always be heard (at 2 times the I. F. frequency in KC) lower the frequency than the fundamental signal. After the oscillator has been properly set, tune the signal generator to 16 MC and rotate the tuning control until the signal is tuned in. Adjust the S.W. antenna trimmer until a maximum reading is noted on the output meter. It is advisable to rock the gang slowly while adjusting the antenna trimmer. Set the generator to 6 MC and tune the signal in on the receiver. Check the alignment at this frequency. No adjustment should be necessary as the coils have been carefully checked before leaving the factory. A fixed oscillator padding condenser is used at 6 MC.

PART NO.		DESCRIPTION
1R-22	R-1	3900Ω RESISTOR 1/2 W. 10%
1R-8	R-2	22,000Ω RESISTOR 1/2 W. 10%
1R-10	R-3	47000Ω RESISTOR 1/2 W. 20%
1R-9	R-4	22000Ω RESISTOR 1/2 W. 20%
1R-24	R-5	1000Ω RESISTOR 1/2 W. 20%
1R-23	R-6	3.9 MEG. RESISTOR 1/2 W. 20%
1R-13	R-7	2 MEG. RESISTOR 1/2 W. 20%
1R-5	R-8	220Ω RESISTOR 1/2 W. 10%
1R-11	R-9	470000Ω RESISTOR 1/2 W. 20%
1R-17	R-10	39Ω RESISTOR 1/2 W. 20%
1R-21	R-11	330Ω RESISTOR 1/2 W. 10%
VC-3	R-12	1 MEG. VOLUME CONTROL
VC-1	R-13	25MΩ TONE CONTROL & SW.
1R-6	R-14	470Ω RESISTOR 1/2 W. 10%
PC-7	C-1	.01 MFD. CONDENSER 400 V.
PC-5	C-2	.05 MFD. CONDENSER 400 V.
PC-9	C-3	.25 MFD. CONDENSER 400 V.
PC-8	C-4	.1 MFD. CONDENSER 400 V.
MC-3	C-5	.00022 MFD. MICA COND. 500 V.
MC-2	C-6	.0001 MFD. MICA COND. 500 V.
MC-1	C-7	.00475 MFD. MICA COND. 3%
MC-4	C-8	.00005 MFD. MICA COND. 500 V.
EC-4	C-9, C-10, C-11	40 MFD. 40 MFD. 40 MFD. 150 V. ELECTROLYTIC
TC-7	C-12	LOOP ANTENNA TRIMMER
TC-8	C-13	S.W. ANTENNA TRIMMER
TC-1	C-14	B.C. OSC. TRIMMER
	C-15	S.W. OSC. TRIMMER
	C-16	B.C. OSC. PADDING COND.
GC-1	G-1, G-2	GANG CONDENSER
SW-1	SW-1, SW-2, SW-3	BAND SWITCH
	SW-4	A.C. SW. ON TONE CONTROL
LI-1	T-1	INPUT I.F. TRANSFORMER
LI-2	T-2	OUTPUT I.F. TRANSFORMER
SPK-4	T-3	OUTPUT SPK. TRANSFORMER
	V.C.	VOICE COIL
	S	P.M. SPEAKER
PB-1	PL	PILOT BULB #47
CO-1	P	LINE CORD
LL-2	L-1	LOOP ANTENNA
LA-2	L-2	S.W. ANTENNA COIL
LO-3	L-3	B.C. OSC. COIL
LO-4	L-4	S.W. OSC. COIL
TU-4		12SK7GT 12SA7GT 12SK7GT 12SQ7GT 35L6GT 35Z5GT

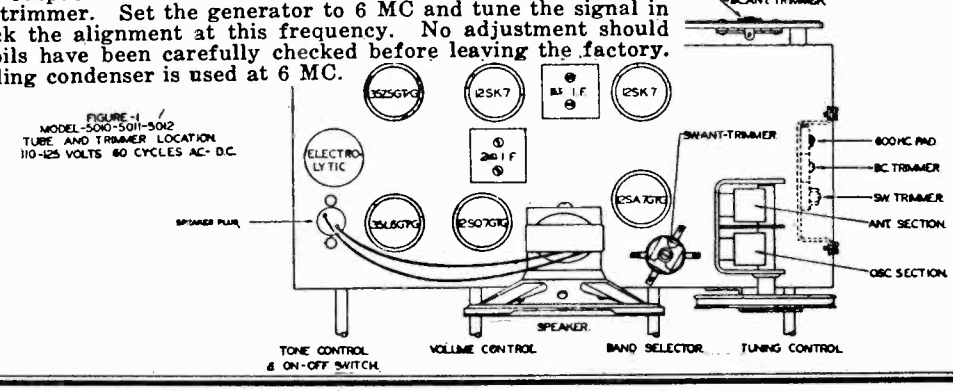
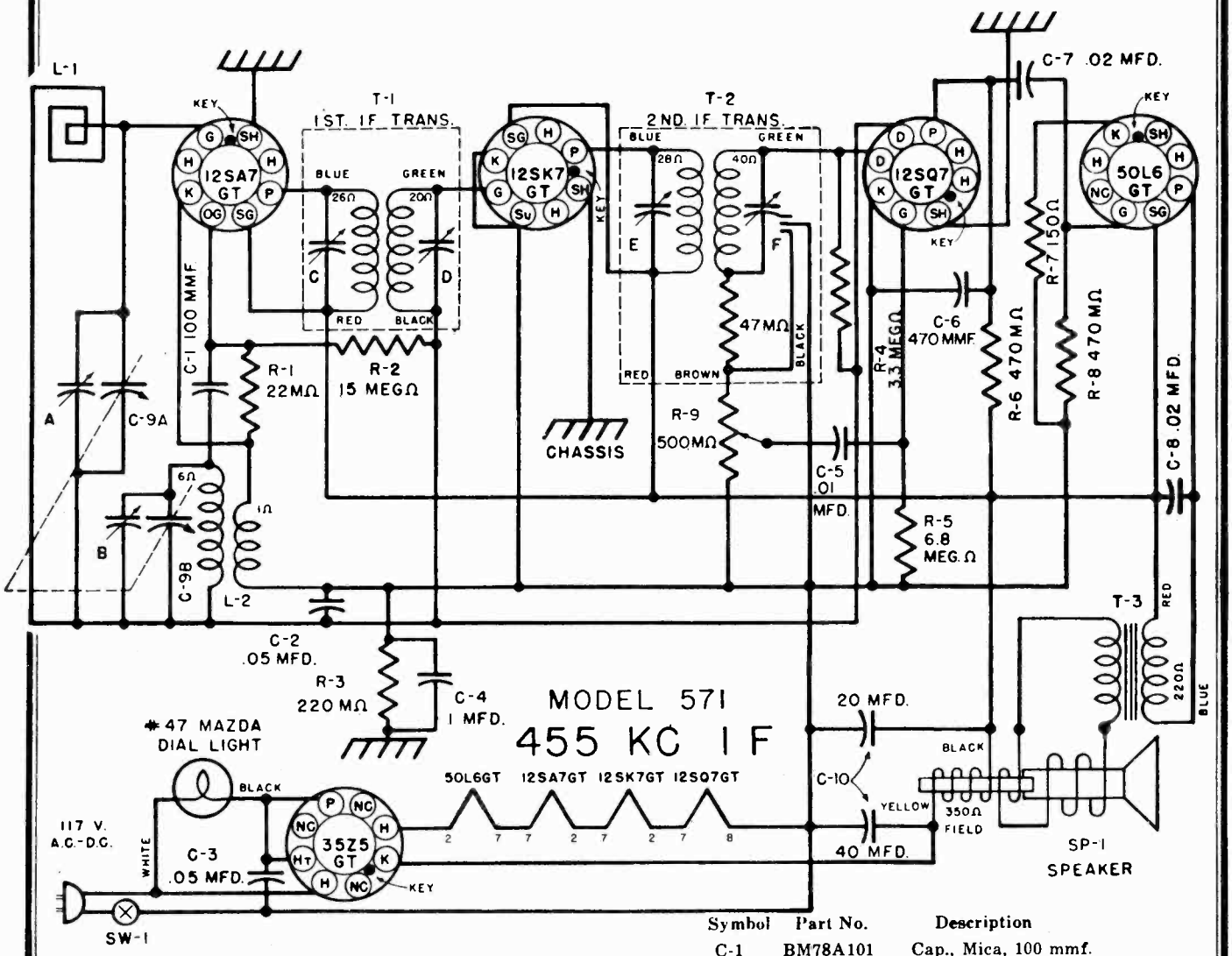


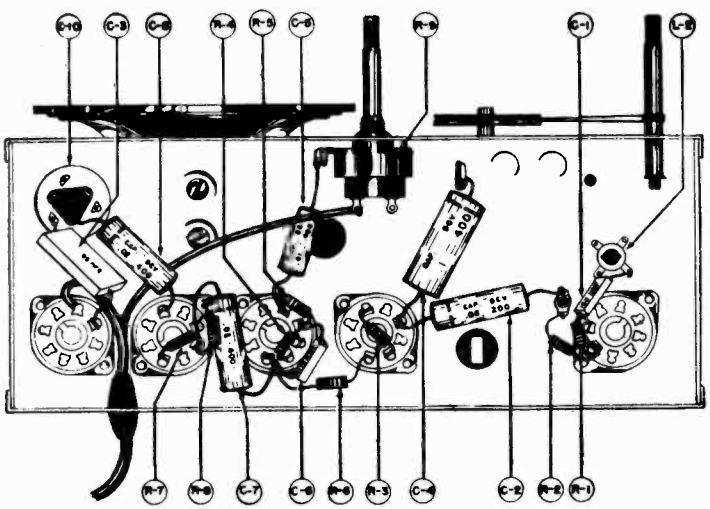
FIGURE-1
MODEL-5010-5011-5012
TUBE AND TRIMMER LOCATION
110-125 VOLTS 60 CYCLES AC-DC

CONCORD RADIO CORP.

MODEL 6D51B,Ch.571;
MODEL 6D51I,Ch.571A;
MODEL 6D51W,Ch.571B



ALL TUBE SOCKETS SHOWN FROM PIN END VIEW



Parts Layout
Chassis Models 571, 571A
and 571B

Symbol	Part No.	Description
C-1	BM78A101	Cap., Mica, 100 mmf.
C-2	BD210503	Cap., Paper, .05 mfd., 200 v.
C-3	BC31B503	Cap., Mold., Paper, .05 mfd.
C-4	BD410104	Cap., Paper, .1 mfd., 400 v.
C-5	BD410103	Cap., Paper, .01 mfd., 400 v.
C-6	BM78A471	Cap., Mica, 470 mmf.
C-7, 8	BD410203	Cap., Paper, .02 mfd., 400 v.
C-9	C-51155-1	Cap., Variable, 2 Section
C-10	A-8948	Cap., Electro., 40-20 mfd., 150 v.
L-2	B-51159	Coil, Osc. Assembly
R-1	BR17B223	Resistor, 22M ohm 1/3 w.
R-2	BR17B156	Resistor, 15 meg. 1/3 w.
R-3	BR17B224	Resistor, 220M ohm 1/3 w.
R-4	BR17B335	Resistor, 3.3 meg. 1/3 w.
R-5	BR17B685	Resistor, 6.8 meg. 1/3 w.
R-6, 8	BR17B474	Resistor, 470M ohm 1/3 w.
R-7	BR16C151	Resistor, 150 ohm. 1/2 w.
R-9	B-9051-1	Control, Vol. & Sw. 500M ohm.
T-1	B-51010-1	Trans., Assembly, 1st IF
T-2	B-51011-1	Trans., Assembly, 2nd IF
SP-1	C-51014	Speaker, 5" Dynamic, 350 ohm.
	A-2163	Cable, Drive
	A-6158	Lamp, Pilot No. 47 Mazda 6.3 v.
	A-51160-1	Cord, AC-DC Line, 6 ft.
	B-51162-1	Shaft, Drive
	A-51163	Clip, Spring
	B-51177	Brkt. Assy., Dial (571A-571B only)
	A-51202	Link, Insulating
	A-51206	Arm, Dial Drive
	B-51330-1	Channel, Rubber (571 only)
	A-51331	Spring, Dial Bracket
	C-51335	Bracket, Dial (571 only)
	A-51787	Spring, Cable

MODEL 6D51B,Ch.571;
MODEL 6D51I,Ch.571A;
MODEL 6D51W,Ch.571B

CONCORD RADIO CORP.

Electrical and Mechanical Specifications

Frequency Range ..... 540-1600 kc.
Intermediate Frequency ..... 455 kc.
Power Supply ..... 105-125 volts AC-DC
Loudspeaker ..... Dynamic
V.C. Impedance ..... 3.5 ohms at 400 cycles

Power Output (Undistorted) ..... .75 watts
Power Output (Maximum) ..... 1.5 watts
Tuning Drive Ratio ..... 3 to 1
Weight 7¼ lbs. (net) ..... 10 lbs. (shipping)

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

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

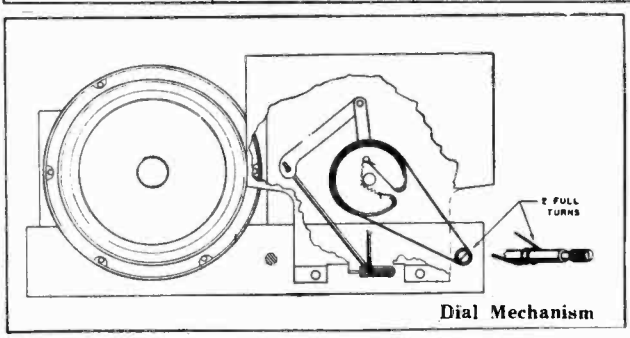
ALIGNMENT PROCEDURE

The following equipment is necessary to properly align this chassis:

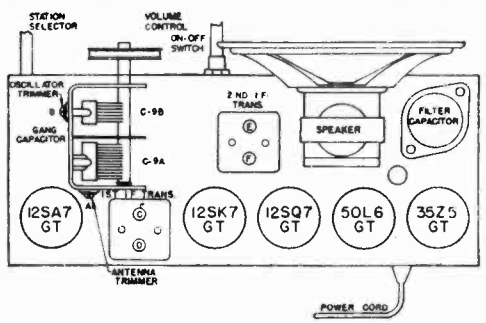
1. A signal generator which will provide an accurately calibrated signal at the frequencies listed.
2. An output meter.
3. A non-metallic screwdriver.
4. Dummy antenna: — .1 mfd., — RMA loop.

NOTE: Intermediate Frequency and Oscillator adjustments may be made with the loop disconnected provided a resistor of 10,000 to 50,000 ohms is substituted to close the 12SA7GT grid circuit. The loop alignment must be done with the loop and chassis mounted in operating position in the cabinet. A single turn loosely coupled to loop may be substituted for RMA loop.

GENERATOR	CONNECTION AT RADIO	DUMMY ANTENNA	DIAL	TO TUNE TRIMMERS	REMARKS
IF 455 kc.	12SA7GT grid	.1 mfd.	HF end	IF trimmers C D E F	Tune to max.
1620 kc.	Through loop	RMA loop	HF end	Osc. trimmer B	Set limit of band
1400 kc.	Through loop	RMA loop	1400 kc.	Ant. trimmer A	Tune to max.

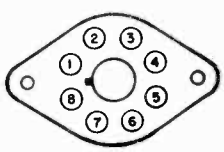


Dial Mechanism



SOCKET VOLTAGES

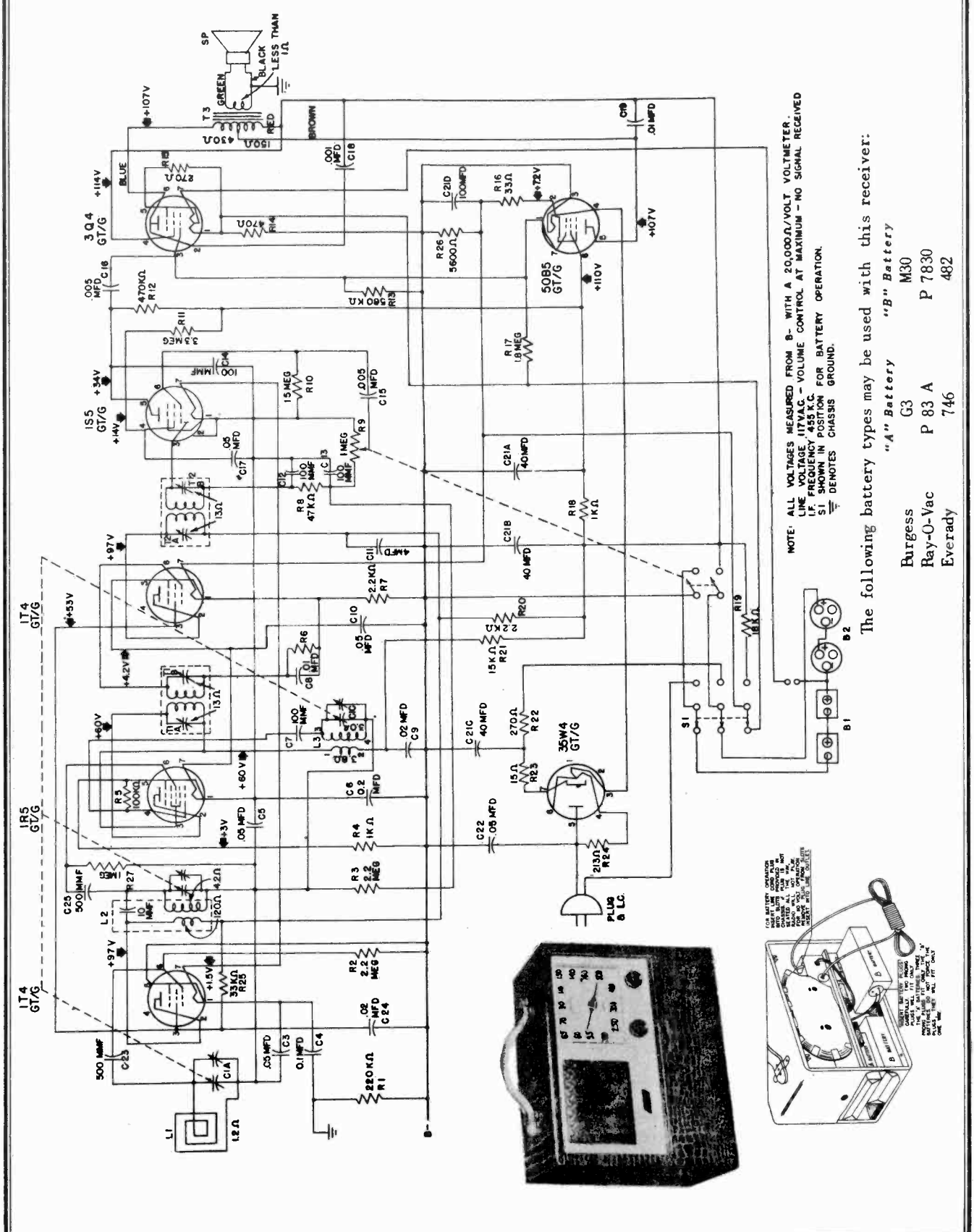
TUBE	POSITION	1	2	3	4	5	6	7	8
12SA7GT	Osc. and Mixer	0	37.5 AC	99	99	-4.2	0	24.5 AC	0
12SK7GT	IF Amplifier	0	24.5 AC	0	0	0	99	12.5 AC	99
12SQ7GT	2nd Det.—1st Audio	0	0	0	0	0	16	12.5 AC	0
50L6GT	Power Output	0	85 AC	91.5	99	0	0	37.5 AC	5.9
35Z5GT	Rectifier	0	117 AC	112 AC	0	112 AC	0	85 AC	112



NOTE: All DC voltages measured with a 1000 ohm per volt meter from ON-OFF switch (—B) to socket contact indicated. All AC voltages are measured from ON-OFF switch (—B) to socket contact indicated.
All voltages are positive DC unless otherwise marked.
Volume control full on.
Line voltage 117 volts AC.

MODEL 7E71PR

CONCORD RADIO CORP.

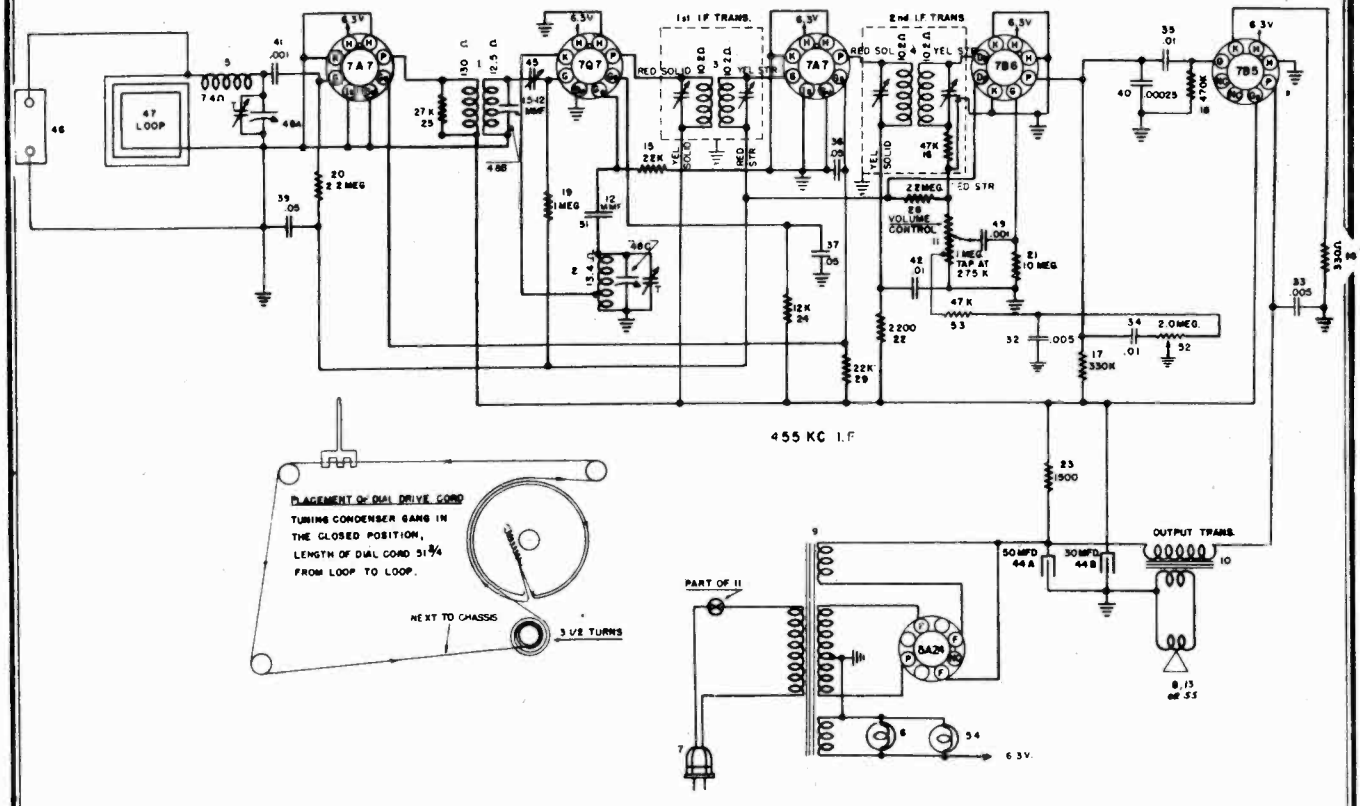


The following battery types may be used with this receiver:

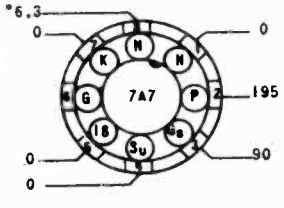
	"A" Battery	"B" Battery
Burgess	G3	M30
Ray-O-Vac	P 83 A	P 7830
Everady	746	482

MODELS 9-102, 9-118W

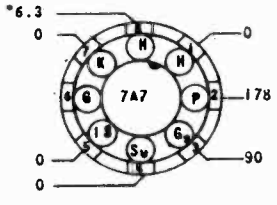
CROSLEY DIV. AVCO MFG. CORP.



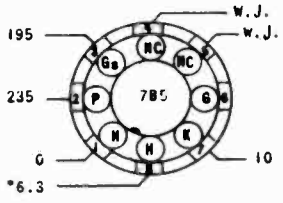
R. F. AMPLIFIER



I. F. AMPLIFIER

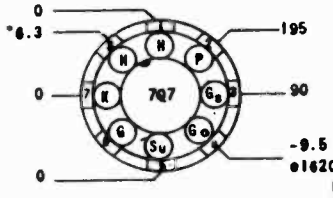


POWER OUTPUT

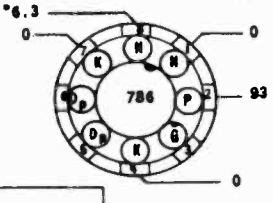


POWER TRANSFORMER

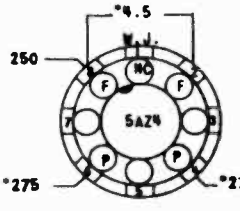
CONVERTER



DET.-AVC.-1st. A.F. AMPL.



RECTIFIER

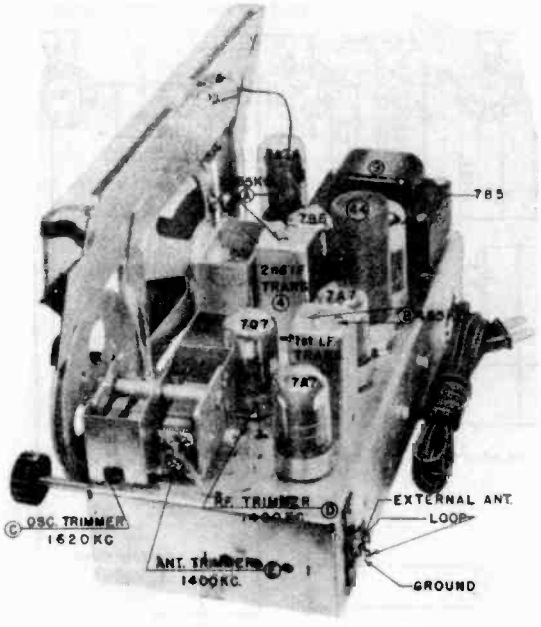


NOTES:
1. Bottom View Of Sockets
2. Measure Voltage From Socket Lug To -B(Chassis)
3. Voltages Measured With An Electronic Voltmeter
4. W.J. = Wiring Junction.
5. N.C. = No Connection.
6. * = A.C. Voltage.
7. Voltage Tolerance, 10%
8. Line Voltage 117 V., 60 ~ A.C.

SOCKET VOLTAGE CHART

CROSLEY DIV.
AVCO MFG. CORP.

MODELS 9-102, 9-118W



CHASSIS, SIDE VIEW

TYPE: Six-tube, single band, superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: 60 cycle a. c. only

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 50 watts maximum

POWER OUTPUT: 2.5 watts maximum

TUBE COMPLEMENT:

TYPE	FUNCTION
7A7	R. F. Amplifier
7Q7	Converter
7A7	I. F. Amplifier
7B6	Detector, AVC, 1st A. F. Amplifier
7B5	A. F. Power Output
5AZ4	Rectifier

REPLACEMENT PARTS LIST—MODELS: 9-102, 9-118W

Figures in first column correspond to figures in Schematic Diagram

Item No.	Part No.	Description
1	AW-137800	Coil, R. F.
2	AW-137724	Coil, Osc.
3	AC-137933	Transformer, 1st I. F.
4	AC-137934	Transformer, 2nd I. F.
5	AW-138546	Coil, Antenna Loading
6	W-48858	Bulb (Dial), Type 47, 6.3 v., .15 amp.
7	C-132300-1	Cable & Plug Assy., Power
9	B-135102	Transformer, Power
10	B-138131-4	Transformer, Output
11	39368-18	Control, Volume
	39370-2	Shaft, Volume Control (Knurled)
	39369-1	Switch, Power
13	C-138246	Speaker
14	39373-23	Resistor, 330 ohm, ½ w.
15	39373-60	Resistor, 22,000 ohms, ½ w.
16	39373-67	Resistor, 47,000 ohms, ½ w.
17	39373-84	Resistor, 330,000 ohms, ½ w.
18	39373-87	Resistor, 470,000 ohms, ½ w.
19	39373-92	Resistor, 1.0 megohm, ½ w.
20	39373-97	Resistor, 2.2 megohms, ½ w.
21	39373-107	Resistor, 10 megohms, ½ w.
22	39373-40	Resistor, 2,200 ohms, ½ w.
23	39372-7	Resistor, 1,500 ohms, 10 w.
24	39373-165	Resistor, 12,000 ohms, 1 w.
25	39373-62	Resistor, 27,000 ohms, ½ w.
27	39373-97	Resistor. 2.2 megohm, ½ w.
28	39373-97	Resistor, 2.2 megohm, ½ w.
29	39373-60	Resistor, 22,000 ohms, ½ w.
32	39001-11	Condenser, .005 mfd., 600 v., paper
33	39001-11	Condenser, .005 mfd., 600 v., paper
34	39001-13	Condenser, .01 mfd., 600 v., paper
35	39001-13	Condenser, .01 mfd., 600 v., paper
36	39001-17	Condenser, .05 mfd., 600 v., paper
37	39001-17	Condenser, .05 mfd., 600 v., paper
39	39001-17	Condenser, .05 mfd., 600 v., paper
40	39001-73	Condenser, .00025 mfd., 600 v., paper
41	39001-7	Condenser .001 mfd., 600 v., paper
42	39001-13	Condenser, .01 mfd., 600 v., paper
44A	B-136596	Condenser, 50 mfd., 300 v. } Two Sect.
44B		Condenser, 30 mfd., 300 v. } elect.filter
45	W-132267-1	Condenser, Trimmer
46	AB-138584	Terminal Board
47	AC-138464	Loop Antenna Assy.
48A	AC-138595-2	Condenser, Variable }
48B		Condenser, Variable } Three Sect.
48C		Condenser, Variable }
49	39001-7	Condenser, .001 mfd., 600 v., paper
51	C-137727-52	Condenser, 12 mmf., 500 v., ceramic
52	39368-11	Control, Tone
53	39373-67	Resistor, 47,000 ohms, ½ w.
54	W-48858	Bulb (Dial), Type 47, 6.3 v., .15 amp.
	C-137750	Back, Cabinet
	R-138573-1	Cabinet (9-102)
	R-138573-2	Cabinet (9-118W)
	D-143931	Dial
	AC-143143	Dial Plate Assy.
	W-134055	Grommet, Variable Condenser
	B-138574-5	Knob (9-102)
	B-138574-2	Knob (9-118W)
	B-143115	Pointer, Dial
	W-137939-1	Pulley, Idler
	W-51071	Ring, Retaining (Dial Drive Shaft)
	39220-36CP	Screw, Chassis Mtg.
	B-135075-5	Shaft, Drive
	W-46065	Shock Mount, Speaker
	D-136565-16	Socket, Dial Light
	39441	Socket, Tube
	W-51752	Spring, Dial Drive
	W-138568	Strip, Pointer
	W-132124-5	Trimount Stud, Cabinet Back
	W-134916	Washer, Spring (Dial Drive Shaft)

MODELS 9-103, 9-104

ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference notch at the low frequency end of the dial background.
2. Turn the tone control to the treble (clockwise) position.
3. Connect the output meter across the speaker voice coil.
4. The r. f. signal input from the signal generator should be connected through a condenser as indicated in the alignment chart. Connect the signal generator ground through a 0.1 mfd. condenser to B— (pin 2 on 6BJ6 tube socket).
5. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.
6. Loop antenna must remain connected at all times.

ALIGNMENT NOTES

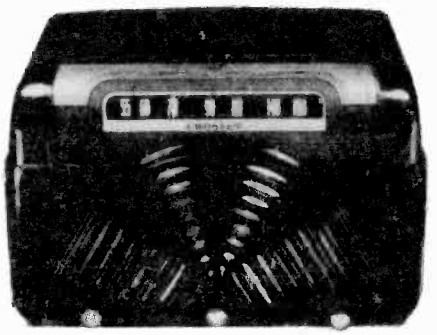
1. Turn I. F. trap core "A" counter-clockwise to stop.
2. To perform step 5 and 6, attach the chassis bottom to chassis and move loop antenna as far away from chassis as the loop brackets will permit.
3. Adjust for maximum output.

ALIGNMENT CHART

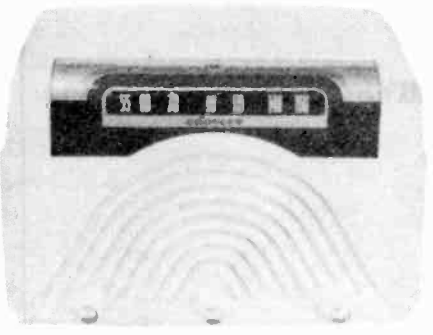
Alignment adjustments are shown in "CHASSIS VIEW."

Alignment Sequence	Signal Generator Output			Position of Tuning Dial or Var. Cond.	Adjust	Remarks
	Frequency in KC	In Series with	To			
1					A	See Note 1
2	455	200 mmf.	Ant. Clip	open	B	See Note 3
3	455	200 mmf.	Ant. Clip	open	C	See Note 3
4	455	200 mmf.	Ant. Clip	open	A	Adj. for min. signal
5	1620	200 mmf.	Ant. Clip	open	D	See Note 2 and 3
6	1400	200 mmf.	Ant. Clip	Tune in Signal	E	See Note 2 and 3

9-102.



9-118W



ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the low frequency end of the dial scale.
2. Turn the tone control to the treble (clockwise) position.
3. Connect the output meter across the speaker voice coil.
4. The r. f. signal input from the signal generator should be connected through a condenser as indicated in the alignment chart. Connect the signal generator ground to the receiver chassis.
5. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.
6. Loop antenna must remain connected at all times.

ALIGNMENT CHART

Alignment adjustments are shown in "CHASSIS, SIDE VIEW."

Alignment Sequence	Signal Generator Output			Position of Tuning Dial or Var. Cond.	Adjust for Maximum Output
	Frequency in KC	In Series with	To		
1	455	.05 mfd.	Pin 6 7Q7	open	A & B
2	1620	4 mmf.	Top Ant. Clip	open 1620	C
3	1400	4 mmf.	Top Ant. Clip	1400	D
4	1400	4 mmf.	Top Ant. Clip	1400	E
5	1400	4mmf.	Top Ant. Clip	1400	Rock var. cond. and repeat 3 & 4

MODELS 9-103,
9-104W

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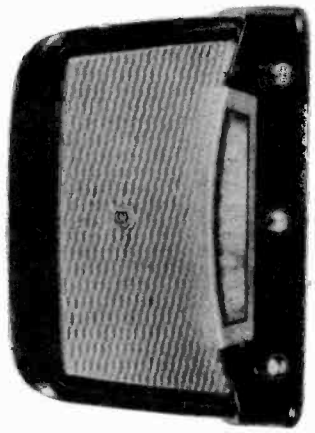
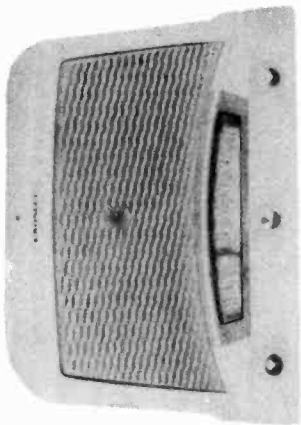
AVCO MFG. CORP.

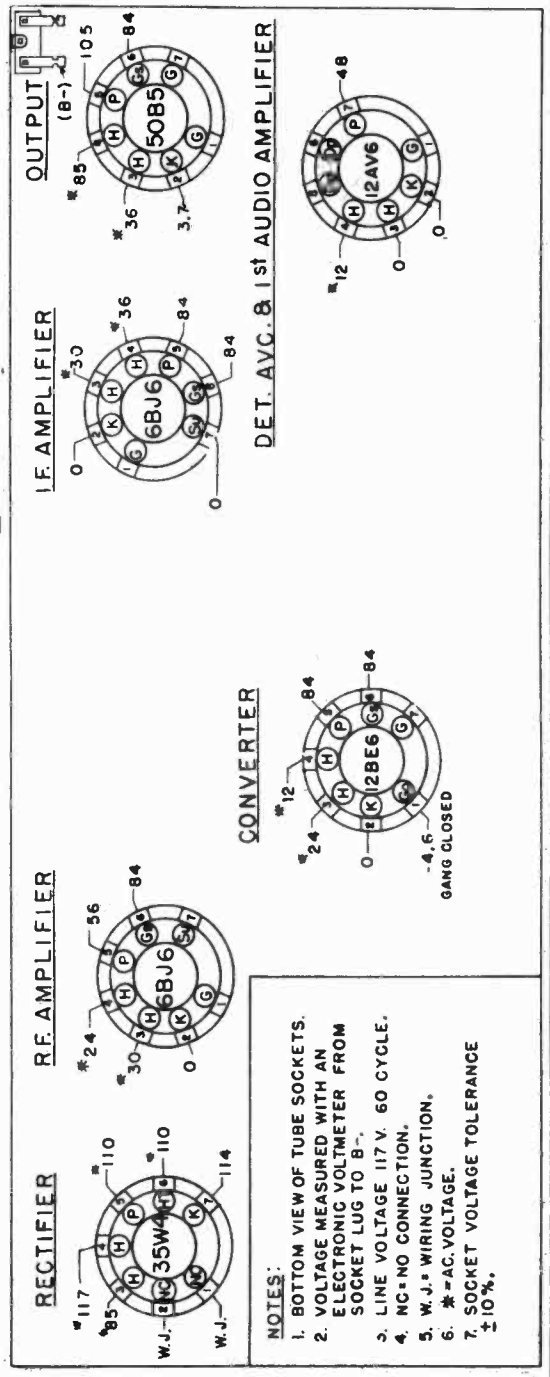
9-103



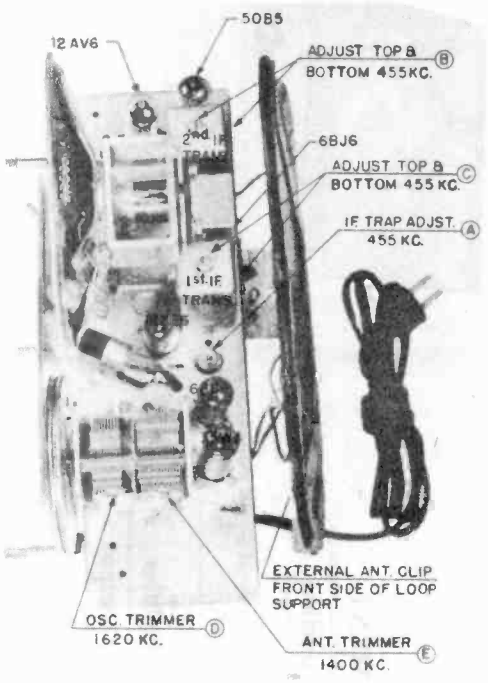
9-104W



SOCKET VOLTAGE CHART



CROSLEY DIV.
AVCO MFG. CORP.



CHASSIS, VIEW

TYPE: Six-tube, single band, superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: a.c.—d.c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 30 watts nominal.

POWER OUTPUT: 1.5 watts maximum.

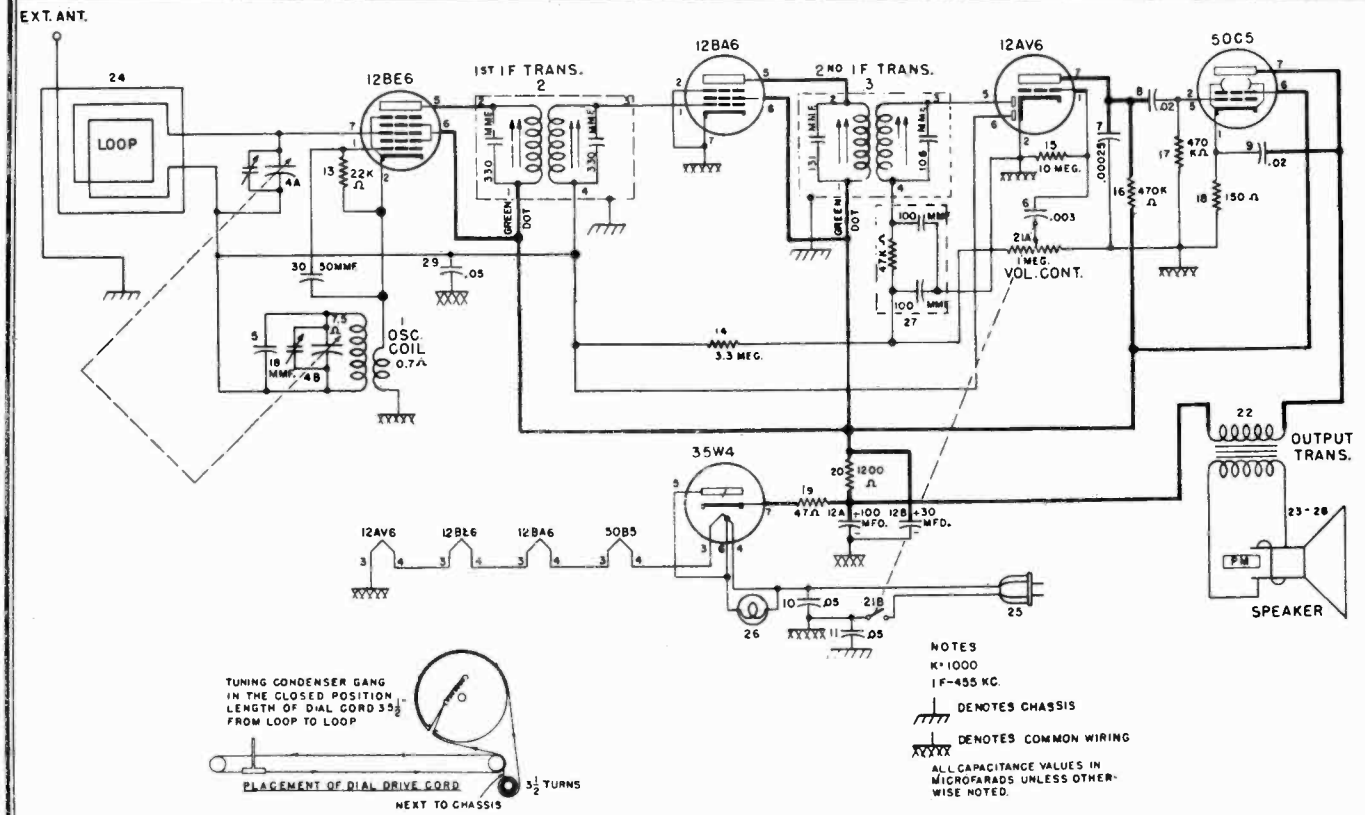
TUBE COMPLEMENT:

TYPE	FUNCTION
6BJ6	R. F. Amplifier
12BE6	Converter
6BJ6	I. F. Amplifier
12AV6	Detector, AVC 1st A. F. Amplifier
50B5	A. F. Power Output
35W4	Rectifier

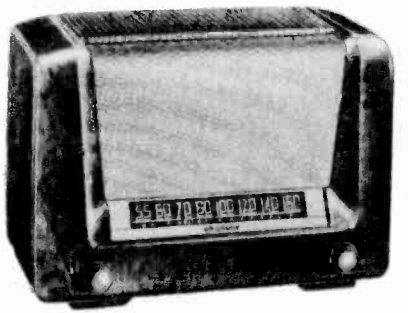
REPLACEMENT PARTS LIST

Figures in first column correspond to figures in Schematic Diagram

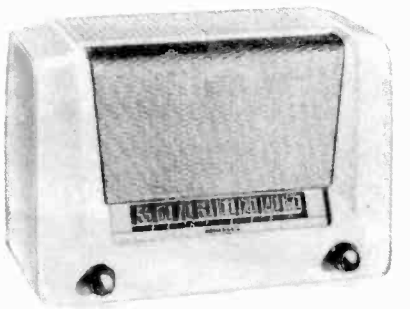
Item No.	Part No.	Description	Item No.	Part No.	Description
1	AW-143474	Coil, I.F. Trap	32	39373-144	Resistor, 1,200 ohms, 1 w.
2	AW-144325	Coil, Osc.	33	39373-119	Resistor, 47 ohms, ½ w.
3	AB-143678	Transformer, 1st I.F.	34	39368-14	Control, Volume, 1.0 meg.
4	AB-143679	Transformer, 2nd I.F.		39369-1	Switch, Power
5A	AC-137073-24	Condenser, Variable } Two	35	B-143494	Switch, Tone
5B		Condenser, Variable } Sect.	36	B-137723	Transformer, Audio
	Part of Item 5	Pulley	37	136420	Speaker
6	B-137498-12	Condenser, 30 mmf., 500 v., mica	38	AC-143698	Loop Antenna Assy.
7	B-137498-38	Condenser, 220 mmf., 500 v., mica	39	C-132300-1	Cable & Plug Assy., Power
8	39001-80	Condenser, .02 mfd., 600 v., paper	40	W-48858	Bulb (Dial) Type 47, 6.3 v., .15 amp.
9	39001-17	Condenser, .05 mfd., 600 v., paper		R-143113-1	Cabinet (9-103)
10	39001-19	Condenser, .1 mfd., 600 v., paper		R-143113-2	Cabinet (9-104W)
11	39001-19	Condenser, .1 mfd., 600 v., paper		W-131154-1	Cotter, External
12	C-137727-66	Condenser, 18 mmf., 500 v., ceramic		C-143884	Dial
13	B-142951-2	Filter Assy., Diode		B-143907	Escutcheon
14	C-137727-21	Condenser, 50 mmf., 500 v., ceramic		W-143514	Foot, Rubber
15	39001-76	Condenser, .003 mfd., 600 v., paper		AW-143791	Grille Cloth & Baffle Assy.
16	B-143686-3	Condenser, 100 mmf., 500 v., ceramic		39012-87	Iron Core, I.F. Trap
17	39001-74	Condenser, .002 mfd., 600 v., paper		39012-89	Iron Core, 1st I.F.
18	39001-74	Condenser, .002 mfd., 600 v., paper		39012-89	Iron Core, 2nd I.F.
19	39001-17	Condenser, .05 mfd., 600 v., paper		B-138576-8	Knob (9-103)
20A	B-143680	Condenser, 100 mfd., 150 v. } Two Sect.		B-138576-7	Knob (9-104W)
20B		Condenser, 30 mfd., 150 v. } Elect. Fil.		143289	Pointer, Dial
21	39373-47	Resistor, 4,700 ohms, ½ w.		W-137939-2	Pulley, Idler
22	39373-80	Resistor, 220,000 ohms, ½ w.		39156-49CP	Screw, Chassis Mtg.
23	39373-60	Resistor, 22,000 ohms, ½ w.		B-135075-2	Shaft, Drive
24	39373-97	Resistor, 2.2 megohms, ½ w.		W-46065	Shock Mount, Variable Cond.
26	39373-107	Resistor, 10 megohms, ½ w.		D-136565-25	Socket, Dial Light
27	39373-87	Resisor, 470,000 ohms, ½ w.		W-51752	Spring, Dial Drive
28	39373-14	Resistor, 100 ohms, ½ w.		C-135038-12	Terminal Strip, Two Lug
29	39373-80	Resistor, 220,000 ohms, ½ w.		C-135038-15	Terminal Strip, Three Lug
30	39373-74	Resistor, 100,000 ohms, ½ w.		W-134916	Washer, Dial Drive
31	39373-87	Resistor, 470,000 ohms, ½ w.			



SCHEMATIC DIAGRAM (First Production)



9-113



9-114W

DESCRIPTION

TYPE: Five-tube, single band, Superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: a.c.-d.c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 35 watts maximum.

POWER OUTPUT: 1.3 watts maximum.

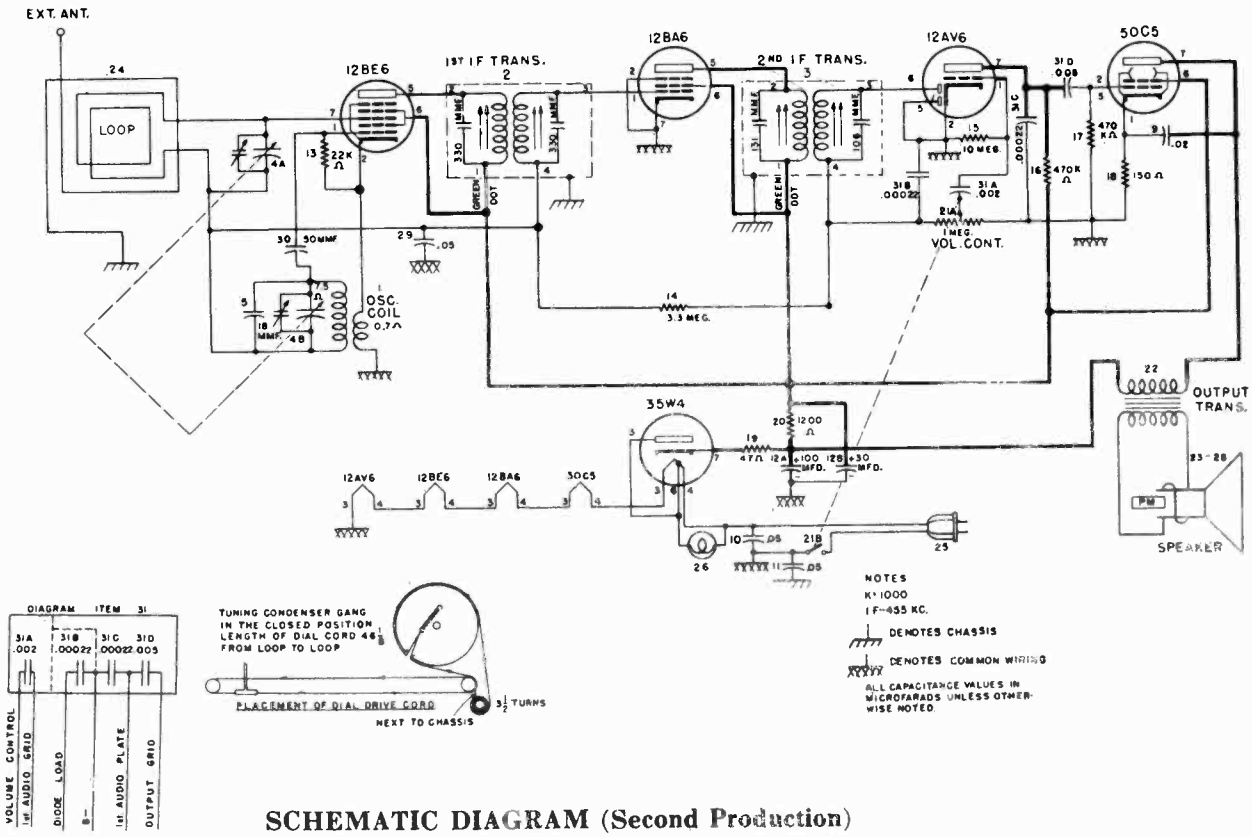
TUBE COMPLEMENT

Type	Function
12BE6	Converter
12BA6	I. F. Amplifier
12AV6	Detector, AVC, 1st A. F. Amplifier
50C5	A. F. Power Output
35W4	Rectifier

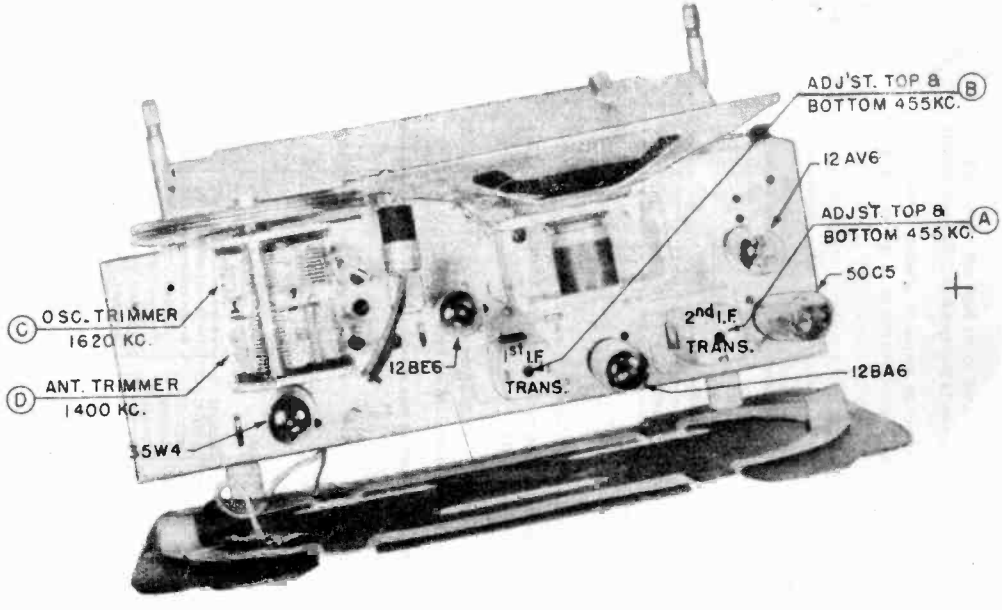
DIAL BULB: Type 47, 6.3 volts, .15 amp.

CROSLEY DIV.
AVCO MFG. CORP.

MODELS 9-113,
9-114W



SCHEMATIC DIAGRAM (Second Production)



CHASSIS, TOP VIEW

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity.

Reversing the position of the power plug when alternating current is used may reduce hum.

Under no circumstances should a ground be connected to this receiver.

MODELS 9-119, 9-120W

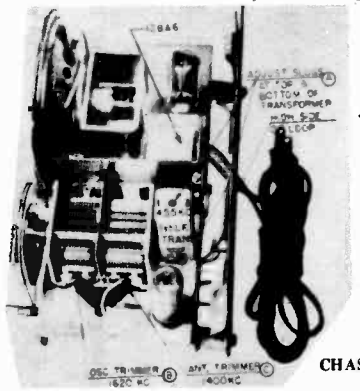
ALIGNMENT PROCEDURE

1. Connect an output meter across the speaker voice coil.
2. The r.f. signal input from the signal generator should be connected to the high side of loop antenna. Connect the signal generator ground through a 0.1 mfd. condenser to B— (pin 2 on 12BA6 tube socket).
3. Turn the volume control on full and adjust the signal generator output to produce approximately midscale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

ALIGNMENT CHART

Alignment Sequence	Signal Generator Output			Position of Dial Pointer	Adjust for Maximum Output
	Frequency in kc.	In Series with	To		
1	455	200 mmf.	High Side of Loop	1620	A
2	1620	*Radiated to Loop		1620	B
3	1400	*Radiated to Loop		1400	C

* Place signal generator output lead near the loop antenna.



CHASSIS, TOP VIEW

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity.

Reversing the position of the power plug when alternating current is used may reduce hum.

Under no circumstances should a ground be connected to this receiver.

1	139919	Transformer, I.F.	24	39001-73	Condenser, 250 mmf., 600 v., paper
2	139873	Antenna Loop and Back Assy.	25	39001-76	Condenser, .003 mfd., 600 v., paper
3	39369-1	Switch, Power	26	39001-73	Condenser, 250 mmf., 600 v., paper
4	142769	Cable and Plug Assy., Power	27	39001-80	Condenser, .02 mfd., 600 v., paper
5	138459	Speaker (Less Transformer)	28	39001-80	Condenser, .02 mfd., 600 v., paper
7	39373-60	Resistor, 22,000 ohm, ½ w.	29A	136770	Condenser, 50 mfd., 150 v. } Two Sect.
8	39373-14	Resistor, 100 ohm, ½ w.	29B		Condenser, 30 mfd., 150 v. } Elec. Filt.
9	39373-161	Resistor, 6,800 ohm, 1 w.	30	138131-1	Transformer, Output
10	39373-100	Resistor, 3.3 megohm, ½ w.	31	144325	Coil Assy., Oscillator
11	39373-67	Resistor, 47,000 ohm, ½ w.	32	137727-21	Condenser, 50 mmf., 500 v., ceramic
12	39373-144	Resistor, 1,200 ohm, 1 w.		144244-1	Cabinet (9-119)
13	39373-107	Resistor, 10 megohm, ½ w.		144242	Cabinet (9-120W)
14	39373-80	Resistor, 220,000 ohm, ½ w.		144243	Dial
15	39373-87	Resistor, 470,000 ohm, ½ w.		144240	Grill Cloth
16	39373-14	Resistor, 100 ohm, ½ w.		139925-1	Knob (9-119)
17	39368-14	Control, Volume (1 megohm)		139925-2	Knob (9-120W)
18A	137073-17	Condenser, Variable } Two		144239	Pointer Disc, Dial
18B		Condenser, Variable } Section		144224	Ring, Calibrated Dial
19	39001-13	Condenser, .01 mfd., 600 v., paper		51071	Ring, Retaining
20	39001-17	Condenser, .05 mfd., 600 v., paper		135075-4	Shaft, Drive
21	39001-17	Condenser, .05 mfd., 600 v., paper		39462-1	Socket, Tube
22	39001-19	Condenser, .1 mfd., 600 v., paper		51752	Spring, Dial Drive Cord
23	39001-73	Condenser, 250 mmf., 600 v., paper		132124	Stud, Trimount
				134916	Washer, Spring

MODELS 9-113, 9-114W

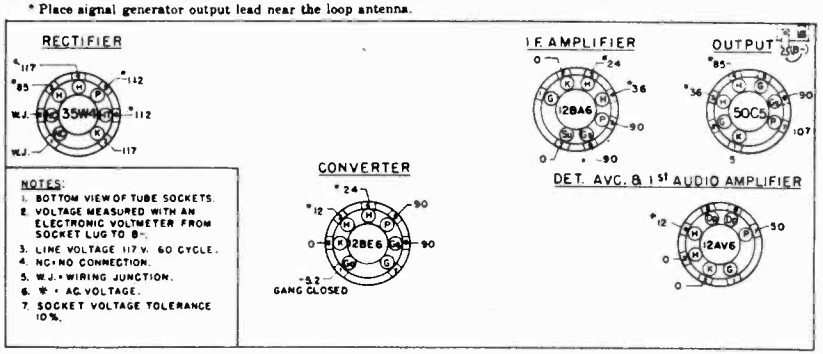
ALIGNMENT PROCEDURE

1. Connect an output meter across the speaker voice coil.
2. The r.f. signal input from the signal generator should be connected to the high side of loop antenna. Connect the signal generator ground through a 0.1 mfd. condenser to B (see Socket Voltage Chart).
3. Turn the volume control on full and adjust the signal generator output to produce approximately midscale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

ALIGNMENT CHART

Alignment Sequence	Signal Generator Output			Position of Tuning Cond.	Adjust for Maximum Output
	Frequency in kc.	In Series with	To		
1	455	200 mmf.	High Side of Loop	Open	A & B
2	1620	*Radiated to Loop		Open	C
3	1400	*Radiated to Loop		Tune to Signal	D

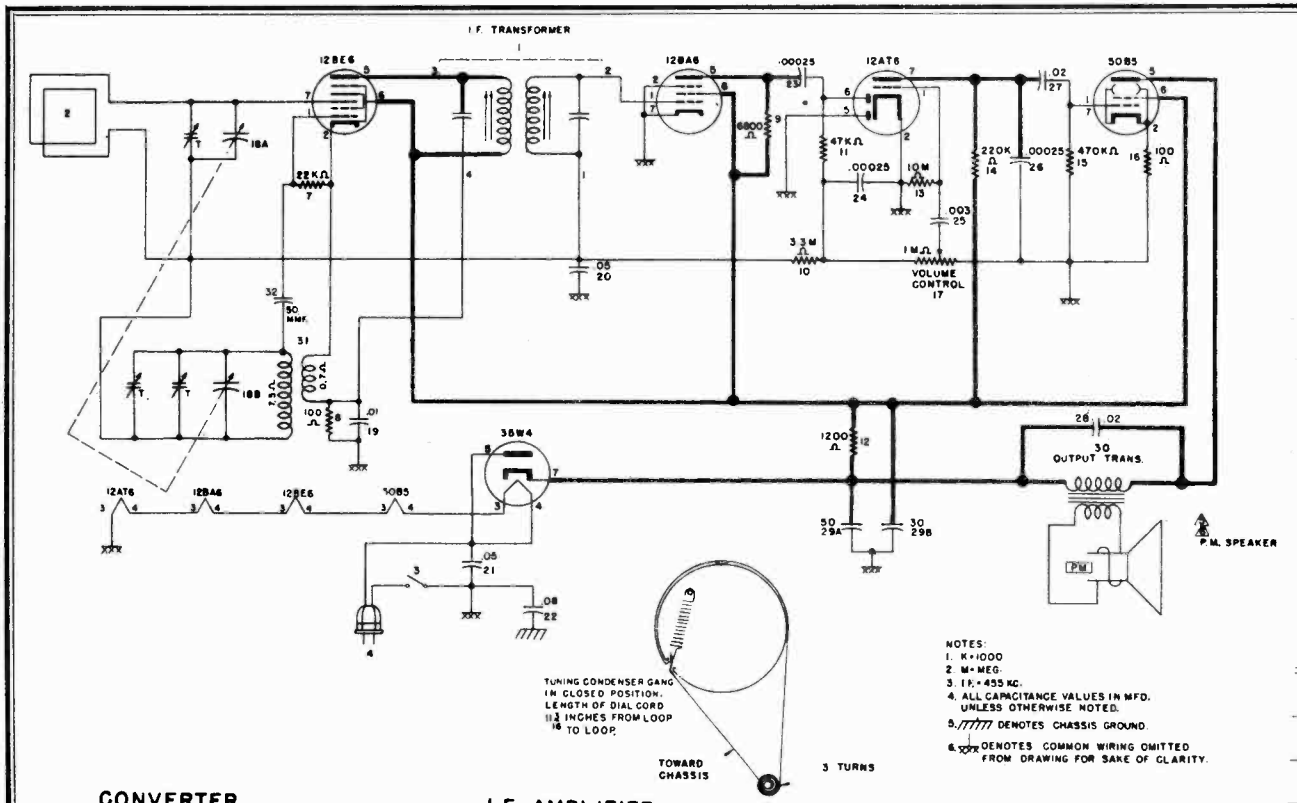
* Place signal generator output lead near the loop antenna.



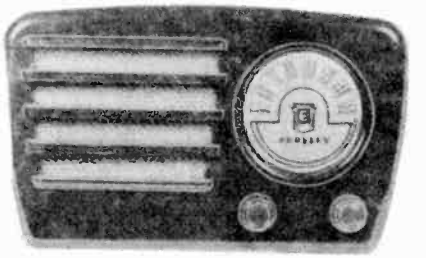
SOCKET VOLTAGE CHART

Item No.	Part Number	Description	Item No.	Part Number	Description
1	144325	Coil, Oscillator	24	144328	Antenna Loop and Back Assy.
2	139919-4	Transformer, 1st I. F.	25	132300-1	Cable and Plug Assy., Power
3	139919-3	Transformer, 2nd I. F.	26	W-48858	Bulb (Dial), Type 47, 6.3 v., .15 amp.
4A	137073-27	Condenser, Variable Two	27	142951-2	Condenser Resistor
4B		Condenser, Variable Section	29	39001-17	Condenser, .05 mfd., 600 v., paper
5	137727-66	Condenser, 18 mmf., 500 v., ceramic	30	137727-21	Condenser, 50 mmf., 500 v., ceramic
6	39001-76	Condenser, .003 mfd., 600 v., paper	31A	144675-1	Condenser, .002 mfd., 500 v.
7	39001-73	Condenser, .00025 mfd., 600 v., paper	31B		Condenser, .00022 mfd., 500 v. Four
8	39001-80	Condenser, .02 mfd., 600 v., paper	31C		Condenser, .00022 mfd., 500 v. Sect.
9	39001-80	Condenser, .02 mfd., 600 v., paper	31D		Condenser, .005 mfd., 500 v.
10	39001-17	Condenser, .05 mfd., 600 v., paper		144176	Background Assy., Dial
11	39001-17	Condenser, .05 mfd., 600 v., paper		144112	Bracket, Dial Light
12A	143680	Condenser, 100 mfd., 150 v. Two Sect.		144034-1	Cabinet (9-113)
12B		Condenser, 30 mfd., 150 v. Elec. Filter		144127	Cabinet (9-114W)
13	39373-60	Resistor, 22,000 ohm, ½ w.		144027	Dial, Glass
14	39373-100	Resistor, 3.3 megohm, ½ w.		144110	Grille and Baffle
15	39373-107	Resistor, 10 megohm, ½ w.		46065	Grommet, Var. Cond. Mtg.
16	39373-87	Resistor, 470,000 ohm, ½ w.		138576-10	Knob (9-113)
17	39373-87	Resistor, 470,000 ohm, ½ w.		138576-9	Knob (9-114W)
18	39373-16	Resistor, 150 ohm, ½ w.		144070	Pointer, Dial
19	39373-119	Resistor, 47 ohm, 1 w.		39220-36	Screw, Chassis Mtg.
20	39373-144	Resistor, 1200 ohm, 1 w.		135075-7	Shaft, Drive
21A	39368-14	Control, Volume, 1 megohm		131346	Socket (Miniature Tube)
21B	39369-1	Switch, Power		136565-17	Socket, Dial Light
22	138131-1	Transformer, Output		51752	Spring, Dial Drive Cord
23	143694	Speaker (Less Transformer)		132124SB	Trimount Stud

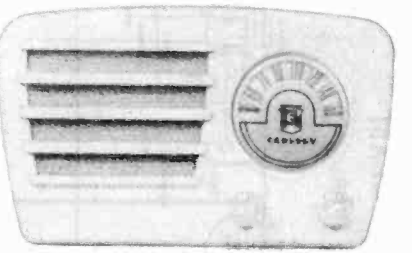
*Used on 2nd production receivers in place of items 6, 7, 8, and 27.



9-119



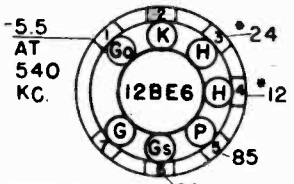
9-120W



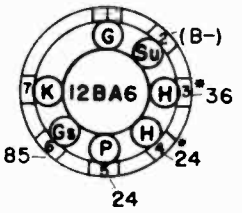
TUBE COMPLEMENT

Type	Function
12BE6	Converter
12BA6	I. F. Amplifier
12AT6	Detector, AVC, 1st A.F. Amplifier
50B5	A.F. Power Output
35W4	Rectifier

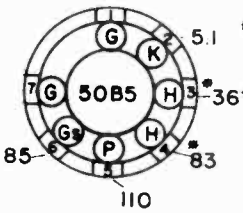
CONVERTER



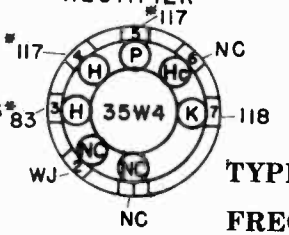
I.F. AMPLIFIER



OUTPUT

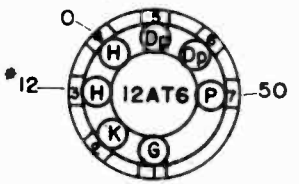


RECTIFIER



NOTES:
1. BOTTOM VIEW OF TUBE SOCKETS.
2. MEASURE VOLTAGE WITH AN ELECTRONIC VOLTMETER FROM SOCKET LUG TO 8-PIN 2 ON THE 12BA6.
3. LINE VOLTAGE 117V 60 ~
4. NC = NO CONNECTION
5. WJ = WIRING JUNCTION
6. * = AC. VOLTAGE
7. SOCKET VOLTAGE TOLERANCE ± 10%

DET., AVC., 1st A.F. AMPL.



SOCKET VOLTAGE CHART

TYPE: Five-tube, single band, Superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: a.c.-d.c.

VOLTAGE RATING: 105-125 volts.

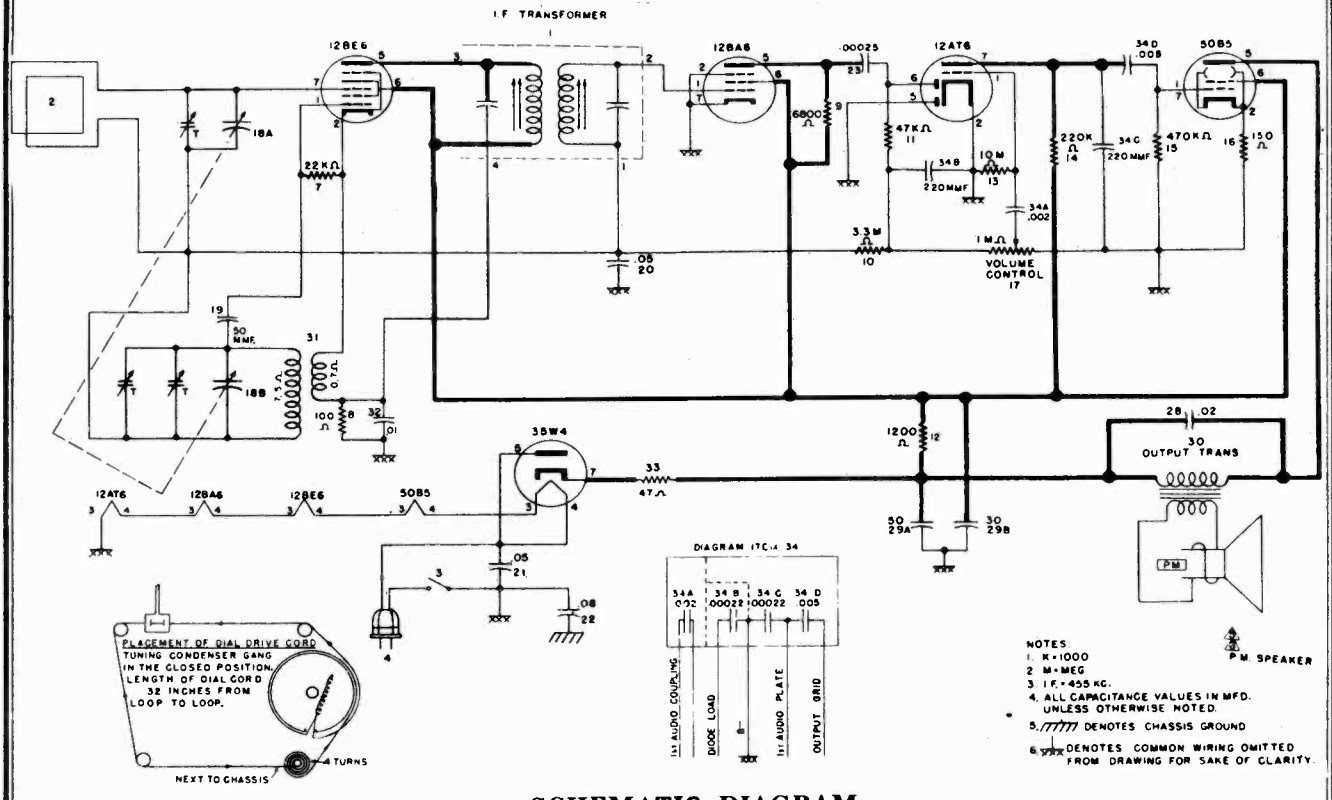
POWER CONSUMPTION: 30 watts.

POWER OUTPUT: 1.5 watts maximum.

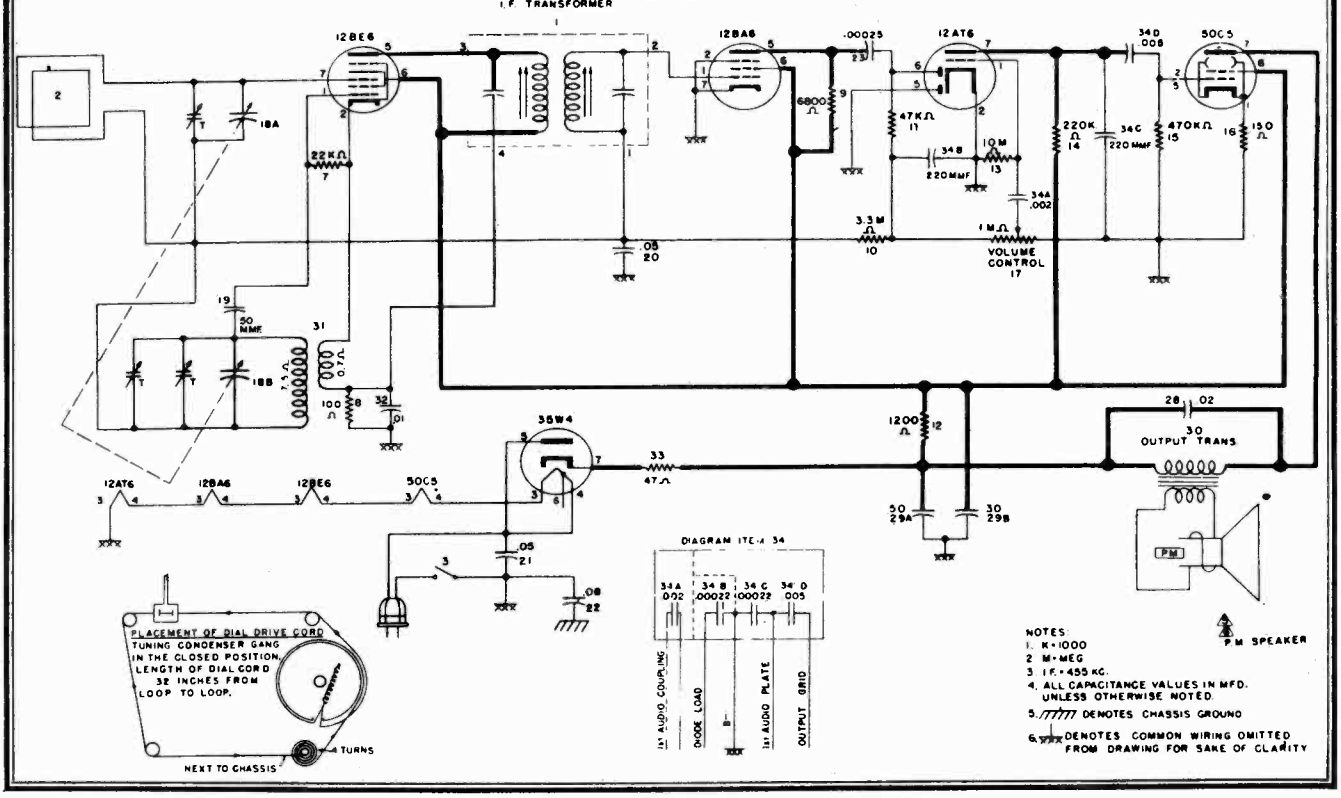
MODELS 9-121,
9-122W

CROSLEY DIV.
AVCO MFG. CORP.

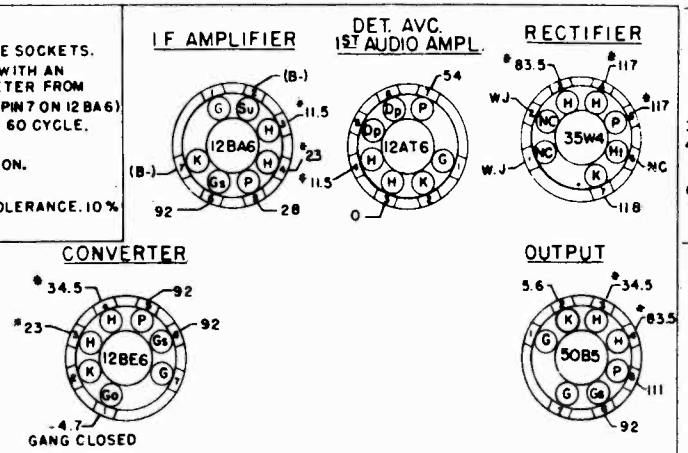
SCHEMATIC DIAGRAM
Using 50B5 tube



SCHEMATIC DIAGRAM
Using 50C5 tube

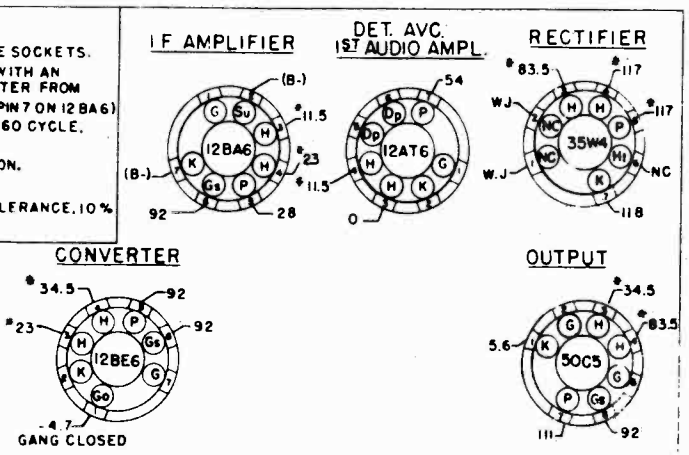


NOTES:
1. BOTTOM VIEW OF TUBE SOCKETS.
2. VOLTAGE MEASURED WITH AN ELECTRONIC VOLTMETER FROM SOCKET LUG TO B-.(PIN 7 ON 12BA6)
3. LINE VOLTAGE 117V. 60 CYCLE.
4. NC = NO CONNECTION.
5. W. J. = WIRING JUNCTION.
6. * = AC. VOLTAGE.
7. SOCKET VOLTAGE TOLERANCE. 10%



SOCKET VOLTAGE CHART
Using 50B5 tube

NOTES:
1. BOTTOM VIEW OF TUBE SOCKETS.
2. VOLTAGE MEASURED WITH AN ELECTRONIC VOLTMETER FROM SOCKET LUG TO B-.(PIN 7 ON 12BA6)
3. LINE VOLTAGE 117V. 60 CYCLE.
4. NC = NO CONNECTION.
5. W. J. = WIRING JUNCTION.
6. * = AC. VOLTAGE.
7. SOCKET VOLTAGE TOLERANCE. 10%



SOCKET VOLTAGE CHART
Using 50C5 tube

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity.

Reversing the position of the power plug when alternating current is used may reduce power hum.

Under no circumstances should a ground be connected to this receiver.

ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r. f. signal input from the signal generator should be connected to the external antenna clip. Connect the signal generator ground through a 0.1 mfd. condenser to B—(pin 7 on 12BA6 tube socket).
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

ALIGNMENT CHART

Alignment Sequence	Signal Generator Output			Position of Dial Pointer or Tuning Gang	Adjust for Maximum Output
	Frequency in kc.	In Series with	To		
1	455	.1 mfd.	To Loop	Open	A
2	1620	.1 mfd.	To Loop	1620	B
3	1400	.1 mfd.	To Loop	1400	C

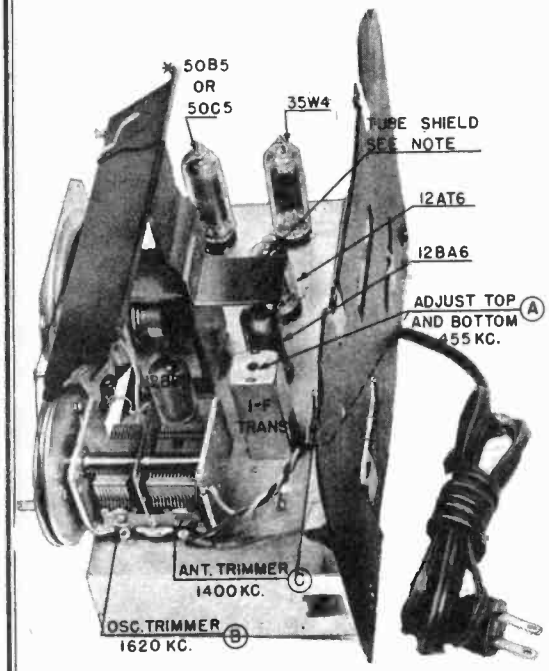
Note:
On some receivers, the tube shield that is attached to the speaker bracket is omitted.

MODELS 9-121, 9-122W

CROSLEY DIV. AVCO MFG. CORP.

9-121

9-122W



TUBE COMPLEMENT:

Type	Function
12BE6	Mixer
12BA6	I. F. Amplifier
12AT6	Detector, AVC, 1st A. F. Amplifier
50B5 or 50C5	A. F. Power Output
35W4	Rectifier

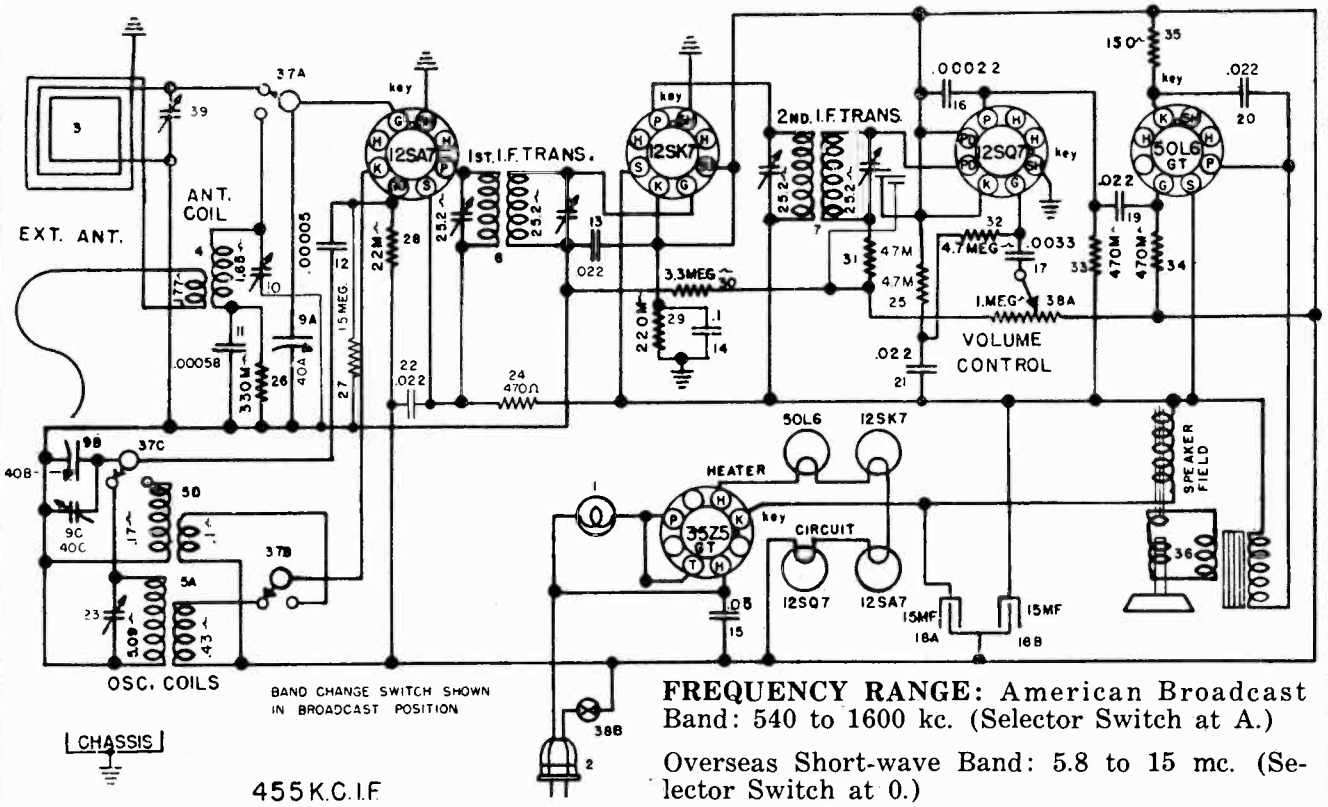
* NOTE:
RECEIVERS WITH TUBE SHIELD USE 50B5 TUBE
RECEIVERS WITHOUT TUBE SHIELD USE 50C5 TUBE

CHASSIS TOP VIEW

Item No.	Part No.	Description
1	C-139919	Transformer, I.F.
2	AC-144328	Loop Antenna & Back Assy.
3	39369-1	Switch, Power
4	C-142769-1	Cable & Plug Assy., Power
5	139631	Speaker
7	39373-60	Resistor, 22,000 ohm, ½ w.
8	39373-14	Resistor, 100 ohm, ½ w.
9	39373-161	Resistor, 6,800 ohm, 1 w.
10	39373-100	Resistor, 3.3 megohm, ½ w.
11	39373-67	Resistor, 47,000 ohm, ½ w.
12	39373-144	Resistor, 1200 ohm, 1 w.
13	39373-107	Resistor, 10 megohm, ½ w.
14	39373-80	Resistor, 220,000 ohm, ½ w.
15	39373-87	Resistor, 470,000 ohm, ½ w.
16	39373-16	Resistor, 150 ohm, ½ w.
17	39368-14	Control, Volume (1 meg.)
18A	AC-137073-15	Condenser, Variable } Two Section
18B		Condenser, Variable }
19	C-137727-21	Condenser, 50 mmf., 500 v. ceramic
20	39001-17	Condenser, .05 mfd., 600 v., paper
21	39001-17	Condenser, .05 mfd., 600 v., paper
22	39001-19	Condenser, .1 mfd., 600 v., paper
23	39001-73	Condenser, .00025 mfd., 600 v., paper
28	39001-80	Condenser, .02 mfd., 600 v., paper
29A	B-136770	Condenser, 50 mfd., 150 v. } Two Section
29B		Condenser, 30 mfd., 150 v. } Elect. Filter
30	138131-1	Transformer, Output
31	AW-144325	Coil Assy., Oscillator
32	39001-13	Condenser, .01 mfd., 600 v., paper
33	39373-119	Resistor, 47 ohm, 1 w.
34A	B-144675-1	Condenser, .002 mfd., 500 v. } Four Sect.
34B		Condenser, .00022 mfd., 500 v. }
34C		Condenser, .00022 mfd., 500 v. }
34D		Condenser, .005 mfd., 500 v. }
	AB-143318	Background & Bracket Assy., Dial
	R-144015-2	Cabinet (9-121)
	AW-143988	Cabinet (9-122W)
	W-139784	Clip, Spring (Cabinet Back)
	C-144175	Dial Glass
	B-138540-1	Knob (9-121)
	B-138540-2	Knob (9-122W)
	B-144162	Pointer, Dial
	W-51071	Ring, Retaining (Drive Shaft)
	39220-28CP	Screw, Chassis Mtg.
	B-135075-2	Shaft, Dial Drive
	W-46065	Shock Mount (Rubber), Var. Cond. Mtg.
	39462-1	Socket, Tube
	W-51752	Spring, Dial Drive Cord
	B-144135	Spring, Retaining (Dial Glass)
	W-134916	Washer, Spring (Drive Shaft)

CROSLEY DIV.
AVCO MFG. CORP.

MODELS 56TA, 56TC, 56TW



FREQUENCY RANGE: American Broadcast Band: 540 to 1600 kc. (Selector Switch at A.)

Overseas Short-wave Band: 5.8 to 15 mc. (Selector Switch at 0.)

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: a.c—d.c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 35 watts nominal.

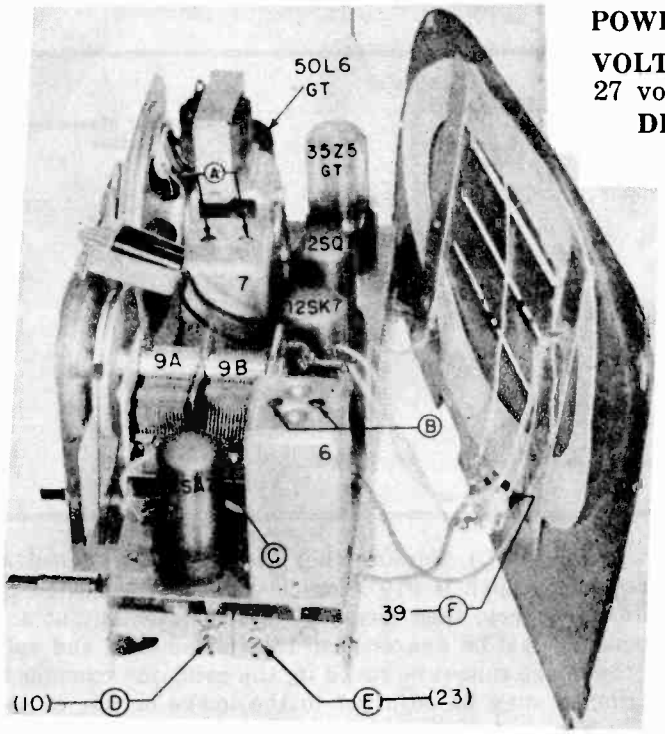
POWER OUTPUT: 1 watt maximum.

VOLTAGE DROP ACROSS SPEAKER FIELD: 27 volts.

DIAL BULB: Type 47, 6.3 volts, .15 amp.

RESISTANCE OF SPEAKER FIELD: 450 ohms.

SPEAKER FIELD CURRENT: 60 ma.



CHASSIS, SIDE VIEW—

-MODELS 56TA, 56TW, 56TC

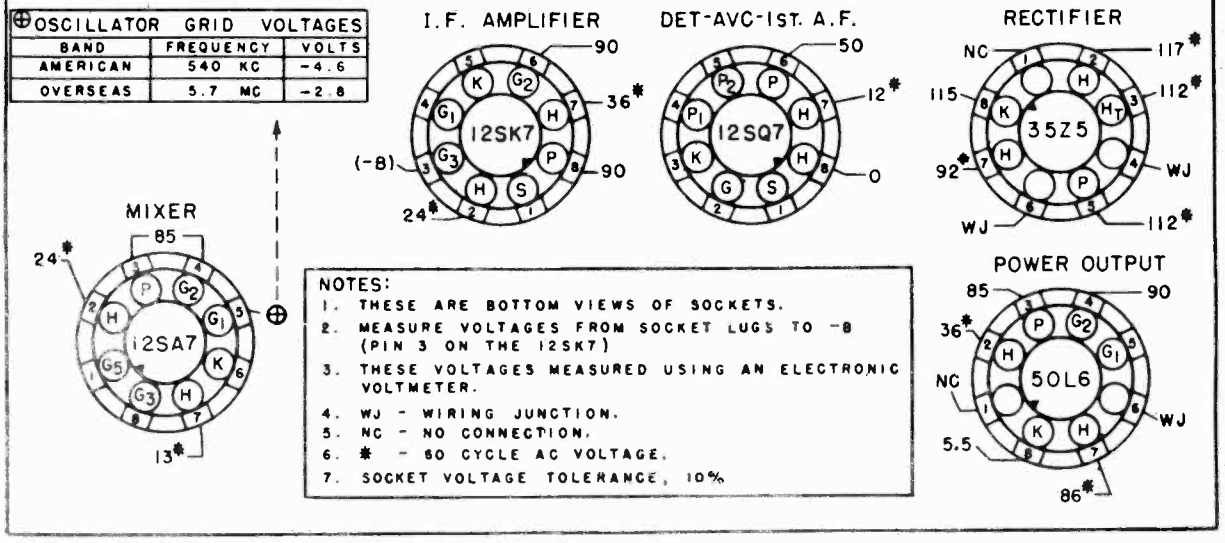
Type	Function
12SA7 (or GT/G)	Mixer
12SK7 (or GT/G)	I.F. Amplifier
12SQ7 (or GT/G)	Detector, AVC, 1st A.F. Amplifier
50L6GT	A.F. Power Output
35Z5GT/G	Rectifier

MODELS 56TA,56TC,56TW
MODELS 56TA-L,56TC-L,
56TW-L

CROSLEY DIV.
AVCO MFG. CORP.

MODELS 56TA, 56TW, 56TC

⊕OSCILLATOR GRID VOLTAGES		
BAND	FREQUENCY	VOLTS
AMERICAN	540 KC	-4.6
OVERSEAS	5.7 MC	-2.8



NOTES:
1. THESE ARE BOTTOM VIEWS OF SOCKETS.
2. MEASURE VOLTAGES FROM SOCKET LUGS TO -8 (PIN 3 ON THE 12SK7)
3. THESE VOLTAGES MEASURED USING AN ELECTRONIC VOLTMETER.
4. WJ - WIRING JUNCTION.
5. NC - NO CONNECTION.
6. * - 60 CYCLE AC VOLTAGE.
7. SOCKET VOLTAGE TOLERANCE, 10%.

ALIGNMENT PROCEDURE

MODELS 56TA, 56TW, 56TC — **MODELS 56TA-L, 56TW-L, 56TC-L**

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r.f. signal input from the signal generator should be connected to the external antenna lead. Connect the signal generator ground through a 0.1 mfd. condenser to —B (pin 3 on 12SK7 tube socket Models 56TA, 56TW, 56TC) (pin 4 on 14A7 tube socket Models 56TA-L, 56TW-L, 56TC-L).
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

Alignment Sequence	Signal Generator Output			Position of		Adjust for Maximum Output
	Frequency in kc.	In Series with	To	Band Switch	Tuning Dial	
1	455	200 mmf.	Ant.	A	1,620	A & B
2	15,300	400 ohms	Ant.	O	15,300	C
3	15,000	400 ohms	Ant.	O	15,000	D
4	1,400	200 mmf.	Ant.	A	1,400	E & F

NOTE: When aligning the short-wave oscillator trimmer (C), be sure that the circuit is aligned at the correct frequency and not at the image frequency which is 910 kilocycles lower as indicated by the receiver dial. To check: Tune in the generator frequency, then increase the generator output and tune in the image frequency. The image frequency should be weaker than the fundamental and audible 910 kilocycles lower on the receiver dial. If the image cannot be tuned in, the oscillator trimmer is adjusted to the wrong peak; i.e., the oscillator trimmer may be adjusted to the image or one of the harmonics instead of the fundamental frequency. The correct peak is the second one heard as the trimmer adjustment screw is opened from the completely closed position.

MODELS 56TA, 56TW, 56TC

Item No.	Part No.	Description
1	W-48858	Dial Light, 6.3 V.
2	C-132300-1	Power Cable and Plug
3		Ant. Loop (Part of Antenna Loop and Back Assembly. See Cabinet Parts.)
4	AW-134994	H. F. Ant. Coil
5A	AW-134993	B. C. Osc. Coil } Dual
5B		H. F. Osc. Coil } Coil
6	AW-134065	1st I. F. Transformer
7	AW-134158	2nd I. F. Transformer
9A	B-134995	Variable Condenser } Two
9B		Variable Condenser } Section
10	AB-135088	H. F. Ant. Trimmer
11	GC-210685-143	Condenser, 580 mmf., 300 V. Mica
12	39004-5	Condenser, 50 mmf., Mica
13	39001-63	Condenser, .022 mfd., 200 V. Paper
14	39001-67	Condenser, .1 mfd., 200 V. Paper
15	39001-65	Condenser, .05 mfd., 200 V. Paper
16	39004-9	Condenser, 220 mmf., Mica
17	39001-10	Condenser, .0033 mfd., 600 V. Paper Two
18A	W-134177	Condenser, 15 mfd., 140 V. Section
18B		Condenser, 15 mfd., 120 V. Elect. Filter
19	39001-63	Condenser, .022 mfd., 200 V. Paper
20	39001-63	Condenser, .022 mfd., 200 V. Paper
21	39001-63	Condenser, .022 mfd., 200 V. Paper
22	39001-63	Condenser, .022 mfd., 200 V. Paper
23	Part of Item #10	B. C. Osc. Trimmer
24	39281-11	Resistor, 470 Ohm, ½ W.
25	39281-17	Resistor, 4700 Ohm, ½ W.
26	39281-28	Resistor, 330,000 Ohm, ½ W.
27	39281-38	Resistor, 15 Megohm, ½ W.
28	39281-21	Resistor, 22,000 Ohm, ½ W.
29	39281-27	Resistor, 220,000 Ohm, ½ W.
30	39281-34	Resistor, 3.3 Megohm, ½ W.
31	39281-23	Resistor, 47,000 Ohm, ½ W.
32	39281-35	Resistor, 4.7 Megohm, ½ W.
33	39281-29	Resistor, 470,000 Ohm, ½ W.
34	39281-29	Resistor, 470,000 Ohm, ½ W.
35	39281-8	Resistor, 150 Ohm, ½ W.
36	GC-49675-9	Speaker
37A	49772-3	Band Change Switch } Three
37B		Band Change Switch } Section
37C		Band Change Switch }
38A	C-46846-6	Control, Volume (1 Megohm) } Assy.
38B		Switch (Power) }
39	Part of Item #3	B. C. Ant. Trimmer
	W-47577	Cable Lock Plate
	C-135175	Dial Face
	B-134570	Dial Pointer
	W-134667	Dial Pointer Clip
	W-51752	Dial Cord Spring
	39017-4	Dial Light Socket Assembly
	W-134917	Drive Shaft
	W-51071	Retaining Ring
	W-134916	Spring Washer
	G-39204	Tube Socket
	W-49770	Trimount Stud, (Dial Face and Chassis Bottom Cover)
	W-134055	Grommet
	W-135164	Rubber Bumper
	W-46662	Palnut (⅜-32)
	D-132136-1	Plastic Cabinet—Brown (56TA)
	AW-134738	Plastic Cabinet—Ivory (56TW)
	D-134586	Wood Cabinet (56TC)
	AC-134618	Ant. Loop and Back Assembly (56TA, 56TW)
	AC-134288	Ant. Loop and Back Assembly (56TC)
	B-134610	Dial Lens
	W-134882	Knob (56TA, 56TC)
	W-134883	Knob (56TW)
	39220-32	Mounting Screw
	W-136630	Trimount Stud (Dial Lens, 56TA, 56TW)
	W-132124	Trimount Stud (Ant. Loop and Back Assembly, 56TA, 56TW)

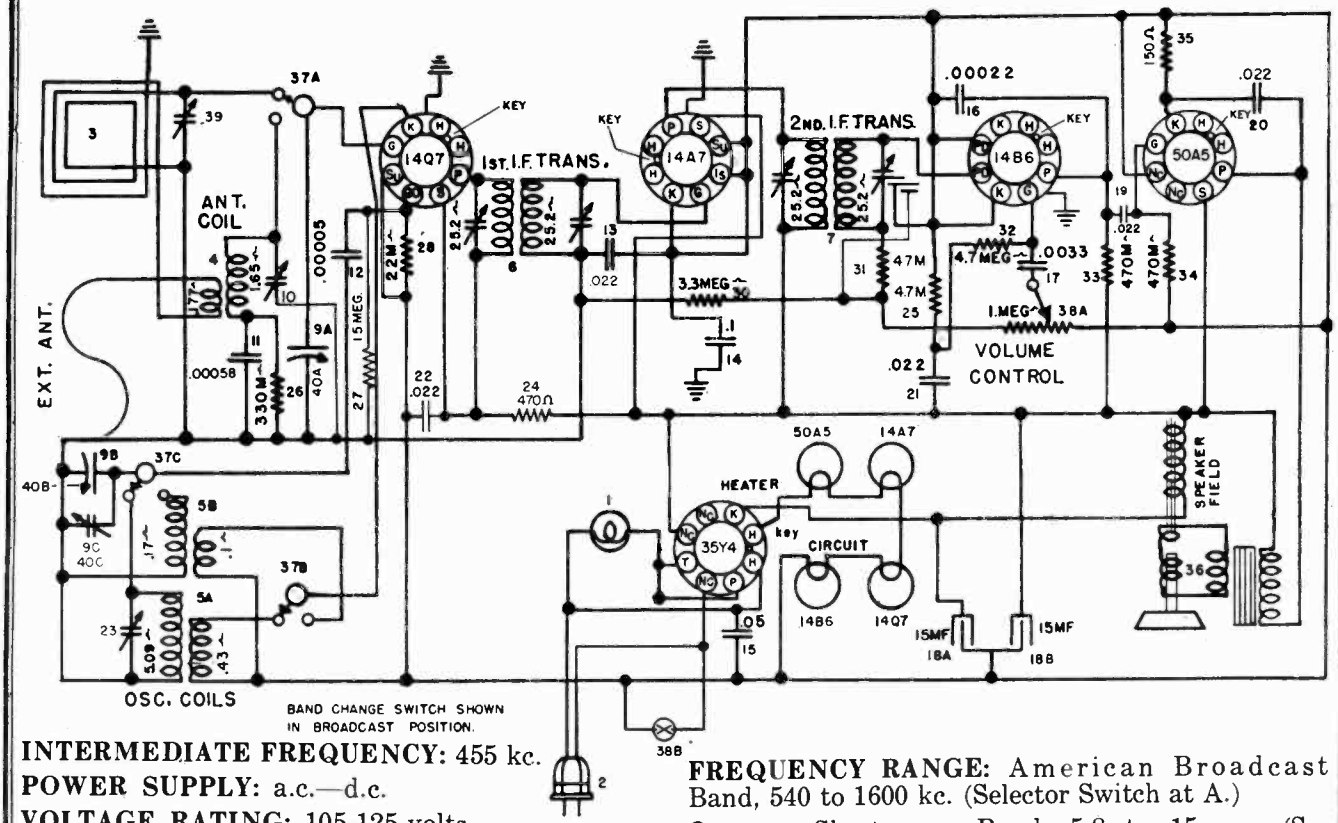
MODELS 56TA-L, 56TW-L, 56TC-L

Item No.	Part No.	Description
1	W-48858	Dial Light, 6.3 v.
2	C-132300-1	Power Cable and Plug
3		Ant. Loop (Part of Antenna Loop and Back Assembly. See Cabinet Parts.)
4	AW-134994	H. F. Ant. Coil
5A	AW-134993	B. C. Osc. Coil } Dual
5B		H. F. Osc. Coil } Coil
6	AW-134065	1st I. F. Transformer
7	AW-134158	2nd I. F. Transformer
9A	B-134995	Variable Condenser } Two
9B		Variable Condenser } Section
10	AB-135088	H. F. Ant. Trimmer
11	GC-210685-143	Condenser, 580 mmf., 300 v., Mica
12	39004-5	Condenser, 50 mmf., 500 v., Mica
13	39001-63	Condenser, .022 mfd., 200 v., Paper
14	39001-67	Condenser, .1 mfd., 200 v., Paper
15	39001-65	Condenser, .05 mfd., 200 v., Paper
16	39004-9	Condenser, 220 mmf., 500 v., Mica
17	39001-10	Condenser, .0033 mfd., 600 v., Paper Two
18A	W-134177	Condenser, 15 mfd., 140 v. Section
18B		Condenser, 15 mfd., 120 v. Elect. Filter
19	39001-63	Condenser, .022 mfd., 200 v., Paper
20	39001-63	Condenser, .022 mfd., 200 v., Paper
21	39001-63	Condenser, .022 mfd., 200 v., Paper
22	39001-63	Condenser, .022 mfd., 200 v., Paper
23	Part of Item #10	B. C. Osc. Trimmer
24	39281-11	Resistor, 470 Ohm, ½ w.
25	39281-17	Resistor, 4700 Ohm, ½ w.
26	39281-28	Resistor, 330,000 Ohm, ½ w.
27	39281-38	Resistor, 15 Megohm, ½ w.
28	39281-21	Resistor, 22,000 Ohm, ½ w.
30	39281-34	Resistor, 3.3 Megohm, ½ w.
31	39281-23	Resistor, 47,000 Ohm, ½ w.
32	39281-35	Resistor, 4.7 Megohm, ½ w.
33	39281-29	Resistor, 470,000 Ohm, ½ w.
34	39281-29	Resistor, 470,000 Ohm, ½ w.
35	39281-8	Resistor, 150 Ohm, ½ w.
36	GC-49675-9	Speaker
37A	49772-3	Band Change Switch } Three
37B		Band Change Switch } Section
37C		Band Change Switch }
38A	C-46846-6	Control, Volume (1 Megohm) } Assy.
38B		Switch (Power) }
39	Part of Item #3	B. C. Ant. Trimmer
	W-47577	Cable Lock Plate
	C-135175	Dial Face
	B-134570	Dial Pointer
	W-134667	Dial Pointer Clip
	W-51752	Dial Cord Spring
	39017-4	Dial Light Socket Assembly
	W-134917	Drive Shaft
	W-51071	Retaining Ring
	W-134916	Spring Washer
	W-135371	Tube Socket
	W-49770	Trimount Stud (Dial Face and Chassis Bottom Cover)
	W-134055	Grommet
	W-135164	Rubber Bumper
	W-46662	Palnut (⅜-32)
	D-132136-1	Plastic Cabinet—Brown (56TA-L)
	AW-134738	Plastic Cabinet—Ivory (56TW-L)
	D-134586	Wood Cabinet (56TC-L)
	AC-134618	Ant. Loop and Back Assembly (56TA-L, 56TW-L)
	AC-134288	Ant. Loop and Back Assembly (56TC-L)
	B-134610	Dial Lens
	W-134882	Knob (56TA-L, 56TC-L)
	W-134883	Knob (56TW-L)
	39220-32	Mounting Screw
	W-136630	Trimount Stud (Dial Lens, 56TA-L, 56TW-L)
	W-132124	Trimount Stud (Ant. Loop and Back Assembly, 56TA-L, 56TW-L)

Figures in first column correspond to figures in Schematic Diagram

CROSLEY DIV. AVCO MFG. CORP.

MODELS 56TA-L, 56TC-L, 56TW-L



INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: a.c.—d.c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 35 watts nominal.

POWER OUTPUT: 1 watt minimum.

VOLTAGE DROP ACROSS SPEAKER FIELD: 27 volts.

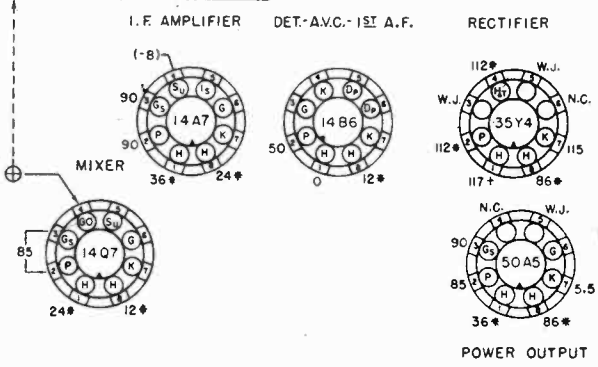
RESISTANCE OF SPEAKER FIELD: 450 ohms.

DIAL BULB: Type 47, 6.3 volts, .15 amp.

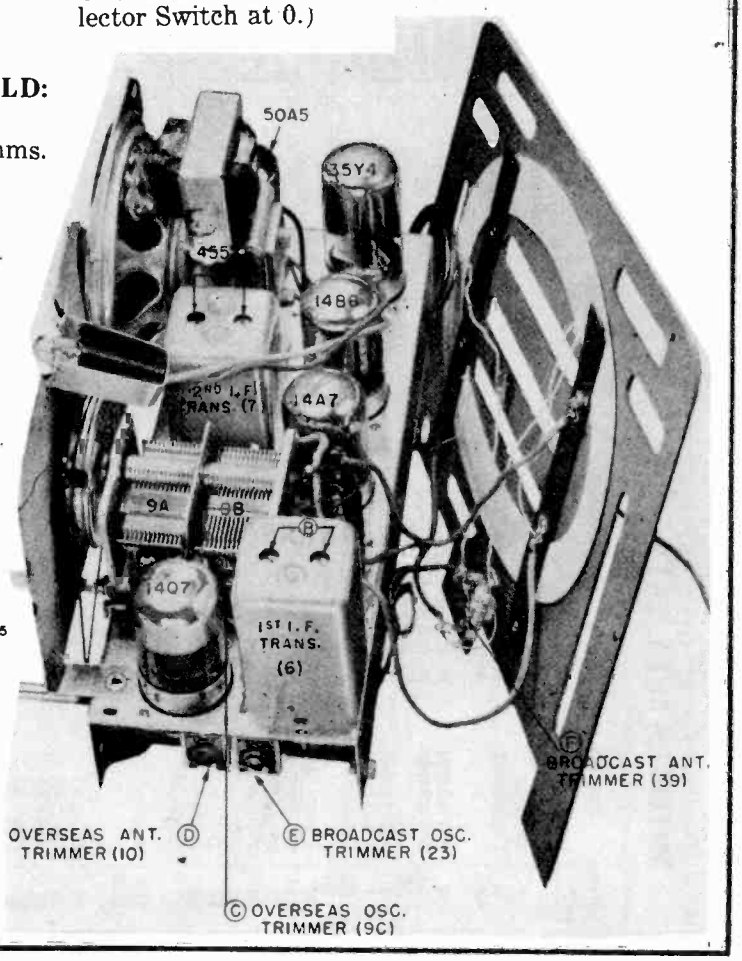
FREQUENCY RANGE: American Broadcast Band, 540 to 1600 kc. (Selector Switch at A.)

Overseas Short-wave Band. 5.8 to 15 mc. (Selector Switch at 0.)

⊕ OSCILLATOR GRID VOLTAGES		
BAND	FREQUENCY	VOLTS
AMERICAN	550 KC	−4.6
OVERSEAS	5.8	−2.8



NOTES:
1. THESE ARE BOTTOM VIEWS OF TUBE SOCKETS.
2. MEASURE VOLTAGES FROM SOCKET LUGS TO −B (PIN 4 ON THE 14A7).
3. THESE VOLTAGES WERE MEASURED USING AN ELECTRONIC VOLTMETER.
4. W.J. — WIRING JUNCTION.
5. N.C. — NO CONNECTION.
6. * — 60 CYCLE A.C. VOLTAGES.
7. SOCKET VOLTAGE TOLERANCE, 10%.



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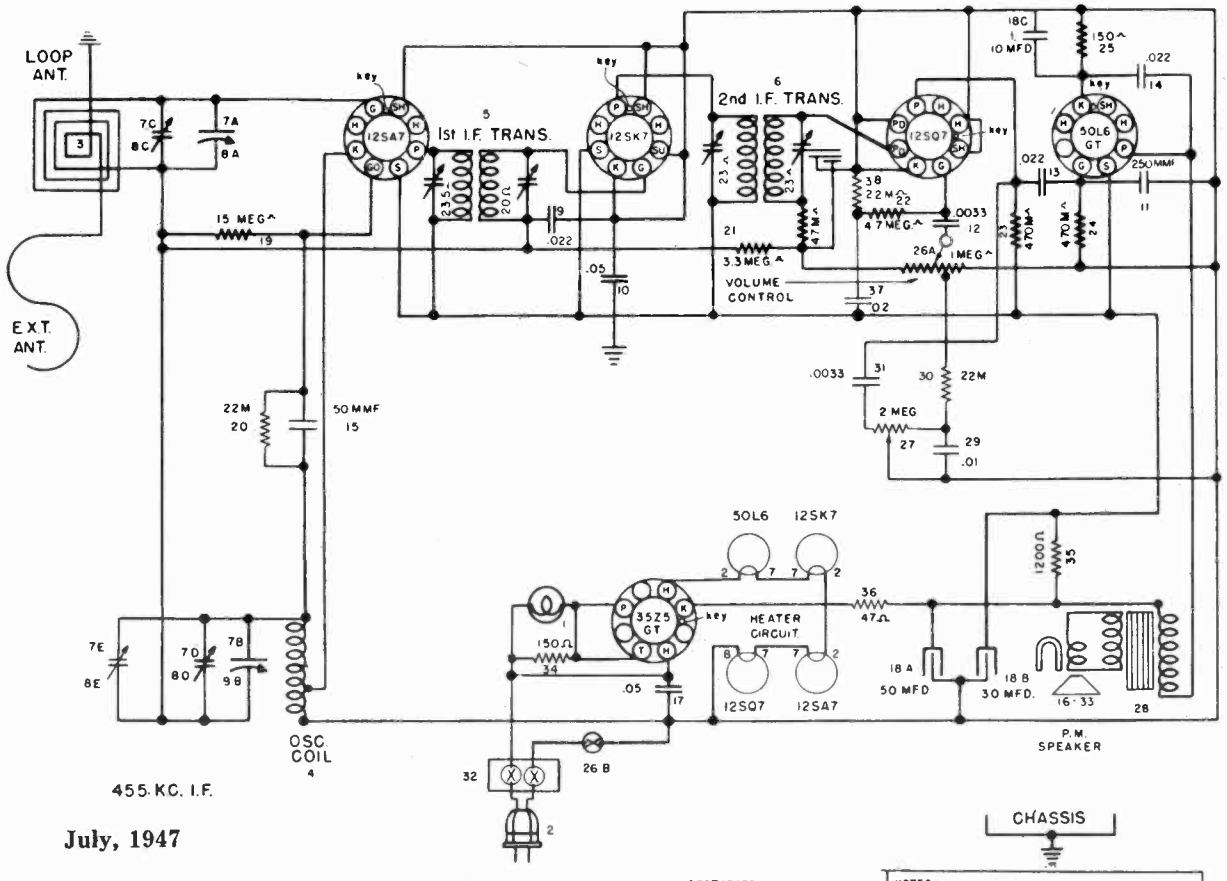
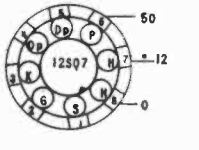
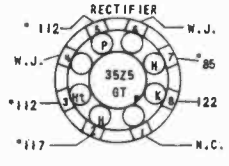
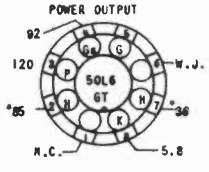
MODEL 56TD-W

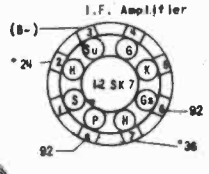


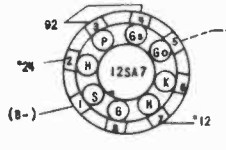
July, 1947







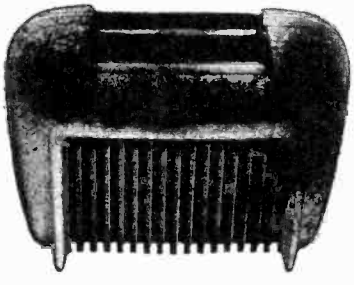


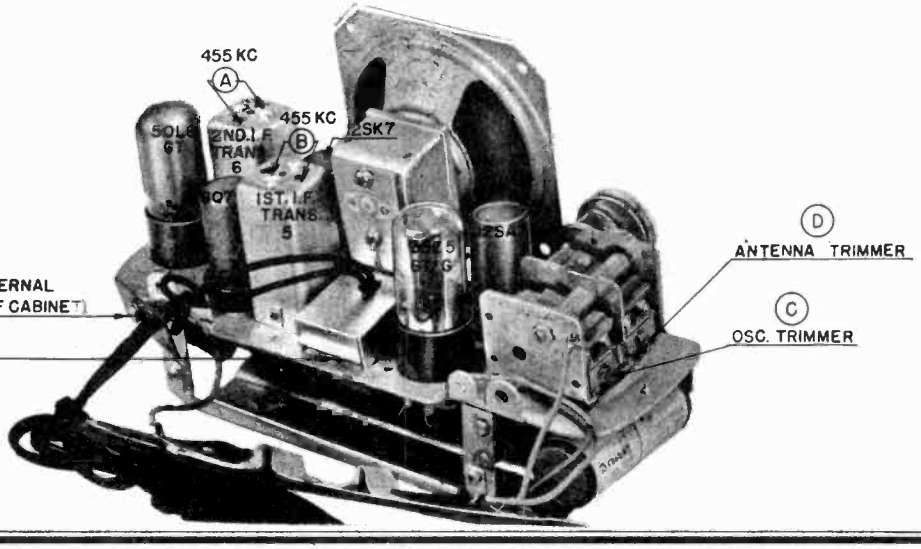


NOTES:
1. Bottom view of tube sockets.
2. Measure voltages from socket lug to (B-) (Pin 3 on the 12SK7).
3. Voltages are measured with an Electronic Voltmeter.
4. W.J. - Wiring Junction.
5. N.C.- No Connection.
6. * - A.C. Voltages
7. Voltage Tolerance, 10%
8. Line Voltage 117 V, 60 A.C.

CHASSIS

OSCILLATOR GRID VOLTS	
FREQUENCY	VOLTS
540 KC	-7





TYPE: Five-tube superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: a. c. - d. c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 30 watts.

POWER OUTPUT: 2 watts maximum.

TUBE COMPLEMENT:

Type	Function
12SA7	Mixer
12SK7	I.F. Amplifier
12SQ7	Detector, AVC, 1st A.F. Amplifier
50L6GT	A.F. Power Output
35Z5GT	Rectifier

DIAL BULB: Type 47, 6.3 volts, .15 amp.

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity.

Reversing the position of the power plug when alternating current is used may reduce power hum. *Under no circumstances should a ground be connected to this receiver.*

When checking or replacing tubes or aligning this receiver, the back of the cabinet must be removed. This is accomplished by removing the two screws located near the top of the cabinet back in the louvre recess. Remove the back carefully and do not exert too much pressure. When the back is removed it disengages the interlock safety switch (item 32 on schematic) and cuts off the power to the receiver. To turn on the radio when the back of the cabinet is removed, it is necessary to hold in the lever on the interlock switch and caution should be exercised not to come in contact with exposed wires on the chassis.

ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r. f. signal input from the signal generator should be connected to the external antenna terminal screw, as indicated in the alignment chart. Connect the signal generator ground through a 0.1 mfd. condenser to —B (pin 3 on 12SK7 tube socket).
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

Alignment Sequence	Signal Generator Output			Position of Tuning Dial KC	Adjust for Maximum Outout
	Frequency in KC	In Series with	To		
1	455	200 mmf.	Ant.	1620	A & B
2	1620	200 mmf.	Ant.	1620	C
3	1400	200 mmf.	Ant.	1400	D

Item No.	Part No.	Description
1	W-48858	Bulb (Dial), Type 47, 6.3 v., .15 amp.
2	C-132300-1	Cable and Plug (Power)
3	AC-136091	Antenna Loop & Back Assy.
4	AW-136058	Coil Assy. (Oscillator)
5	AW-137656	Transformer (1st I. F.)
6	AW-137657	Transformer (2nd I. F.)
7 A	B-136810	Condenser, Variable (Two
7 B		Condenser, Variable (Section
7 C	Part of Item 7A	Condenser, Trimmer
7 D	Part of Item 7B	Condenser, Trimmer
7 E	Part of Item 7B	Condenser, Trimmer
9	39001-80	Condenser, .02 mfd., 600 v., paper
10	39001-17	Condenser, .05 mfd., 600 v., paper
11	39001-73	Condenser, 250 mmf., 600 v., paper
12	39001-76	Condenser, .003 mfd., 600 v., paper
13	39001-80	Condenser, .02 mfd., 600 v., paper
14	39001-80	Condenser, .02 mfd., 600 v., paper
15	B-226638-53	Condenser, 50 mmf., 500 v., ceramic
16	B-136767	Speaker
17	39001-17	Condenser, .05 mfd., 600 v., paper
18 A	B-136771	Condenser, 50 mfd., 150 w. v. (Three
18 B		Condenser, 30 mfd., 150 w. v. (Sec. Elec.
18 C		Condenser, 10 mfd., 25 w. v. (Filter
19	39294-38	Resistor, 15 megohm, ½ w.
20	39294-21	Resistor, 22,000 ohm, ½ w.
21	39294-34	Resistor, 3.3 megohm, ½ w.
22	39294-35	Resistor, 4.7 megohm, ½ w.
23	39294-29	Resistor, 470,000 ohm, ½ w.
24	39294-29	Resistor, 470,000 ohm, ½ w.
25	39294-8	Resistor, 150 ohm, ½ w.
26 A	B-135383	Control, Volume (1 megohm) Assy.
26 B		Switch (Power) Assy.

*These parts will replace the original equipment parts.

Item No.	Part No.	Description
*	39368-18	Control (Volume)
*	39870-2	Shaft (Plug-in)
*	39369-1	Switch (Power)
27	B-135892	Control, (2 megohm)
*	39368-11	Control (Tone)
28	B-135388	Transformer (Output)
29	39001-13	Condenser, .01 mfd., 600 v., paper
30	39294-21	Resistor, 22,000 ohm, ½ w.
31	39001-76	Condenser, .003 mfd., 600 v., paper
32	W-135355	Switch (Interlock)
34	39294-8	Resistor, 150 ohm, ½ w.
35	39015-26	Resistor, 1200 ohm, 1 w.
36	W-137367	Resistor, 47 ohm, 1 w.
	G-39204	Socket, Tube
	39017-4	Socket, Dial Light
	AW-136809	Pulley and Pinion Drive Assy. (Var. Cond.)
	C-136827	Background, Dial
	D-136828	Face, Dial
	W-134681	Roller, Drive Cord
	W-51752	Spring, Drive Cord
	B-134657	Pointer, Dial
	W-135915	Shaft, Drive
	W-134916	Washer, Spring (Drive Shaft)
	W-51071	Ring, Retaining (Drive Shaft)
	W-134055	Grommet
	AC-135163-4	Cabinet Assy.
	W-139963	Knob
	B-135275	Lens, Dial
	W-136630	Stud, Trimount
37	39001-80	Condenser, .02 mfd., 600 v., paper
38	39294-21	Resistor, 22,000 ohm, ½ w.

MODELS 56TG, 56TH, 56TJ
56TG-O, 56TH-O, 56TJ-O

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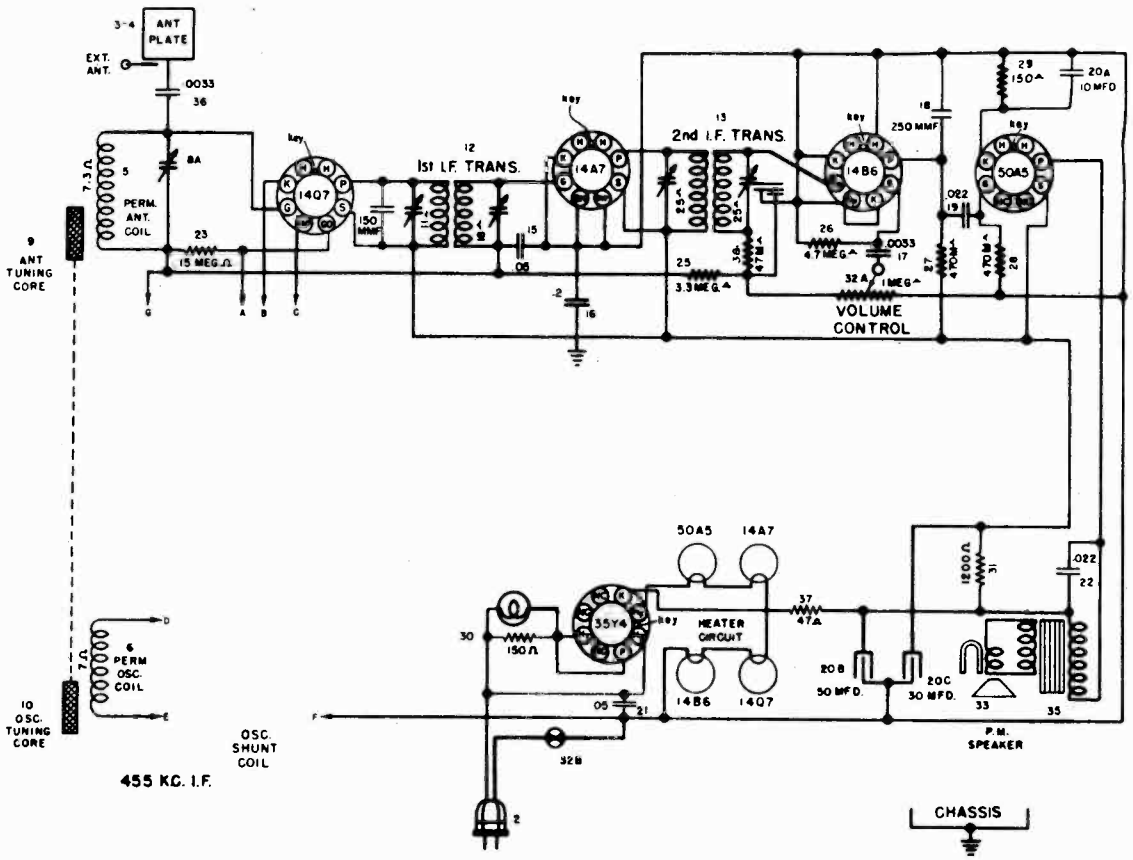
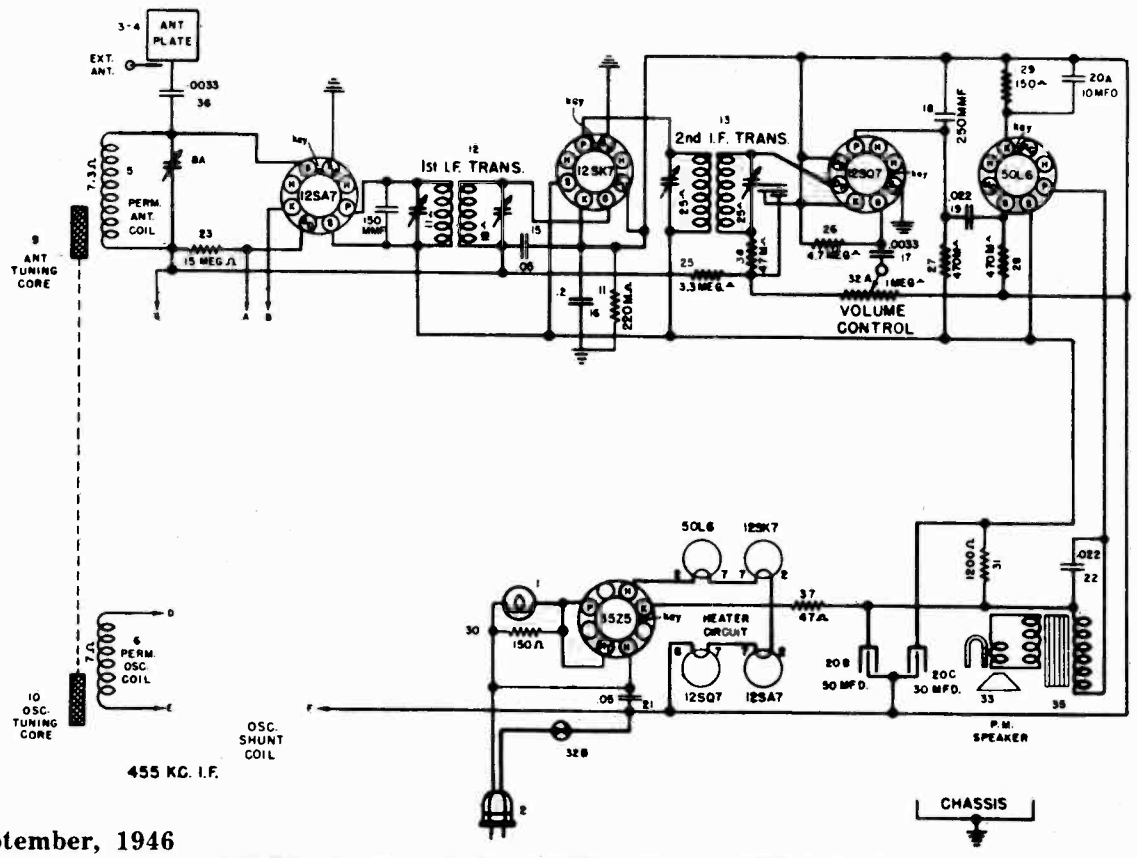


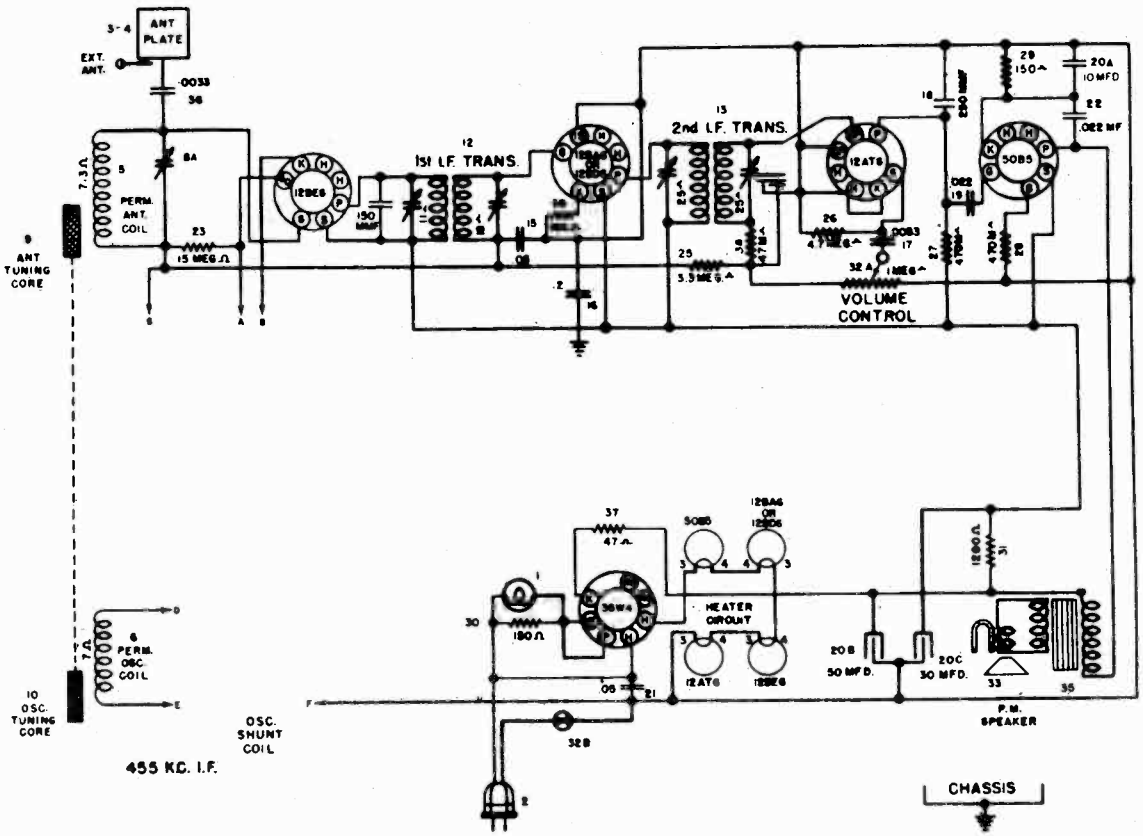
SCHEMATIC DIAGRAM—MODEL 56TG, 56TH, 56TJ (LOCTAL)



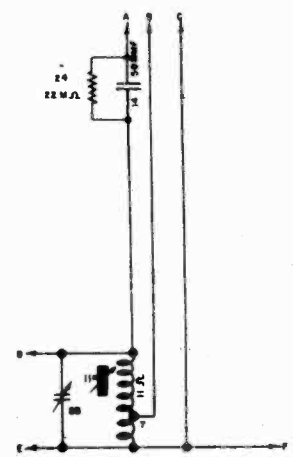
September, 1946

SCHEMATIC DIAGRAM—MODEL 56TG-O, 56TH-O, 56TJ-O (OCTAL)

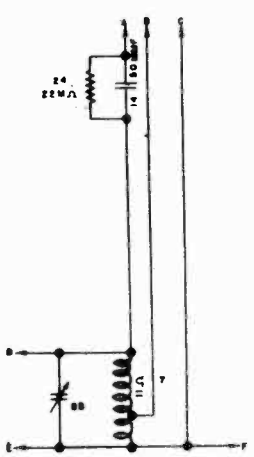
MODELS 56TG-M, 56TH-M, 56TJ-M CROSLEY DIV.
AVCO MFG. CORP.



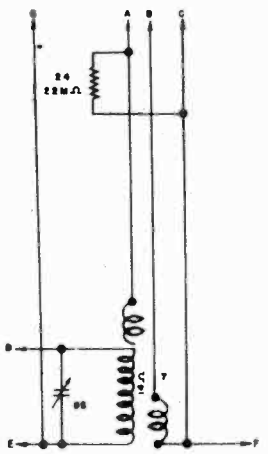
SCHEMATIC DIAGRAM—MODEL 56TG-M, 56TH-M, 56TJ-M (MINIATURE)



THE ABOVE OSCILLATOR SHUNT COIL IS USED IN THE FIRST PRODUCTION MODELS. IT IS MOUNTED ON THE PERMEABILITY TUNER AND USES AN ADJUSTABLE IRON CORE. "G" IS NOT USED WITH A MINIATURE OR AN OCTAL TUBE.



THIS OSCILLATOR SHUNT COIL IS USED IN THE SECOND PRODUCTION MODELS. IT IS MOUNTED ON THE REAR OF THE PERMEABILITY TUNER AND DOES NOT USE AN ADJUSTABLE IRON CORE. "C" IS NOT USED WITH A MINIATURE OR AN OCTAL TUBE.



THIS OSCILLATOR SHUNT COIL IS USED IN THE THIRD PRODUCTION MODELS. IT IS MOUNTED UNDER THE CHASSIS AND DOES NOT USE AN ADJUSTABLE IRON CORE. "G" IS NOT USED WITH A MINIATURE OR AN OCTAL TUBE.

OSCILLATOR SHUNT COIL CHARTS

To check circuits and parts find the socket in the preceding SCHEMATIC DIAGRAMS which correspond to the socket in the radio. Connection "G" is used only on 3rd production sets. To check the oscillator shunt coil circuit, choose the circuit (which corresponds to the radio being serviced) from the 3 circuits shown above.

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity.

Reversing the position of the power plug when alternating current is used may reduce power hum.

Under no circumstances should a ground be connected to the receiver.

ALIGNMENT PROCEDURE
(1st Production Models)

1. With the tuning knob turned to the extreme right against the stop, set the dial pointer to the last reference line at the 540 kilocycle end of the dial.
2. Connect the output of a signal generator directly to the receiver antenna clip. Connect the ground of the signal generator through a .01 mfd. condenser to the receiver chassis.
3. Connect the output meter across the speaker voice coil.
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.
5. Set the signal generator to 455 Kc. Set the receiver dial pointer against the stop at 1600 Kc. end of the dial. Adjust the 2nd I.F. trimmers (13) and the 1st I.F. trimmers (12), for maximum output. (See CHASSIS SIDE VIEW at top of P.15-34 for adjustment locations.)
6. Open oscillator trimmer (8B) approximately one-half turn from the closed position. Adjust oscillator shunt core (11) to its extreme outer position.
7. Set the dial pointer against the stop at the low frequency (540 Kc.) end of the dial. Tune the signal generator until the signal is heard in speaker of the receiver. The frequency of this signal from the signal generator should be between 500 Kc. and 800 Kc.

   NOTE: Check to make sure the circuit is aligned at the correct frequency and not the image frequency which is a weaker signal, 910 Kc. higher as indicated by the receiver dial.
8. With the dial pointer set against the stop at the 540 Kc. end of the dial, adjust the oscillator iron core (10) to its minimum frequency.
9. Set the signal generator to 535 Kc. and adjust the oscillator shunt core (11) for maximum output.
10. Set the dial pointer against the stop at the high frequency (1600 Kc.) end of dial. Set the signal generator to 1620 Kc. and adjust the oscillator trimmer (8B), for maximum output.

    NOTE: Repeat steps 9 and 10 until correct dial calibration is obtained.
11. Tune both the receiver and the signal generator to 1400 Kc. Adjust the antenna trimmer (8A) for maximum output.
12. Tune both the receiver and the signal generator to 600 Kc. Adjust the antenna trimmer (8A) for maximum output.

    NOTE: If it is necessary to adjust trimmer (8A) closer together, the antenna inductance change is too small and must be increased by adjusting the antenna core (9), farther out of the antenna coil.

    If it is necessary to adjust trimmer (8A) farther apart, the antenna inductance change is too great and must be reduced by adjusting the antenna core (9), farther into the antenna coil.
13. Repeat steps 11 and 12 until (8A) is properly adjusted for maximum output at 600 Kc., as it is at 1400 Kc.

ALIGNMENT PROCEDURE
(2nd and 3rd Production Models)

1. With the tuning knob turned to the extreme right against the stop, set the dial pointer to the last reference line at the 540 Kc. end of the dial.
2. Connect the output of a signal generator directly to the receiver antenna clip. Connect the ground of the signal generator through a .01 mfd. condenser to the receiver chassis.
3. Connect the output meter across the speaker voice coil.
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.
5. Set the signal generator to 455 Kc. Set the receiver dial pointer against the stop at the high frequency (1600 Kc.) end of the dial. Adjust the 2nd I.F. trimmers (13) and the 1st I.F. trimmers (12) for maximum output. (See CHASSIS SIDE VIEW at bottom of P.15-34 for adjustment locations.)
6. Set the dial pointer against the stop at the low frequency (540 Kc.) end of the dial. Preset the antenna tuning core (9) and the oscillator tuning core (10) so that the top of each core is approximately 1/16-inch below the upper edge of the coil form.
7. Set the signal generator to 535 Kc. and with the dial pointer against the stop at the 540 Kc. end of dial, adjust the oscillator trimmer (8B) for maximum output.
8. Set the signal generator to 1620 Kc. Set the dial pointer against the stop at the high frequency (1600 Kc.) end of the dial. Adjust the oscillator tuning core (10) for maximum output.

   NOTE: Repeat steps 7 and 8 until the correct dial calibration is obtained.
9. Tune both the signal generator and the receiver to 600 Kc. and adjust the antenna trimmer (8A) for maximum output.
10. Tune both the signal generator and the receiver to 1400 Kc. and adjust the antenna tuning core (9) for maximum output.

    NOTE: Repeat steps 9 and 10 until the antenna trimmer (8A) is properly adjusted for maximum output at 1400 Kc. as it is at 600 Kc.

    When the receiver is to be used without an external antenna, disconnect the signal generator output from the receiver. Tune in a weak signal between 1400 Kc. and 1000 Kc. and adjust the antenna trimmer (8A) for maximum output.

MODELS 56TG,56TH,56TJ
1st, 2nd Production
3rd Production

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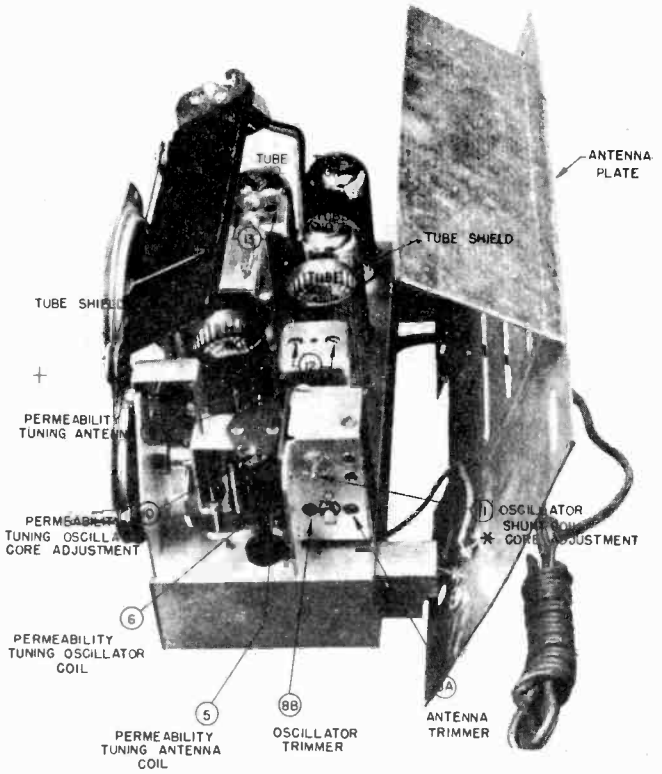
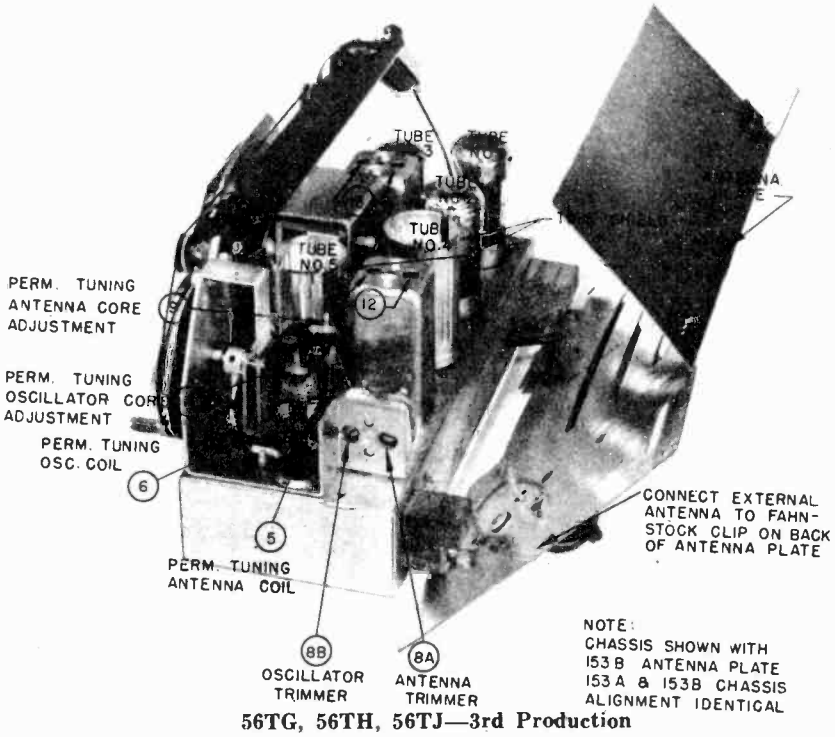
CHASSIS SIDE VIEWS



*The second production models do not have an Oscillator Shunt Core. The alignment procedure is identical to the 3rd production procedure.

56TG, 56TH, 56TJ—1st and 2nd Production



56TG, 56TH, 56TJ—3rd Production

The tube numbers 1, 2, 3, 4, 5, which are not circled in the above charts, correspond to the tube numbers in the first column of the TUBE COMPLEMENT COMPARISON CHART shown on page 1.

CROSLEY DIV.
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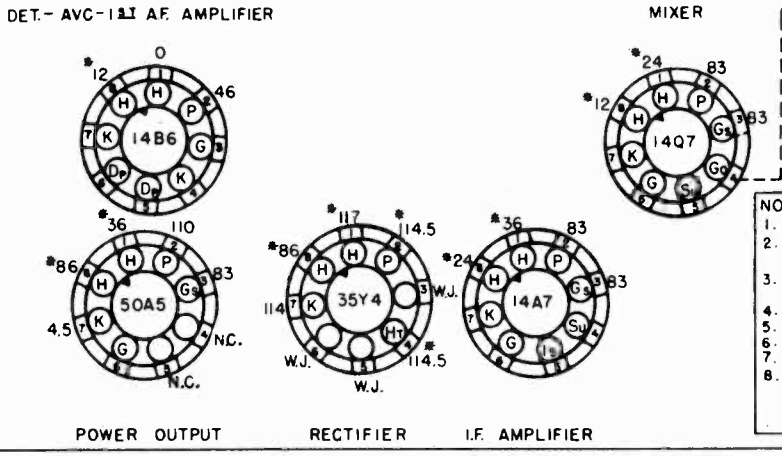
SOCKET VOLTAGE CHARTS

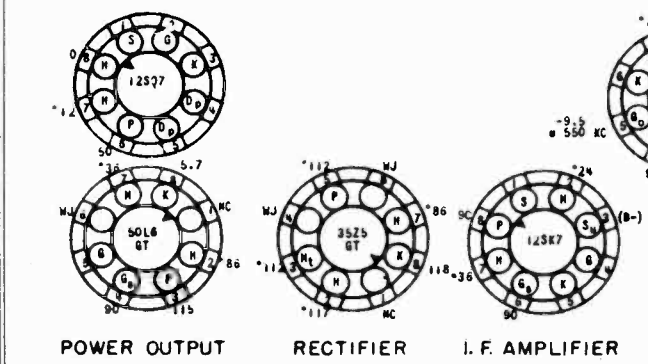
MODELS 56TG, 56TH, 56TJ,
56TG-O, 56TH-O, 56TJ-O,
56TG-M, 56TH-M, 56TJ-M

OSCILLATOR GRID VOLTAGE		
BAND	FREQUENCY	VOLTS
AMERICAN	550 KC	-8.4



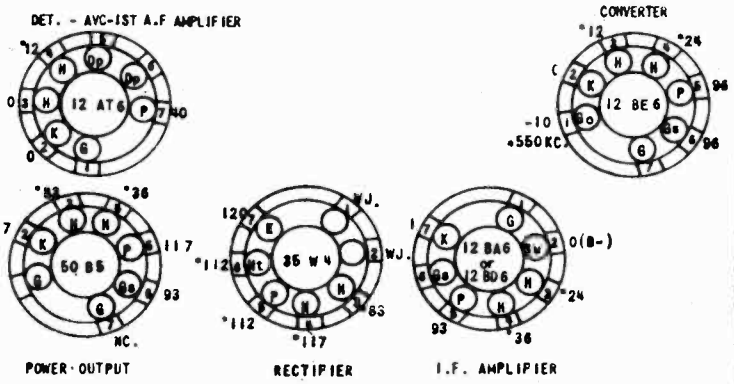
NOTES:
1. THESE ARE BOTTOM VIEWS OF TUBE SOCKETS.
2. MEASURE VOLTAGES FROM SOCKET LUGS TO -B (PIN 4 ON THE 14A7)
3. THESE VOLTAGES WERE MEASURED USING AN ELECTRONIC VOLTMETER.
4. W.J.- WIRING JUNCTION
5. N.C.- NO CONNECTION
6. * - 60 CYCLE A.C. VOLTAGES.
7. SOCKET VOLTAGE TOLERANCE, 10%.
8. SOCKET VOLTAGES MEASURED USING 117 VOLTS, 60 CYCLE LINE VOLTAGE.

56TG, 56TH, 56TJ (LOCTAL)



NOTES:
1. BOTTOM VIEW OF SOCKETS.
2. MEASURE VOLTAGE FROM SOCKET LUGS TO B- (PIN 3 ON THE 12SK7).
3. VOLTAGES MEASURED WITH AN ELECTRONIC VOLTMETER.
4. W.J. =WIRING JUNCTION.
5. N.C. = NO CONNECTION
6. * = 60 CYCLE A.C. VOLTAGES.
7. SOCKET VOLTAGES MEASURED USING 117 VOLTS, 60 CYCLE POWER SUPPLY.
8. SOCKET VOLTAGE TOLERANCE 10%.

56TG-O, 56TH-O, 56TJ-O (OCTAL)



NOTES:
1. These are bottom views of tube sockets.
2. Measure voltages from socket lugs to -B (Pin 2 on the 12 BA6 or 12BD6).
3. These voltages were measured with an electronic voltmeter.
4. W.J. - Wiring Junction
5. N.C. - No Connection.
6. * - 60 Cycle A.C. Voltage
7. Socket Voltage Tolerance 10%
8. Socket Voltages Measured at normal line voltage. (117 Volts- 60 Cycle)

56TG-M, 56TH-M, 56TJ-M (MINIATURE)

NOTE: To check voltages, find the socket in the above charts which corresponds to the socket in the radio.

MODELS 56TG,56TH,56TJ,
56TG-O,56TH-O,56TJ-O,
56TG-M,56TH-M,56TJ-M

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FREQUENCY RANGE: 540 to 1600 Kc.
INTERMEDIATE FREQUENCY: 455 Kc.
POWER SUPPLY: a.c.-d.c.

VOLTAGE RATING: 105-125 volts.
POWER CONSUMPTION: 35 watts nominal.
POWER OUTPUT: 1.75 watts minimum.

PARTS LIST

MODEL 56TG, 56TG-O, 56TG-O1234, 56TG-M, 56TG(M12), 56TG-O(M12), 56TG(M12)034
MODEL 56TH, 56TH-O, 56TH-O1234, 56TH-M, 56TH(M12), 56TH-O(M12), 56TH(M12)034
MODEL 56TJ, 56TJ-O, 56TJ-O1234, 56TJ-M, 56TJ(M12), 56TJ-O(M12), 56TJ(M12)034

Figures in first column correspond to figures in Schematic Diagram

ITEM No.	PART No.	DESCRIPTION
1	W-48858	Bulb (dial), Type 47, 6.3 v., 15 amp.
2	C-132300-1	Cord and Plug (Power)
3	AW-136476	Ant. Plate (56TJ Series)
4	AW-136574	Ant. Plate (56TG, 56TH Series)
5	AW-136438	Coil, Ant. Tuning
6	AW-136657	Coil, Osc. Tuning
7	*AW-136658	Coil, Osc. Shunt (Part of AD-136695, 1st Production)
7	*AW-137532	Coil, Osc. Shunt (Part of AD-136695-H, 2nd Production)
7	*AW137720	Coil, Osc. Shunt (3rd Production)
8A	W-136699	Trimmer, Ant.
8B		Trimmer, Osc.
9	G-39012-49	Iron Core, Ant. Tuning
10	G-39012-49	Iron Core, Osc. Tuning
11	*G39012-48	Iron Core. Osc. Shunt (Part of AD-136695, 1st Production)
11	39294-27	Resistor, 220,000 ohm, ½ w. (56TG-O, 56TH-O, 56TJ-O)
12	AW-137658	Transformer, 1st I.F.
13	AW-137667	Transformer, 2nd I.F.
14	*B-226638-53	Condenser, 50 mmf. (1st and 2nd Production)
15	39001-65	Condenser, .05 mfd., 200 v., paper
16	39001-105	Condenser, .2 mfd., 200 v., paper
17	39001-10	Condenser, 3300 mmf., 200 v., paper
18	39001-73	Condenser, 250 mmf., 600 v., paper
19	39001-63	Condenser, .022 mfd., 200 v., paper
20A	B-136769	Condenser, 10 mfd., 25 v. } Three
20B		Condenser, 50 mfd., 150 v. } Section
20C		Condenser, 30 mfd., 150 v. } Filter
21	39001-65	Condenser, .05 mfd., 200 v., paper
22	39001-63	Condenser, .022 mfd., 200 v., paper
23	39294-38	Resistor, 15 megohm, ½ w.
24	39294-21	Resistor, 22,000 ohm, ½ w.
25	39294-34	Resistor, 3.3 megohm, ½ w.
26	39294-35	Resistor, 4.7 megohm, ½ w.
27	39294-29	Resistor, 470,000 ohm, ½ w.
28	39294-29	Resistor, 470,000 ohm, ½ w.
29	39294-8	Resistor, 150 ohm, ½ w.
30	39294-8	Resistor, 150 ohm, ½ w.
31	39015-26	Resistor, 1200 ohm, 1 w.
32A	C-135127	Control, Volume (1 megohm) } Assembly
32B		Switch (Power) } Assembly
33	B-136768	Speaker
35	B-135077	Transformer (Output)
36	*39001-10	Condenser, 3300 mmf., 200 v., paper (2nd and 3rd Production)
37	*W-137367	Resistor, 47 ohm, 1 w. (2nd and 3rd Production)
38	Part of Item #13	Resistor, 47,000 ohm, ½ w.
39	39294-8	Resistor, 150 ohm, ½ w. (56TG-M, 56TH-M, 56TJ-M)
	W-135371	Socket, Loctal Tube
	W-131346	Socket, Miniature Tube
	39204	Socket, Octal Tube
	39017-5	Socket, Dial Light
	W-46447-1	Shield, Tube
	*AD-136695	Permeability Tuner, Complete Assy. (1st Production)
	*AD-136695-H	Permeability Tuner, Complete Assy. (2nd Production)
	*AW-137722	Permeability Tuner, Complete Assy. (3rd Production)
	AW-137689	Slide Assy. Permeability Tuner
	AW-137688	Hub and Cam Assy., Permeability Tuner
	W-136520	Spring, Retractor (Permeability Tuner)
	W-136533	Grommet, Ant. Coil Mtg. (Permeability Tuner)
	W-45580	Grommet, Osc. Coil Mtg. (Permeability Tuner)
	*W-132366-2	Nut, Iron Core Locking (Part of AD-136695, 1st Production)
	W-51993	Fastener, Iron Core
	W-52063	Spring, Iron Core
	AB-135135	Plate Assy., Dial
	W-135074	Pulley, Idler
	B-135094	Pointer, Dial
	B-135075	Shaft, Drive
	W-134916	Washer, Spring
	W-51071	Ring Retaining
	W-136630	Trimount Stud
	W-131154-1	Cotter, External
	D-137263	Cabinet (56TJ Series)
	R-135404	Cabinet (56TG Series)
	AB-135446	Cabinet and Handle Assy. (56TH Series)
	B-135403	Handle (Part of AB-135446)
	AW-135444	Cabinet (Part of AB-135446)
	B-136633	Dial Glass
	W-135455	Knob (56TG, 56TJ Series)
	W-135454	Knob (56TH Series)
	W-132124	Trimount Stud (56TH, 56TG Series)

*1st Production models are identified by the adjustable Iron Core in the Oscillator Shunt Coil which is mounted on rear of the Tuner. 2nd Production models do not have the adjustable Iron Core in the Oscillator Shunt Coil which is mounted on the rear of the Tuner. 3rd Production models do not have the adjustable Iron Core in the Oscillator Shunt Coil which is mounted under the chassis.

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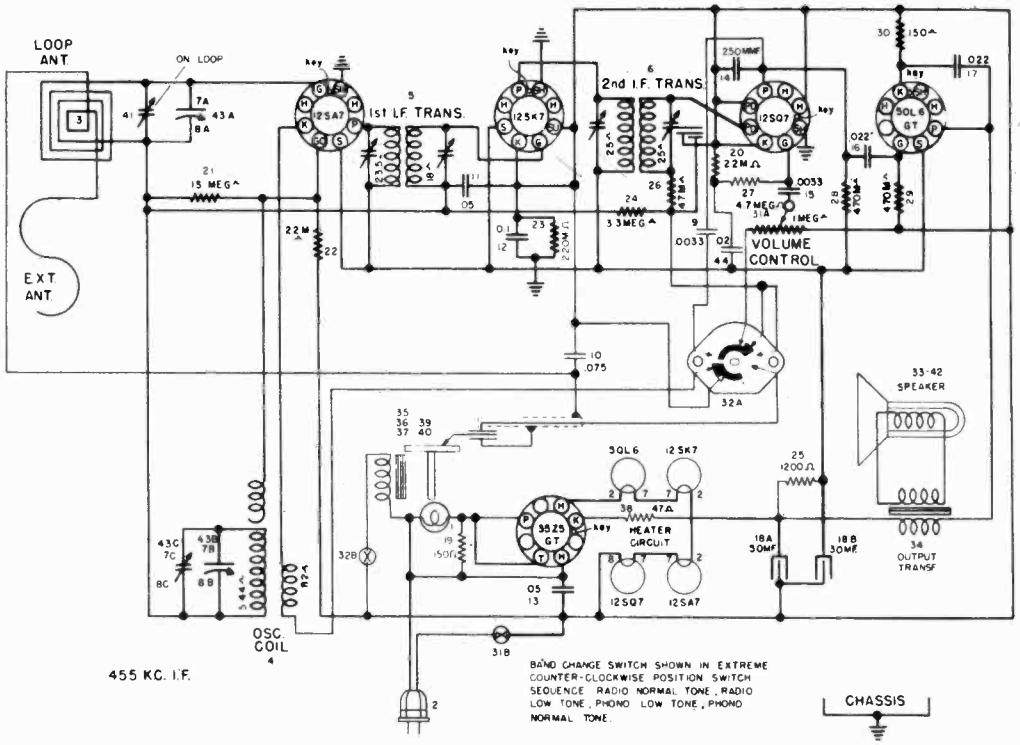
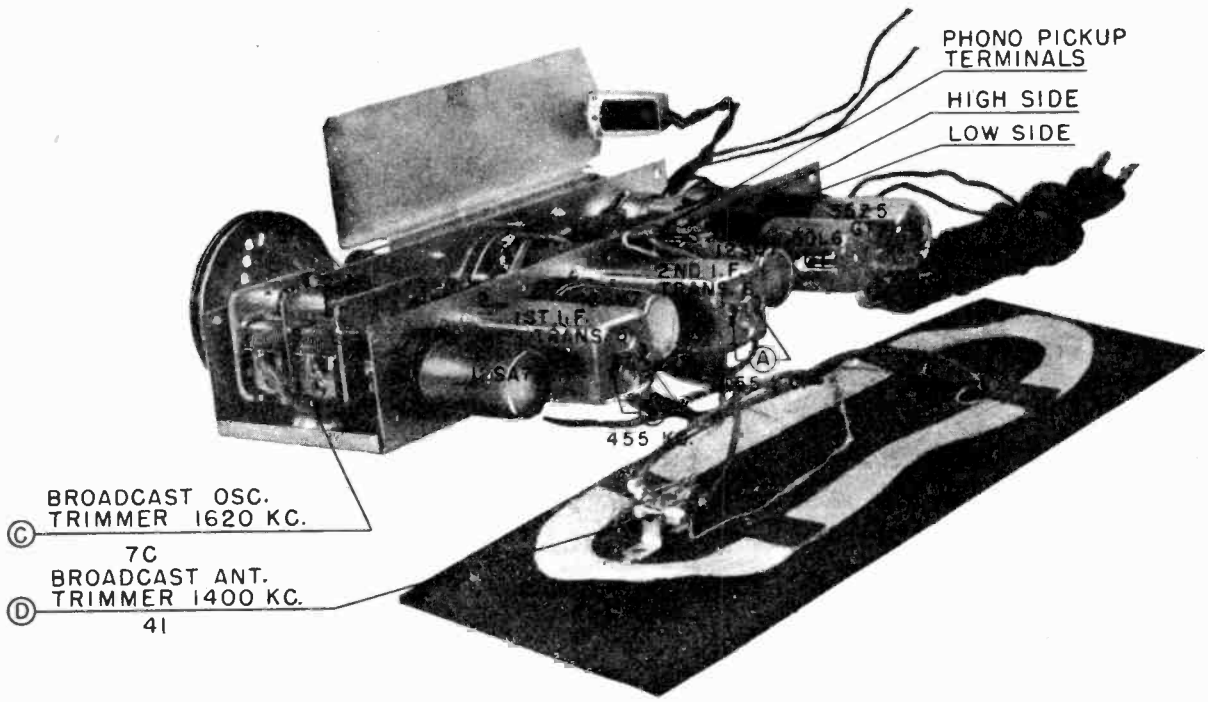
MODELS 56TR, 56TS



Reversing the position of the power plug may reduce power hum.

Under no circumstances should a ground be connected to this receiver.



CHASSIS, SIDE VIEW—MODELS: 56TR, 56TS

MODELS 56TR, 56TS

CROSLEY DIV. AVCO MFG. CORP.

ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Turn tone control switch to normal tone position.
3. Connect the output meter across the speaker voice coil.
4. The r.f. signal input from the signal generator should be connected to the external antenna clip. Connect the signal generator ground through a 0.1 mfd. condenser to—B (pin 3 on 12SK7 tube socket).
5. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

ALIGNMENT CHART

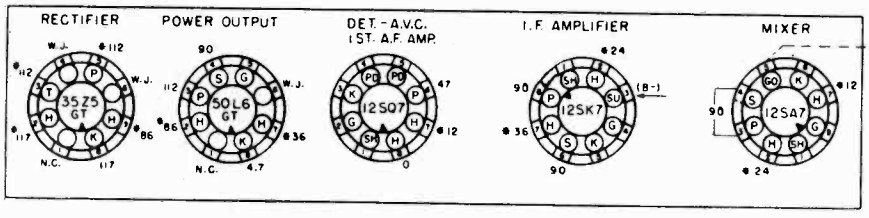
Alignment adjustment locations are shown on Chassis, Side View—Models 56TR, 56TS

Alignment Sequence	Signal Generator Output			Position of		Adjust for Maximum Output
	Frequency in kc.	In Series with	To	Band Switch	Tuning Dial	
1	455	200 mmf.	Ant.	Right	1620	A & B
2	1620	200 mmf	Ant.	Right	1620	C
3	1400	200 mmf	Ant.	Right	1400	D

Note: Model 56TS uses the Model G-5 (Part No. D-134921) automatic record changer. and parts list.

SOCKET VOLTAGE CHART

OSCILLATOR GRID VOLTAGE		
BAND	FREQUENCY	VOLTS
AMERICAN	540 KC	-5.5



NOTES
1. THESE ARE BOTTOM VIEWS OF TUBE SOCKETS.
2. MEASURE VOLTAGES FROM SOCKET LUGS TO "B-" (PIN 3 ON THE 12SK7).
3. THESE VOLTAGES WERE MEASURED USING AN ELECTRONIC VOLTMETER.
4. W.J. – WIRING JUNCTION.
5. N.C. – NO CONNECTION.
6. # – 60 CYCLE A.C. VOLTAGES.
7. SOCKET VOLTAGE TOLERANCE, 10%.
8. LINE VOLTAGE 117 V, 60~ A.C.

CROSLEY DIV.
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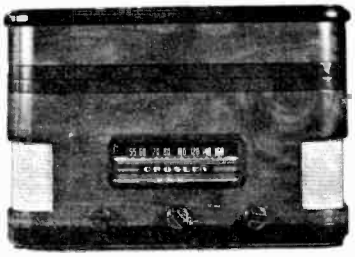
MODELS 56TR, 56TS

56TR



56TS

TYPE: Five-tube superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: 60 cycle a.c. only.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION:
Radio position—30 watts.
Phono position—45 watts.

POWER OUTPUT: 1.5 watts minimum.

TUBE COMPLEMENT:

Type	Function
12SA7	Converter
12SK7	I.F. Amplifier
12SQ7	Detector, AVC, 1st I.F. Amplifier
50L6GT	A.F. Power Output
35Z5GT	Rectifier

DIAL BULB: Type 47, 6.3 volts, .15 amp.

Figures in first column correspond to figures in schematic diagram.

Item No.	Part Number	Description
1	W-48858	Bulb (Dial), Type 47, 6.3 v., .15 amp.
2	C-132300-1	Cable & Plug (Power)
3	AC-135840	Ant. Loop & Back Assy.
4	AW-135730	Coil Assy., Oscillator
5	AW-135729	Transformer, 1st I. F.
6	AW-135731	Transformer, 2nd I. F.
7A	B-135570	Condenser, Variable (Two
7B		Condenser, Variable, Section
7C	Part of Item #7B	Condenser, Trimmer
9	39001-76	Condenser, .003 mfd., 600 v., Paper
10	39001-17	Condenser, .05 mfd., 600 v., Paper
11	39001-17	Condenser, .05 mfd., 600 v., Paper
12	39001-19	Condenser, .1 mfd., 600 v., Paper
13	39001-17	Condenser, .05 mfd., 600 v., Paper
14	39001-73	Condenser, 250 mmf., 600 v., Paper
15	39001-76	Condenser, .003 mfd., 600 v., Paper
16	39001-80	Condenser, .02 mfd., 600 v., Paper
17	39001-80	Condenser, .02 mfd., 600 v., Paper
**18A	B-136770	Condenser, 50 mfd., 150 w.v. (Two
**18B		Condenser, 30 mfd., 150 w.v.) Section
19	39294-8	Resistor, 150 ohm, ½ w.
**20	39294-21	Resistor, 22,000 ohm, ½ w.
21	39294-38	Resistor, 15.0 megohm, ½ w.
22	39294-21	Resistor, 22,000 ohm, ½ w.
23	39294-27	Resistor, 220,000 ohm, ½ w.
24	39294-34	Resistor, 3.3 megohm, ½ w.
25	39015-26	Resistor, 1200 ohm, 1 w.
26	Part of Item #6	Resistor, 47,000 ohm, ½ w.
27	39294-35	Resistor, 4.7 megohm, ½ w.
28	39294-29	Resistor, 470,000 ohm, ½ w.
29	39294-29	Resistor, 470,000 ohm, ½ w.
30	39294-8	Resistor, 150 ohm, ½ w.
31A	B-135692	Control, Volume (1.0 megohm) } Assy.
31B		Switch, Power (Radio) } Assy.
*	39368-14	Control, Volume
*	39369-1	Switch, Power (Radio)
32A	B-135641	Switch (Radio, Phono, Tone) } Assy.
32B		Switch, Power (Phono.) } Assy.
33	C-135633	Speaker (Less Transformer)
34	B-137723	Transformer, Output
36	D-134921	Record Changer, G5 (56TS)
37	C-134724	Phono Motor & Turntable Assy. (56TR)
38	W-137367	Resistor, 47 ohm. 1 w.
39	B-134245	Tone Arm & Cartridge Assy. (56TR)
41	Part of Item #3	Condenser, Trimmer
**44	39001-80	Condenser, .02 mfd., 600 v. Paper

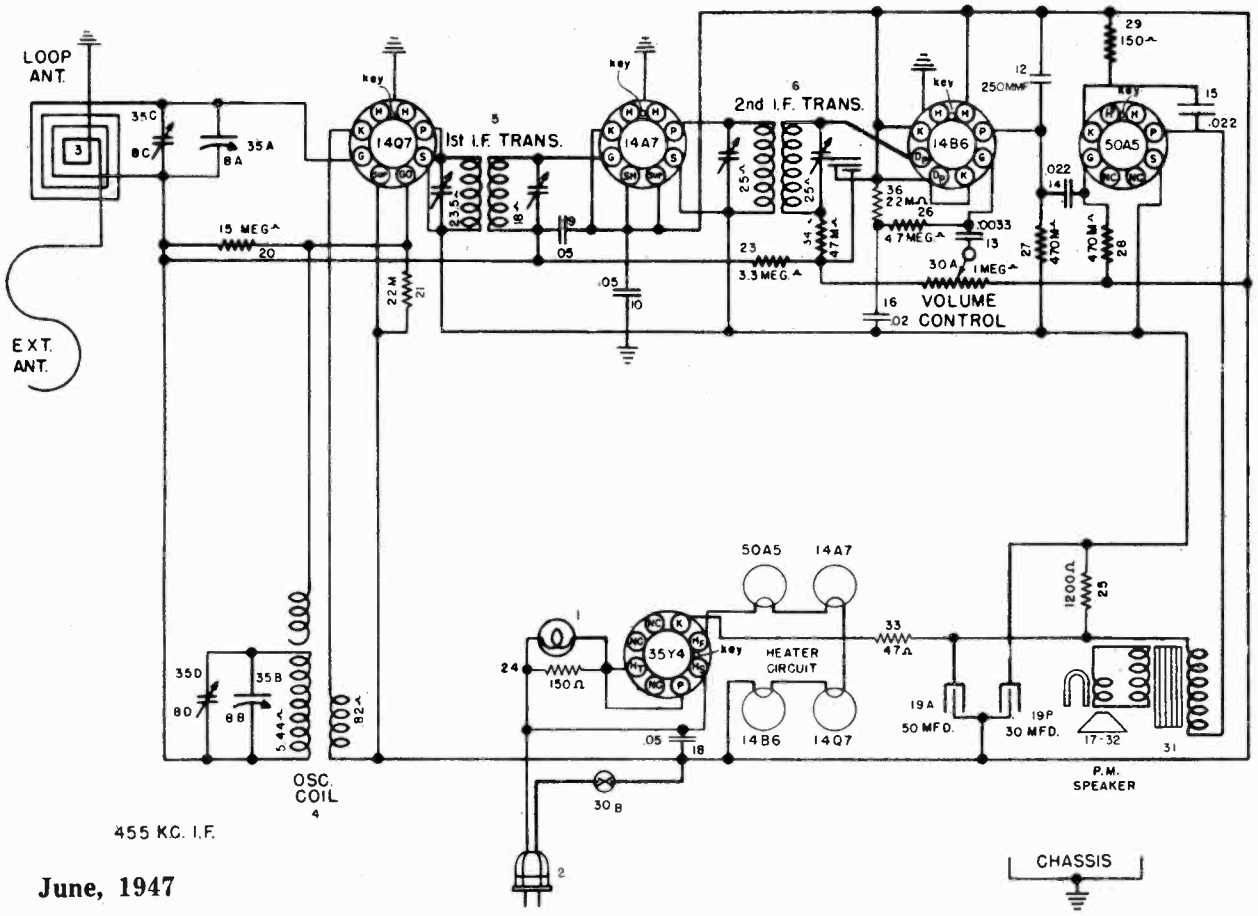
Item No.	Part Number	Description
	G-39204	Socket, Tube
	D-136565-15	Socket, Dial Light
	AB-135575	Plate & Stud Assy., Dial
	W-135074	Pulley, Idler (Wood)
	W-131154-1	Cotter, External (Idler Pulley)
	W-51752	Spring, Dial Drive Cord
	B-135460	Pointer, Dial
	B-135568	Shaft, Drive
	W-51071	Ring, Retaining (Drive Shaft)
	W-134916	Washer, Spring (Drive Shaft)
	W-134055	Grommet
	W-135164	Bumper
	R-137483	Cabinet (56TR)
	R-137982	Cabinet (56TS)
	B-135751	Dial Glass
	W-137200	Spring, Retaining (Dial Glass)
	W-135929	Knob (Dial or Volume)
	W-135930	Knob (Radio-Phono)
	AB-134935	Floating Jewel Needle Assy.
	136774-68	Cartridge, Pickup
	W-131126	Spring, Ratio Change (56TR)
	W-138271	Motor & Spindle Assy. (Less Turntable),56TR
	131104	Turntable (56TR)
	131098	Grommet, Motor Mtg. (56TR)
	131101	Bushing, Motor Mtg. (56TR)
	131102	Idler Wheel, Phono (56TR)
	131103	Spring, Idler Wheel (56TR)
	131207	Spindle, Turntable (56TR)
	131097	Plate, Phono Mtg. (56TR)
	W-134247	Rest, Tone Arm (56TR)
	W-134246	Spacer, Tone Arm (56TR)
	W-134955	Bumper (56TS)
	W-45056	Grommet (56TS)
	AB-137859	Support, Lid (56TS)
	AB-137884	Support, Lid (56TR)

*These parts will replace the original equipment parts.

**Early models used a three section Filter Condenser, Part No. B-135732. Item No. 20 and No. 44 were not used.

MODEL 56TU

CROSLEY DIVISION
AVCO MFG. CORP.



June, 1947

REPLACEMENT PARTS LIST

Figures in first column correspond to figures in Schematic Diagram

ITEM No.	PART No.	DESCRIPTION
1	W-48858	Bulb (dial), Type 47, 6.3 v., .15 amp.
2	C-132300-1	Cable and Plug (power)
3	AC-135506	Ant. Loop and Back Assy.
4	AW-135195	Oscillator Coil Assembly
5	AW-137665	Transformer (1st I.F.)
6	AW-137667	Transformer (2nd I.F.)
7A	B-135202	Condenser (variable) } Two
7B		Condenser (variable) } Section
7C	Part of Item #7A	Condenser (trimmer)
7D	Part of Item #7B	Condenser (trimmer)
9	39001-65	Condenser, .05 mfd., 200 v., paper
10	39001-65	Condenser, .05 mfd., 200 v., paper
12	39001-73	Condenser, 250 mmf., 600 v., paper
13	39001-10	Condenser, 3300 mmf., 600 v., paper
14	39001-63	Condenser, .022 mfd., 200 v., paper
15	39001-63	Condenser, .022 mfd., 200 v., paper
17	B-136768	Speaker
18	39001-65	Condenser, .05 mfd., 200 v., paper
19A	B-136770	Condenser, 50 mfd., 150 v. } Two Section
19B		Condenser, 30 mfd., 150 v. } Elect. Filter
20	39294-38	Resistor, 15 megohm, ½ w.
21	39294-21	Resistor, 22,000 ohm, ½ w.
23	39294-34	Resistor, 3.3 megohm, ½ w.
24	39294-8	Resistor, 150 ohm, ½ w.
25	39015-26	Resistor, 1200 ohm, 1 w.
26	39294-35	Resistor, 4.7 megohm, ½ w.
27	39294-29	Resistor, 470,000 ohm, ½ w.

ITEM No.	PART No.	DESCRIPTION
28	39294-29	Resistor, 470,000 ohm, ½ w.
29	39294-8	Resistor, 150 ohm, ½ w.
30A	C-135127	Control, Volume (1 megohm) } Assy.
30B		Switch (power) }
31	B-137723	Transformer (output)
33	W-137367	Resistor, 47 ohm, 1 w.
34	Part of Item #6	Resistor, 47,000 ohm, ½ w.
	W-135371	Socket (tube)
	39017-5	Socket (dial light)
	AB-135135	Plate Assembly (dial)
	W-135074	Pulley (idler)
	B-135094	Pointer (dial)
	B-135075	Shaft (drive)
	W-134916	Washer (spring)
	W-51071	Ring (retaining)
	W-131154-1	Cotter (external)
	W-51752	Spring (drive cord)
	W-134055	Grommet
	W-135164	Bumper
	W-136630	Trimount Stud
	R-135146	Cabinet & Handle Assy.
	R-135444	Cabinet, Only
	B-135403	Handle, Only
	W-137511	Spring, Handle
	W-50325	Clip
	B-135713	Dial Glass
	W-135454	Knob
	136571	Support, Dial

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity. Reversing the position of the power plug when alternating current is used may reduce power hum. UNDER NO CIRCUMSTANCES SHOULD A GROUND BE CONNECTED TO THIS RECEIVER.

CROSLEY DIVISION
AVCO MFG. CORP.

MODEL 56TU

DESCRIPTION

TYPE: Five-tube, single-band, superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: a.c.—d.c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 35 watts nominal.

POWER OUTPUT: 1 watt minimum.

TUBE COMPLEMENT:

Type	Function
14Q7	Mixer
14A7	I.F. Amplifier
14B6	Detector, AVC, 1st A.F. Amplifier
50A5	A.F. Power Output
35Y4	Rectifier

DIAL BULB: Type 47, 6.3 volts, .15 amp.

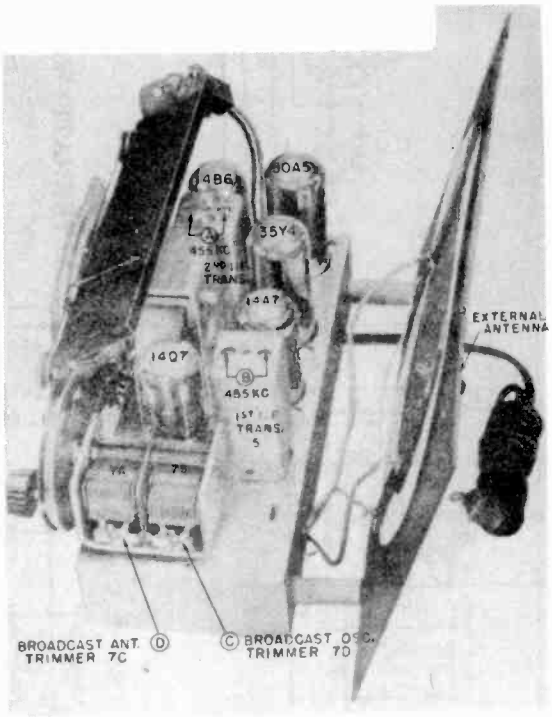
ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r.f. signal input from the signal generator should be connected to the external antenna lead. Connect the signal generator ground through a 0.1 mfd. condensor to —B (pin 4 on 14A7 tube socket).
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

ALIGNMENT CHART

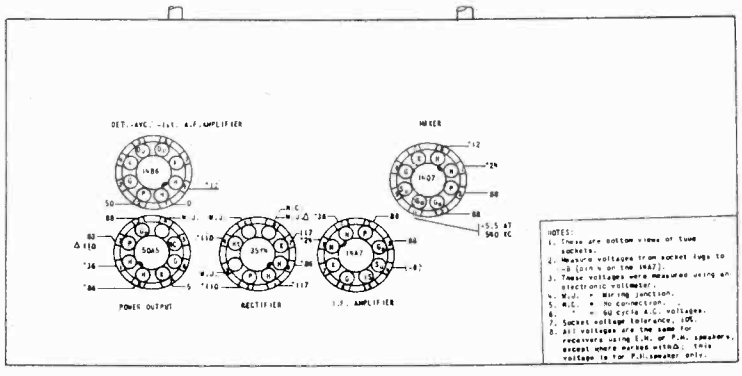
Alignment adjustment locations are shown in Chassis, Side View at the right.

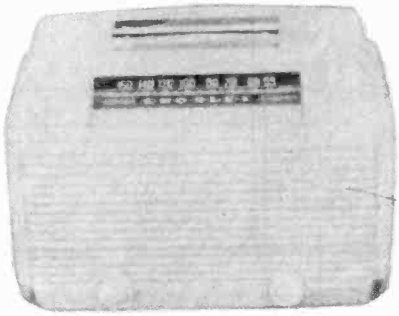
Alignment sequence	Signal Gen. Output			Position of Tuning Dial	Adjust for max. output
	Frequency in KC	In Series with	To		
1	455	200 mmf.	Ant.	1620	A & B
2	1620	200 mmf.	Ant.	1620	C
3	1400	200 mmf.	Ant.	1400	D

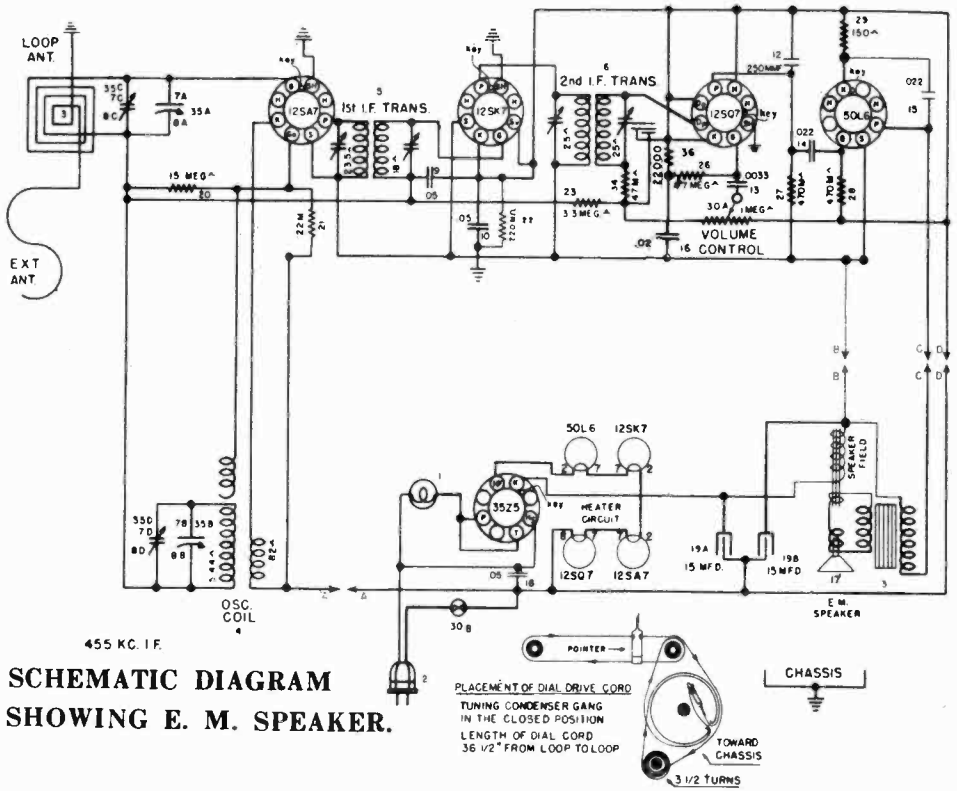


CHASSIS, SIDE VIEW

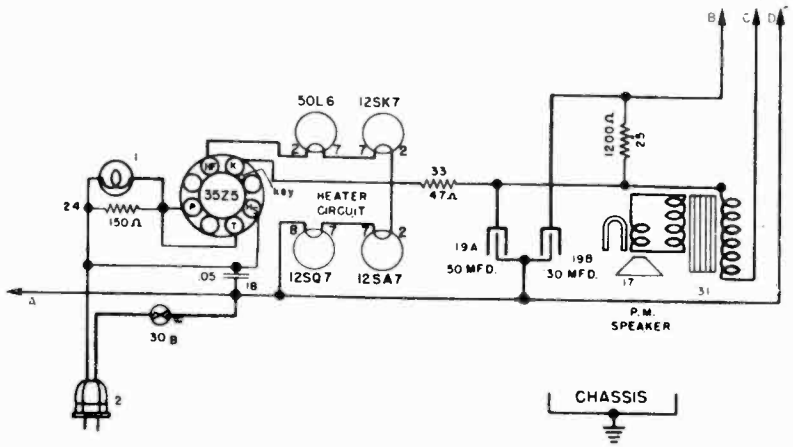
SOCKET VOLTAGE CHART







SCHEMATIC DIAGRAM SHOWING E. M. SPEAKER.



ALTERNATE WIRING WHEN P. M. SPEAKER IS USED.

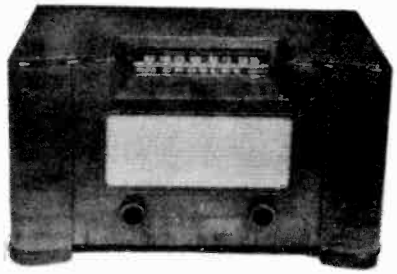
RESISTANCE OF SPEAKER FIELD: 450 ohms.
SPEAKER FIELD CURRENT: 60 ma.
TUBE COMPLEMENT:

Type	Function
12SA7 (or GT/G)	Mixer
12SK7 (or GT/G)	I.F. Amplifier
12SQ7 (or GT/G)	Detector, AVC, 1st A.F. Amplifier
50L6GT	A.F. Power Output
35Z5GT/G	Rectifier

DIAL BULB: Type 47, 6.3 volts, .15 amp.

56TU-O

56TV-O



CROSLEY DIV.
AVCO MFG. CORP.

MODELS 56TU-O, 56TV-O

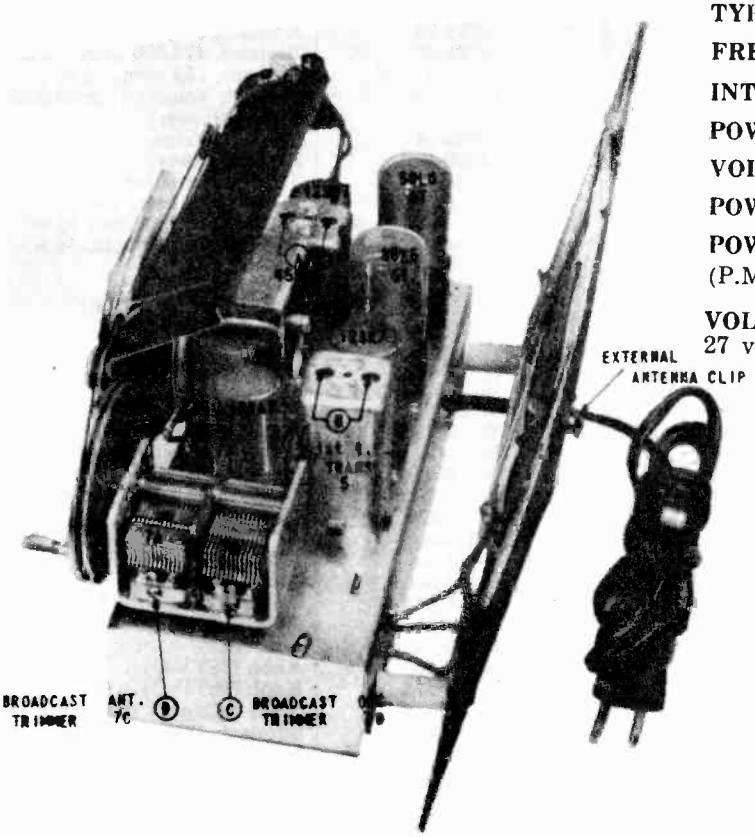
ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r.f. signal input from the signal generator should be connected to the external antenna lead. Connect the signal generator ground through a 0.1 mfd. condenser to —B (pin 3 on 12SK7 tube socket).
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

ALIGNMENT CHART

Alignment adjustment locations are shown on Chassis, Side View—Models 56TU-O, 56TV-O

Alignment Sequence	Signal Generator Output		To	Position of Tuning Dial	Adjust for Maximum Output
	Frequency in kc.	In Series with			
1	455	200 mmf.	Ant.	1,620	A & B
2	1,620	200 mmf.	Ant.	1,620	C
3	1,400	200 mmf.	Ant.	1,400	D



CHASSIS, SIDE VIEW

TYPE: Five-tube, single band, superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: a.c—d.c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 35 watts nominal.

POWER OUTPUT: (E.M. Speaker) 1 watt maximum (P.M. Speaker) 1.75 watts maximum

VOLTAGE DROP ACROSS SPEAKER FIELD: 27 volts.

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity.

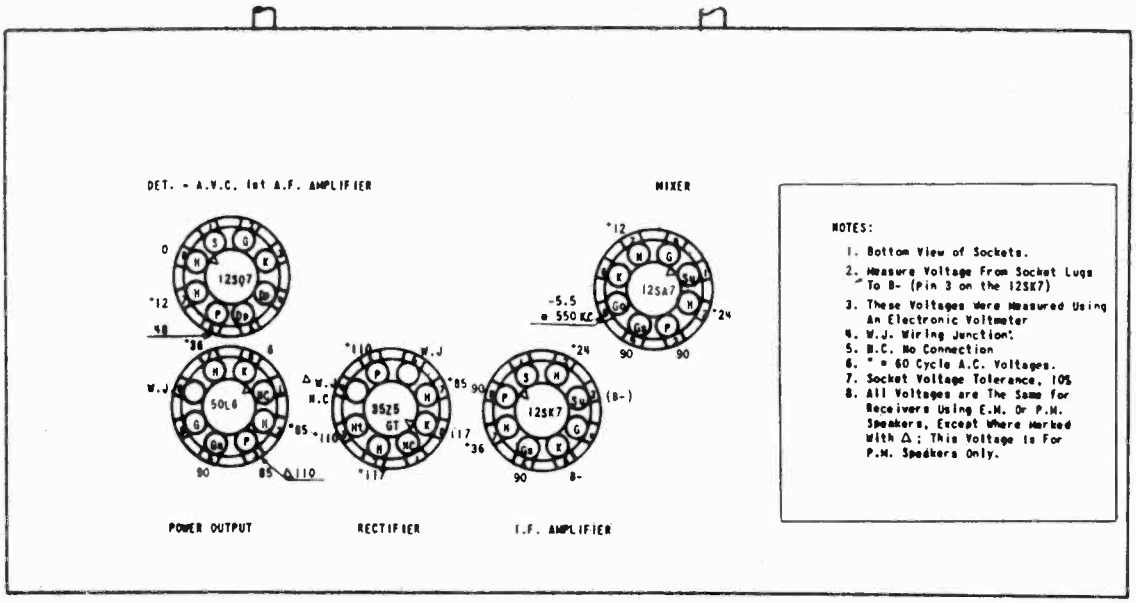
Reversing the position of the power plug when alternating current is used may reduce power hum.

Under no circumstances should a ground be connected to this receiver.

MODELS 56TU-O, 56TV-O

CROSLEY DIV. AVCO MFG. CORP.

SOCKET VOLTAGE CHART



Figures in first column correspond to figures in Schematic Diagram

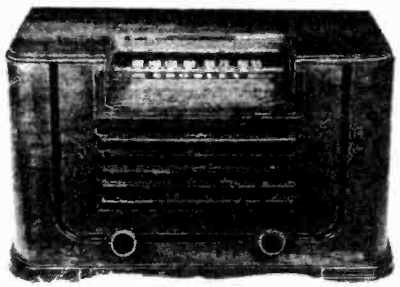
Item No.	Part No.	Description
1	W-48858	Bulb (Dial), Type 47, 6.3 v., .15 amp.
2	C-132300-1	Cable and Plug (Power)
3	AC-135506	Antenna Loop & Back Assy. (56TU-O)
3	AC-137489	Antenna Loop & Back Assy. (56TV-O)
4	AW-135195	Coil Assembly (Oscillator)
5	AW-137665	Transformer (1st. I. F.)
6	AW-137667	Transformer (2nd. I. F.)
7A	B-135202	Condenser (Variable) } Two
7B		Condenser (Variable) } Section
7C	Part of Item #7A	Condenser (Trimmer)
7D	Part of Item #7B	Condenser (Trimmer)
9	39001-17	Condenser, .05 mfd., 600 v., Paper
10	39001-17	Condenser, .05 mfd., 600 v., Paper
12	39001-73	Condenser, 250 mmf., 600 v., Paper
13	39001-76	Condenser, .003 mfd., 600 v., Paper
14	39001-80	Condenser, .02 mfd., 600 v., Paper
15	39001-80	Condenser, .02 mfd., 600 v., Paper
**16	39001-80	Condenser, .02 mfd., 600 v., Paper
**17	B-136768	Speaker, P. M.
*17	AD-135632	Speaker, E. M.
18	39001-17	Condenser, .05 mfd., 600 v., Paper
** 19A	B-136770	Condenser, 50 mfd., 150 w.v. } Two Section Elect. Filter
** 19B		Condenser, 30 mfd., 150 w.v. } Two Section Elect. Filter
* 19A	B-135073	Condenser, 15 mfd., 150 w.v. } Two Section Elect. Filter
* 19B		Condenser, 15 mfd., 150 w.v. } Two Section Elect. Filter
20	39294-38	Resistor, 15 megohm, ½ w.
21	39294-21	Resistor, 22,000 ohm, ½ w.
22	39294-27	Resistor, 220,000 ohm, ½ w.
23	39294-34	Resistor, 3.3 megohm, ½ w.
**24	39294-8	Resistor, 150 ohm, ½ w.
**25	39015-26	Resistor, 1200 ohm, 1 w.

Item No.	Part No.	Description
26	39294-35	Resistor, 4.7 megohm, ½ w.
27	39294-29	Resistor, 470,000 ohm, ½ w.
28	39294-29	Resistor, 470,000 ohm, ½ w.
29	39294-8	Resistor, 150 ohm, ½ w.
30A	B-135127	Control, Volume (1 megohm) } Assy.
30B		Switch (Power) } Assy.
‡	39368-14	Control (Volume)
‡	39369-1	Switch (Power)
31	B-135077	Transformer (Output)
**33	W-137367	Resistor, 47 ohm, 1 w.
34	Part of Item #6	Resistor, 47,000 ohm, ½ w.
**36	39294-21	Resistor, 22,000 ohm, ½ w.
	G-39204	Socket, Tube
	39017-5	Socket (Dial Light)
	AB-135135	Plate Assembly (Dial)
	W-135074	Pulley (Idler)
	B-135094	Pointer (Dial)
	B-135075	Shaft (Drive)
	W-134916	Washer (Spring)
	W-51071	Ring (Retaining)
	W-131154-1	Cotter (External)
	W-51752	Spring (Drive Cord)
	W-134055	Grommet
	W-49770	Stud (Trimount)
	D-137324	Cabinet (56TV-O)
	R-135446	Cabinet & Handle Assy. (56TU-O)
	R-135444	Cabinet, Only (56TU-O)
	B-135403	Handle (56TU-O)
	W-137511	Spring, Handle (56TU-O)
	W-50325	Clip (56TU-O)
	B-135713	Dial Glass
	W-135455	Knob (56TV-O)
	W-135454	Knob (56TU-O)
	W-132124	Stud, Trimount (56TU-O)
	136571	Support, Dial

*These parts are used only on the above models which are equipped with E. M. speakers.
**These parts are used only on the above models which are equipped with P. M. speakers.
‡These parts will replace the original equipment parts.

CROSLEY DIVISION
AVCO MFG. CORP.

MODEL 56TY

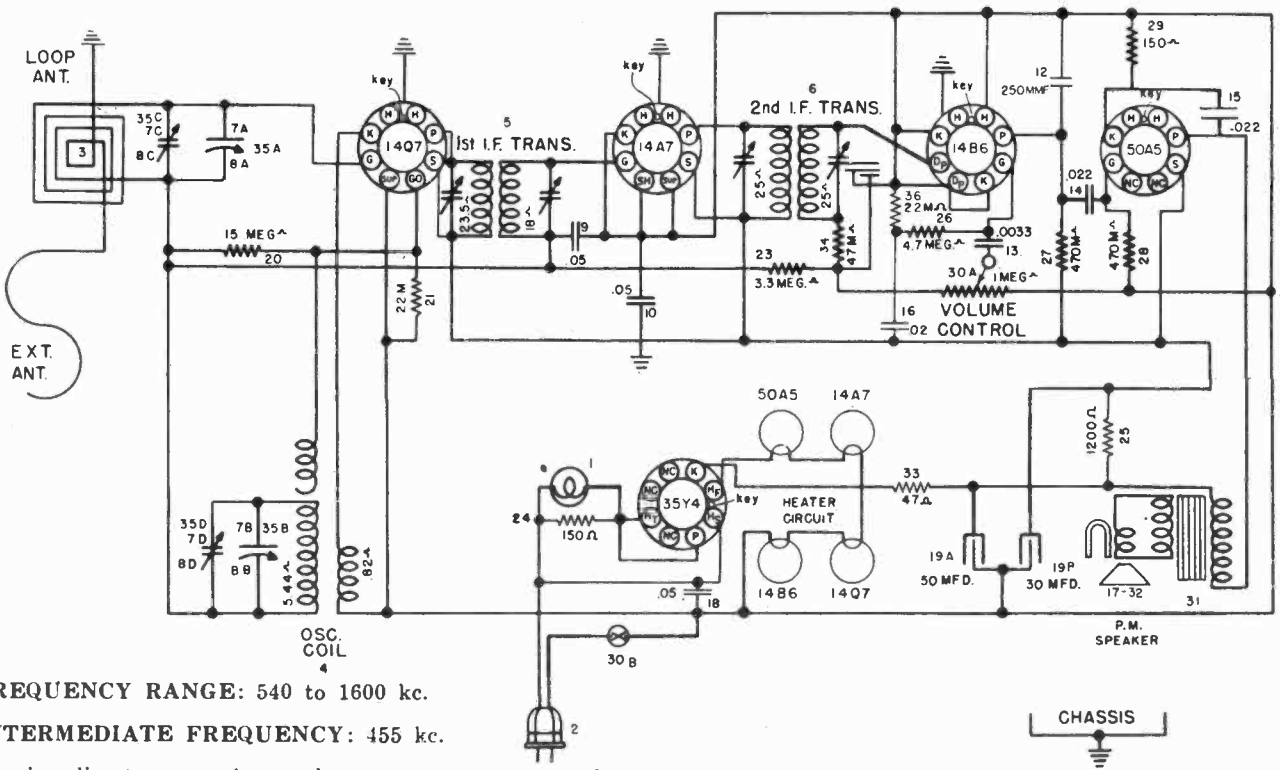


POWER SUPPLY: a.c.—d.c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 35 watts nominal.

POWER OUTPUT: 1 watt minimum.



FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity. Reversing the position of the power plug when alternating current is used may reduce power hum. UNDER NO CIRCUMSTANCES SHOULD A GROUND BE CONNECTED TO THIS RECEIVER.

ITEM No.	PART No.	DESCRIPTION
1	W-48858	Bulb (dial), Type 47, 6.3 v., .15 amp.
2	C-132300-1	Cable and Plug (power)
3	AC-135253	Ant. Loop and Back Assy.
4	AW-135195	Oscillator Coil Assembly
5	AW-137665	Transformer (1st I.F.)
6	AW-137667	Transformer (2nd I.F.)
7A	B-135202	Condenser (variable) } Two
7B		Condenser (variable) } Section
7C	Part of Item 7A	Condenser (trimmer)
7D	Part of Item 7B	Condenser (trimmer)
9	39001-65	Condenser, .05 mfd., 200 v., paper
10	39001-65	Condenser, .05 mfd., 200 v., paper
12	39001-73	Condenser, 250 mmf., 600 v., paper
13	39001-10	Condenser, 3300 mmf., 600 v., paper
14	39001-63	Condenser, .022 mfd., 200 v., paper
15	39001-63	Condenser, .022 mfd., 200 v., paper
17	B-136768	Speaker
18	39001-65	Condenser, .05 mfd., 200 v., paper
19A	B-136770	Condenser, 50 mfd., 150 v. } Two Section
19B		Condenser, 30 mfd., 150 v. } Elect. Filter
20	39294-38	Resistor, 15 megohm, ½ w.
21	39294-21	Resistor, 22,000 ohm, ½ w.
23	39294-34	Resistor, 3.3 megohm, ½ w.
24	39294-8	Resistor, 150 ohm, ½ w.
25	39015-26	Resistor, 1200 ohm, 1 w.
26	39294-35	Resistor, 4.7 megohm, ½ w.
27	39294-29	Resistor, 470,000 ohm, ½ w.

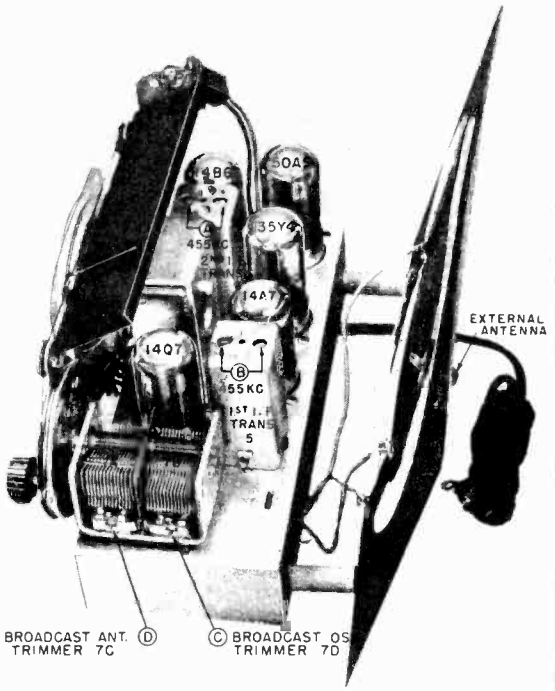
ITEM No.	PART No.	DESCRIPTION
28	39294-29	Resistor, 470,000 ohm, ½ w.
29	39294-8	Resistor, 150 ohm, ½ w.
30A	C-135127	Control, Volume (1 megohm) } Assy.
30B		Switch (power) } Assy.
31	B-137723	Transformer (output)
33	W-137367	Resistor, 47 ohm, 1 w.
34	Part of Item 26	Resistor, 47,000 ohm, ½ w.
	W-135371	Socket (tube)
	39017-5	Socket (dial light)
	AB-135135	Plate Assembly (dial)
	W-135074	Pulley (idler)
	B-135094	Pointer (dial)
	B-135075	Shaft (drive)
	W-134916	Washer (spring)
	W-51071	Ring (retaining)
	W-131154-1	Cotter (external)
	W-51752	Spring (drive cord)
	W-134055	Grommet
	W-135164	Bumper
	W-136630	Trimount Stud
	D-135235	Cabinet
	B-135713	Dial Glass
	W-135391	Knob

March, 1947

MODEL 56TY

CROSLEY DIVISION
AVCO MFG. CORP.

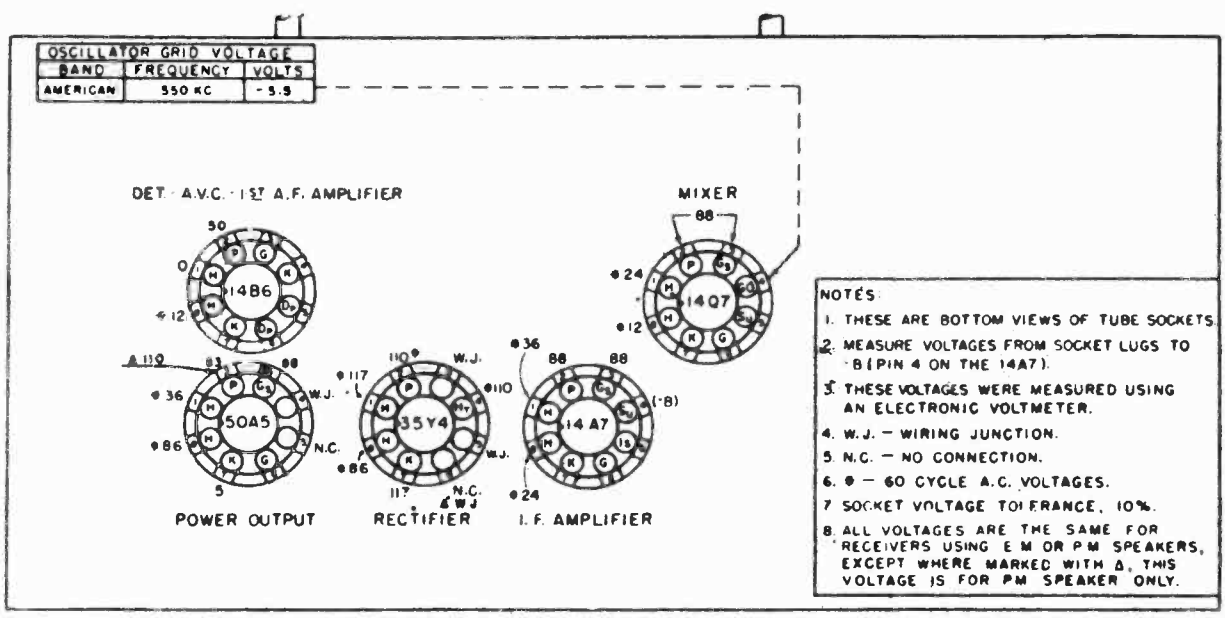
1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r.f. signal input from the signal generator should be connected to the external antenna lead. Connect the signal generator ground through a 0.1 mfd. condenser to —B (pin 4 on 14A7 tube socket).
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.



ALIGNMENT CHART

Alignment adjustment locations are shown in Chassis, Side View at the right.

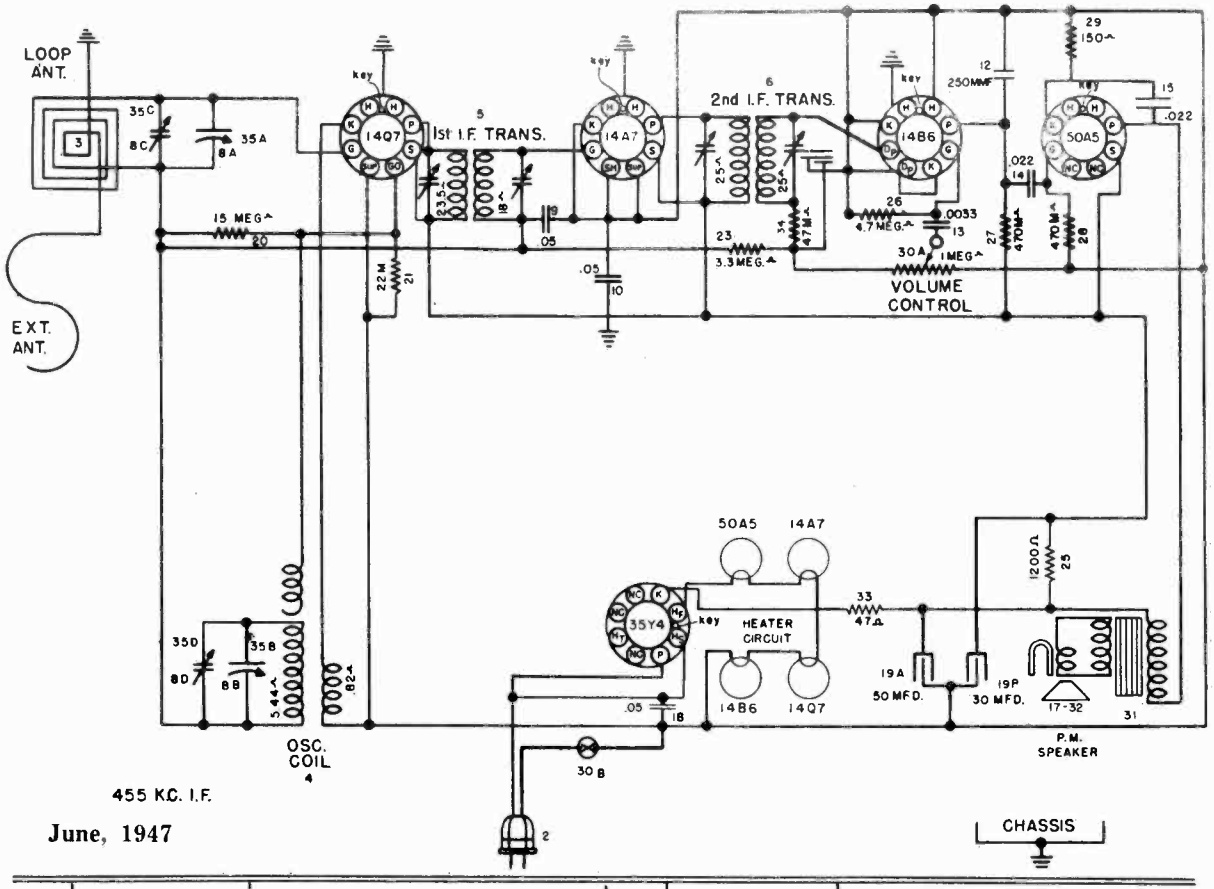
Alignment sequence	Signal Gen. Output			Position of Tuning Dial	Adjust for max. output
	Frequency in KC	In Series with	To		
1	455	200 mmf.	Ant.	1620	A & B
2	1620	200 mmf.	Ant.	1620	C
3	1400	200 mmf.	Ant.	1400	D



SOCKET VOLTAGE CHART

CROSLEY DIVISION
AVCO MFG. CORP.

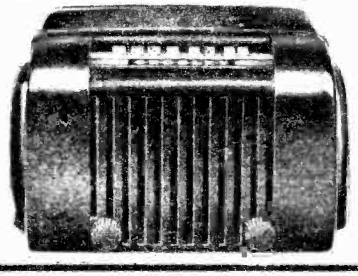
MODELS 57TK, 57TL



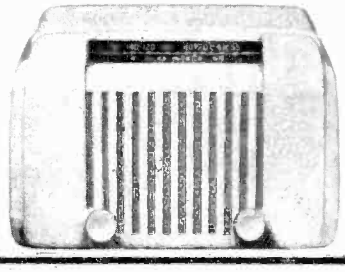
June, 1947

Item No.	Part No.	Description	Item No.	Part No.	Description
2	C-132300-1	Cable and Plug Assy., Power	30 A	C-135127	Control, Volume (1 megohm) } Assy.
3	AC-135209	Loop and Back Assy., Antenna	30 B		Switch, Power }
4	AW-135195	Coil Assy., Oscillator	*	39368-14	Control, Volume
5	AW-137665	Transformer, 1st I. F.	*	39369-1	Switch, Power
6	AW-137667	Transformer, 2nd I. F.	31	B-137723	Transformer, Ouput
8 A	B-135056	Condenser, Variable } Two	33	W-137367	Resistor, 47 ohm, 1 w.
8 B		Condenser, Variable } Section	34	Part of Item #6	Resistor, 47,000 ohm, ½ w.
8 C	Part of Item #8A	Condenser, Trimmer		W-135164	Bumper, Rubber
8 D	Part of Item #8B	Condenser, Trimmer		R-135162	Cabinet, (57TK)
9	39001-17	Condenser, .05 mfd., 600 v., paper		AW-135246	Cabinet, (57TL)
10	39001-17	Condenser, .05 mfd., 600 v., paper		W-131154-1	Cotter, External
12	39001-73	Condenser, 250 mmf., 600 v., paper		B-135713	Dial Glass
13	39001-73	Condenser, .003 mfd., 600 v., paper		W-134055	Grommet, Var. Cond. Mtg
14	39001-80	Condenser, .02 mfd., 600 v., paper		W-135391	Knob (57TK)
15	39001-80	Condenser, .02 mfd., 600 v., paper		W-135390	Knob (57TL)
17	B-136768	Speaker		AB-135135	Plate Assy., Dial
18	39001-17	Condenser, .05 mfd., 600 v., paper		B-135094	Pointer, Dial
19 A	B-136770	Cond'ser, 50 mfd., 150 v. } Two Sect.		W-135074	Pulley, Idler (Dial Drive)
19 B		Cond'ser, 30 mfd., 150 v. } Elec. Filter		W-51071	Ring, Retaining
20	39373-109	Resistor, 15 megohm, ½ w.		39220-28	Screw, Chassis Mtg.
21	39373-60	Resistor, 22,000 ohm, ½ w.		B-135075	Shaft, Dial Drive
23	39373-100	Resistor, 3.3 megohm, ½ w.		39441	Socket, Tube
25	39373-144	Resistor, 1200 ohm, 1 w.		W-51752	Spring, Dial Drive Cord
26	39373-102	Resistor, 4.7 megohm, ½ w.		W-49770	Stud, Trimount (Chassis Bottom)
27	39373-87	Resistor, 470,000 ohm, ½ w.		W-132124	Stud, Trimount (Cabinet Back)
28	39373-87	Resistor, 470,000 ohm, ½ w.		W-136571	Support, Dial
29	39373-16	Resistor, 150 ohm, ½ w.		W-134916	Washer, Spring

*These parts will replace the original equipment parts.

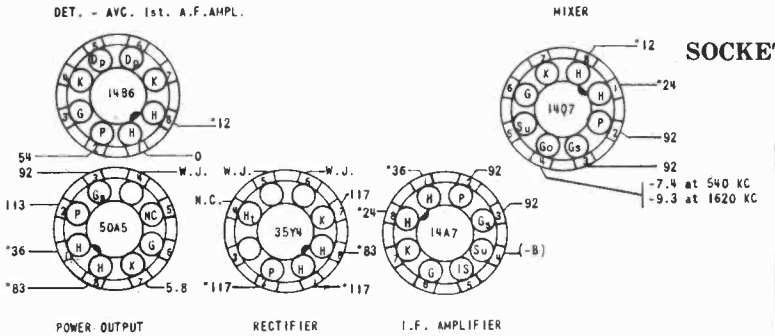


57TK



57TL

SOCKET VOLTAGE CHART



NOTES:
1. These are bottom views of tube sockets.
2. Measure voltages from socket lugs to -B (pin 4 on the 14A7).
3. These voltages were measured using an electronic voltmeter. Line voltage 117.
4. W.J. = Wiring junction
5. N.C. = No connection
6. * = 60 cycle A.C. voltages.
7. Socket voltage tolerance 10%.

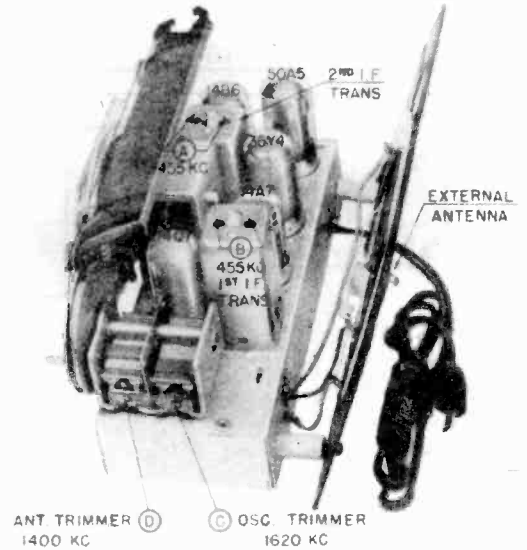
When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity.

Reversing the position of the power plug when alternating current is used may reduce power hum. *Under no circumstances should a ground be connected to this receiver.*

ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r. f. signal input from the signal generator should be connected to the external antenna clip. Connect the signal generator ground through a 0.1 mfd. condenser to—B (pin 4 on 14A7 tube socket.
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

Alignment Sequence	Signal Generator Output			Position of Tuning Dial KC	Adjust for Maximum Output
	Frequency in KC	In Series with	To		
1	455	200 mmf.	Ant.	1620	A & B
2	1620	200 mmf.	Ant.	1620	C
3	1400	200 mmf.	Ant.	1400	D



CHASSIS, SIDE VIEW—

TUBE COMPLEMENT:

Type	Function
14Q7	Mixer
14A7	I.F. Amplifier
14B6	Detector. AVC, 1st A.F. Amplifier
50A5	A.F. Power Output
35Y4	Rectifier

TYPE: Five-tube, single band, superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: a. c.—d. c.

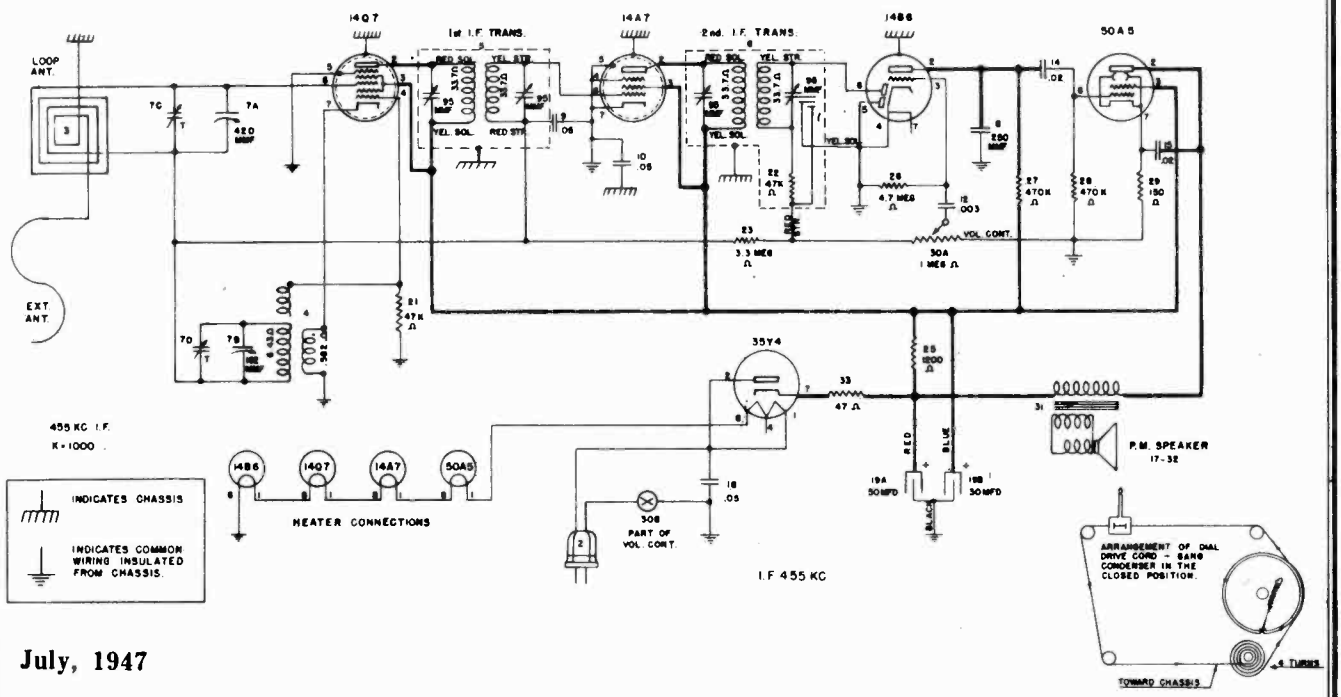
VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 35 watts nominal.

POWER OUTPUT: 1.75 watts minimum.

CROSLEY DIVISION
AVCO MFG. CORP.

MODELS 58TA, 58TL



July, 1947

Item No.	Part No.	Description
2	C-132300-1	Cable and Plug Assy., Power
3	AC-139795	Antenna Loop and Back Assy.
4	AW-139584	Coil Assy., Oscillator
5	AC-139571	Transformer, 1st I. F.
6	AC-139572	Transformer, 2nd I. F.
7A	AC-137073-15	Condenser, Variable (Two
7B		Condenser, Variable (Section
7C	Part of Item 7A	Condenser, Trimmer
7D	Part of Item 7B	Condenser, Trimmer
8	39001-73	Condenser, 250 mmf., 600 v., paper
9	39001-17	Condenser, .05 mfd., 600 v., paper
10	39001-17	Condenser, .05 mfd., 600 v., paper
12	39001-76	Condenser, .003 mfd., 600 v., paper
14	39001-80	Condenser, .02 mfd., 600 v., paper
15	39001-80	Condenser, .02 mfd., 600 v., paper
18	39001-17	Condenser, .05 mfd., 600 v., paper
19A	B-136770	Condenser, 50 mfd., 150 v. (Two Section
19B		Condenser, 30 mfd., 150 v. (Elect. Filter
21	39373-67	Resistor, 47,000 ohm, ½ w.
22	39373-67	Resistor, 47,000 ohm, ½ w.
23	39373-100	Resistor, 3.3 megohm, ½ w.
25	39373-144	Resistor, 1200 ohm, 1 w.
26	39373-102	Resistor, 4.7 megohm, ½ w.
27	39373-87	Resistor, 470,000 ohm, ½ w.
28	39373-87	Resistor, 470,000 ohm, ½ w.
29	39373-16	Resistor, 150 ohm, ½ w.
30A	B-135127	Control, Volume (1 megohm) (Assy.
30B		Switch Power (Assy.
*	39368-14	Control, Volume
*	39369-1	Switch, Power
31	B-137723	Transformer, Output
32	AD-138459	Speaker
33	W-137367	Resistor, 47 ohm, 1 w.

Item No.	Part No.	Description
	R-139526-2	Cabinet (58TA)
	AW-139600	Cabinet (58TL)
	B-139605	Dial Glass
	B-138540-1	Knob (58TA)
	B-138540-2	Knob (58TL)
	W-139532	Pointer, Dial
	W-51071	Ring, Retaining
	B-135075-2	Shaft, Drive
	39441	Socket, Tube
	W-51752	Spring, Dial Drive Cord
	W-139060	Stud, Trimount (Chassis Bottom)
	W-132124	Stud, Trimount (Cabinet Back)
	W-134916	Washer, Spring

*These parts will replace the original equipment parts.

TUBE COMPLEMENT:

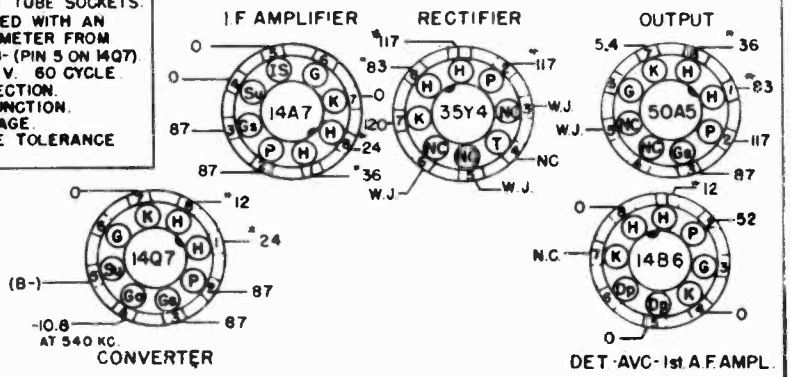
Type	Function
14Q7	Mixer
14A7	I. F. Amplifier
14B6	Detector, AVC, 1st A. F. Amplifier
50A5	A. F. Power Output
35Y4	Rectifier

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity.

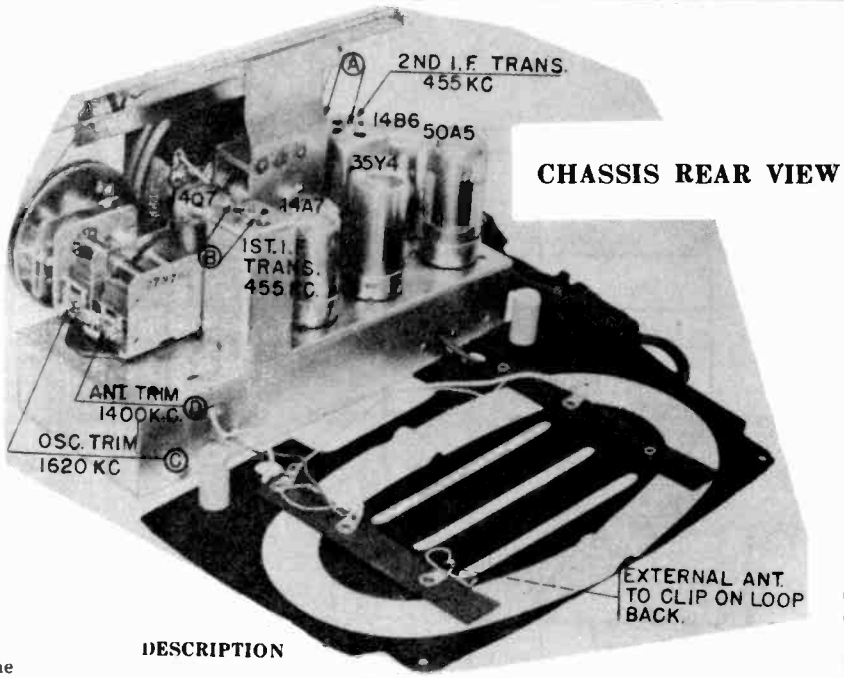
Reversing the position of the power plug when alternating current is used may reduce power hum.

Under no circumstances should a ground be connected to this receiver.

NOTES:
1. BOTTOM VIEW OF TUBE SOCKETS.
2. VOLTAGE MEASURED WITH AN ELECTRONIC VOLTMETER FROM SOCKET LUG TO B- (PIN 5 ON 14Q7).
3. LINE VOLTAGE 117 V. 60 CYCLE.
4. N.C. = NO CONNECTION.
5. W.J. = WIRING JUNCTION.
6. * = A.C. VOLTAGE.
7. SOCKET VOLTAGE TOLERANCE 10 %.



SOCKET VOLTAGE CHART



CHASSIS REAR VIEW

ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r. f. signal input from the signal generator should be connected to the external antenna clip. Connect the signal generator ground through a 0.1 mfd. condenser to B (pin 5 on 14Q7 tube socket).
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

ALIGNMENT CHART

Alignment adjustment locations are shown on "CHASSIS REAR VIEW"

Alignment Sequence	Signal Generator Output			Position of Dial Pointer	Adjust for Maximum Output
	Frequency in kc.	In Series with	To		
1	455	200 mmf.	Ant.	1620	A & B
2	1620	200 mmf.	Ant.	1620	C
3	1400	200 mmf.	Ant.	1400	D

DESCRIPTION

TYPE: F ve-tube, single band, Superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

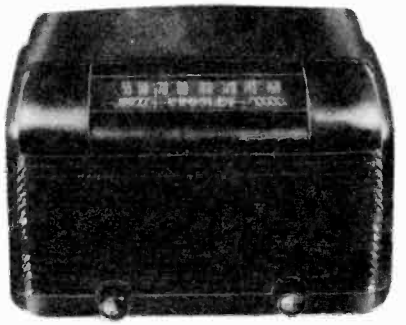
POWER SUPPLY: a.c. d.c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 35 watts.

POWER OUTPUT: 1.5 watts maximum.

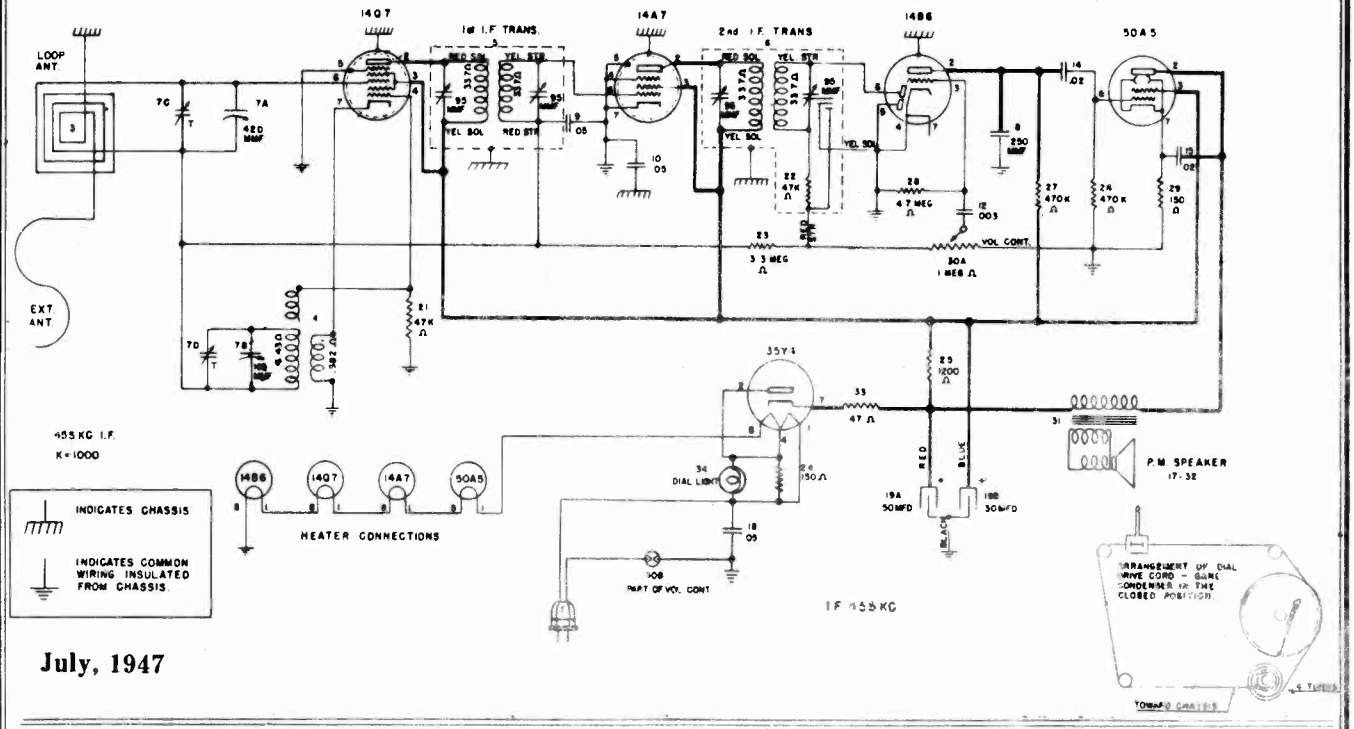
58TA



58TL

CROSLEY DIVISION
AVCO MFG. CORP.

MODELS 58TC, 58TW



July, 1947

Item No.	Part No.	Description
2	C-132300-1	Cable and Plug Assy., Power
3	AC-139808	Antenna Loop and Back Assy.
4	AW-139584	Coil Assy., Oscillator
5	AC-139571	Transformer, 1st I. F.
6	AC-139572	Transformer, 2nd I. F.
7A	AC-137073-15	Condenser, Variable } Two
7B		Condenser, Variable } Section
7C	Part of Item 7A	Condenser, Trimmer
7D	Part of Item 7B	Condenser, Trimmer
8	39001-73	Condenser, 250 mmf., 600 v., paper
9	39001-17	Condenser, .05 mfd., 600 v., paper
10	39001-17	Condenser, .05 mfd., 600 v., paper
12	39001-76	Condenser, .003 mfd., 600 v., paper
14	39001-80	Condenser, .02 mfd., 600 v., paper
15	39001-80	Condenser, .02 mfd., 600 v., paper
18	39001-17	Condenser, .05 mfd., 600 v., paper
19A	B-136770	Condenser, 50 mfd., 150 v. } Two Section
19B		Condenser, 30 mfd., 150 v. } Elect. Filter
21	39373-67	Resistor, 47,000 ohm, ½ w.
22	39373-67	Resistor, 47,000 ohm, ½ w.
23	39373-100	Resistor, 3.3 megohm, ½ w.
24	39373-16	Resistor, 150 ohm, ½ w.
25	39373-144	Resistor, 1200 ohm, 1 w.
26	39373-102	Resistor, 4.7 megohm, ½ w.
27	39373-87	Resistor, 470,000 ohm, ½ w.
28	39373-87	Resistor, 470,000 ohm, ½ w.
29	39373-16	Resistor, 150 ohm, ½ w.
30A	B-135127	Control, Volume (1 megohm) } Assy.
30B		Switch, Power }
*	39368-14	Control, Volume
*	39369-1	Switch, Power
31	B-137723	Transformer, Output
32	AD-138459	Speaker
33	W-137367	Resistor, 47 ohm, 1 w.
34	W-48858	Bulb (Dial), Type 47, 6.3 v., .15 amp.

Item No.	Part No.	Description
	R-139269	Cabinet (58TC)
	AW-139594	Cabinet (58TW)
	W-50325CP	Clip, Cabinet Handle (58TW)
	B-139605	Dial Glass
	B-135403	Handle, Cabinet (58TW)
	B-138540-3	Knob (58TC)
	B-138540-2	Knob (58TW)
	W-139532	Pointer, Dial
	W-51071	Ring, Retaining
	B-135075-2	Shaft, Drive
	D-136565-4	Socket, Dial Light
	39441	Socket, Tube
	W-137511	Spring, Cabinet Handle
	W-51752	Spring, Dial Drive Cord
	W-139060	Stud, Trimount (Chassis Bottom)
	W-134916	Washer, Spring

*These parts will replace the original equipment parts.

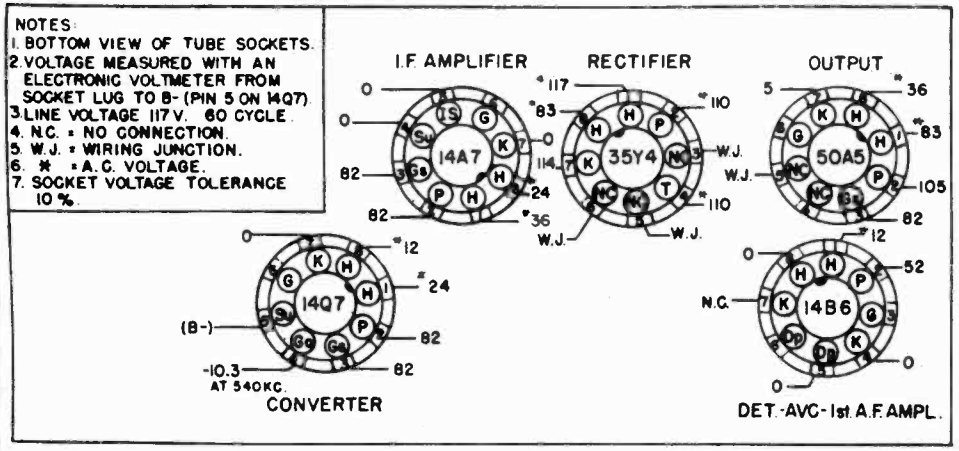
TUBE COMPLEMENT:

Type	Function
14Q7	Mixer
14A7	I. F. Amplifier
14B6	Detector, AVC, 1st A. F. Amplifier
50A5	A. F. Power Output
35Y4	Rectifier

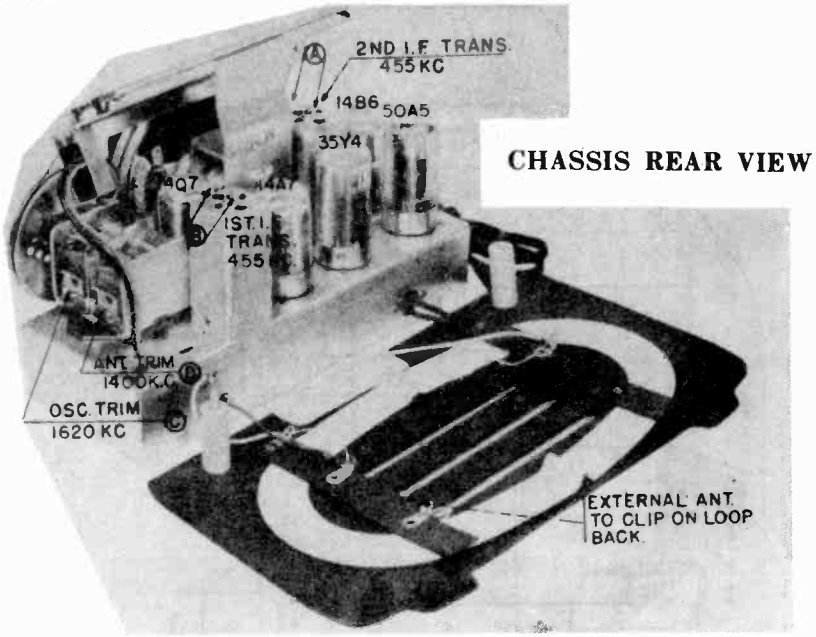
DIAL BULB: Type 47, 6.3 volts, .15 amp.

When using direct current it may be necessary to reverse the position of the power plug in the electric outlet for correct polarity.

Reversing the position of the power plug when alternating current is used may reduce power hum.
Under no circumstances should a ground be connected to this receiver.



SOCKET VOLTAGE CHART



CHASSIS REAR VIEW

ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r. f. signal input from the signal generator should be connected to the external antenna clip. Connect the signal generator ground through a 0.1 mfd. condenser to B (pin 5 on 14Q7 tube socket).
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain signal generator output as low as possible to prevent AVC action in the receiver.

ALIGNMENT CHART

Alignment adjustment locations are shown on page 1, "CHASSIS REAR VIEW."

Alignment Sequence	Signal Generator Output			Position of Dial Pointer	Adjust for Maximum Output
	Frequency in kc.	In Series with	To		
1	455	200 mmf.	Ant.	1620	A & B
2	1620	200 mmf.	Ant.	1620	C
3	1400	200 mmf.	Ant.	1400	D

DESCRIPTION

TYPE: Five-tube, single band, Superheterodyne.

FREQUENCY RANGE: 540 to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

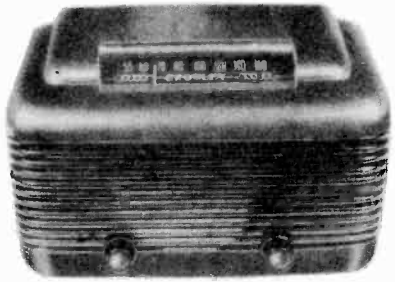
POWER SUPPLY: a.c. d.c.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 35 watts.

POWER OUTPUT: 1.5 watts maximum.

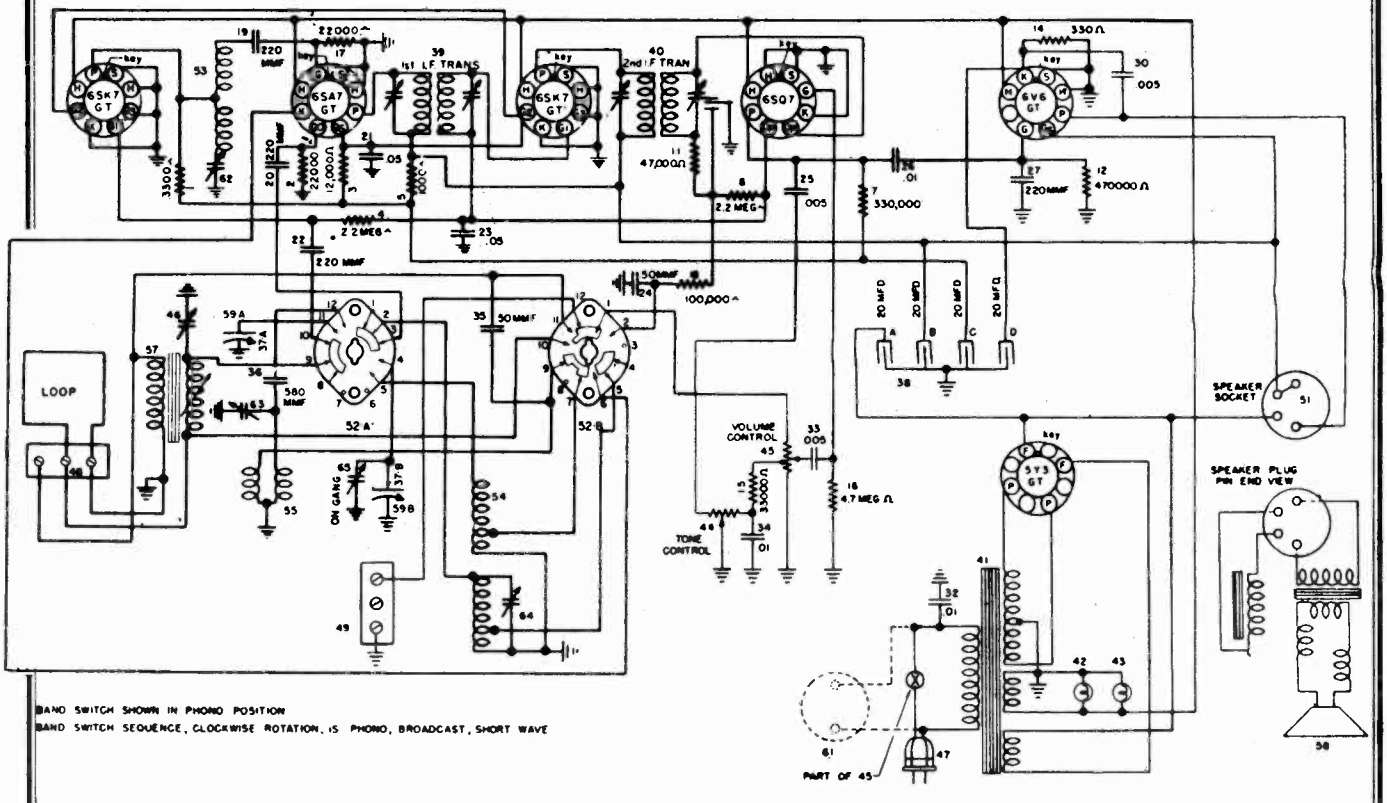
58TC



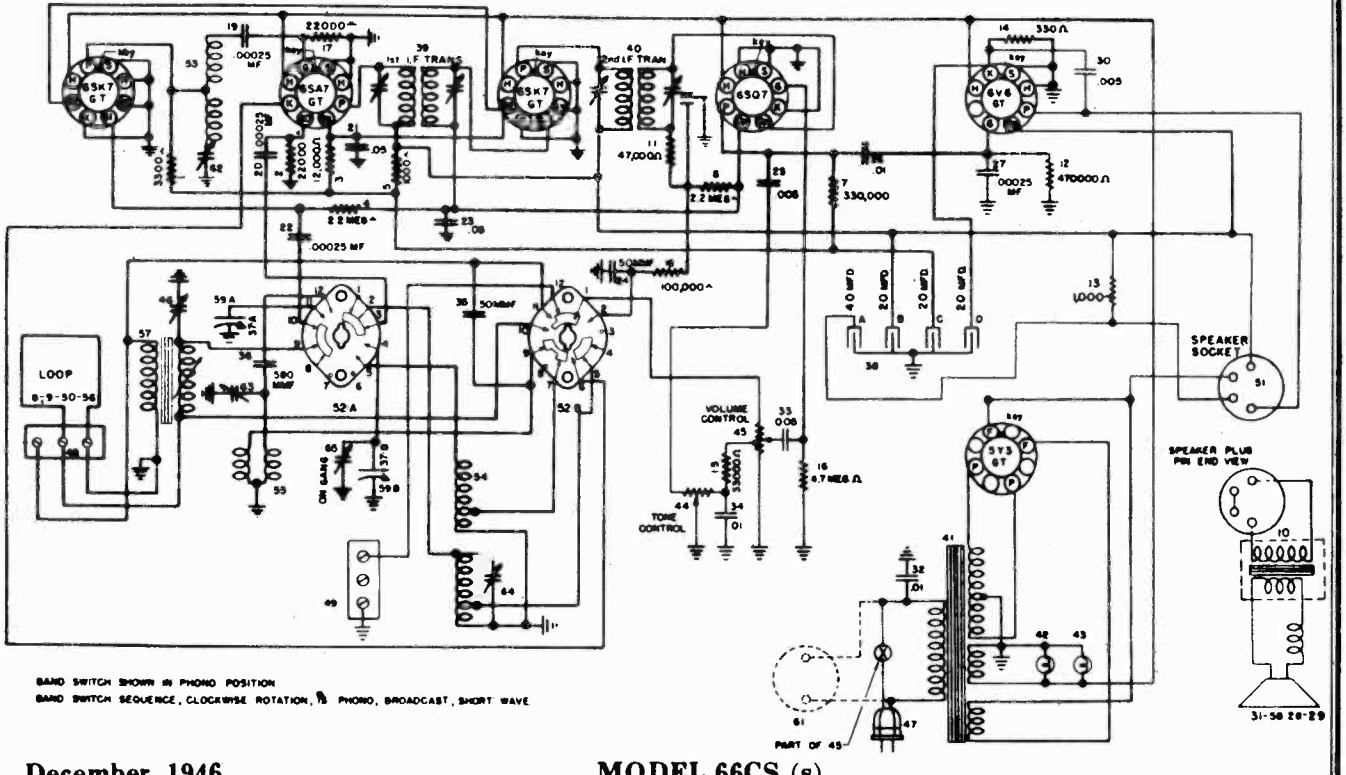
58TW

MODELS 66CS, 66CSM
MODEL 66CS(s)

CROSLEY DIV.
AV CO MFG. CORP.



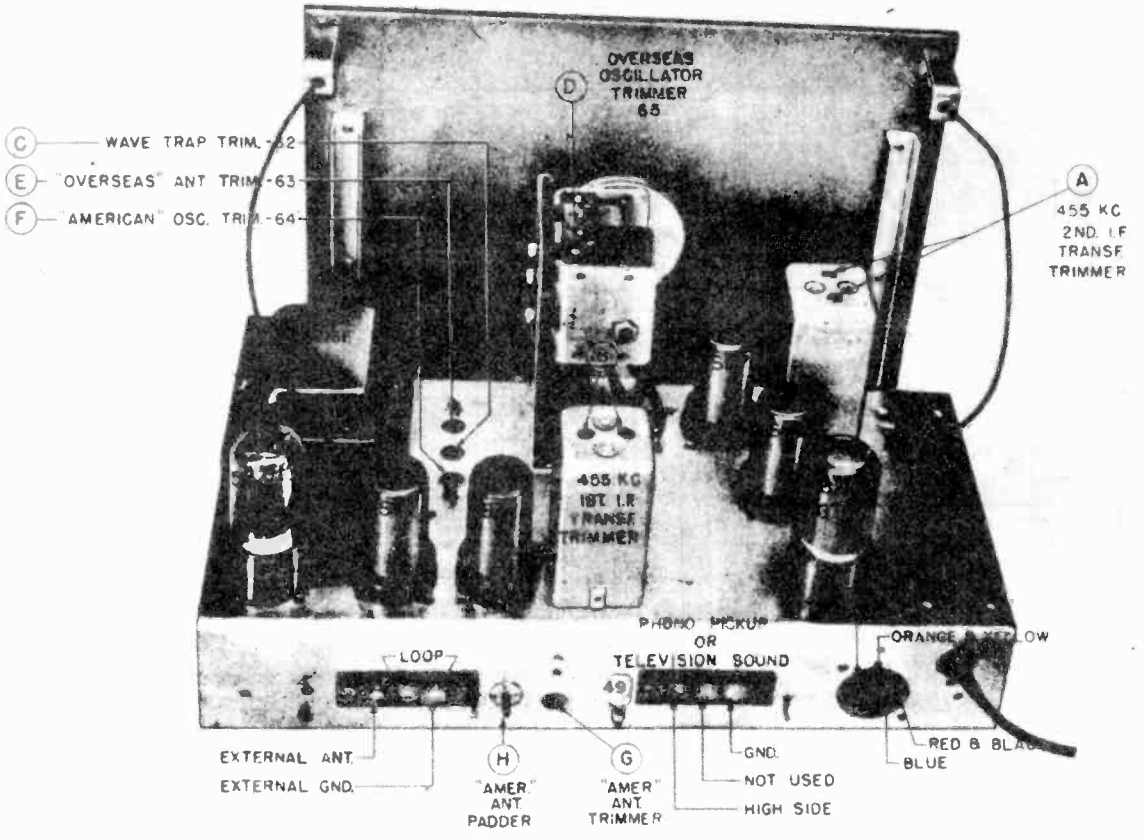
September 1946 SCHEMATIC DIAGRAM—MODELS 66CS, 66CSM



December, 1946 **MODEL 66CS (s)**

CROSLEY DIV.
AV COMFG. CORP.

MODELS 66CS,66CSM
Model 66CS(s)



1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the reference line at the end of the dial scale.
2. Connect the output meter across the speaker voice coil.
3. The r. f. signal input from the signal generator should be connected to the external antenna post as indicated in the alignment chart. Connect the low side (ground) of the signal generator to the chassis.
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain the signal generator output as low as possible to prevent AVC action in the receiver.

Alignment Sequence	Signal Generator Output			Position of		Adjust for Maximum Output
	Frequency in kc.	In Series With	To	Band Switch	Tuning Dial	
1	455	200 mmf.	Ant.	A	1620	A & B
2	455	200 mmf.	Ant.	A	1620	C*
3	15,300	400 ohms	Ant.	O	15,300	D
4	15,000	400 ohms	Ant.	O	15,000	E
5	1620	200 mmf.	Ant.	A	1620	F
6	1400	200 mmf.	Ant.	A	1400	G
7	600	200 mmf.	Ant.	A	600	H
8	1400	200 mmf.	Ant.	A	1400	Recheck G

*Adjust for Minimum Output (Wave Trap).

NOTE: When aligning the "Overseas" oscillator trimmer (D), be sure that the circuit is aligned at the correct frequency and not at the image frequency which is 910 kilocycles lower as indicated by the receiver dial. To check: tune in the generator frequency, then increase the generator output and tune in the image frequency. The image frequency should be weaker than the fundamental and audible 910 kilocycles lower on the receiver dial. If the image cannot be tuned in, the oscillator trimmer is adjusted to the wrong peak of the trimmer from the closed position.

TUBE COMPLEMENT:

CROSLEY DIV.
AVCO MFG. CORP.

MODELS 66CS, 66CSM, 66CS(s)

Type	Function
6SA7 (GT/G)	Mixer
6SK7 (GT/G)	R. F. Amplifier
6SK7 (GT/G)	I. F. Amplifier
6SQ7 (GT/G)	Detector, AVC, 1st A.F Amplifier
6V6 (GT/G)	A. F. Power Output
5Y3 GT/G	Rectifier

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: 60 cycle a. c. only.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 60 watts maximum.

POWER OUPUT: 4.5 watts minimum.

VOLTAGE DROP ACROSS SPEAKER FIELD: 76 volts.

RESISTANCE OF SPEAKER FIELD: 900 ohms.

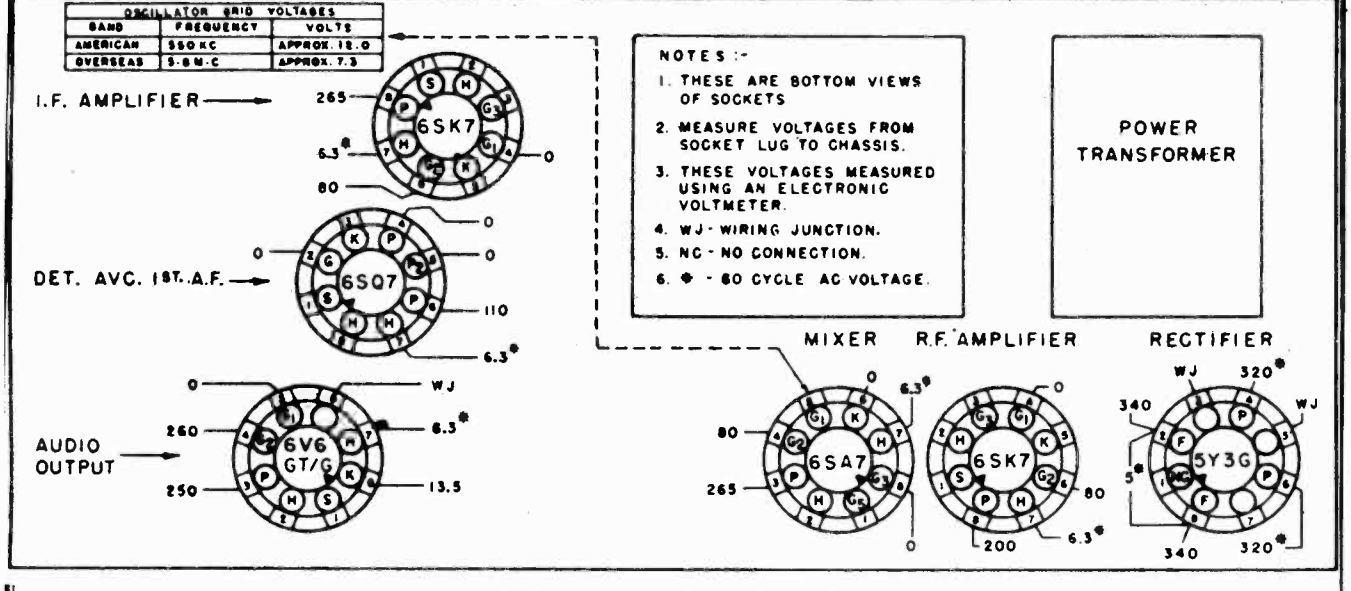
DIAL BULB: Type 51. 7.5 volts, .25 amp.

Item No.	Part Number	Description
1	39281-16	Resistor, 3300 ohm, ½ w.
2	39281-21	Resistor, 22,000 ohm, ½ w.
3	39016-38	Resistor, 12,000 ohm, 2 w.
4	39281-33	Resistor, 2.2 megohm, ½ w.
5	39040-13	Resistor, 1,000 ohm, 1 w.
6	39281-33	Resistor, 2.2 megohm, ½ w.
7	39281-28	Resistor, 330,000 ohm, ½ w.
11	39281-23	Resistor, 47,000 ohm, ½ w.
12	39281-29	Resistor, 470,000 ohm, ½ w.
14	39015-19	Resistor, 330 ohm, 1 w.
15	39281-22	Resistor, 33,000 ohm, ½ w.
16	39281-35	Resistor, 4.7 megohm, ½ w.
17	39281-21	Resistor, 22,000 ohm, ½ w.
18	39281-25	Resistor, 100,000 ohm, ½ w.
19	39004-9	Condenser, 220 mmf., 500 v., Mica
20	39004-9	Condenser, 220 mmf., 500 v., Mica
21	39001-41	Condenser, .05 mfd., 400 v., Paper
22	39004-9	Condenser, 220 mmf., 500 v., Mica
23	39001-65	Condenser, .05 mfd., 200 v., Paper
24	39004-5	Condenser, 50 mmf., 500 v., Mica
25	39001-11	Condenser, .005 mfd., 600 v., Paper
26	39001-27	Condenser, .01 mfd., 400 v., Paper
27	39004-9	Condenser, 220 mmf., 500 v., Mica
30	39001-11	Condenser, .006 mfd., 600 v., Paper
32	W-30805	Condenser, .01 mfd., 400 v., Paper
33	39001-11	Condenser, .005 mfd., 600 v., Paper
34	39001-61	Condenser, .01 mfd., 200 v., Paper
35	39004-5	Condenser, 50 mmf., 500 v., Mica
36	GC-210655-143	Condenser, 500 mmf., 500 v., Mica
37A	B-134996	Condenser (variable) | Two
37B		Condenser (variable) /Section
38A	B-132307	Condenser, 20 mfd., 360 w.v. | Four
38B		Condenser, 20 mfd., 275 w.v. | Section
38C		Condenser, 20 mfd., 245 w.v. | Elect.
38D		Condenser, 20 mfd., 25 w.v. | Filter
39	AW-134065	Transformer (1st I. F.)
40	AW-134158	Transformer (2nd I. F.)
41	B-134625	Transformer (Power)
42	W-43567	Bulb (Dial Light, Type 51, 7.5 v., .25 amp.)
43	W-43567	Bulb (Dial Light, Type 51, 7.5 v., .25 amp.)
44	B-135651	Control, Tone (3 megohm)
45	B-135650	Control, Volume (1 megohm) & Switch
46	W-132267-1	Condenser (Trimmer)
47	B-132300-1	Cable and Plug (Power)
48	39019-8	Terminal Board Assembly
49	39019-8	Terminal Board Assembly
51	W-134968-1	Socket (Speaker)
52A	B-134639	Switch (Band Change) | Two
52B		Switch (Band Change) /Section
53	AW-135907	R. F. Coil Assembly
54	AW-135908	Oscillator Coil Assembly
55	AW-135909	Antenna Coil Assembly
57	AW-135910	Antenna Loading Coil Assembly
58	B-134700	Speaker
62	B-132386-7	Condenser (Trimmer) Three
63		Condenser (Trimmer) Section
64		Condenser (Trimmer) Assembly
	G-39012-8	Core (Iron)
	G-39204	Socket (Tube)
	39017-2	Socket (Dial Light)
	AW-134793	Dial Face Assembly
	B-134571	Pointer (Dial)
	W-134657	Clip (Dial Pointer)
	W-61752	Spring (Dial Cord)
	W-134917	Shaft (Drive)
	W-61071	Ring (Retaining)
	W-134916	Washer (Spring)
	W-132366-2	Nut (Iron Core Locking)
	39196-29	Screw (Dial Mtg.)
	W-134055	Grommet (Variable Condenser Mtg.)
	R-137873	Cabinet (66CS)
	R-137917	Cabinet (66CSM)
	C-134773	Lens (Dial)
	AC-134782	Antenna Loop Assembly
	D-134945-1	Record Changer
	AB-134935	Floating Jewel Needle Assembly
	W-134959	Cable, Phono
	W-135248	Knob
	W-45680	Rubber Mtg. (Speaker and Chassis Mtg.)
	W-136539	Lid Support, Cabinet
	AW-134972	Screw and Washer Assembly (Record Changer Mtg., 66CS)
	W-134966	Nut, Spring Lock (Record Changer Mtg.)
	W-134956	Nut, Tee (Record Changer Mtg.)
	AW-134961	Lead Assembly, Shielded (Record Changer)
	W-23880	Thumbscrew (Chassis Mtg., 66CS)

MODEL 66CS (s) PARTS LIST

Item No.	Part Number	Description
13	B-210735-32	Resistor, 1000 ohm, 5 w.
38A	B-137076	Condenser, 40 mfd., 450 w. v. Four
38B		Condenser, 20 mfd., 450 w. v. Section
38C		Condenser, 20 mfd., 450 w. v. Elect.
38D		Condenser, 20 mfd., 25 w. v. Filter
58	C-135974	Speaker
8	W-137143	Antenna (Transmission Line, 116")

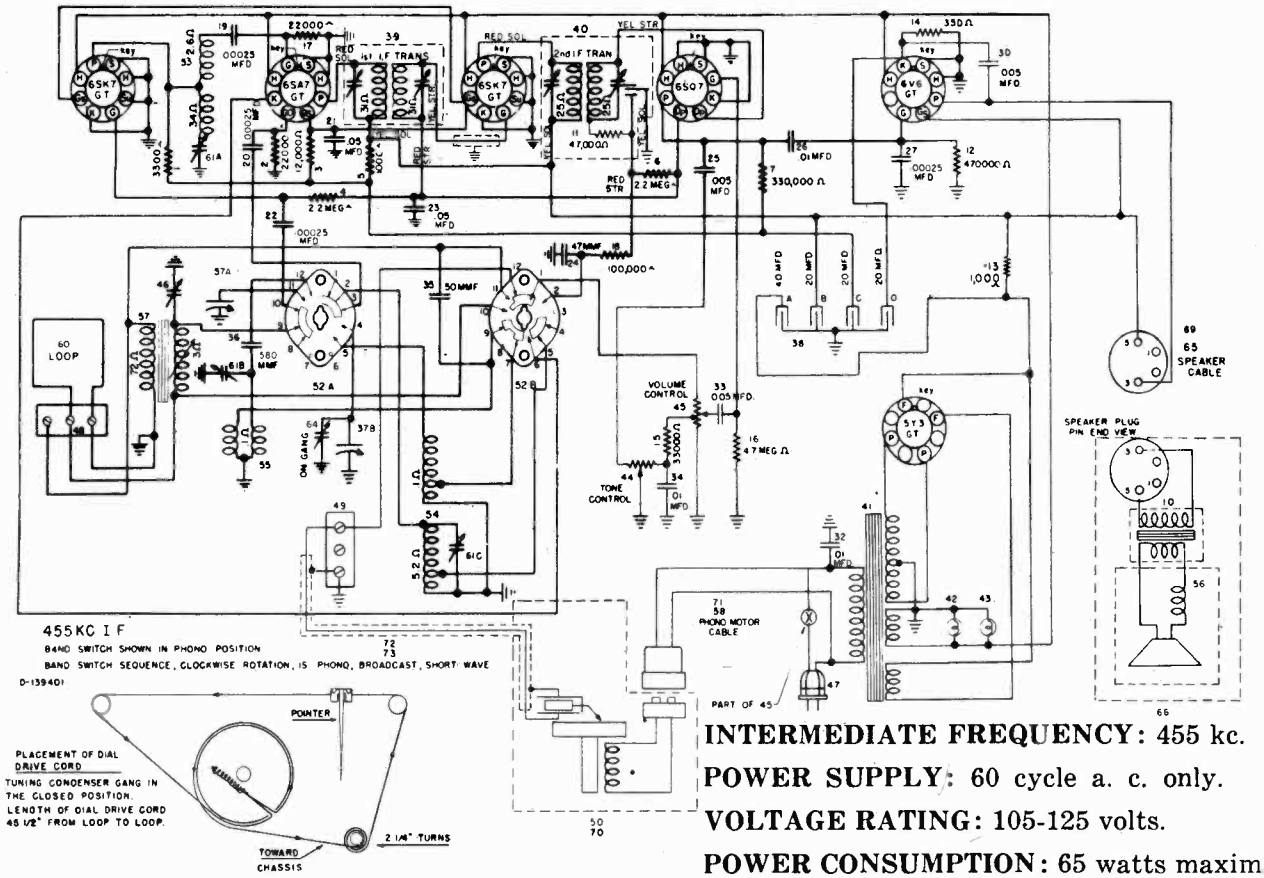
NOTE—All other parts and service information are the same as used on models "66CS" and "66CSM".



SOCKET VOLTAGE TOLERANCE: 10%

MODELS 68CP, 68CR

CROSLEY DIV.
AVCO MFG. CORP.



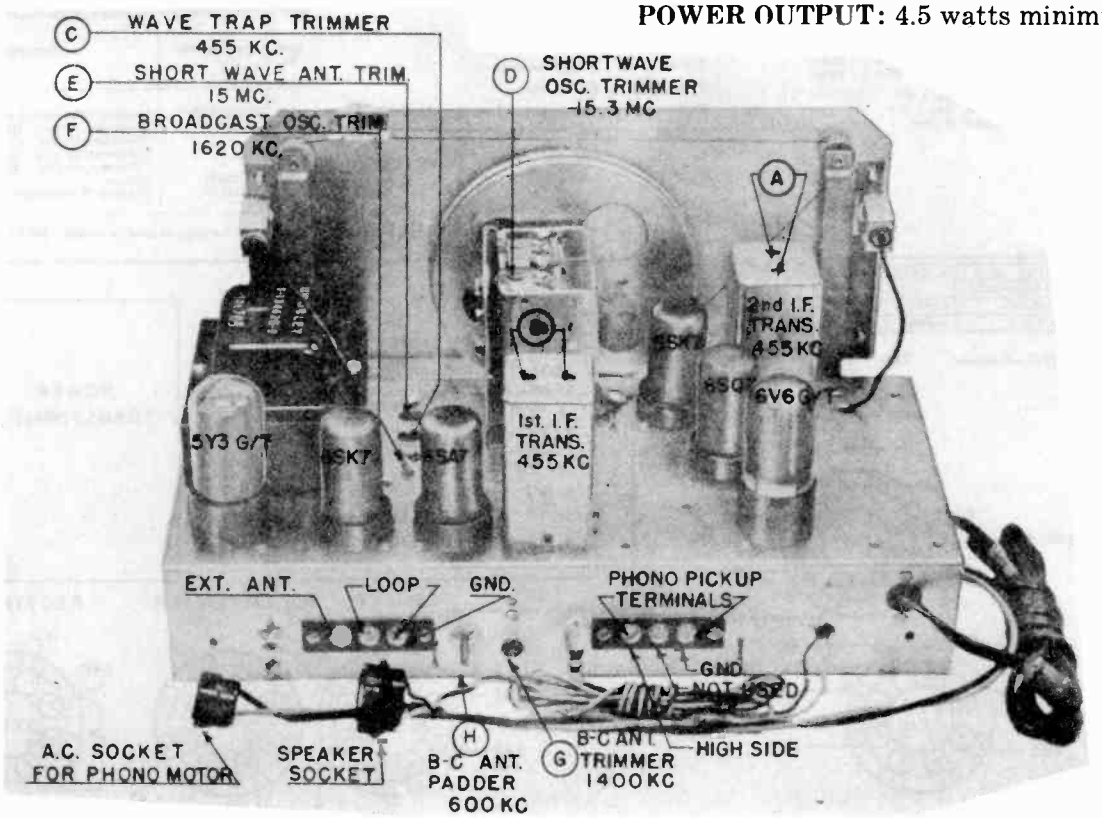
INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: 60 cycle a. c. only.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 65 watts maximum. watts additional for record changer.

POWER OUTPUT: 4.5 watts minimum.

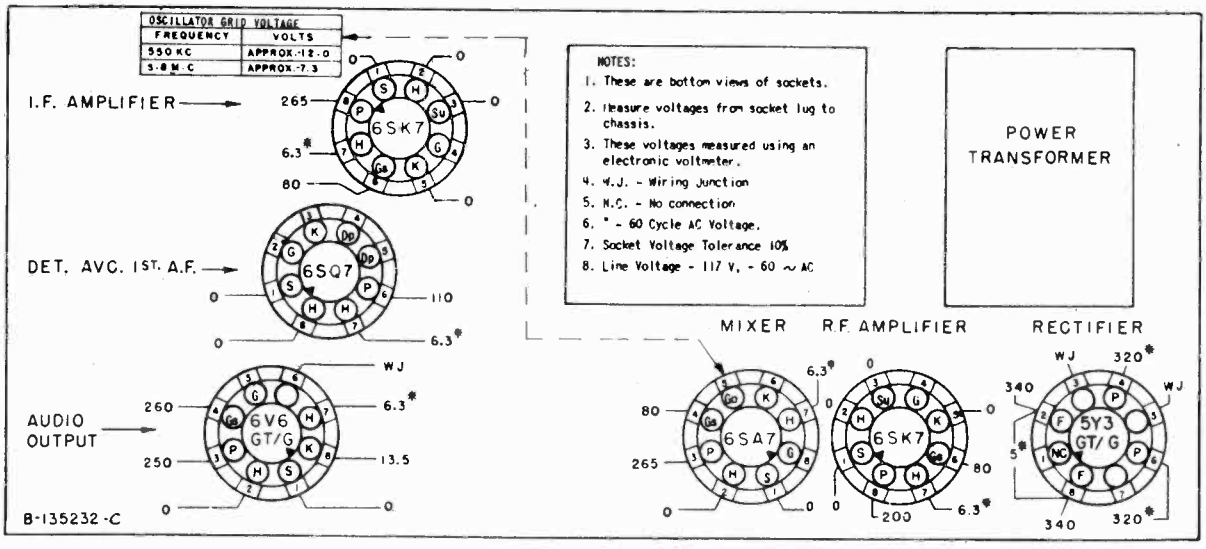


CHASSIS, REAR VIEW

CROSLEY DIV.
AVCO MFG. CORP.

MODELS 68CP, 68CR

SOCKET VOLTAGE CHART



ALIGNMENT PROCEDURE

1. Turn the tuning condenser to the completely closed position against the stop and set the dial pointer to the notch at the right-hand end of the dial background.
2. Connect the output meter across the speaker voice coil and turn tone control to the treble position.
3. The r. f. signal input from the signal generator should be connected to the external antenna post as indicated in the alignment chart. Connect the low side (ground) of the signal generator to the chassis.
4. Turn the volume control on full and adjust the signal generator output to produce approximately mid-scale deflection of the output meter, but maintain the signal generator output as low as possible to prevent AVC action in the receiver.

NOTE: The signal web antenna must remain connected at all times. If the receiver is removed from cabinet, use a suitable dummy antenna of 4 uh.

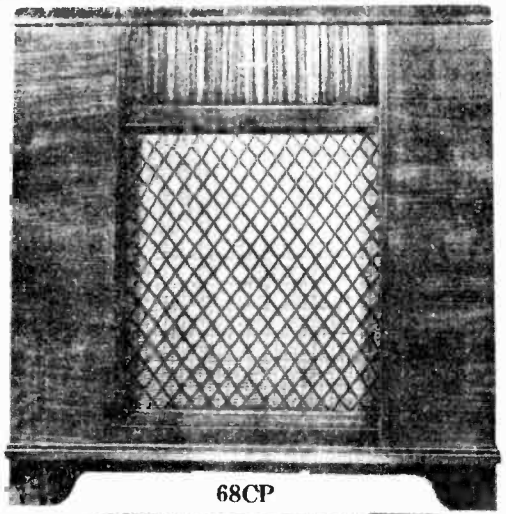
ALIGNMENT CHART

Alignment adjustment locations are shown on Chassis, Rear View

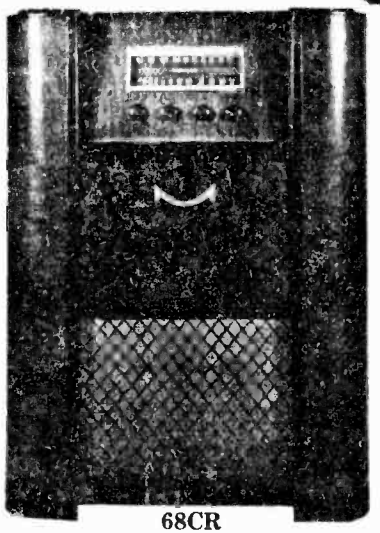
Alignment Sequence	Signal Generator Output			Position of		Adjust for Maximum Output
	Frequency	In Series With	To	Band Switch	Variable Condenser	
1	455 kc.	200 mmf.	Ant.	BC	Open	A & B
2	455 kc.	200 mmf.	Ant.	BC	Open	C*
3	15.3 mc.	400 ohms	Ant.	SW	Open	D
4	15 mc.	400 ohms	Ant.	SW	To 15 mc. Signal	E
5	1620 kc.	200 mmf.	Ant.	BC	Open	F
6	1400 kc.	200 mmf.	Ant.	BC	To 1400 kc. Signal	G
7	600 kc.	200 mmf.	Ant.	BC	To 600 kc. Signal	H
8	1400 kc.	200 mmf.	Ant.	BC	To 1400 kc. Signal	Recheck G

*Adjust for Minimum Output (Wave Trap).

NOTE: When aligning the short-wave oscillator trimmer (D), be sure that the circuit is aligned at the correct frequency and not at the image frequency which is 910 kilocycles lower as indicated by the receiver dial. To check: tune in the generator frequency, then increase the generator output and tune in the image frequency. The image frequency should be weaker than the fundamental and audible 910 kilocycles lower on the receiver dial. If the image cannot be tuned in, the oscillator trimmer is adjusted to the wrong peak. The correct peak is the second peak of the trimmer from the closed position.



68CP



68CR

Item No.	Part No.	Description
1	39373-44	Resistor, 3300 ohm, ½ w.
2	39373-60	Resistor, 22,000 ohm, ½ w.
3	39373-275	Resistor, 12,000 ohm, 2 w.
4	39373-97	Resistor, 2.2 megohm, ½ w.
5	39373-143	Resistor, 1,000 ohm, 1 w.
6	39373-97	Resistor, 2.2 megohm, ½ w.
7	39373-84	Resistor, 330,000 ohm, ½ w.
10	B-138131-2	Transformer, Output
11	39373-67	Resistor, 47,000 ohm, ½ w.
12	39373-87	Resistor, 470,000 ohm, ½ w.
13	39371-5	Resistor, 1,000 ohm, 5 w.
14	39373-133	Resistor, 330 ohm, 1 w.
15	39373-64	Resistor, 33,000 ohm, ½ w.
16	39373-102	Resistor, 4.7 megohm, ½ w.
17	39373-60	Resistor, 22,000 ohm, ½ w.
18	39373-74	Resistor, 100,000 ohm, ½ w.
19	39001-73	Condenser, .00025 mfd., 600 v., paper
20	39001-73	Condenser, .00025 mfd., 600 v., paper
21	39001-17	Condenser, .05 mfd., 600 v., paper
22	39001-73	Condenser, .00025 mfd., 600 v., paper
23	39001-17	Condenser, .05 mfd., 600 v., paper
24	39004-5	Condenser, 47 mmf., 500 v., mica
25	39001-11	Condenser, .005 mfd., 600 v., paper
26	39001-13	Condenser, .01 mfd., 600 v., paper
27	39001-73	Condenser, .00025 mfd., 600 v., paper
30	39001-11	Condenser, .005 mfd., 600 v., paper
32	W-30805	Condenser, .01 mfd., 400 v., paper
33	39001-11	Condenser, .005 mfd., 600 v., paper
34	39001-13	Condenser, .01 mfd., 600 v., paper
35	B-137727-21	Condenser, 50 mmf., 500 v., ceramic
36	B-137498-14	Condenser, 580 mmf., 300 v., mica
37A	B-137073-3	Condenser, Variable } Two Section
37B		Condenser, Variable } Assy.
38A	B-137076	Condenser, 40 mfd., 450 v. }
38B		Condenser, 20 mfd., 450 v. } Four Sec.
38C		Condenser, 20 mfd., 450 v. } Elect. Filter
38D		Condenser, 20 mfd., 25 v. }
39	AW-137495	Transformer, 1st I.F.
40	AW-139080	Transformer, 2nd I.F.
41	B-134625	Transformer, Power
42	W-48858	Bulb (Dial), Type 47, 6.3 v., .15 amp.
43	W-48858	Bulb (Dial), Type 47, 6.3 v., .15 amp.
44	B-135314	Control, Tone (3 megohm)
*	39368-22	Control, Volume
	39370-2	Shaft, Plug-in
45	B-135313	Control, Volume (1 megohm) and Switch Assy.
	39368-18	Control, Volume
*	39370-2	Switch, Power
	39369-1	Shaft, Plug-in

Item No.	Part No.	Description
46	W-132267-1	Condenser, Trimmer
47	B-132300-1	Cable and Plug Assy., Power
48	39019-3	Terminal Board Assy.
49	39019-3	Terminal Board Assy.
50	D-137057-1	Record Changer (68CP)
52A	B-135312	Switch, Band Change } Two
52B		Switch, Band Change } Section
53	AW-139073	Coil Assy., R.F.
54	AW-139079	Coil Assy., Oscillator
55	AW-139081	Coil Assy., Antenna (SW)
56	C-138762-5	Speaker (Less Transformer)
57	AW-139074	Coil Assy., Antenna Loading
58	B-139727-2	Cable, Phono Motor (68CP)
60	W-139692	Loop, Antenna (Transmission Line)
61A	B-132386-7	Condenser, Trimmer } Three
61B		Condenser, Trimmer } Section
61C		Condenser, Trimmer } Assy.
64	Part of Item 37B	Condenser, Trimmer
65	AB-139023	Cable and Plug Assy., Speaker (68CP)
69	AB-138935	Cable, Speaker (68CR)
70	D-142552	Record Changer (68CR)
71	B-139727-5	Cable, Phono Motor (68CR)
72	AW-142644	Shielded Cable Assy. (68CR)
73	Part of Item 50	Shielded Cable (68CP)
	R-139858	Cabinet (68CP)
	R-142615	Cabinet (68CR)
	W-131154-1	Cotter, External
	D-139376	Dial Glass
	C-139888	Escutcheon, Dial
	W-45580	Grommet, Speaker and Chassis Mtg.
	W-134055	Grommet, Variable Cond. Mtg.
	G-39012-8	Iron Core
	W-135309	Knob
	AB-134935	Needle, Floating Jewel Assy.
	W-132366-2	Nut, Iron Core Locking
	C-135234	Plate, Dial Background
	W-135274	Pointer, Dial
	W-135074	Pulley, Drive Cord Idler
	W-51071	Ring, Retaining
	B-135532	Shaft, Drive
	G-39204	Socket, Tube
	D-136565-3	Socket, Dial Light
	W-51752	Spring, Dial Drive Cord
	W-138136	Strip, Dial Pointer
	AC-137885	Support, Cabinet Lid (68CP)
	C-135038-46	Terminal Strip
	W-134916	Washer, Spring

TUBE COMPLEMENT:

Type	Function
6SA7 (GT/G)	Mixer
6SK7 (GT/G)	R. F. Amplifier
6SK7 (GT/G)	I. F. Amplifier
6SQ7 (GT/G)	Detector, AVC, 1st A.F. Amplifier
6V6 (GT/G)	A. F. Power Output
5Y3 GT/G	Rectifier

* These parts will replace the original equipment parts.

DIAL BULB: Type 47, 6.3 volts, .15 amp.

TYPE: Six-tube, two-band, superheterodyne.

FREQUENCY RANGE: Broadcast Band, 540 to 1600 kc. (Selector Switch at BC.)

Short-wave Band, 5.8 to 15 mc. (Selector Switch at SW.)