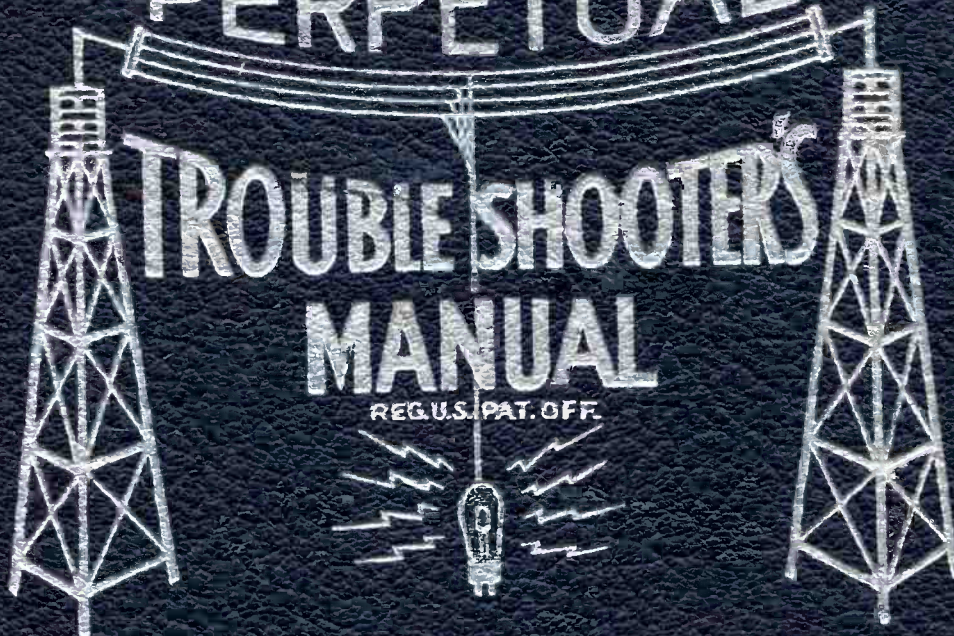


VOLUME XII

PERPETUAL



JOHN F. RIDER

PERPETUAL
TROUBLE SHOOTER'S MANUAL

Reg. U.S. Pat. Off.

VOLUME XII

by
JOHN F. RIDER



JOHN F. RIDER PUBLISHER, INC.

404 Fourth Avenue

New York City

Other Books
by
JOHN F. RIDER

SERVICING SUPERHETERODYNES
SERVICING RECEIVERS BY MEANS OF RESISTANCE
MEASUREMENT
PERPETUAL TROUBLE SHOOTER'S MANUAL
VOLUME I
VOLUME II
VOLUME III
VOLUME IV
VOLUME V
VOLUME VI
VOLUME VII
VOLUME VIII
VOLUME IX
VOLUME X
VOLUME XI
VOLUME XII
VOLUME XIII
VOLUMES I TO V ABRIDGED
ALIGNING PHILCO RECEIVERS, VOLUMES I AND II
AUTOMATIC FREQUENCY CONTROL SYSTEMS
FREQUENCY MODULATION
SERVICING BY SIGNAL TRACING
THE OSCILLATOR AT WORK
THE METER AT WORK
VACUUM TUBE VOLTMETERS
RESONANCE AND ALIGNMENT
AUTOMATIC VOLUME CONTROL
ALTERNATING CURRENTS IN RADIO RECEIVERS
D-C. VOLTAGE DISTRIBUTION IN RADIO RECEIVERS
AUTOMATIC RECORD CHANGERS AND RECORDERS
THE CATHODE-RAY TUBE AT WORK

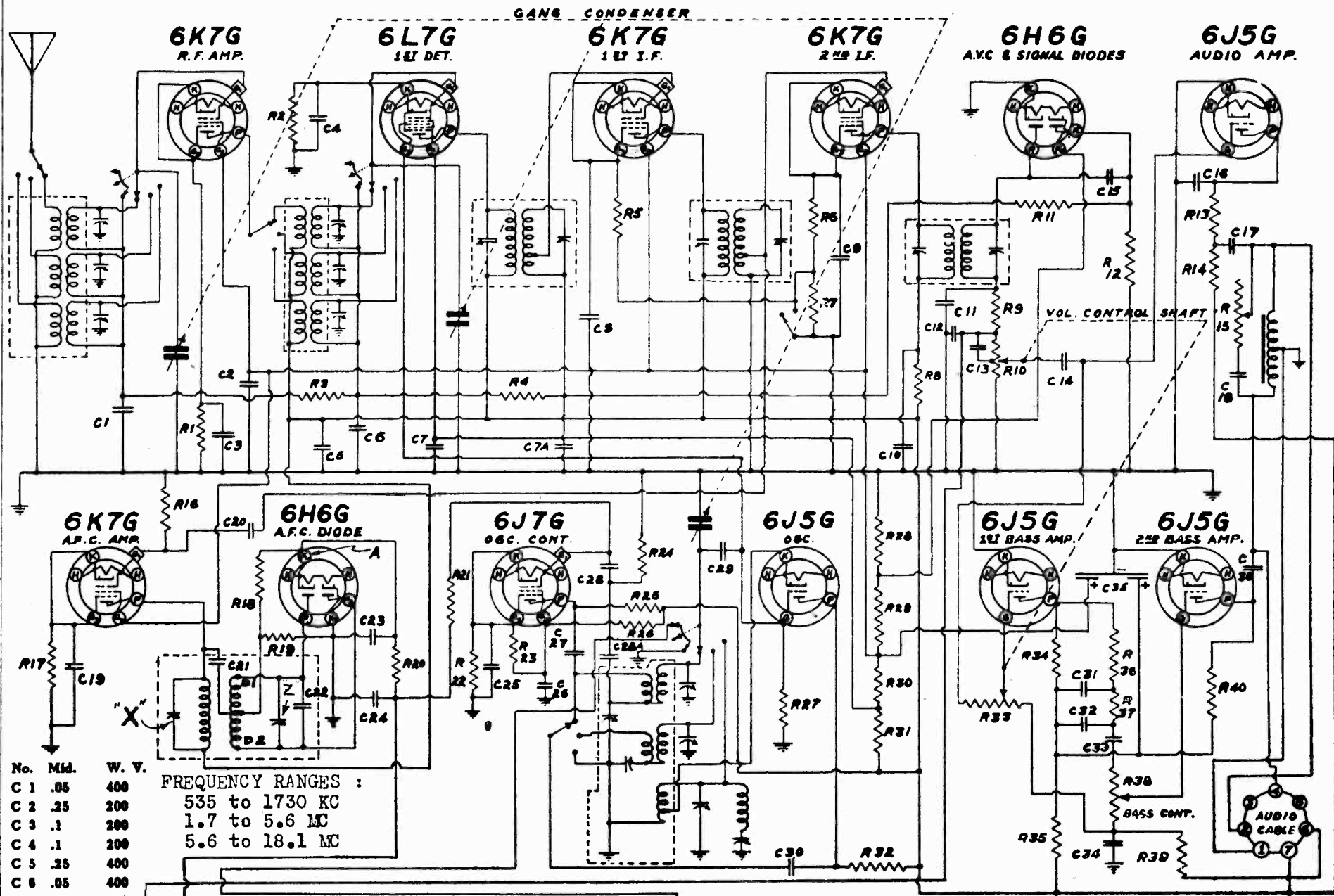
The servicing data appearing on Philco, RCA and other pages carrying individual copyright notices, are copyrighted by the respective companies and are reproduced herein with their permission.

Entire contents copyrighted 1942, by John F. Rider.

Printed in U. S. A.

ALLIED RADIO CORP.

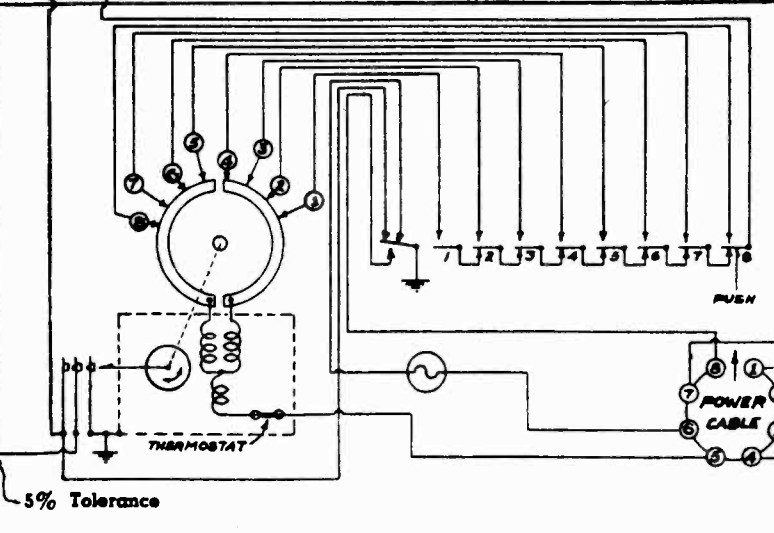
MODELS B10525, B10526, B10765, B10766, B10767



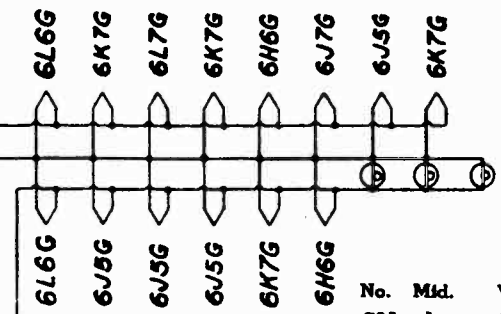
No.	Ohms	Watts	Tolerance	No.	Ohms	Watts	Tolerance
R 1	750	1/4	10% Tolerance	R 23	25,000	1/2	10% Tolerance
R 2	700	1/4	10% Tolerance	R 24	350	1/4	10% Tolerance
R 3	250,000	1/4		R 25	25,000	1/4	
R 4	250,000	1/4		R 26	35,000	1	
R 5	750	1/4	10% Tolerance	R 27	50,000	1/4	
R 6	750	1/4	10% Tolerance	R 28	450	1/4	10% Tolerance
R 7	600	1/4	10% Tolerance	R 29	2,400		
R 8	5,000	1/4		R 30	2,250		Sections of Metal Clad Resistor
R 9	20,000	1/4		R 31	2,260		
R 10	250,000	Volume Control		R 32	25,000	1	
R 11	1 Meg.	1/4		R 33	500,000	Bass Control (Section)	
R 12	1 Meg.	1/4		R 34	25,000	1/4	
R 13	7,000	1/4	10% Tolerance	R 35	10,000	1/2	
R 14	25,000	1/4		R 36	10,000	1/4	
R 15	250,000	Tone Control		R 37	20,000	1/4	
R 16	2 Meg.	1/4		R 38	500,000	Bass Control (Section)	
R 17	750	1/4	10% Tolerance	R 39	500,000	Bass Control (Section)	
R 18	500,000	1/4		R 40	25,000	Bass Control (Section)	
R 19	500,000	1/4		R 41	31		Sections of Metal Clad Resistor
R 20	2 Meg.	1/4		R 42	150		
R 21	500,000	1/4		R 43	15,000	2	
R 22	1,100	1/4	5% Tolerance				

No.	Mfd.	W. V.
C 1	.05	400
C 2	.25	200
C 3	.1	200
C 4	.1	200
C 5	.25	400
C 6	.05	400
C 7	.1	200
C 7A	.05	400
C 8	.1	200
C 9	.1	200
C 10	.05	400
C 11	.0001	Mica
C 12	.0001	Mica
C 13	.00025	Mica
C 14	.05	400
C 15	.00005	Mica
C 16	.0005	Mica
C 17	.25	400
C 18	.05	400
C 19	.1	200
C 20	.001	Mica
C 21	.0001	Mica
C 22	.0002	Mica
C 23	.1	200
C 24	.1	200

FREQUENCY RANGES :
 535 to 1730 KC
 1.7 to 5.6 MC
 5.6 to 18.1 MC

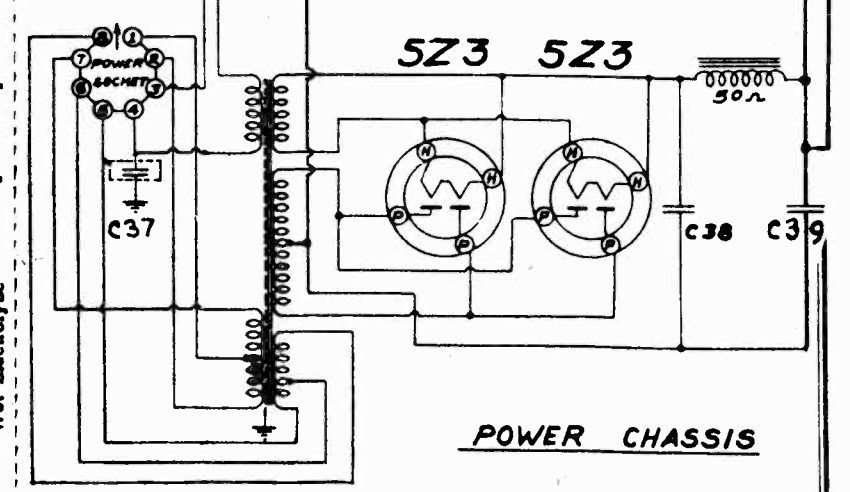
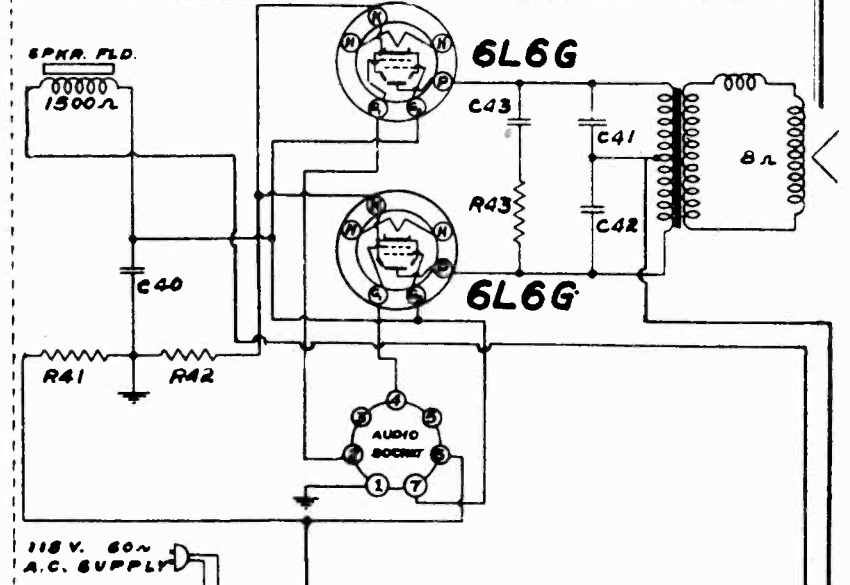


IF PEAK 456 KC



R. F. CHASSIS

No.	Mfd.	W. V.
C 30	.002	Mica
C 31	.05	Mica
C 32	.1	400
C 33	.1	400
C 34	.25	200
C 35	4	100
C 36	.25	400
C 37	.02	600
C 38	.25	450
C 39	.12	450
C 40	.25	300
C 41	.002	600
C 42	.002	600
C 43	.01	1000



POWER CHASSIS

ALLIED RADIO CORP.

MODELS B10525, B10526 B10765, B10766, B10767

INSTRUCTIONS FOR ADJUSTMENT AND OPERATION OF THE ELECTRIC TUNER

It is very important to read the following instructions carefully before attempting to adjust the electric tuner. The electric tuner is made up of three integral units:

PUSH BUTTON SWITCH The push button switch consists of one (1) white button (extreme left), and eight (8) brown buttons whose numerical sequence is reckoned from left to right. The white button is provided for converting the set from automatic electric push button tuning to manual knob tuning. The brown buttons are provided for automatic electric tuning.

SELECTOR MECHANISM The selector mechanism is made up of the selector plate, eight (8) thumb screws, and the adjustment light bulb.

ELECTRIC MOTOR The power for this tuner is provided by a small, efficient electric motor, of the brushless variety. It is fitted with an automatic clutch and a silent gear train. The bearings and the oil retainer hold sufficient oil to lubricate the motor for a lifetime.

The first step to take in adjusting the electric push button device incorporated into this receiver is to choose eight (8) of the most powerful local stations, stations which are free from excess fading. Turn on the receiver (broadcast band) and press in the white button; tune in the station of the lowest frequency, using the station selector knob. Now hold the white button in and press in button number one (1), next to the white button. (See Figure 1). Both buttons are now locked into place; a small pilot lamp located at the rear of the chassis will light up unless the thumb screw at the rear accidentally happens to be correctly set. Loosen thumb screw number one (See Figure 2 for order of thumb screws) enough to allow it to slide freely back and forth until the light goes out. Now tighten the thumb screw; the adjustment for the first station is now complete. Out of the station call letter sheet supplied remove the proper station call block and insert into the window directly above button number one (1). Now release button number one (1) by pressing the white button in as far as it will go.

With the white button still in, tune in the station of the next highest frequency and holding the white button, press in button number two (2). Both buttons are now locked into place. Loosen thumb screw number two (see Figure 2) and slide back and forth until a point is reached at which the pilot lamp in the rear goes out; tighten the thumb screw. Insert the proper station call into the window of button number two (2).

Follow this same procedure for the remaining stations, always choosing the station with the next highest frequency. After all eight (8) stations have been adjusted, check each adjustment by tuning in each station. NOTE: In the window above the white button insert the word "OFF" found in the call letter sheet.

HOW TO TUNE IN STATIONS USING THE ELECTRIC PUSH BUTTON TUNER

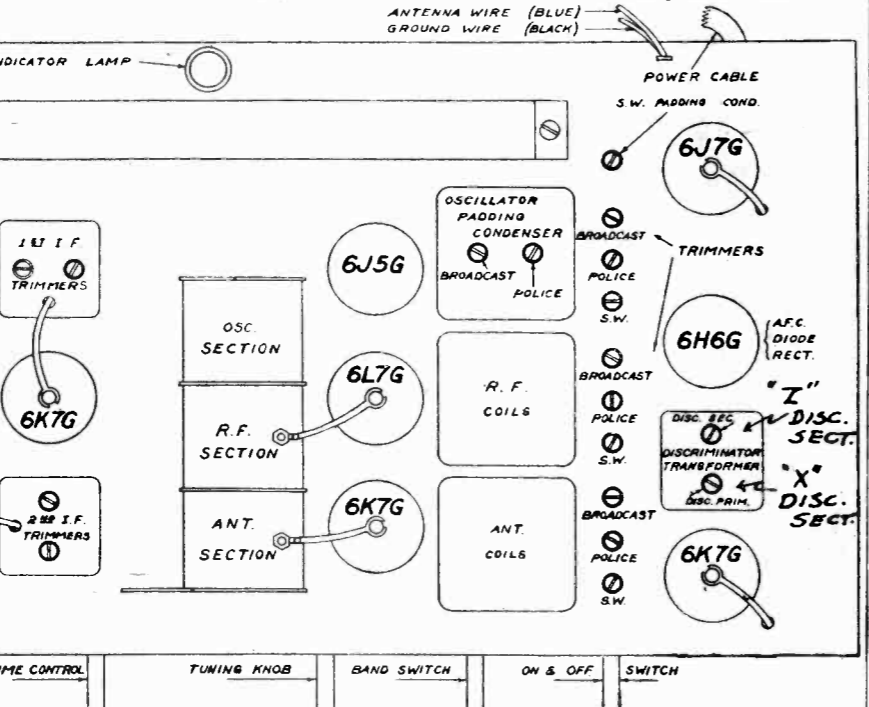
In order to operate the receiver satisfactorily—using the electric push button tuner, the white button must be in released position, that is, all the way out. To tune in a station, merely press the selector button which designates the station desired. Note: Should the station fail to come in clearly, check the adjustment by following the adjustment procedure described in the paragraph above. If by chance all of the buttons are pressed in, they may be released by pressing any one button all the way in. To change from electric tuning to manual selecting, simply press in the white button. When the white button is in, the set may be tuned as a conventional receiver. Note: If it is desired to tune Short Wave or Police while the set is being operated with push buttons, it is not necessary to change over from push button tuning to manual tuning. Simply turn the band switch and proceed to tune with the selector knob. When the band switch is returned to broadcast the

I.F. ALIGNMENT - Generator at 456 KC, connected to control grid of 6L7 thru .05 MFD condenser, align 1st, 2nd, and Diode transformer trimmers to peak. Connect a 0-200 microammeter between the ungrounded cathode of the 6H6 APC diode rectifier, and ground. The Cathode indicated as point "A" in the schematic. Place a 100 MFD condenser across the secondary of the discriminator transformer. These terminals are indicated as points "D1" and "D2" on the schematic. The condenser is used to detune the secondary circuit during the following primary adjustment: The primary is tuned by impressing an IF signal on the signal grid of the 6L7 and adjusting the trimmer marked "X" on the schematic and the chassis layout, to give a maximum meter indication. Signal strength should be approximately 100,000 micro volts for the adjustment. With reduced signal strength repeat the adjustments of the entire I.F. system, for maximum sensitivity. The volume control should be on full for all adjustments. Without disturbing the generator or any of the other adjustments, the trimmer "Z" ("Disc. Sec.") should be adjusted as follows: Remove the 100 MFD condenser from across the discriminator secondary, increase the generator signal to approximately 100,000 micro volts, with volume control turned down to limit audio output, slowly turn the trimmer "Z" until a sudden sharp drop in current occurs the meter will now probably read in reverse and off scale. Reverse trimmer adjustment bringing meter reading to zero. Use only a non-metallic screw driver. It is some times convenient to use an offset of "remote zero" setting of the micro ammeter in making the adjustments so that zero current setting is higher on the scale. After the current has been brought to zero by the above described method the I.F. alignment and discriminator tuning is completed, and R.F. alignment may be accomplished.

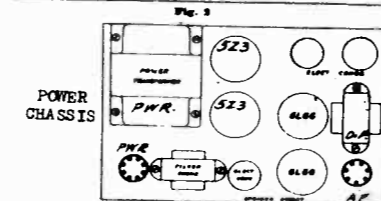
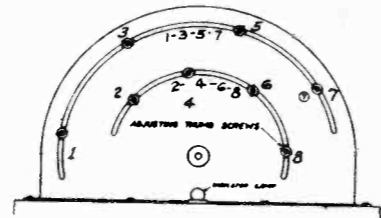
BROADCAST BAND - Generator at 1730 KC, connected to the antenna thru a 200 MFD condenser, variable condenser at minimum, peak oscillator trimmer. Generator at 1400 KC, tuning in signal, peak the RF and antenna trimmers. Generator at 600 KC, while rooking variable condenser, peak the oscillator padding condenser.

POLICE BAND - Generator at 5600 KC, connected to antenna thru 400 Ohm resistor, variable condenser at minimum, peak oscillator trimmer. Generator at 5000 KC, tune in signal, peak RF and antenna trimmers. Generator at 1800 KC, while rooking variable across signal, pad the oscillator circuit for maximum response.

SHORTWAVE BAND - Generator at 18100 KC, gang condenser at minimum, peak oscillator trimmer. Generator at 16000 KC, locate signal on receiver, peak RF and antenna trimmers. Generator at 8000 KC, while rooking variable across signal, peak SW padding condenser.

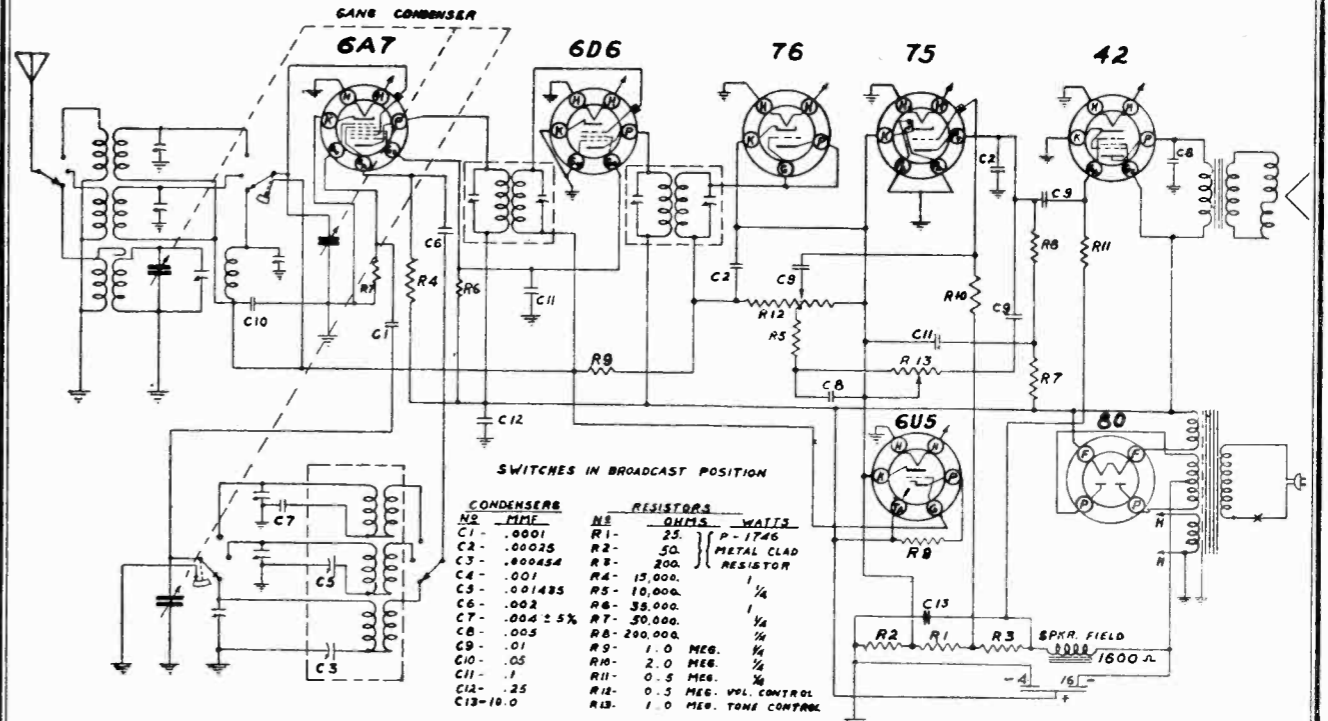


station last selected by button will automatically tune in by itself.



MODEL B10535

ALLIED RADIO CORP.



SWITCHES IN BROADCAST POSITION

Table listing component values for condensers and resistors, including values in microfarads, ohms, and watts.

IF PEAKED AT 456 KC

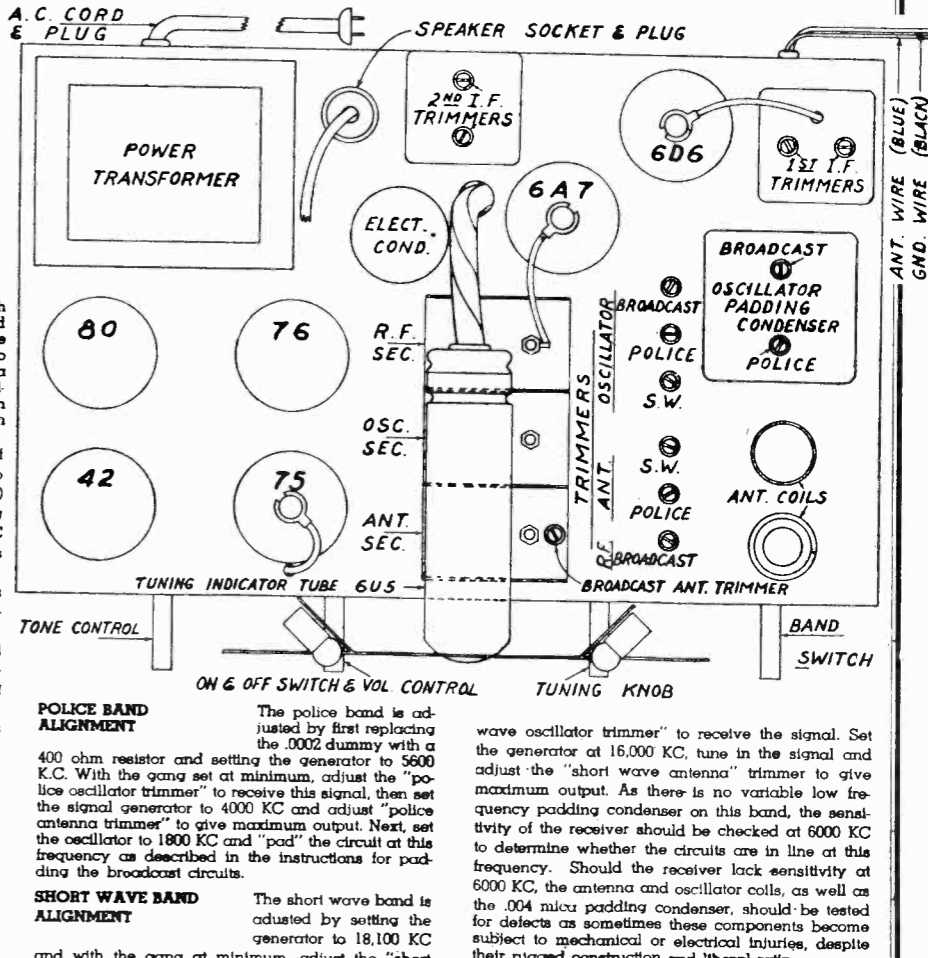
FREQUENCY RANGE - 550 to 1700 KC 1700 to 5400 KC 5600 to 18100 KC

I.F. ALIGNMENT With the wave switch in the Broadcast Band and the gang condenser set at minimum. Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6A7) through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT Connect the output of the signal generator to the antenna lead (blue) through a .0002 mfd. mica condenser. Set the gang condenser to minimum and the oscillator to 1730 KC and adjust the "oscillator trimmer" to receive this signal. Make no other adjustments at this frequency. Then set the generator to 1400 KC and tune in this signal by rotating the gang to 1400 on the dial. Adjust the "preselector" and "antenna" trimmer to maximum signal. Set the signal generator to 600 KC and tune in the signal on the receiver. Note: approximately the same sensitivity should be noted at this point as was at 1400 KC. The signal strength may sometimes be improved by padding the circuits. This is done by slowly increasing or decreasing the oscillator padding condenser and, at the same time, continuously tuning back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the preselector of the R.F. section. Return to 1400 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 KC.

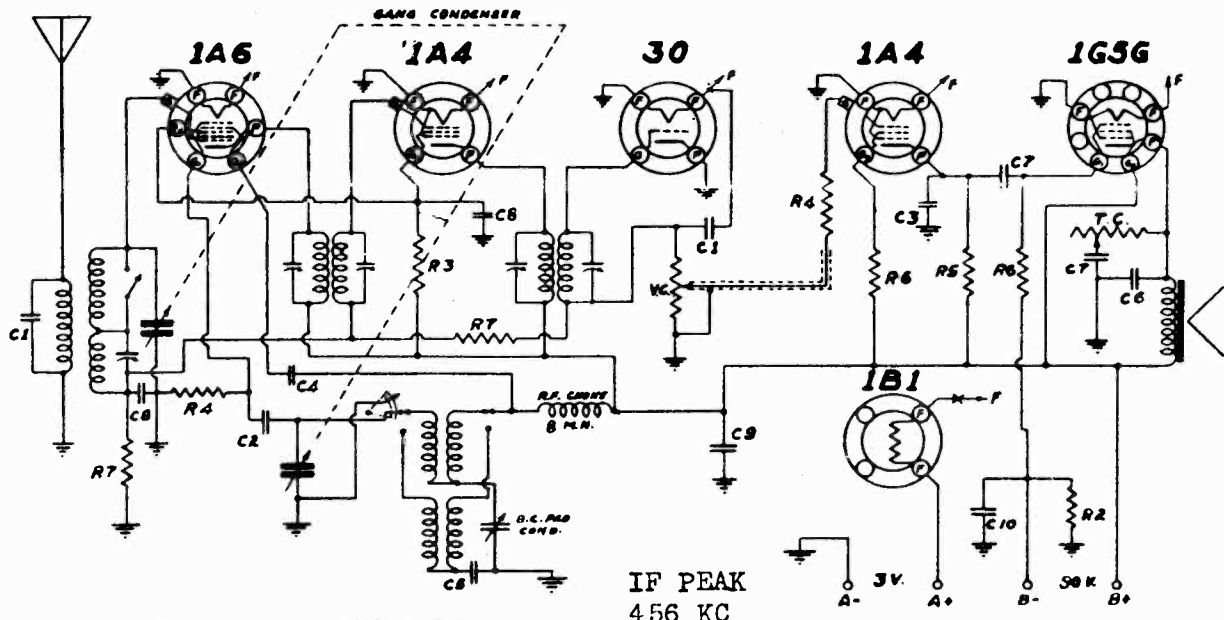
POLICE BAND ALIGNMENT The police band is adjusted by first replacing the .0002 dummy with a 400 ohm resistor and setting the generator to 5600 K.C. With the gang set at minimum, adjust the "police oscillator trimmer" to receive this signal, then set the signal generator to 4000 KC and adjust "police antenna trimmer" to give maximum output. Next, set the oscillator to 1800 KC and "pad" the circuit at this frequency as described in the instructions for padding the broadcast circuits.

SHORT WAVE BAND ALIGNMENT The short wave band is adjusted by setting the generator to 18,100 KC and with the gang at minimum, adjust the "short



wave oscillator trimmer" to receive the signal. Set the generator at 16,000 KC, tune in the signal and adjust the "short wave antenna" trimmer to give maximum output. As there is no variable low frequency padding condenser on this band, the sensitivity of the receiver should be checked at 6000 KC to determine whether the circuits are in line at this frequency. Should the receiver lack sensitivity at 6000 KC, the antenna and oscillator coils, as well as the .004 mica padding condenser, should be tested for defects as sometimes these components become subject to mechanical or electrical injuries, despite their rugged construction and liberal ratings.

ALLIED RADIO CORP.



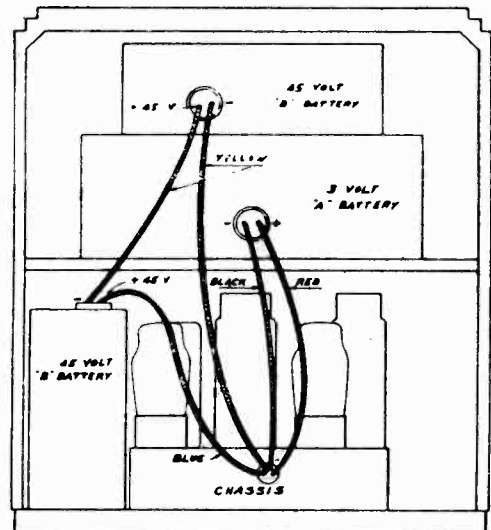
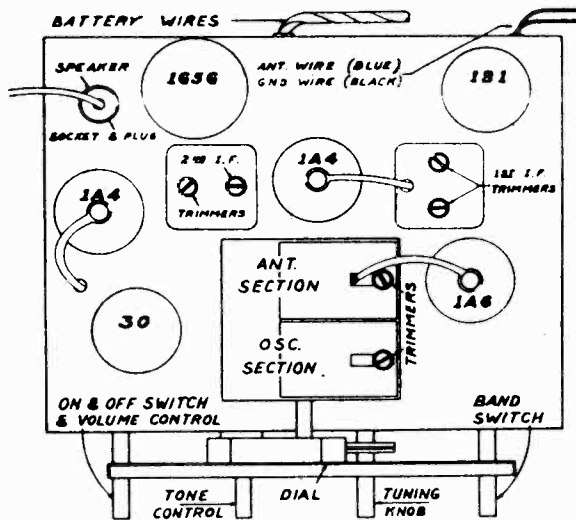
IF PEAK
456 KC

V.C. - VOLUME CONTROL - 1 MEGOHM.
T.C. - TONE CONTROL - 100,000 OHMS.
SWITCHES IN BROADCAST POSITION.

FREQUENCY RANGE -
535 to 1730 KC
2.2 to 6.5 MC

CONDENSERS	
Nº	MFD.
1	.0001 MICA
2	.00025
3	.0005
4	.001
5	.0015
6	.002 200 VOLTS
7	.01 200
8	.05 200
9	.25
10	10.0 ELECT. 25 V.

RESISTORS		
Nº	OHMS	WATTS
1	50.	1/4
2	535 ± 5%	1/2
3	10,000.	1/2
4	50,000.	1/4
5	200,000.	1/4
6	1 MEG.	1/4
7	2 MEG.	1/4



IF ALIGNMENT - Wave change Sw. in BC position. Gang condenser at minimum, generator at 456 KC, output to 1A6 CG thru .05 MFD condenser, Generator grounded to receiver, align four trimmers of IF transformers.

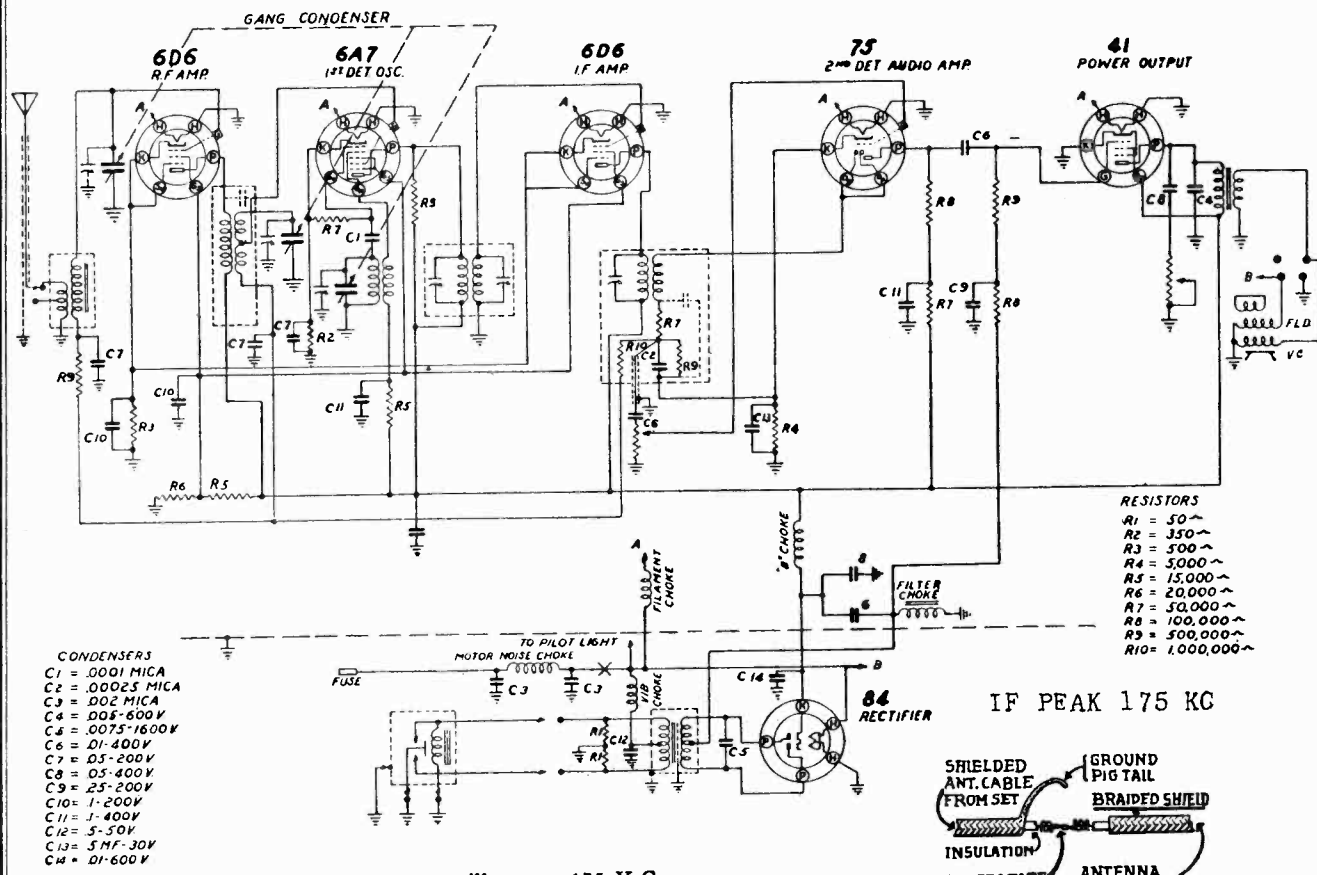
BROADCAST - Generator connected to antenna lead thru 200 MMFD condenser, and set at 1400 KC. Gang condenser at minimum. Trim oscillator then Antenna trimmers Pad the oscillator circuit at 600 KC while rocking gang condenser.

SHORT WAVE - Generator at 6000 KC, start rotating gang condenser from HF end, when signal is heard, adjust antenna trimmer (SW) for maximum peak.

Repeat all adjustments for maximum performance.

MODEL B10550

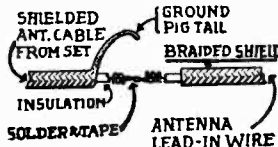
ALLIED RADIO CORP.



- RESISTORS**
 R1 = 50 ~
 R2 = 350 ~
 R3 = 500 ~
 R4 = 5,000 ~
 R5 = 15,000 ~
 R6 = 20,000 ~
 R7 = 50,000 ~
 R8 = 100,000 ~
 R9 = 500,000 ~
 R10 = 1,000,000 ~

- CONDENSERS**
 C1 = 0001 MICA
 C2 = 00025 MICA
 C3 = 002 MICA
 C4 = 005-500V
 C5 = 0075-1600V
 C6 = 01-400V
 C7 = 05-200V
 C8 = 05-400V
 C9 = 25-200V
 C10 = 1-200V
 C11 = 1-400V
 C12 = 5-50V
 C13 = 5MF-30V
 C14 = 01-600V

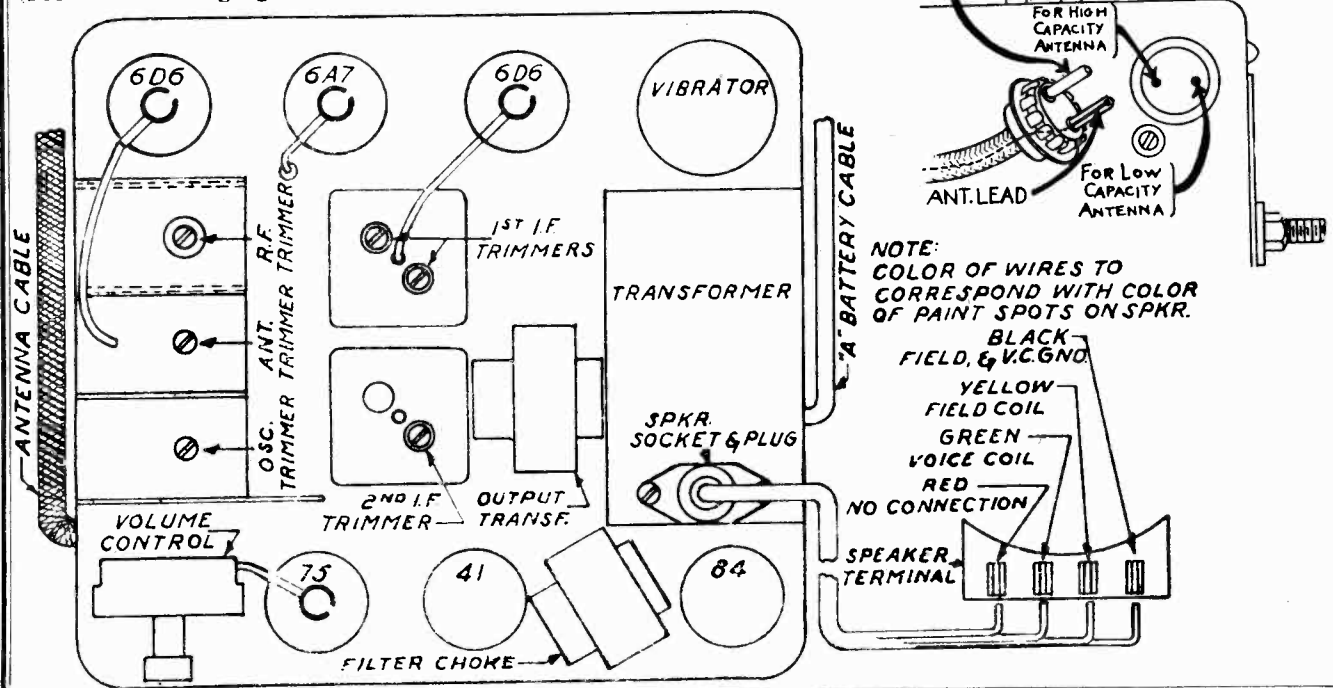
IF PEAK 175 KC



I.F. ALIGNMENT. Adjust the test oscillator to 175 K.C. and connect the output directly to the grid of the first detector tube (6A7), without the use of any series condenser or resistor; the omission of series condenser and resistor

OSCILLATOR ALIGNMENT. Adjust the test oscillator to 1400 K.C. and connect the output to the antenna through a .0001 mfd. mica condenser to give the equivalent of a low capacity type average auto antenna. Set the dial pointer to 1400 K.C. and adjust the oscillator trimmer to peak. (Front section of gang condenser.)

R.F. ALIGNMENT. The next step is to adjust the center and rear trimmers of the gang condenser to peak. The center section of the gang condenser tunes the antenna amplifier stage (6D6 tube), and the rear condenser section tunes the detector grid coil of the 6A7 tube.

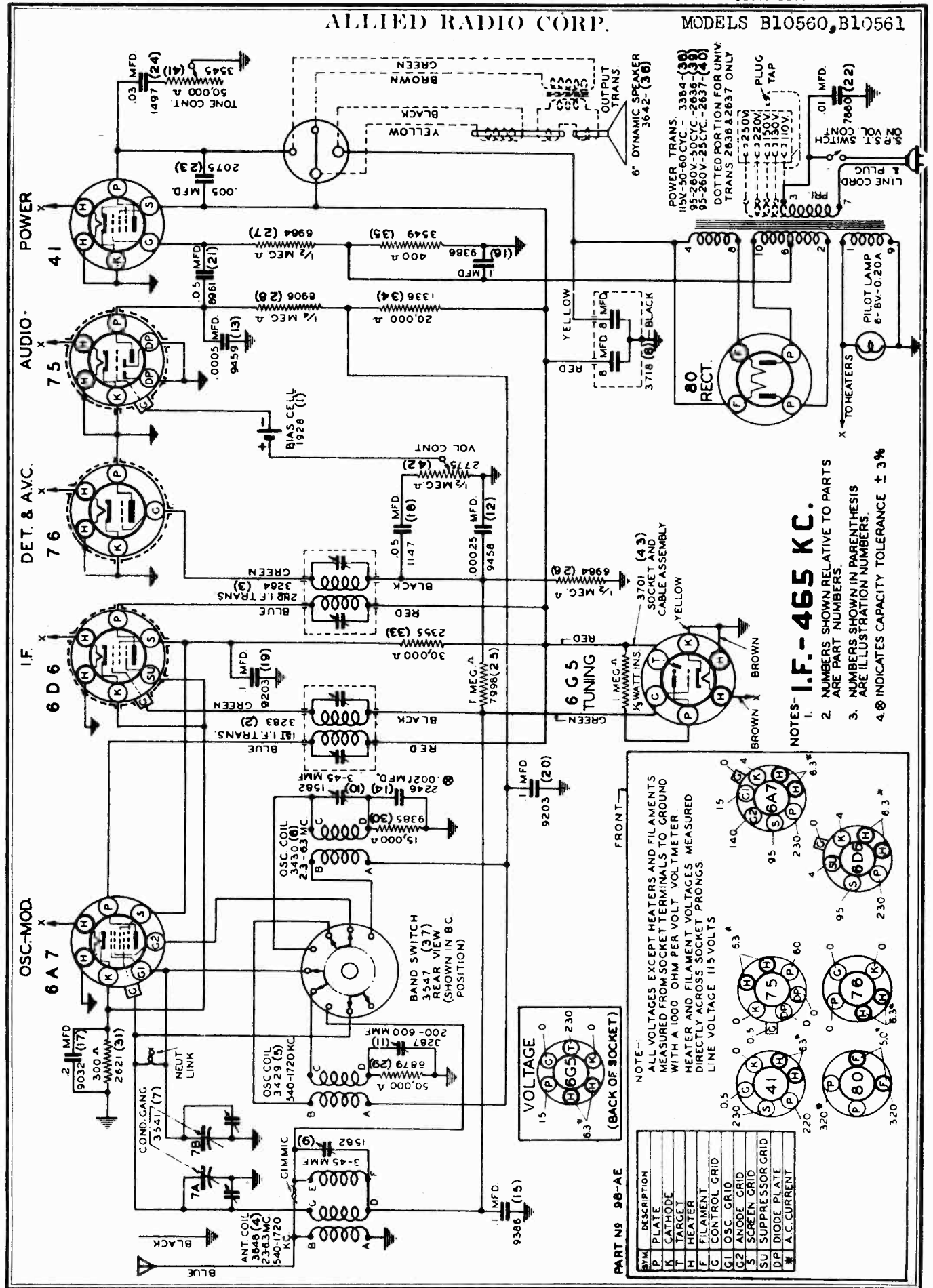


NOTE: COLOR OF WIRES TO CORRESPOND WITH COLOR OF PAINT SPOTS ON SPKR.

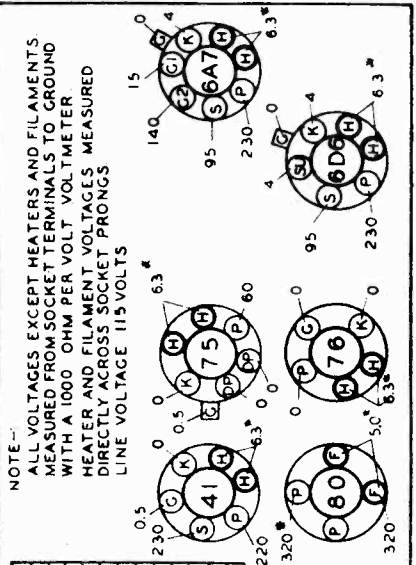
- BLACK FIELD, & VC. GND
- YELLOW FIELD COIL
- GREEN VOICE COIL
- RED NO CONNECTION

ALLIED RADIO CORP.

MODELS B10560, B10561



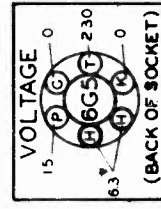
- NOTES: I.F. - 465 KC.**
1. NUMBERS SHOWN IN PARENTHESIS ARE PART NUMBERS.
 2. NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.
 3. NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.
 4. ⊕ INDICATES CAPACITY TOLERANCE ± 3%

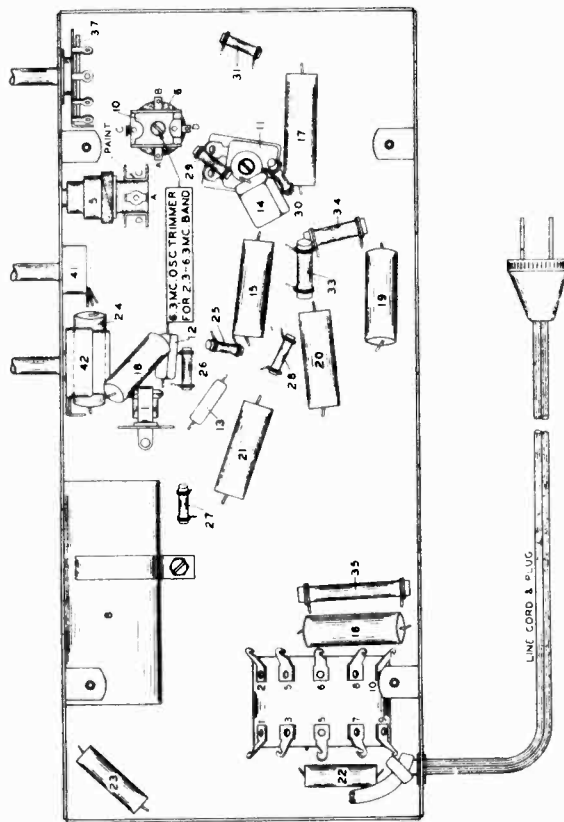
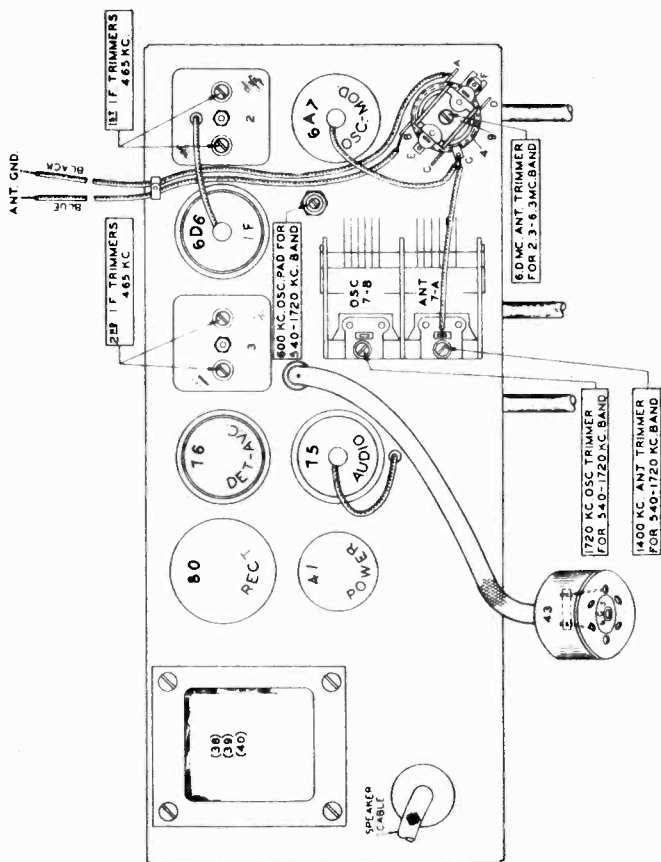


NOTE - ALL VOLTAGES EXCEPT HEATERS AND FILAMENTS MEASURED FROM SOCKET TERMINALS TO GROUND WITH A 1000 OHM PER VOLT VOLTMETER. HEATER AND FILAMENT VOLTAGES MEASURED DIRECTLY ACROSS SOCKET PRONGS. LINE VOLTAGE 115 VOLTS

SYM.	DESCRIPTION
P	PLATE
C	CATHODE
T	TARGET
H	HEATER
F	FILAMENT
G	CONTROL GRID
G1	OSC. GRID
G2	ANODE GRID
S	SCREEN GRID
SU	SUPPRESSOR GRID
DP	DIODE PLATE
⊕	A.C. CURRENT

PART NO 98-AE





ALIGNMENT PROCEDURE:

Lack of sensitivity, selectivity or poor tone quality may be due to any one or a combination of causes such as weak or defective tubes or speaker, open or grounded bias resistor, bypass condenser, inadequate or excessively long antenna, etc. Never attempt to realign set until all other possible sources of trouble have been first thoroughly investigated and definitely proven not to be the cause.

NOTE: BE SURE TO FOLLOW PROCEDURE CAREFULLY WHEN ALIGNING. OTHERWISE THE RECEIVER WILL BE INSENSITIVE AND THE DIAL CALIBRATION WILL BE INCORRECT.

IT IS ABSOLUTELY NECESSARY THAT AN ACCURATELY CALIBRATED TEST OSCILLATOR WITH SOME TYPE OF OUTPUT MEASURING DEVICE BE USED WHEN ALIGNING THE RECEIVER.

ALIGNING I.F. STAGE AT 465 KILOCYCLES:

- Connect the ground lead of the test oscillator to the chassis or set ground lead. Connect the other lead of the test oscillator to the grid cap of the 6A7 tube through a .02 Mfd. series condenser. **DO NOT REMOVE GRID CLIP.**
 - Set test oscillator to **EXACTLY 465 kilocycles** and turn receiver volume control on full.
 - Peak each of the second I.F. transformer trimmers.
 - Peak each of the first I.F. transformer trimmers.
- To assure most accurate trimmer setting repeat above adjustment several times always using lowest possible test oscillator output consistent with readable output meter scale deflection.

ALIGNING 1720-540 KILOCYCLE BAND:

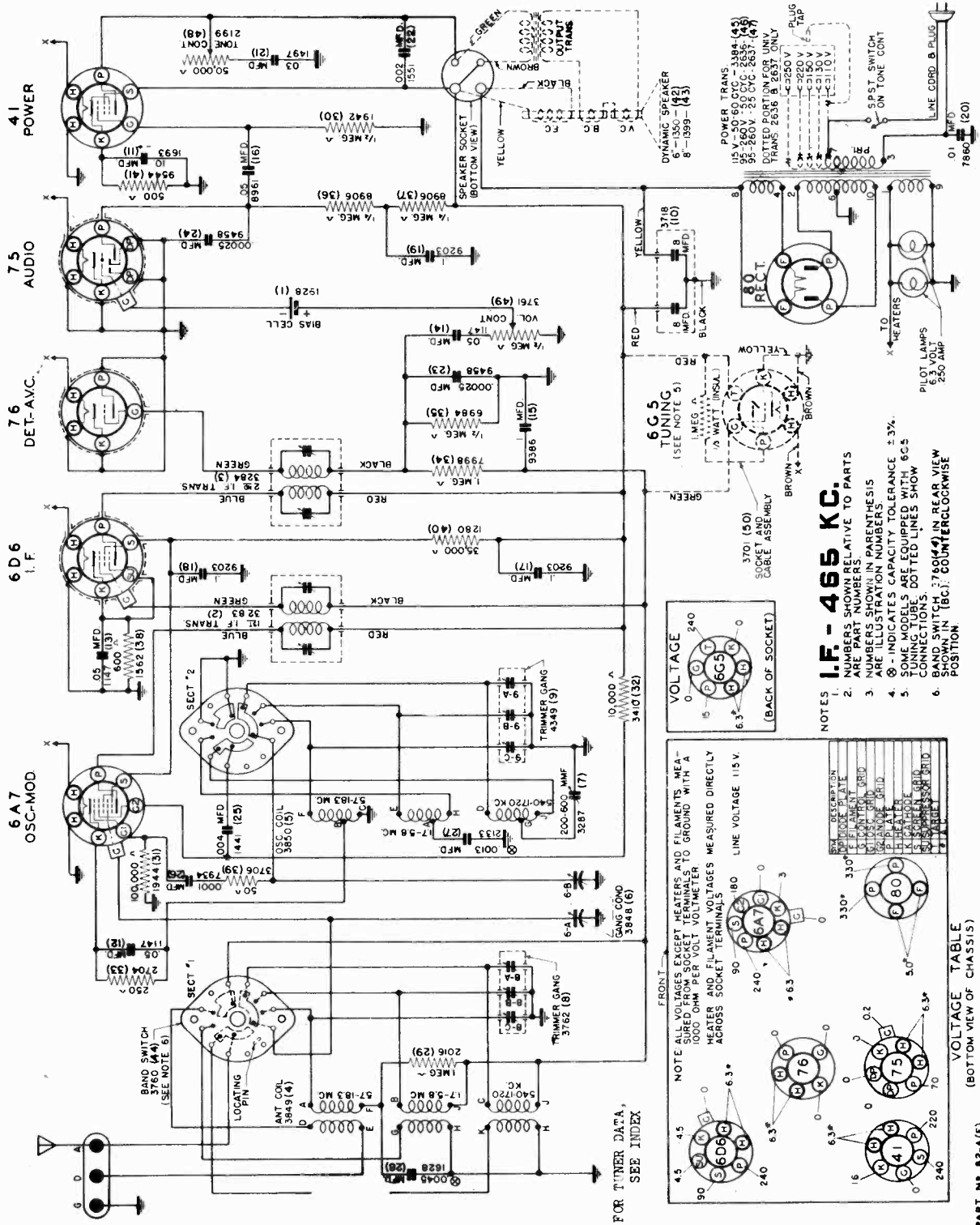
- Remove test oscillator lead from grid of the 6A7 tube and attach it to the receiver antenna lead through a .00025 Mfd. series condenser.
- Check tuning dial adjustment by turning gang condenser until plates touch maximum capacity **stop** (completely in mesh), at which point the dial needle must be exactly even with the last line at the low frequency end of the dial calibration. If the dial needle does not point exactly to the last line move needle to correct position.
- Set receiver dial and test oscillator frequency to **EXACTLY 1720 kilocycles.**
- Bring in 1720 KC test oscillator signal to maximum output by adjusting the trimmer condenser mounted on top of the oscillator section of the gang condenser. Looking at the front of the receiver the rear section of the gang condenser is the oscillator section.
- Tune receiver dial and set test oscillator frequency to **EXACTLY 1400 kilocycles.**
- Adjust trimmer on top of the front section gang condenser (antenna section) for maximum 1400 kilocycle test signal response.
- Tune receiver dial and set test oscillator frequency to approximately 600 kilocycles.
- While rocking the tuning condenser back and forth adjust 600 KC oscillator padder condenser which is accessible through the hole in the top of the chassis adjacent to the gang condenser for maximum 600 kilocycle signal response.

ALIGNING 2.3-6.3 MEGACYCLE BAND:

- Replace .00025 Mfd. Test oscillator antenna lead series condenser with a 400 ohm resistor.
- Adjust band selector switch for 2.3-6.3 megacycles band operation, tune receiver dial and set test oscillator frequency to **EXACTLY 6.3 megacycles.**
- Bring in 6.3 megacycle test oscillator signal to maximum output by adjusting 6.3 M.C. oscillator trimmer on top of coil located underneath chassis.
- Tune receiver dial and test oscillator frequency to **EXACTLY 6 megacycles,** and adjust 6 M.C. antenna trimmer which is mounted on coil located on top of chassis for maximum sensitivity.

ALLIED RADIO CORP.

MODELS B10572, B10585, B10586



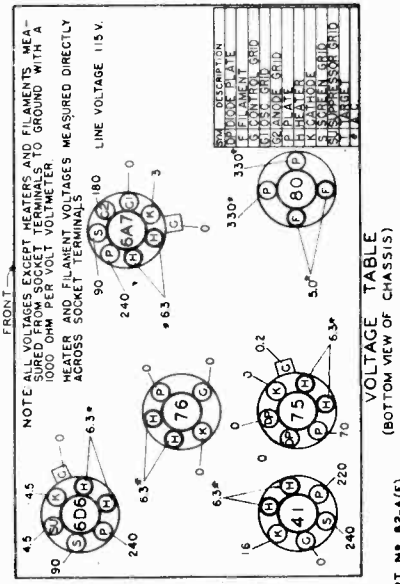
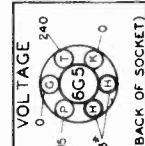
FOR TUNER DATA, SEE INDEX

NOTE: ALL VOLTAGES EXCEPT HEATERS AND FILAMENTS MEASURED FROM SOCKET TERMINALS TO GROUND WITH A 1000 OHM PER VOLT VOLTMETER. ALL VOLTAGES MEASURED DIRECTLY ACROSS SOCKET TERMINALS.

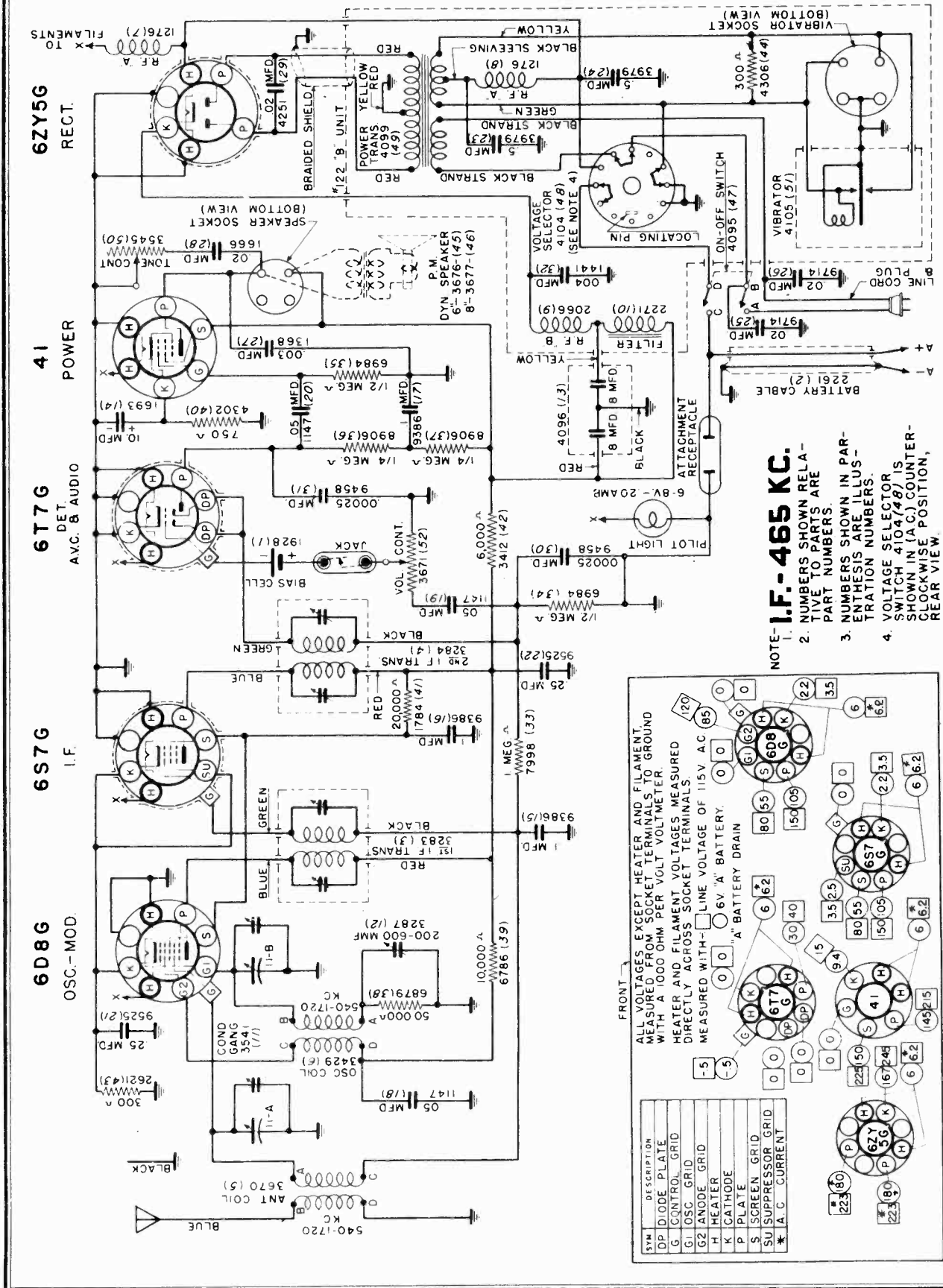
LINE VOLTAGE 115 V

POINT	DESCRIPTION	VOLTAGE
1	PIVOT LAMP	6.3
2	6G5 TUNING EYE	100
3	6E6 DET.-AVC. SOCKET	100
4	7S5 AUDIO SOCKET	100
5	41 POWER SOCKET	100
6	ANTENNA	100
7	TRIMMER GANG 3762 (8)	100
8	TRIMMER GANG 4345 (9)	100
9	6A7 OSC-MOD SOCKET	100
10	6D6 I.F. SOCKET	100
11	6E6 DET.-AVC. SOCKET	100
12	7S5 AUDIO SOCKET	100
13	41 POWER SOCKET	100
14	ANTENNA	100
15	TRIMMER GANG 3762 (8)	100
16	TRIMMER GANG 4345 (9)	100
17	6A7 OSC-MOD SOCKET	100
18	6D6 I.F. SOCKET	100
19	6E6 DET.-AVC. SOCKET	100
20	7S5 AUDIO SOCKET	100
21	41 POWER SOCKET	100
22	ANTENNA	100
23	TRIMMER GANG 3762 (8)	100
24	TRIMMER GANG 4345 (9)	100
25	6A7 OSC-MOD SOCKET	100
26	6D6 I.F. SOCKET	100
27	6E6 DET.-AVC. SOCKET	100
28	7S5 AUDIO SOCKET	100
29	41 POWER SOCKET	100
30	ANTENNA	100
31	TRIMMER GANG 3762 (8)	100
32	TRIMMER GANG 4345 (9)	100
33	6A7 OSC-MOD SOCKET	100
34	6D6 I.F. SOCKET	100
35	6E6 DET.-AVC. SOCKET	100
36	7S5 AUDIO SOCKET	100
37	41 POWER SOCKET	100
38	ANTENNA	100
39	TRIMMER GANG 3762 (8)	100
40	TRIMMER GANG 4345 (9)	100
41	6A7 OSC-MOD SOCKET	100
42	6D6 I.F. SOCKET	100
43	6E6 DET.-AVC. SOCKET	100
44	7S5 AUDIO SOCKET	100
45	41 POWER SOCKET	100

- I.F. - 465 KC.**
- NUMBERS SHOWN RELATIVE TO PARTS ARE PART NUMBERS
 - NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS
 - 0 - INDICATES CAPACITY TOLERANCE ±3%
 - 1 - INDICATES CAPACITY TOLERANCE ±5%
 - 2 - INDICATES CAPACITY TOLERANCE ±10%
 - 3 - INDICATES CAPACITY TOLERANCE ±20%
 - 4 - INDICATES CAPACITY TOLERANCE ±30%
 - 5 - INDICATES CAPACITY TOLERANCE ±50%
 - 6 - INDICATES CAPACITY TOLERANCE ±100%

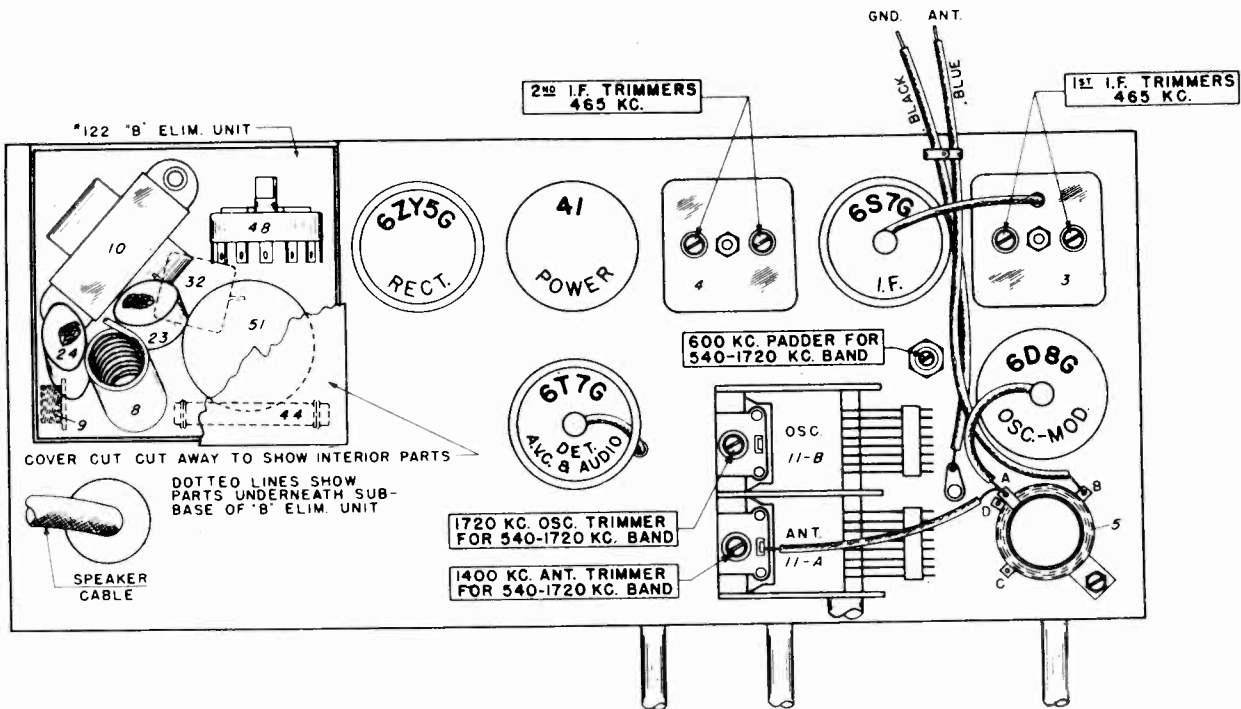


ALLIED RADIO CORP.



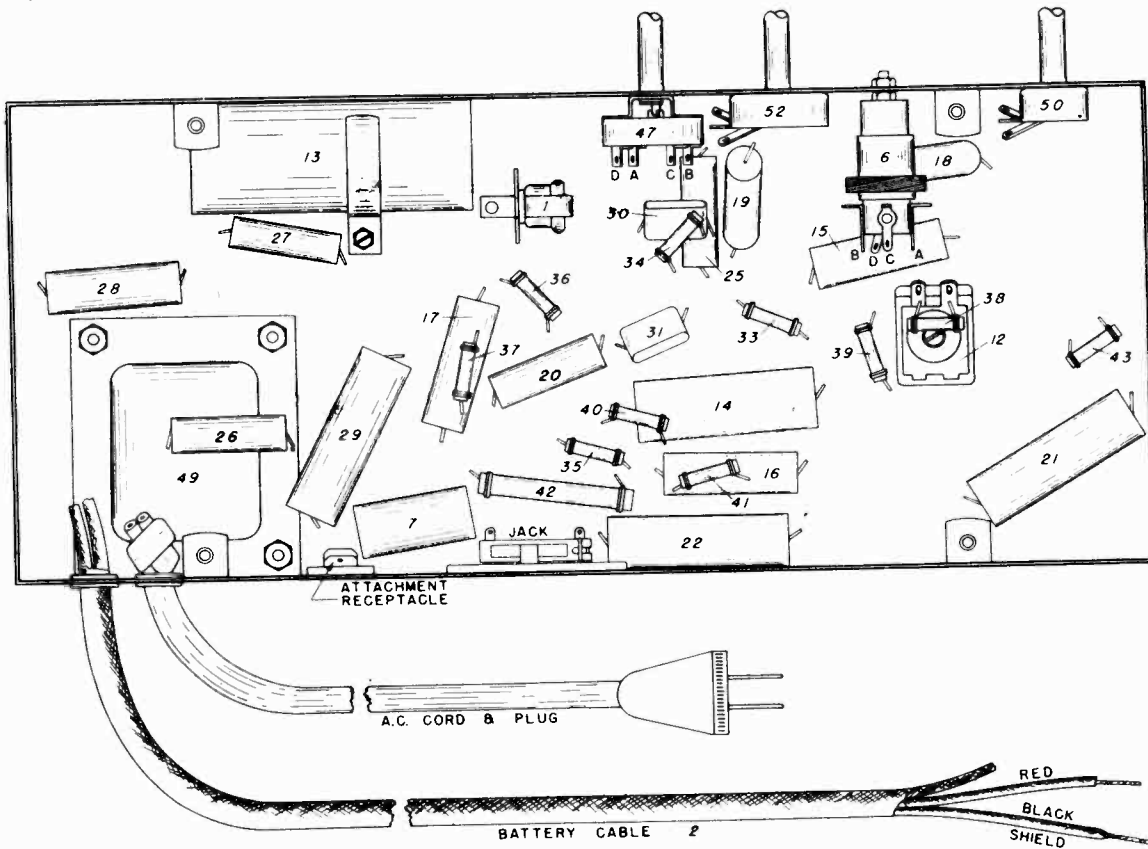
MODEL B10575

ALLIED RADIO CORP.



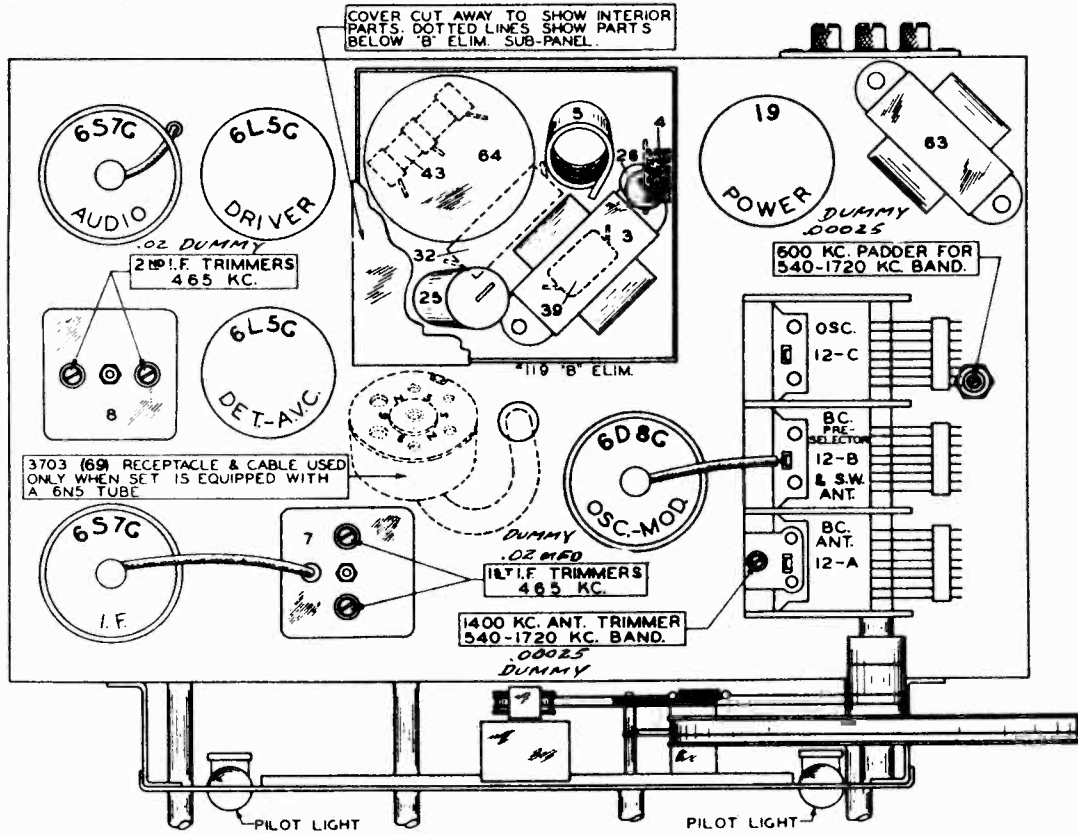
USE THE FOLLOWING DUMMY ANTENNAS-----
 I.F.----.02 MFD CONDENSER
 540-1720 KC---.00025 MFD CONDENSER
 (CONNECT DUMMIES IN SERIES WITH SIGNAL LEAD)

CONVENTIONAL ALIGNMENT
 SEE SPECIAL SECTION VOL. VIII

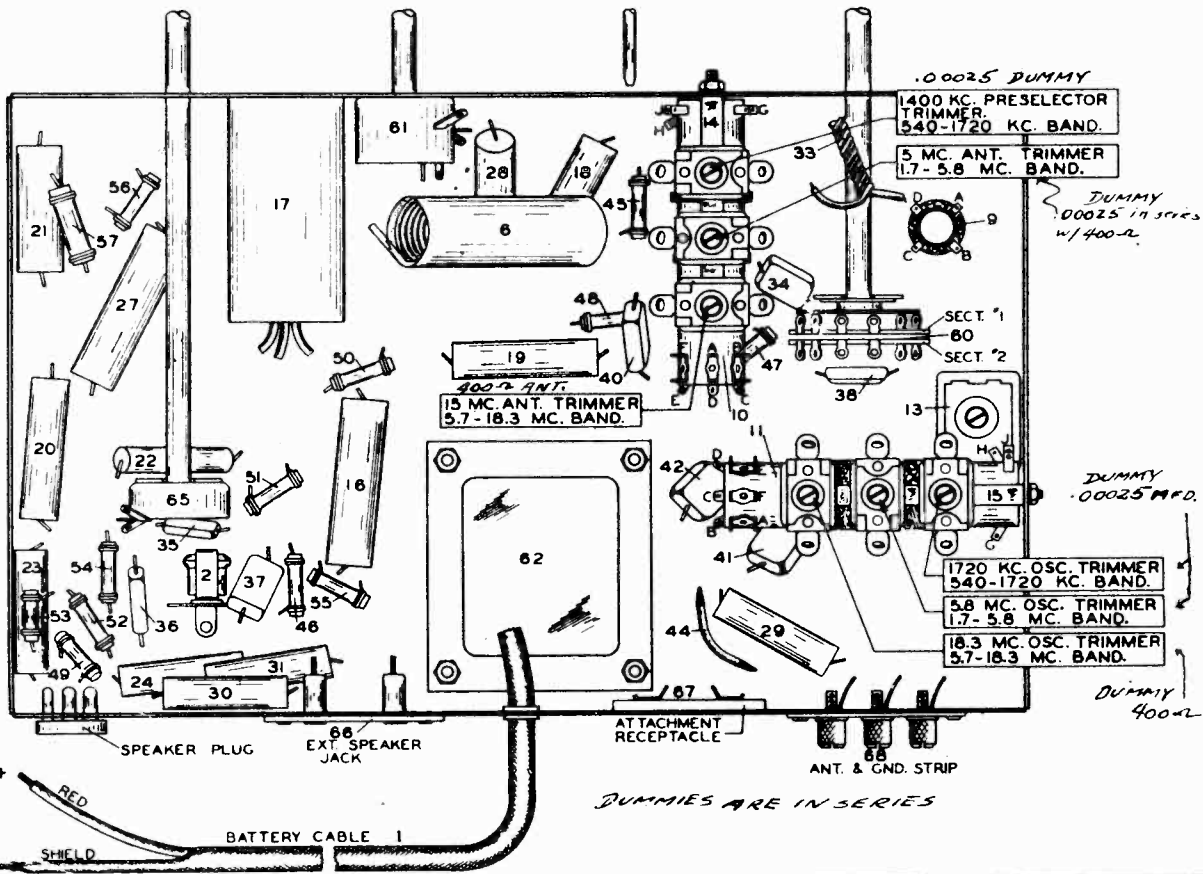


MODELS B10600, B10601, B10602,
B10603, B10604, B10605

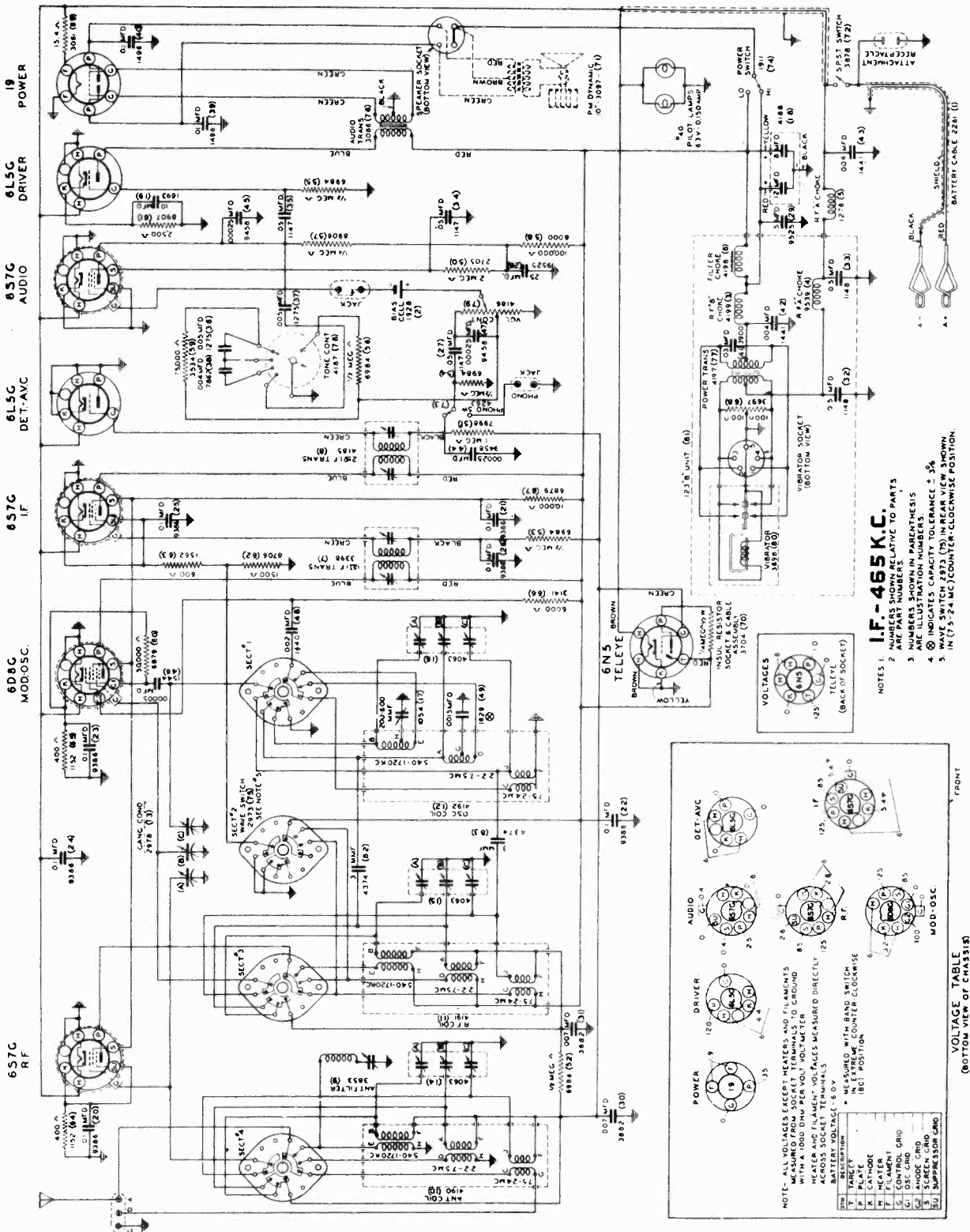
ALLIED RADIO CORP.



CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOL. VIII.

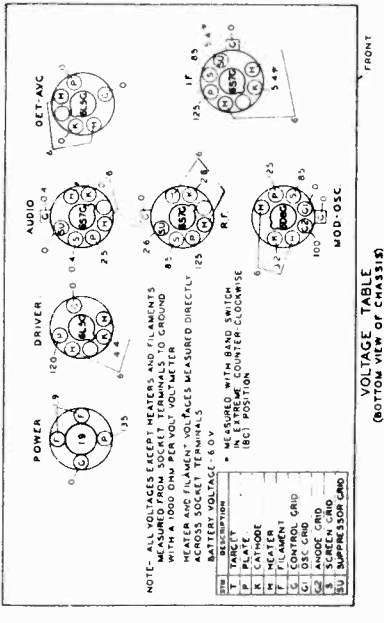


MODELS B10606, B10607, B10608
 ALLIED RADIO CORP. B10610, B10611
 B10609



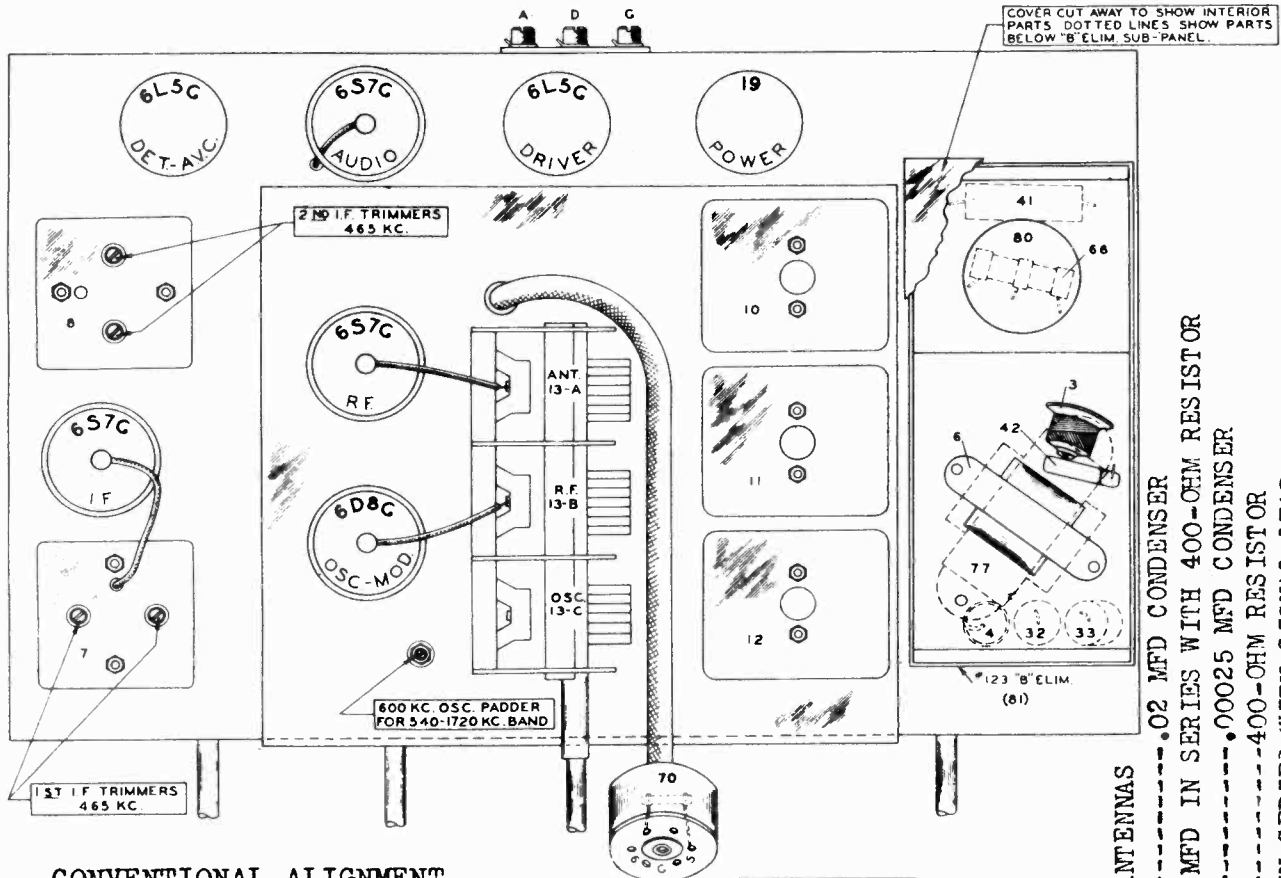
I.F. - 465 K.C.

NOTES:
 1. NUMBERS SHOWN RELATIVE TO PARTS
 2. NUMBERS SHOWN IN PARENTHESES
 3. NUMBERS SHOWN IN PARENTHESES
 4. ARC ILLUSTRATION NUMBERS
 5. INDICATES CAPACITY TOLERANCE ± 5%
 6. WAVE SWITCH 2973 (7) IN REAR VIEW SHOWN
 IN (7-24-MC) COUNTER-CLOCKWISE POSITION.

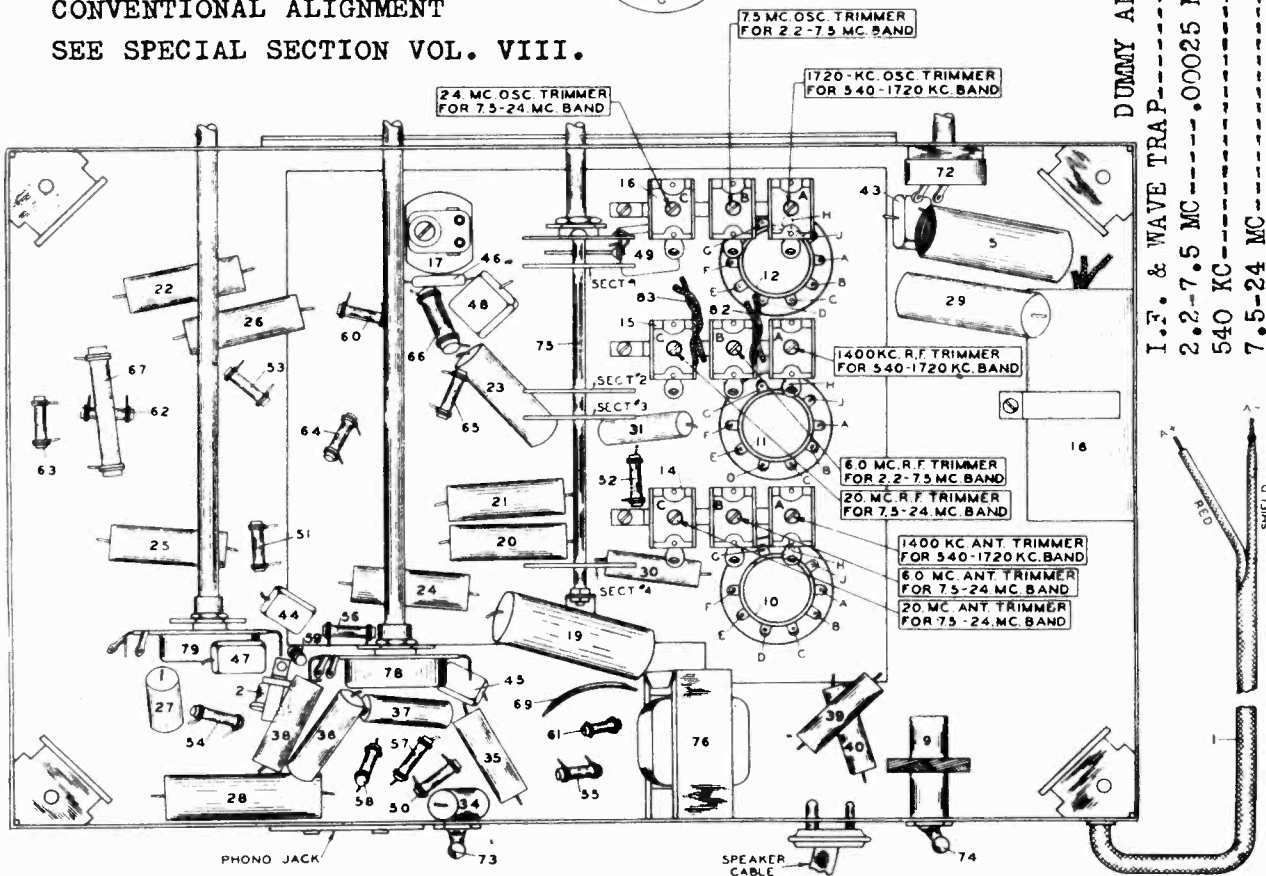


MODELS B10603, B10607, B10608,
B10609, B10610, B10611

ALLIED RADIO CORP.



CONVENTIONAL ALIGNMENT
SEE SPECIAL SECTION VOL. VIII.



DUMMY ANTENNAS
I.F. & WAVE TRAP
0.02 MFD CONDENSER
2.2-7.5 MC
540 KC
7.5-24 MC
400-OHM RESISTOR
0.00025 MFD IN SERIES WITH 400-OHM RESISTOR
0.00025 MFD CONDENSER
400-OHM RESISTOR
ALL UNITS ARE USED IN SERIES WITH SIGNAL LEAD

MODELS

B10612, B10615, B10617

ALLIED RADIO CORP.

32-V. Interference Data

Ignition Noise on Battery Leads

Sometimes the ignition interference will travel up the battery leads. This condition can be corrected as follows: Attach a .5 Mfd. condenser between the POSITIVE terminal at the top of the control box and the frame of the box. (Be sure the frame of the box is well grounded to the generator frame.) Attach a .5 Mfd. condenser between the NEGATIVE terminal at the top of the control box and the control box frame.

Ignition Interference on Supply Leads

In extreme cases the ignition interference will travel up the supply leads to the radio receiver. This condition can be corrected by attaching a .5 Mfd. condenser between the ungrounded side of the line (in the main switch box) and ground for the grounded side of the line if one side of the line is grounded.

Grounding

Some cases may require a thorough grounding of the system. This may be accomplished by running a No. 12 B. & S. gauge wire from the generator frame to a good ground. Conduit and metal switch boxes should also be grounded.

It is necessary to ground one side of the supply lines, first ground them temporarily, one at a time through a 32 volt lamp. One side of the line will light the lamp, the other will not. The side which WILL NOT light the lamp should be grounded.

DO NOT apply any of the remedies listed under "Extreme Cases", before trying the ones listed under "Usual Cases".

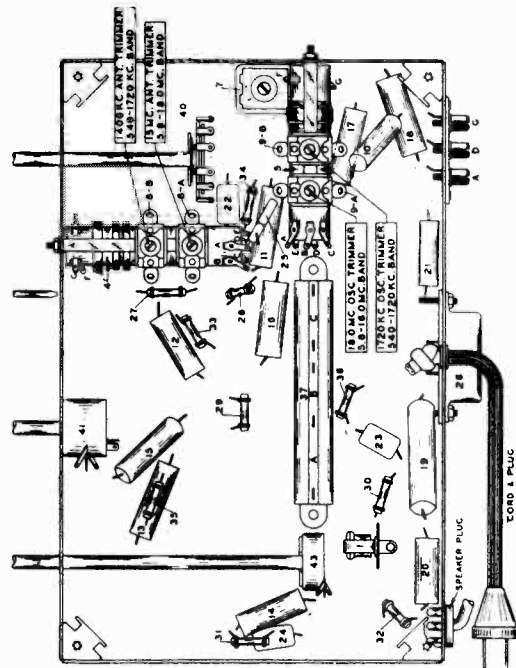
Slip the loom over the high tension lead. Slip the shielding over the loom so that it is one-half inch from each end of the loom. Wrap some line copper wire around the shielding near the end of the shield; slip the shielding in place. Solder the wire to the shielding so it will not slip due to plant vibration. The shield may be taped in place if the tape is very adhesive. DO NOT USE FRICTION TAPE.

Solder a short braided pig-tail to the shielding and ground it under the nearest screw in the generator frame.

This receiver is designed for operation on 32 volt battery plants only and must not be used on battery plants of a HIGHER RATED VOLTAGE than 32 volts without a voltage regulator.

The power plug attached to the end of the power cord must be inserted correctly IN THE 32 VOLT POWER SUPPLY OUTLET OR RECEPTACLE. OTHERWISE THE SET WILL NOT OPERATE. If after inserting the plug and turning the receiver on, the set does not operate after approximately two minutes, remove this plug and turn it half-way around and reinsert it in the power receptacle.

A 4 AMPERE FUSE is located on the back of the chassis underneath receptacle marked "Fuse" and protects the receiver from damage should a defect occur in the set or if it is connected to the improper power supply. Continued burning out of fuses on the proper power supply is indicative of some defect. THE WARRANTY IS VOID IF THE RECEIVER IS OPERATED WITH THE FUSE SHORTED OUT OR WITH A FUSE LARGER THAN 4 AMPERES.



CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOL. VIII. ELIMINATION OF INTERFERENCE CAUSED BY A 32-VOLT LIGHT PLANT

General

Two kinds of static-like noise may be heard when you operate your 32 volt radio at the same time the generating plant is charging the plant batteries.

Static-like noise, due to the action of the brushes on the commutator, may reach the set through the supply lines. Such noise can generally be eliminated by the use of .5 Mfd. 200 volt condensers, as shown in Figs. 1 and 3.

Static-like noise, due to the operation of the high tension circuit may radiate through the air to the antenna of the set. Radiation has been found to extend a half mile in extreme cases. Proper placement of the antenna, along with the use of a spark plug suppressor and correct shielding will entirely eliminate this type of noise. When eliminating these electrical disturbances always apply the remedies given in the order in which they appear.

Usual Installations

Install spark plug suppressor on the spark plug and connect the high tension lead to the suppressor, as shown in Figure 3.

For four cylinder plants use four spark plug suppressors, one attached to each spark plug.

CAUTION: Disconnect batteries from generator before attaching suppressor equipment.

Connect one .5 Mfd. 200 volt condenser between one positive brush and the generator frame and one condenser between one negative brush and the generator frame as shown in Figure 1.

FOUR CYLINDER PLANTS. For four cylinder plants attach a condenser to the positive and negative brushes as shown in Figure 2.

Extreme Cases

To determine if the high tension wiring is radiating into the antenna disconnect the antenna and ground from the receiver and if the noise is eliminated or materially reduced, the noise is being picked up by the antenna. In such a case, obtain a piece of electrician's loom which will just slide over the high tension wire and a piece of copper braided shielding which will just slip over the loom. Cut a piece of loom just long enough to cover the high tension wire from the coil to the spark plug suppressor. Cut a piece of shielding that will be one inch shorter than the loom when the shielding is extended over the loom.

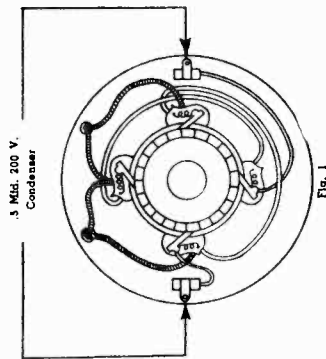


Fig. 1

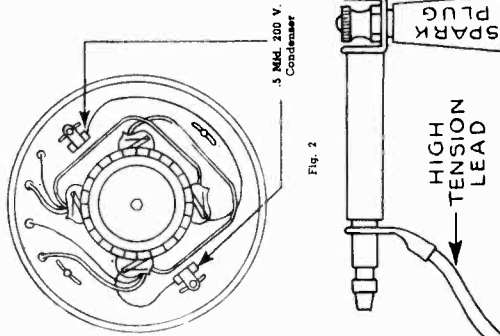


Fig. 2

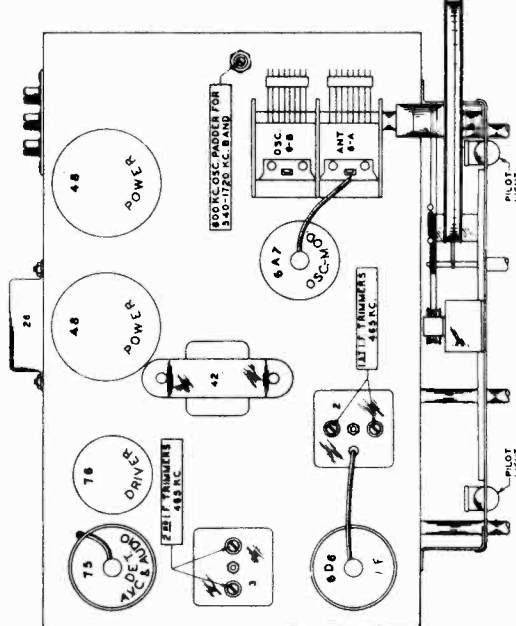
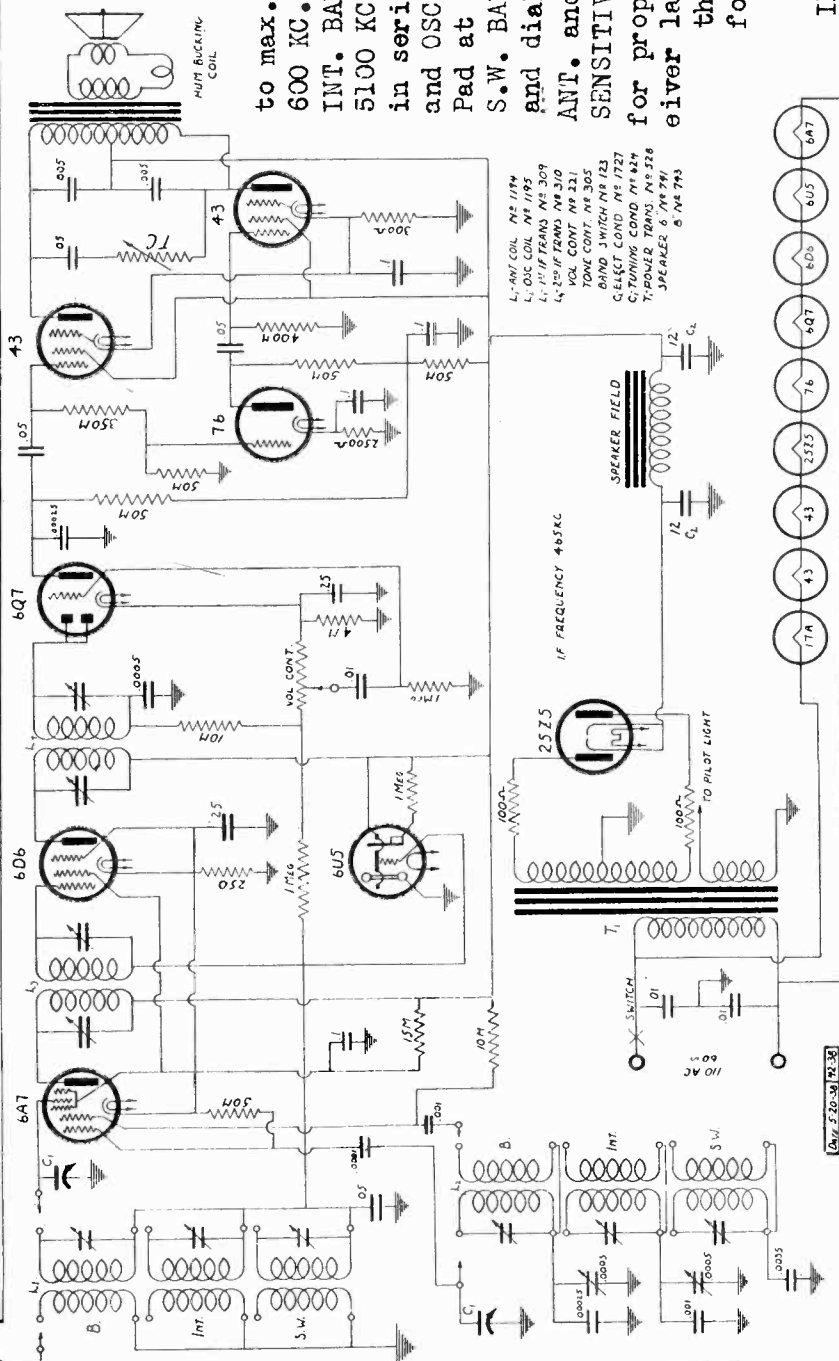


Fig. 3

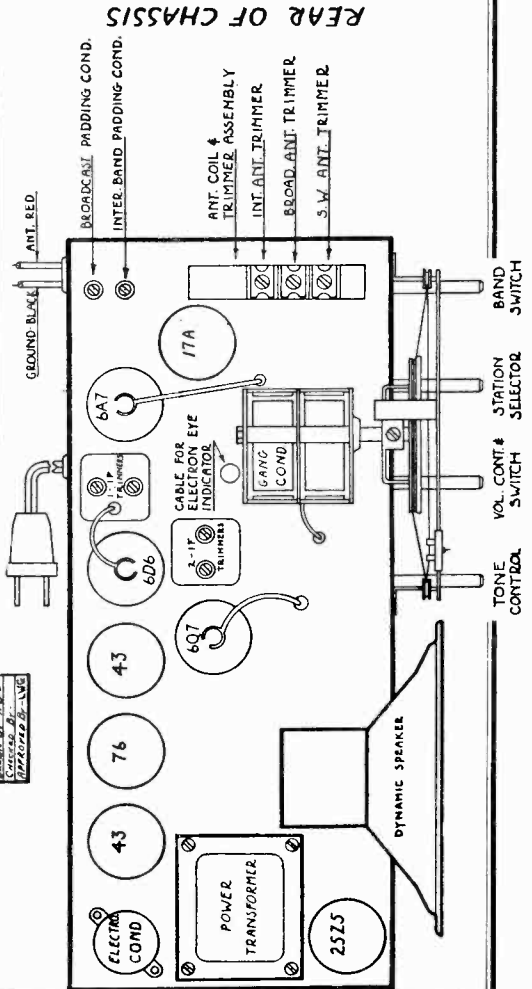
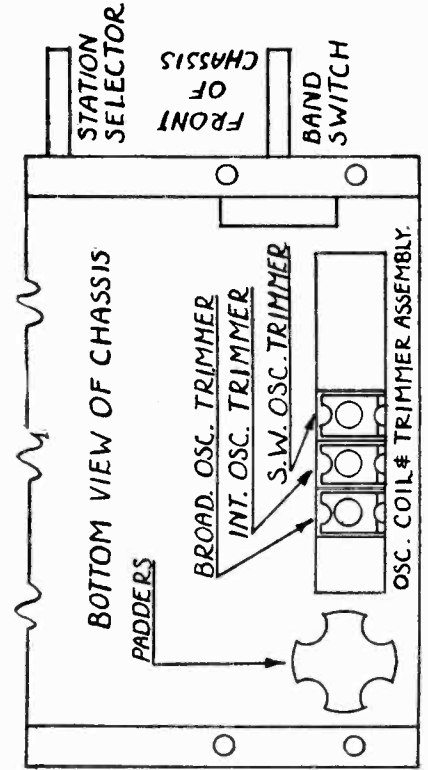
ALLIED RADIO CORP.

ALIGNMENT

I.F. 465 KC to grid of 6A7. Adj. IF trimmers. B.C.BAND. Osc. and dial at 1400 KC. .0002 mfd. dummy, Vol. Contr. max. Adjust B.C. OSC. trimmer to max. Similarly B.C. Pad at 600 KC. Then recheck at 1400 KC. INT. BAND. Dial and osc. at 5100 KC .0002 mfd. with 400 ohm in series as dummy. Adj. ANT. and OSC trimmers to max. Adj. S.W. BAND. 400 ohm dummy. Osc. and dial at 15 MC. Adjust S.W. ANT. and OSC trimmers to max. SENSITIVITY Check at 6000 KC for proper alignment. If receiver lacks sensitivity check the .0035 mica condenser for short circuit.

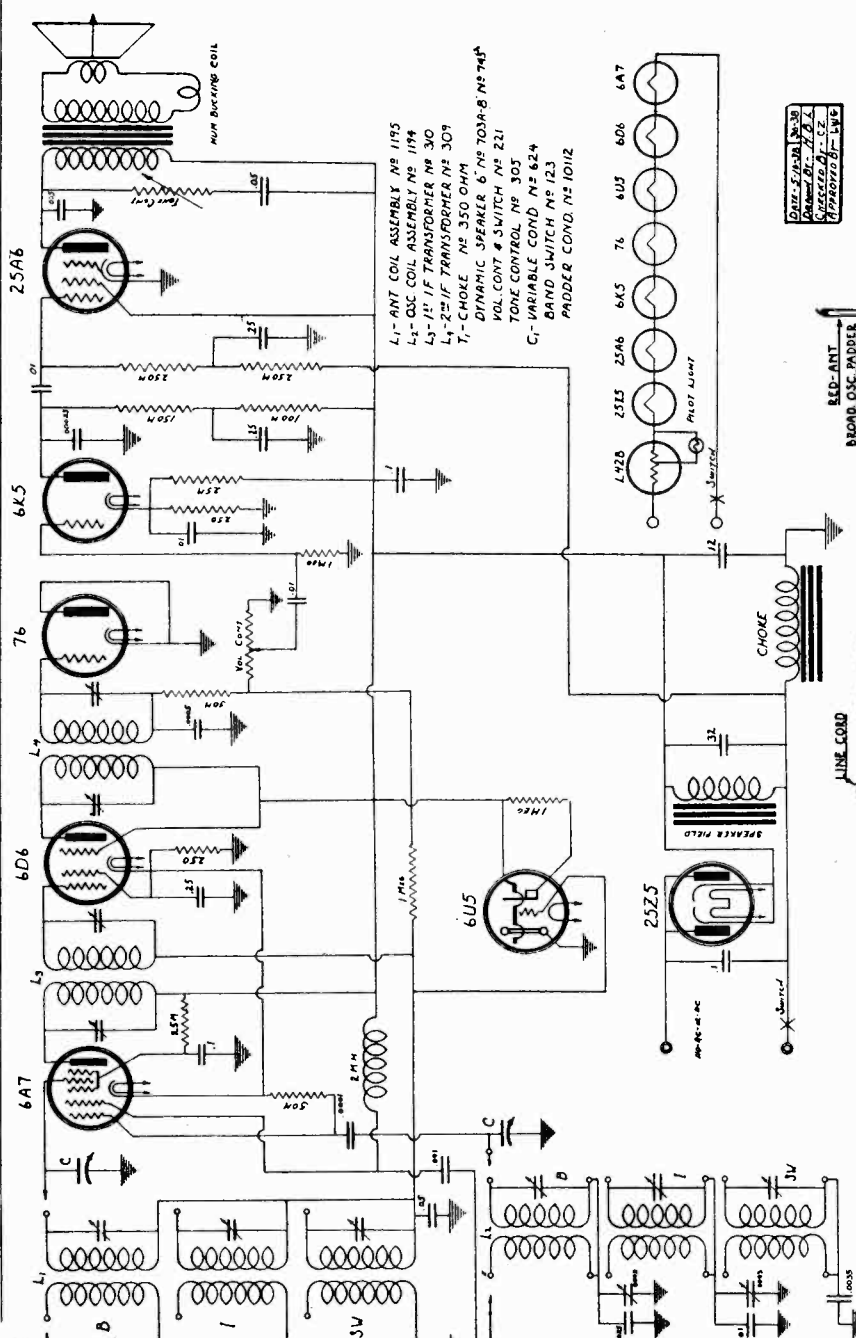


IF PEAK 465 KC



ALLIED RADIO CORP.

MODELS B10708, B10709, B10710

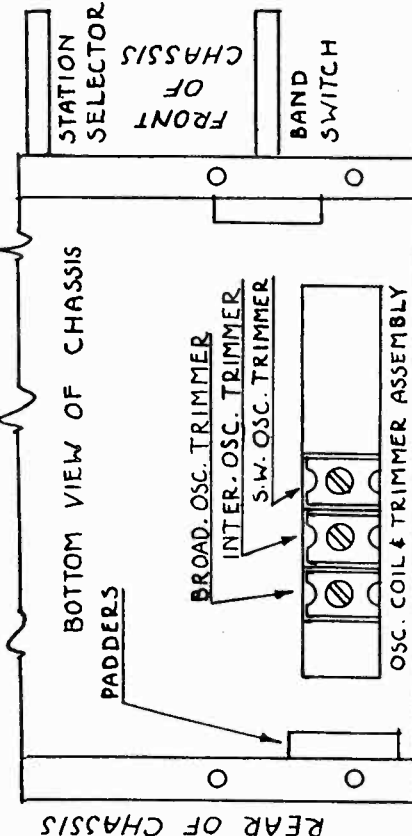
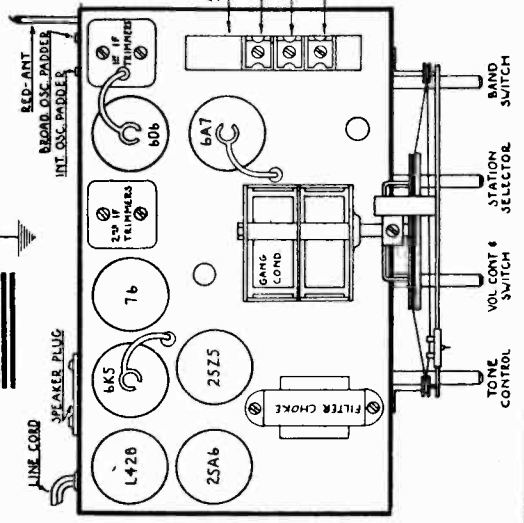


ALIGNMENT

I.F. 465 KC. to grid of 6A7, Adjust IF trimmers. B.C. Band. Osc at 1400 KC. .0002 dummy, Vol. Contr. at max. Dial at 1400 KC. Adjust B.C. OSC trim. to max. Similarly B.C. Pad at 600 KC. Recheck 1400KC INT. BAND. Dial and Osc. at 5100KC. .0002 mfd. cond. with 400 ohm series res. as dummy. Adjust ant. and osc. trimmers to max. Adjust Pad at 1800 KC. Recheck adjustment 5100KC S.W. BAND. 400 ohm dummy Oscillator and dial at 15 MC. adjust S.W. ant. and osc. trimmers to max. Check sensitivity at 6000 KC to check for proper alignment. If the receiver lacks sensitivity check the .0035 cond. (mica) for short circuit.

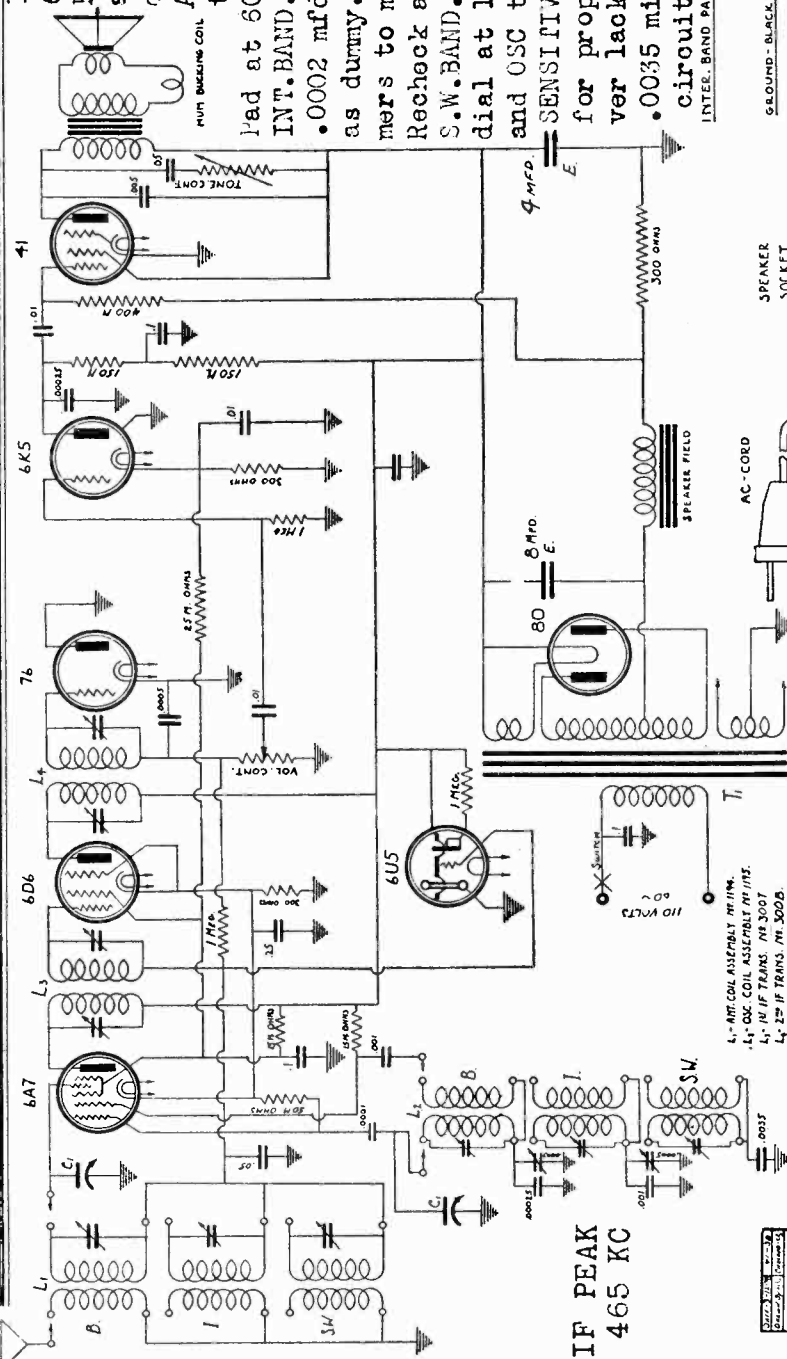
OVER-ALL TUNING
 OVER-ALL TUNING
 APPROXIMATELY 465 KC

IF PEAK 465 KC



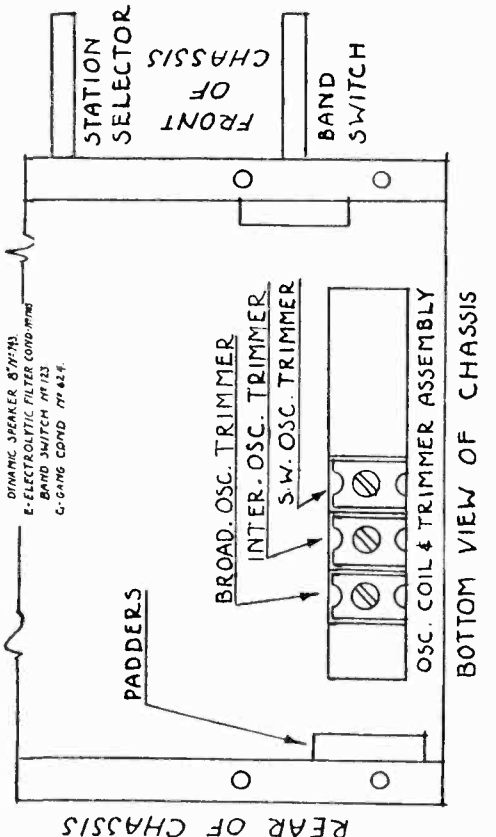
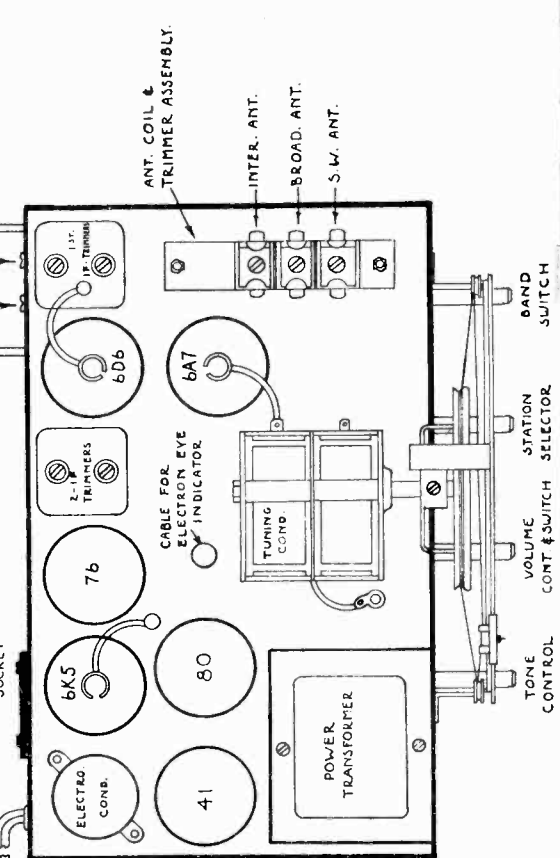
ALLIED RADIO CORP. MODELS B10713, B10714, B10715

I.F. 465 KC to grid of 6A7. Adj. IF trimmers. B.C.BAND. Osc and dial at 1400 KC., .0002 mfd. dummy, Vol. Contr. max. Adj. B.C. OSC. trimmer to max. Similarly B.C. Pad at 600 KC. Then recheck 1400 INT.BAND. Dial and osc. at 5100KC .0002 mfd. with 400 ohm in series as dummy. Adj. ANT. and OSC. trimmers to max. Adj. Pad at 1800KC Recheck at 5100 KC. S.W.BAND. 400 ohm dummy. Osc and dial at 15 MC. adjust S.W. ANT. and OSC trimmers to max. SENSITIVITY check at 6000 KC for proper alignment. If receiver lacks sensitivity check the .0035 mica cond. for short circuit.



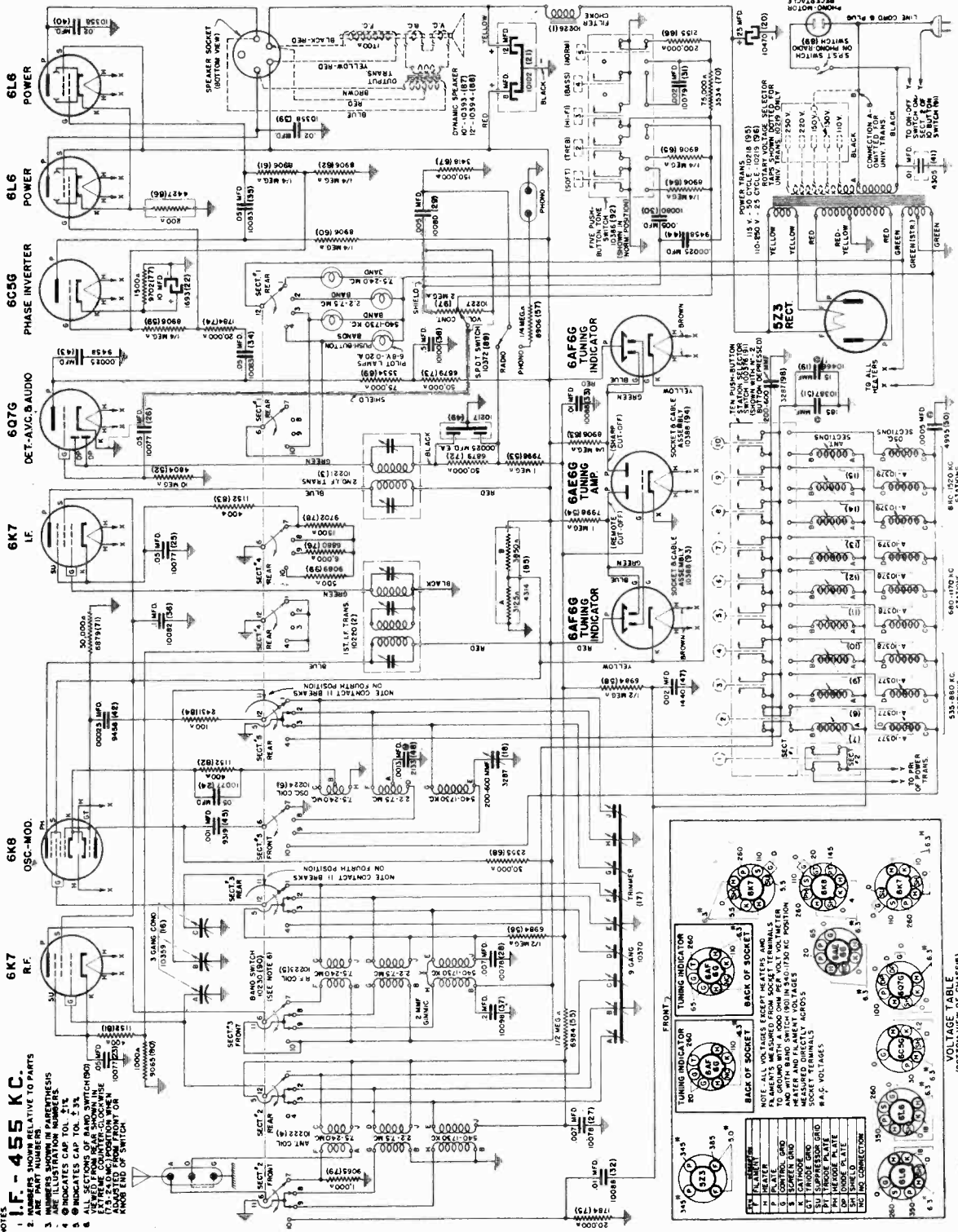
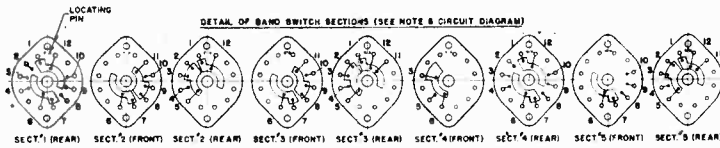
IF PEAK 465 KC

- L1- ANT. COIL ASSEMBLY #1176.
- L2- OSC. COIL ASSEMBLY #1176.
- L3- IF TRANS. #1307
- L4- 2nd IF TRANS. #1308.
- Vol. CONT. & SWITCH #1221.
- TONE CONT. #1305.
- T1- POWER TRANS. #1529.
- DYNAMIC SPEAKER 6" #1702A
- ELECTROLYTIC FILTER COND.#1173
- BAND SWITCH #123
- G- GAGE COND. #1424.

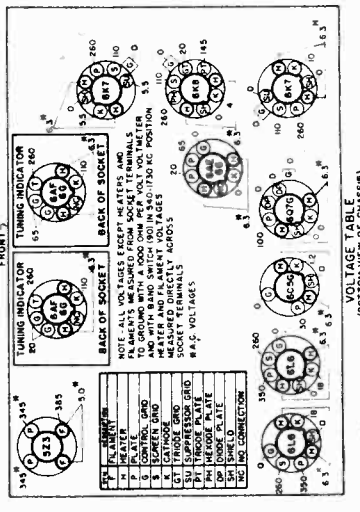


ALLIED RADIO CORP.

THREE BAND — ELEVEN TUBE A.C. Operated Superheterodyne Receiver



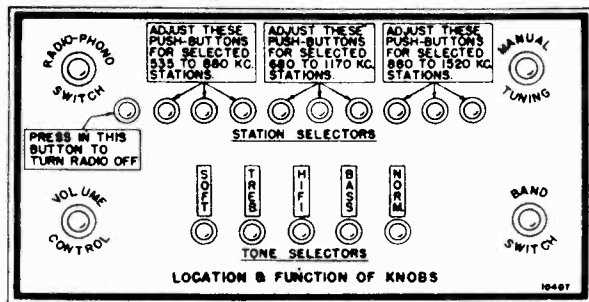
- NOTES**
1. I.F. - 455 KC.
 2. NUMBERS SHOWN RELATIVE TO PARTS
 3. AMP PART NUMBERS
 4. SEE ILLUSTRATION NUMBERS
 5. INDICATES CAP. TOL. 5%
 6. INDICATES CAP. TOL. 1%
 7. PARTS SHOWN IN CIRCLES ARE ADAPTED FROM FRONT OR REAR VIEW OF SWITCH



MODEL E10797
MODEL E10882A

ALLIED RADIO CORP.

MODEL E10797



PUSH-BUTTON ADJUSTMENT

Nine stations operating in the 1500-540 kilocycle band may be automatically push button tuned by properly setting each station selector push button.
AS THE PUSH BUTTONS ARE NOT PRE-SET AT THE FACTORY FOR ANY DEFINITE STATIONS BE SURE TO SET EACH ONE.

Before Attempting to Set Push Buttons Be Sure to:

- Have aerial which will be used with the radio attached to the receiver when setting push buttons.
- Operate radio at least 15 minutes before adjusting push buttons.
- Obtain transmitter frequency—number of kilocycles—and call letters of the nine stations you wish to push button tune from radio log or newspaper radio station list.

Adjust Push Buttons for Selected Stations by:

- Rotate band switch knob to the NEXT to MAXIMUM RIGHT HAND POSITION—540-1730 KILOCYCLE BAND MANUAL TUNING POSITION.
- Using regular manual tuning knob carefully tune in one of the selected stations whose transmitter frequency is somewhere between 535-880 kilocycles. Make a mental note of the kind of program on this station, so that when push button is adjusted for this particular station (as instructed in paragraph (e)) it will be easy to recognize the station by the type of program being transmitted.
- Rotate band switch knob to maximum right hand position.
- Press in one of the three push buttons marked 535-880 kilocycles on diagram.
NOTE: STATION MAY DISAPPEAR, BE DISTORTED OR IN SOME INSTANCES ANOTHER STATION MAY BE HEARD.
- GRASP END OF PUSH BUTTON JUST PRESSED IN AND BY SLOWLY TURNING THIS BUTTON CAREFULLY TUNE IN THE SELECTED 535-880 KILOCYCLE STATION THAT WAS PREVIOUSLY TUNED IN WITH MANUAL CONTROL.
Slowly—turn first in one direction, then if the wanted station is not heard turn in opposite direction. WATCH TUNING EYE AND ADJUST SO THAT THE TWO OPEN ENDS OF THE GREEN INVERTED "V" ON THE TUNING EYE ARE CLOSEST TOGETHER—AT WHICH POINT THE SIGNAL WILL BE HEARD WITH GREATEST VOLUME AND CLEARST TONE.
- Press station call letter of the station just tuned in out of call letter sheet supplied and insert into depression adjacent to push button just adjusted.
- After the first 535-880 kilocycle push button has been properly set, the other eight push buttons should be adjusted in the same manner preferably in the following order:
 - Set remaining two push buttons marked 535-880 kilocycles on diagram for any two stations operating between 535-880 kilocycles.
 - The three push buttons marked 680-1170 kilocycles on diagram should be adjusted for any three selected stations operating between 680 and 1170 kilocycles.
 - Adjust the three push buttons marked 880-1520 kilocycles on diagram for any three selected stations operating between 880 and 1520 kilocycles.

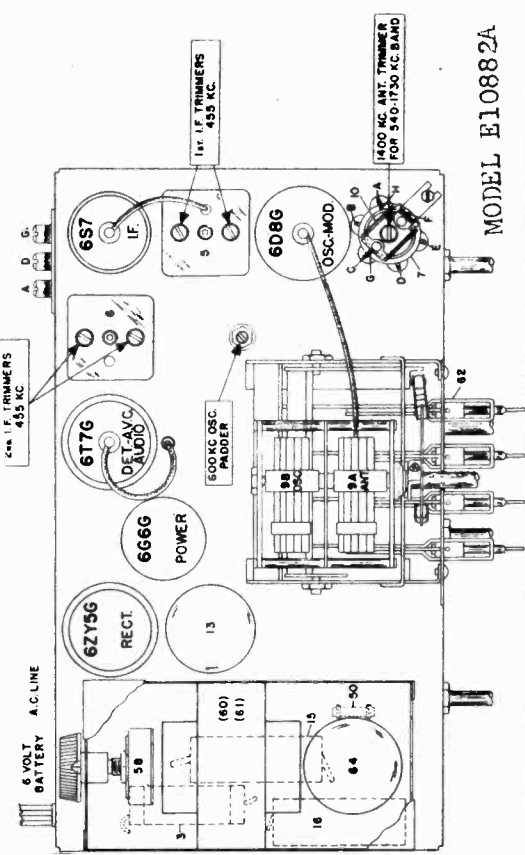
IMPORTANT

For Manual Tuning the Band Switch must be in next to maximum right hand position. When adjusting Push Buttons or when Push Button tuning after Push Buttons have been set, Band Switch must be in maximum right hand position.

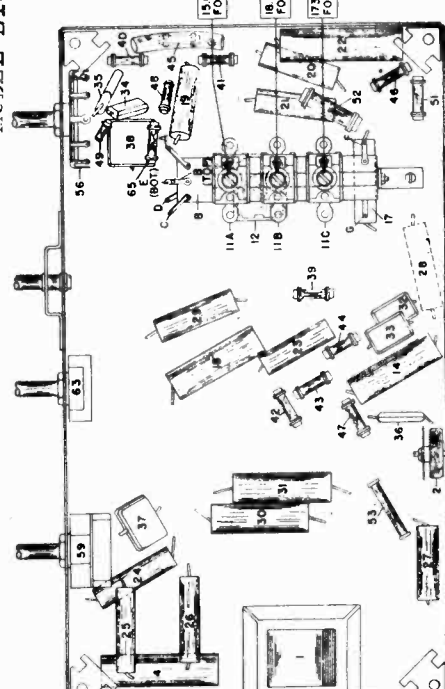
MODEL E10882A ALIGNMENT PROCEDURE IN TABULATED FORM

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. If more than one adjustment is required on any one band, make the adjustment marked (1) first, (2) next, (3) third.
Before starting alignment, check tuning dial adjustment by: Turn gang condenser until plates touch maximum capacity stop (completely in mesh) at which point the dial indicates must be exactly over with the last line at the low frequency end of the dial calibration. If dial needle does not point exactly to last line move needle to correct position.
Use an accurately calibrated test oscillator with some type of output measuring device.
Have ground lead of test oscillator attached to chassis.

Place band switch for operation on:	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 and:
I.F. alignment use any band position	Any point where no interfering signal is received	Exactly 455 K.C.	.02 Mid. condenser	High side to grid cap of 6D8G tube. Do not remove cap.	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.
1730 to 540 K.C.	1 Exactly 1730 K.C.	Exactly 1730 K.C.	.00025 Mid. condenser	Receiver blue antenna lead	Adjust 1730 K.C. oscillator trimmer for maximum output.
	2 Exactly 1400 K.C.	Exactly 1400 K.C.	.00025 Mid. condenser	Receiver blue antenna lead	Adjust 1400 K.C. antenna trimmer for maximum output.
	3 Approximately 600 K.C.	Approximately 600 K.C.	.00025 Mid. condenser	Receiver blue antenna lead	While rocking gang condenser adjust 600 K.C. oscillator padder for maximum output.
5.8 to 18.1 M.C. BAND	1 Exactly 18.1 M.C.	Exactly 18.1 M.C.	400 Ohm carbon resistor	Receiver blue antenna lead	Adjust 18.1 M.C. oscillator trimmer for maximum output—be sure in use proper peak. If more than one peak is noticed, back off trimmer to minimum capacity; then screw down trimmer (solid capacity) until the second peak—which is the proper one to use—is tuned in.
	2 Exactly 15 M.C.	Exactly 15 M.C.	400 Ohm carbon resistor	Receiver blue antenna lead	Adjust 15 M.C. antenna trimmer for maximum output.

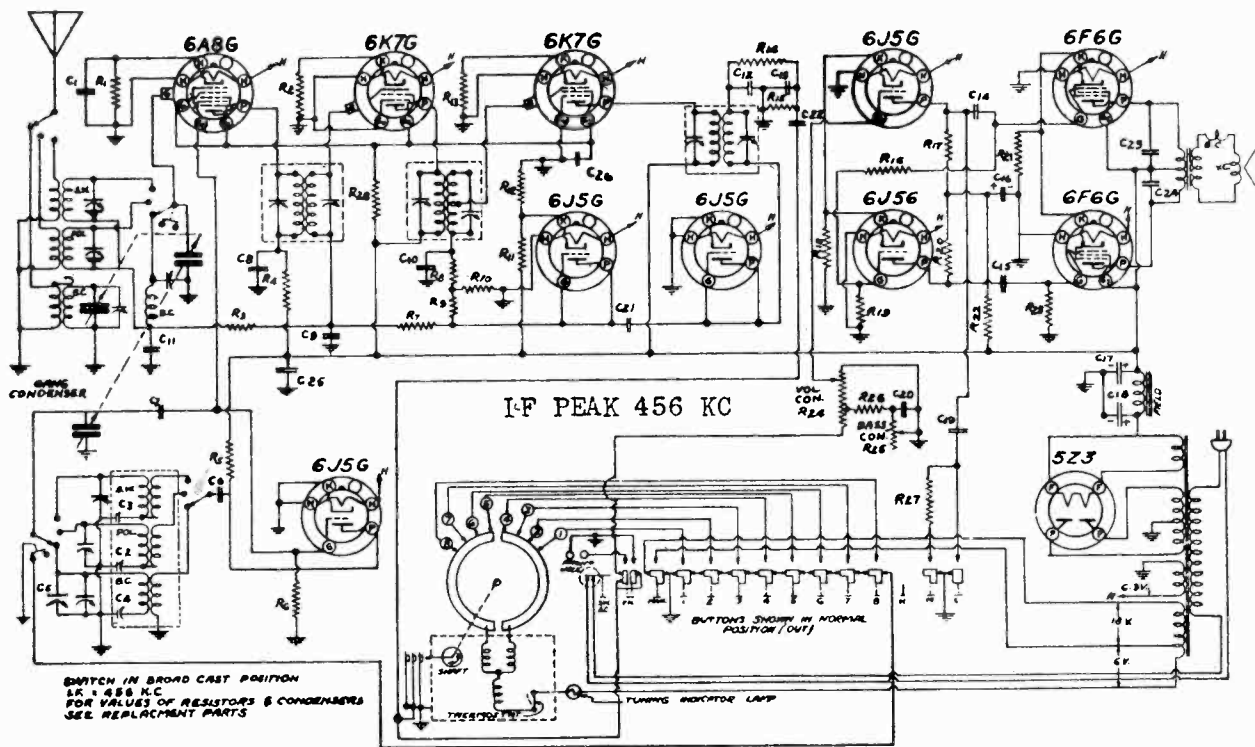


MODEL E10882A



MODEL E10850

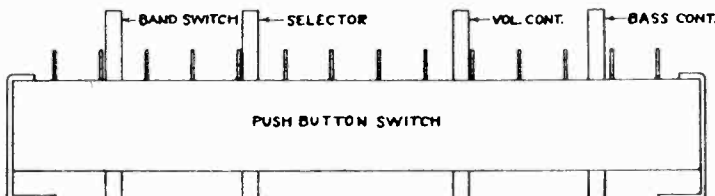
ALLIED RADIO CORP.



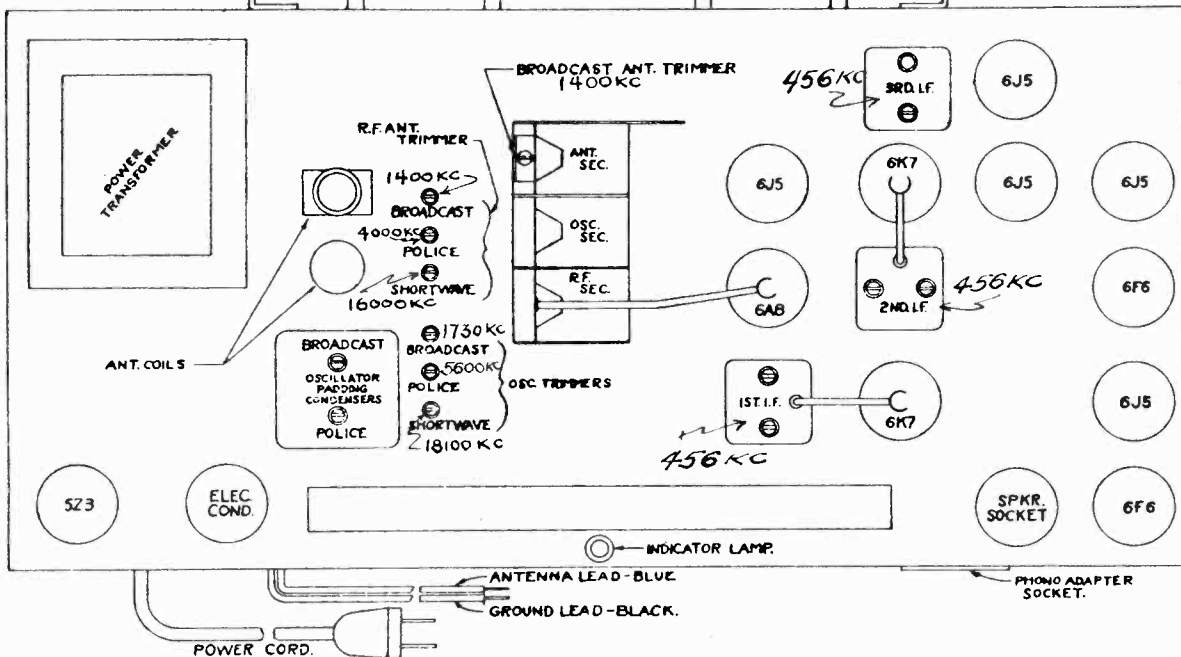
SWITCH IN BROADCAST POSITION
OR 456 KC
FOR VALUES OF RESISTORS & CAPACITORS
SEE REPLACEMENT PARTS

CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOL. VIII

Note: In aligning IF, align all six Trimmers.

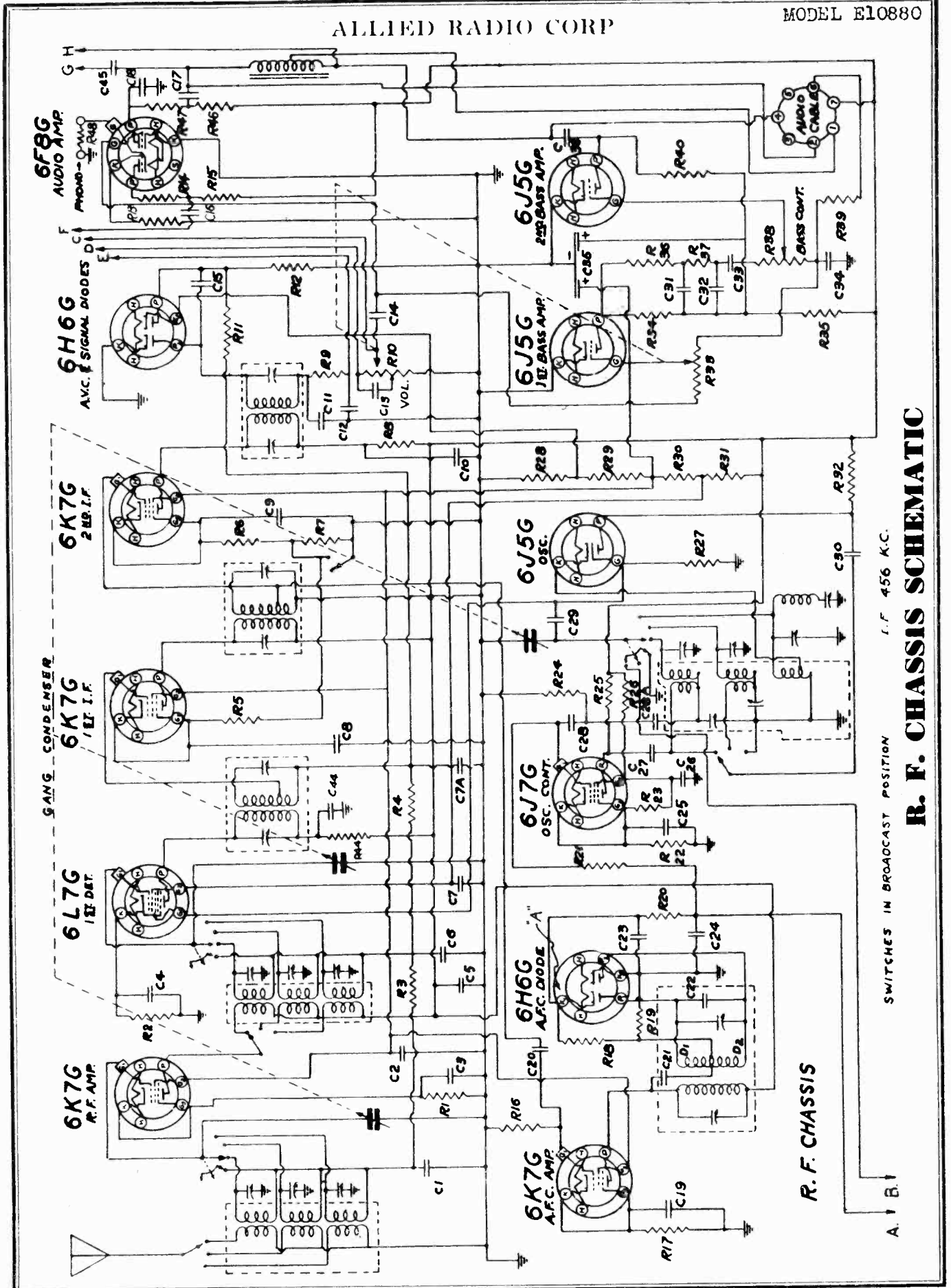


PAD BROADCAST BAND AT 600KC
PAD POLICE BAND AT 1800 KC
CHECK SENSITIVITY AT 6000 KC



ALLIED RADIO CORP

MODEL E10880



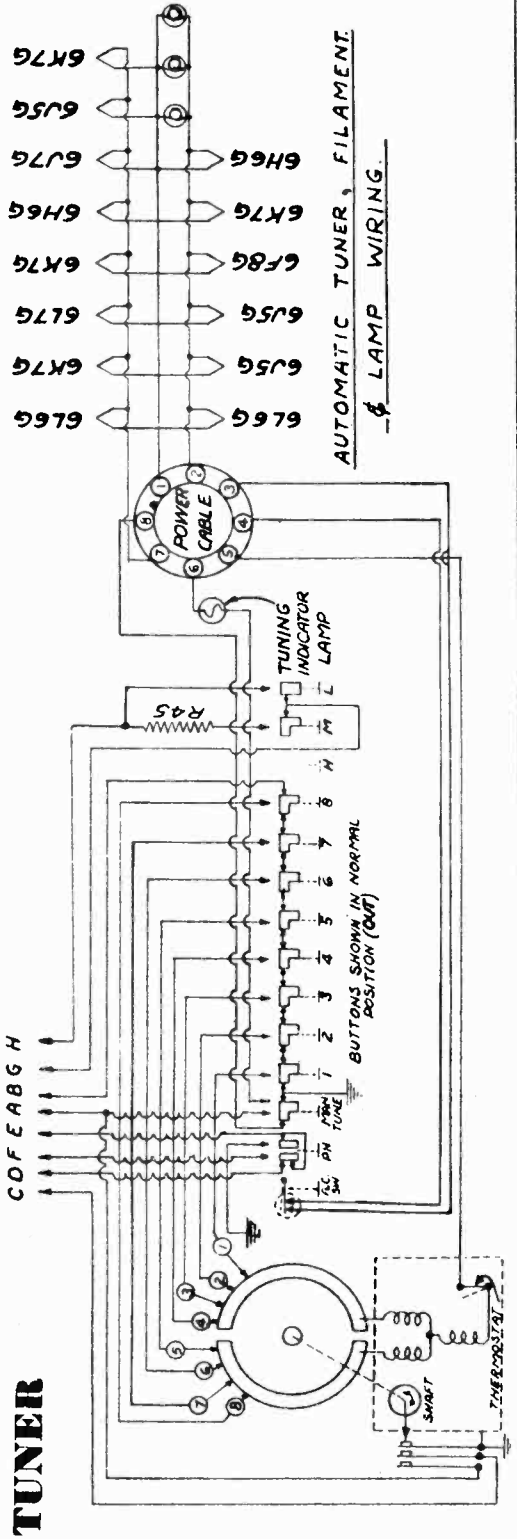
SWITCHES IN BROADCAST POSITION

f. 456 K.C.

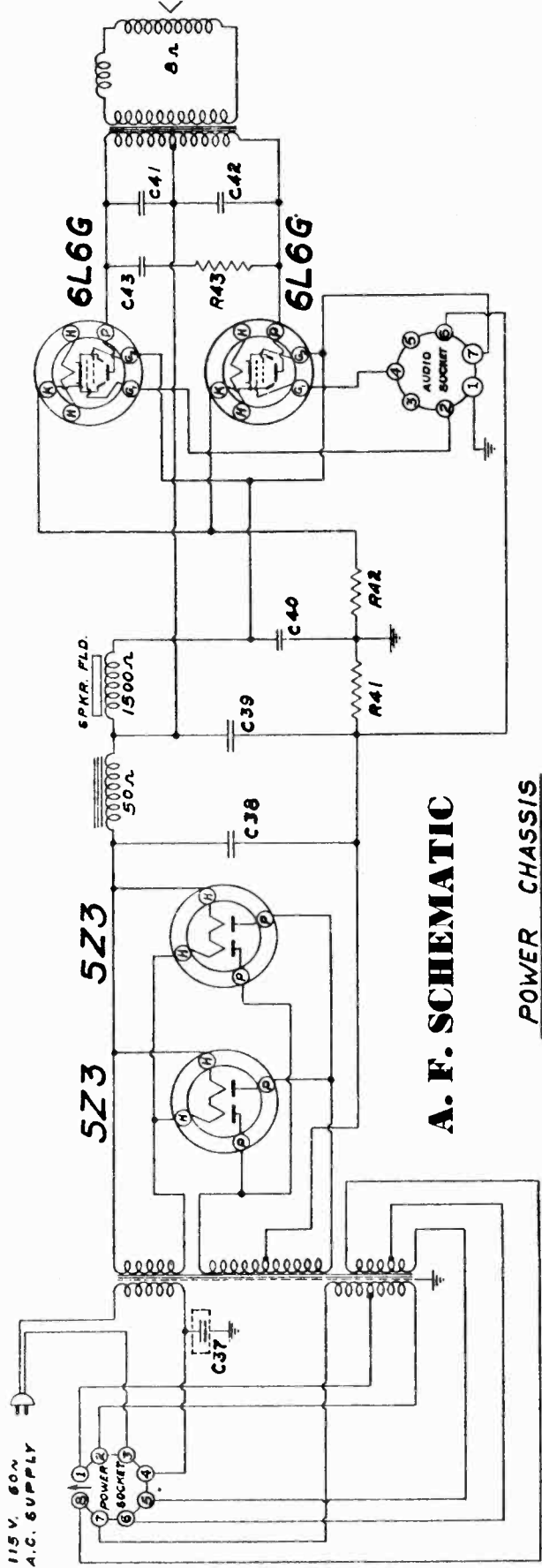
R. F. CHASSIS SCHEMATIC

MODEL E10880

ALLIED RADIO CORP.



AUTOMATIC TUNER, FILAMENT
- & LAMP WIRING.



POWER CHASSIS

FOR TUNER DATA, SEE INDEX

ALLIED RADIO CORP.

This receiver is designed to operate over three tuning ranges with a Horizontal Pointer movement; the broadcast band which extends from 535 to 1730 Kilocycles (KC) (173 to 560 Meters), Police and Aviation Band which extends from 1.7 to 5.6 Megacycles (MC) (53 to 176 Meters) and the International Short Wave Band which extends from 5.6 to 18.1 Megacycles (MC) (16.5 to 53 Meters). This latter range is the one which includes the four internationally assigned bands—the 19, 25, 31 and 49 meter bands.

This receiver is designed to operate from a power supply main of 110-120 volts, 60 cycle alternating current (AC). Never plug into a DC outlet.

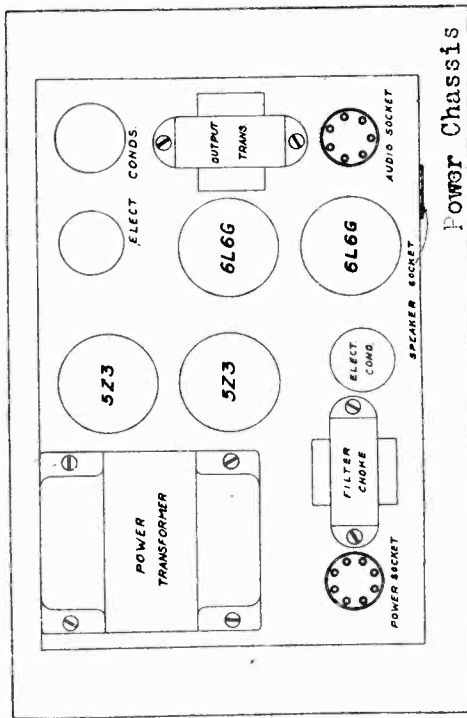
FLOATING CHASSIS (IMPORTANT) Loosen the four (4) mounting screws and two (2) hook bolts that secure the chassis to the cabinet and remove the two (2) wooden strips that are underneath the chassis. This allows the chassis to float and rest on the rubber pads used for this purpose. After the strips have been removed, adjust the chassis in the cabinet so that the dial will be in the center of the front escutcheon plate. Do not retighten the mounting screws. NOTE: Save the mounting screws and wooden strips to use in case the set is realigned or moved. Otherwise damage may be done to the interior of the chassis.

Wherever possible, a good ground should be employed. Water pipes and steam or hot water radiators make a very desirable ground connection. The ground wire should be connected to the ground lead (Block). Where the above mentioned ground facilities are not available, a good outside ground may be had by sinking a metal pipe or ground rod about six feet into moist earth. An excellent bed can be prepared by digging a hole and filling with charcoal, in which the ground rod is placed. The charcoal bed surrounding the ground rod will maintain a moist condition throughout the year.

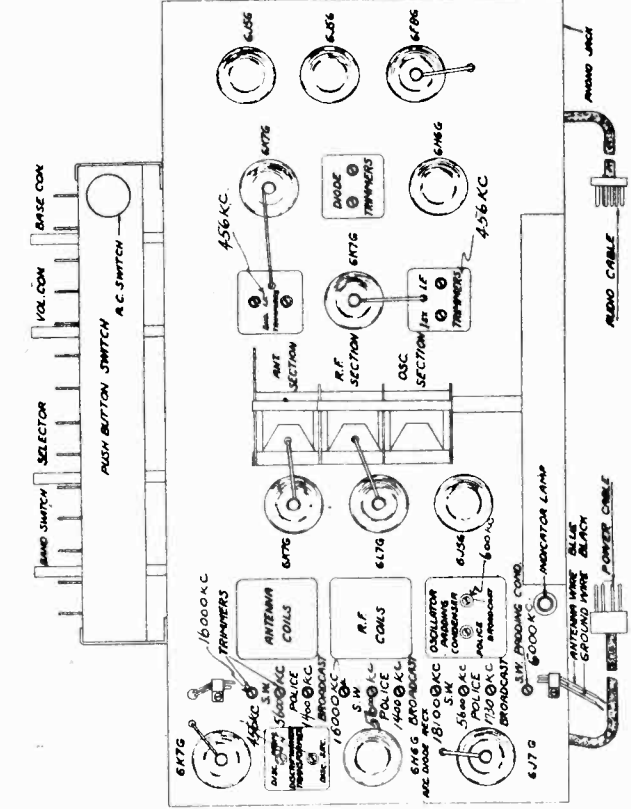
REPLACEMENT PARTS LIST

Table with multiple columns listing parts such as CARBON RESISTORS, ADJUSTABLE CONDENSERS, TRANSFORMERS AND COILS, MISC. CONDENSERS, MICA CONDENSERS, CARBON RESISTORS, PAPER CONDENSERS, and ELECTROLYTIC CONDENSERS.

CONVENTIONAL ALIGNMENT --SEE SPECIAL SECT. VOL. VIII



CHASSIS LAYOUT DIAGRAMS



MODEL E10850
MODEL E10880

ALLIED RADIO CORP
ELECTRIC TUNER

MODELS E10850 and E10880

It is very important to read the following instructions carefully before attempting to adjust the electric tuner.
The electric tuner is made up of three integral units:

PUSH BUTTON SWITCH: The push button switch consists of eight (8) brown push buttons flanked on either side by three (3) white push buttons.

SELECTOR MECHANISM: The selector mechanism is made up of the selector plate, eight (8) thumb screws, and the adjustment light bulb.

ELECTRIC MOTOR: The power for this tuner is provided by a small, efficient electric motor, of the brushless variety. It is fitted with an automatic clutch. The bearings and the oil retainer hold sufficient oil to lubricate the motor for a lifetime.

SETTING UP STATIONS

The first step to take in adjusting the electric push button tuner device incorporated into this receiver is to choose eight (8) of the most powerful local stations, stations which are free from excess fading. Turn on the receiver (broadcast band) and press in the dial tuning button; tune in the station of the **lowest frequency**, using the station selector knob. Now hold the dial tuning button in and press in button number one (1). (See Figure 1). Both buttons are now locked into place; a small pilot lamp located at the rear of the chassis will light up unless the thumb screw at the rear accidentally happens to be correctly set. Loosen thumb screw number one (See Figure 2 for order of thumb screws) enough to allow it to slide freely back and forth until the light goes out. Now tighten the thumb screw; the adjustment for the first station is now complete. Out of the station call letter sheet supplied remove the proper station call disc and insert into the recess of button number one. Push one of the clear celluloid discs into the recess also, over the station call disc. Now release button number one by pressing the dial tuning button in as far as it will go.

With the white button still in, tune in the station of the next highest frequency and holding the white button, press in button number two. Both buttons are now locked into place. Loosen thumb screw number two (see Figure 2) and slide back and forth until a point is reached at which the pilot lamp in the rear goes out; tighten the thumb screw. Insert the proper station call disc and celluloid disc into the window of button number two.

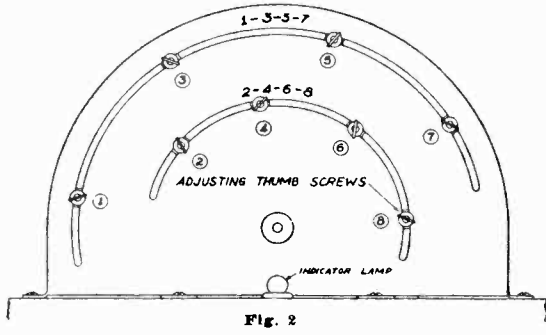
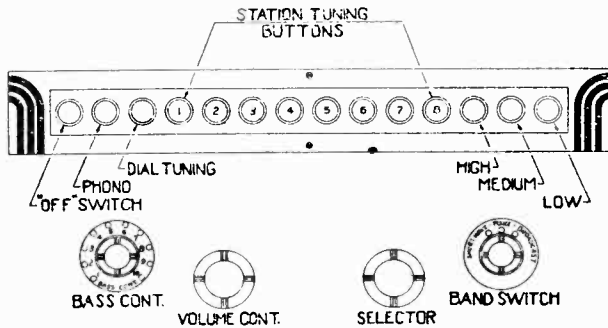
Follow this same procedure for the remaining stations, always choosing the station with the next highest frequency. After all eight (8) stations have been adjusted, check each adjustment by tuning in each station. Note: In the window above the white button, insert the word "OFF" found in the call letter sheet.

NOTE: In the recesses of the white push buttons insert the words found in the call letter sheet as shown in Figure 1.

HOW TO TUNE IN STATIONS USING THE ELECTRIC PUSH BUTTON TUNER

In order to operate the receiver satisfactorily—using the electric push button tuner, the dial tuning button must be in released position, that is, all the way out. To tune in a station, merely press the selector button which designates the station desired. Note: Should the station fail to come in clearly, check the adjustment by following the adjustment procedure described in the paragraph above.

To change from electric tuning to manual selecting, simply press in the dial tuning button. When the dial tuning button is in, the set may be tuned as a conventional receiver.



PARTS LIST FOR MODEL E10850

RESISTORS		
R 1—P140	500 Ohm	¼ Watt
R 2—P1950	350 Ohm	¼ Watt 10%
R 3—P139	250,000 Ohm	¼ Watt
R 4—P481	3,000 Ohm	¼ Watt
R 5—P673	10,000 Ohm	½ Watt
R 6—P417	50,000 Ohm	¼ Watt
R 7—P137	500,000 Ohm	¼ Watt
R 9—P137	1,000,000 Ohm	¼ Watt
R11—P2731	25,000 Ohm	1 Watt
R12—P278	600 Ohm	¼ Watt
R13—P1950	350 Ohm	¼ Watt
R14—P417	50,000 Ohm	¼ Watt
R15—P139	250,000 Ohm	¼ Watt
R16—P1220	200,000 Ohm	¼ Watt
R17—P166	25,000 Ohm	¼ Watt
R18—P376	750 Ohm	¼ Watt
R19—P258	15,000 Ohm	¼ Watt
R20—P166	25,000 Ohm	¼ Watt
R21—P2732	220 Ohm	2 Watt
R22—P167	10,000 Ohm	¼ Watt
R23—P139	250,000 Ohm	¼ Watt
R24	Volume Control—	2,000,000 Ohms

TRANSFORMERS AND COILS

P2710	Power Transformer
P1930	1st I.F. Transformer
P2704	2nd I.F. Transformer
P2711	3rd I.F. Transformer
G5794	Oscillator Coil Assembly
G5310	Police and Short Wave Antenna Coil
G5347	Broadcast Antenna Coil

R25	Bass Control—	1,000,000 Ohms
R26—P1217	60,000 Ohm	¼ Watt
R27—P167	10,000 Ohm	¼ Watt
R28—P165	25,000 Ohm	¼ Watt
R29	Speaker Field—	600 Ohm

PAPER CONDENSERS

C 1—P148	.05 Mfd.	200 V.
C 2	Police Band Padder—	(.0008—.0016 Mfd.)
C 4	Broadcast Band Padder—	(.003—.0006 Mfd.)
C 6—P1322	.005 Mfd.	600 V.
C 8—P276	.1 Mfd.	400 V.
C 9—P148	.05 Mfd.	200 V.
C11—P142	.1 Mfd.	200 V.
C14—P334	.05 Mfd.	400 V.
C15—P334	.05 Mfd.	400 V.
C19—P334	.05 Mfd.	400 V.
C20—P1322	.005 Mfd.	600 V.
C22—P148	.05 Mfd.	200 V.

MISCELLANEOUS

P1928	Tube Socket
P1153	5Z3 Socket
P945	Speaker Socket
P2705	Volume Control
P2706	Bass Control
G5788	Band Switch and Lead Assembly
P929	A.C. Line Cord
P1455	Tube Shield
P1456	Tube Shield Base
P2716	12" Dynamic Speaker

C23—P1322	.005 Mfd.	600 V.
C24—P1322	.005 Mfd.	600 V.
C25—P276	.1 Mfd.	400 V.
C26—P276	.1 Mfd.	400 V.
C28—P148	.05 Mfd.	200 V.

MICA CONDENSERS

C 3—P1683	.004 Mfd.
C 7—P480	.0001 Mfd.
C12—P480	.0001 Mfd.
C13—P480	.0001 Mfd.
C21—P1382	.00025 Mfd.
C27—P480	.0001 Mfd.

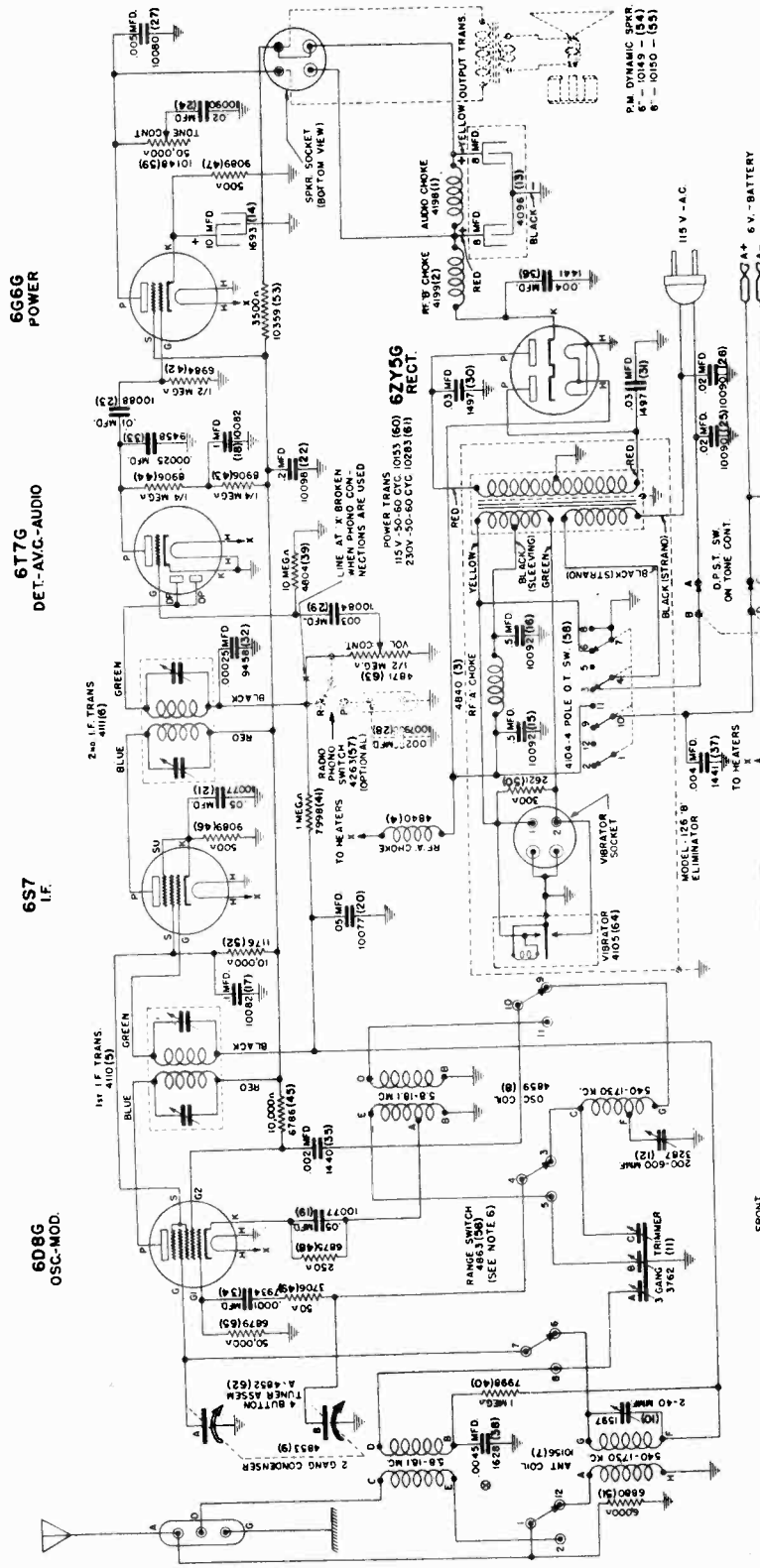
ELECTROLYTIC CONDENSERS

C16 } P1939	Dual Electrolytic
C17 }	
C18—P1937	Electrolytic

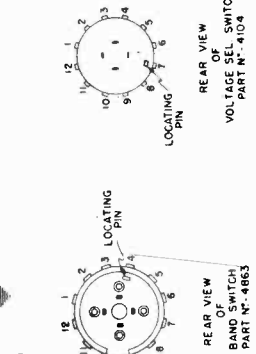
ADJUSTABLE CONDENSERS

P1918A	Variable Condenser
P2743	Gang Trimmer Strip
P1682	Oscillator Padder Condensers
P2694	Push Button Switch
P1503	Pilot Light Socket
P1504	Pilot Light Bulb
P2690	Electric Motor
P2689	Rubber Drive Belt
P2688	Dial Scale
P2644	Dial Pointer
G5462	Lower Segment Adjustment Bracket and Contact
G5463	Upper Segment Adjustment Bracket and Contact

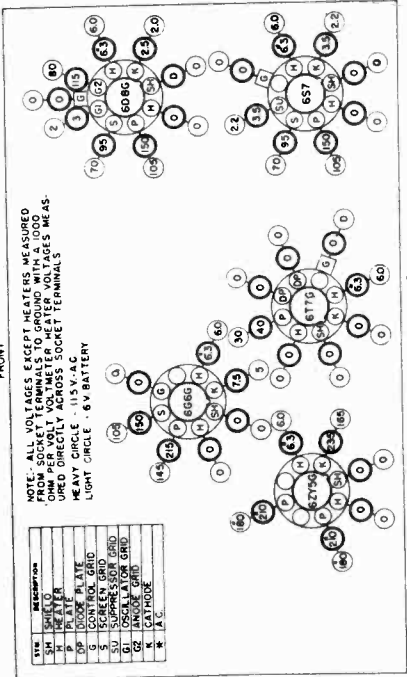
ALLIED RADIO CORP



- NOTES:**
1. ALL VOLTAGES EXCEPT MEASUREMENTS ON PER VOLT VOLTMETER HEATER VOLTAGES MEASURED DIRECTLY ACROSS SOCKET TERMINALS.
 2. NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.
 3. NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.
 4. INDICATES CHART TOLERANCE ± 1%.
 5. RADIO SWITCHES ARE EQUIPPED WITH PHONO-RADIO SWITCH AND JACK. DOTTED LINES SHOW CONNECTIONS.
 6. BAND IN CLOCKWISE POSITION VIEWED FROM REAR WHEN ADJUSTED FROM FRONT OR KNOB END OF SWITCH-SELECTOR SWITCH 4104 (15).
 7. VIEWED FROM REAR SHOWN IN CLOCKWISE POSITION WHEN ADJUSTED FROM FRONT OR KNOB END OF SWITCH.



FOR ALIGNMENT SEE INDEX



VOLTAGE TABLE (BOTTOM VIEW OF CHASSIS)

FOR OTHER DATA, SEE INDEX

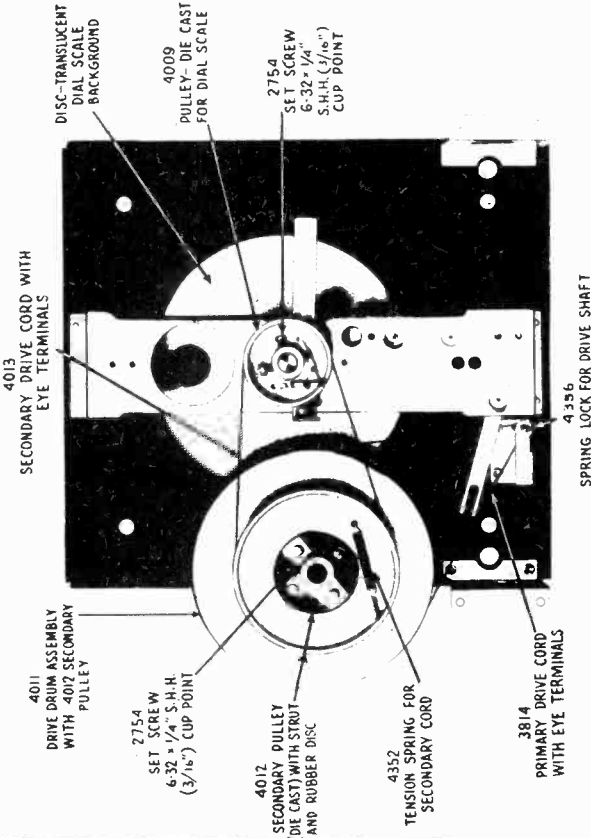
PART N° 144-X

MODELS B10565, -6, -7, -8
 MODELS B10572, -35, -86
 MODELS B10590, -1, -2, -3, -5, -6
 MODELS B10600, -1, -2, -3, -4, -5

ALLIED RADIO CORP.

SERVICE NOTES for "AUTOMATIC-TUNE" WHEEL DIAL

DIAL MECHANISM



WHEN INSTALLING PART No. 4000 GLASS ASSEMBLY WITH No. 4005 SHAFT ATTACHED carefully follow procedure in order given:

- Insert No. 4005 shaft into main bushing attached to the cadmium plated bracket on back of dial face.
- Place steel spacer washer and brass tension spring in order named over end of No. 4005 shaft.
- Place the small die cast primary pulley No. 4009 on shaft—do not tighten No. 2754 set screws.
- Loosen the two set screws in brass spacer collar on the No. 4005 shaft.
- Adjust brass spacer collar—by sliding collar on shaft—so that there will be approximately 1/8" clearance between the bottom of metal tab holder and the face plate. Firmly retighten brass collar and No. 2754 die cast pulley set screws. Failure to provide proper clearance will result in scratches on dial face and the dial mechanism will not operate freely.

TO INSTALL No. 3814 PRIMARY DRIVE CORD:

- Looking at back of dial, wrap dial cord twice around No. 4355 drive shaft in CLOCKWISE direction.
 - Hook No. 3462 tension spring into loops at end of dial cord.
- NEVER LOOSEN THE FOUR SCREWS THAT HOLD THE CADMIUM PLATED BRACKET TO DIAL FACE—OTHERWISE THE MAIN BUSHING WILL BE THROWN OUT OF CENTER.

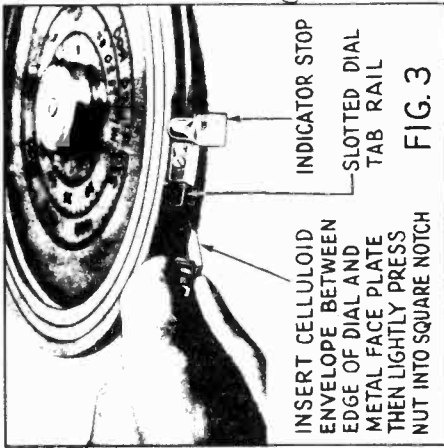


FIG. 3

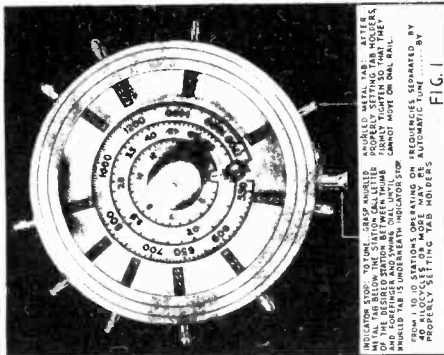


FIG. 1

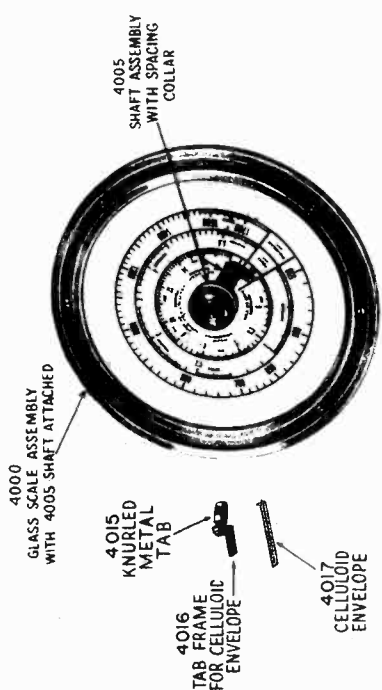
- INSERT CELLULOID ENVELOPE INTO A NUT TAB FRAME BY:
 - Hold curved end of celluloid envelope towards metal knurled tab holder and insert celluloid into metal frame.
 - Gently push celluloid inward until curved end of envelope touches edge of celluloid envelope tab frame.
 - Arrange tabs in numerical order according to station frequency.
- SET THE METAL TAB HOLDERS ON DIAL BY: (See Fig. 3)
 - Set the first metal tab holder for the station that broadcasts the lowest frequency. Push the indicator stop on the dial to the next station tab for the selected station operating on the next lowest frequency, continuing on in this way until a tab has been set for all of the selected stations.
 - Carefully tune in the station which broadcasts on the lowest frequency—least number of kilocycles.
 - Insert celluloid envelope between edge of dial holder and metal knurled tab holder. Lightly press nut end of knurled tab into square notch in slotted dial rail—then slide tab holder along rail until the knurled tab is underneath the indicator stop on the dial at which point station call letter strip will appear directly below the indicator line on the face of the dial.
 - Tighten tab holder as much as possible by turning dial by turning knurled tab to the right—then swing dial so knurled tab is away from indicator stop on the dial and firmly tighten so that it cannot move on the dial rail. DO NOT USE PLIERS TO TIGHTEN.

REPLACING No. 4000 DIAL GLASS SCALE ASSEMBLY

As it requires special tools to properly set, part No. 4005 shaft assembly on part No. 4000 glass scale—we will ship all orders for No. 4000 glass scales with the No. 4005 shaft assembled on the glass scale.

ALLIED RADIO CORP.

"Automatic Tune" Wheel Dial



COMPLETE WHEEL DIAL ASSEMBLY LESS ESCUTCHEON

Part No.	Description	Unit Price
205	Dial Assembly Used With Model 1 Complete Assembly Less Escutcheon	\$12.75
206	Dial Assembly Used With Model 2 Complete Assembly Less Escutcheon	12.75
207	Dial Assembly Used With Model 2 & 3 Complete Assembly Less Escutcheon	12.75
201	Dial Assembly Used With Model 4 Complete Assembly Less Escutcheon	12.75
204	Dial Assembly Used With Model 4 Complete Assembly Less Escutcheon	12.25

MISCELLANEOUS PARTS USED IN ABOVE ASSEMBLIES

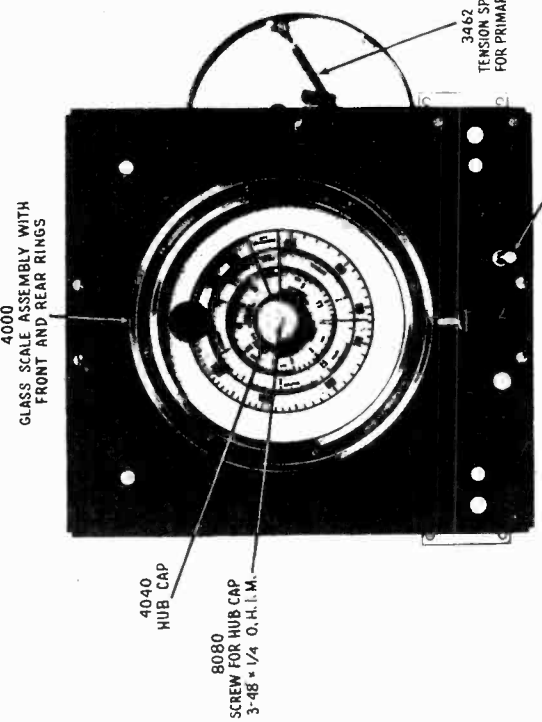
Part No.	Description	Unit Price
4016	Celluloid Envelope	.05
3814	Cord Station Call Letter Cover	.15
4013	Cord Primary Drive Cord	.15
3985	Band Indicator Assem. For Model 1 & 4	.75
3982	Band Indicator Assem. For Model 2 & 3	.75
4011	Drive Drum Assem. with 4012 Secondary Pulley and Rubber Disc Coupler	1.25
4355	Drive Shaft	.12
4027	Disc Translucent Dial Scale Background for Model 1	.50
3984	Disc Translucent Dial Scale Background for Model 2 & 3	.55
4024	Disc Translucent Dial Scale Background for Model 2	.55
4029	Disc Translucent Dial Scale Background for Model 1 & 4	.50
3771	Escutcheon For Cabinet—All Models	1.00
4017	Frame Metal Holder for Celluloid Envelope	.05
4040	Hub Cap	.15
4015	Knurled Tab	.05
4009	Pulley Dial Scale Drive (Die Cast)	.45
4000	Scale Calibrated Glass Scale With 4005 Shaft Assem.	2.75
8071	Screw For Hub Cap 3-48 x 1/4" O.H.I.M.	.005
2754	Screw For Pulley 6-32 x 1/4" S.H.H. Cup Point	.01
4356	Spring Lock For Drive Shaft	.01 net
4352	Spring Tension For Secondary Cord	.07
3462	Spring Tension For Primary Cord	.07

Prices are subject to change without notice.

TO INSTALL No. 4013 SECONDARY DRIVE CORD:

The dial mechanism picture shows and refers to eye terminals on drive cord—these were used in early production. Loops made by knots in the cords are now used to attach cord to lugs in the No. 4009 die cast pulley and to the No. 4352 & 3462 tension springs.

- (a) Looking at the front of the dial rotate dial scale COUNTER-CLOCKWISE until dial stop is reached.
- (b) Loosen the two No. 2754 set screws in small die cast pulley No. 4009.
- (c) Looking at front of dial turn the small die cast pulley so that the cut out in pulley will be towards the left and approximately in line with the upper edge of the dial light bracket. This bracket which is only used in six volt battery and 110 volt AC models is shown mounted on the cadmium plated dial face plate bracket in dial mechanism picture.
- (d) Hook No. 4352 tension spring in dial cord loop.
- (e) Turn No. 4011 drum so that the hole in the No. 4012 large die cast pulley—through which the secondary drive cord is pulled—is towards the top of face plate. This will bring the hole approximately in line with the left hand edge (looking at back of dial) of face plate.



(f) Take long end of No. 4013 secondary drive cord—measured from knot at spring to end of cord—then looking at the front of dial, wrap cord one complete turn CLOCKWISE around the No. 4009 small die cast pulley. The other end of the cord (short end) is placed on bottom half of secondary and primary die cast pulleys.

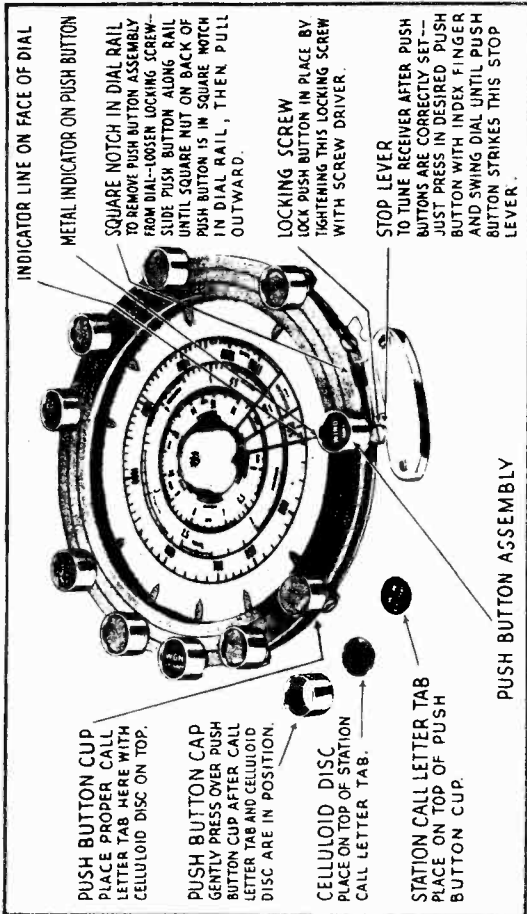
(g) Firmly tighten No. 2754 set screws in small die cast pulley.

NOTE *****
 FOR #1, MODEL NUMBERS ARE B10600, -1, -2, -3, -4, -5
 " #2, " " " B10572, -85, -86
 " #3, " " " B10565, -6, -7, -8
 " #4, " " " B10590, -1, -2, -3, -5, -6

MODEL Push Button Dial

ALLIED RADIO CORP.

SERVICE NOTES for PUSH BUTTON DIAL



PARTS LIST

COMPLETE PUSH BUTTON DIAL ASSEMBLY LESS ESCUTCHEON

Part No.	Description	Quantity	List Price
211	Dial Assembly Used With Model 1 Complete Assembly Less Escutcheon	1	\$12.75
212	Dial Assembly Used With Model 1 2 Complete Assembly Less Escutcheon	1	12.75
208	Dial Assembly Used With Model 2 Complete Assembly Less Escutcheon	2	12.75
209	Dial Assembly Used With Model 2 & 3 Complete Assembly Less Escutcheon	2 & 3	12.75
210	Dial Assembly Used With Model 4 3 Complete Assembly Less Escutcheon	3	12.25

SEE NOTE BELOW

MISCELLANEOUS PARTS USED IN ABOVE ASSEMBLIES

4047	Cap	1	.15
4046	Celluloid Disc	1	.05
3814	Card	1	.15
4013	Card	1	.15
4041	Cup Assembly	1	.15
3995	Band Indicator Assem. For Model 1 & 4	1	.75
3992	Band Indicator Assem. For Model 2 & 3	1	.75
4011	Drive Drum Assem. with 4012 Secondary Pulley and Rubber Disc Coupler	1	1.25
4355	Drive Shaft	1	.12
4027	Disc	1	.50
3984	Disc	1	.55
4024	Disc	1	.55
4029	Disc	1	.50
3771	Escutcheon	1	1.00
4040	Hub Cap	1	.15
4009	Pulley	1	.10
4089	Plate	1	2.75
4000	Scale	1	.005
8071	Screw	1	.01
2754	Screw	1	.10
4037	Slide Stop	1	.01 net
4356	Spring Lock	1	.07
4352	Spring Tension	1	.07
3462	Spring Tension	1	.07

Prices are subject to change without notice.

When ordering parts be sure to mention part number and order all parts from:

NOTE: *****

FOR #1, MODEL NUMBERS ARE B10600, -1, -2, -3, -4, -5
 " #2, " " " B10572, -86, -85
 " #3, " " " B10565, -6, -7, -8
 " #4, " " " B10590, -1, -2, -3, -5, -6

FROM ONE TO TEN STATIONS OPERATING ON FREQUENCIES SEPARATED BY FORTY KILOCYCLES OR MORE MAY BE AUTOMATICALLY TUNED BY PROPERLY SETTING PUSH BUTTONS.

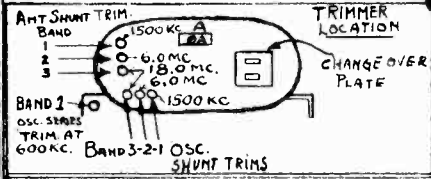
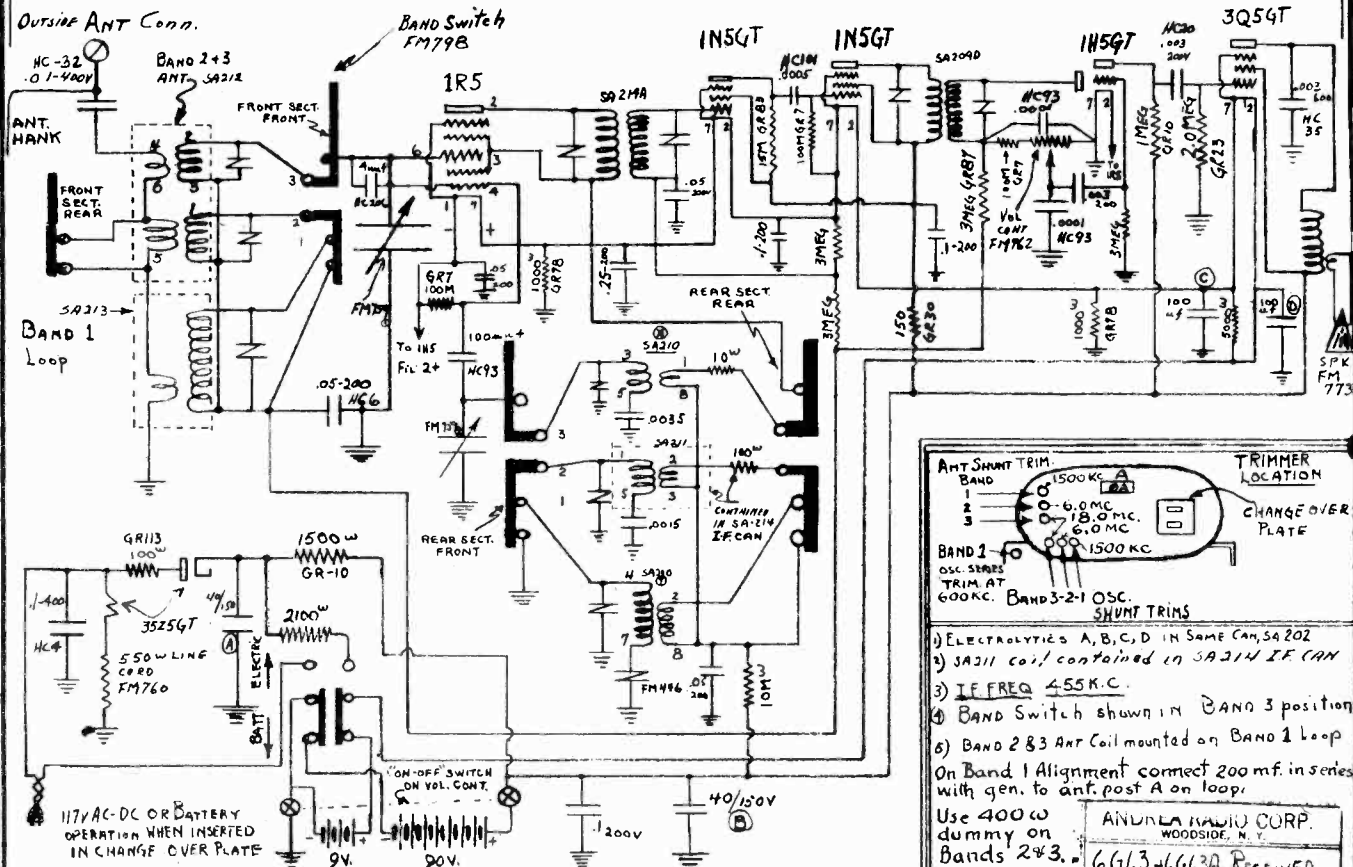
- a. Gently press desired round paper station call letter tabs out of station tab sets.
- b. Always set the first push button for the desired station that broadcasts on the lowest frequency—the least number of kilocycles—and then set the next push button for the station continuing on in this manner until a Push Button has been set for all of the desired stations.
- c. Loosen Push Button locking screw and remove caps on all Push Buttons by grasping cap between fingers and gently pulling outward—then remove celluloid disc.
- d. Carefully tune in the station which broadcasts on the lowest frequency—least number of kilocycles.
- e. Slide the Push Button nearest to the low frequency end of dial to the station which broadcasts on the lowest frequency attached to Push Button is exactly given with the indicator line on the face of the dial.—then with a small screw driver firmly lock Push Button in place by tightening Push Button locking screw.
- f. Place printed paper station call letter tab, having call letters of station desired, on top of the celluloid disc—then place celluloid protective disc on top of this call letter tab.—then gently press Push Button cap firmly down over Push Button cap.
- g. Next set a Push Button for the desired station operating on the next lowest frequency in the same manner as above and continue on in this way until all the Push Buttons have been properly set.

SET STATION PUSH BUTTON BY:

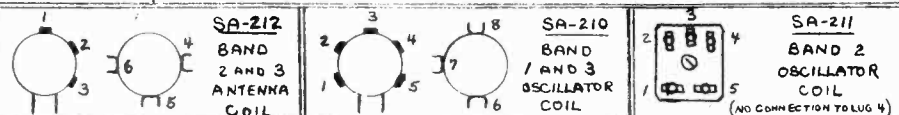
- a. IF A SIMPLE MATTER TO "AUTOMATIC TUNE" AFTER THE STATION CALL LETTER TABS HAVE BEEN PROPERLY SET—JUST PLACE INDEX FINGER INTO THE PUSH BUTTON HAVING CALL LETTERS OF THE DESIRED STATION PUSHING INWARD—THEN SWING DIAL UNTIL STATION IS TUNED IN.—THE INDICATOR LINE SHOULD BE PROPERLY TUNED IN.—THE STATION INDICATOR ATTACHED TO THE PUSH BUTTON SHOULD POINT TO THE INDICATOR LINE ON FACE OF DIAL. If reception is slightly distorted—which may be particularly noticeable when tuning knobs.
- b. WHILE A PUSH BUTTON MAY BE SET FOR DISTANT WEAK STATIONS, THE BEST RESULTS ARE OBTAINED IF THE STATIONS SELECTED FOR AUTOMATIC PUSH BUTTON TUNING ARE STRONG NEARBY OR LOCAL STATIONS.
- c. AFTER IT IS DETERMINED WHAT STATIONS YOU WISH TO "AUTOMATIC PUSH BUTTON TUNE", OBTAIN THE FREQUENCY USED AND CALL LETTERS OF THESE STATIONS AND SET PUSH BUTTONS BY:
- d. To illustrate the proper installation and setting of the Push Buttons, the receiver is shipped with a Push Button set for station WGN, Chicago, Ill.
- e. If station WGN is not one of the selected stations, remove call letters by:
 - Grasp cap section of Push Button between fingers and gently pull outward until it is clear of dial.
 - Carefully remove the station call letter tab and celluloid disc.

AFTER THE TEN PUSH BUTTONS HAVE BEEN PROPERLY SET THEY WILL NOT REQUIRE FURTHER ATTENTION—EXCEPT WHEN MOVED FROM THEIR POSITION OR WHEN AN ADDITIONAL TAB IS INCLUDED WHICH WOULD DISTURB THE POSITION OF THE OTHER TABS.

ANDREA RADIO CORP. Models 6G63, 6G63A, Ch. 6G3 Model G42, Ch. PH2



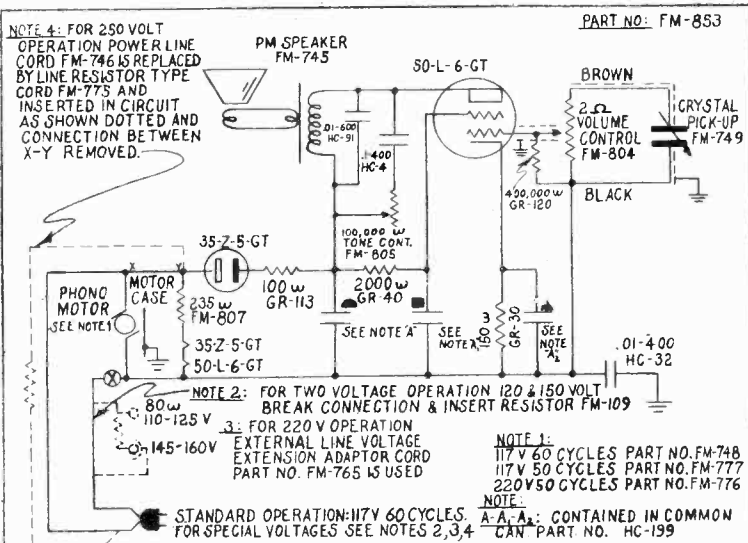
- 1) ELECTROLYTICS A, B, C, D IN SAME CAN, SA 202
 - 2) SA211 coil contained in SA210 IF CAN
 - 3) I.F. FREQ. 455 K.C.
 - 4) BAND SWITCH SHOWN IN BAND 3 POSITION
 - 5) BAND 2 283 ANT COIL MOUNTED ON BAND 1 LOOP
- On Band 1 Alignment connect 200 mf. in series with gen. to ant. post A on loop.
Use 400w dummy on Bands 2+3.



ANDREA RADIO CORP.
WOODSIDE, N. Y.

6G63+6G63A RECEIVER
MAT: 6G3 CHASSIS

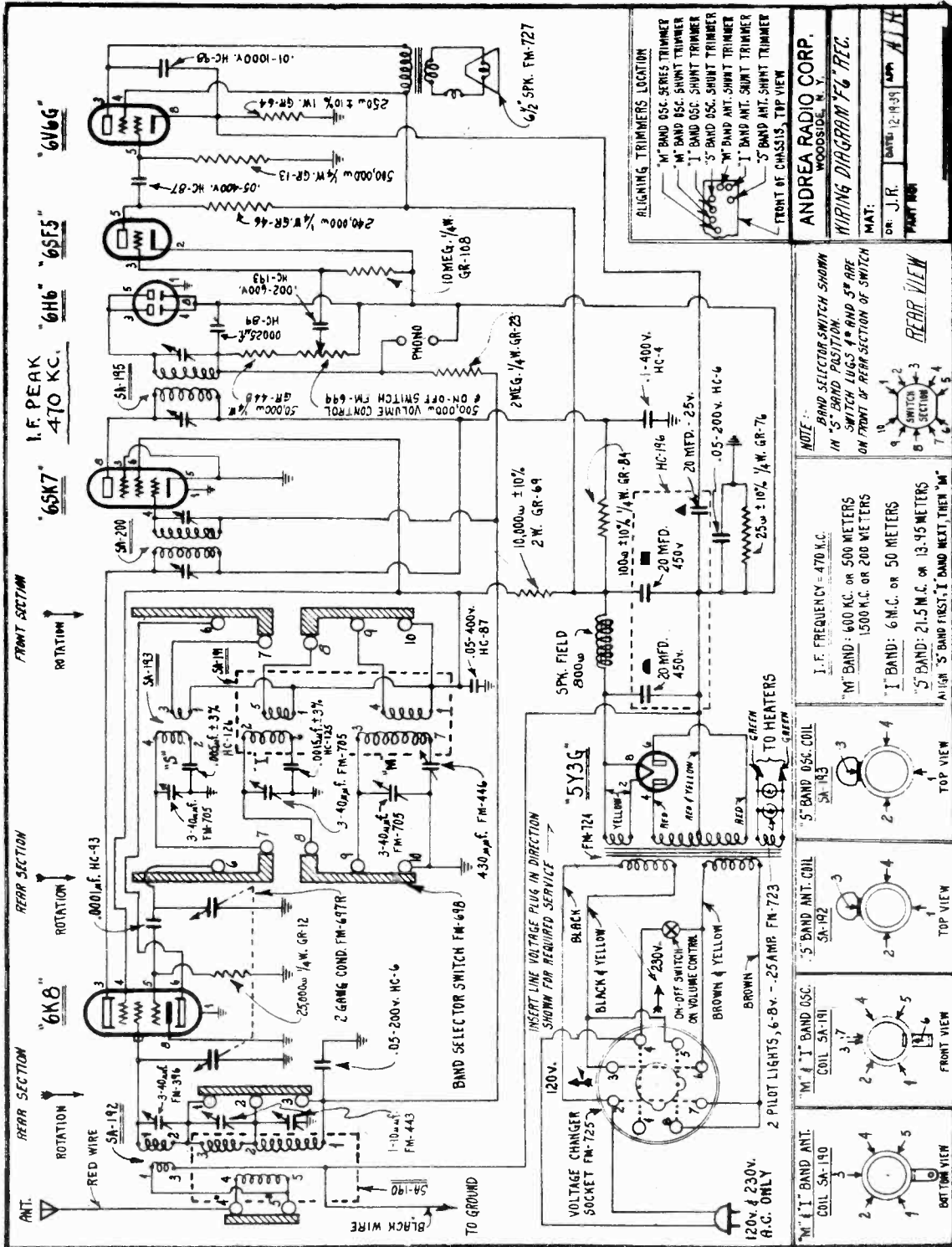
DR: DATE: 7/6/42 APP: R.L.W.
PART NO:



MODEL: G42 CHASSIS: PH2
POWER CONSUMPTION AT 117 VOLTS 60 CYCLES 40 WATTS

Model 43F6, Ch. F6

ANDREA RADIO CORP.

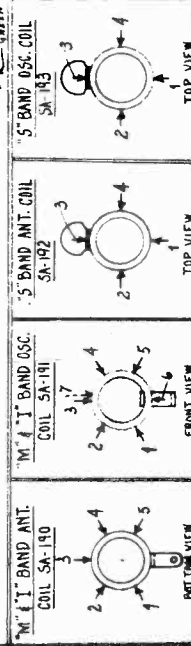


ALIGNING TRIMMERS LOCATION
 M BAND OSC. SERIES TRIMMER
 M BAND OSC. SHUNT TRIMMER
 I BAND OSC. SERIES TRIMMER
 I BAND OSC. SHUNT TRIMMER
 S BAND ANT. SHUNT TRIMMER
 S BAND ANT. SERIES TRIMMER
 S BAND ANT. SHUNT TRIMMER
 FRONT OF CHASSIS, TOP VIEW

ANDREA RADIO CORP.
 WOODSIDE, N. Y.
WIRING DIAGRAM "F6" REC.
 MAT:
 DR. J.R. DATE: 12-19-31
 PART NO.

NOTE:
 BAND SELECTOR SWITCH SHOWN
 IN "S" BAND POSITION.
 SWITCH LUGS #1 AND #2 ARE
 ON FRONT OF REAR SECTION OF SWITCH

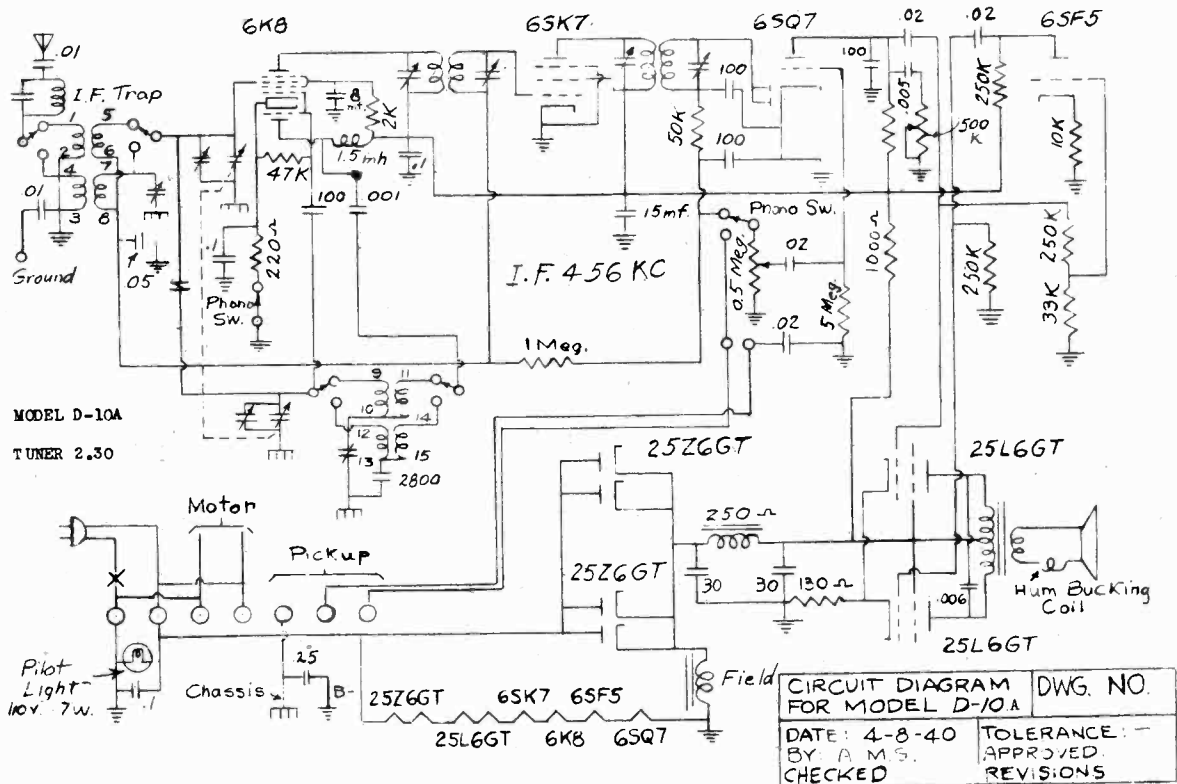
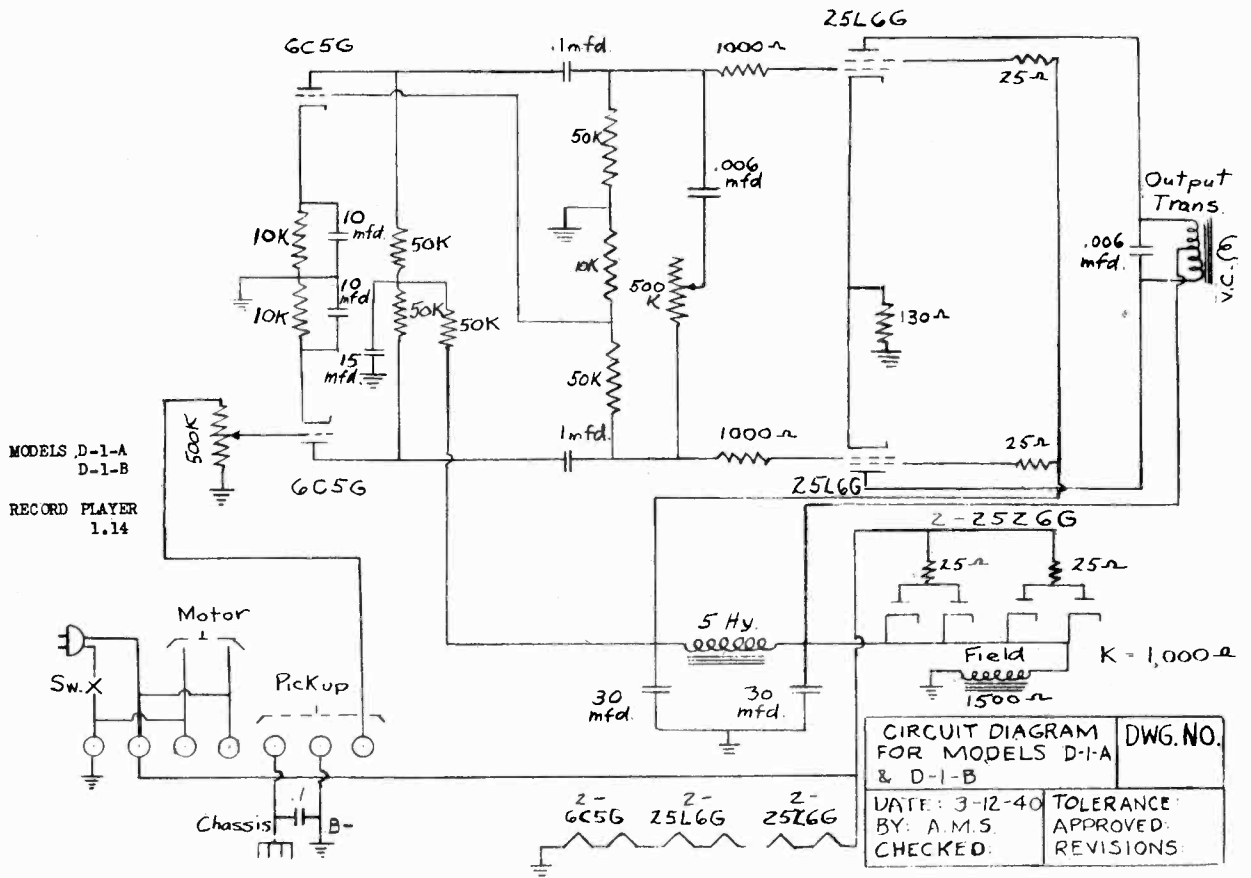
I. F. FREQUENCY = 470 K.C.
 "M" BAND: 600 KC. OR 500 METERS
 "I" BAND: 1500 K.C. OR 200 METERS
 "S" BAND: 21.5 M.C. OR 13.95 METERS
 ALIGN "S" BAND FIRST; I BAND NEXT THEN "M"



ALIGNMENT NOTE: Use 0.1 mf condenser as dummy antenna when aligning the i-f transformers; use a 400-ohm resistor for the S and I bands and a 0.00025-mf condenser for the M band.

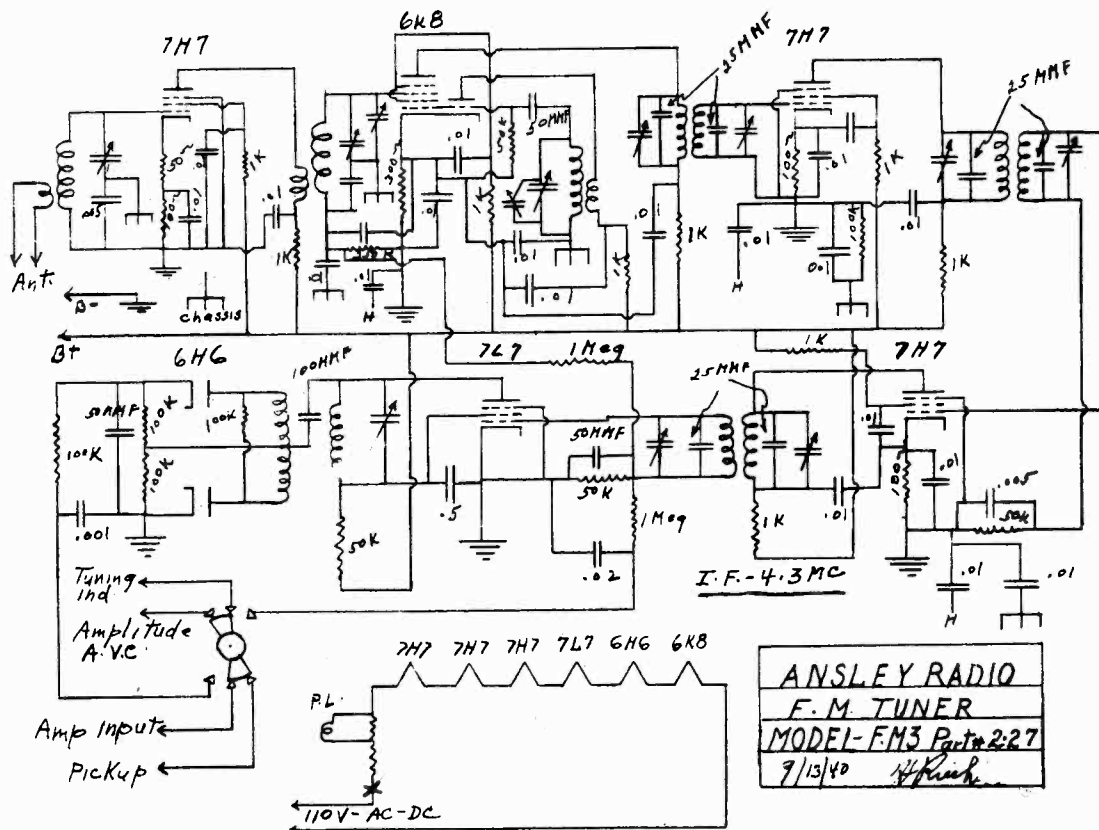
ANSLEY RADIO CORP.

MODELS D-1-A, D-1-B
MODEL D-10A



MODEL FM-3

ANSLEY RADIO CORP.

Directions for Alignment of the FM Tuner

Remove the grid lead from the 6K8 converter tube. Connect the live side of the signal generator to the grid of the 6K8 through a small mica condenser 200 to 500 mmf. Connect the ground side of the signal generator through a similar condenser to the lead that was removed from the cap of the tube. Connect a resistor of 200 to 500 ohms between the grid of the tube and the grid lead. Connect the ground or shield of the signal generator to B--. Be sure that there is no direct connection between the signal generator and an external ground or directly to the power supply line.

Using a 5,000 ohm per volt D.C. meter with a voltage range of 20 volts as a resonance indicator, connect it across the 50,000 ohm limiting resistor. Set the signal generator at 4.3 M.C. and set the attenuator for about a 5-volt reading on the voltmeter. Align the three I.F. coils for a maximum reading, the same as an amplitude set.

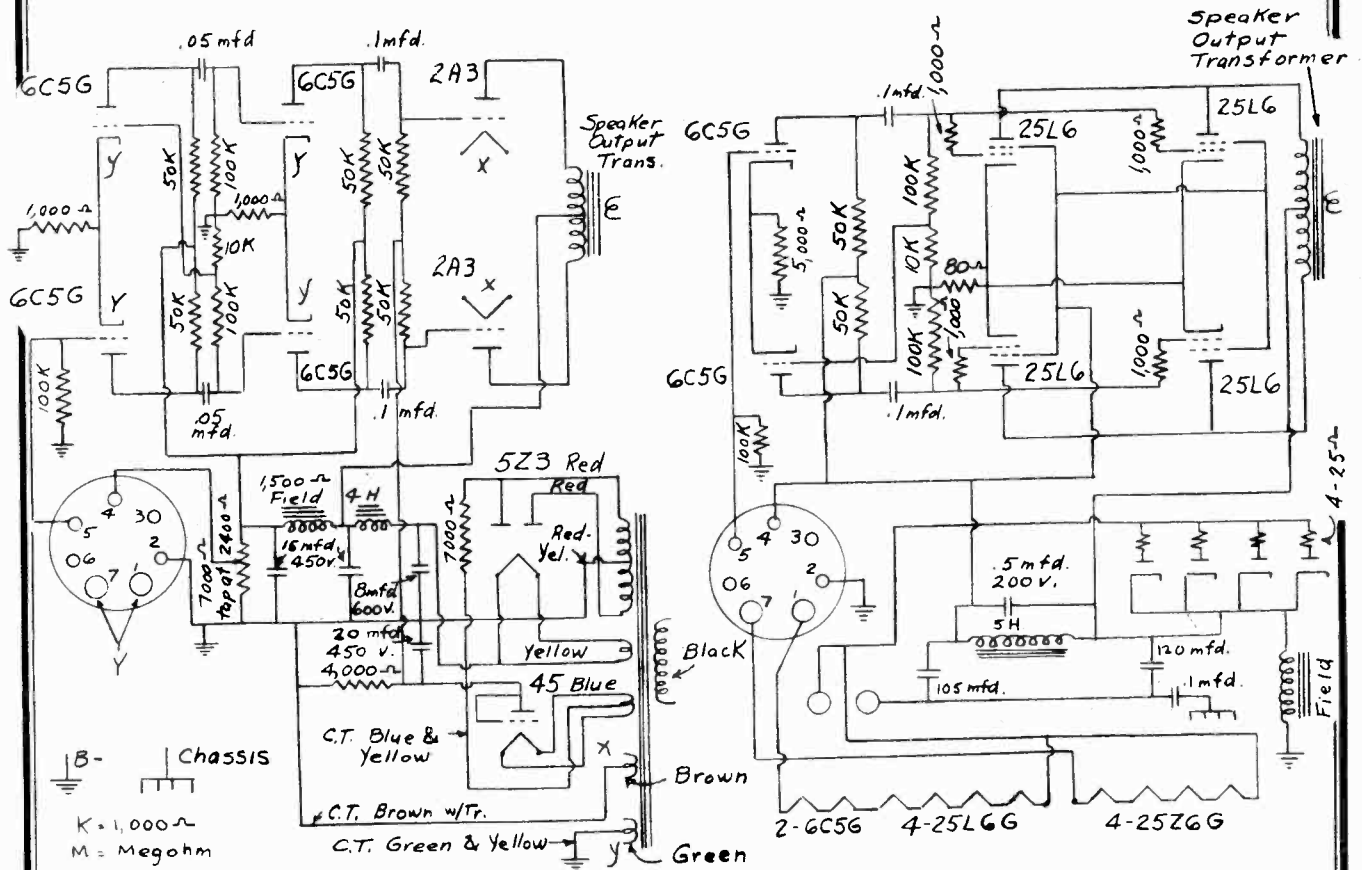
Check the shape of the resonance curve by changing the signal generator to 4.2 M.C. and 4.4 M.C. The output reading either side of resonance should be about the same.

To align the discriminator, connect the signal generator, the same as for the I.F. alignment. Set the generator at 4.3 M.C. Connect the voltmeter across the two diode load resistors. Using an insulated screw driver adjust the secondary trimmer to zero voltage. Shift the signal generator to 4.2 M.C. and 4.4 M.C. Adjust the primary trimmer so that the D.C. readings are equal and opposite in polarity.

To align the R.F. and oscillator, connect the signal generator to the two leads at the back of the chassis. With the generator set at 40 M.C. adjust the oscillator, R.F. and antenna trimmers for maximum signal with the set tuned to the low frequency end of the dial, 50 M.C. and check the frequency and the alignment.

ANSLEY RADIO CORP.

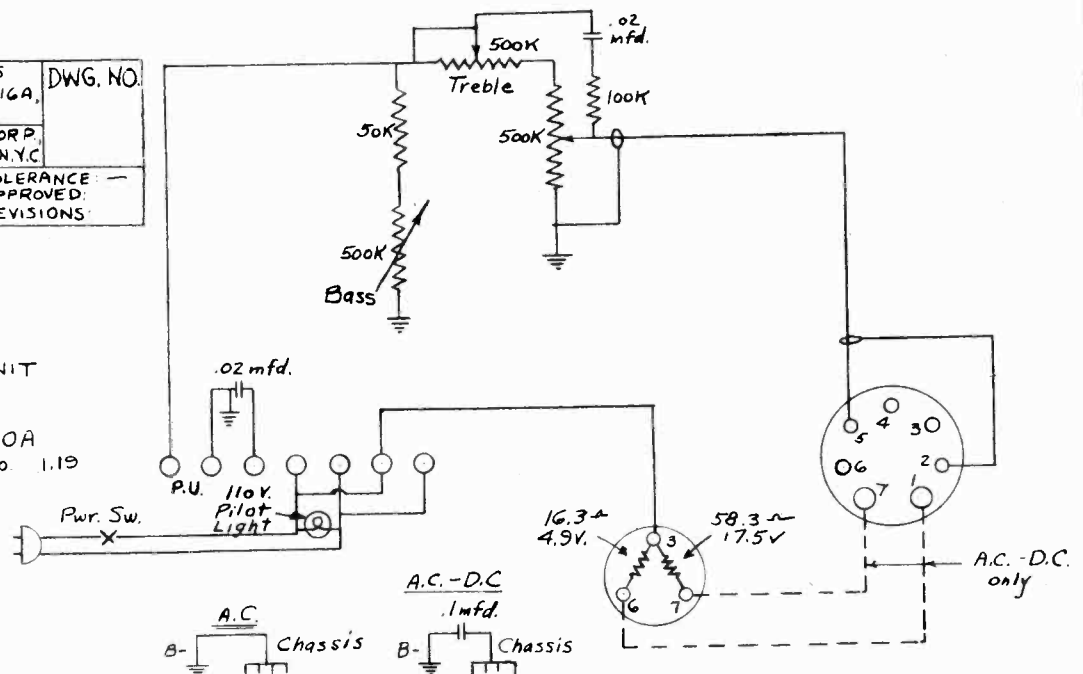
MODELS D16A
D20A



CIRCUIT DIAGRAMS FOR MODELS D-16A, AND D-20A		DWG. NO.
ANSLEY RADIO CORP. 4377 BRONX BLVD, N.Y.C.		
DATE: 2-1-40	TOLERANCE: —	
BY: A.M.S.	APPROVED:	
CHECKED:	REVISIONS:	

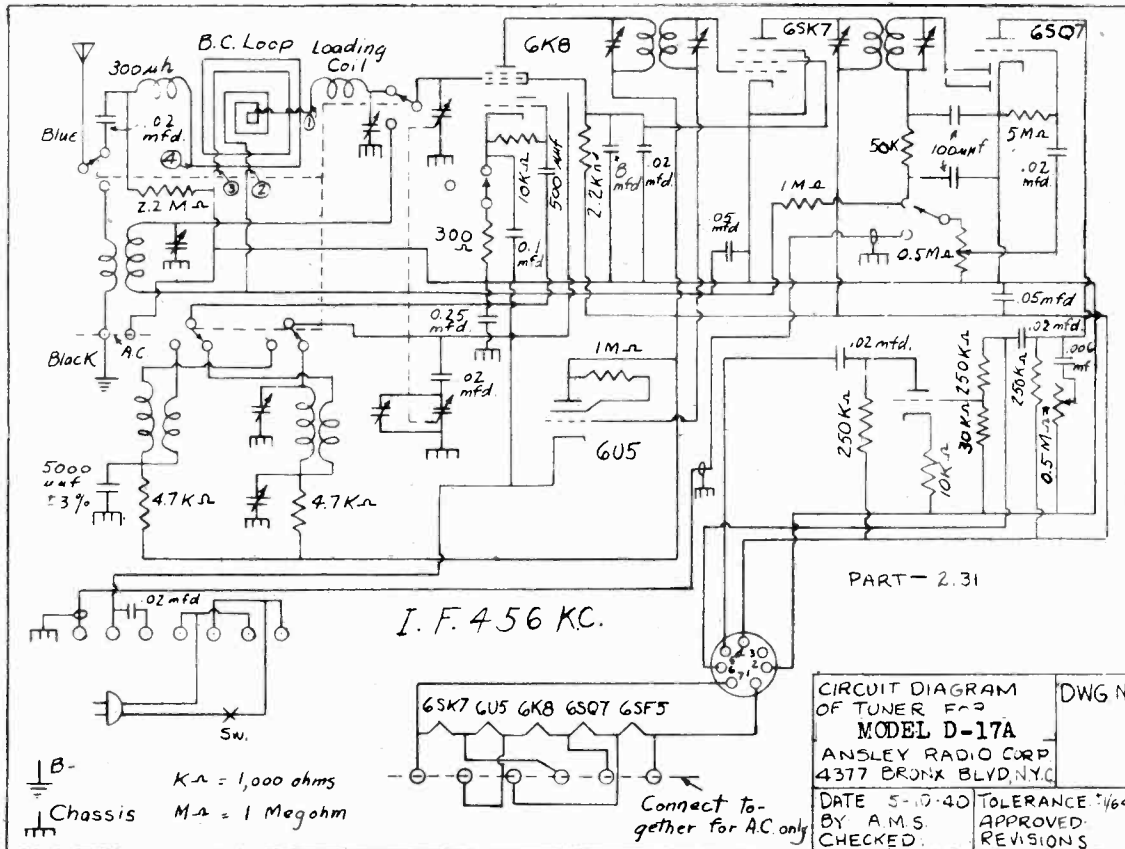
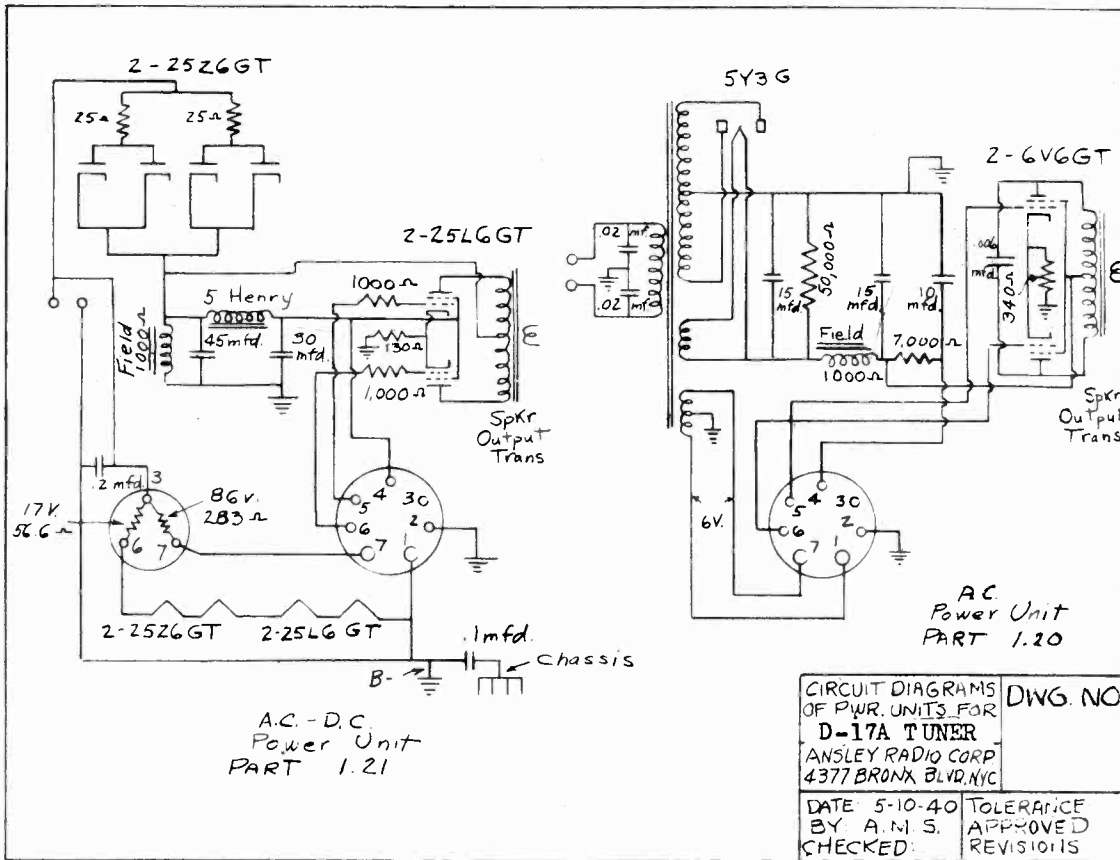
CONTROL UNIT

D-16A, D-20A
PART No. 1.19

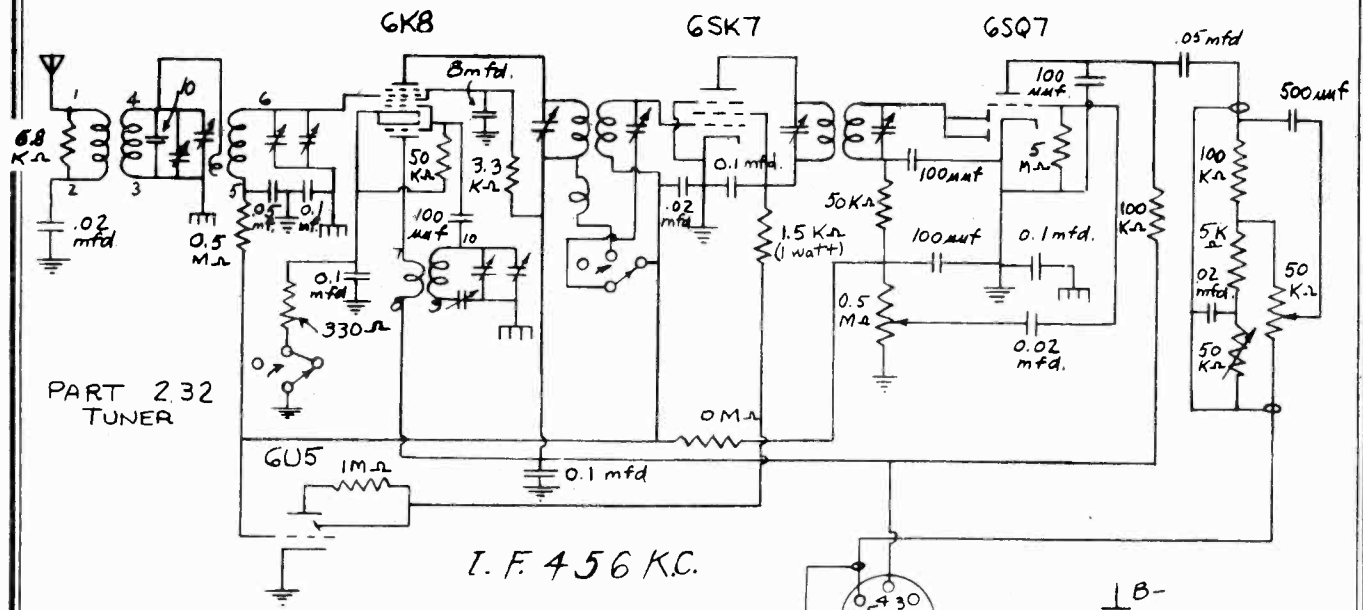


D17A (1940)

ANSLEY RADIO CORP.

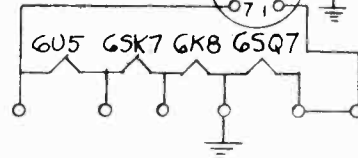


ANSLEY RADIO CORP.

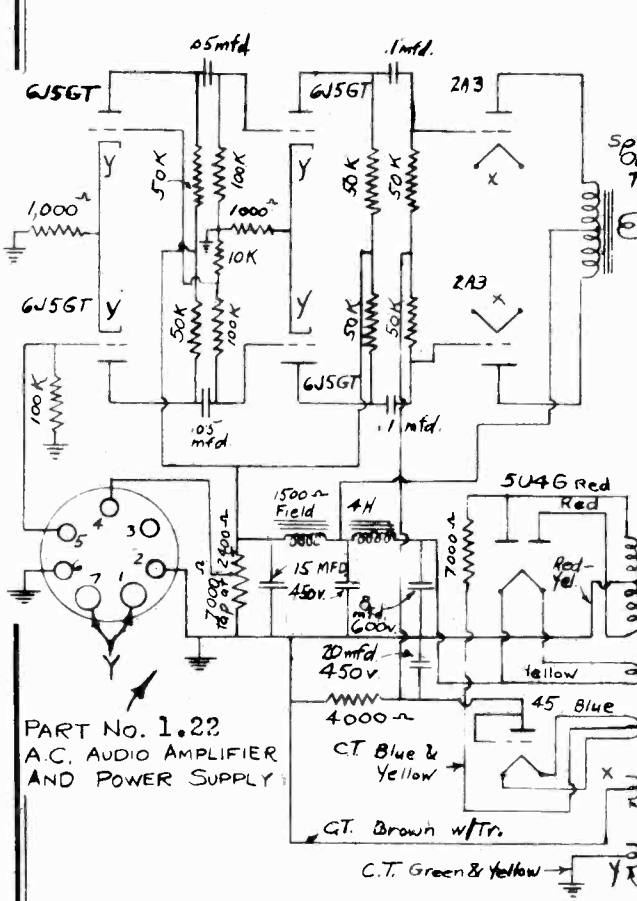


CIRCUIT DIAGRAMS FOR MODELS D-21A
 ANSLEY RADIO CORP.
 4377 BRONX BLDG. N.Y.C.
 DATE: 5-10-40
 BY: A.M.S.
 CHECKED:

DWG. NO.
 TOLERANCE APPROVED.
 REVISIONS:

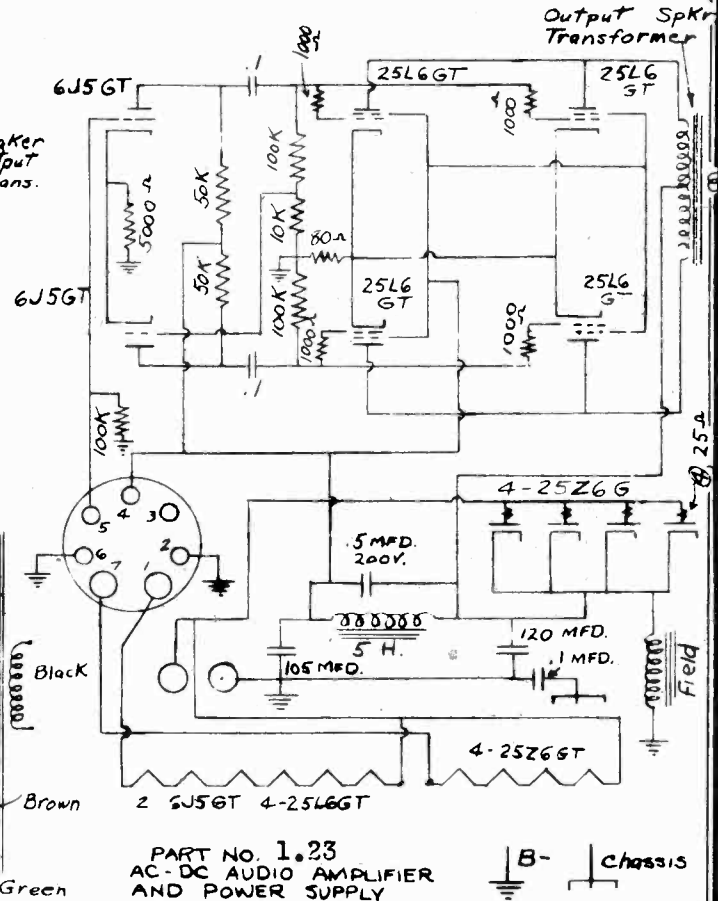


Chassis
 K Ω = 1,000 ohms
 M Ω = 1 Megohm



PART NO. 1.22
 A.C. AUDIO AMPLIFIER
 AND POWER SUPPLY

CT. Green & Yellow
 G.T. Brown w/Tr.



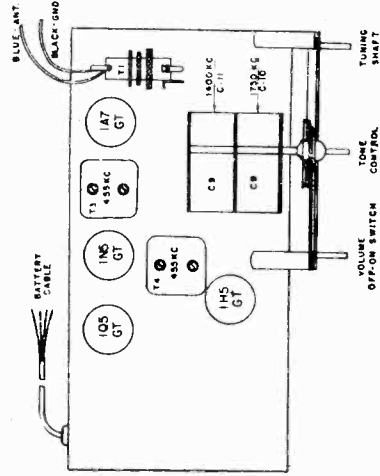
PART NO. 1.23
 AC-DC AUDIO AMPLIFIER
 AND POWER SUPPLY

Chassis

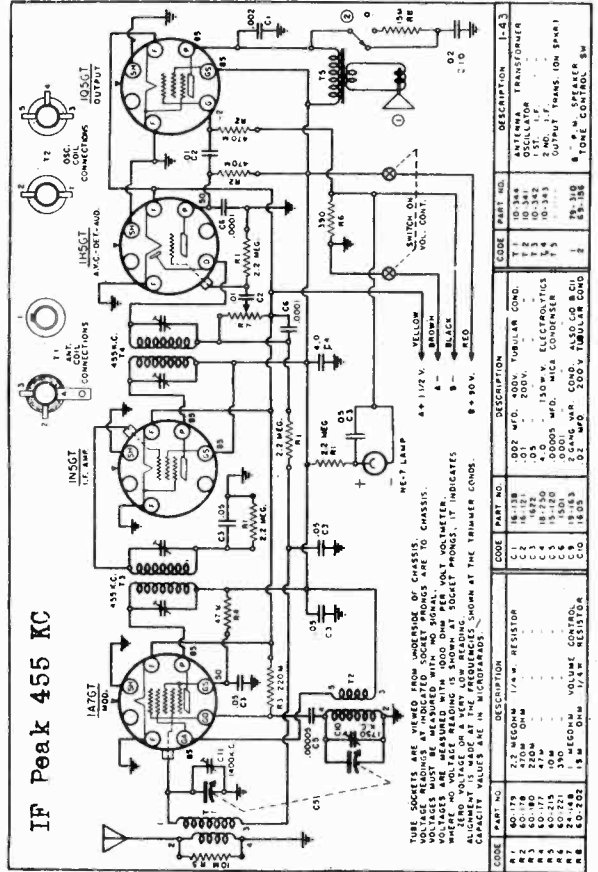
AUTOCRAT RADIO COMPANY

Models 131, 531, 533
Model 431

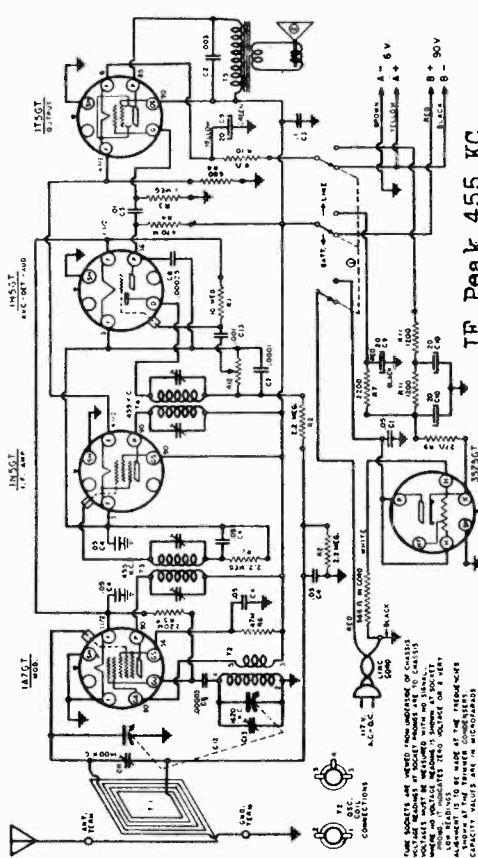
MODEL 431



MODEL 431



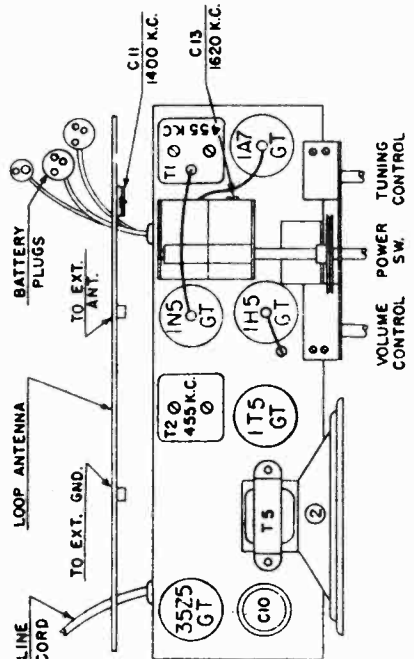
IF Peak 455 KC



IF Peak 455 KC

CODE	PART NO.	DESCRIPTION	QTY.
C1	40-131	10 MEG. RESISTOR	1
C2	40-132	10 MEG. RESISTOR	1
C3	40-133	10 MEG. RESISTOR	1
C4	40-134	10 MEG. RESISTOR	1
C5	40-135	10 MEG. RESISTOR	1
C6	40-136	10 MEG. RESISTOR	1
C7	40-137	10 MEG. RESISTOR	1
C8	40-138	10 MEG. RESISTOR	1
C9	40-139	10 MEG. RESISTOR	1
C10	40-140	10 MEG. RESISTOR	1
C11	40-141	10 MEG. RESISTOR	1
C12	40-142	10 MEG. RESISTOR	1
C13	40-143	10 MEG. RESISTOR	1
C14	40-144	10 MEG. RESISTOR	1
C15	40-145	10 MEG. RESISTOR	1
C16	40-146	10 MEG. RESISTOR	1
C17	40-147	10 MEG. RESISTOR	1
C18	40-148	10 MEG. RESISTOR	1
C19	40-149	10 MEG. RESISTOR	1
C20	40-150	10 MEG. RESISTOR	1
C21	40-151	10 MEG. RESISTOR	1
C22	40-152	10 MEG. RESISTOR	1
C23	40-153	10 MEG. RESISTOR	1
C24	40-154	10 MEG. RESISTOR	1
C25	40-155	10 MEG. RESISTOR	1
C26	40-156	10 MEG. RESISTOR	1
C27	40-157	10 MEG. RESISTOR	1
C28	40-158	10 MEG. RESISTOR	1
C29	40-159	10 MEG. RESISTOR	1
C30	40-160	10 MEG. RESISTOR	1
C31	40-161	10 MEG. RESISTOR	1
C32	40-162	10 MEG. RESISTOR	1
C33	40-163	10 MEG. RESISTOR	1
C34	40-164	10 MEG. RESISTOR	1
C35	40-165	10 MEG. RESISTOR	1
C36	40-166	10 MEG. RESISTOR	1
C37	40-167	10 MEG. RESISTOR	1
C38	40-168	10 MEG. RESISTOR	1
C39	40-169	10 MEG. RESISTOR	1
C40	40-170	10 MEG. RESISTOR	1
C41	40-171	10 MEG. RESISTOR	1
C42	40-172	10 MEG. RESISTOR	1
C43	40-173	10 MEG. RESISTOR	1
C44	40-174	10 MEG. RESISTOR	1
C45	40-175	10 MEG. RESISTOR	1
C46	40-176	10 MEG. RESISTOR	1
C47	40-177	10 MEG. RESISTOR	1
C48	40-178	10 MEG. RESISTOR	1
C49	40-179	10 MEG. RESISTOR	1
C50	40-180	10 MEG. RESISTOR	1
C51	40-181	10 MEG. RESISTOR	1
C52	40-182	10 MEG. RESISTOR	1
C53	40-183	10 MEG. RESISTOR	1
C54	40-184	10 MEG. RESISTOR	1
C55	40-185	10 MEG. RESISTOR	1
C56	40-186	10 MEG. RESISTOR	1
C57	40-187	10 MEG. RESISTOR	1
C58	40-188	10 MEG. RESISTOR	1
C59	40-189	10 MEG. RESISTOR	1
C60	40-190	10 MEG. RESISTOR	1
C61	40-191	10 MEG. RESISTOR	1
C62	40-192	10 MEG. RESISTOR	1
C63	40-193	10 MEG. RESISTOR	1
C64	40-194	10 MEG. RESISTOR	1
C65	40-195	10 MEG. RESISTOR	1
C66	40-196	10 MEG. RESISTOR	1
C67	40-197	10 MEG. RESISTOR	1
C68	40-198	10 MEG. RESISTOR	1
C69	40-199	10 MEG. RESISTOR	1
C70	40-200	10 MEG. RESISTOR	1
C71	40-201	10 MEG. RESISTOR	1
C72	40-202	10 MEG. RESISTOR	1
C73	40-203	10 MEG. RESISTOR	1
C74	40-204	10 MEG. RESISTOR	1
C75	40-205	10 MEG. RESISTOR	1
C76	40-206	10 MEG. RESISTOR	1
C77	40-207	10 MEG. RESISTOR	1
C78	40-208	10 MEG. RESISTOR	1
C79	40-209	10 MEG. RESISTOR	1
C80	40-210	10 MEG. RESISTOR	1
C81	40-211	10 MEG. RESISTOR	1
C82	40-212	10 MEG. RESISTOR	1
C83	40-213	10 MEG. RESISTOR	1
C84	40-214	10 MEG. RESISTOR	1
C85	40-215	10 MEG. RESISTOR	1
C86	40-216	10 MEG. RESISTOR	1
C87	40-217	10 MEG. RESISTOR	1
C88	40-218	10 MEG. RESISTOR	1
C89	40-219	10 MEG. RESISTOR	1
C90	40-220	10 MEG. RESISTOR	1
C91	40-221	10 MEG. RESISTOR	1
C92	40-222	10 MEG. RESISTOR	1
C93	40-223	10 MEG. RESISTOR	1
C94	40-224	10 MEG. RESISTOR	1
C95	40-225	10 MEG. RESISTOR	1
C96	40-226	10 MEG. RESISTOR	1
C97	40-227	10 MEG. RESISTOR	1
C98	40-228	10 MEG. RESISTOR	1
C99	40-229	10 MEG. RESISTOR	1
C100	40-230	10 MEG. RESISTOR	1

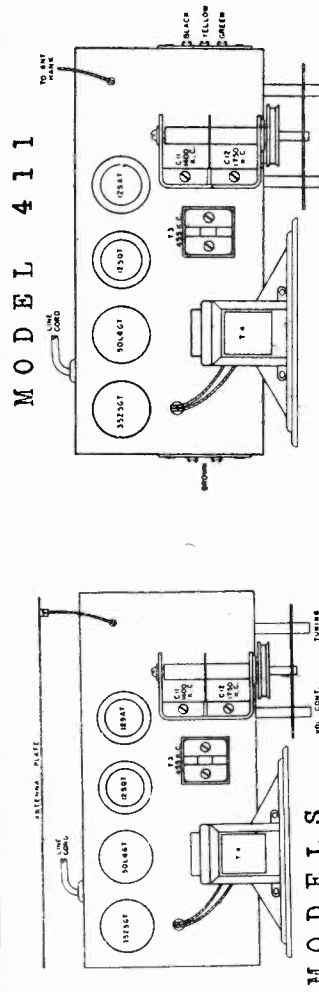
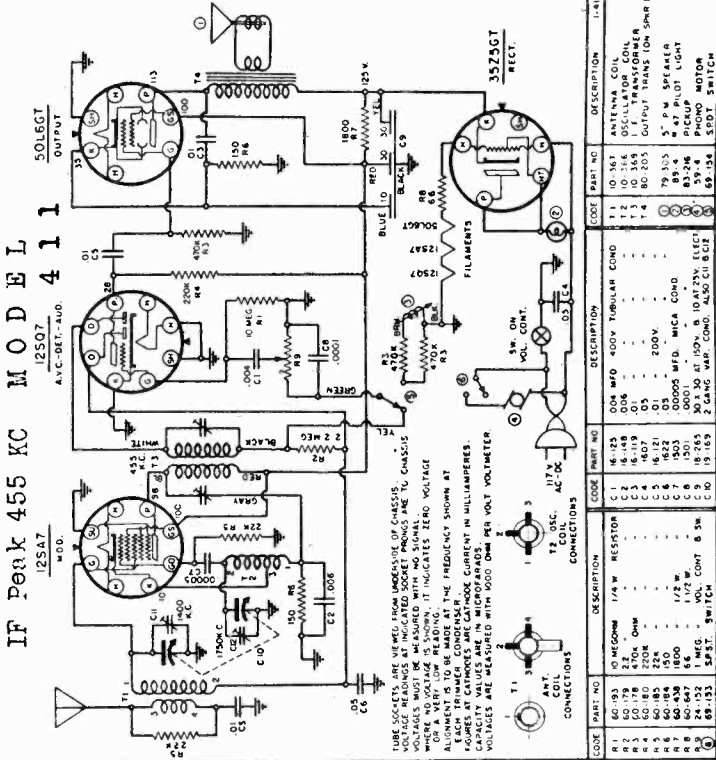
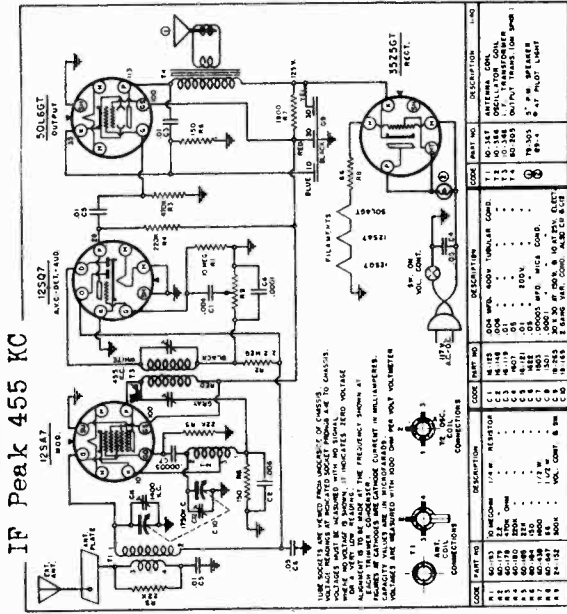
MODELS 131, 531, 533



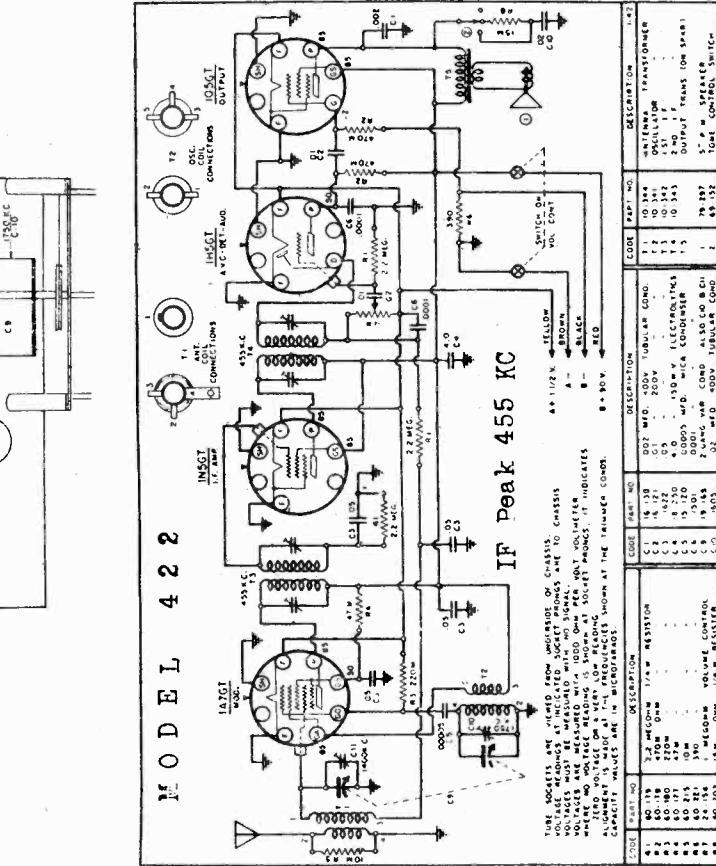
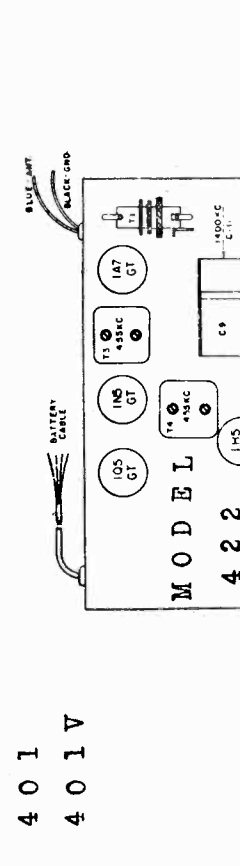
MODELS 131, 531, 533

Models 401, 401V
 Model 411
 Model 422

AUTOCRAT RADIO COMPANY



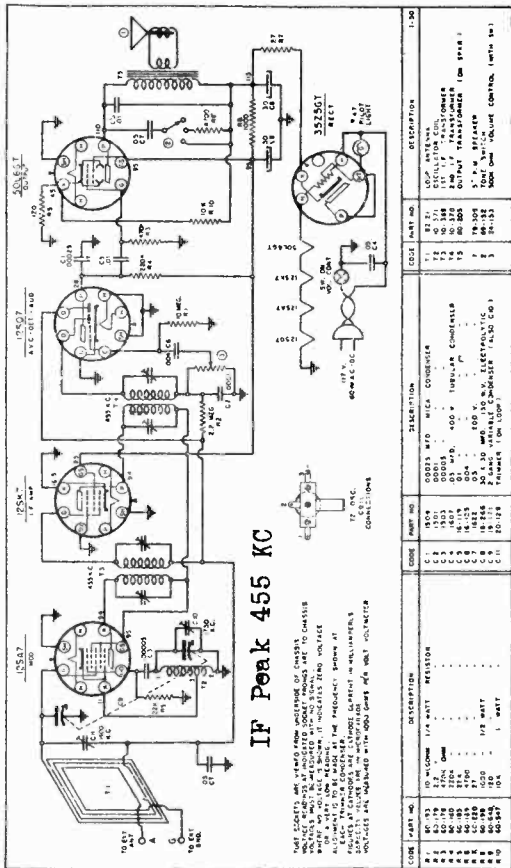
MODELS
 401
 401V



MODELS
 401
 401V

AUTOCRAT RADIO COMPANY

Models 501, 501U, 503
Model 521

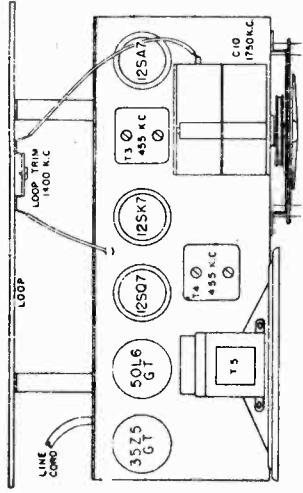


IF Peak 455 KC

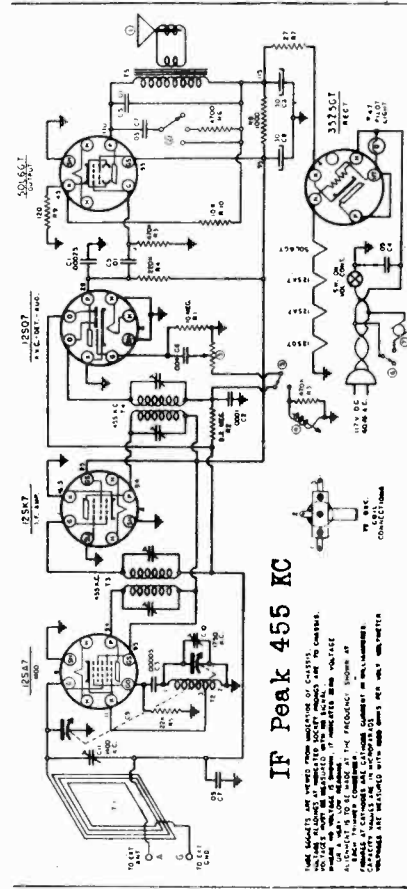
READ INSTRUCTIONS CAREFULLY FROM BACKSIDE OF CASE. WHEN PLUGS ARE INSTALLED SOCKET POINTS ARE TO CENTER WITH PLUG. WHEN PLUGS ARE INSTALLED SOCKET POINTS ARE TO CENTER WITH PLUG. WHEN PLUGS ARE INSTALLED SOCKET POINTS ARE TO CENTER WITH PLUG. WHEN PLUGS ARE INSTALLED SOCKET POINTS ARE TO CENTER WITH PLUG.

CODE	PART NO.	DESCRIPTION	QUANTITY
A1	500K5	500K5 WFO. WFO. COMPLEXER	1
A2	500K6	500K6 WFO. WFO. COMPLEXER	1
A3	35250T	35250T RECT.	1
A4	10W	10 WATT MOTOR	1
A5	10R	10 WATT RESISTOR	1
A6	10C	10 WATT CAPACITOR	1
A7	10L	10 WATT INDUCTOR	1
A8	10T	10 WATT TRANSFORMER	1
A9	10D	10 WATT CONDENSER	1
A10	10S	10 WATT SWITCH	1

MODELS 501, 501U, 503



MODELS 501, 501U, 503

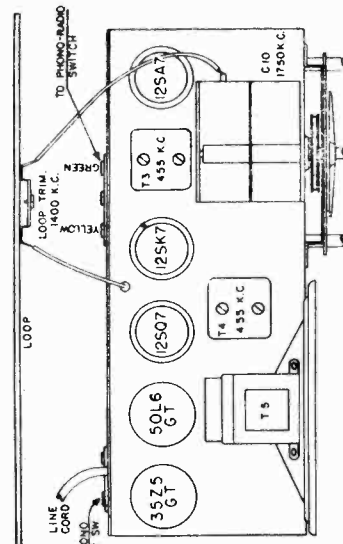


IF Peak 455 KC

READ INSTRUCTIONS CAREFULLY FROM BACKSIDE OF CASE. WHEN PLUGS ARE INSTALLED SOCKET POINTS ARE TO CENTER WITH PLUG. WHEN PLUGS ARE INSTALLED SOCKET POINTS ARE TO CENTER WITH PLUG. WHEN PLUGS ARE INSTALLED SOCKET POINTS ARE TO CENTER WITH PLUG. WHEN PLUGS ARE INSTALLED SOCKET POINTS ARE TO CENTER WITH PLUG.

CODE	PART NO.	DESCRIPTION	QUANTITY
A1	500K5	500K5 WFO. WFO. COMPLEXER	1
A2	500K6	500K6 WFO. WFO. COMPLEXER	1
A3	35250T	35250T RECT.	1
A4	10W	10 WATT MOTOR	1
A5	10R	10 WATT RESISTOR	1
A6	10C	10 WATT CAPACITOR	1
A7	10L	10 WATT INDUCTOR	1
A8	10T	10 WATT TRANSFORMER	1
A9	10D	10 WATT CONDENSER	1
A10	10S	10 WATT SWITCH	1

MODEL 521

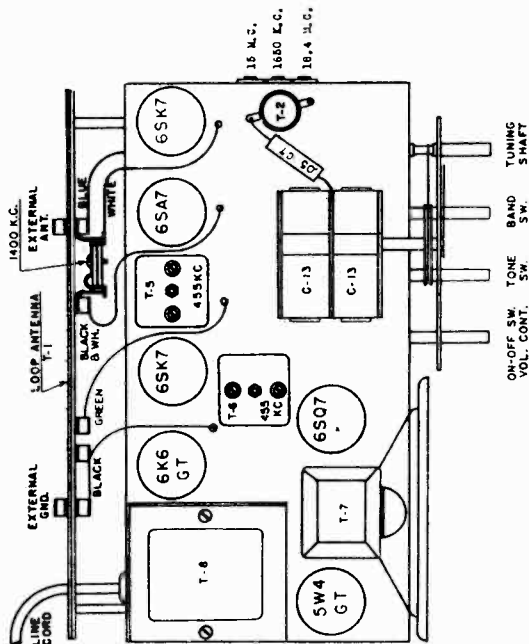


MODEL 521

Model 601
Model 611

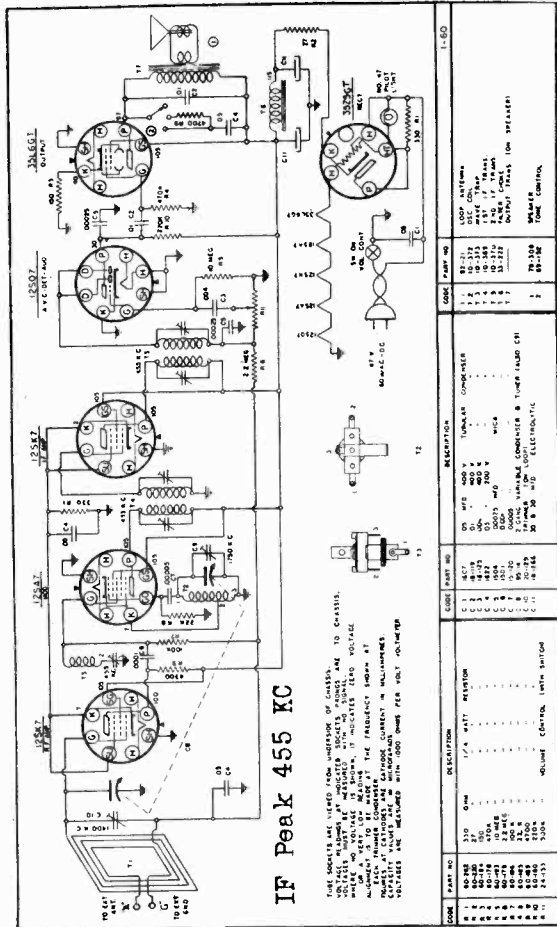
AUTOCRAT RADIO COMPANY

MODEL 611



ON-OFF SW. TONE VOL. CONT. BAND TUNING SW.

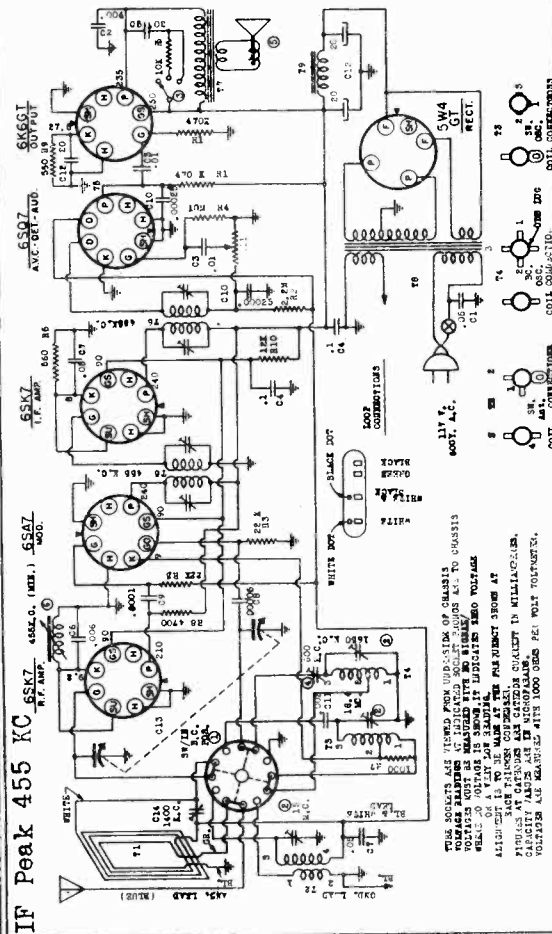
MODEL 601



IF Peak 455 KC

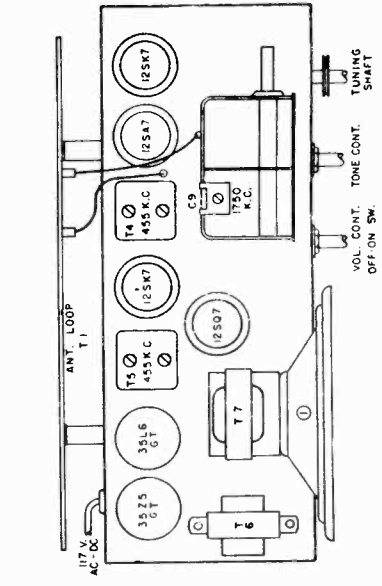
THE SOCKET ARE VIEWED FROM UNDER-SIDE OF CHASSIS. UNLESS INDICATED OTHERWISE, ALL TUBES ARE TO CHASSIS. ALL VOLTAGES ARE IN VOLTS, UNLESS OTHERWISE SPECIFIED. ALL RESISTORS ARE IN OHMS, UNLESS OTHERWISE SPECIFIED. ALL CAPACITORS ARE IN MICROFARADS, UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE SPECIFIED.

CODE	PART NO.	DESCRIPTION	QTY.	REMARKS
C-1	10-100	500 P.F. CAP.	1	
C-2	10-100	500 P.F. CAP.	1	
C-3	10-100	500 P.F. CAP.	1	
C-4	10-100	500 P.F. CAP.	1	
C-5	10-100	500 P.F. CAP.	1	
C-6	10-100	500 P.F. CAP.	1	
C-7	10-100	500 P.F. CAP.	1	
C-8	10-100	500 P.F. CAP.	1	
C-9	10-100	500 P.F. CAP.	1	
C-10	10-100	500 P.F. CAP.	1	
C-11	10-100	500 P.F. CAP.	1	
C-12	10-100	500 P.F. CAP.	1	
C-13	10-100	500 P.F. CAP.	1	
C-14	10-100	500 P.F. CAP.	1	
C-15	10-100	500 P.F. CAP.	1	
C-16	10-100	500 P.F. CAP.	1	
C-17	10-100	500 P.F. CAP.	1	
C-18	10-100	500 P.F. CAP.	1	
C-19	10-100	500 P.F. CAP.	1	
C-20	10-100	500 P.F. CAP.	1	
C-21	10-100	500 P.F. CAP.	1	
C-22	10-100	500 P.F. CAP.	1	
C-23	10-100	500 P.F. CAP.	1	
C-24	10-100	500 P.F. CAP.	1	
C-25	10-100	500 P.F. CAP.	1	
C-26	10-100	500 P.F. CAP.	1	
C-27	10-100	500 P.F. CAP.	1	
C-28	10-100	500 P.F. CAP.	1	
C-29	10-100	500 P.F. CAP.	1	
C-30	10-100	500 P.F. CAP.	1	
C-31	10-100	500 P.F. CAP.	1	
C-32	10-100	500 P.F. CAP.	1	
C-33	10-100	500 P.F. CAP.	1	
C-34	10-100	500 P.F. CAP.	1	
C-35	10-100	500 P.F. CAP.	1	
C-36	10-100	500 P.F. CAP.	1	
C-37	10-100	500 P.F. CAP.	1	
C-38	10-100	500 P.F. CAP.	1	
C-39	10-100	500 P.F. CAP.	1	
C-40	10-100	500 P.F. CAP.	1	
C-41	10-100	500 P.F. CAP.	1	
C-42	10-100	500 P.F. CAP.	1	
C-43	10-100	500 P.F. CAP.	1	
C-44	10-100	500 P.F. CAP.	1	
C-45	10-100	500 P.F. CAP.	1	
C-46	10-100	500 P.F. CAP.	1	
C-47	10-100	500 P.F. CAP.	1	
C-48	10-100	500 P.F. CAP.	1	
C-49	10-100	500 P.F. CAP.	1	
C-50	10-100	500 P.F. CAP.	1	
C-51	10-100	500 P.F. CAP.	1	
C-52	10-100	500 P.F. CAP.	1	
C-53	10-100	500 P.F. CAP.	1	
C-54	10-100	500 P.F. CAP.	1	
C-55	10-100	500 P.F. CAP.	1	
C-56	10-100	500 P.F. CAP.	1	
C-57	10-100	500 P.F. CAP.	1	
C-58	10-100	500 P.F. CAP.	1	
C-59	10-100	500 P.F. CAP.	1	
C-60	10-100	500 P.F. CAP.	1	
C-61	10-100	500 P.F. CAP.	1	
C-62	10-100	500 P.F. CAP.	1	
C-63	10-100	500 P.F. CAP.	1	
C-64	10-100	500 P.F. CAP.	1	
C-65	10-100	500 P.F. CAP.	1	
C-66	10-100	500 P.F. CAP.	1	
C-67	10-100	500 P.F. CAP.	1	
C-68	10-100	500 P.F. CAP.	1	
C-69	10-100	500 P.F. CAP.	1	
C-70	10-100	500 P.F. CAP.	1	
C-71	10-100	500 P.F. CAP.	1	
C-72	10-100	500 P.F. CAP.	1	
C-73	10-100	500 P.F. CAP.	1	
C-74	10-100	500 P.F. CAP.	1	
C-75	10-100	500 P.F. CAP.	1	
C-76	10-100	500 P.F. CAP.	1	
C-77	10-100	500 P.F. CAP.	1	
C-78	10-100	500 P.F. CAP.	1	
C-79	10-100	500 P.F. CAP.	1	
C-80	10-100	500 P.F. CAP.	1	
C-81	10-100	500 P.F. CAP.	1	
C-82	10-100	500 P.F. CAP.	1	
C-83	10-100	500 P.F. CAP.	1	
C-84	10-100	500 P.F. CAP.	1	
C-85	10-100	500 P.F. CAP.	1	
C-86	10-100	500 P.F. CAP.	1	
C-87	10-100	500 P.F. CAP.	1	
C-88	10-100	500 P.F. CAP.	1	
C-89	10-100	500 P.F. CAP.	1	
C-90	10-100	500 P.F. CAP.	1	
C-91	10-100	500 P.F. CAP.	1	
C-92	10-100	500 P.F. CAP.	1	
C-93	10-100	500 P.F. CAP.	1	
C-94	10-100	500 P.F. CAP.	1	
C-95	10-100	500 P.F. CAP.	1	
C-96	10-100	500 P.F. CAP.	1	
C-97	10-100	500 P.F. CAP.	1	
C-98	10-100	500 P.F. CAP.	1	
C-99	10-100	500 P.F. CAP.	1	
C-100	10-100	500 P.F. CAP.	1	



CODE	PART NO.	DESCRIPTION	QTY.	REMARKS
1A	10-100	500 P.F. CAP.	1	
1B	10-100	500 P.F. CAP.	1	
1C	10-100	500 P.F. CAP.	1	
1D	10-100	500 P.F. CAP.	1	
1E	10-100	500 P.F. CAP.	1	
1F	10-100	500 P.F. CAP.	1	
1G	10-100	500 P.F. CAP.	1	
1H	10-100	500 P.F. CAP.	1	
1I	10-100	500 P.F. CAP.	1	
1J	10-100	500 P.F. CAP.	1	
1K	10-100	500 P.F. CAP.	1	
1L	10-100	500 P.F. CAP.	1	
1M	10-100	500 P.F. CAP.	1	
1N	10-100	500 P.F. CAP.	1	
1O	10-100	500 P.F. CAP.	1	
1P	10-100	500 P.F. CAP.	1	
1Q	10-100	500 P.F. CAP.	1	
1R	10-100	500 P.F. CAP.	1	
1S	10-100	500 P.F. CAP.	1	
1T	10-100	500 P.F. CAP.	1	
1U	10-100	500 P.F. CAP.	1	
1V	10-100	500 P.F. CAP.	1	
1W	10-100	500 P.F. CAP.	1	
1X	10-100	500 P.F. CAP.	1	
1Y	10-100	500 P.F. CAP.	1	
1Z	10-100	500 P.F. CAP.	1	
2A	10-100	500 P.F. CAP.	1	
2B	10-100	500 P.F. CAP.	1	
2C	10-100	500 P.F. CAP.	1	
2D	10-100	500 P.F. CAP.	1	
2E	10-100	500 P.F. CAP.	1	
2F	10-100	500 P.F. CAP.	1	
2G	10-100	500 P.F. CAP.	1	
2H	10-100	500 P.F. CAP.	1	
2I	10-100	500 P.F. CAP.	1	
2J	10-100	500 P.F. CAP.	1	
2K	10-100	500 P.F. CAP.	1	
2L	10-100	500 P.F. CAP.	1	
2M	10-100	500 P.F. CAP.	1	
2N	10-100	500 P.F. CAP.	1	
2O	10-100	500 P.F. CAP.	1	
2P	10-100	500 P.F. CAP.	1	
2Q	10-100	500 P.F. CAP.	1	
2R	10-100	500 P.F. CAP.	1	
2S	10-100	500 P.F. CAP.	1	
2T	10-100	500 P.F. CAP.	1	
2U	10-100	500 P.F. CAP.	1	
2V	10-100	500 P.F. CAP.	1	
2W	10-100	500 P.F. CAP.	1	
2X	10-100	500 P.F. CAP.	1	
2Y	10-100	500 P.F. CAP.	1	
2Z	10-100	500 P.F. CAP.	1	

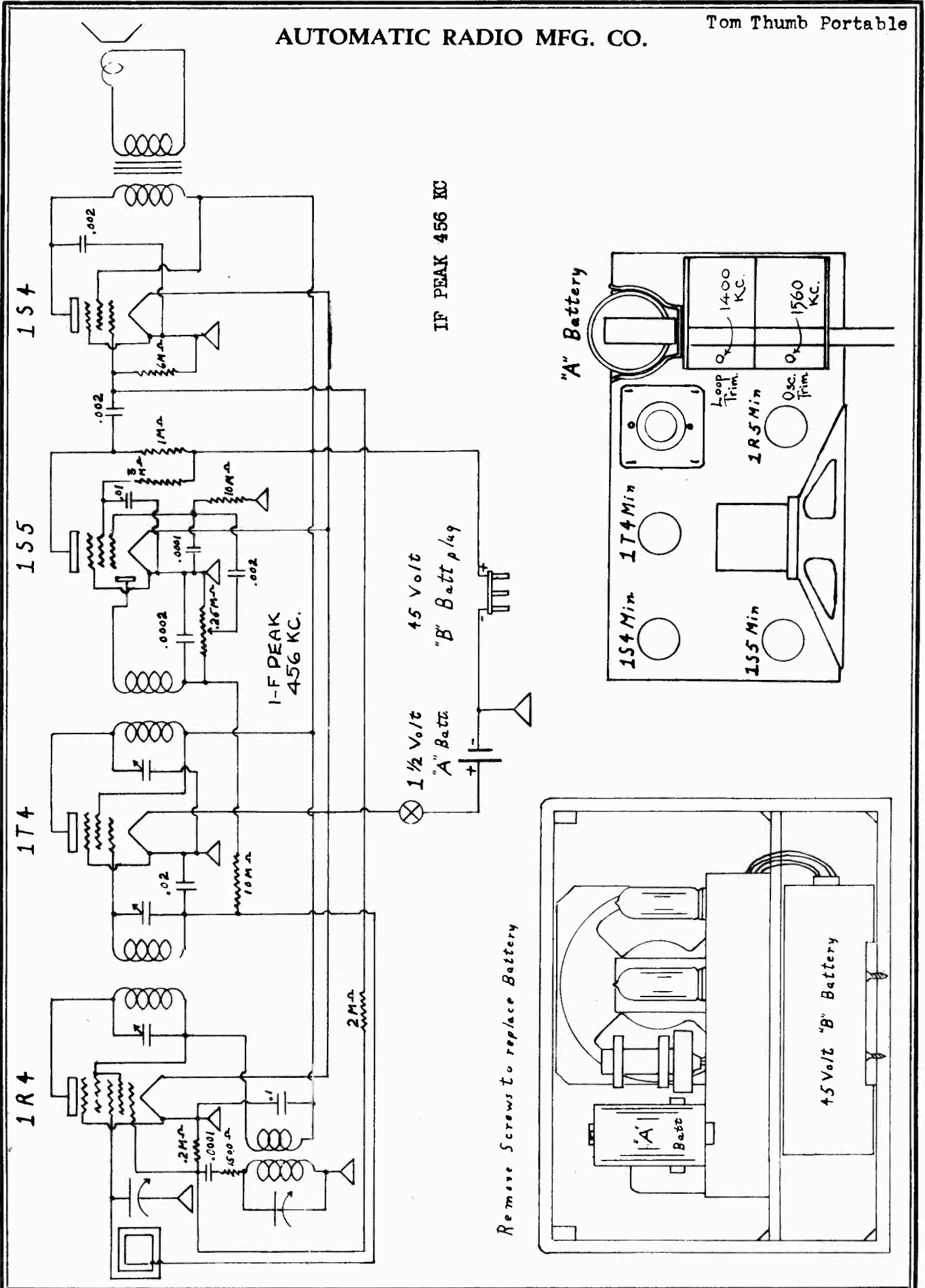
MODEL 611



MODEL 601

AUTOMATIC RADIO MFG. CO.

Tom Thumb Portable

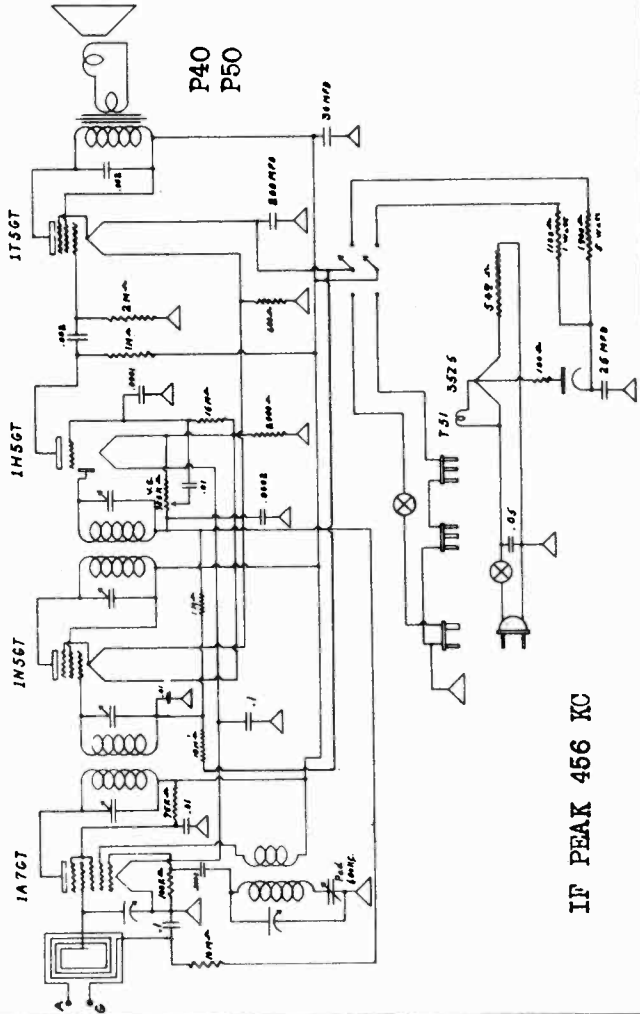
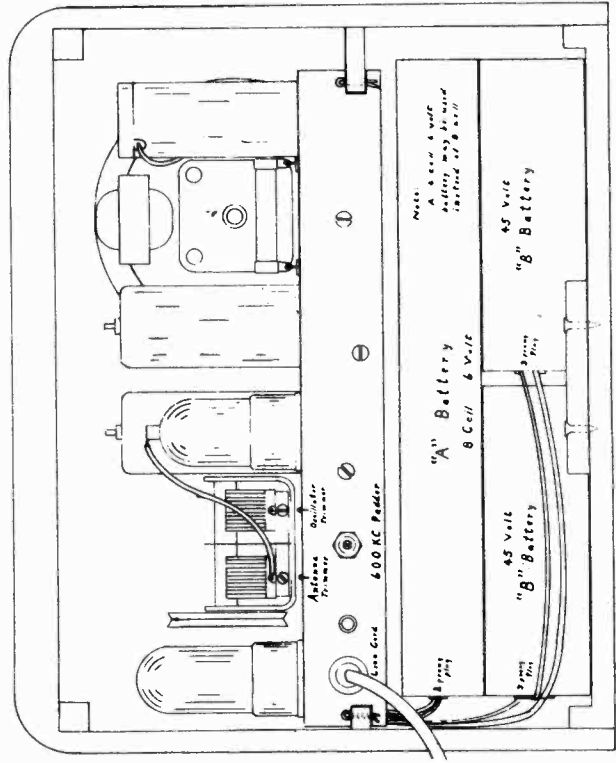
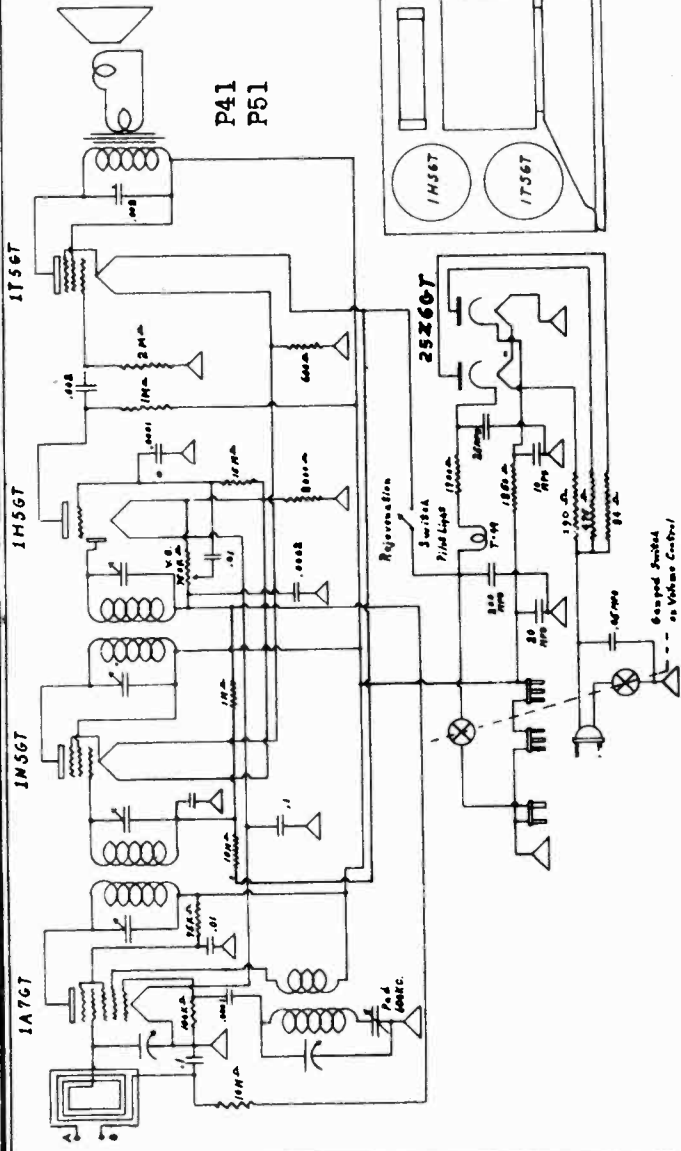


Remove Screws to replace Battery

Models P40, P41,
P50, P51

AUTOMATIC RADIO MFG. CO.

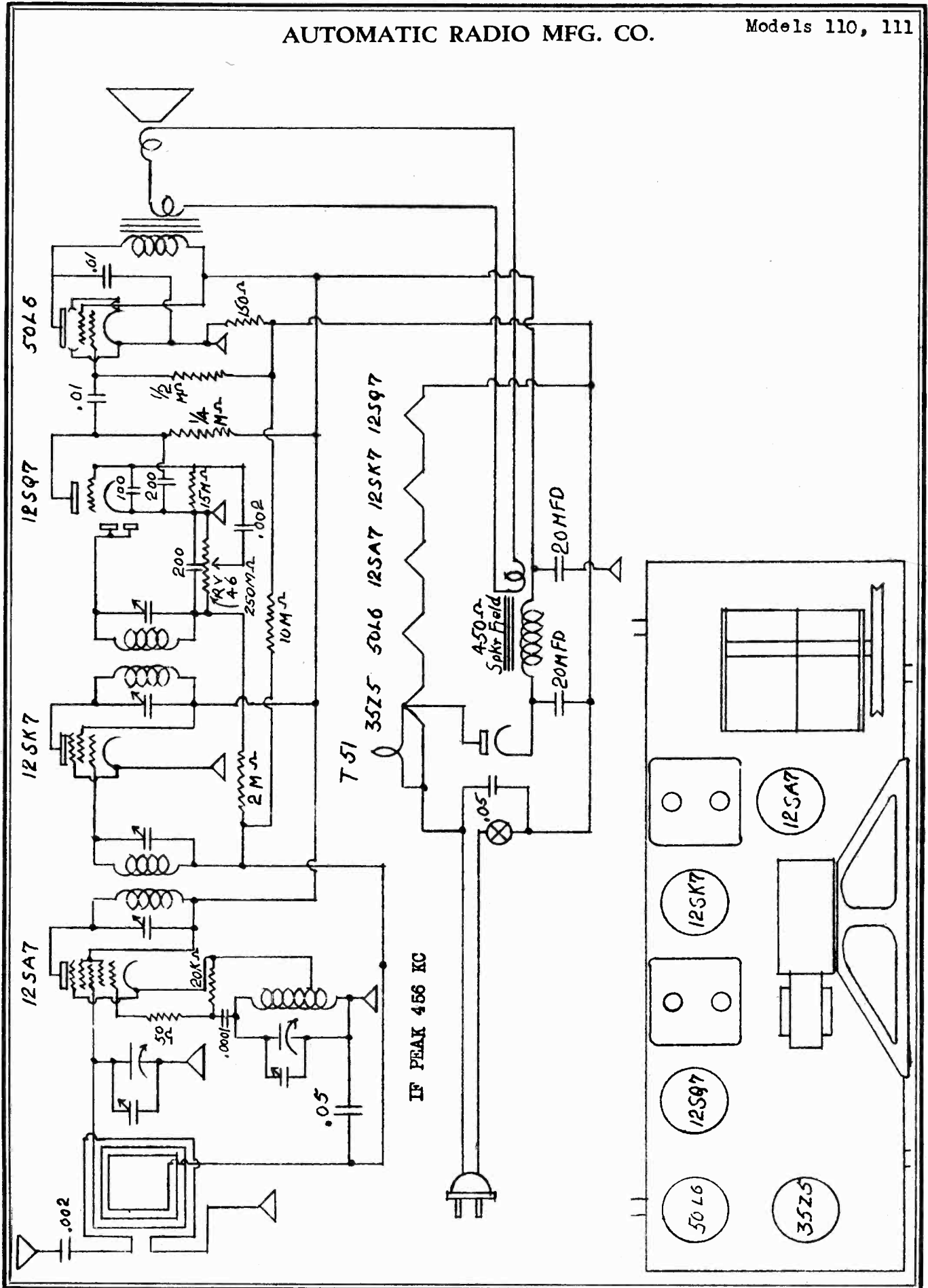
1. IF PEAK 456 KC
2. Osc. (left trimmer on gang)
3. 1560 kc. Variable condenser at minimum capacity.
4. Trimmer loop (right trimmer on gang) - 1400 kc.
5. Pad loop 600 kc.



Take out screws, and remove disk before changing batteries.

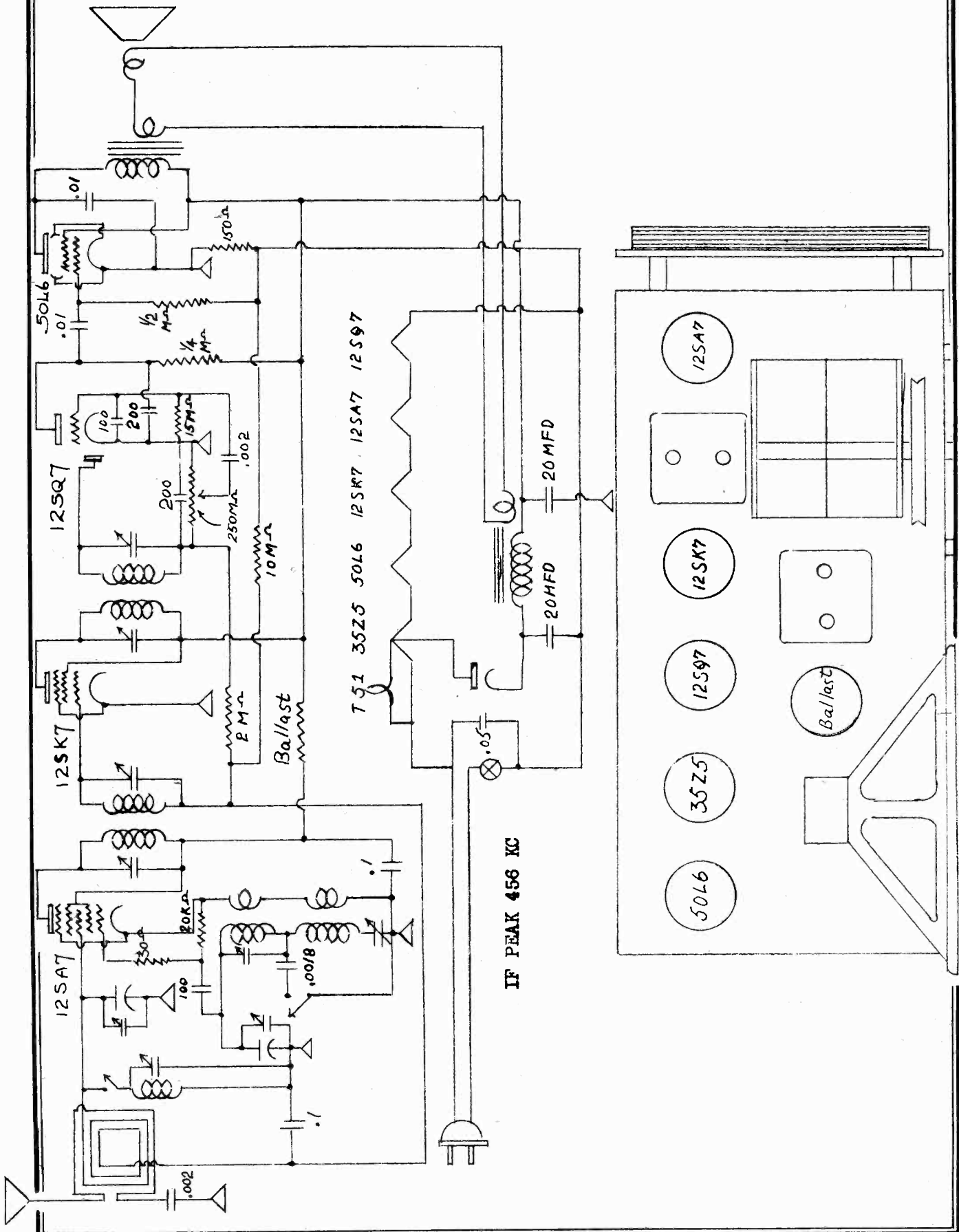
AUTOMATIC RADIO MFG. CO.

Models 110, 111



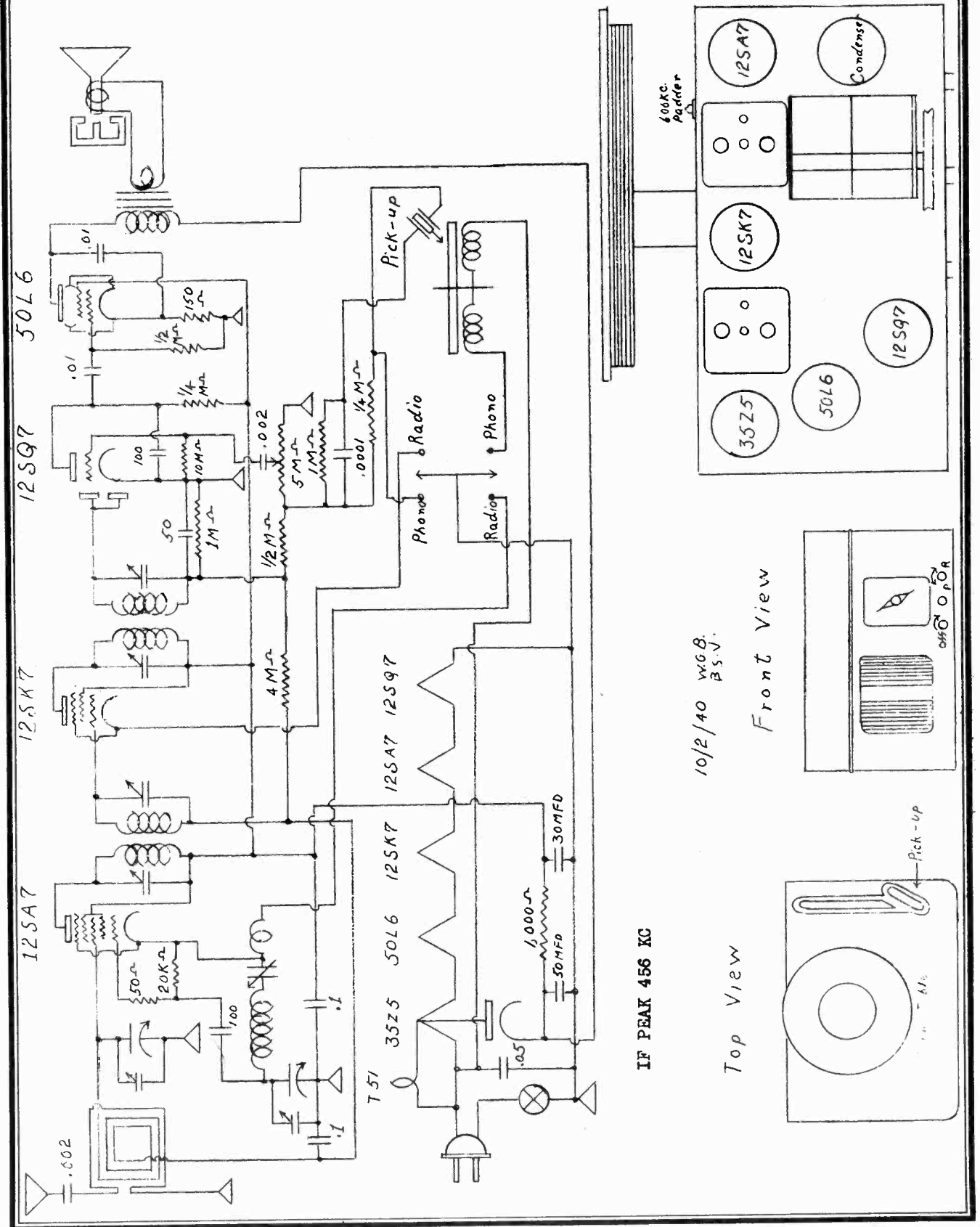
Model 115

AUTOMATIC RADIO MFG. CO.



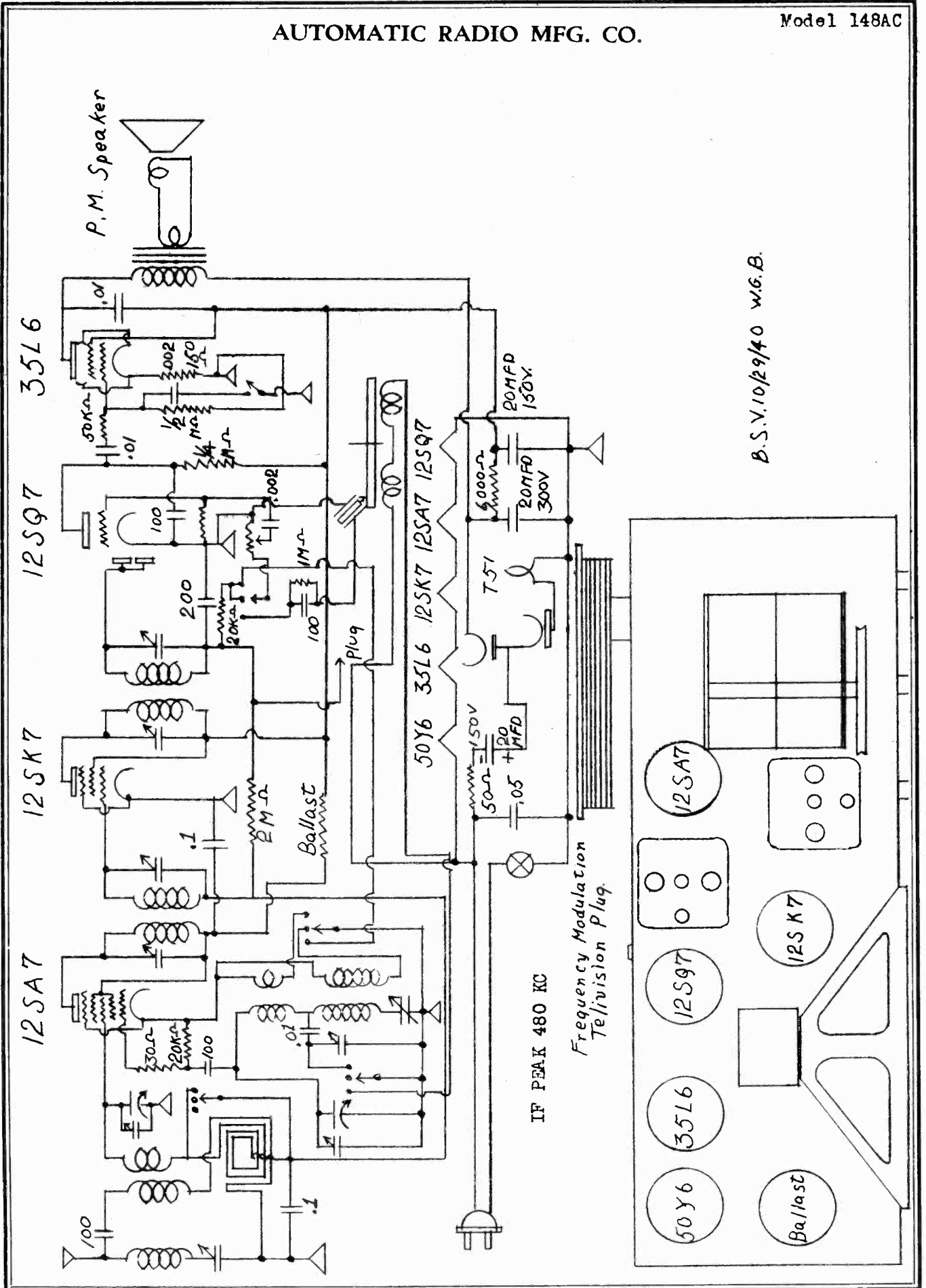
AUTOMATIC RADIO MFG. CO.

Model 140AC



AUTOMATIC RADIO MFG. CO.

Model 148AC



B.S.V.10/29/40 W.G.B.

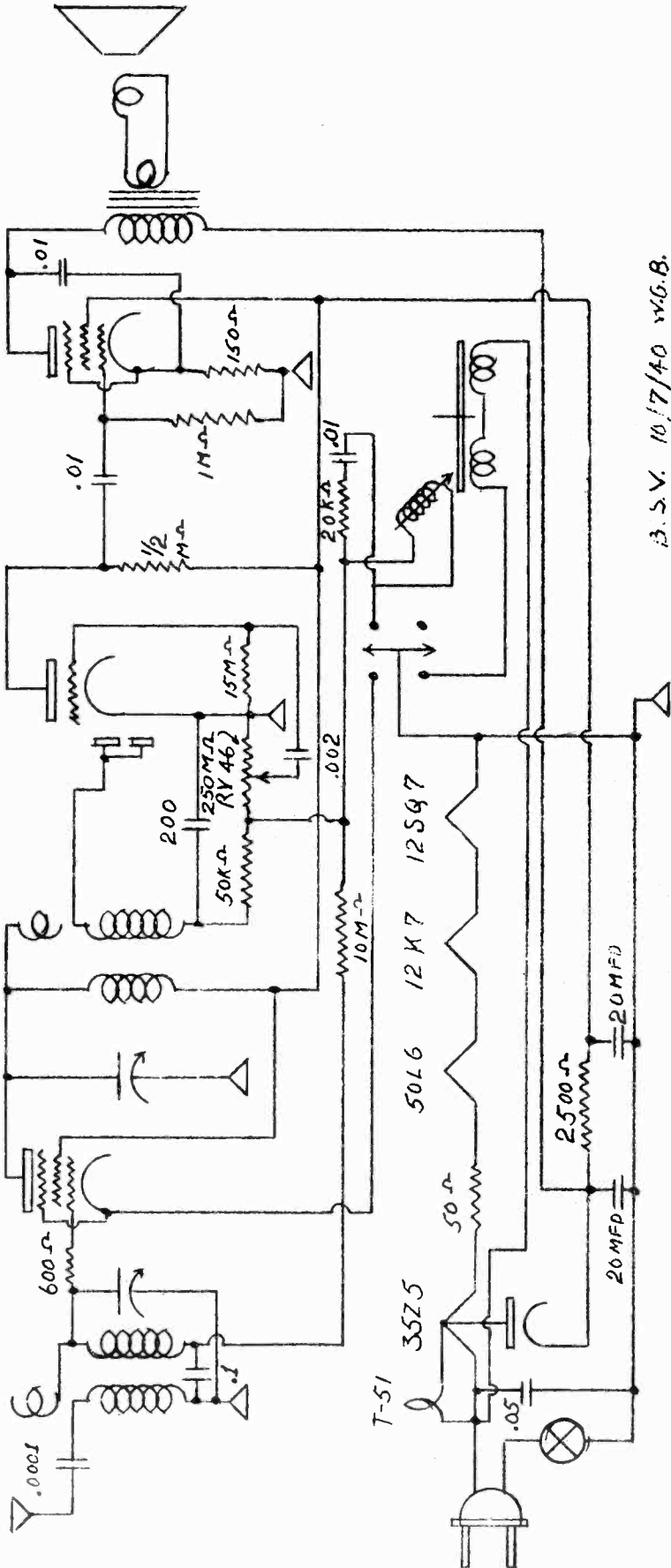
Models 152AC, 155

AUTOMATIC RADIO MFG. CO.

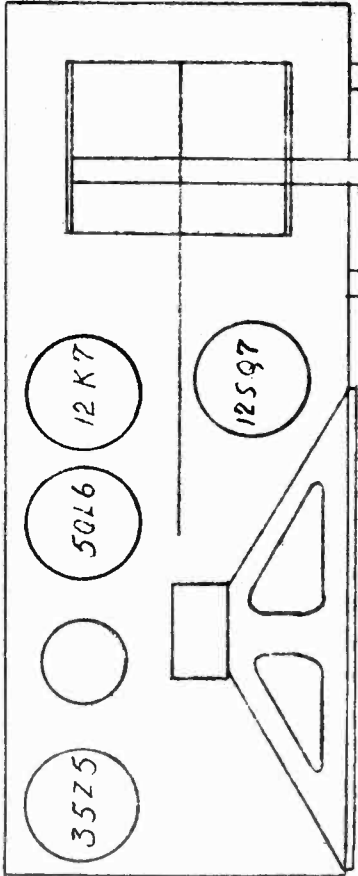
50L6

12S97

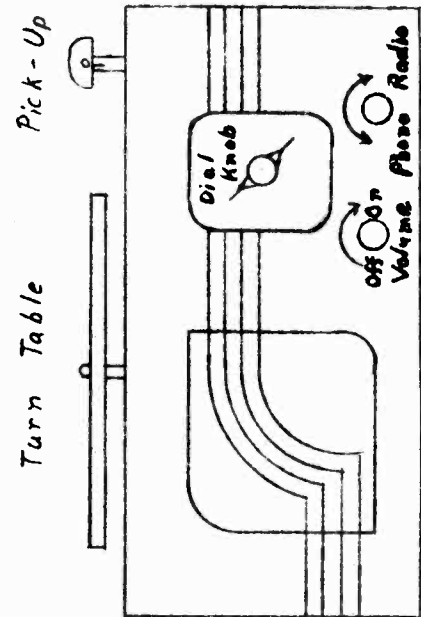
12K7



3.5V 10/7/40 W.G.B.

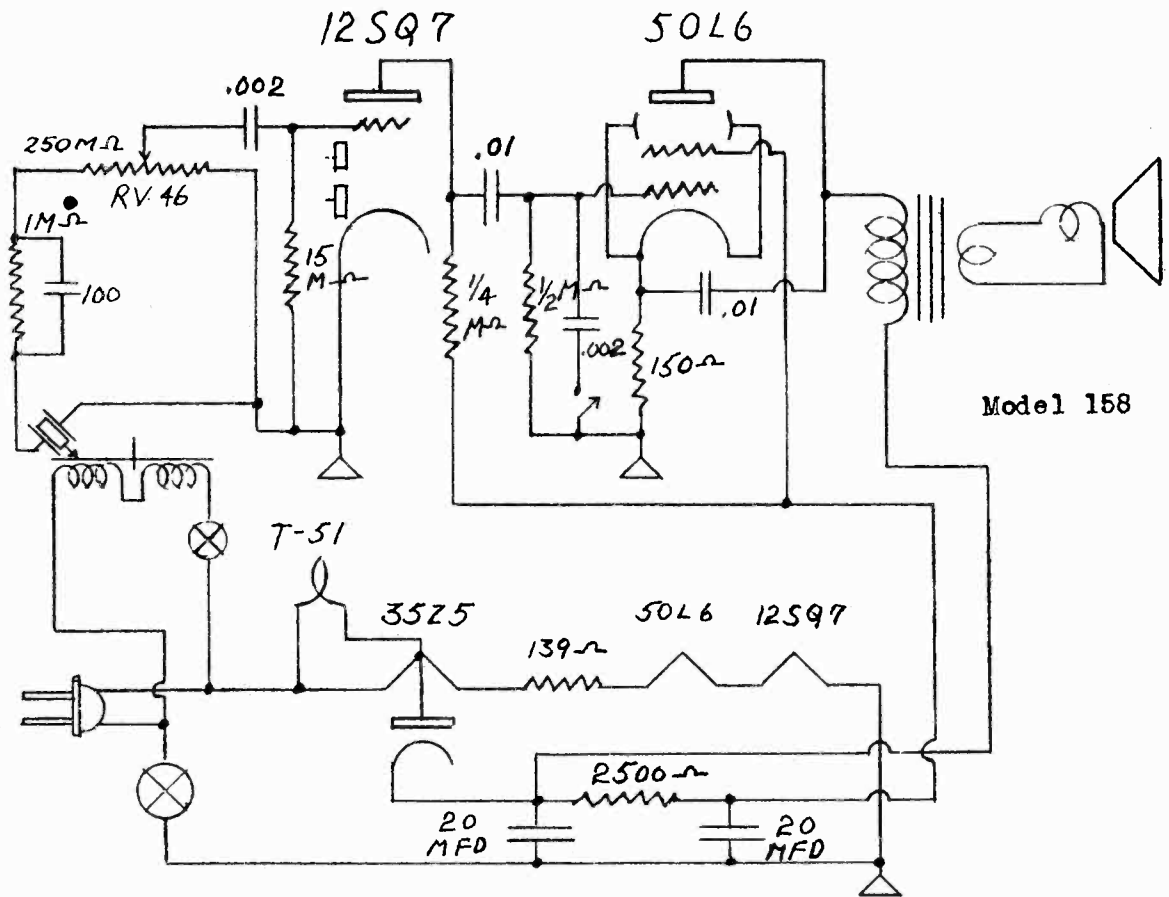


Volume Tuning Phono-Radio

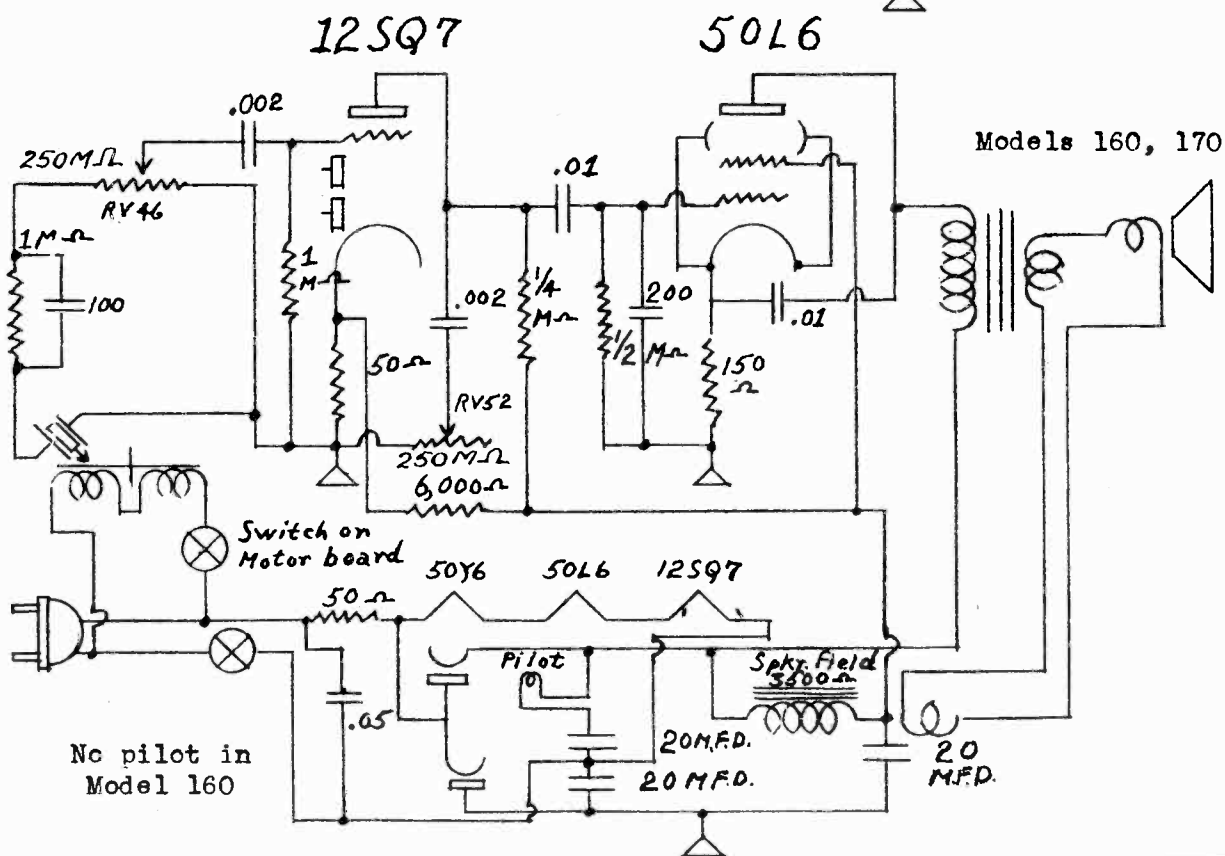


AUTOMATIC RADIO MFG. CO.

Models 158, 160, 170



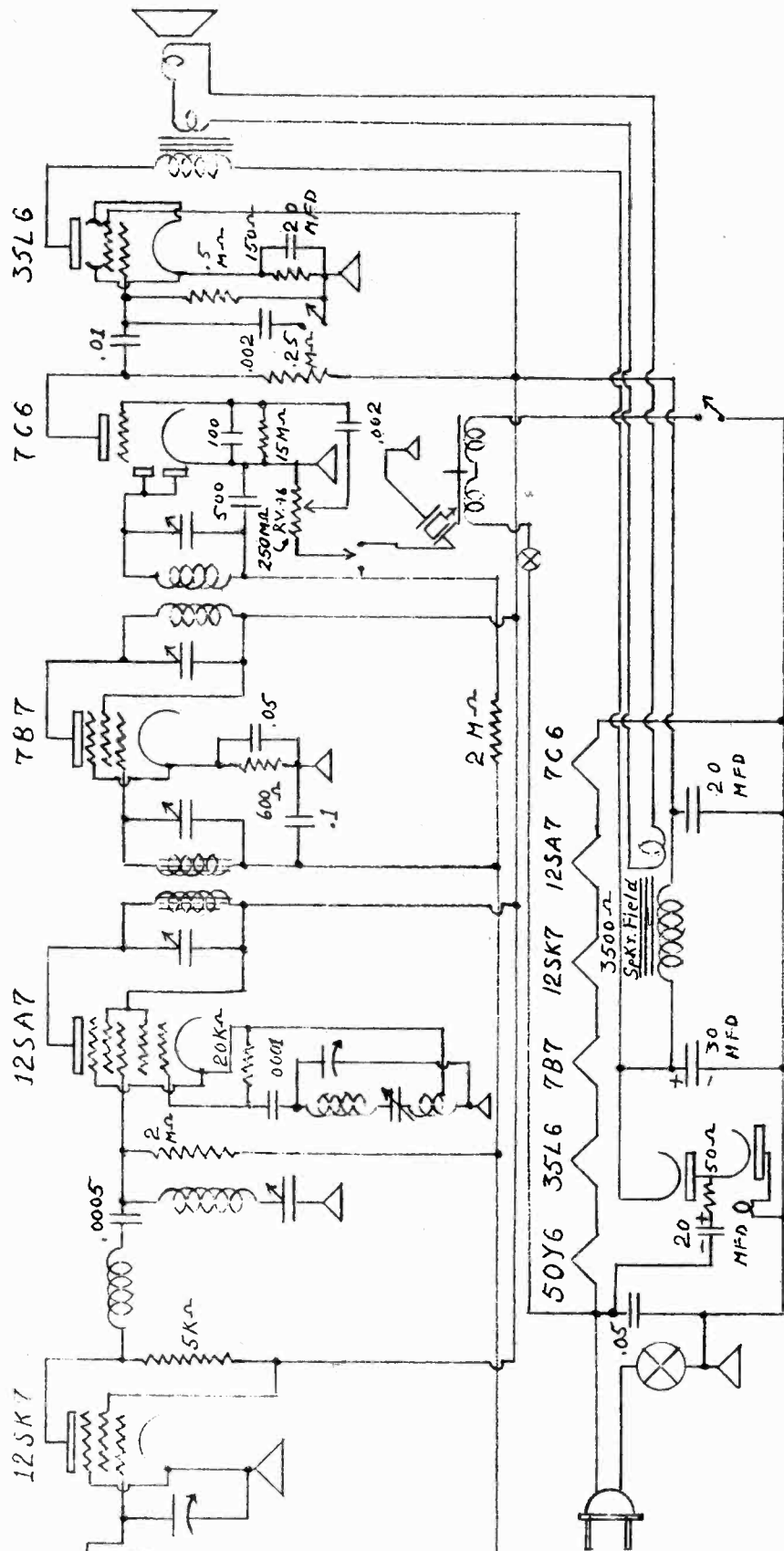
Model 158



Models 160, 170

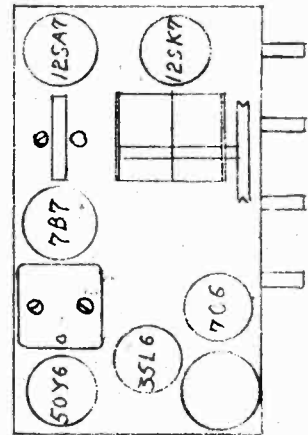
Model 175AC

AUTOMATIC RADIO MFG. CO.



IF PEAK 456 KC

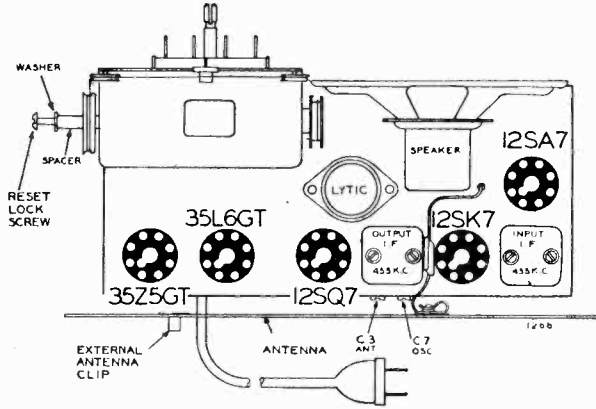
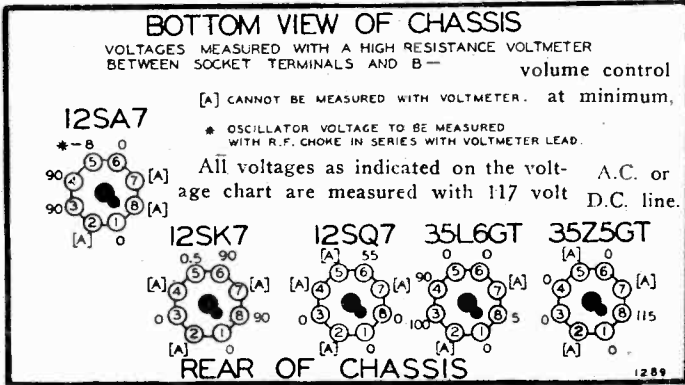
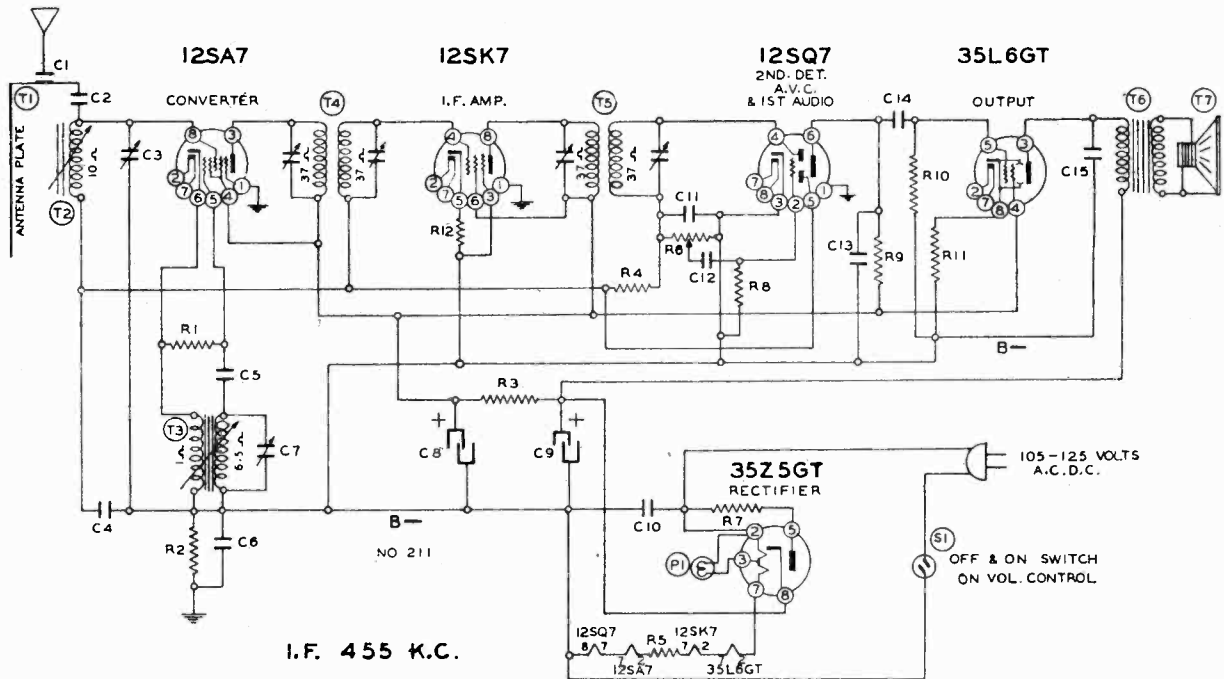
2/26/41 W.G.B. B.S.V



Phone-Radio Tone Volume Tuning

BELMONT RADIO CORP.

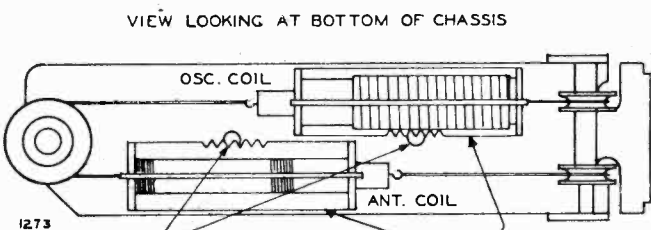
MODELS 151, 536



Schematic Ref. No.	Part No.	Description
RESISTORS		
R1	130176	20M ohm—1/2 w.
R2	130100	150M ohm—1/2 w.
R3	130279	1M ohm—1 w.
R4	1304	3 megohm—1/2 w.
R5	130288	50 ohm—1.5 w.
R6	101238	500M ohm volume control and switch
R7	130240	30 ohm—1/2 w.
R8	130257	5 megohm—1/2 w.
R9	100100	150M ohm—1/2 w.
R10	13011	250M ohm—1/2 w.
R11	130166	150 ohm—1/2 w.
R12	130233	60 ohm—1/2 w.

C1	131262	.0001 washer condenser (Antenna clip on back plate)
C2	129114	.0003 mica
C3	124151	Trimmer on antenna coil
C4	1009	.05 x 200 v.
C5	12939	.0005 mica
C6	10091	.15 x 400 v.
C7	124151	Trimmer on oscillator coil
C8	11992	20 mid. lytic x 150 w. v.
C9	11992	40 mid. lytic x 150 w. v.
C10	10013	.05 x 400 v.
C11	12912	.00025 mica
C12	10025	.002 x 600 v.
C13	1292	.0005 mica
C14	10011	.01 x 400 v.
C15	10011	.01 x 400 v.

T1	128586B	Back plate (walnut)
T2	112877	Antenna coil—Permeability tuning assembly complete
T3	112877	Oscillator coil—Permeability tuning assembly complete
T4	108157L	Input I. F. coil—455 Kc.
T5	108157N	Output I. F. coil—455 Kc.
T6	10395C	Output transformer
T7	114225	5" P. M. speaker
S1		Switch on volume control
P1	107249	Pilot light T47



NOTE*—THE ANTENNA COIL ASSEMBLY IS MADE SO THAT IT IS MOVABLE LEFT OR RIGHT. WHEN MAKING THE ADJUSTMENT AS GIVEN IN THE ALIGNMENT PROCEDURE MOVE THE COIL ASSEMBLY VERY SLOWLY. IT CAN BE MOVED BY HAND OR BY PIVOTING ONE EDGE OF THE BLADE OF A SCREWDRIVER IN THE HOLE AND ENGAGING THE BLADE IN THE GEAR TEETH OF THE COIL FORM.

Setting the Automatic Pushbuttons

Make a list of your favorite stations. Push out the call letters of these stations from the call letter sheets supplied. Insert a call letter in the front of each pushbutton.

Press one of the buttons all the way down and hold it FIRMLY. Now tune in the station you want with the tuning knob. Tune back and forth until the

station is clear, then release the button. NOTE: If the tuning knob turns quite hard when the button is held down firmly (loosen the reset lock screw several turns with a screwdriver or coin (quarter).

Continue, setting each of the remaining pushbuttons in the same way. Now turn the tuning knob all the way to the right and tighten the reset lock screw. This screw prevents the pushbuttons from slipping off the stations you have set. To change stations loosen lock screw and proceed as above.

BRC. Series A—5142—5750—10-40 Pro. 246

ALIGNMENT PROCEDURE

- IMPORTANT:—See alignment instructions**
- Volume control—Maximum all adjustments.
 - Connect B - of radio chassis to ground post of signal generator through .1 Mfd. condenser.
 - Connect dummy antenna value in series with generator output lead.
 - Connect output meter across primary of output transformer.
 - Allow chassis and signal generator to "heat up" for several minutes.

- The following equipment is required for aligning:
- An all wave signal generator.
 - Output indicating meter.
 - Non-metallic screwdriver.
 - Dummy antennas—.1 Mfd.

MODEL
642

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 12SA7	Rotor full open (Plates out of mesh)	Four Trimmers on Top (See Fig. 1)	Output and Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1600 Kc.	.1 MFD.	Grid of 12SA7	Rotor full open (Plates out of mesh)	Trimmer rear section of gang.	Broadcast Oscillator	Adjust to maximum output
	1400 Kc.	See Note "A"		Set dial at 1400 Kc.	Trimmer front section of gang	Broadcast Antenna	Adjust to maximum output

NOTE "A" Lay the output lead from the generator in back of the loop antenna. Turn up the output of the generator, picking up the energy in the loop antenna without any electrical connection from the generator.

FREQUENCY RANGE
535 to 1600 K.C.

Power Consumption 35 Watts
Power Output 1 Watt Undistorted, 1.5 Watts Maximum
Intermediate Frequency 455 K.C.

Power Consumption 35 Watts **Selectivity - 85 KC Broad at 1000 Times Signal at 1000 KC**
Power Output 800 Milliwatts Undistorted **Tuning Frequency Range** 535 to 1720 KC
Sensitivity (for .05 Watts Output) - 30 Microvolts Average **Intermediate Frequency** 455 KC
Speaker 5 in. P. M. Dynamic

- Volume control—Maximum all adjustments.
 - Connect B—of radio chassis to ground post of signal generator through .1 Mfd. condenser.
 - Connect dummy antenna value in series with generator output lead.
 - Connect output meter across primary of output transformer.
 - Allow chassis and signal generator to "heat up" for several minutes.
- The following equipment is required for aligning.
- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
 - Non-metallic screwdriver.
 - Output indicating meter.
 - Dummy antennas—.1 Mfd., and 200 Mmf.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Metal Antenna Backplate	Iron Cores All the way out	Two trimmers on top of output I. F. can	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Metal Antenna Backplate	Iron Cores All the way out	Two trimmers on top of input I. F. can	Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1720 Kc.	.1 MFD.	Metal Antenna Backplate	Iron Cores All the way out	Trimmer (C7) (See chassis view)	Oscillator	Adjust to maximum output
	1720 Kc.	200 MMF.	Outside Antenna Clip	Iron Cores All the way out	Trimmer (C3) (See chassis view)	Antenna	Adjust to maximum output (See Note "A")
	1400 Kc.	200 MMF.	Outside Antenna Clip	Turn Dial to 1400 Kc.	Adjust position of antenna coil (See coil assembly view)	Antenna Coil Adjustment	Adjust to maximum output
	1720 Kc.	200 MMF.	Outside Antenna Clip	Turn Dial to 1720 Kc.	Adjust trimmer (C3) (See chassis view)	Antenna	Check for tracking (See Note "B")

NOTE "A"—The antenna coil assembly is made so that it is movable. When making the adjustment as given in the alignment procedure move the coil assembly very slowly. It can be moved by hand or by pivoting one edge of the blade of a screwdriver in the hole and engaging the blade in the gear teeth of the coil form.

NOTE "B"—After the antenna coil has been tracked at 1400 Kc. it is necessary to check the antenna trimmer (C3) adjustment again at 1720 Kc. If no appreciable change in trimmer adjustment is made the coil is in track; if the trimmer requires considerable change it will be necessary to again adjust the position of the antenna coil at 1400 Kc. These readjustments should be made several times until no change of trimmer adjustment is required at 1720 Kc.

Reduce to 9%

MODEL 794, Series A,
Ser. No. OA297000 up
MODEL 518

BELMONT RADIO CORP.

FREQUENCY RANGE
540 to 1720 K.C.

Model 518

Power Consumption.....35 Watts
Power Output.....800 Milliwatts Undistorted, 1.2 Watts Maximum
Intermediate Frequency.....465 K.C.

SIGNAL GENERATOR

BAND	Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	.1 MFD.	Connect to Terminal "B" (See Fig. 4)	Iron Cores All the way out	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Connect to Terminal "B" (See Fig. 4)	Iron Cores All the way out	Two trimmers on top (See Fig. 1)	Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1720 Kc.	.1 MFD.	Connect to Terminal "B" (See Fig. 4)	Iron Cores All the way out	Trimmer (C6) (See bottom of Radio, Fig. 3)	Oscillator	Adjust to maximum output
	1720 Kc.	200 MMF.	Connect to Terminal "A" (See Fig. 4)	Iron Cores All the way out	Trimmer (C3)	Antenna	Adjust to maximum output (See Note "A")
	1400 Kc.	200 MMF.	Connect to Terminal "A" (See Fig. 4)	Turn Dial to 1400 Kc.	Adjust position of antenna coil up or down (See Fig. 4)	Antenna Coil Adjustment	Adjust to maximum output
	1720 Kc.	200 MMF.	Connect to Terminal "A" (See Fig. 4)	Turn Dial to 1720 Kc.	Adjust trimmer (C3) (See Fig. 3)	Antenna	Check for tracking (See Note "B")

NOTE "A"—The antenna coil assembly is made so that it is movable up or down. When making the adjustment as given in the alignment procedure move the coil assembly very slowly. It can be moved by hand or by pivoting one edge of the blade of a screwdriver in the hole and engaging the blade in the gear teeth of the coil form.

NOTE "B"—Alter the antenna coil has been tracked at 1400 Kc. it is necessary to check the antenna trimmer (C3) adjustment again at 1720 Kc. If no appreciable change in trimmer adjustment is made the coil is in track, if the trimmer requires considerable change it will be necessary to again adjust the position of the antenna coil at 1400 Kc. These two adjustments should be tried several times until no change of trimmer adjustment is required at 1720 Kc.

Model 794
Series A

(Serial No. OA297000 and up)

SIGNAL GENERATOR

BAND	Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	.1 MFD.	Grid of 12SK7 I. F.	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 2)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Grid of 12A8GT Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 2)	Input I. F.	Adjust to maximum output
SHORT WAVE BAND (See Note A)	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C3 (See Fig. 5)	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C2 (See Fig. 4)	Short Wave antenna	Adjust to maximum output
	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	Trimmer C10 (See Fig. 4)	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "C")
BROAD-CAST BAND (See Note A)	1550 Kc.	200 mmf.	Grid of 12A8GT	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C4 (See Fig. 5)	Broadcast oscillator	Adjust to maximum output
	540 Kc.	200 mmf.	Grid of 12A8GT	Broadcast	Set Dial at 540 Kc.	Trimmer C8 (See Fig. 4)	Broadcast oscillator series pad	Adjust to maximum output
LOOP ALIGN-MENT (See Note B)	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	Trimmer C1 (See Fig. 5)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer T2 (See Fig. 5)	Iron Core Tracking Coil	Adjust to maximum output

NOTE "A"—The signal generator is connected to the "ANT." and "GND." terminals on the rear of the chassis when aligning the Short Wave Band and to the grid of the 12A8GT tube and ground terminal when setting the Broadcast Band oscillator end frequencies, (1550 and 540 K.C.).

The loop antenna need not be connected to the radio when making these adjustments.
NOTE "B"—Loop alignment is made with the chassis mounted in the cabinet and the loop antenna connected to the terminal board. The signal generator is connected to the "ANT." and "GND." terminals and the jumper on the terminal board connected to "EXT." terminal (See Fig. 1).

NOTE "C"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained.
Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

After each band is completed, repeat the procedure as a final check.

It is important during loop alignment that the same distance between the loop antenna and the chassis be maintained as when the chassis is installed in the cabinet.

FREQUENCY RANGE
5.7 to 18.3 MC.
540 to 1550 KC.

BELMONT RADIO CORP

MODEL 533, Series A
 Ser. OC3710100 up
 MODEL 533, Series B
 Ser. OC371605B up

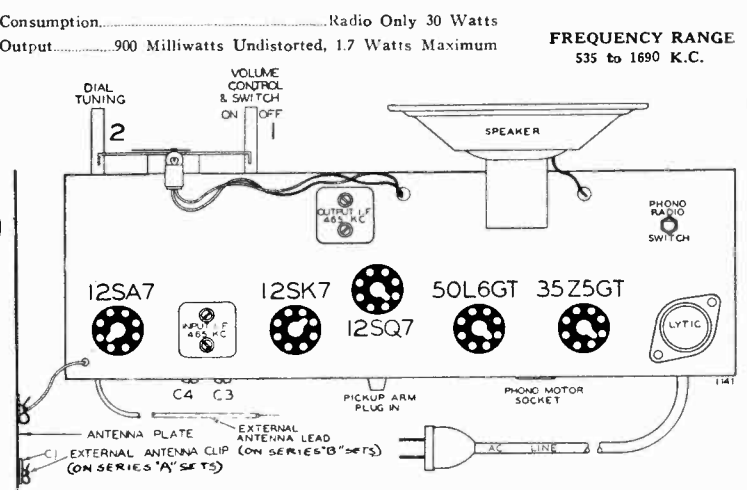
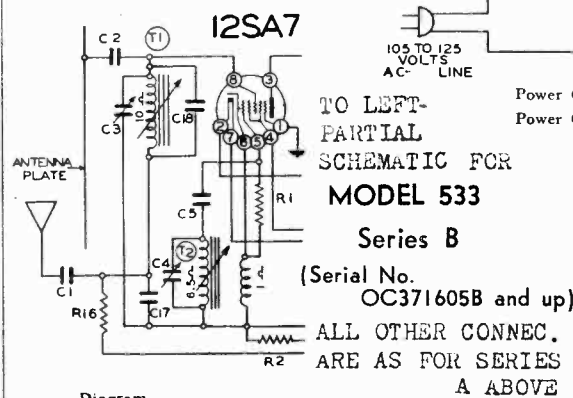
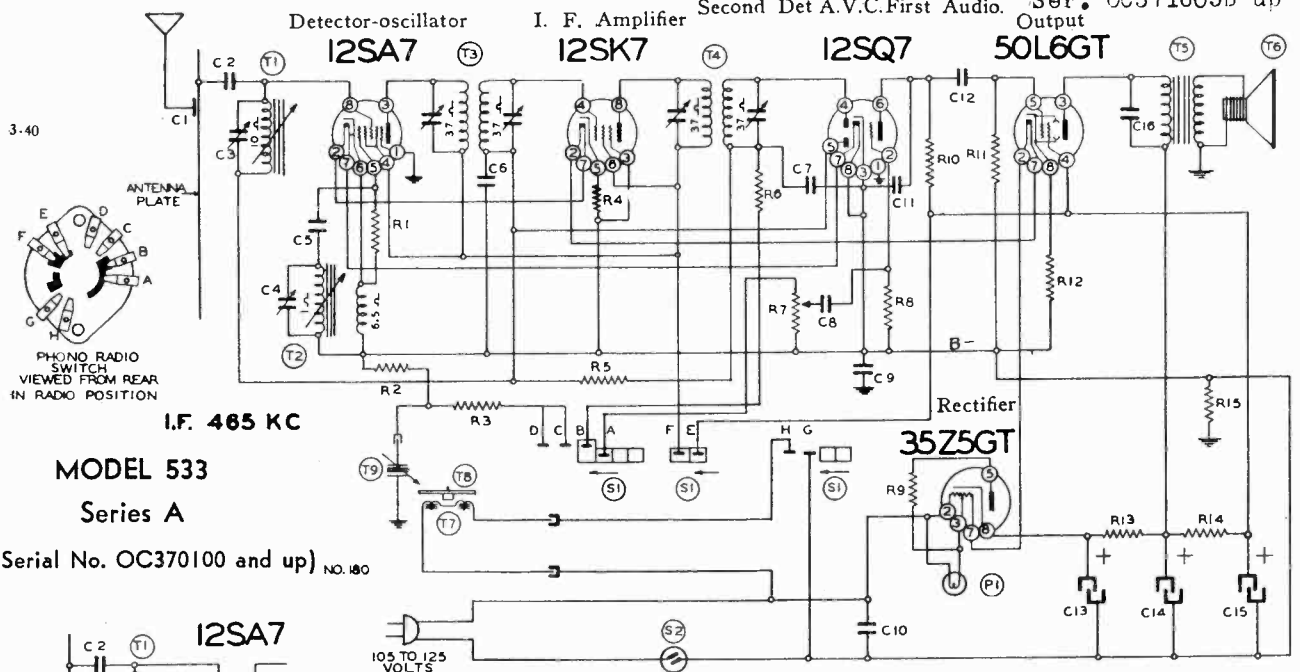


Diagram Ref. No. Part No. Description

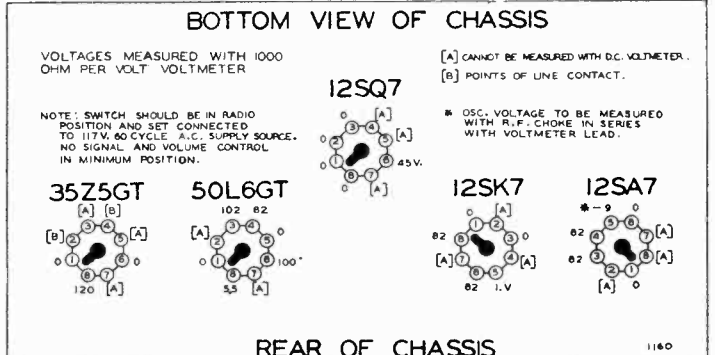
RESISTORS

R1	130176	20M ohm— $\frac{1}{2}$ w.
R2	130118	600M ohm— $\frac{1}{4}$ w.
R3	130118	600M ohm— $\frac{1}{4}$ w.
R4	13056	100 ohm— $\frac{1}{2}$ w.
R5	130170	3 megohm— $\frac{1}{4}$ w.
R6	13012	50M ohm— $\frac{1}{4}$ w.
R7	101217	$\frac{1}{2}$ megohm—volume control
R8	130257	5 megohm— $\frac{1}{4}$ w.
R9	130215	25 ohm— $\frac{1}{4}$ w.
R10	1309	200M ohm— $\frac{1}{4}$ w.
R11	13037	750M ohm— $\frac{1}{4}$ w.
R12	130166	150 ohm— $\frac{1}{4}$ w.
R13	13097	200 ohm— $\frac{1}{4}$ w.
R14	130287	1200 ohm—1 watt
R15	1309	200M ohm— $\frac{1}{4}$ w.
R16	1309	200M— $\frac{1}{4}$ w.

CONDENSERS

C2	129114	.0003 mfd. mica
C5	1295	.0001 mica
C6	1009	.05 x 200 v.
C7	1295	.0001 mica
C8	10025	.002 x 600 v.
C9	100119	.1 x 400 v.
C10	1001	.1 x 400 v.
C11	12912	.00025 mica
C12	10019	.006 x 600 v.
C13	11994	40 mfd. lytic—150 w. v.
C14	11994	20 mfd. lytic—150 w. v.
C15	11994	20 mfd. lytic—150 w. v.
C16	10011	.01 x 400 v.
C17	129162	.0008 Mica Condenser
C18	129163	.000025 Ceramicon Condenser

C13, C14 and C15 are in same unit



PARTS

T1	112767	Antenna Coil—Permeability tuning assembly complete
T2	112767	Oscillator Coil
T3	105108	Output Transformer
T6	114193	5" P.M. Speaker
T7	104206	Phono Motor
T8	12228	Turntable
T9	114194	Phono pick up arm
S1	125113	Phono Switch
S2		Switch on volume control
P1	107249	Pilot light

T1 and T2 in same unit

Series A	BETWEEN SOCKET TERMINALS AND CHASSIS.	Series B	BETWEEN SOCKET TERMINALS AND B-
C1	131262 .0001 washer condenser (clip on antenna plate)	C1	1295 0001 Mica Condenser
C3	124135 Antenna Trimmer	C3	124136 Antenna Trimmer
C4	124135 Oscillator Trimmer	C4	124136 Oscillator Trimmer
T3	108157F Input I. F. Coil—465 kc.	T3	108140F Input I. F. Coil—465 kc.
T4	108157G Output I. F. Coil—465 kc.	T4	108145D Output I. F. Coil—465 kc.

MODEL 533

Series A

Series B

BELMONT RADIO CORP.

ALIGNMENT PROCEDURE

The following equipment is required for aligning:

- Volume control—Maximum all adjustments.
- Connect — B of radio chassis to ground post of signal generator through .1 Mfd. condenser.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Output indicating meter.
- Non-metallic screwdriver.
- Dummy antennas—.1 Mfd., and 200 Mmf.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	.1 MFD.	Connect to Terminal "A" (See Fig. 1)	Iron Cores All the way out	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Connect to Terminal "A" (See Fig. 1)	Iron Cores All the way out	Two trimmers on top (See Fig. 1)	Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1690 Kc.	.1 MFD.	Connect to Terminal "A" (See Fig. 1)	Iron Cores All the way out	Trimmer (C4) (See Fig. 1)	Oscillator	Adjust to maximum output
	1690 Kc.	200 MMF.	Connect to Terminal "B" (See Fig. 1)	Iron Cores All the way out	Trimmer (C3) (See Fig. 1)	Antenna	Adjust to maximum output
	1400 Kc.	200 MMF.	Connect to Terminal "B" (See Fig. 1)	Turn Dial to 1400 Kc.	Adjust position of antenna coil right or left. (See Fig. 3)	Antenna Coil Adjustment	Adjust to maximum output (See Note "A")
	1690 Kc.	200 MMF.	Connect to Terminal "B" (See Fig. 1)	Turn Dial to 1690 Kc.	Adjust trimmer (C3) (See Fig. 1)	Antenna	Adjust to maximum output (Check for tracking) (See Note "B")

NOTE "A"—The antenna coil assembly is made so that it is movable right or left. When making the adjustment as given in the alignment procedure move the coil assembly very slowly. It can be moved by hand or by pivoting one edge of the blade of a screwdriver in the hole and engaging the blade in the gear teeth of the coil form.

NOTE "B"—After the antenna coil has been tracked at 1400 Kc. it is necessary to check the antenna trimmer (C3) adjustment again at 1690 Kc. If no appreciable change in trimmer adjustment is made the coil is in track, if the trimmer requires considerable change it will be necessary to again adjust the position of the antenna coil at 1400 Kc. These two adjustments should be tried several times until no change of trimmer adjustment is required at 1690 Kc.

SERVICE NOTES:

Resistances of coil windings are indicated in ohms on the schematic circuit diagram.

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

Excessive hum, stuttering, low volume and a reduction in all D. C. voltages is usually caused by a shorted electrolytic condenser; open by-pass condensers frequently cause oscillation and distorted tone.

ALIGNING INSTRUCTIONS:

CAUTION—No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltage, defective tubes, condensers and resistors. In order to properly align this radio, the chassis should be removed from the cabinet.

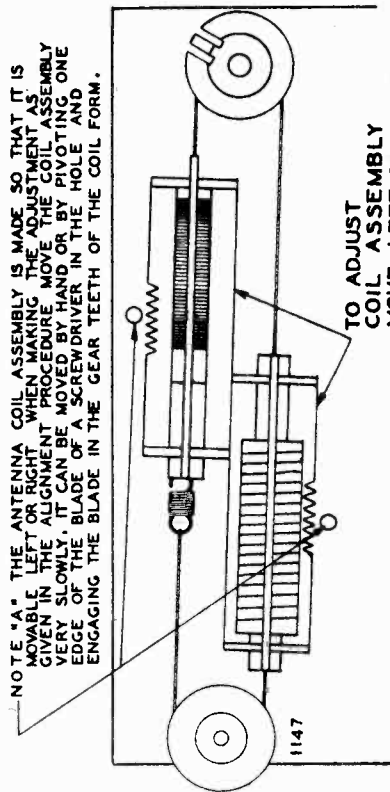
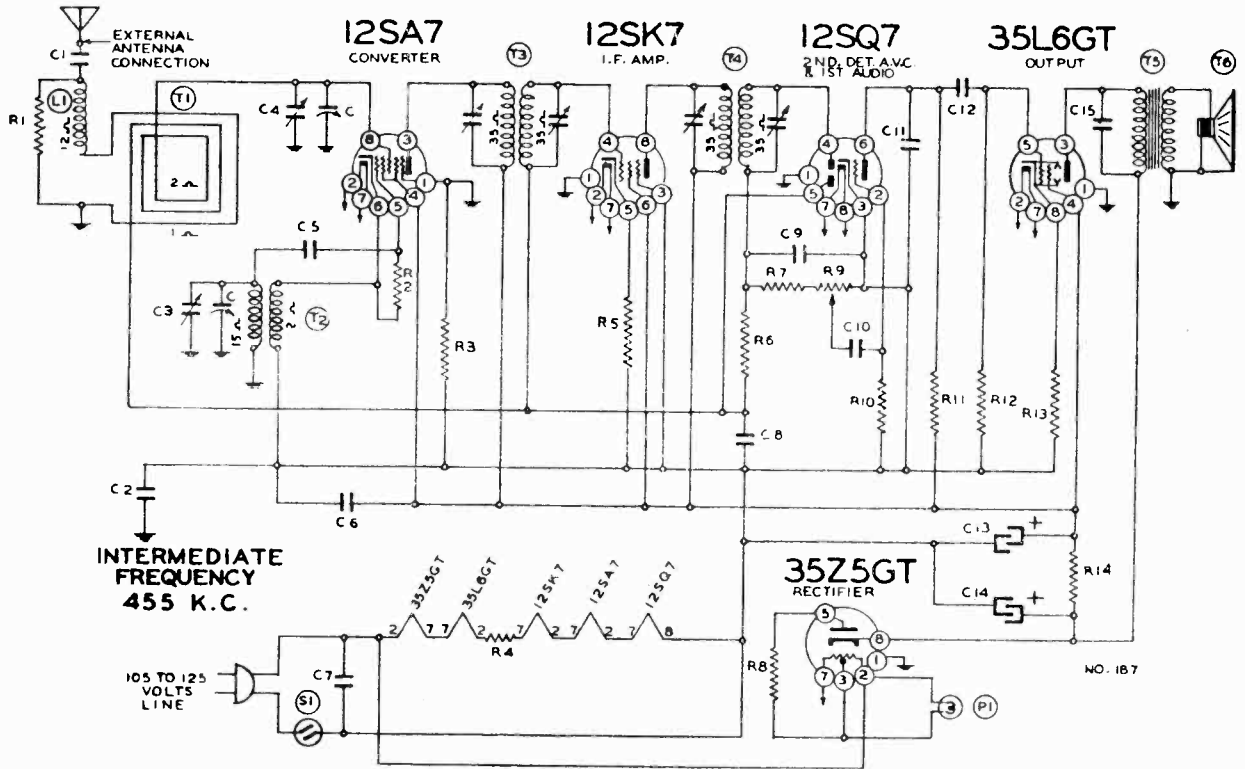


FIG. 3.—TUNING ASSEMBLY

BELMONT RADIO CORP.



Schematic Diagram Part Ref. No. No.

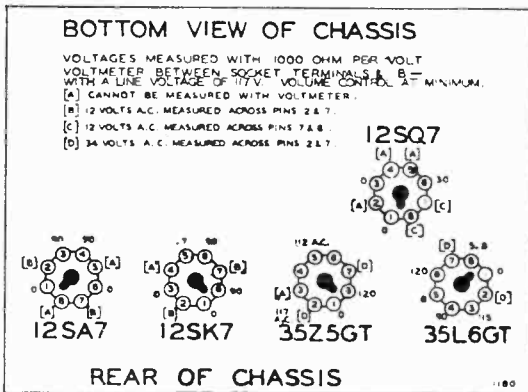
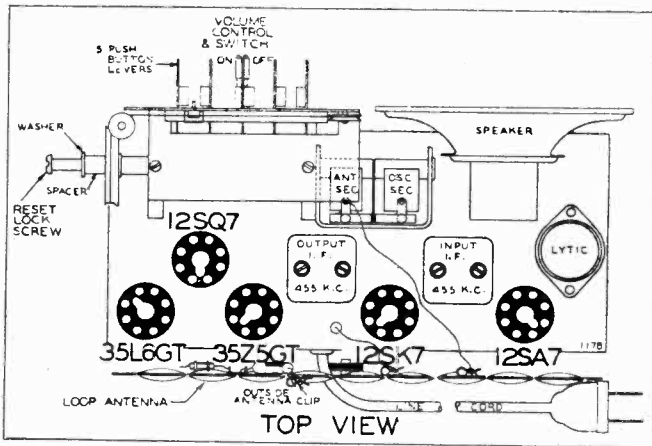
Description CONDENSERS

C	102132	2 gang variable condenser
C1	10011	.01 x 400 v.
C2	10091	.15 x 400 v.
C3		Oscillator trimmer on gang
C4		Antenna trimmer on gang
C5	12921	.0002 mfd. mica
C6	1009	.05 x 200 v.
C7	1001	.1 x 400 v.
C8	1009	.05 x 200 v.
C9	1295	.0001 mfd. mica
C10	10025	.002 x 600 v.
C11	12912	.00025 mfd. mica
C12	100106	.004 x 600 v.
C13	11992	20 mfd. lytic x 150 w. v.
C14	11992	40 mfd. lytic x 150 w. v.
C15	10026	.02 x 400 v.

C13 and C14 are in same unit

RESISTORS

R1	130314	2200 ohm—1/2 w.
R2	13094	50M ohm—1/2 w.
R3	1309	200M ohm—1/2 w.
R4	130315	75 ohm—1 1/2 w.
R5	130203	40 ohm—1/2 w.
R6	1304	3 megohm—1/2 w.
R7	1301	25M ohm—1/2 w.
R8	130215	25 ohm—1/2 w.
R9	101198	1 megohm volume control
R10	130257	5 megohm—1/2 w.
R11	1303	500M ohm—1/2 w.
R12	1303	500M ohm—1/2 w.
R13	130166	150 ohm—1/2 w.
R14	130287	1200 ohm—1 w.



BRC Series A—Form No. 5125—4200-10-40 PRO. 259—1732

T1	111182	Loop antenna—complete assembly
T2	110145	Oscillator coil
T3	108140I	Input I. F.—455 kc.
T4	108141D	Output I. F.—455 kc.
T5	105104	Output Transformer
T6	114201	5" P. M. Speaker
L1	12311	Loading coil
S1		On-off switch on volume control
P1	107249	Pilot light bulb T47

FOR TUNER DATA, SEE INDEX

MODELS 534, 695

BELMONT RADIO CORP.

MODEL 534
 Power Consumption - - - - - 35 Watts
 Power Output - - - - - 800 Milliwatts Undistorted
 Sensitivity for 50 Milliwatt Output: 20 Microvolts Average
 Selectivity - 65 KC Broad at 1000 Times Signal at 1000 KC
 Tuning Frequency Range - - - - - 535 to 1650 KC
 Intermediate Frequency - - - - - 455 KC
 Speaker - - - - - 5 in. P.M. Dynamic

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 12SK7 I. F. Tube	Rotor full open (Plates out of mesh)	Two trimmers on top (See Top View)	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Grid of 12SA7	Rotor full open (Plates out of mesh)	Two trimmers on top (See Top View)	Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1650 Kc.	.1 MFD.	Grid of 12SA7	Rotor full open (Plates out of mesh)	Trimmer—Bottom of gang (See Top View)	Oscillator	Adjust to maximum output
	1400 Kc.		(See Note "A" and "B")	Set dial at 1400 Kc.	Trimmer—Bottom of gang (See Top View)	Antenna	(See Note "A") Adjust to maximum output

Loop aerial should be connected when aligning receiver.
 NOTE "A"—Mount the chassis and the loop antenna in the cabinet; connect the loop antenna to the chassis. Adjust the antenna trimmer through hole in bottom of cabinet.
 NOTE "B"—Lay the output lead from the signal generator in back of the loop antenna. Turn up the output of the generator, picking up the energy in the loop antenna without any electrical connection from the signal generator.

MODEL 695

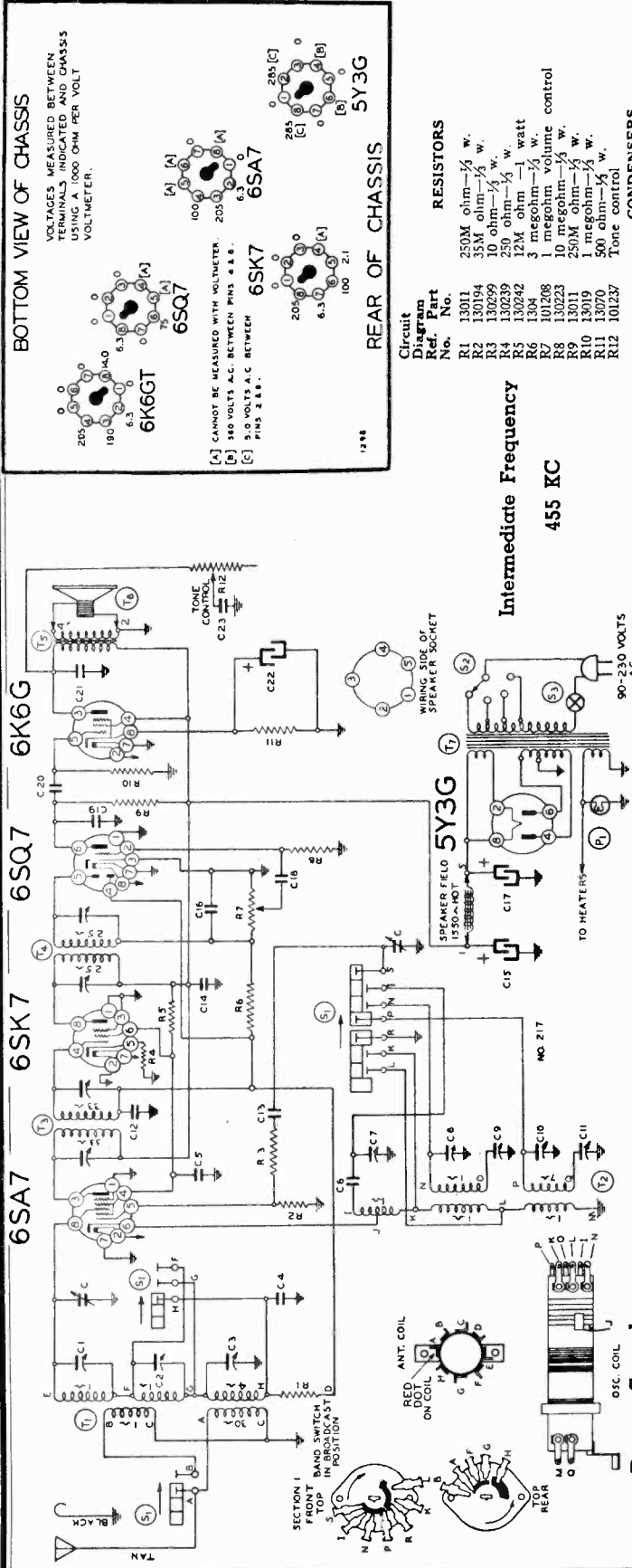
BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 12SK7 I. F. Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Top View)	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Grid of 12SA7	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Top View)	Input I. F.	Adjust to maximum output
SHORT WAVE BAND	17 Mc.	400 Ohms	External Antenna and B—	Short Wave	Set Dial at 17 Mc.	Trimmer C8	Short Wave oscillator	Adjust to signal
	17 Mc.	400 Ohms	External Antenna and B—	Short Wave	Set Dial at 17 Mc.	Trimmer C4	Short Wave antenna	Adjust to maximum output
	6 Mc.	400 Ohms	External Antenna and B—	Short Wave	Set Dial at 6 Mc.	Trimmer C12	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "A")
BROAD-CAST BAND	1600 Kc.	.1 mmf.	Grid of 12SA7	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C9	Broadcast oscillator	Adjust to signal
	1400 Kc.	200 mmf.	External Antenna and B—	Broadcast	Set Dial at 1400 K. C.	Trimmer C7 (See Top View)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	External Antenna and B—	Broadcast	Set Dial at 600 K. C.	Trimmer C11 (See Top View)	Broadcast Series Pad	Adjust to maximum output (See Note "A")

The loop antenna should be connected to the radio when making all adjustments—Loop alignment is made with the chassis mounted in the cabinet and the loop antenna connected.
 NOTE "A"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained.
 Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.
 After each band is completed, repeat the procedure as a final check.

Power Consumption - - - - - 35 Watts
 Power Output - - - - - 900 Milliwatts Undistorted
 Sensitivity for 50 Milliwatt Output - 15 Microvolts Average
 Selectivity - 46 KC Broad at 1000 Times Signal at 1000 KC
 Tuning Frequency Range - - - - - 540 to 1600 KC
 Shortwave - - - - - 5.6 to 18.3 MC
 Intermediate Frequency - - - - - 455 KC
 Speaker - - - - - 5 in. P.M. Dynamic

BELMONT RADIO CORP.

MODEL 542
Series A



VOLTAGES MEASURED BETWEEN TERMINALS INDICATED AND CHASSIS USING A 1000 OHM PER VOLT VOLTMETER.

CANNOT BE MEASURED WITH VOLTMETER. 180 VOLTS A.C. BETWEEN PINS 4 & 8. 9.0 VOLTS A.C. BETWEEN PINS 2 & 8.

RESISTORS

- R1 13011 250M ohm-1/2 w.
- R2 130194 35M ohm-1/2 w.
- R3 130299 10 ohm-1/2 w.
- R4 130239 250 ohm-1/2 w.
- R5 130242 12M ohm-1 watt
- R6 1304 3 megohm-1/2 w.
- R7 101208 1 megohm volume control
- R8 130223 10 megohm-1/2 w.
- R9 13011 250M ohm-1/2 w.
- R10 13019 1 megohm-1/2 w.
- R11 13070 500 ohm-1/2 w.
- R12 101237 Tone control

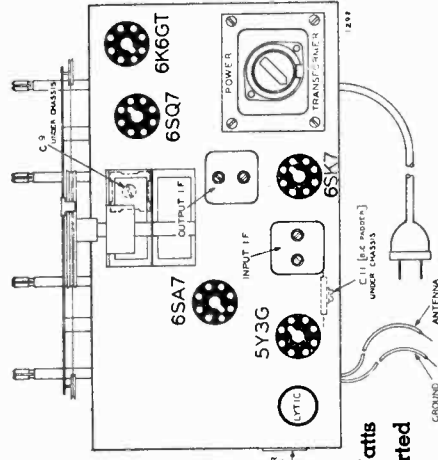
CONDENSERS

- C1 102124 Two Gang Variable Condenser
- C2 124124 S. W. Antenna Trimmer
- C3 124124 M. W. Antenna Trimmer
- C4 1009 B. C. Antenna Trimmer .05 x 200 v.
- C5 1001 .1 x 400 v.
- C6 129155 S. W. Oscillator Trimmer
- C7 124123 M. W. Oscillator Trimmer
- C8 129154 .0025 M. W. Padder Trimmer
- C9 124123 B. C. Oscillator Trimmer
- C10 129155 B. C. Padder .02 x 400 v.
- C11 10026 .02 x 400 v.
- C12 1295 .0001 Mica
- C13 1295 .1 x 400 v.
- C14 1001 40 mid. lytic
- C15 119103 .0001 Mica
- C16 1295 10 mid. lytic
- C17 119103 10 mid. lytic
- C18 10025 .002 x 600 v.
- C19 1292 .0005 Mica
- C20 10026 .02 x 400 v.
- C21 10071 .04 x 600 v.
- C22 119103 20 mid. lytic x 25 w. v.
- C23 10013 .05 x 400 v.

C15, C17 and C22 in same unit

- PARTS
- T1 11169 Antenna Coil
 - T2 10143 Oscillator Coil
 - T3 10815H Input T. F.
 - T4 10815C Output T. F.
 - T5 10875C Transformer
 - T6 114126 6" Dynamic Speaker (1550 ohm field)
 - T7 104193B Power Transformer 90-230 volts
 - S1 123105 Band Switch
 - S2 Voltage Switch on Power Transformer
 - S3 Volume Control-On-Off switch
 - P1 10794 Pilot Light Bulb T-44
 - 101237 Tone Control

Intermediate Frequency
455 KC



- TRIMMER VIEW
- S.W. OSC. C7
 - VOLUME CONTROL C8
 - BAND SWITCH C9
 - B.C. ANT. C10
 - M.W. ANT. C2
 - ANT. C1
 - B.C. OSC. C3

MODEL 542 SERIES A

- Power Consumption - - - 55 Watts
- Power Output - 1 1/2 Watts Undistorted
- Tuning Frequency Range
Broadcast Band - 540 to 1735 KC
- Medium Band - - - 2.2 to 7 MC
- Short Wave Band - - - 6.6 to 23 MC

Power Supply

This radio is equipped with a universal transformer, 40 to 60 cycles which has the following taps: 90-110-130-150-230 volts.

A rotary switch mounted on top of the transformer selects the proper voltage tap.

Set the switch for various line voltages to conform with the following table:
90 mark for current of 85 to 105 volts
110 mark for current of 105 to 125 volts
130 mark for current of 125 to 145 volts
150 mark for current of 145 to 165 volts
230 mark for current of 210 to 250 volts

To set the switch, loosen the set screw on the side of the switch and rotate the knob so that the mark desired shows up in the small framed window on the top of the switch. Tighten the set screw.

MODEL 542, Series A
MODEL 681, Series A

BELMONT RADIO CORP.

The following equipment is required for aligning:
 • An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
 • Output indicating meter.
 • Non-metallic screwdriver.
 • Dummy antennas—1 Mf., 200 Mmf., 400 Ohms.

ALIGNMENT PROCEDURE

• Volume control—Maximum all adjustments.
 • Connect radio chassis to ground post of signal generator with a short heavy lead.
 • Connect dummy antenna value in series with generator output lead.
 • Connect output meter across primary of output transformer.
 • Allow chassis and signal generator to "heat up" for several minutes.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 I. F. Tube	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Chassis View)	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Grid of 6SA7 (Extreme Left Rotation)	Broadcast (Extreme Left Rotation)	Rotor full open (Plates out of mesh)	Two trimmers on top (See Chassis View)	Input I. F.	Adjust to maximum output
SHORT WAVE BAND	21 Mc.	400 ohms	Antenna lead	Short Wave (Extreme Right Rotation)	Set Dial at 21 MC	Trimmer (C7) (See Trimmer View)	Short wave oscillator	See Note "A" Adjust to maximum output
	21 Mc.	400 ohms	Antenna lead	Short Wave (Extreme Right Rotation)	Set Dial at 21 MC	Trimmer (C1) (See Trimmer View)	Short wave antenna	Adjust to maximum output
MEDIUM WAVE BAND	6 Mc.	400 ohms	Antenna lead	Medium Wave	Set Dial at 6 MC	Trimmers (C8, C2) (See Trimmer View)	Medium wave oscillator and antenna	Adjust to maximum output
	2.3 Mc.	400 ohms	Antenna lead	Medium Wave	Set Dial at 2.3 MC	Trimmer (C9) (See Chassis View)	Medium wave osc. series pad	Adjust to maximum output dial. (See note "B")
BROAD-CAST BAND	1730 Kc.	200 mmf.	Antenna lead	Broadcast (Extreme Left Rotation)	Rotor full open (Plates out of mesh)	Trimmer (C10) (See Trimmer View)	Broadcast oscillator	Adjust to maximum output
	1500 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1500 Kc.	Trimmer (C3) (See Trimmer View)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 600 Kc.	Trimmer (C11) (See Chassis View)	Broadcast oscillator series pad	Adjust to maximum output dial. (See note "B")

MODEL 542—SERIES A

The loop antenna should be connected to the radio when making all R. F. adjustments.
 NOTE "A"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained.
 Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.
 After each band is completed, repeat the procedure as a final check.

NOTE "A"—It is extremely necessary when making this adjustment that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental.
 NOTE "B"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained.
 Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.
 After each range is completed, repeat the procedure as a final check.

Model 681—SERIES A

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (In Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD	Grid of 6SA7	Broadcast	Rotor full open (Plates out of mesh)	Trimmers on top (See Chassis View)	Input and Output I. F.	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C4	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C1	Short Wave antenna	Adjust to maximum output
SHORT WAVE BAND	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	Trimmer C7	Short Wave oscillator series pad	Adjust to maximum output dial. (See note "A")
	1600 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C5	Broadcast oscillator	Adjust to maximum output
BROAD-CAST BAND	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	Trimmer C2 (See Chassis View)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer C6 (See Chassis View)	Broadcast oscillator series pad	Adjust to maximum output dial. (See note "A")

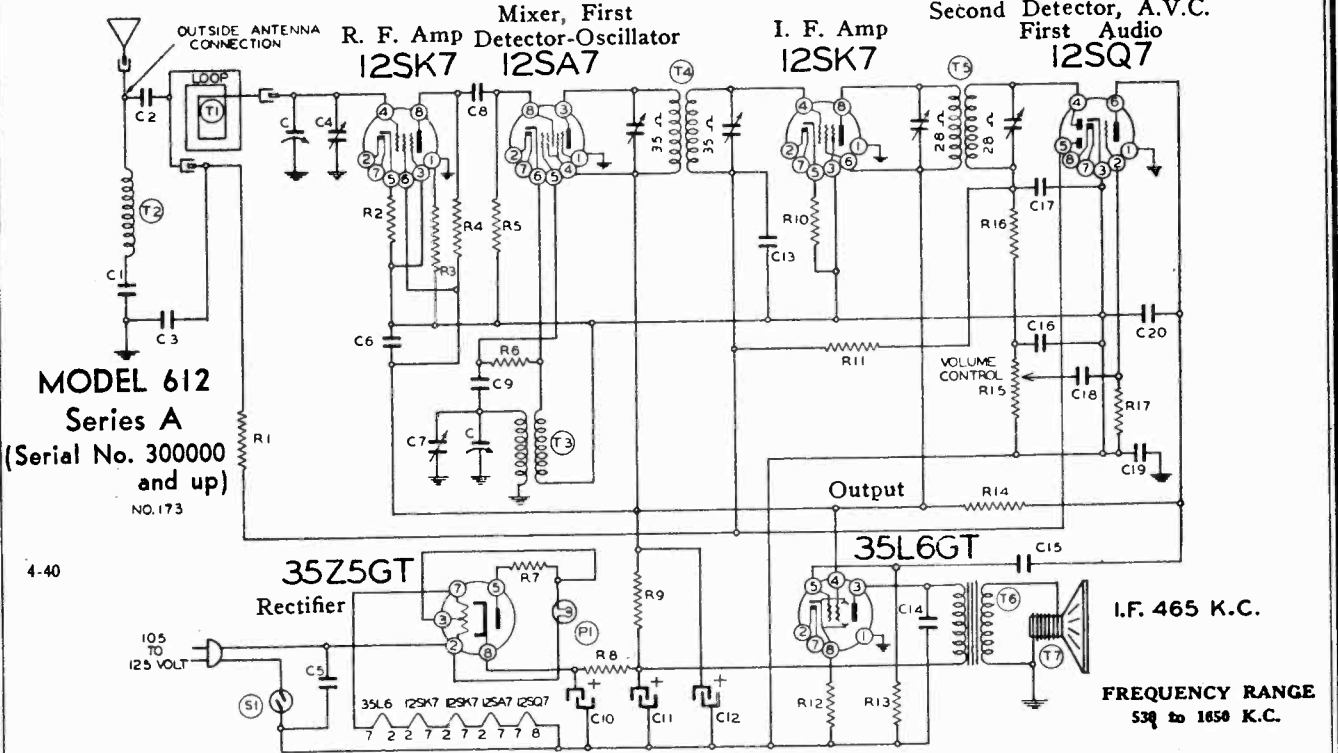
BELMONT RADIO CORP.

MODEL 612, Series A

Ser. 300000 up

Second Detector, A.V.C.

First Audio
12SQ7



MODEL 612
Series A
(Serial No. 300000
and up)
NO. 173

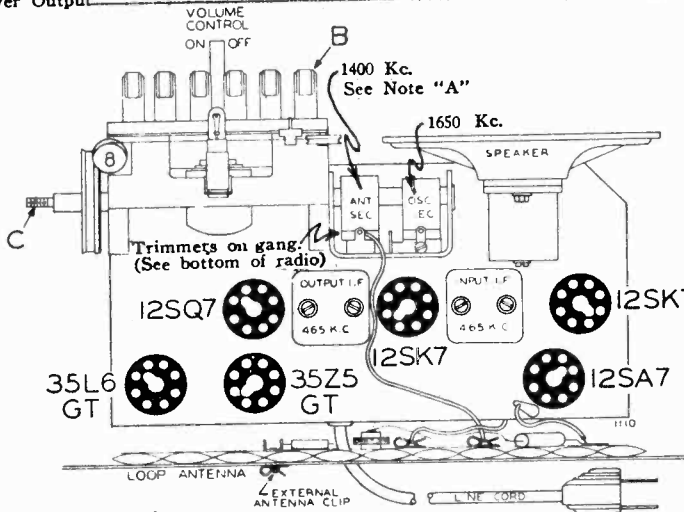
4-40

I.F. 465 K.C.

FREQUENCY RANGE
530 to 1650 K.C.

Power Consumption _____ 35 Watts
Power Output _____ 1 Watt Undistorted, 1.7 Watts Maximum

Diagram Ref. Part No. Description



For
Tuner
Data
see
Index

For Conv.
Align. see
Spec. Sec.
Vol. VIII

RESISTORS

R1	130100	150M ohms— $\frac{1}{2}$ w.
R2	130168	100 ohms— $\frac{1}{2}$ w.
R3	130100	150M ohms— $\frac{1}{2}$ w.
R4	130218	5M ohms— $\frac{1}{2}$ w.
R5	13020	100M ohms— $\frac{1}{2}$ w.
R6	13094	50M ohms— $\frac{1}{2}$ w.
R7	130215	25 ohms— $\frac{1}{2}$ w.
R8	130296	200 ohms—1 watt
R9	130287	1200 ohms—1 watt
R10	130166	150 ohm— $\frac{1}{2}$ w.
R11	1304	3 megohm— $\frac{1}{2}$ w.
R12	130166	150 ohm— $\frac{1}{2}$ w.
R13	1303	500M ohm— $\frac{1}{2}$ w.
R14	1309	200M ohm— $\frac{1}{2}$ w.
R15	101211	1 megohm—volume control and switch
R16	13012	50M ohm— $\frac{1}{2}$ w.
R17	130257	5 megohm— $\frac{1}{2}$ w.

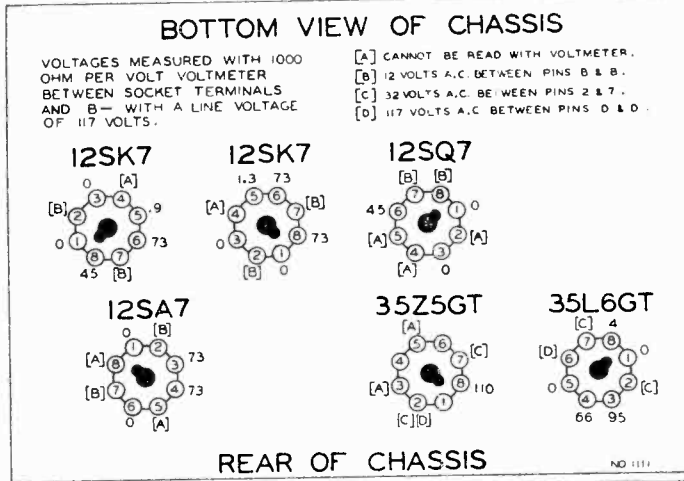
CONDENSERS

C	102116	Two gang variable condenser
C1	10011	.01 x 400 v.
C2	129132	.000125 mica
C3	10026	.02 x 400 v.
C4		B.C. Antenna Trimmer
C5	1001	.1 x 400 v.
C6	1006	.25 x 200 v.
C7		B.C. Oscillator Trimmer
C8	1295	.0001 mica
C9	1295	.0001 mica
C10	11994	40 ufd.—150 w.v. lytic
C11	11994	20 ufd.—150 w.v. lytic
C12	11994	20 ufd.—150 w.v. lytic
C13	1009	.05 x 200 v.
C14	10026	.02 x 400 v.
C15	100106	.004 x 600 v.
C16	12939	.00005 mica
C17	1295	.0001 mica
C18	10025	.002 x 600 v.
C19	100110	.2 x 400 v.
C20	1295	.0001 mica

PARTS

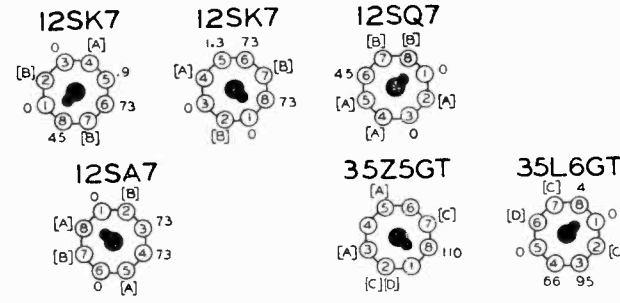
T1	111145	Loop Antenna Assembly
T2	1237	Loading Coil
T3	110128	Oscillator Coil
T4	108140G	Input I.F. Coil—465 kc.
T5	108145C	Output I.F. Coil—465 kc.
T6	10595B	Output Transformer
T7	114191	5" P.M. Speaker
S1		On-off switch
P1	107249	T-47 Pilot light

NOTE "A" Lay the output lead from the generator in back of the loop antenna. Turn up the output of the generator, picking up the energy in the loop antenna without any electrical connection from the generator.



VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND B— WITH A LINE VOLTAGE OF 117 VOLTS.

[A] CANNOT BE READ WITH VOLTMETER.
[B] 12 VOLTS A.C. BETWEEN PINS B & B.
[C] 32 VOLTS A.C. BETWEEN PINS 2 & 7.
[D] 117 VOLTS A.C. BETWEEN PINS D & D.



REAR OF CHASSIS

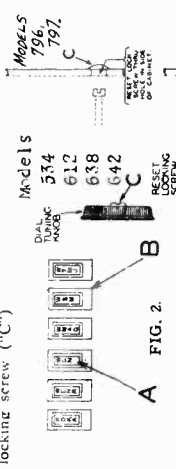
MODELS 534, 612, 638, 642, 678C, 794, 796, 797

PROCEDURE FOR SETTING THE AUTOMATIC TUNER PUSH BUTTONS

- MODELS 612, 638, 794, 796, 797, 642, 638
1. Make a list of six stations you tune in regularly. There are six push buttons on the front of the radio by means of which six stations may be tuned automatically. (See "B," Fig. 2.)
 2. Punch out the call letters of the stations you have selected from the set of station call letter tabs supplied. On the front of each automatic tuner button an opening is provided for inserting the call letter tabs. (See "A," Fig. 2.) Insert the call letter tabs in the rectangular openings in each of the automatic tuner push buttons.
 3. Stations may be set up in any sequence desired. Press any one of the automatic tuner push buttons down all the way.
 4. Hold the push button down firmly, and tune set very carefully to station desired, until station is heard clearly and with maximum volume. Release the push button.
 5. Press down another automatic tuner push button. Hold it down FIRMLY and carefully tune in next station desired. Release this push button.

Follow this procedure until you have selected all of your favorite stations.

6. Now rotate the tuning knob to the right (clockwise) as far as it will turn, and with a screwdriver tighten the special locking screw ("C").



MODEL 794
Looking at the back of the cabinet note the locking screw "C" on the left hand side of the chassis. It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT.

This screw will lock in place all the stations you have selected on the automatic tuner push buttons. (Note: Locking screw "C" is loose when radio is shipped from factory.)

CHANGING STATIONS:

If you should desire to change any station you have selected to another, loosen the locking screw "C" one or two turns. Hold in push button on which the station is to be changed and tune in new station desired. Release the push button. (Note: If the dial mechanism works hard when setting up a new station for one of the automatic tuner buttons, it is due to a new locking screw being too tight. Loosen the locking screw "C" until the dial mechanism works freely with the tuner push button pressed in.

Be sure to retighten the locking screw, otherwise the stations you have previously selected will not stay adjusted to the push buttons.

The set is now set up for automatic tuning.

pushbutton and the dial tuning knob are latched in together. Holding the pushbutton in firmly, tune in the station indicated on the call letter tab on this pushbutton.

6. Follow this procedure until you have tuned in all of your favorite stations.
7. When the last pushbutton has been properly set up, it is necessary to release it from the latched-in position before the tuner mechanism can be locked. To release this pushbutton, press the pushbutton release pin on the bottom of the tuner unit. This will trip the latching mechanism and all the pushbuttons will be released to out position. (See Fig. 2A.)
8. Now, press on the dial tuning knob hard enough to make it latch in. Rotate the dial tuning knob to the right (clockwise) until the knob can not be turned any further without forcing it. This will lock the tuner mechanism and all the stations that have been set up on the pushbuttons will be locked in place for automatic tuning.
9. Press in any one of the pushbuttons and—YOUR FAVORITE STATION IS SELECTED.

The important steps to remember when setting up stations on the pushbuttons for automatic tuning are:

1. To unlock the tuner mechanism press on the dial tuning knob hard enough to make it stay latched in. Rotate the dial tuning knob to the left (counterclockwise) until the knob cannot be turned any further without forcing it.
2. To set a pushbutton, push in all the way and hold in firmly both the pushbutton and the dial tuning knob so that both latch in. Hold in firmly the pushbutton and tune in the station by means of the dial tuning knob. Set all the pushbuttons in the same manner.
3. To release the last pushbutton press the pushbutton release pin on the bottom of the tuner unit.
4. To lock the tuner mechanism push on the dial tuning knob hard enough to make it stay latched in. Rotate the dial tuning knob to the right (clockwise) until the knob cannot be turned any further without forcing it. (NOTE: All the pushbuttons must be in out position when locking the tuner mechanism.)

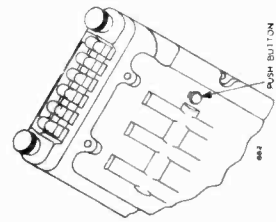


Fig. 2A—
Bottom View of Remote Tuner Unit Showing Push Button Release Pin.

MODEL 678C
PROCEDURE FOR SETTING THE AUTOMATIC PUSHBUTTONS:

There are six pushbuttons on the Remote Tuner Unit by means of which six stations may be set up for automatic tuning (see B, Fig. 2).

Make a list of local stations you tune in regularly; any number up to and including six. Punch out from the set of station call letter tabs supplied, the call letters of the stations you have selected. On the top of each pushbutton a slot is provided for inserting the call letter tabs, (see A, Fig. 2). Insert the call letter tabs.

NOW, PROCEED AS FOLLOWS:—

1. Push the dial tuning knob in hard enough to make it latch in.
2. Rotate the dial tuning knob to the left (counterclockwise), until the knob can not be turned any further without forcing.

You will note that as the knob is rotated it will turn easily until the pointer reaches the end of the dial scale and then a slight amount of force will be required to actually start unlocking the tuner mechanism. Beyond this point the knob will turn quite easily again until the tuner mechanism is completely unlocked. At this point do not force the knob any further. The tuner mechanism is now unlocked.

(NOTE:—Automatic tuner mechanism is locked tight when radio is shipped from the factory.)

3. Push in all the way any one of the pushbuttons and at the same time hold in firmly the dial tuning knob. Both the dial tuning knob and the pushbutton should be pushed hard enough to make them stay latched in. The reason for holding the dial tuning knob in firmly when the pushbutton is pressed in is due to the latching mechanism in the Remote Tuner unit which is so constructed to release the dial tuning knob entirely when a pushbutton is pressed in. When setting up stations for automatic tuning, however, it is necessary that both the dial tuning knob and the pushbutton be latched in together.
4. Press in on the pushbutton which is latched in. Holding it in firmly, tune in by means of the dial tuning knob the station indicated on the station call letter tab on this pushbutton. Turn the dial tuning knob very slowly back and forth (while still pressing in firmly on the pushbutton), until the station is clearest. The station will then be accurately tuned in.
5. Push in all the way another pushbutton, at the same time holding the dial tuning knob in so that both the

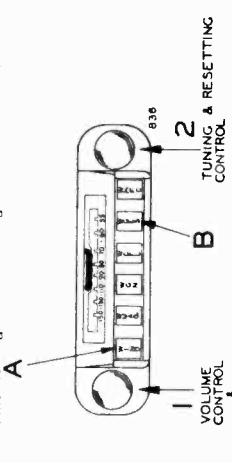
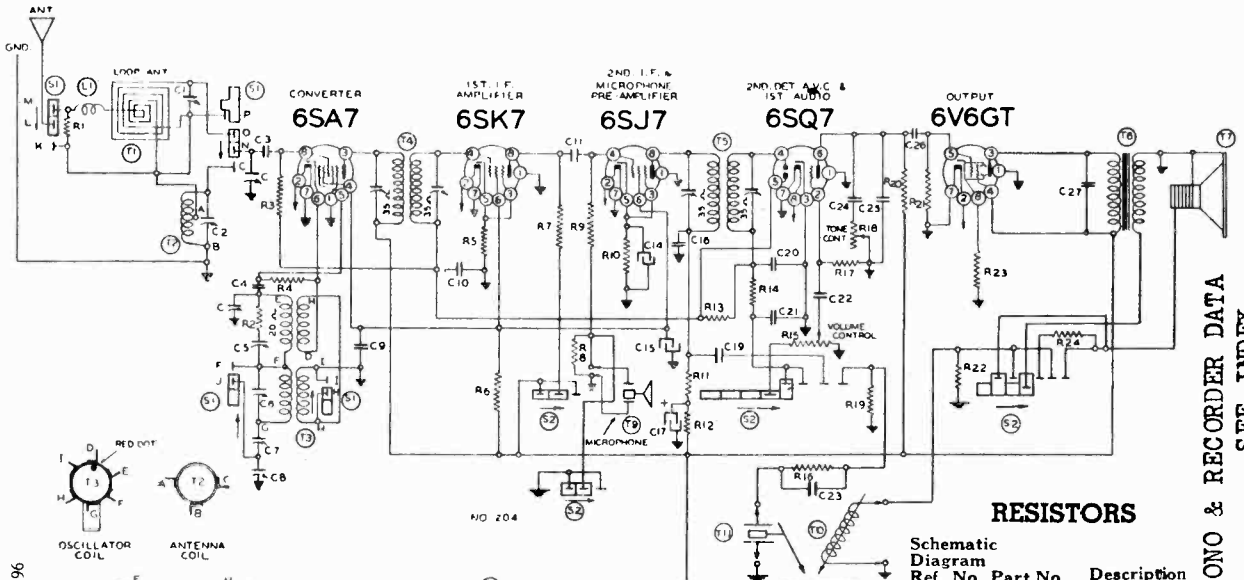


Fig. 2—Front View of Remote Tuner Unit

BELMONT RADIO CORP.

MODEL 616
Series A

BRC. Series A—Form 6265—IM 8-40
Pto. 196



FOR PHONO & RECORDER DATA SEE INDEX

RESISTORS

Schematic Diagram Ref. No. Part No. Description

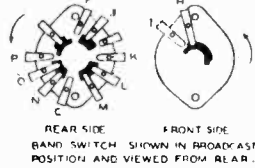
R1	130321	3500 ohm— $\frac{1}{2}$ w.
R2	130197	20 ohm— $\frac{1}{2}$ w.
R3	1304	3 megohm— $\frac{1}{2}$ w.
R4	13076	30M ohm— $\frac{1}{2}$ w.
R5	13097	200 ohm— $\frac{1}{2}$ w.
R6	130116	15M ohms— $\frac{1}{2}$ w.
R7	13022	5M ohms— $\frac{1}{2}$ w.
R8	13019	1 megohm— $\frac{1}{2}$ w.
R9	13012	50M ohms— $\frac{1}{2}$ w.
R10	130192	2M ohms— $\frac{1}{2}$ w.
R11	1302	75M ohms— $\frac{1}{2}$ w.
R12	1301	25M ohms— $\frac{1}{2}$ w.
R13	1304	3 megohm— $\frac{1}{2}$ w.
R14	13012	50M ohms— $\frac{1}{2}$ w.
R15	101142	1 megohm volume control
R16	13028	750M ohm— $\frac{1}{2}$ w.
R17	130257	5 megohm— $\frac{1}{2}$ w.
R18	101143	Tone control
R19	13019	1 megohm— $\frac{1}{2}$ w.
R20	13011	250M ohm— $\frac{1}{2}$ w.
R21	1303	500M ohm— $\frac{1}{2}$ w.
R22	130322	10 ohm—1 w.
R23	130323	270 ohm—1 w.
R24	130203	40 ohm— $\frac{1}{2}$ w.

CONDENSERS

C	102135	2 gang variable condenser
C1	124127	B.C. Antenna trimmer
C2	124127	S.W. Antenna trimmer
C3	1292	.0005 mica
C4	12960	.00015 mica
C5	124112	S.W. Oscillator trimmer
C6	124112	B.C. Oscillator trimmer
C7	124146	B.C. Oscillator series padder
C8	124146	S.W. Oscillator series padder
C9	10013	.05 x 400 v. condenser
C10	1009	.05 x 200 v. condenser
C11	12921	.0002 mica
C12	119114	15 mfd. x 400 v. lytic
C13	119114	15 mfd. x 400 v. lytic
C14	119114	20 mfd. x 25 volt lytic
C15	119114	10 mfd. x 300 v. lytic
C16	1292	.0005 mica
C17	11967	8 mfd. x 450 v. lytic
C18	1001	.1 x 400 v. condenser
C19	10011	.01 x 400 v. condenser
C20	129161	.0001 mica
C21	129161	.0001 mica
C22	10012	.003 x 600 v. condenser
C23	1292	.0005 mica
C24	10089	.008 x 800 v.
C25	12912	.00025 mica
C26	10026	.02 x 400 v.
C27	10011	.01 x 400 v.

PARTS

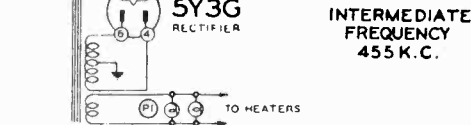
T1	111211	Loop Antenna Assembly
T2	111184	S.W. Antenna Coil
T3	110163	B.C. S.W. Oscillator Coil
T4	108169D	Input I.F. Coil complete—455 kc.
T5	108106T	Output I.F. Coil complete—455 kc.
T6	105118	Output Transformer
T7	114218	8 in. dynamic speaker
T8	104225	Power Transformer
T9	114214	Microphone and Cable
T10	104230B	Recording and playback unit complete 60 cycle
T11	104235B	Recording and playback unit complete 50 cycle Phono Pickup arm



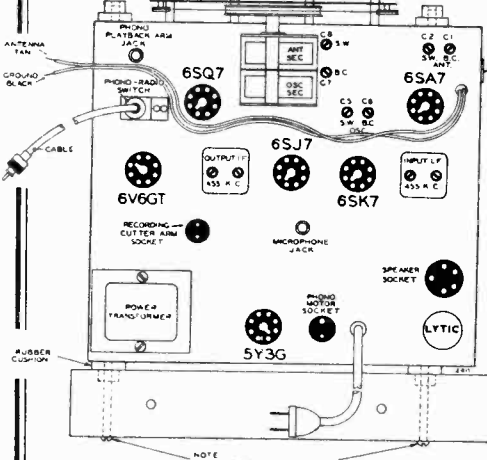
OSCILLATOR COIL ANTENNA COIL



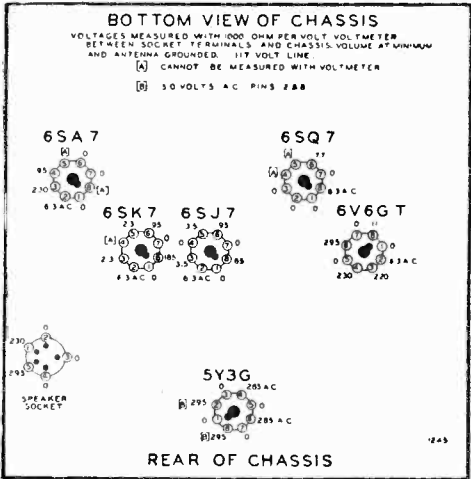
REAR SIDE FRONT SIDE
BAND SWITCH SHOWN IN BROADCAST POSITION AND VIEWED FROM REAR.



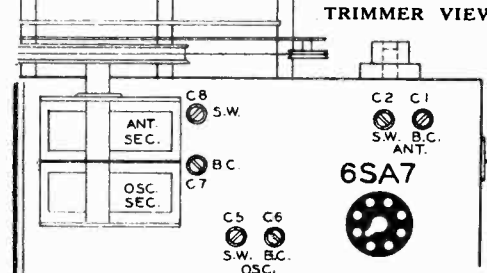
INTERMEDIATE FREQUENCY 455 K.C.



NOTE REMOVE THESE SCREWS SO CHASSIS RESTS ON RUBBER CUSHIONS



REAR OF CHASSIS



TRIMMER VIEW

C1 and C2 in one unit C5 and C6 in one unit
C7 and C8 in one unit
C12, C13, C14 and C15 in one unit
C20 and C21 in one unit

LOOP ANTENNA SOCKET
S1 125126 Band Switch
S2 125134 Phono radio switch
S3 On-off switch on volume control
S4 12577 Phono motor switch
L1 12312 R.F. Choke Coil
P1 10794 2 Pilot light bulbs T4

Radio Only - - - - - 70 Watts
Power Consumption Motor Only - - - - - 40 Watts
Power Output - - - - - 2.1 Watts Undistorted
Sensitivity for 500 Milliwatt Output: 15 Microvolts Average
Selectivity - 51 KC Broad at 1000 Times Signal at 1000 KC
Tuning Frequency Range Broadcast Band - 535 to 1600 KC
Shortwave Band - 5.46 to 18.3 MC
Speaker - - - - - 8 in. Electro Dynamic

- Volume control—Maximum all adjustments.
 - Connect radio ground to ground post of signal generator with a short heavy lead.
 - Connect dummy antenna valve in series with generator output lead.
 - Connect output meter across primary of output transformer.
 - Allow chassis and signal generator to "heat up" for several minutes.
- The following equipment is required for aligning:
- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
 - Output indicating meter.
 - Non-metallic screwdriver.
 - Dummy antennas—1—mf., 200 mmf., 400 ohms.

MODEL 671

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (In Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 6SA7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Trimmers on top (See Top View)	Input and Output I. F.	Adjust to maximum output
SHORT WAVE BAND (See Note A)	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C4	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C1	Short Wave antenna	Adjust to maximum output
	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	Trimmer C7	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "C")
BROAD-CAST BAND (See Note A)	1600 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C5	Broadcast oscillator	Adjust to maximum output
	530 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full closed	Trimmer C6	Broadcast oscillator series pad	Adjust to maximum output
LOOP ALIGN-MENT (See Note B)	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	Trimmer C2 (See Top View)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer C6 (See Top View)	Broadcast oscillator series pad	Adjust to maximum output

SEE NOTES BELOW

MODEL 616

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (In Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 6S7 I. F.	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Chassis View)	Output I. F.	Adjust to maximum output
SHORT WAVE BAND (See Note A)	455 Kc.	.1 MFD.	Grid of 6SA7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Chassis View)	Input I. F.	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C5	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C2	Short Wave antenna	Adjust to maximum output
BROAD-CAST BAND (See Note A)	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	Trimmer C8	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "C")
	1600 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C6	Broadcast oscillator	Adjust to maximum output
LOOP ALIGN-MENT (See Note B)	535 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full closed	Trimmer C7	Broadcast oscillator series pad	Adjust to maximum output
	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	Trimmer C1 (See Chassis View)	Broadcast antenna	Adjust to maximum output
BROAD-CAST BAND (See Note A)	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer C7 (See Chassis View)	Broadcast oscillator series pad	Adjust to maximum output

NOTE "A"—The signal generator is connected to the "ANT." and "GND." leads when aligning the Short Wave Band and to the grid of the 6SA7 tube and ground terminal when setting the Broadcast Band oscillator end frequencies, (1600 and 535 K. C.).

NOTE "B"—Loop alignment is made with the chassis mounted in the cabinet and the loop antenna connected. The signal generator is connected to the "ANT." and "GND." terminals.

NOTE "C"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained.

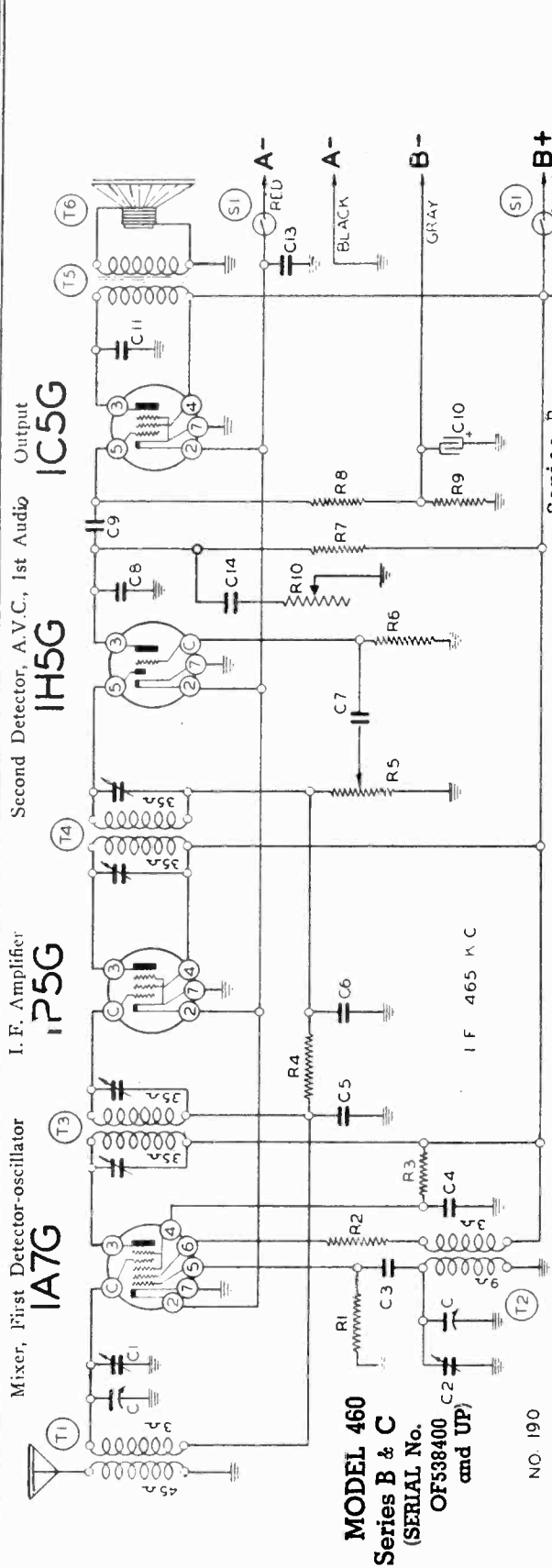
ON 530 KC Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

After each band is completed, repeat the procedure as a final check.

MODEL 671

BELMONT RADIO CORP.

MODEL 460
Series B and C
Ser. No. OF538400



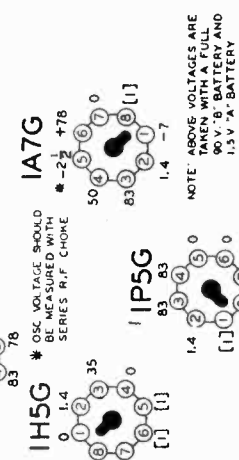
MODEL 460
Series B & C
(SERIAL No.
OF538400 C-2
and UP)

NO. 190

BOTTOM VIEW OF CHASSIS

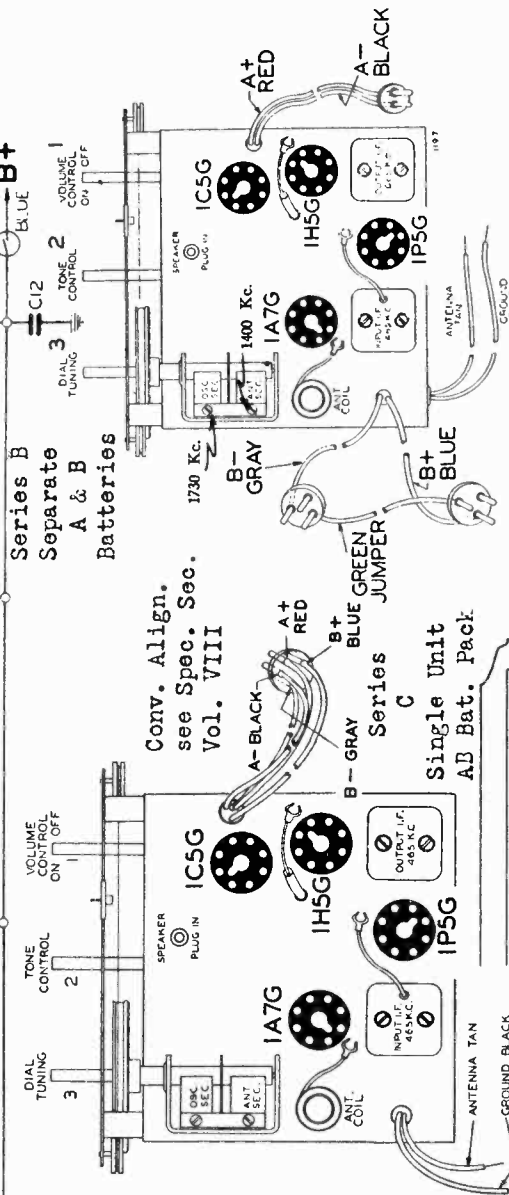
VOLTAGES MEASURED WITH
500 OHM PER VOLT VOLTMETER
BETWEEN SOCKET TERMINALS
AND CHASSIS

[] CANNOT BE MEASURED WITH
VOLTMETER.



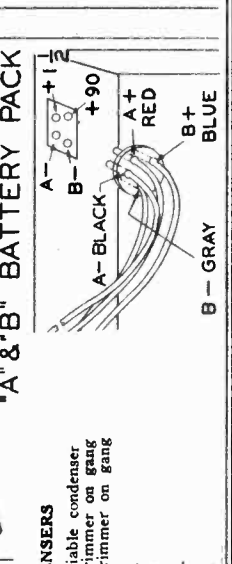
REAR OF CHASSIS

Ref. Part No.	RESISTORS	CONDENSERS
R1	200M ohm-1/2 w.	2 gang variable condenser
R2	4M ohm-1/2 w.	Antenna trimmer on gang
R3	40M ohm-1/2 w.	Oscillator trimmer on gang
R4	3 megohm-1/2 w.	.00025 mica
R5	1 megohm-1/2 w.	.05 x 200 v.
R6	500K ohm-1/2 w.	.05 x 200 v.
R7	1 megohm-1/2 w.	.0001 mica
R8	1 megohm-1/2 w.	.003 x 600 v.
R9	700 ohm-1/2 w.	.0001 mica
R10	10K119 Tone Control (1 Megohm)	.01 x 400 v.



PARTS

111132	Antenna Coil	Power Output
110122	Oscillator F. 465 kc.	150 Milliwatts Undistorted,
108153	Input I. F. 465 kc.	270 Milliwatts Maximum
10591	Output Transformer	
114166	5 in. P. M. Speaker	AUGUST 1940
	Off-on switch on Volume control	FREQUENCY RANGE
11975	10 mid. x 25 w. v.	535 to 1750KC.
11012	.003 x 600 v.	
11064	.25 x 200 v.	
11062	.1 x 200 v.	
11025	.102 x 600 v.	



BELMONT RADIO CORP.

MODEL 638

Series A

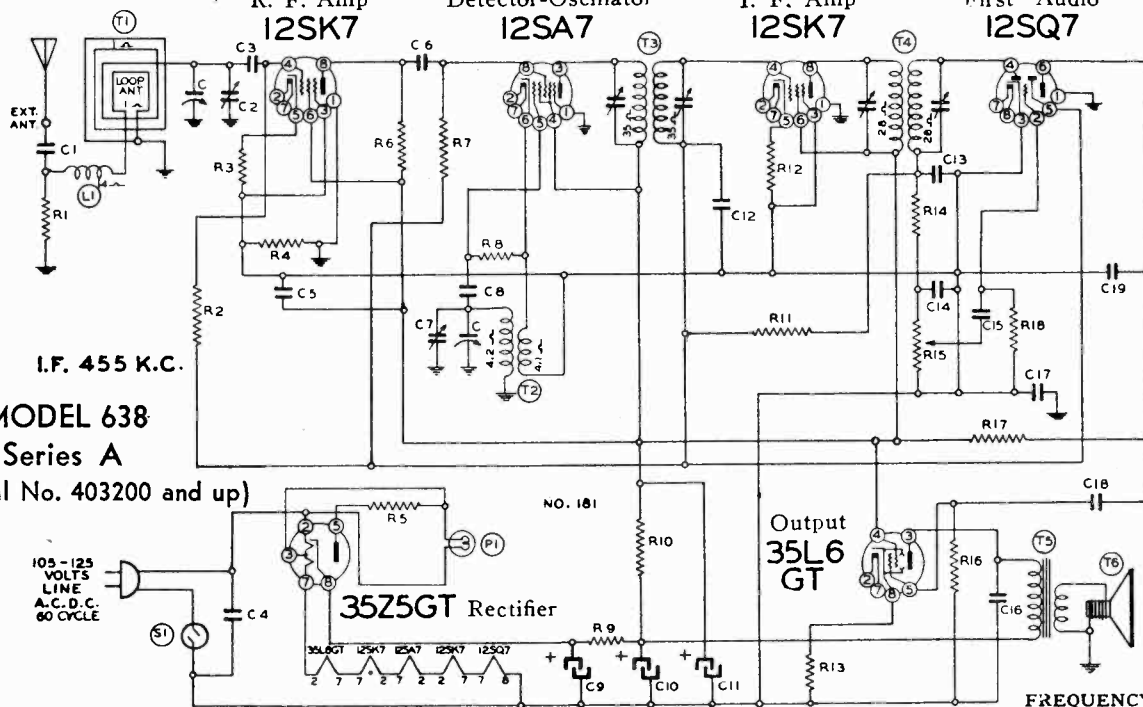
Ser. No. 403200 up

R. F. Amp
12SK7

Mixer, First
Detector-Oscillator
12SA7

I. F. Amp
12SK7

Second Detector, A.V.C.
First Audio
12SQ7



I.F. 455 K.C.

MODEL 638

Series A

(Serial No. 403200 and up)

105-125
VOLTS
A.C.D.C.
60 CYCLE

35Z5GT Rectifier

Output
35L6
GT

FREQUENCY RANGE
540 to 1600 K.C.

Power Consumption.....35 Watts
Power Output.....1 Watt Undistorted, 1.5 Watts Maximum

Code Part
No. No. Description

RESISTORS

R1	13018	4M ohm-1/2 w.
R2	13019	1 megohm-1/2 w.
R3	130168	100 ohm-1/2 w.
R4	130100	150M ohm-1/2 w.
R5	130215	25 ohm-1/2 w.
R6	130218	5M ohm-1/2 w.
R7	13020	100M ohm-1/2 w.
R8	13012	50M ohm-1/2 w.
R9	130296	200 ohm-1 w.
R10	130287	1200 ohm-1 w.
R11	130170	3 megohm-1/2 w.
R12	13024	400 ohm-1/2 w.
R13	130166	150 ohm-1/2 w.
R14	13012	50M ohm-1/2 w.
R15	101218	1 megohm volume control
R16	1303	500M ohm-1/2 w.
R17	1309	200M ohm-1/2 w.
R18	130257	5 megohm-1/2 w.

CONDENSERS

C	102116	2 gang variable condenser
C1	10025	.002 x 600 v.
C2		B. C. Antenna Trimmer on Gang Con.
C3	1292	.0005 Mica
C4	1001	.1 x 400 v.
C5	1006	.25 x 200 v.
C6	1295	.0001 mica
C7		B. C. Oscillator Trimmer on Gang Con.
C8	1295	.0001 mica
C9	11994	40 mfd. lytic x 150 w. v.
C10	11994	20 mfd. lytic x 150 w. v.
C11	11994	20 mfd. lytic x 150 w. v.
C12	1009	.05 x 200 v.
C13	129161	.0001 mica
C14	129161	.0001 mica
C15	10025	.002 x 600 v.
C16	10026	.02 x 400 v.
C17	100110	.2 x 400 v.
C18	100106	.004 x 600 v.
C19	1295	.0001 mica

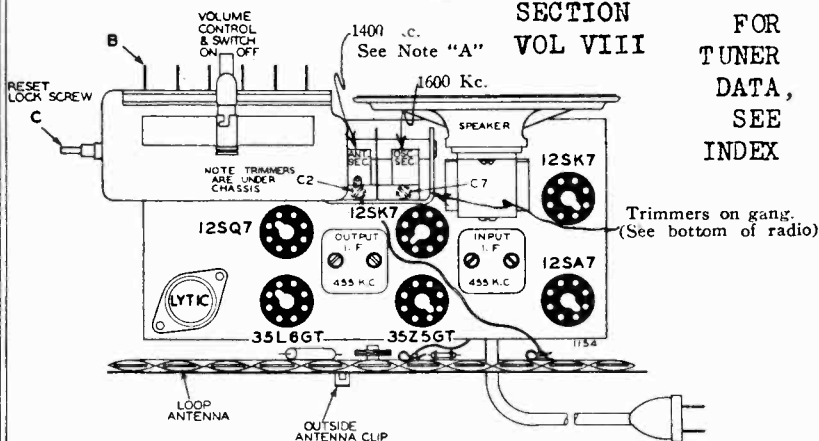
PARTS

T1	111180	Loop Antenna complete
T2	110152	Oscillator Coil
T3	108140H	Input I. F. Coil-455 Kc.
T4	108145	Output I. F. Coil-455 Kc.
T5	105104	Output Transformer
T6	114197	5" P. M. Speaker
L1	12310	Loading Coil
S1		On-off switch on volume control
P1	107249	T47 Pilot light bulb

NOTE "A" Lay the output lead from the generator in back of the loop antenna. Turn up the output of the generator, picking up the energy in the loop antenna without any electrical connection from the generator.

CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION VOL VIII

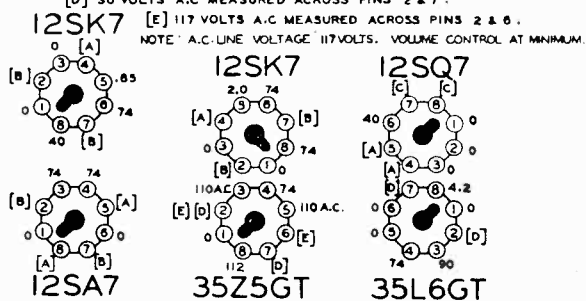
FOR TUNER DATA, SEE INDEX



BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND B -

- [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 & 8.



REAR OF CHASSIS

1156

BELMONT RADIO CORP.

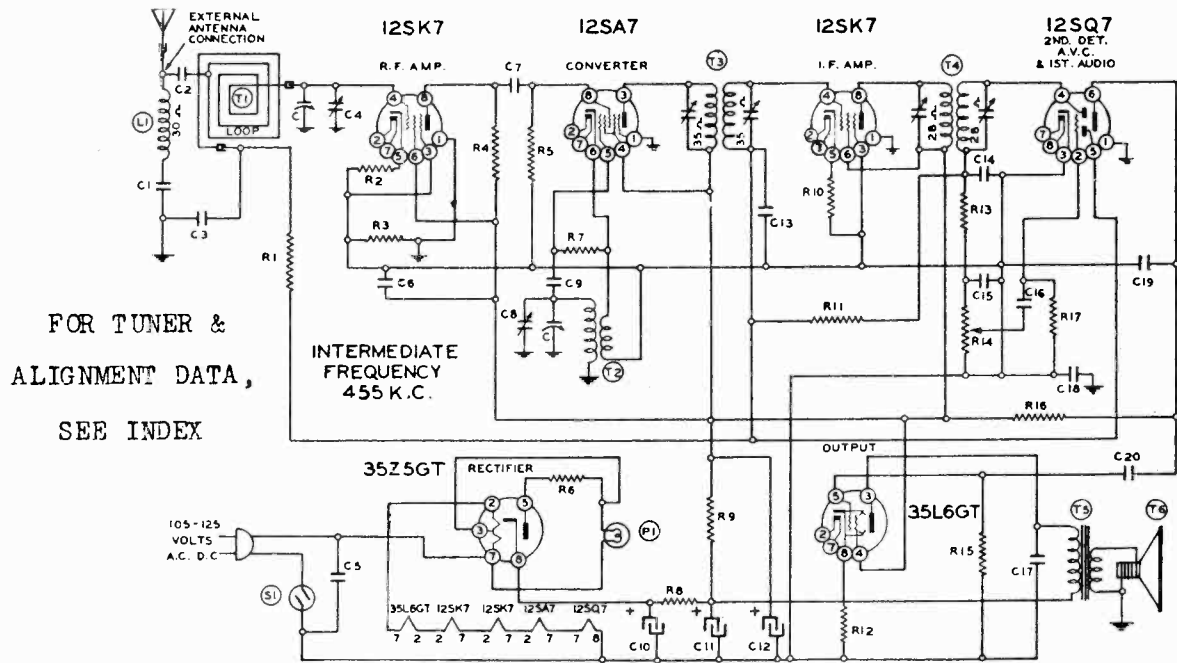
MODEL 642

Six-Tube A.C.-D.C. Superheterodyne Receiver
with Automatic Tuning and Self-Contained Loop Antenna

JUNE 1940

Frequency Range—535 - 1600 Kilocycles

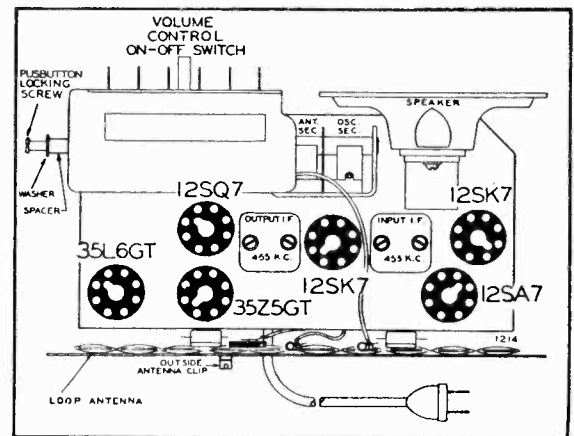
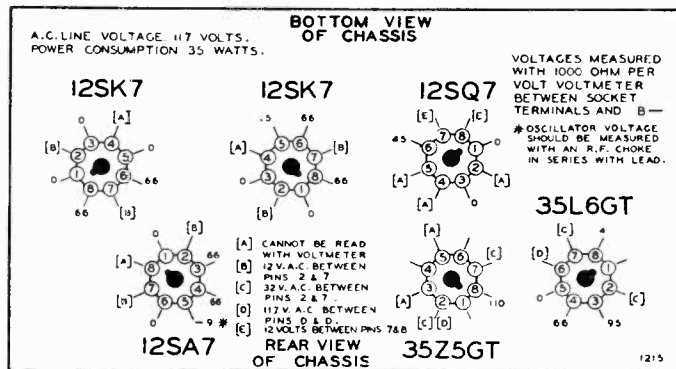
I. F. Frequency 455 Kc.



FOR TUNER &
ALIGNMENT DATA,
SEE INDEX

NO. 196

Receivers of this model which are to be used on voltages other than 105-125 volts A. C. (50/60 cycle), or 105-125 volts D. C. are so marked. The power consumption of this receiver is 35 watts.



Code Part No. No. Description

RESISTORS

R1	130100	150M ohm—1/2 w.
R2	130168	100 ohm—1/2 w.
R3	130100	150M ohm—1/2 w.
R4	130218	5M ohm—1/2 w.
R5	13020	100M ohm—1/2 w.
R6	130215	25 ohm—1/2 w.
R7	13094	50M ohm—1/2 w.
R8	130296	200 ohm—1 w.
R9	130287	1200 ohm—1 w.
R10	130248	40 ohm—1/2 w.
R11	1304	3 megohm—1/2 w.
R12	130166	150 ohm—1/2 w.
R13	13012	50M ohm—1/2 w.
R14	101193	1 megohm volume control
R15	1303	500M ohm—1/2 w.
R16	1309	200M ohm—1/2 w.

Code Part No. No. Description

CONDENSERS

C1	102116	2 gang variable condenser
C2	10011	.01 x 400 v.
C3	129132	.000125 mica
C4	10026	.02 x 400 v.
C5	1001	.1 x 400 v.
C6	1006	.25 x 200 v.
C7	1295	.0001 mica
C8		B.C. Oscillator Trimmer
C9	1295	.0001 mica
C10	11994	40 mfd.—150 v.v. lytic
C11	11994	20 mfd.—150 v.v. lytic
C12	11994	20 mfd.—150 v.v. lytic
C13	1009	.05 x 200 v.
C14	1295	.0001 mica

Code Part No. No. Description

C15	12939	.00005 mica
C16	10025	.002 x 600 v.
C17	10026	.02 x 400 v.
C18	100110	2 x 400 v.
C19	1295	.0001 mica
C20	100106	.004 x 600 v.

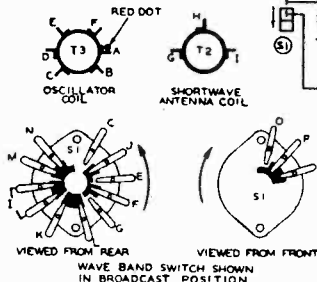
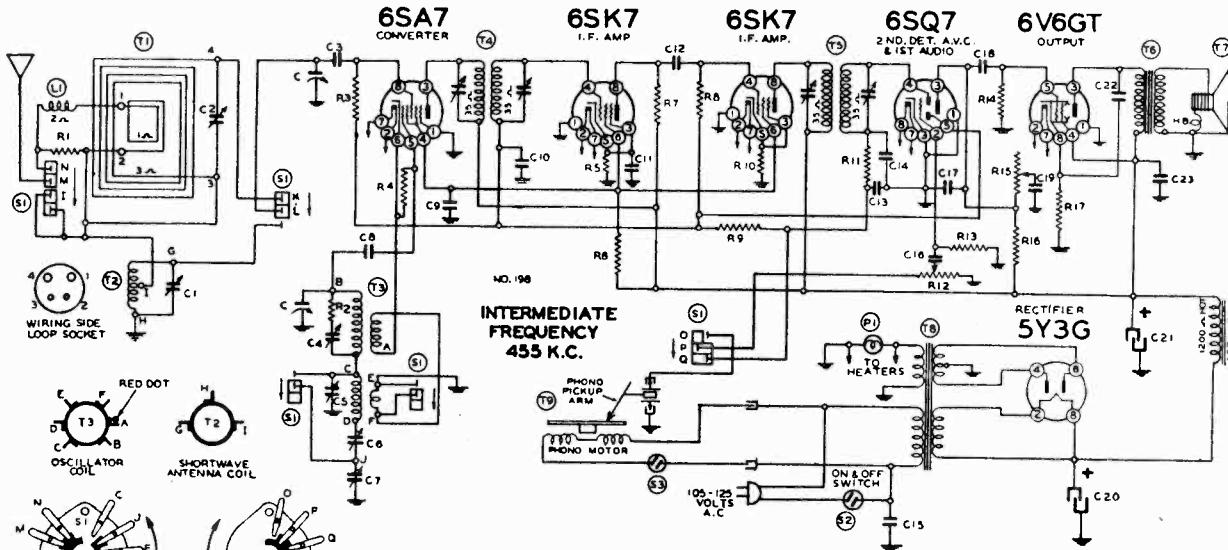
C10, C11 and C12 are in same unit

PARTS

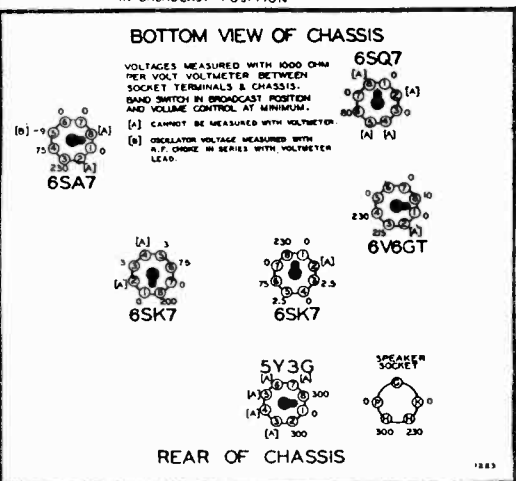
T1	111145	Loop Antenna Assembly
T2	110128	Oscillator Coil
T3	108140G	Input I.F. Coil—465 kc.
T4	108145C	Output I.F. Coil—465 kc.
T5	10595B	Output Transformer
T6	114174	5" P.M. Speaker
L1	1237	Loading Coil
S1		On-off switch on volume control
P1	107249	Pilot light T47

MODEL 671
Series A

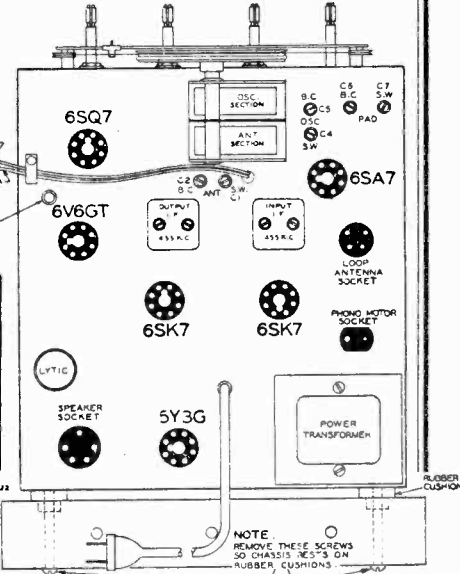
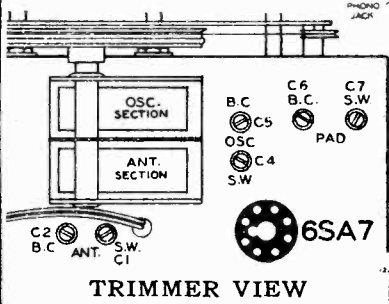
BELMONT RADIO CORP.



BRC. 671—Series A—Form 6261—1,750—7-40
Pro. 200



FOR AUTOMATIC
RECORD-CHANGER
DATA, SEE INDEX



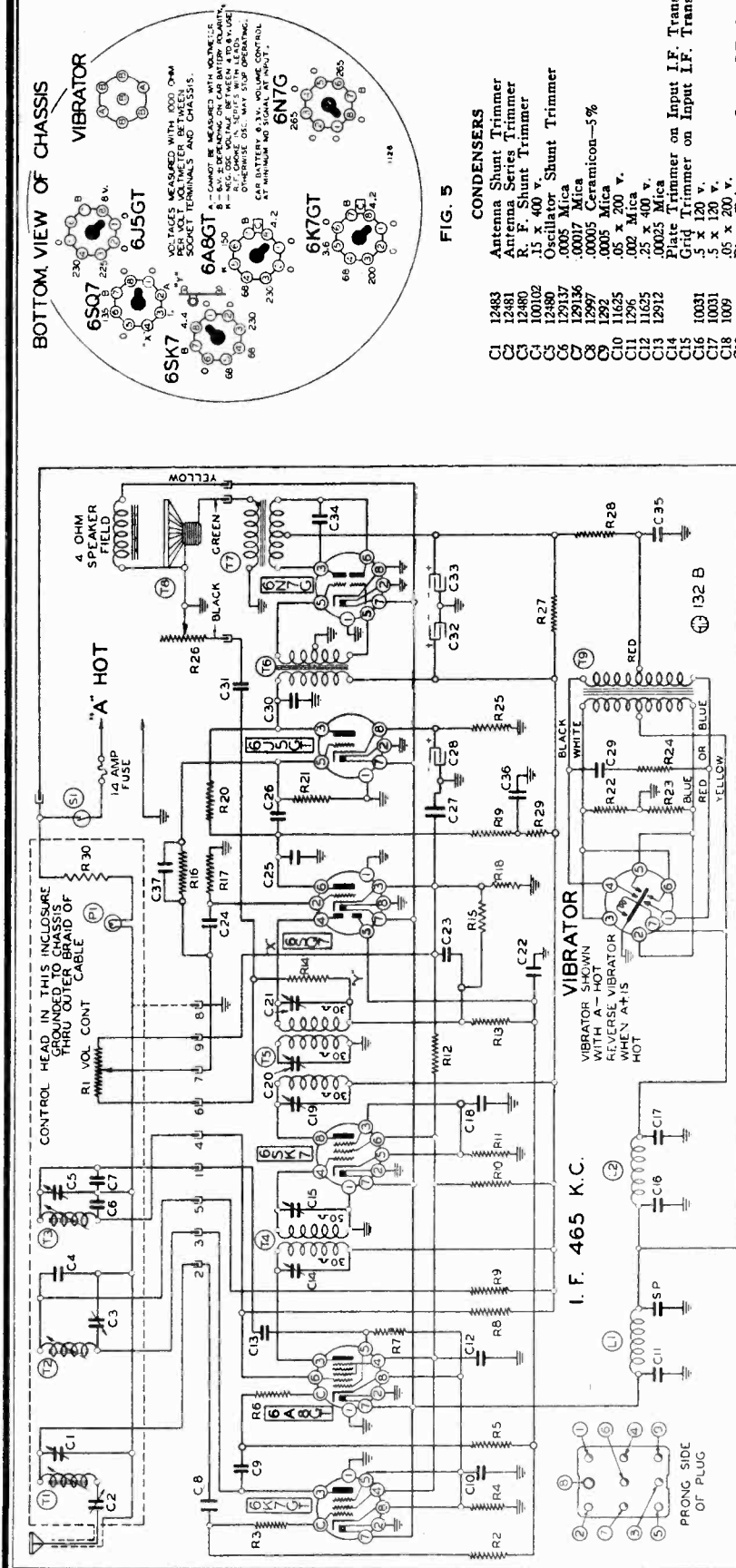
Code No.	Part No.	Description
RESISTORS		
R1	13071	4000 ohm—1/2 w.
R2	130128	20 ohm—1/2 w.
R3	13019	1 megohm—1/2 w.
R4	130236	30M ohm—1/2 w.
R5	130283	750 ohm—1/2 w.
R6	130324	18M ohm—1 watt
R7	130218	5M ohm—1/2 w.
R8	13020	100M ohm—1/2 w.
R9	130170	3 megohm—1/2 w.
R10	130222	350 ohm—1/2 w.
R11	13012	50M ohm—1/2 w.
R12	101232	1 megohm volume control
R13	130223	10 megohm—1/2 w.
R14	1303	500M ohm—1/2 w.
R15	101231	1 megohm tone control
R16	130172	250M ohm—1/2 w.
R17	130323	270 ohm—1 watt
CONDENSERS		
C	102137	Two gang variable cond
C1	124149	S. W. Antenna trimmer
C2	124149	B. C. Antenna trimmer
C3	1292	.0005 mica
C4	124142	S. W. Oscillator trimmer
C5	124142	B. C. Oscillator trimmer
C6	124146	B. C. Padding Condenser
C7	124146	S. W. Padding Condenser
C8	12960	150 mmfd. mica
C9	10013	.05 x 400 v.
C10	10022	.05 x 200 v.
C11	1009	.05 x 200 v.
C12	1292	.0005 mica
C13	129161	.0001 mica
C14	129161	.0001 mica
C15	10061	.02 x 600 v.
C16	10025	.002 x 600 v.
C17	12912	.00025 mica
C18	10026	.02 x 400 v.
C19	10071	.004 x 600 v.
C20	119115	16 mfd. x 400 w. v. lytic
C21	119115	16 mfd. x 400 w. v. lytic
C22	10019	.006 x 600 v.
C23	1001	.1 x 400 v.

Radio Only - - - - - 70 Watts
Power Consumption Motor Only - - - - - 20 Watts
Power Output - - - - - 2.1 Watts Undistorted
Sensitivity for 500 Milliwatt Output: 15 Microvolts Average
Selectivity - 51 KC Broad at 1000 Times Signal at 1000 KC
Tuning Frequency Range Broadcast Band - 530 to 1600 KC
Shortwave Band - 5.46 to 18.3 MC
Intermediate Frequency - - - - - 455 KC
Speaker - - - - - 8 in. Electro Dynamic

PARTS		
T1	111208	Loop antenna assembly
T2	111184	S. W. Antenna Coil
T3	110154	B. C. and S. W. Oscillator Coil
T4	108169E	Input I. F. Coil—455 kc.
T5	108106U	Output I. F. Coil—455 kc.
T6	105118	Output Transformer
T7	114216	8" Electro Dynamic Speaker
T8	104225B	60 cycle power transformer
	and 104238B	25 cycle power transformer
T9	104228	60 cycle Seeburg Record Changer and Phono Assembly
	and 104229	25 cycle Seeburg Record Changer and Phono Assembly
S1	125132	Phono-band switch
S2		Switch on volume control
S3		Switch on record changer
L1	12312	R. F. Choke coil
P1	10794	Pilot light bulb No. T-44

BELMONT RADIO CORP.

MODEL 678
Issue C
Ser. No.
14302 up



CONDENSERS

12483	Antenna Shunt Trimmer
12481	Antenna Series Trimmer
100102	R. F. Shunt Trimmer
12480	.15 x 400 v.
12486	Oscillator Shunt Trimmer
129137	.0005 Mica
129136	.00017 Mica
12997	.00005 Ceramic-5%
1292	.05 x 200 v.
11625	.25 x 40 v.
11296	.02 Mica
1025	.25 x 40 v.
12912	.0025 Mica
1031	.5 x 120 v.
1031	.5 x 120 v.
1009	.05 x 200 v.
11625	Tertiary Trimmer on Output I.F. Trans.
10011	Grid Trimmer on Output I.F. Trans.
10011	.01 x 400 v.
1295	.0001 Mica
10011	.01 x 400 v.
10011	.01 x 400 v.
10025	.02 x 400 v.
1988	20 mid.-25 w. v. lyric
100101	.0035 x 1600
12914	.003 Mica
1988	12 x 1600 w. v. lyric
11988	13 mid.-450 w. v. lyric
100103	100 x 800 v.
100103	.1 x 400 volt
10013	.05 x 400 v.
12967	.00004 Mica

RESISTORS

10161	1.2 megohm volume control
13019	1 megohm-1/4 w.
130275	500 ohm-1/2 w.
13079	400 ohm-1/2 w.
13019	1 megohm-1/4 w.
130275	500 ohm-1/2 w.
13012	50M ohm-1/2 w.
13021	50M ohm-1/2 w.
13021	20M ohm-1/2 w.
130196	30M ohm-1 watt
130235	1500 ohm-1/2 w.
1307	40M ohm-1/2 w.
13019	1 megohm-1/4 w.
13020	100M ohm-1/2 w.
13018	600M ohm-1/2 w.
130257	5 megohm-1/2 w.
13019	250M ohm-1/2 w.
130101	600 ohm-1/2 w.
13038	500M ohm-1/2 w.
1303	250M ohm-1/2 w.
130269	100 ohm-1/2 w.
13071	100 ohm-1/2 w.
13092	4M ohm-1/2 w.
10162	1M ohm-1/2 w.
10166	1500 ohm tone control
130231	75 ohm-1/2 w.
13020	100M ohm-1/2 w.
130299	10 ohm-1/2 w.

FIG. 5

RESISTORS

1.2 megohm volume control
1 megohm-1/4 w.
500 ohm-1/2 w.
400 ohm-1/2 w.
1 megohm-1/4 w.
500 ohm-1/2 w.
50M ohm-1/2 w.
20M ohm-1/2 w.
30M ohm-1 watt
1500 ohm-1/2 w.
40M ohm-1/2 w.
100M ohm-1/2 w.
600M ohm-1/2 w.
5 megohm-1/2 w.
250M ohm-1/2 w.
500M ohm-1/2 w.
100 ohm-1/2 w.
100 ohm-1/2 w.
4M ohm-1/2 w.
1M ohm-1/2 w.
1500 ohm tone control
75 ohm-1/2 w.
100M ohm-1/2 w.
10 ohm-1/2 w.

FOR TUNER DATA, SEE INDEX

Power Consumption 7.7 Amperes at 6.3 Volts
Power Output 7 Watts Undistorted, 9 Watts Maximum

FREQUENCY RANGE
535 to 1565 Kc.

MARCH 1940
MODEL 678, Issue C
(Serial No. 14302 and up)

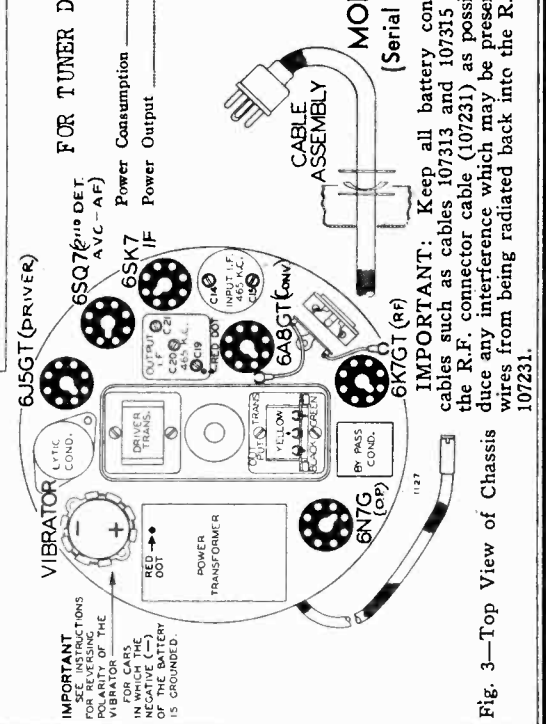


Fig. 3—Top View of Chassis

MODEL 678

Issue C

Ser. No.

14302 up

BELMONT RADIO CORP.

ALIGNMENT PROCEDURE

- Volume control—Maximum all adjustments.
 - Connect radio chassis to ground post of signal generator with a short heavy lead.
 - Connect dummy antenna in series with generator output lead.
 - Connect output meter across primary of output transformer.
 - Allow chassis and signal generator to "heat up" for several minutes.
- The following equipment is required for aligning:
- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
 - Output indicating meter.
 - Non-metallic screwdriver.
 - Dummy antennas—1 m.f., 125 mmf.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Remote Tuner Dial Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	.1 MFD.	Grid of 6SK7 I. F. Tube	Set dial at 1400 Kc.	Trimmers C19, C20 (See Fig. 3)	Output I. F.	See note "A" Adjust to maximum output
	465 Kc.	.1 MFD.	Grid of 6SK7	Set dial at 1400 Kc.	Trimmer C21 (See Fig. 3)	Output I. F.	See note "B" Adjust to maximum output
	465 Kc.	.1 MFD.	Grid of 6A8GT	Set dial at 1400 Kc.	Trimmers C14, C15 (See Fig. 3)	Input I. F.	Adjust to maximum output
BROAD- CAST BAND	1565 Kc.	125 mmf.	Antenna lead	Set dial at 1565 Kc.	Trimmer C3 (See Fig. 4)	Oscillator	Adjust to maximum output
	1400 Kc.	125 mmf.	Antenna lead	Set dial at 1400 Kc.	Trimmers C1, C3 (See Fig. 4)	Antenna and R. F.	Adjust to maximum output
	600 Kc.	125 mmf.	Antenna lead	Set dial at 600 Kc.	Trimmer C2 (See Fig. 4)	Antenna series adj.	See note "C"

NOTE "A" IMPORTANT: To align the output I. F. transformer without using a cathode ray oscillograph a 10M ohm resistor must be shunted across the diode tuned circuit. Connect the resistor as indicated by points "X" and "Y" on the circuit diagram and the bottom view of the radio chassis Fig. 5. A red dot on top of output I. F. can designate location of trimmer "C19."

NOTE "B" Before adjusting trimmer C21 disconnect the 10M ohm resistor. Under no circumstances re-adjust trimmers C19 or C20 after the 10M ohm resistor has been removed.

For alignment of the output I. F. transformer using a cathode ray oscillograph the 10M ohm resistor is not used.

NOTE "C" Maximum gain for this adjustment depends on the capacity of the antenna system of the car in which the radio is installed. For the proper alignment of this adjustment see "Adjusting Antenna Trimmer."

ALIGNMENT OF THE IRON CORES

The iron cores for the antenna, R. F. and oscillator permeability coils have been very carefully adjusted at the factory and require no further adjustment, unless it becomes necessary to replace a coil, or if the adjustments have been tampered with.

The procedure for aligning the iron cores will be supplied with replacement coils when ordered.

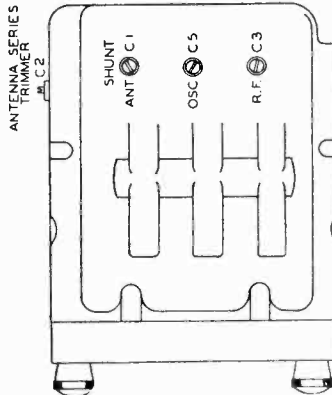


Fig. 4.—Bottom View of Remote Tuner

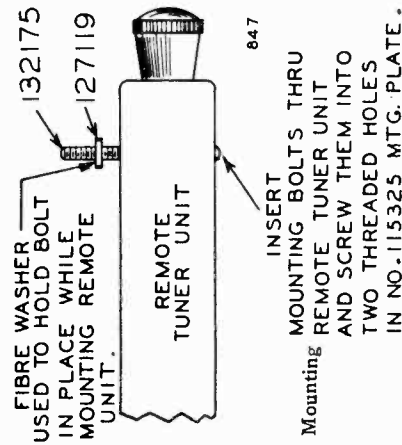
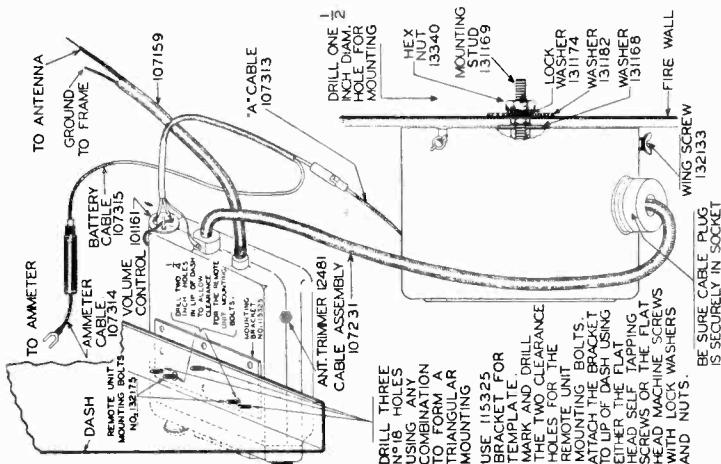
IMPORTANT—ADJUSTING ANTENNA TRIMMER:

Tune in any weak station between 600 and 800 kc. Make sure that the antenna shunt trimmer on the Bottom of the Remote Tuner is turned all the way out (counter clockwise), (see adjustment "C1," Fig. 4).

Adjust antenna series trimmer on the side of the remote Tuner Unit. For maximum output. (See adjustment "C2," Fig. 4)

NOTE: If resonance (maximum output) cannot be obtained within the range of the antenna series trimmer "C2," turn the adjustment screw all the way out (counter clockwise) and then adjust the antenna shunt trimmer "C1" on the bottom of the remote tuner unit for a peak of maximum output.

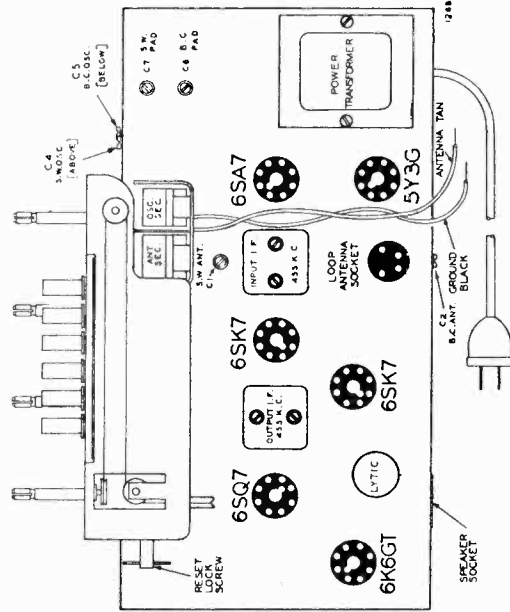
The above arrangement will cover any antenna capacity that is now in use.



General Installation View

BELMONT RADIO CORP.

MODEL 681
Series A



Setting the Pushbuttons

Make a list of your 6 favorite stations. Push out the call letters of these stations from the call letter sheets supplied. Insert a call letter in the front of each pushbutton.

Next push one of the pushbuttons all the way in as far as it will go and hold it there. Now tune in the station you want with the tuning knob—tune back and forth until the station is clear and distinct, then release the button. Continue setting each pushbutton in the same way. Now rotate the tuning knob to the right (clockwise) as far as it will turn.

Looking at the back of the cabinet note the reset lock screw on the left hand side of the chassis, (see chassis view).

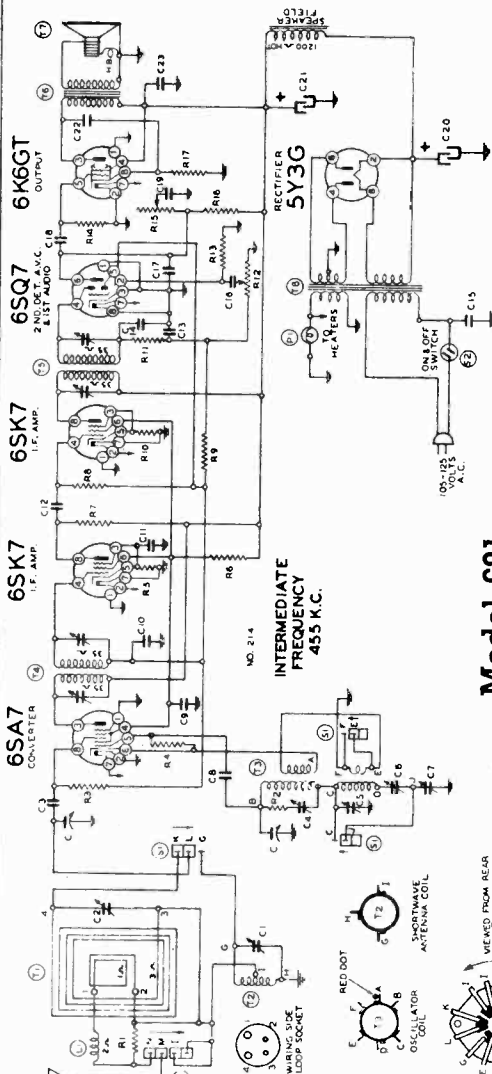
Rotate the reset lock screw to the right (clockwise) by means of the pin thru the shaft.

It is very important that this locking screw is turned until it is absolutely tight.

This screw will lock in place all the stations you have selected on the automatic tuner pushbuttons. Pressing the proper button will now tune the station you want. (NOTE: Locking screw is loose when radio is shipped from factory).

To change stations simply loosen the reset lock screw and repeat the procedure above.

BRC. 681—Series A Form No. 6273—1000—11-40
Pro. 260



Model 681

Series A

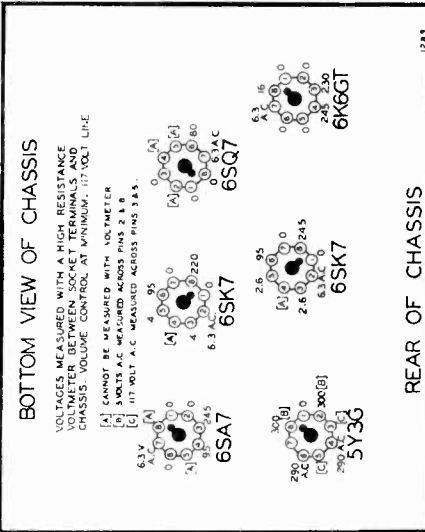
CONDENSERS

C1	102128	2 gang variable condenser
C2	124116	50V antenna trimmer
C3	124141	B.C. antenna trimmer
C4	1292	.0005 mica
C5	124142	B.C. oscillator trimmer
C6	124146	B.C. padding condenser
C7	124146	B.C. padding condenser
C8	12969	150 mid. mica
C9	10013	.05 x 400 v.
C10	1009	.05 x 200 v.
C11	1009	.05 x 200 v.
C12	1292	.0005 mica
C13	129161	.0001 mica
C14	129161	.0001 mica
C15	10295	.002 x 600 v.
C16	12912	.002 x 600 v.
C17	12912	.002 x 600 v.
C18	10026	.02 x 400 v.
C19	10071	.004 x 600 v. lyric
C20	119115	16 mid. x 400 v. lyric
C21	119115	16 mid. x 400 v. lyric
C22	10019	.006 x 600 v.
C23	1001	.1 x 400 v.

C4 and C5 are in same unit
C13 and C14 are in same unit
C6 and C7 are in same unit
C20 and C21 are in same unit

PARTS

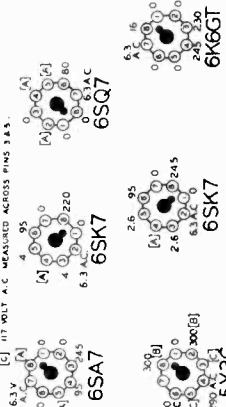
T1	11228	Loop antenna assembly
T2	11184	S.W. antenna coil
T3	11054	B.C. & S.W. oscillator coil
T4	108169G	Input I.F. coil—455 kc.
T5	108106L	Output I.F. coil—455 kc.
T6	10990B	Output Transformer
T7	114229	8" electro dynamic speaker
T8	104225C60	cycle power transformer
S1	104225C25	cycle power transformer
S2	125141	Band switch
P1	13312	W.P. choke coil
P2	10794	Flor light bulb T-44



BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH A HIGH RESISTANCE VOLTMETER BETWEEN SOCKET TERMINALS IN CHASSIS. VOLUME CONTROL AT MINIMUM. 117 VOLT LINE CANNOT BE MEASURED WITH VOLTMETER

[A] 50KETS A.C. MEASURED ACROSS PINS 3 & 4. [B] 117 VOLT A.C. MEASURED ACROSS PINS 3 & 4.

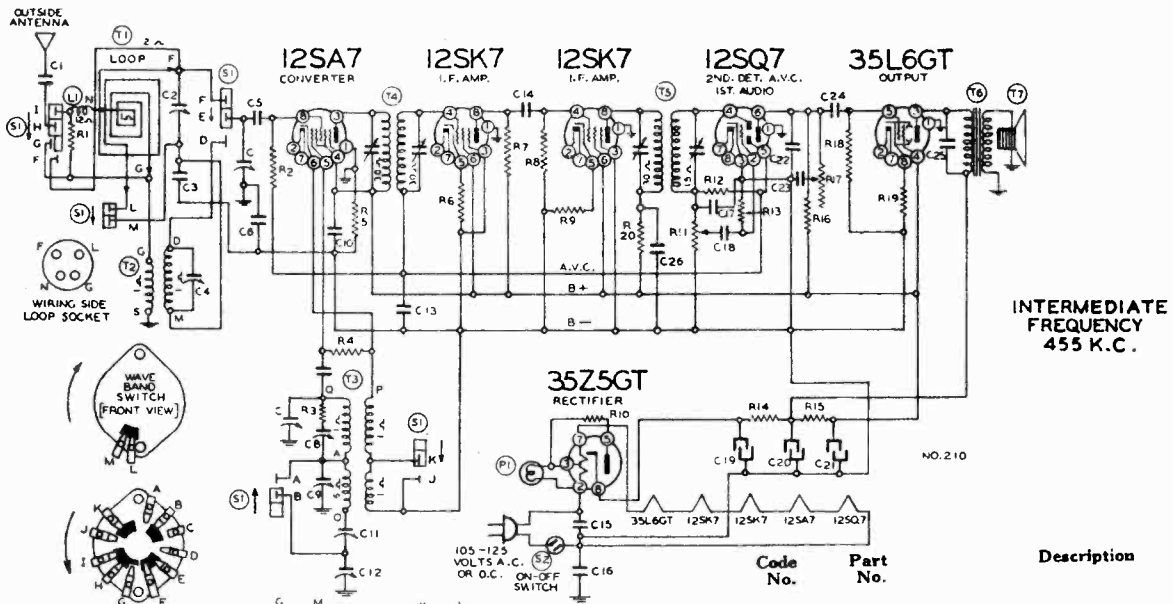


REAR OF CHASSIS

Power Consumption	55 Watts
Power Output	2.2 Watts Undistorted
Sensitivity for 500 Milliwatt Output	15 Microvolts Average
Selectivity - 47 KC Broad at 1000 Times Signal at 1000 KC	
Tuning Frequency Range Broadcast Band - 535 to 1600 KC	
Shortwave Band - 5.43 to 18.3 MC	
Intermediate Frequency	455 KC

MODEL 695

BELMONT RADIO CORP.



INTERMEDIATE
FREQUENCY
455 K.C.

Code No. Part No. Description

RESISTORS

R1	13064	3500 ohm
R2	1304	3 megohm
R3	130197	20 ohm
R4	13076	30M ohm
R5	130100	150M ohm
R6	13097	200 ohm—1/2 w.
R7	13082	10M ohm—1/2 w.
R8	13019	1 megohm
R9	13083	300 ohm
R10	130215	25 ohm
R11	101215	1 megohm volume control
R12	1304	3 megohm
R13	130257	5 megohm
R14	130296	200 ohm—1 w.
R15	130287	1200 ohm—1 w.
R16	13011	250M ohm
R17	101216	1 megohm tone control
R18	1303	500M ohm
R19	130166	150 ohm
R20	13022	5M ohm—1/2 w.

CONDENSERS

C	102139	2 gang variable condenser
C1	10092	.001 x 600 v.
C2	124152	B.C. Antenna Trimmer
C3	1009	.05 x 200 v.
C4	124152	S.W. Antenna Trimmer
C5	1292	.0005 mica
C6	1001	.1 x 400 v.
C7	12960	.00015 mica
C8	124142	S.W. Oscillator trimmer
C9	124142	B.C. Oscillator trimmer
C10	1001	.1 x 400 v.
C11	124153	B.C. Oscillator pad
C12	124153	S.W. Oscillator pad
C13	1009	.05 x 200 v.
C14	1292	.0005 mica
C15	1001	.1 x 400 v.
C16	1001	.1 x 400 v.
C17	129158	.0002 mica
C18	10012	.003 x 600 v.
C19	11994	40 mfd. x 150 v. lytic
C20	11994	20 mfd. x 150 v. lytic
C21	11994	20 mfd. x 150 v. lytic
C22	1295	.0001 mica
C23	1007	.005 x 600 v.
C24	10011	.01 x 400 v.
C25	10026	.02 x 400 v.
C26	10013	.05 x 400 v.

C2 and C4 are in same unit C8 and C9 in same unit
C11 and C12 in same unit
C19, C20 and C21 in same unit

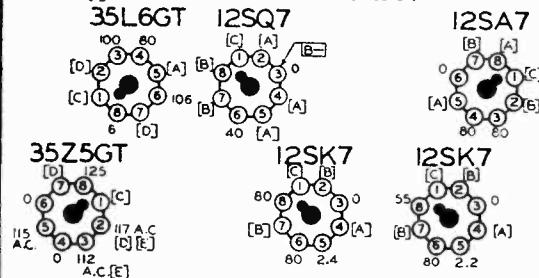
PARTS

T1	111217	Loop Antenna Assembly
T2	111219	S.W. Antenna coil
T3	110169	B.C. S.W. Oscillator Coil
T4	108169F	Input I.F. Coil—455 kc.
T5	108130F	Output I.F. Coil—455 kc.
T6	105104C	Output Transformer
T7	114224	5" P.M. Speaker
L1	1239	R.F. Choke coil
S1	125139	Wave band switch
S2		Switch on volume control
P1	107249	Pilot light

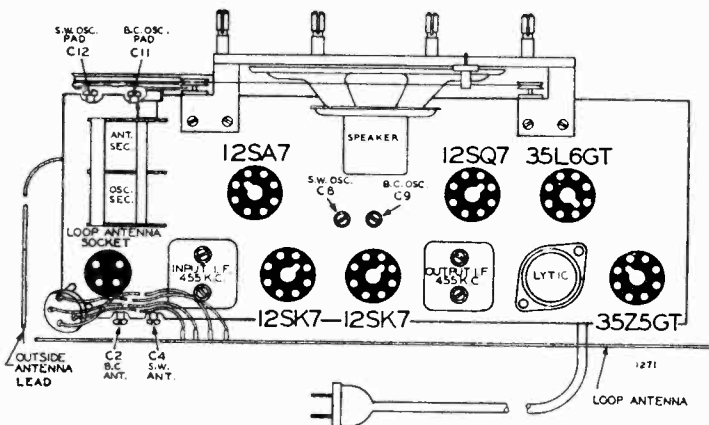
BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH A 1000 OHMS PER VOLT
VOLTMETER BETWEEN SOCKET TERMINALS & B—
WITH NO SIGNAL INPUT & 117 VOLTS LINE.

- [A] CANNOT BE MEASURED WITH VOLTMETER.
- [B] 12 V. A.C. BETWEEN PRONGS ON SAME SOCKET.
- [C] GROUND TO CHASSIS BASE.
- [D] 35 V. A.C. BETWEEN PRONGS ON SAME SOCKET.
- [E] 5 V. A.C. BETWEEN PRONGS ON SAME SOCKET.



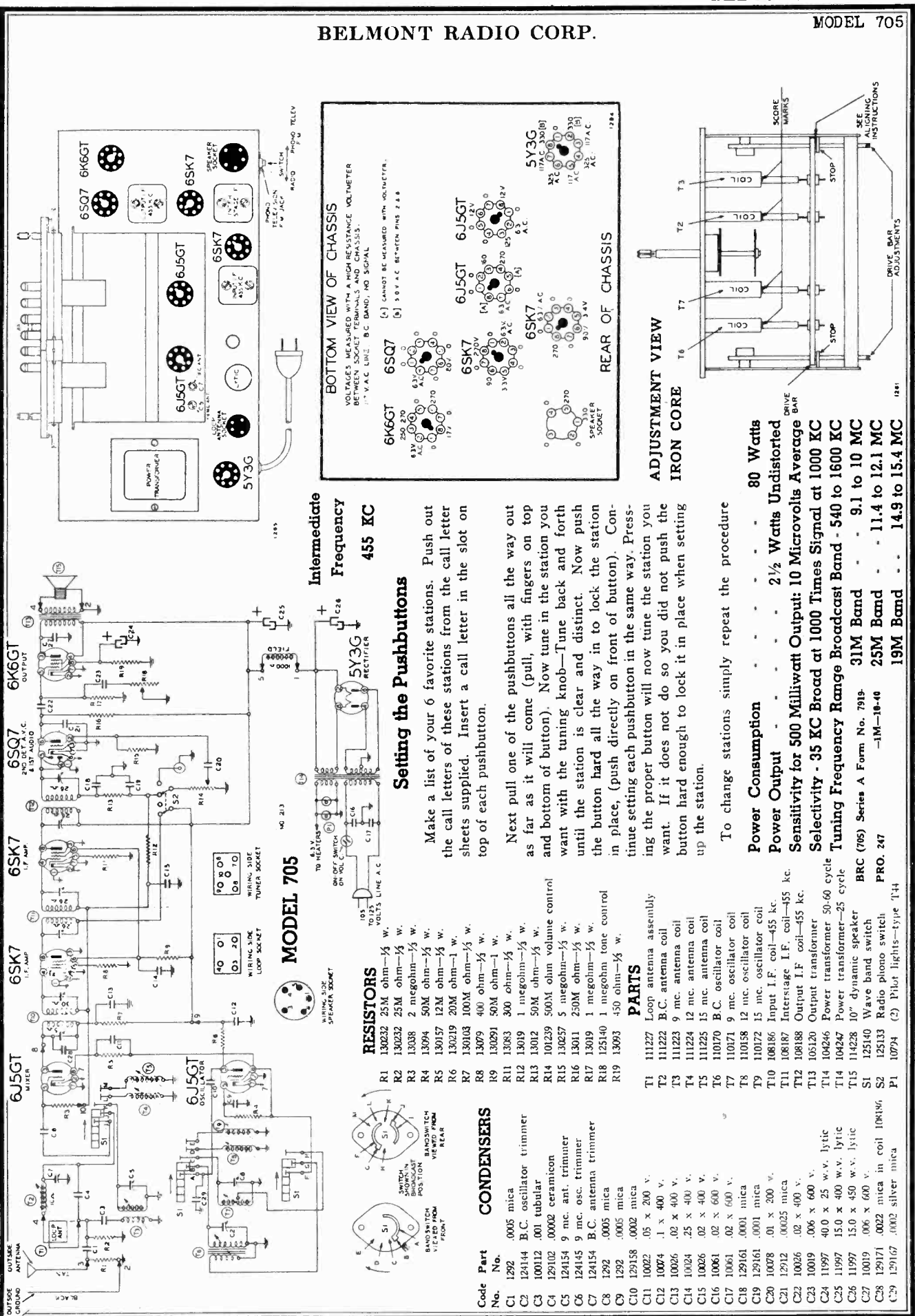
REAR OF CHASSIS



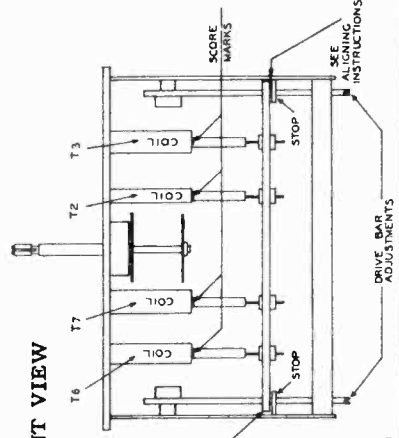
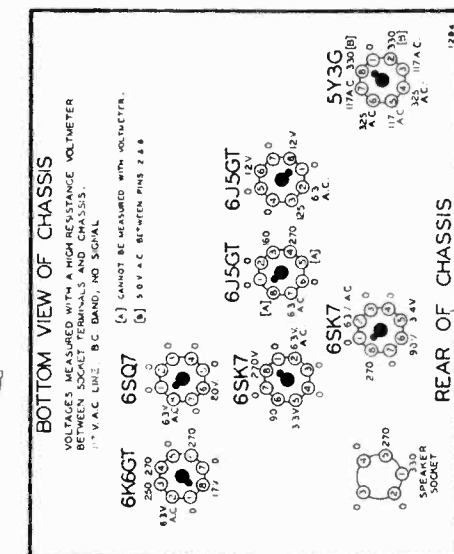
BRC.(695) Form No. 6271-2750-10-40
PRO. 242

BELMONT RADIO CORP.

MODEL 705



© John F. Rider, Publisher



Intermediate Frequency
455 KC

Setting the Pushbuttons

Make a list of your 6 favorite stations. Push out the call letters of these stations from the call letter sheets supplied. Insert a call letter in the slot on top of each pushbutton.

Next pull one of the pushbuttons all the way out as far as it will come (pull, with fingers on top and bottom of button). Now tune in the station you want with the tuning knob—Tune back and forth until the station is clear and distinct. Now push the button hard all the way in to lock the station in place, (push directly on front of button). Continue setting each pushbutton in the same way. Pressing the proper button will now tune the station you want. If it does not do so you did not push the button hard enough to lock it in place when setting up the station.

To change stations simply repeat the procedure

- Power Consumption** - - - - - 80 Watts
- Power Output** - - - - - 2 1/2 Watts Undistorted
- Sensitivity for 500 Milliwatt Output:** 10 Microvolts Average
- Selectivity - 35 KC Broad at 1000 Times Signal at 1000 KC**
- Tuning Frequency Range Broadcast Band - 540 to 1600 KC**
- BRC (705) Series A Form No. 7919- 31M Band - - - 9.1 to 10 MC**
- PRO. 247 -1M-10-40 25M Band - - - 11.4 to 12.1 MC**
- 19M Band - - - 14.9 to 15.4 MC**

MODEL 705

RESISTORS

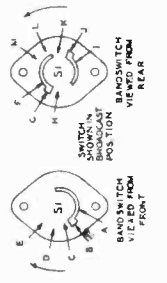
- R1 130232 25M ohm-1/2 W.
- R2 130232 25M ohm-1/2 W.
- R3 13038 2 megohm-1/2 W.
- R4 13094 50M ohm-1/2 W.
- R5 130157 12M ohm-1/2 W.
- R6 130219 20M ohm-1 W.
- R7 130103 100M ohm-1/2 W.
- R8 13079 400 ohm-1/2 W.
- R9 130991 50M ohm-1 W.
- R11 13083 300 ohm-1/2 W.
- R12 13019 1 megohm-1/2 W.
- R13 13012 50M ohm-1/2 W.
- R14 101239 500M ohm volume control
- R15 130257 5 megohm-1/2 W.
- R16 13011 250M ohm-1/2 W.
- R17 13019 1 megohm-1/2 W.
- R18 125140 1 megohm-1/2 W.
- R19 13093 450 ohm-1/2 W.

PARTS

- T1 111227 Loop antenna assembly
- T2 111222 B.C. antenna coil
- T3 111223 9 mc. antenna coil
- T4 111224 12 mc. antenna coil
- T5 111225 15 mc. antenna coil
- T6 110770 B.C. oscillator coil
- T7 110771 9 mc. oscillator coil
- T8 110558 12 mc. oscillator coil
- T9 110772 15 mc. oscillator coil
- T10 108186 Input I.F. coil-455 kc.
- T11 108187 Interstage I.F. coil-455 kc.
- T12 108188 Output I.F. coil-455 kc.
- T13 105120 Output transformer
- T14 104246 Power transformer-50.60 cycle
- T15 114228 10" dynamic speaker
- S1 125140 Wave band switch
- S2 125133 Radio phono switch
- P1 10774 (2) Pilot lights-type T14

CONDENSERS

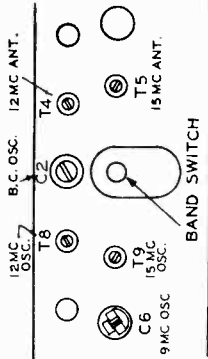
- C1 1292 .0005 mica
- C2 124144 B.C. oscillator trimmer
- C3 100112 .001 tubular
- C4 129102 .0002 ceramic
- C5 124154 9 mc. ant. trimmer
- C6 124145 9 mc. osc. trimmer
- C7 124154 B.C. antenna trimmer
- C8 1292 .0005 mica
- C9 1292 .0005 mica
- C10 129158 .0002 mica
- C11 10022 .05 x 200 V.
- C12 10074 1 x 400 V.
- C13 10026 .02 x 400 V.
- C14 10024 .25 x 400 V.
- C15 10026 .02 x 400 V.
- C16 10061 .02 x 600 V.
- C17 10061 .02 x 600 V.
- C18 129161 .0001 mica
- C19 129161 .0001 mica
- C20 10078 .01 x 200 V.
- C21 12912 .0025 mica
- C22 10026 .02 x 400 V.
- C23 10019 .006 x 600 V.
- C24 11997 .40 x 25 w.v. lytic
- C25 11997 15.0 x 400 w.v. lytic
- C26 11997 15.0 x 450 w.v. lytic
- C27 10019 .006 x 600 V.
- C28 129171 .002 mica in coil 104136
- C29 129167 .0002 silver mica



1281

MODELS 705
902

BELMONT RADIO CORP.



TRIMMER VIEW
MODEL 705

MODELS 705 & 902

Do not realign the band spread scales unless you are positive; they are out of adjustment. When adjustment is necessary proceed as follows.

First refer to the "Iron Core Adjustment View" now turn the tuning knob until the drive bar comes within 1/64 to 1/32 from the stops. (A piece of blotting paper is about the right thickness and will serve as a gauge). The clearance of the bar must be the same at both stops. If far off you can raise one drive screw gently and equalize them. Minor adjustments may be made with the drive bar adjustments.

Next rotate each iron core until the fine score marks are even with the edge of the coil forms.

You are now ready to continue with the trimmer adjustments as shown on the alignment chart.

MODEL 902
Pushbutton Tone Control

This button has three tone positions Bass—Medium—Trebble. Each time you push the button it will change the tone to one of these positions—Change it any time to the tone you like best.

Radio-Phono Pushbutton Switch

This pushbutton switches from the radio to the phono position. It should be level with the other buttons for radio operation—or pulled out to use a phonograph. A phono jack is provided on the chassis should you wish to connect an external Phonograph to your Radio. (Phono jack is shown in the chassis view).

The following equipment is required for aligning:
 • An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
 • Output indicating meter.
 • Non-metallic screwdriver.
 • Dummy antennas—1 mt., 200 mmf., and 400 ohms.

MODEL 705

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Dial Pointer Setting In Order Shown	Trimmers Adjusted In Order Shown	Trimmer Function	Adjustment
I. F.	435 Kc.	1 MFD.	Grid of 6SN7 (2nd I.F.)	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Output I. F.	Adjust to maximum output
	435 Kc.	1 MFD.	Grid of 6SN7 (1st I.F.)	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Intermediate I. F.	Adjust to maximum output
	435 Kc.	1 MFD.	Grid of 6J5 (Mixer)	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Input I. F.	Adjust to maximum output
31 METER BAND	9.6 Mc.	400 ohms	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) C6 (See Trimmer on Top) C5	Osc. Ant.	Adjust to maximum output
25 METER BAND	11.8 Mc.	400 ohms	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T8 (See Trimmer View) T4	Osc. Ant.	Adjust to maximum output
19 METER BAND	15.2 Mc.	400 ohms	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T9 (See Trimmer View) T5	Osc. Ant.	Adjust to maximum output
BROAD-CAST BAND	1600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C2 (See Trimmer on Top) C7	Osc. Ant.	Adjust to maximum output
BROAD-CAST BAND	1400 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	(See Iron Core Adjustment View)	Ant.	Adjust to maximum output

MODEL 902
Setting the Pushbuttons

Power Consumption - - - - - 100 Watts
Power Output - - - - - 5 Watts Undistorted
Sensitivity for 500 Milliwatt Output: 10 Microvolts Average
Selectivity - 35 KC Broad at 1000 Times Signal at 1000 KC
Tuning Frequency Range Broadcast Band - 540 to 1600 KC
 49M Band - - - 5.9 to 6.1 MC
 31M Band - - - 9.1 to 10 MC
 25M Band - - - 11.4 to 12.1 MC
 19M Band - - - 14.9 to 15.4 MC

Make a list of your 6 favorite stations. Push out the button hard all the way in to lock the station the call letters of these stations from the call letter in place, (push directly on front of button). Con sheets supplied. Insert a call letter in the slot on tune setting each pushbutton in the same way. Press top of each pushbutton. (Except the two end ones). ing the proper button will now tune the station you want. If it does not do so you did not push the them. Minor adjustments may be made with the drive bar adjustments.

Next pull one of the pushbuttons all the way out button hard enough to lock it in place when setting with the tuning knob—Tune back and forth. To change stations simply repeat the procedure as far as it will come (pull, with fingers on top up the station).

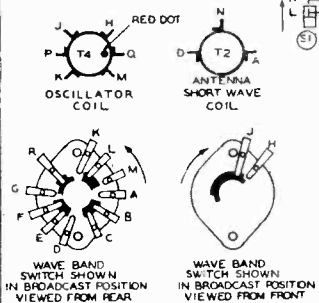
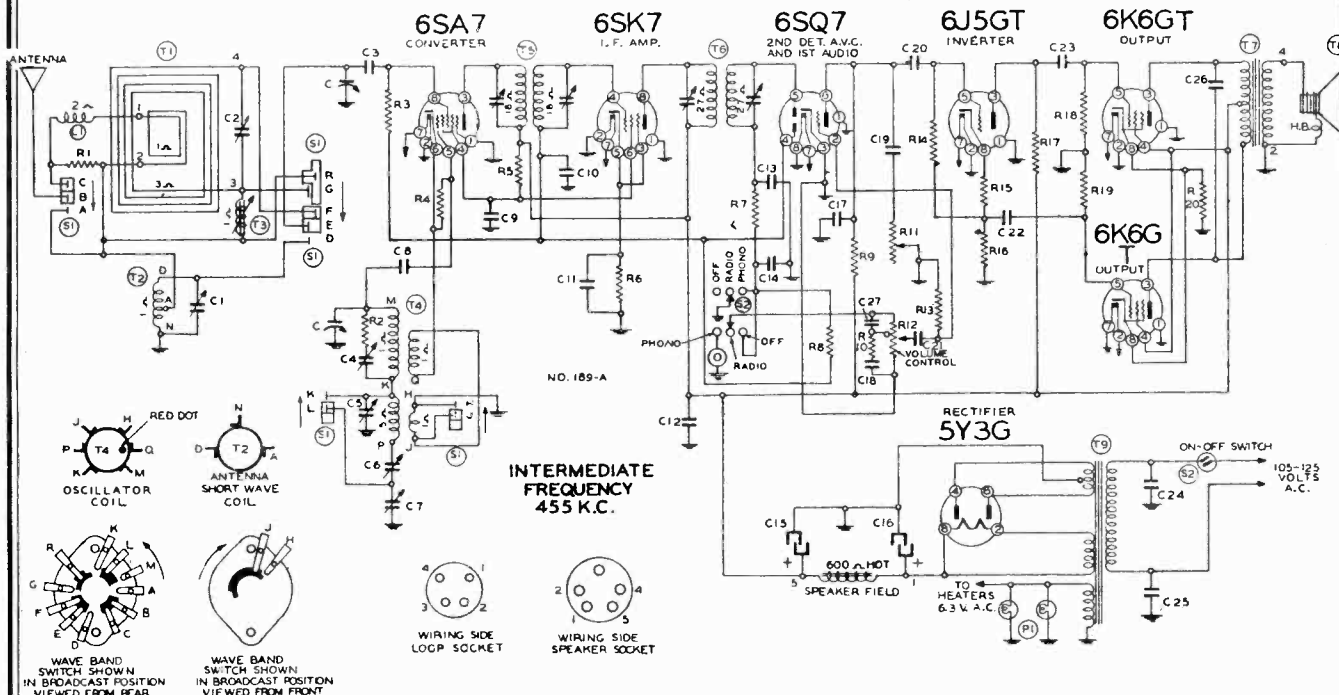
The following equipment is required for aligning:
 • An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
 • Output indicating meter.
 • Non-metallic screwdriver.
 • Dummy antennas—1 mt., 200 mmf., and 400 ohms.

MODEL 902

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted In Order Shown	Trimmer Function	Adjustment
I. F.	435 Kc.	1 MFD.	Grid of 6SN7 (1.F.)	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Output I. F.	Adjust to maximum output
	435 Kc.	1 MFD.	Grid of 6SA7	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Input I. F.	Adjust to maximum output
31 METER BAND	9.6 Mc.	400 ohms	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) C20 (See Trimmer on Top) C19	Osc. R. F.	Adjust to maximum output
49 METER BAND	6.1 Mc.	400 ohms	Antenna lead	49M	Set Dial at 6.1 Mc.	(See Trimmer View) T8 (See Trimmer View) T4	Osc. R. F.	Adjust to maximum output
25 METER BAND	11.8 Mc.	400 ohms	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T5 (See Trimmer View) T9	Osc. R. F.	Adjust to maximum output
19 METER BAND	15.2 Mc.	400 ohms	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T16 (See Trimmer View) T10	Osc. R. F.	Adjust to maximum output
BROAD-CAST BAND	1600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C16 (See Trimmer on Top) C3	Osc. R. F.	Adjust to maximum output
BROAD-CAST BAND	1400 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	Rotate Core T11 Rotate Core T12 (See Iron Core Adjustment View)	R. F. Ant.	Adjust to maximum output

BELMONT RADIO CORP.

MODEL 729
Series A



INTERMEDIATE
FREQUENCY
455 K.C.

Schematic
Diagram Part
Ref. No. No. Description

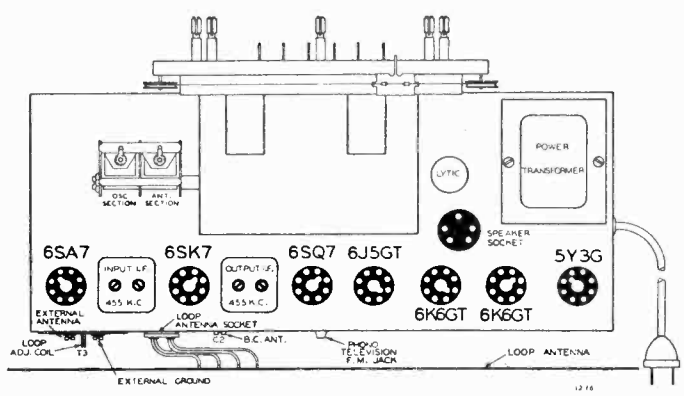
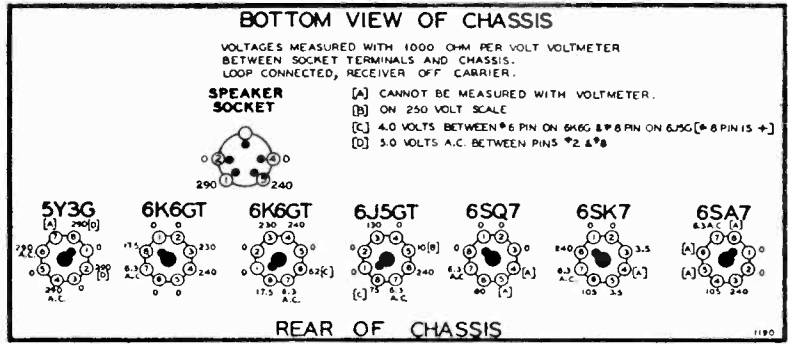
RESISTORS

R1	13064	3500 ohm—1/4 w.
R2	130276	10 ohm—1/4 w.
R3	1304	3 megohm—1/4 w.
R4	130236	30M ohm—1/4 w.
R5	130307	15M ohm—1 w.
R6	13083	300 ohm—1/4 w.
R7	13012	50M ohm—1/4 w.
R8	13038	2 megohm—1/4 w.
R9	13011	250M ohm—1/4 w.
R10	130149	15M ohm—1/4 w.
R11	101223	Tone control—1 megohm
R12	101224	Volume Control—1/2 megohm
R13	130257	5 megohm—1/4 w.
R14	1303	500M ohm—1/4 w.
R15	130218	5M ohm—1/4 w.
R16	130103	100M ohm—1/4 w.
R17	130103	100M ohm—1/4 w.
R18	1303	500M ohm—1/4 w.
R19	1303	500M ohm—1/4 w.
R20	130320	320 ohm—1 watt

CONDENSERS

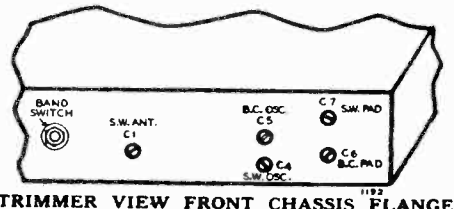
C	102133	2 gang variable condenser
C1	124116	Short wave antenna trimmer
C2	124141	B.C. antenna trimmer
C3	1292	.0005 mica
C4	124142	Dual adj. trimmer—S.W. osc. trimmer
C5	124142	Dual adj. trimmer—B.C. osc. trimmer
C6	124140	Dual adj. condenser—B.C. pad
C7	124140	Dual adj. condenser—S.W. pad
C8	12960	.00015 mica
C9	10013	.05 x 400 v.
C10	1009	.05 x 200 v.
C11	1009	.05 x 200 v.
C12	1001	.1 x 400 v.
C13	129161	Dual—.0001 mica
C14	129161	Dual—.0001 mica
C15	119108	16 mfd. x 450 v.v. lytic condenser
C16	119108	16 mfd. x 450 w.v. lytic condenser
C17	1295	.0001 mica
C18	100120	.035 x 200 v.
C19	10019	.006 x 600 v.
C20	10026	.02 x 400 v.
C21	10019	.006 x 600 v.
C22	10013	.05 x 400 v.
C23	10013	.05 x 400 v.
C24	10061	.02 x 600 v.
C25	10061	.02 x 600 v.
C26	10019	.006 x 600 v.
C27	129169	.00025 mica

C4 and C5, C6 and C7, and C13 and C14 are in the same units



PARTS

T1	111220	Loop antenna assembly
T2	111184	Short wave antenna coil
T3	111183	Loop adjustable coil
T4	110154	B.C.—S.W. oscillator coil
T5	108178	Input I.F. coil—455 kc.
T6	108179	Output I.F. coil—455 kc.
T7	105112	Output transformer
T8	114226	6" Dynamic Speaker
T9	104212	Power transformer
L1	12312	R.F. Choke coil
S1	125119	Wave band switch
S2	125120	Radio-phonograph On-off switch
P1	10794	(2) Pilot light bulbs T-44



TRIMMER VIEW FRONT CHASSIS FLANGE

BRC. (729) Form No. 7917—1750—10-40
PRO. 254

MODEL 729
Series A

BELMONT RADIO CORP.

Pushbutton Tuning

Make a list of your 6 favorite stations. Push out the call letters of these stations from the call letter sheets supplied. Insert a call letter in the slot on top of each pushbutton.

Next pull one of the pushbuttons all the way out as far as it will come (pull with fingers on top and bottom of button). Now tune in the station you want with the tuning knob—Tune back and forth until the station is clear and distinct. Now push the button hard all the way in to lock the station in place (push directly on front of button). Continue setting each pushbutton in the same way. Pressing the proper button will now tune the station you want. If it does not do so you did not push the button hard enough to lock it in place when setting up the station.

To change stations simply repeat the procedure above.

If television or frequency modulation (FM) programs ever become available in your community this radio may still be used in conjunction with the necessary converters.

The jack marked phono-television-FM in the top view will accommodate either the Phono or a television or FM converter.

- Power Consumption - - - - - 75 Watts
- Power Output - - - - - 3 Watts Undistorted
- Sensitivity for 500 Milliwatt Output: 20 Microvolts Average
- Selectivity - 45 KC Broad at 1000 Times Signal at 1000 KC
- Tuning Frequency Range Broadcast - - - 535 to 1600 KC
- Shortwave - - - - - 5.4 to 18.4 MC
- Intermediate Frequency - - - - - 455 KC
- Speaker - - - - - 6 in. Electro Dynamic

ALIGNMENT PROCEDURE

- The following equipment is required for aligning:
- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
 - Output indicating meter.
 - Non-metallic screwdriver.
 - Dummy antennas—1 mt., 200 mmf., 400 ohms.

Phonograph-Television or FM Jack

Should you wish to use an external phonograph it should be plugged into the phono-jack shown in the top view.—The on-off radio-phonograph knob on the front panel will then switch from radio to phono operation.

- Volume control—Maximum all adjustments.
- Connect radio ground to ground post of signal generator with a short heavy lead.
- Connect dummy antenna valve in series with generator output lead.
- Connect output meter across primary of output transformer.
- All-waves chassis and signal generator to "heat up" for several minutes.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Setting Condenser	Trimmers adjusted (In Order Shows)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 I. F.	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Top View)	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Grid of 6SA7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Top View)	Input I. F.	Adjust to maximum output
SHORT WAVE BAND (See Note A)	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C4	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C1	Short Wave antenna	Adjust to maximum output
	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	Trimmer C7	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "C.")
BROADCAST BAND (See Note A)	1600 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C5	Broadcast oscillator	Adjust to maximum output
	535 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Set Dial at 535 Kc.	Trimmer C6	Broadcast oscillator series pad	Adjust to maximum output
LOOP ALIGNMENT (See Note B)	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	Trimmer C2 (See Top View)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer T3 (See Top View)	Iron Core Tracking Coil	Adjust to maximum output

NOTE "A"—The signal generator is connected to the "ANT." and "GND." terminals on the rear of the chassis when aligning the Short Wave Band and to the grid of the 6SA7 tube and ground terminal when setting the Broadcast Band oscillator end frequencies, (1600 and 535 K. C.).

The loop antenna should be connected to the radio when making these adjustments.

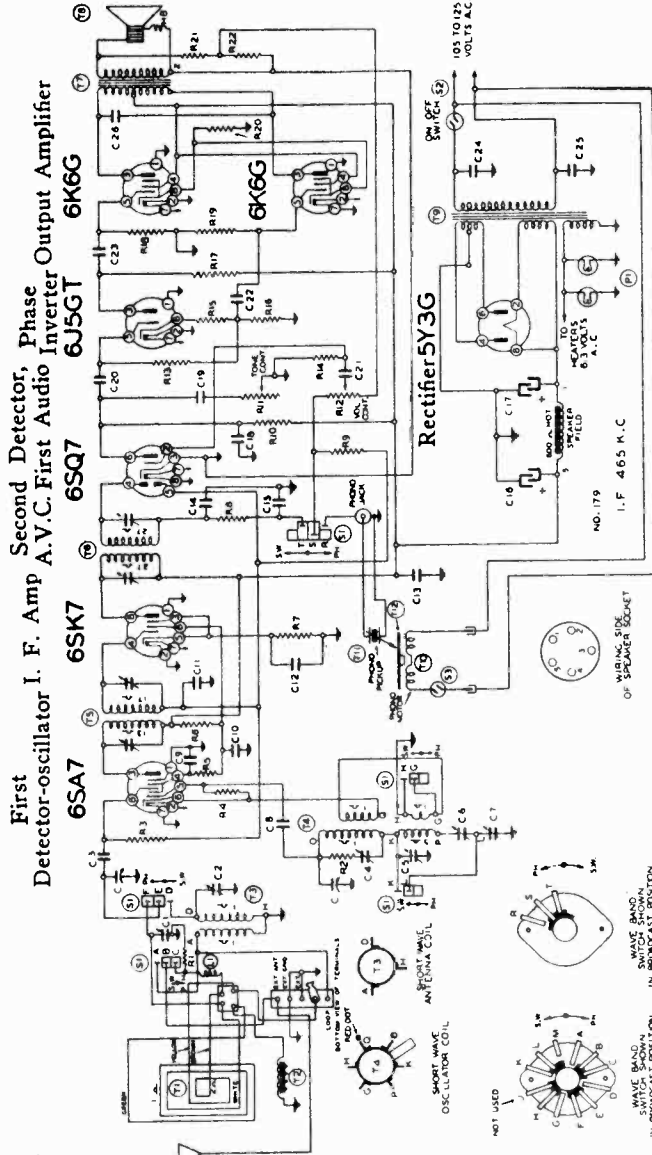
NOTE "B"—Loop alignment is made with the chassis mounted in the cabinet and the loop antenna connected. The signal generator is connected to the "ANT." and "GND." terminals.

NOTE "C"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained. Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

After each band is completed, repeat the procedure as a final check.

BELMONT RADIO CORP.

MODEL 796 Series A
Serial No.
OC362500 up



FREQUENCY RANGE
5.4 to 18.3 MC.
532 to 1570 KC.

I. F. 465 K.C.

FOR TUNER DATA, SEE INDEX

3-40

Power Consumption (Radio Chassis only, less Phono Motor).....85 Watts
Power Output.....4.5 Watts Undistorted, 6 Watts Maximum

Model 796

Series A
(Serial No. OC362500 and up)

CONDENSERS

Part No.	Description
C1	2 gang variable condenser
C2	B.C. Antenna Trimmer
C3	0.005 Mica Antenna Trimmer
C4	S.W. Oscillator Trimmer
C5	B.C. Series Pad
C6	S.W. Series Pad
C7	0.0015 Mica
C8	.05 x 400 V.
C9	.1 x 400 V.
C10	.05 x 200 V.
C11	.05 x 200 V.
C12	.1 x 400 V.
C13	.0001 mica
C14	.0001 mica
C15	Lytic-16 mid. 450 w.v.
C16	Lytic-16 mid. 450 w.v.
C17	.0001 Mica
C18	.008 x 600 V.
C19	.02 x 400 V.
C20	.002 x 600 V.
C21	.05 x 400 V.
C22	.05 x 400 V.
C23	.02 x 600 V.
C24	.02 x 600 V.
C25	.02 x 600 V.
C26	.006 x 600 V.

RESISTORS

Part No.	Description
R1	4M ohm-1/2 W.
R2	20 ohm-1/2 W.
R3	30M ohm-1/2 W.
R4	1000 ohm-1/2 W.
R5	15M ohm-1/2 W.
R6	300 ohm-1/2 W.
R7	100M ohm-1/2 W.
R8	3 megohm-1/2 W.
R9	100M ohm-1/2 W.
R10	250M ohm-1/2 W.
R11	1 megohm-tone control
R12	1 megohm volume control
R13	500M ohm-1/2 W.
R14	500M ohm-1/2 W.
R15	500M ohm-1/2 W.
R16	500M ohm-1/2 W.
R17	500M ohm-1/2 W.
R18	500M ohm-1/2 W.
R19	250 ohm-1/2 W.
R20	100 ohm-1/2 W.
R21	100 ohm-1/2 W.
R22	20 ohm-1/2 W.

Circuit Diagram

Ref. No.	Part No.	Description
120131	C1	2 gang variable condenser
124117	C2	B.C. Antenna Trimmer
124116	C3	0.005 Mica Antenna Trimmer
124112	C4	S.W. Oscillator Trimmer
124113	C5	B.C. Series Pad
124134	C6	S.W. Series Pad
12991	C7	0.0015 Mica
10011	C8	.05 x 400 V.
10011	C9	.1 x 400 V.
10099	C10	.05 x 200 V.
10099	C11	.05 x 200 V.
129161	C12	.1 x 400 V.
129161	C13	.0001 mica
119108	C14	.0001 mica
12940	C15	Lytic-16 mid. 450 w.v.
100118	C16	Lytic-16 mid. 450 w.v.
10026	C17	.0001 Mica
10026	C18	.008 x 600 V.
10025	C19	.02 x 400 V.
10013	C20	.002 x 600 V.
10013	C21	.05 x 400 V.
10013	C22	.05 x 400 V.
10061	C23	.02 x 600 V.
10061	C24	.02 x 600 V.
10019	C25	.02 x 600 V.
10019	C26	.006 x 600 V.

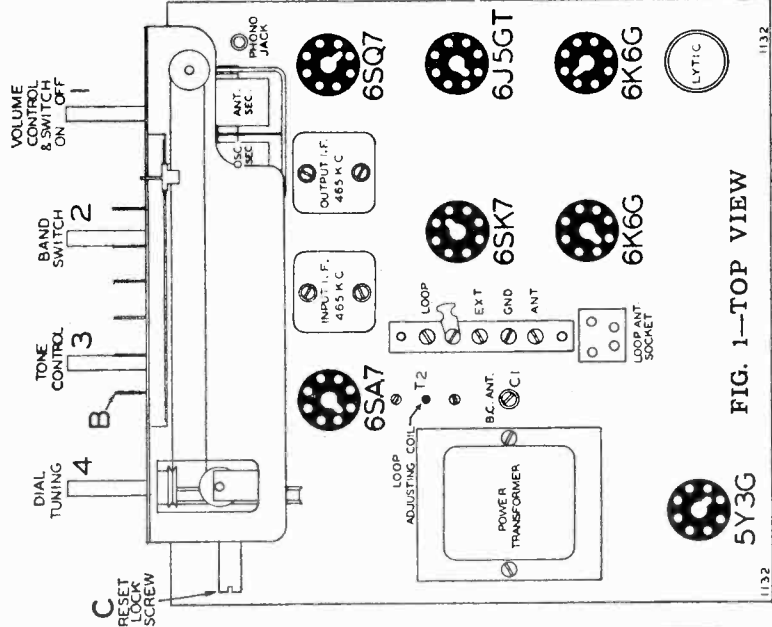
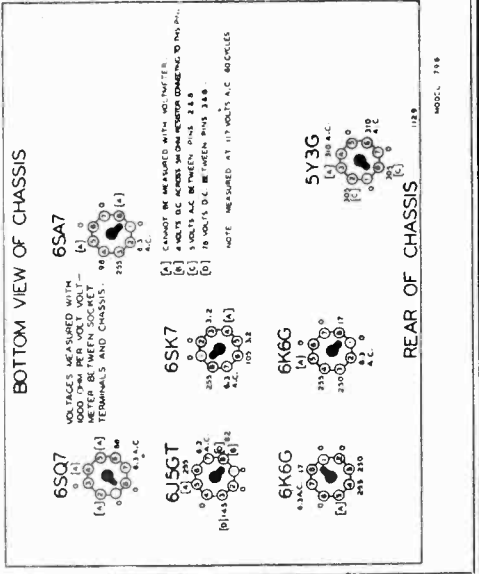


FIG. 1—TOP VIEW



BELMONT RADIO CORP.

MODEL 796, Series A
Ser. No. 0C32500 up
MODEL 797, Series A
Ser. No. 0D428100 up

ALIGNMENT PROCEDURE

IMPORTANT: See Aligning Instructions.

- Volume control—Maximum all adjustments.
- Connect radio ground to ground post of signal generator with a short heavy lead.
- Connect dummy antenna valve in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.

- The following equipment is required for aligning:
 - An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
 - Output indicating meter.
 - Non-ferrous screwdriver.
 - Dummy antennas—1 mf., 200 mmf., 400 ohms.

SIGNAL GENERATOR
MODEL 796
MODEL 797

BAND	Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	1 MFD.	Grid of 6SA7 I. F. Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top	Output I. F.	Adjust to maximum output
	465 Kc.	1 MFD.	Grid of 6SA7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top	Input I. F.	Adjust to maximum output
SHORT WAVE BAND	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C4 (See Fig. 4)	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C2 (See Fig. 4)	Short Wave antenna	Adjust to maximum output
(See Note A)	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	Trimmer C7 (See Fig. 4)	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "C")
BROADCAST BAND	1570 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C5 (See Fig. 4)	Broadcast oscillator	Adjust to maximum output
(See Note A)	532 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Set Dial at 532 K. C.	Trimmer C6 (See Fig. 4)	Broadcast oscillator series pad	Adjust to maximum output
LOOP ALIGNMENT	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	Trimmer C1 (See Fig. 5)	Broadcast antenna	Adjust to maximum output
(See Note B)	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer T2 (See Fig. 5)	Iron Core Tracking Coil	Adjust to maximum output

NOTE "A"—The signal generator is connected to the "ANT." and "GND." terminals on the rear of the chassis when aligning the Short Wave Band and to the grid of the 6SA7 tube and ground terminal when setting the Broadcast Band oscillator end frequencies, (1570 and 532 K. C.).

The loop antenna need not be connected to the radio when making these adjustments.

NOTE "B"—Loop alignment is made with the chassis mounted in the cabinet and the loop antenna connected. The signal generator is connected to the "ANT." and "GND." terminals and the jumper on the terminal board connected to "EXT." terminal.

SERVICE NOTES:

Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt.

All voltages as indicated on the voltage chart are measured with 115 volts A. C. on the primary of the power transformer.

Resistances of coil windings are indicated in ohms on the schematic circuit diagram.

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

Excessive hum, stuttering, low volume and a reduction in all D. C. voltages is usually caused by a shorted electrolytic condenser; open by-pass condensers frequently cause oscillation and distorted tone.

NOTE "C"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained. Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

After each band is completed, repeat the procedure as a final check.

ALIGNING INSTRUCTIONS:

CAUTION—No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltages, defective tubes, condensers and resistors. In order to properly align this chassis, an oscillator (generator) is absolutely necessary. No aligning adjustments should be attempted with the chassis in the cabinet.

It is important during loop alignment that the same distance between the loop antenna and the chassis be maintained as when the chassis is installed in the cabinet.

To remove the chassis from the cabinet, pull off the knobs and take out the 4 bolts holding the chassis flange to the control panel.

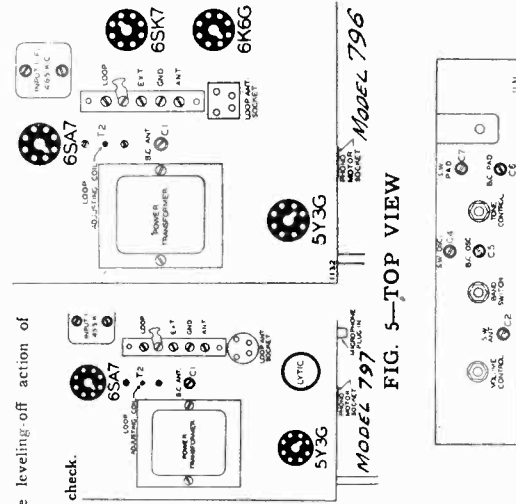
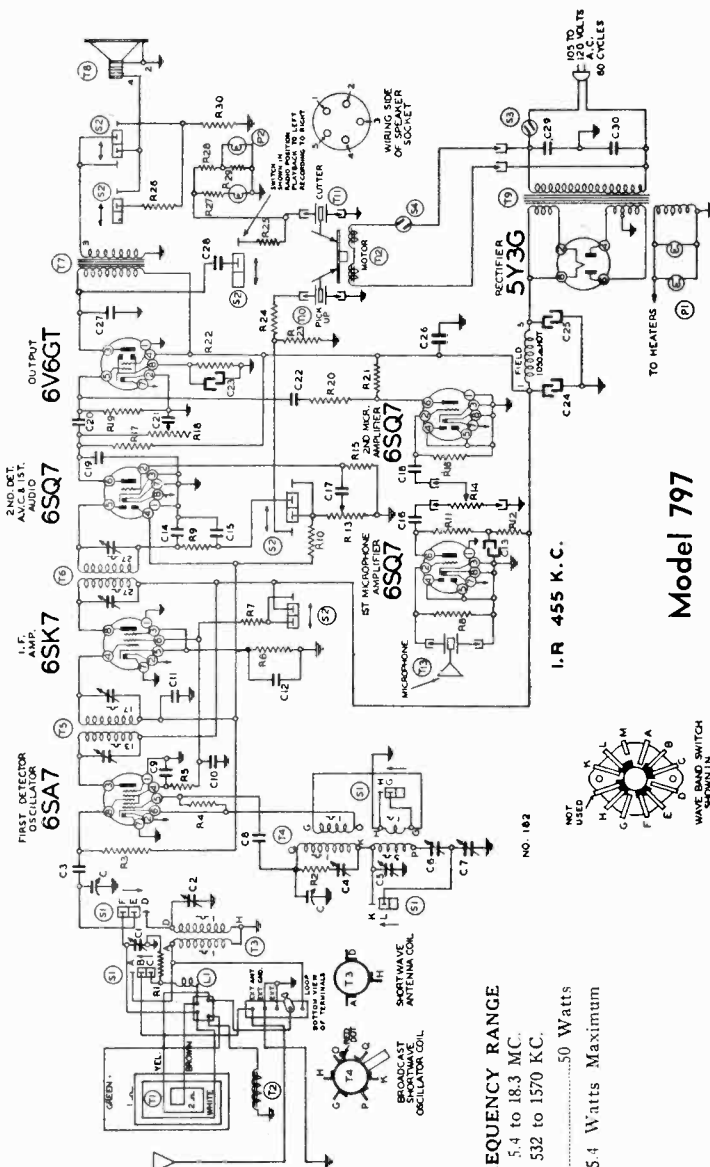


FIG. 5—TOP VIEW

FIG. 4

BELMONT RADIO CORP.

MODEL 797, Series A
Ser. No. 0D428100 up



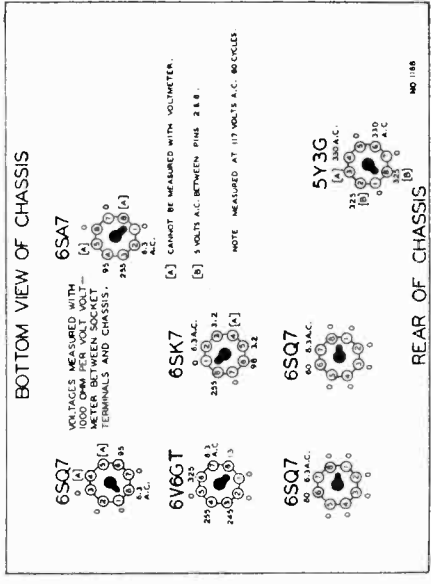
I.R. 455 K.C.

NO. 182

FOR TUNER DATA
SEE INDEX

Model 797 Series A

(Serial No. OD428100 and up)



FREQUENCY RANGE
5.4 to 18.3 MC.
532 to 1570 KC.

BAND SWITCH
Short Wave
Broadcast

BAND SWITCH
Extreme Right Rotation
Center Position

Power Consumption (Radio Chassis only, less Phono Motor).....50 Watts
Power Output.....3.6 Watts Undistorted, 5.4 Watts Maximum

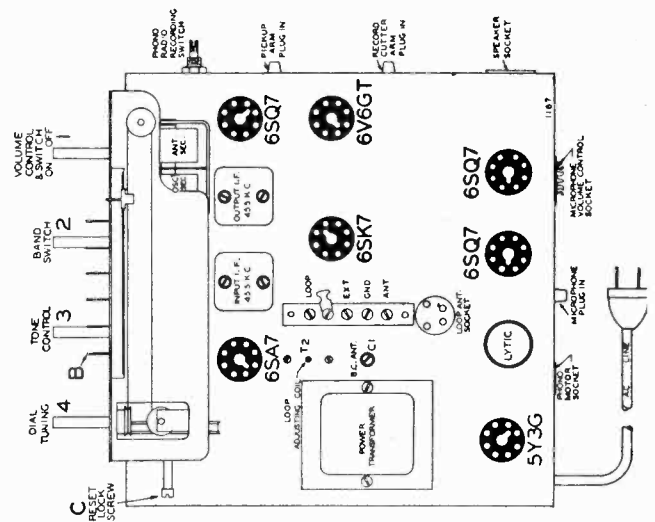


FIG. 3—TOP VIEW

CONDENSERS

- 102131 2 gang variable condenser
- 124117 B.C. Antenna Trimmer
- 124116 S.W. Antenna Trimmer
- C2 124116 S.W. Antenna Trimmer
- C3 292 .0005 mica
- C4 124112 B.C. Oscillator Trimmer
- C5 124134 S.W. Series Pad
- C6 124134 S.W. Series Pad
- C7 12991 .00015 mica
- C8 10013 .05 x 400 v.
- C9 1001 .1 x 400 v.
- C10 1009 .05 x 200 v.
- C11 1009 .05 x 200 v.
- C12 1967 8 mid. lytic
- C13 1967 8 mid. lytic
- C14 129161 .0001 mica
- C15 129161 .0001 mica
- C16 10026 .02 x 400 volts
- C17 10026 .02 x 400 volts
- C18 10025 .006 x 600 v.
- C19 1292 .0005 mica
- C20 10013 .05 x 400 v.
- C21 10019 .006 x 600 v.
- C22 10013 .05 x 400 v.
- C23 19110 40 mid. lytic
- C24 19110 20 mid. lytic
- C25 19110 20 mid. lytic
- C26 1001 .1 x 400 v.
- C27 10019 .006 x 600 v.

RESISTORS

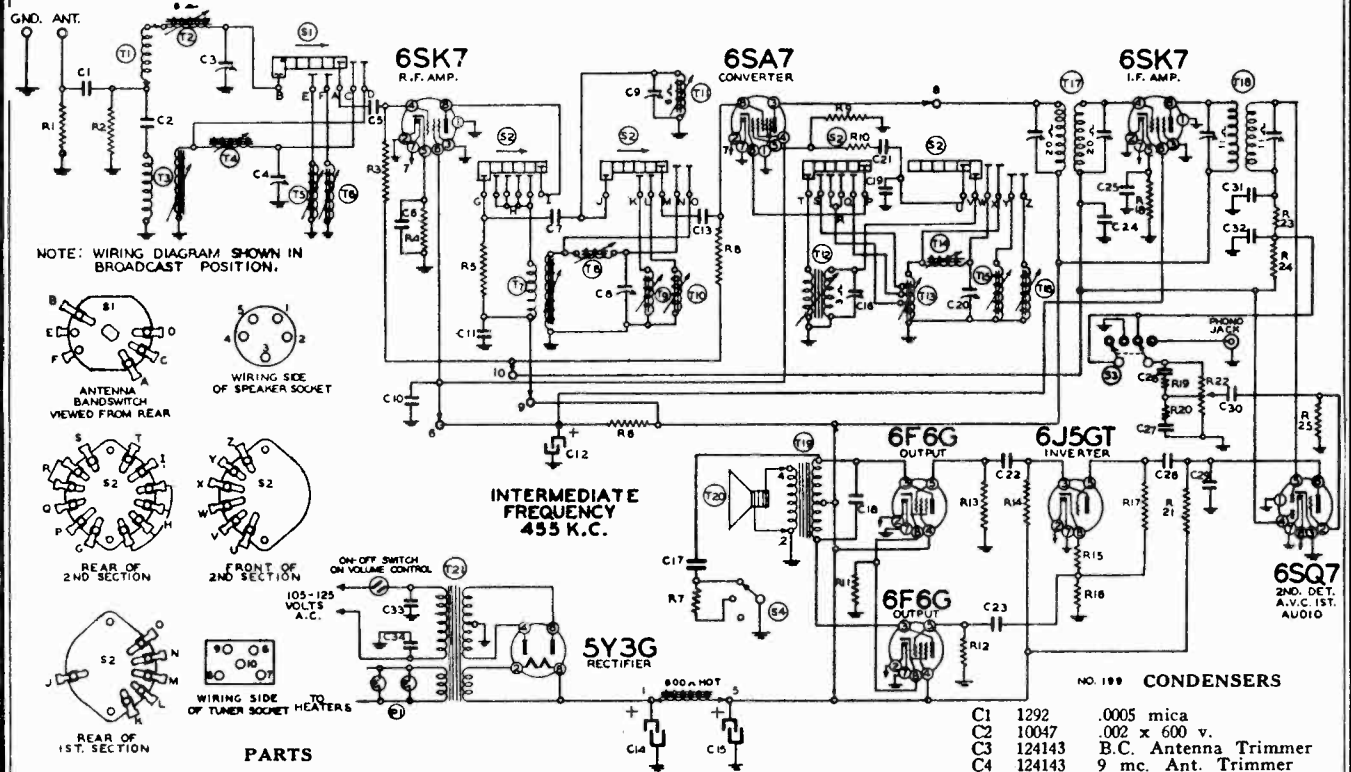
- R1 13018 4M ohm-1/2 w.
- R2 13017 20 ohm-1/2 w.
- R3 1304 3 megohm-1/2 w.
- R4 130236 30M ohm-1/2 w.
- R5 13002 1M ohm-1/2 w.
- R6 13083 300 ohm-1/2 w.
- R7 130313 20M ohm-1/2 watt
- R8 130257 5 megohm-1/2 w.
- R9 13012 50M ohm-1/2 w.
- R10 1304 3 megohm-1/2 w.
- R11 1303 500M ohm-1/2 w.
- R12 13012 5 megohm-1/2 w.
- R13 101215 1 megohm volume control
- R14 101219 1 megohm microphone control
- R15 130223 10 megohm-1/2 w.
- R16 130223 10 megohm-1/2 w.
- R17 13011 250M ohm-1/2 w.
- R18 101216 1 megohm tone control
- R19 1303 500M ohm-1/2 w.
- R20 13020 100M ohm-1/2 w.
- R21 1303 250 ohm-1/2 watt
- R22 13027 1 megohm-1/2 w.
- R23 13019 1 megohm-1/2 w.
- R24 1303 500M ohm-1/2 w.
- R25 130194 35M ohm-1/2 w.
- R26 130166 150 ohm-1/2 w.
- R27 1309 200M ohm-1/2 w.
- R28 1309 200M ohm-1/2 w.
- R29 1309 200M ohm-1/2 w.
- R30 10661 6 ohm-5 watt

PARTS

- T1 111165E Loop Antenna Assembly
- T2 111153 Loop Adjustable Coil
- T3 111163 S.W. Antenna Coil
- T4 110150 B.C. & S.W. Oscillator Coil
- T5 108162B Input I.F. Coil-455 kc.
- T6 108132D Output I.F. Coil-455 kc.
- T7 105109 Output Transformer
- T8 114195 10" Dynamic Speaker
- T9 104209 Power Transformer
- T10 104210 Pickup arm
- T11 104210 Record cutter arm
- T12 104210 Phono Motor Complete
- L1 12319 R.F. Choke coil
- S1 125114 Wave Band Switch
- S2 125115 On-off switch on Volume Control
- S3 Radio Recording Switch
- S4 Phono Motor Switch
- P1 10794 (2) Pilot light bulbs T44
- P2 107326 (2) Neon Light Bulbs Type (T2)

BELMONT RADIO CORP.

MODEL 800



- PARTS**
- T1 111206 Loop antenna assembly
 - T2 111195 B.C. Antenna Coil
 - T3 111190 9 mc. Antenna Coil
 - T4 111189 6 mc. Antenna Coil
 - T5 111191 12 mc. Antenna Coil
 - T6 111192 15 mc. Antenna Coil
 - T7 10959 9 mc. R.F. Coil
 - T8 10958 6 mc. R.F. Coil
 - T9 10960 12 mc. R.F. Coil
 - T10 10961 15 mc. R.F. Coil
 - T11 10962 B.C. R.F. Coil
 - T12 110161 B.C. Oscillator Coil
 - T13 110157 9 mc. Oscillator Coil
 - T14 110156 6 mc. Oscillator Coil
 - T15 110158 12 mc. Oscillator Coil
 - T16 110159 15 mc. Oscillator Coil
 - T17 108177 Input I.F. Coil—455 kc.
 - T18 108176 Output I.F. Coil—455 kc.
 - T19 105111 Output Transformer
 - T20 114221 12" Dynamic Speaker
 - T21 104202B Power Transformer—For 50-60 Cycle
 - or 104203B Power Transformer—For 25 Cycle
 - S1 125118 Antenna Bandswitch
 - S2 125117 R.F. & Osc. Bandswitch
 - S3 125129 Radio-Phono Switch
 - S4 125130 Tone Control Switch
 - P1 10794 (2) 6-8 Volt Pilot Lights—T44

- RESISTORS**
- | Code No. | Part No. | Value |
|----------|----------|--------------------------------|
| R1 | 1301 | 25M ohm— $\frac{1}{2}$ w. |
| R2 | 1301 | 25M ohm— $\frac{1}{2}$ w. |
| R3 | 13019 | 1 megohm— $\frac{1}{2}$ w. |
| R4 | 130239 | 250 ohm— $\frac{1}{2}$ w. |
| R5 | 130218 | 5M ohm— $\frac{1}{2}$ w. |
| R6 | 10662 | 12,500 ohm— $\frac{1}{2}$ w. |
| R7 | 13064 | 3500 ohm— $\frac{1}{2}$ w. |
| R8 | 13019 | 1 megohm— $\frac{1}{2}$ w. |
| R9 | 130232 | 25M ohm— $\frac{1}{2}$ w. |
| R10 | 130174 | 50 ohm— $\frac{1}{2}$ w. |
| R11 | 130220 | 300 ohm—1 w. |
| R12 | 1303 | 500M ohm— $\frac{1}{2}$ w. |
| R13 | 1303 | 500M ohm— $\frac{1}{2}$ w. |
| R14 | 130103 | 100M ohm— $\frac{1}{2}$ w. |
| R15 | 130218 | 5M ohm— $\frac{1}{2}$ w. |
| R16 | 130103 | 100M ohm— $\frac{1}{2}$ w. |
| R17 | 13019 | 1 megohm— $\frac{1}{2}$ w. |
| R18 | 13070 | 500 ohm— $\frac{1}{2}$ w. |
| R19 | 13011 | 250M ohm— $\frac{1}{2}$ w. |
| R20 | 130149 | 15M ohm— $\frac{1}{2}$ w. |
| R21 | 13011 | 250M ohm— $\frac{1}{2}$ w. |
| R22 | 101233 | Volume Control & On-off switch |
| R23 | 13012 | 50M ohm— $\frac{1}{2}$ w. |
| R24 | 1304 | 3 megohm— $\frac{1}{2}$ w. |
| R25 | 130257 | 5 megohm— $\frac{1}{2}$ w. |

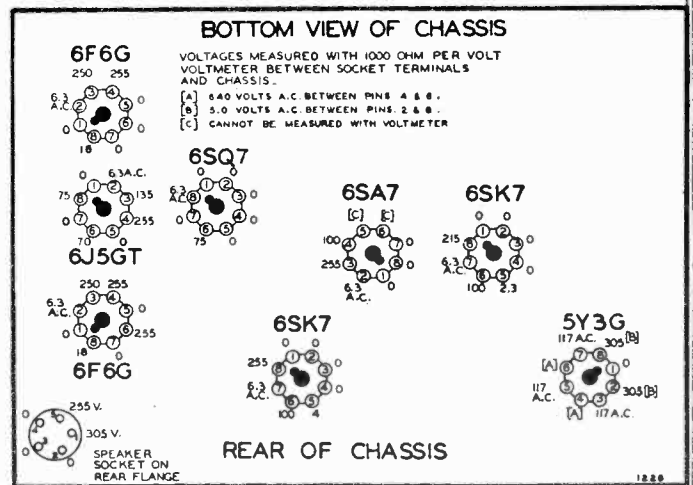
- NO. 199 CONDENSERS**
- | | | |
|-----|--------|----------------------------|
| C1 | 1292 | .0005 mica |
| C2 | 10047 | .002 x 600 v. |
| C3 | 124143 | B.C. Antenna Trimmer |
| C4 | 124143 | 9 mc. Ant. Trimmer |
| C5 | 1292 | .0005 mica |
| C6 | 10020 | .1 x 200 v. |
| C7 | 129168 | .00001 mica |
| C8 | 124138 | 9 mc. R.F. Trimmer |
| C9 | 124139 | B.C. R.F. Trimmer |
| C10 | 10074 | .1 x 400 v. |
| C11 | 10074 | .1 x 400 v. |
| C12 | 119109 | 10.0 mfd. x 350 w.v. lytic |
| C13 | 1292 | .0005 mica |
| C14 | 119109 | 15.0 mfd. x 450 w.v. lytic |
| C15 | 119109 | 15.0 mfd. x 450 w.v. lytic |
| C16 | 124144 | B.C. Oscillator Trimmer |
| C17 | 10013 | .05 x 400 v. |
| C18 | 10071 | .004 x 600 v. |
| C19 | 129167 | .0002 silver mica |
| C20 | 124145 | 9 mc. Oscillator Trimmer |
| C21 | 12938 | .00005 mica |
| C22 | 10013 | .05 x 400 v. |
| C23 | 1009 | .05 x 200 v. |
| C24 | 10026 | .02 x 400 v. |
| C25 | 10020 | .1 x 200 v. |
| C26 | 129114 | .0003 mica |
| C27 | 100122 | .03 x 200 v. |
| C28 | 10026 | .02 x 400 v. |
| C29 | 12921 | .0002 mica |
| C30 | 10019 | .006 x 600 v. |
| C31 | 129165 | .00005 mica |
| C32 | 129165 | .00005 mica |
| C33 | 10061 | .02 x 600 v. |
| C34 | 10061 | .02 x 600 v. |

Setting the Pushbuttons

Make a list of your 6 favorite stations. Push out the call letters of these stations from the call letter sheets supplied. Insert a call letter in the slot on top of each pushbutton. (Except the two end ones).

Next pull one of the pushbuttons all the way out as far as it will come (pull, with fingers on top and bottom of button). Now tune in the station you want with the tuning knob—Tune back and forth until the station is clear and distinct. Now push the button hard all the way in to lock the station in place, (push directly on front of button). Continue setting each pushbutton in the same way. Pressing the proper button will now tune the station you want. If it does not do so you did not push the button hard enough to lock it in place when setting up the station.

To change stations simply repeat the procedure above.



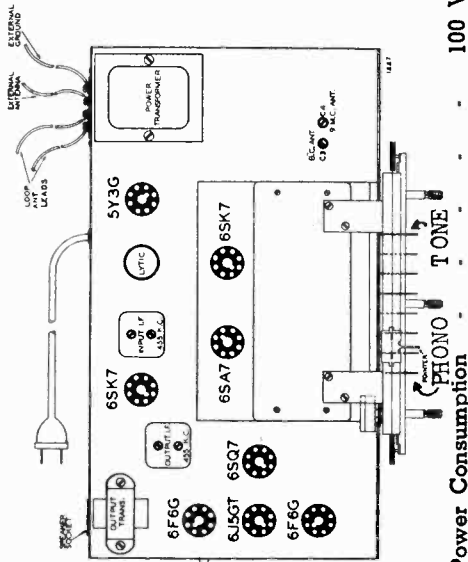
MODEL 800

Tuning Frequency Range
Broadcast Band - 540 to 1600 KC
49M Band - - - 5.9 to 6.1 MC
31M Band - - - 9.1 to 10 MC
25M Band - - - 11.4 to 12.1 MC
19M Band - - - 14.9 to 15.4 MC
Intermediate Frequency 455 KC
Speaker 12 in. Electro Dynamic
Phonograph-Television and Fm. Jack

Should you wish to use an external phonograph it should be plugged into the phono jack shown in the chassis view—The radio-phonograph button on the front panel will then switch from radio to phono operation.

If television or frequency modulation (FM) programs ever become available in your community this radio may still be used in conjunction with the necessary converters.

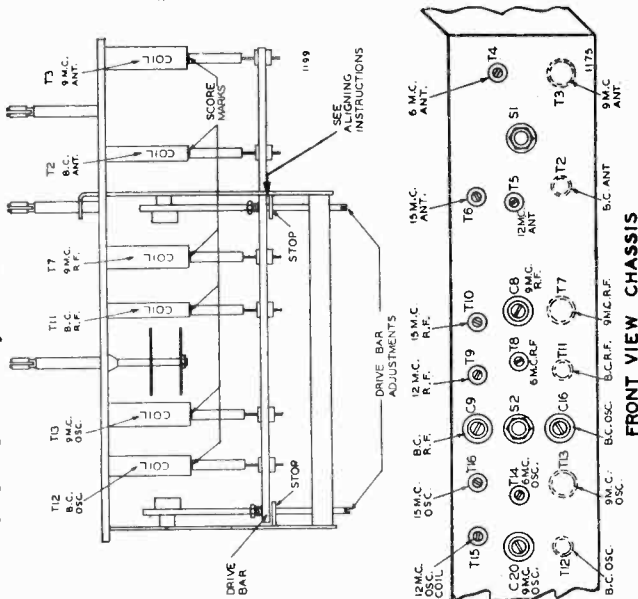
The jack marked phono-television-FM in the top view will accommodate either the Phono or a television or FM converter.



Power Consumption - - - 100 Watts
Power Output - - - 5 Watts Undistorted
Sensitivity for 500 Milliwatt Output: 10 Microvolts Average
Selectivity - 35 KC Broad at 1000 Times Signal at 1000 KC

- Tone control—Trebble
- Volume control—Maximum all adjustments.
- Connect radio chassis to ground post of signal generator with a short heavy lead.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.

IRON CORE ADJUSTMENT VIEW



FRONT VIEW CHASSIS

BAND	Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted In Order Shown	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 (I.F.)	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Output I. F.	Adjust to maximum output
I. F.	455 Kc.	.1 MFD.	Grid of 6SA7	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Input I. F.	Adjust to maximum output
31 METER BAND	9.6 Mc.	400 ohms	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) C20 (See Trimmer View) C8 (See Trimmer on Top) C4	Osc. R. F. Ant.	Adjust to maximum output
49 METER BAND	6.1 Mc.	400 ohms	Antenna lead	49M	Set Dial at 6.1 Mc.	(See Trimmer View) T14 (See Trimmer View) T8 (See Trimmer View) T4	Osc. R. F. Ant.	Adjust to maximum output
25 METER BAND	11.8 Mc.	400 ohms	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T15 (See Trimmer View) T9 (See Trimmer View) T5	Osc. R. F. Ant.	Adjust to maximum output
19 METER BAND	15.2 Mc.	400 ohms	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T16 (See Trimmer View) T6	Osc. R. F. Ant.	Adjust to maximum output
BROADCAST BAND	1600 Kc.	200 mmi.	Antenna lead	Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C16 (See Trimmer View) C9 (See Trimmer on Top) C3	Osc. R. F. Ant.	Adjust to maximum output
BROADCAST BAND	1400 Kc.	200 mmi.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	Rotate Core T11 (See Iron Core Adjustment View)	R. F. Ant.	Adjust to maximum output

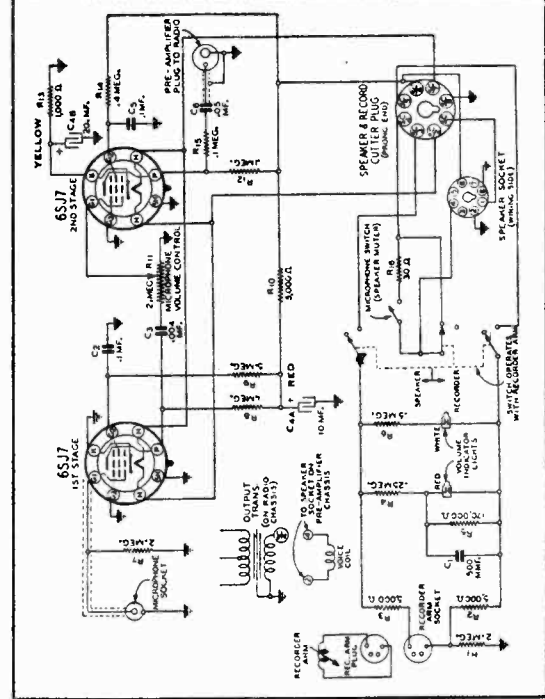
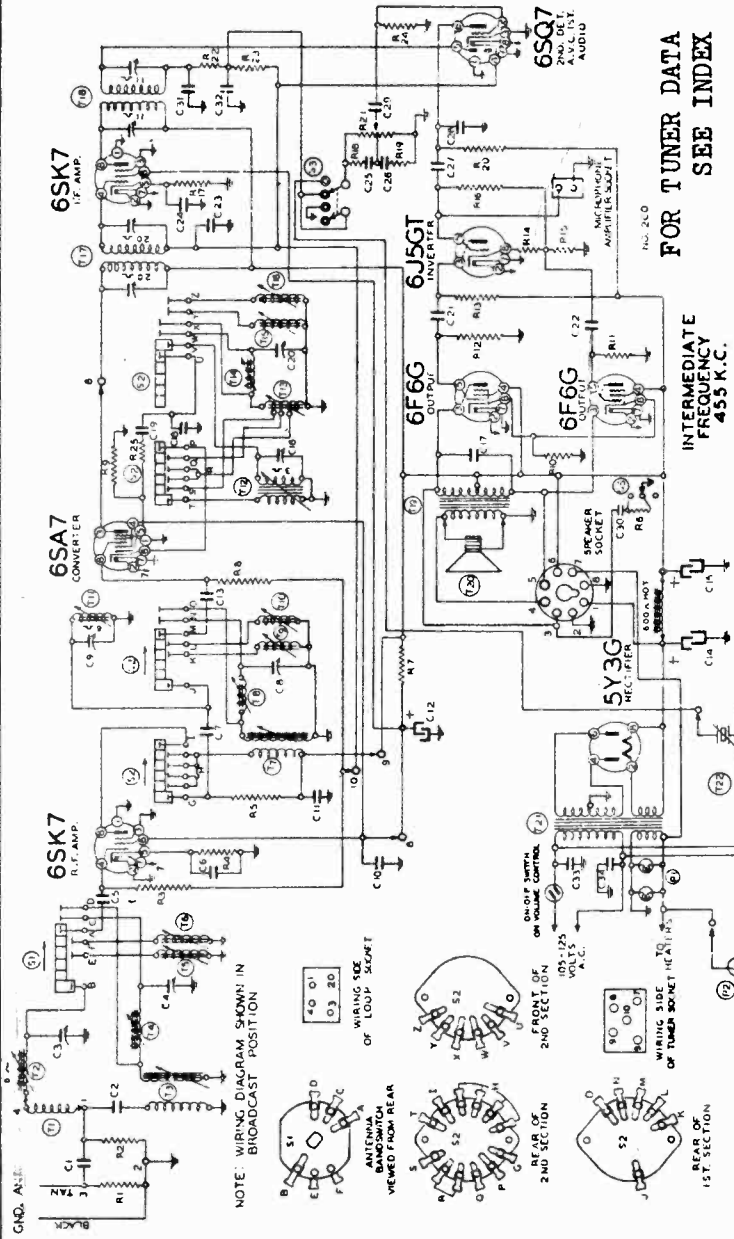
Do not realign the band spread scales unless you are positive they are out of adjustment. When adjustment is necessary proceed as follows.

ment View" now turn the tuning knob until the drive bar comes within 1/64 to 1/32 from the stops. (A piece of blotting paper is about the right thickness and will serve as a gauge). The clearance of the bar must be the same at both stops. If far off you can raise fine score marks are even with the edge of the coil forms.

You are now ready to continue with the trimmer adjustments as shown on the alignment chart.

First refer to the "Iron Core Adjustment" of the bar must be the same at both stops.

MODEL 801



CIRCUIT DIAGRAM OF MICROPHONE AMPLIFIER

FOR TUNER DATA
SEE INDEX

INTERMEDIATE
FREQUENCY
455 K.C.

Aug. 1940

Radio Set Schematic Ref. Part No.	Description
R1	1301 25M ohm—1/2 w.
R2	1301 25M ohm—1/2 w.
R3	1301 25M ohm—1/2 w.
R4	130239 250 ohm—1/2 w.
R5	130218 5M ohm—1/2 w.
R6	13064 3500 ohm—1/2 w.
R7	10662 12,500 ohm—1/2 w.
R8	13019 1 megohm—1/2 w.
R9	130232 25M ohm—1/2 w.
R10	130230 500 ohm—1 watt
R11	1303 500M ohm—1/2 w.
R12	1303 500M ohm—1/2 w.
R13	130103 100M ohm—1/2 w.
R14	130218 5M ohm—1/2 w.
R15	13019 1 megohm—1/2 w.
R16	13019 1 megohm—1/2 w.
R17	13070 500 ohm—1/2 w.
R18	13011 250M ohm—1/2 w.
R19	130149 15M ohm—1/2 w.
R20	13011 250M ohm—1/2 w.
R21	101233 1/2 megohm volume control and on-off switch
R22	13012 50M ohm—1/2 w.
R23	1304 3 megohm—1/2 w.
R24	130257 5 megohm—1/2 w.
R25	130174 50 ohm—1/2 w.

CONDENSERS

C1	1292 .0005 mica
C2	10047 .002 x 600 v.—10%
C3	124143 B.C. Antenna Trimmer
C4	124143 9 mc. antenna trimmer
C5	1292 .0005 mica
C6	10020 1 x 200 v.
C7	120168 .0001 mica tubular
C8	124138 9 mc. I.F. Trimmer
C9	124139 B.C. R.F. Trimmer
C10	10074 1 x 400 v.
C11	10074 1 x 400 v.
C12	119109 10.0 x 350 v.v.v.
C13	1292 .0005 mica
C14	119109 15.0 x 450 v.v.v.
C15	119109 15.0 x 450 v.v.v.
C16	124144 B.C. Oscillator trimmer
C17	10071 .004 x 600 v.
C18	129167 .0002 silver mica
C19	12938 9 mc. osc. trimmer
C20	124145 1 x 200 v.
C21	10013 .05 x 400 v.
C22	1009 .05 x 200 v.
C23	10026 .02 x 400 v.
C24	10020 1 x 200 v.
C25	129114 .0003 mica
C26	10022 .03 x 200 v.
C27	10026 .02 x 400 v.
C28	12921 .0002 mica
C29	10019 .006 x 600 v.
C30	10013 .05 x 400 v.
C31	129165 .00005 mica
C32	129165 .00005 mica
C33	10061 .02 x 600 v. bakelite
C34	10061 .02 x 600 v. bakelite

T1	111209 Loop antenna assembly
T2	111195 B.C. Antenna Coil
T3	111190 9 mc. Antenna Coil
T4	111189 6 mc. Antenna Coil
T5	111191 12 mc. Antenna Coil
T6	111192 13 mc. Antenna Coil

L7	10959 9 mc. R.F. Coil
L8	10958 6 mc. R.F. Coil
L9	10960 12 mc. R.F. Coil
L10	10961 15 mc. R.F. Coil
L11	10962 B.C. R.F. Coil
L12	110161 B.C. Osc. Coil
L13	110157 9 mc. Osc. Coil
L14	110156 6 mc. Osc. Coil
L15	110158 12 mc. Osc. Coil
L16	110159 15 mc. Osc. Coil
L17	108177 Input I.F. Coil—455 kc.
L18	108176 Output Transformer
L19	051111 k.f. Osc. Coil—50 cycle
L20	142117 12 in. speaker—dynamic
L21	104203B Power Transformer—25 cycle
L22	104234 Automatic Record Changer—50 cycle
	104232 Complete Record Changer—60 cycle
	104233 Automatic Record Changer—25 cycle
	104233 Complete Record Changer—60 cycle
	104233 Complete Record Changer—25 cycle
	104233 Complete Record Changer—50 cycle
S1	125118 Antenna Bandswitch
S2	125117 R.F. & Osc. Bandswitch
S3	125129 Radio-phonograph switch
S4	125130 Tone control switch
P1	10794 Switch on record changer
P2	10794 Indicator Light T44

BELMONT RADIO CORP.

- Power Consumption, Radio only - 100 Watts
- Power Output - 5 Watts Undistorted
- Sensitivity for 500 Milliwatt Output: 10 Microvolts Average
- Selectivity - 35 KC Broad at 1000 Times Signal at 1000 KC
- Tuning Frequency Range Broadcast Band - 540 to 1600 KC
- 49M Band - 5.9 to 6.1 MC
- 31M Band - 9.1 to 10 MC
- 25M Band - 11.4 to 12.1 MC
- 19M Band - 14.9 to 15.4 MC
- Intermediate Frequency - 455 KC
- Speaker - 12 in. Electro Dynamic

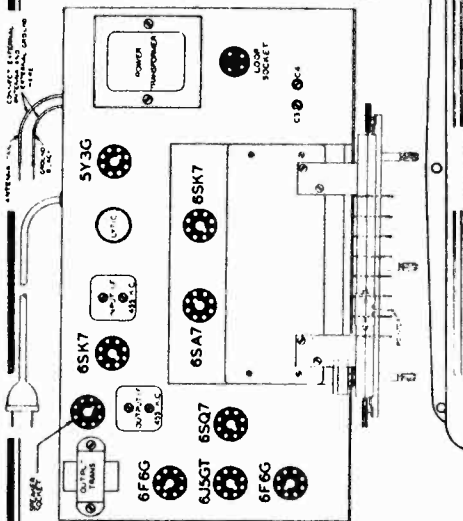
FOR TUNER DATA, SEE INDEX

FOR IRON-CORE
ADJUSTMENT DATA
(SW BAND SPREAD)
SEE INDEX

Television and Fm. Jack

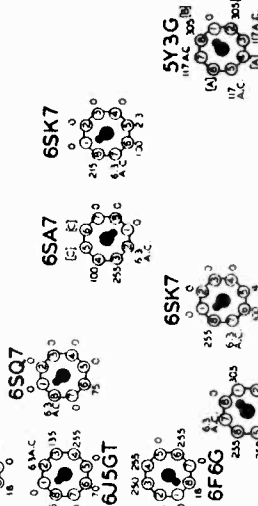
If television or frequency modulation (FM) programs ever become available in your community this radio may still be used in conjunction with the necessary converters.

The jack marked phono-pickup jack in the chassis view will accommodate either the Phono or a television or FM converter.

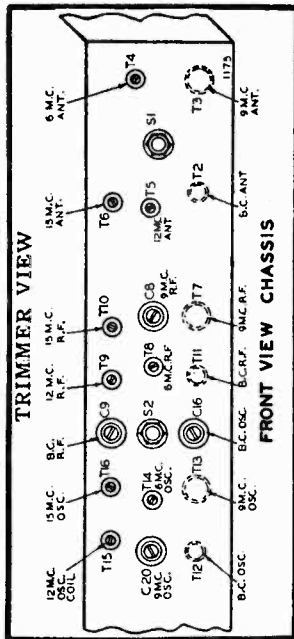


BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 100 OHM PER VOLT AND CHASSIS AS GROUND.
 (A) 450 VOLTS A.C. BETWEEN MAIN 4-5.
 (B) 50 VOLTS A.C. BETWEEN MAIN 2-3.
 (C) CANNOT BE MEASURED WITH VOLTMETER



REAR OF CHASSIS

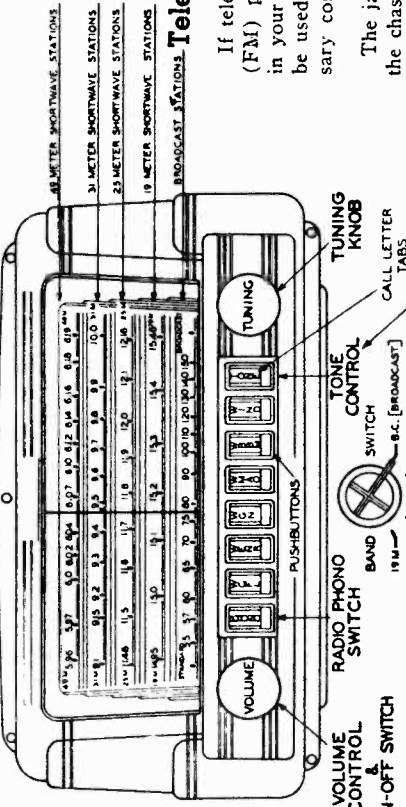


FRONT VIEW CHASSIS

- Tone control—Treble.
- Volume control—Maximum all adjustments.
- Connect radio chassis to ground post of signal generator with a short heavy lead.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.

SIGNAL GENERATOR

BAND	Frequency Setting	Dummy Antenna	Connection to Radio
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 (I.F.)
	455 Kc.	.1 MFD.	Grid of 6SA7
31 METER BAND	9.6 Mc.	400 ohms	Antenna lead
49 METER BAND	6.1 Mc.	400 ohms	Antenna lead
25 METER BAND	11.8 Mc.	400 ohms	Antenna lead
19 METER BAND	15.2 Mc.	400 ohms	Antenna lead
BROADCAST BAND	1600 Kc.	200 mmi.	Antenna lead
	1400 Kc.	200 mmi.	Antenna lead

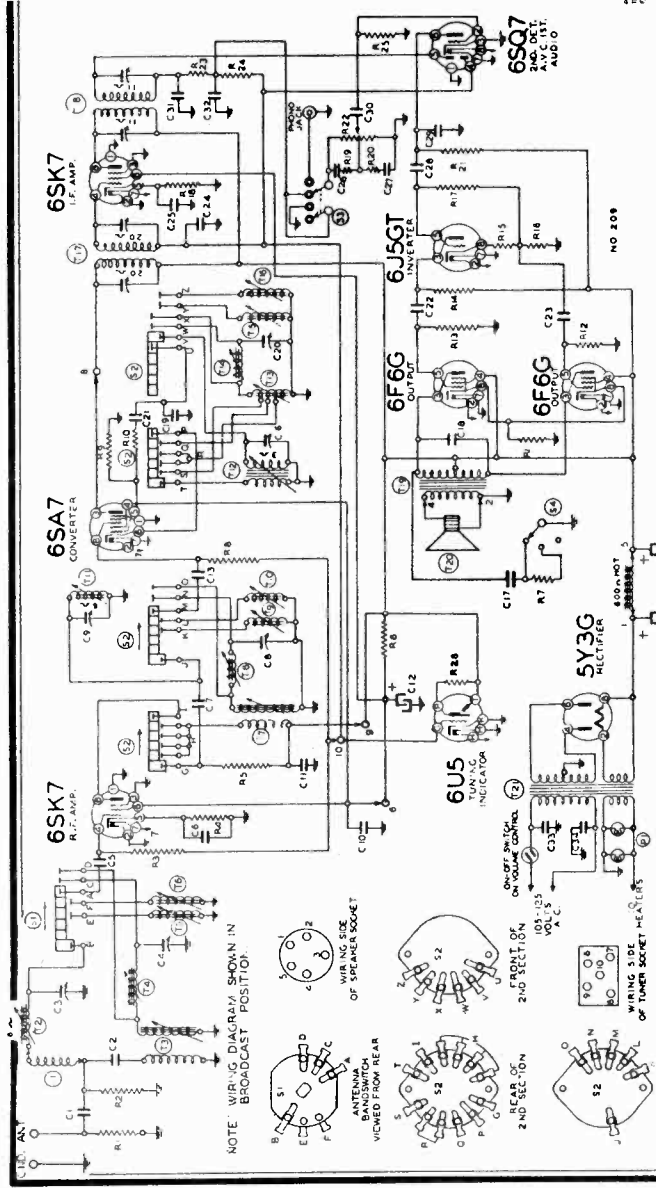
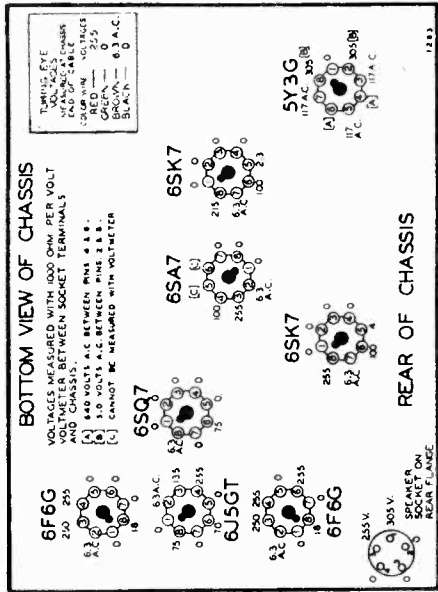


NOTE: PUSHBUTTON 15 ON TRIMMERS ADJUSTED TONE CONTROL.

Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted in Order Shown	Trimmer Function	Adjustment
Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Output I. F.	Adjust to maximum output
Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Input I. F.	Adjust to maximum output
31M	Set Dial at 9.6 Mc.	(See Trimmer View) C20 (See Trimmer View) C4 (See Trimmer on Top) C4	Osc. R. F. Ant.	Adjust to maximum output
49M	Set Dial at 6.1 Mc.	(See Trimmer View) T14 (See Trimmer View) T8 (See Trimmer View) T4	Osc. R. F. Ant.	Adjust to maximum output
25M	Set Dial at 11.8 Mc.	(See Trimmer View) T15 (See Trimmer View) T9 (See Trimmer View) T5	Osc. R. F. Ant.	Adjust to maximum output
19M	Set Dial at 15.2 Mc.	(See Trimmer View) T16 (See Trimmer View) T10 (See Trimmer View) T6	Osc. R. F. Ant.	Adjust to maximum output
Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C16 (See Trimmer View) C9 (See Trimmer on Top) C3	Osc. R. F. Ant.	Adjust to maximum output
Broadcast	Set Dial at 1400 Kc.	Rotate Core T11 (See Iron Core Adjustment View)	R. F. Ant.	Adjust to maximum output

BELMONT RADIO CORP.

MODEL 902

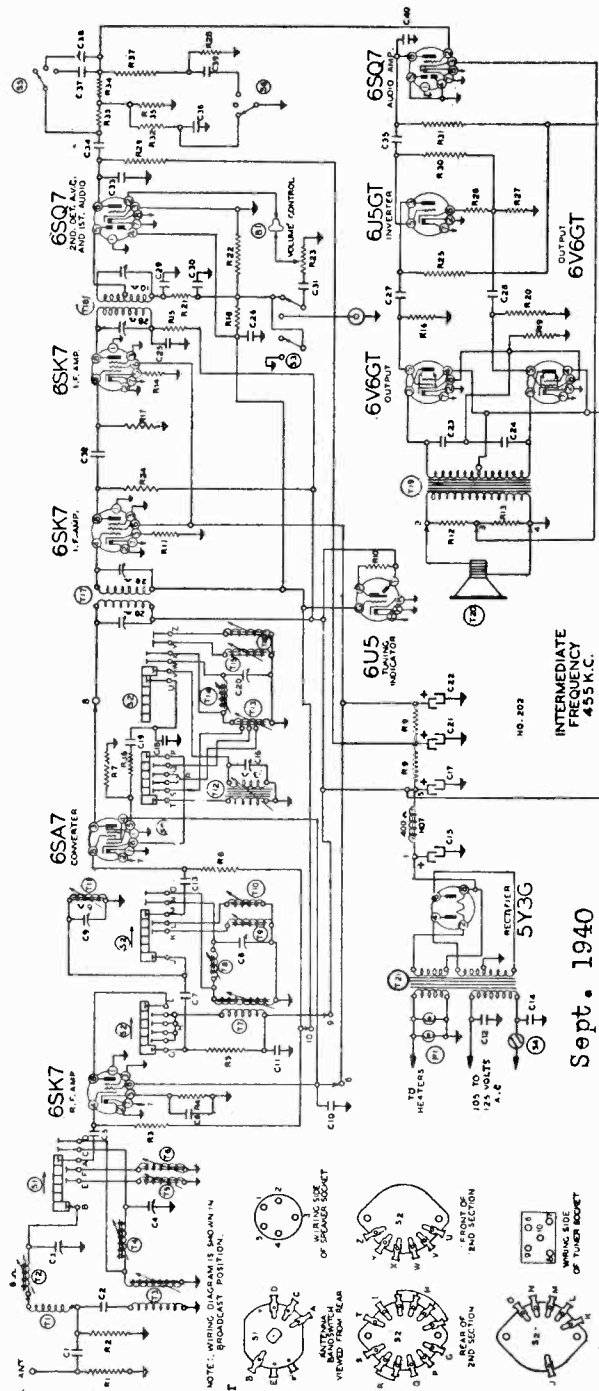


- PARTS**
- 111206 Loop antenna assembly
 - 111195 B.C. Antenna Coil
 - 111198 6 mc. Antenna Coil
 - 111199 12 mc. Antenna Coil
 - 111192 9 mc. R.F. Coil
 - 10958 6 mc. R.F. Coil
 - 10959 12 mc. R.F. Coil
 - 10960 15 mc. R.F. Coil
 - 10961 B.C. R.F. Coil
 - 11062 B.C. Oscillator Coil
 - 11061 9 mc. Oscillator Coil
 - 11057 6 mc. Oscillator Coil
 - 11058 12 mc. Oscillator Coil
 - 11059 15 mc. Oscillator Coil
 - 108176 Input I.F. Coil—455 kc.
 - 108177 Output I.F. Coil—455 kc.
 - 108178 Output Transformer
 - 114231 12" Transformer
 - 104202B Power Transformer—For 50-60 Cycle
 - 104203B Power Transformer—For 25 Cycle
 - 125118 R.F. & Osc. Bandswitch
 - 125129 Radio-Phono Switch
 - 125130 Tone Control Switch
 - 10794 (2) 6-8 Volt Pilot Lights—T4
- RESISTORS**
- R1 1301 25M ohm—1/4 w.
 - R2 1301 25M ohm—1/4 w.
 - R3 13019 1 megohm—1/4 w.
 - R4 130239 250 ohm—1/4 w.
 - R5 130218 5M ohm—1/4 w.
 - R6 10662 12,500 ohm—1/4 w.
 - R7 13064 1 megohm—1/4 w.
 - R8 13019 1 megohm—1/4 w.
 - R9 130232 25M ohm—1/4 w.
 - R10 130174 50 ohm—1 w.
 - R11 130220 300 ohm—1 w.
 - R12 1303 500M ohm—1/4 w.
 - R13 1303 500M ohm—1/4 w.
 - R14 130218 500M ohm—1/4 w.
 - R15 130103 500M ohm—1/4 w.
 - R16 130103 100M ohm—1/4 w.
 - R17 130103 100M ohm—1/4 w.
 - R18 130103 100M ohm—1/4 w.
 - R19 130103 100M ohm—1/4 w.
 - R20 130103 100M ohm—1/4 w.
 - R21 130103 100M ohm—1/4 w.
 - R22 130103 100M ohm—1/4 w.
 - R23 130103 100M ohm—1/4 w.
 - R24 130103 100M ohm—1/4 w.
 - R25 130237 1 megohm tuning indicator cable
 - R26
- CONDENSERS**
- C1 1292 .0005 mica
 - C2 10047 .002 x 600 v.
 - C3 124143 B.C. Antenna Trimmer
 - C4 124143 9 mc. Ant. Trimmer
 - C5 1292 .0005 mica
 - C6 10020 .1 x 200 v.
 - C7 129168 .00001 mica
 - C8 124138 9 mc. R.F. Trimmer
 - C9 124139 B.C. R.F. Trimmer
 - C10 10074 .1 x 400 v.
 - C11 10074 10.0 mid. x 350 w.v. lytic
 - C12 130109 1005 mica
 - C13 130109 15.0 mid. x 450 w.v. lytic
 - C14 130109 B.C. Oscillator Trimmer
 - C15 130109 B.C. Oscillator Trimmer
 - C16 124144 .05 x 400 v.
 - C17 10071 .004 x 600 v.
 - C18 10071 .002 silver mica
 - C19 129167 9 mc. Oscillator Trimmer
 - C20 124145 .0005 mica
 - C21 12938 .05 x 400 v.
 - C22 10013 .05 x 200 v.
 - C23 1009 .02 x 200 v.
 - C24 10026 .1 x 200 v.
 - C25 10020 .0003 mica
 - C26 129114 .03 x 200 v.
 - C27 100122 .03 x 200 v.
 - C28 10026 .02 x 400 v.
 - C29 12921 .0002 mica
 - C30 10019 .06 x 600 v.
 - C31 129165 .0005 mica
 - C32 129165 .0005 mica
 - C33 10081 .02 x 600 v.
 - C34 10081 .02 x 600 v.
- TRIMMERS**
- T1 111206
 - T2 11195
 - T3 11198
 - T4 11199
 - T5 11192
 - T6 10958
 - T7 10959
 - T8 10960
 - T9 10961
 - T10 10962
 - T11 11061
 - T12 11057
 - T13 11058
 - T14 11059
 - T15 11059
 - T16 108176
 - T17 108177
 - T18 108178
 - T19 114231
 - T20 104202B
 - T21 104203B
 - T22 125118
 - T23 125129
 - T24 125130
 - T25 10794
- IRON CORE ADJUSTMENT VIEW**
- T1 15M.C. OSC.
 - T2 12M.C. OSC.
 - T3 15M.C. B.C. R.F.
 - T4 15M.C. R.F.
 - T5 15M.C. R.F.
 - T6 15M.C. ANT.
 - T7 15M.C. ANT.
 - T8 15M.C. ANT.
 - T9 15M.C. ANT.
 - T10 15M.C. ANT.
 - T11 15M.C. ANT.
 - T12 15M.C. ANT.
 - T13 15M.C. ANT.
 - T14 15M.C. ANT.
 - T15 15M.C. ANT.
 - T16 15M.C. ANT.
 - T17 15M.C. ANT.
 - T18 15M.C. ANT.
 - T19 15M.C. ANT.
 - T20 15M.C. ANT.
 - T21 15M.C. ANT.
 - T22 15M.C. ANT.
 - T23 15M.C. ANT.
 - T24 15M.C. ANT.
 - T25 15M.C. ANT.
 - T26 15M.C. ANT.
 - T27 15M.C. ANT.
 - T28 15M.C. ANT.
 - T29 15M.C. ANT.
 - T30 15M.C. ANT.
 - T31 15M.C. ANT.
 - T32 15M.C. ANT.
 - T33 15M.C. ANT.
 - T34 15M.C. ANT.
 - T35 15M.C. ANT.
 - T36 15M.C. ANT.
 - T37 15M.C. ANT.
 - T38 15M.C. ANT.
 - T39 15M.C. ANT.
 - T40 15M.C. ANT.
 - T41 15M.C. ANT.
 - T42 15M.C. ANT.
 - T43 15M.C. ANT.
 - T44 15M.C. ANT.
 - T45 15M.C. ANT.
 - T46 15M.C. ANT.
 - T47 15M.C. ANT.
 - T48 15M.C. ANT.
 - T49 15M.C. ANT.
 - T50 15M.C. ANT.
 - T51 15M.C. ANT.
 - T52 15M.C. ANT.
 - T53 15M.C. ANT.
 - T54 15M.C. ANT.
 - T55 15M.C. ANT.
 - T56 15M.C. ANT.
 - T57 15M.C. ANT.
 - T58 15M.C. ANT.
 - T59 15M.C. ANT.
 - T60 15M.C. ANT.
 - T61 15M.C. ANT.
 - T62 15M.C. ANT.
 - T63 15M.C. ANT.
 - T64 15M.C. ANT.
 - T65 15M.C. ANT.
 - T66 15M.C. ANT.
 - T67 15M.C. ANT.
 - T68 15M.C. ANT.
 - T69 15M.C. ANT.
 - T70 15M.C. ANT.
 - T71 15M.C. ANT.
 - T72 15M.C. ANT.
 - T73 15M.C. ANT.
 - T74 15M.C. ANT.
 - T75 15M.C. ANT.
 - T76 15M.C. ANT.
 - T77 15M.C. ANT.
 - T78 15M.C. ANT.
 - T79 15M.C. ANT.
 - T80 15M.C. ANT.
 - T81 15M.C. ANT.
 - T82 15M.C. ANT.
 - T83 15M.C. ANT.
 - T84 15M.C. ANT.
 - T85 15M.C. ANT.
 - T86 15M.C. ANT.
 - T87 15M.C. ANT.
 - T88 15M.C. ANT.
 - T89 15M.C. ANT.
 - T90 15M.C. ANT.
 - T91 15M.C. ANT.
 - T92 15M.C. ANT.
 - T93 15M.C. ANT.
 - T94 15M.C. ANT.
 - T95 15M.C. ANT.
 - T96 15M.C. ANT.
 - T97 15M.C. ANT.
 - T98 15M.C. ANT.
 - T99 15M.C. ANT.
 - T100 15M.C. ANT.
- TRIMMER VIEW**
- T1 9M.C. OSC.
 - T2 9M.C. OSC.
 - T3 9M.C. B.C. R.F.
 - T4 9M.C. R.F.
 - T5 9M.C. R.F.
 - T6 9M.C. ANT.
 - T7 9M.C. ANT.
 - T8 9M.C. ANT.
 - T9 9M.C. ANT.
 - T10 9M.C. ANT.
 - T11 9M.C. ANT.
 - T12 9M.C. ANT.
 - T13 9M.C. ANT.
 - T14 9M.C. ANT.
 - T15 9M.C. ANT.
 - T16 9M.C. ANT.
 - T17 9M.C. ANT.
 - T18 9M.C. ANT.
 - T19 9M.C. ANT.
 - T20 9M.C. ANT.
 - T21 9M.C. ANT.
 - T22 9M.C. ANT.
 - T23 9M.C. ANT.
 - T24 9M.C. ANT.
 - T25 9M.C. ANT.
 - T26 9M.C. ANT.
 - T27 9M.C. ANT.
 - T28 9M.C. ANT.
 - T29 9M.C. ANT.
 - T30 9M.C. ANT.
 - T31 9M.C. ANT.
 - T32 9M.C. ANT.
 - T33 9M.C. ANT.
 - T34 9M.C. ANT.
 - T35 9M.C. ANT.
 - T36 9M.C. ANT.
 - T37 9M.C. ANT.
 - T38 9M.C. ANT.
 - T39 9M.C. ANT.
 - T40 9M.C. ANT.
 - T41 9M.C. ANT.
 - T42 9M.C. ANT.
 - T43 9M.C. ANT.
 - T44 9M.C. ANT.
 - T45 9M.C. ANT.
 - T46 9M.C. ANT.
 - T47 9M.C. ANT.
 - T48 9M.C. ANT.
 - T49 9M.C. ANT.
 - T50 9M.C. ANT.
 - T51 9M.C. ANT.
 - T52 9M.C. ANT.
 - T53 9M.C. ANT.
 - T54 9M.C. ANT.
 - T55 9M.C. ANT.
 - T56 9M.C. ANT.
 - T57 9M.C. ANT.
 - T58 9M.C. ANT.
 - T59 9M.C. ANT.
 - T60 9M.C. ANT.
 - T61 9M.C. ANT.
 - T62 9M.C. ANT.
 - T63 9M.C. ANT.
 - T64 9M.C. ANT.
 - T65 9M.C. ANT.
 - T66 9M.C. ANT.
 - T67 9M.C. ANT.
 - T68 9M.C. ANT.
 - T69 9M.C. ANT.
 - T70 9M.C. ANT.
 - T71 9M.C. ANT.
 - T72 9M.C. ANT.
 - T73 9M.C. ANT.
 - T74 9M.C. ANT.
 - T75 9M.C. ANT.
 - T76 9M.C. ANT.
 - T77 9M.C. ANT.
 - T78 9M.C. ANT.
 - T79 9M.C. ANT.
 - T80 9M.C. ANT.
 - T81 9M.C. ANT.
 - T82 9M.C. ANT.
 - T83 9M.C. ANT.
 - T84 9M.C. ANT.
 - T85 9M.C. ANT.
 - T86 9M.C. ANT.
 - T87 9M.C. ANT.
 - T88 9M.C. ANT.
 - T89 9M.C. ANT.
 - T90 9M.C. ANT.
 - T91 9M.C. ANT.
 - T92 9M.C. ANT.
 - T93 9M.C. ANT.
 - T94 9M.C. ANT.
 - T95 9M.C. ANT.
 - T96 9M.C. ANT.
 - T97 9M.C. ANT.
 - T98 9M.C. ANT.
 - T99 9M.C. ANT.
 - T100 9M.C. ANT.
- FRONT VIEW CHASSIS**
- T1 9M.C. OSC.
 - T2 9M.C. OSC.
 - T3 9M.C. B.C. R.F.
 - T4 9M.C. R.F.
 - T5 9M.C. R.F.
 - T6 9M.C. ANT.
 - T7 9M.C. ANT.
 - T8 9M.C. ANT.
 - T9 9M.C. ANT.
 - T10 9M.C. ANT.
 - T11 9M.C. ANT.
 - T12 9M.C. ANT.
 - T13 9M.C. ANT.
 - T14 9M.C. ANT.
 - T15 9M.C. ANT.
 - T16 9M.C. ANT.
 - T17 9M.C. ANT.
 - T18 9M.C. ANT.
 - T19 9M.C. ANT.
 - T20 9M.C. ANT.
 - T21 9M.C. ANT.
 - T22 9M.C. ANT.
 - T23 9M.C. ANT.
 - T24 9M.C. ANT.
 - T25 9M.C. ANT.
 - T26 9M.C. ANT.
 - T27 9M.C. ANT.
 - T28 9M.C. ANT.
 - T29 9M.C. ANT.
 - T30 9M.C. ANT.
 - T31 9M.C. ANT.
 - T32 9M.C. ANT.
 - T33 9M.C. ANT.
 - T34 9M.C. ANT.
 - T35 9M.C. ANT.
 - T36 9M.C. ANT.
 - T37 9M.C. ANT.
 - T38 9M.C. ANT.
 - T39 9M.C. ANT.
 - T40 9M.C. ANT.
 - T41 9M.C. ANT.
 - T42 9M.C. ANT.
 - T43 9M.C. ANT.
 - T44 9M.C. ANT.
 - T45 9M.C. ANT.
 - T46 9M.C. ANT.
 - T47 9M.C. ANT.
 - T48 9M.C. ANT.
 - T49 9M.C. ANT.
 - T50 9M.C. ANT.
 - T51 9M.C. ANT.
 - T52 9M.C. ANT.
 - T53 9M.C. ANT.
 - T54 9M.C. ANT.
 - T55 9M.C. ANT.
 - T56 9M.C. ANT.
 - T57 9M.C. ANT.
 - T58 9M.C. ANT.
 - T59 9M.C. ANT.
 - T60 9M.C. ANT.
 - T61 9M.C. ANT.
 - T62 9M.C. ANT.
 - T63 9M.C. ANT.
 - T64 9M.C. ANT.
 - T65 9M.C. ANT.
 - T66 9M.C. ANT.
 - T67 9M.C. ANT.
 - T68 9M.C. ANT.
 - T69 9M.C. ANT.
 - T70 9M.C. ANT.
 - T71 9M.C. ANT.
 - T72 9M.C. ANT.
 - T73 9M.C. ANT.
 - T74 9M.C. ANT.
 - T75 9M.C. ANT.
 - T76 9M.C. ANT.
 - T77 9M.C. ANT.
 - T78 9M.C. ANT.
 - T79 9M.C. ANT.
 - T80 9M.C. ANT.
 - T81 9M.C. ANT.
 - T82 9M.C. ANT.
 - T83 9M.C. ANT.
 - T84 9M.C. ANT.
 - T85 9M.C. ANT.
 - T86 9M.C. ANT.
 - T87 9M.C. ANT.
 - T88 9M.C. ANT.
 - T89 9M.C. ANT.
 - T90 9M.C. ANT.
 - T91 9M.C. ANT.
 - T92 9M.C. ANT.
 - T93 9M.C. ANT.
 - T94 9M.C. ANT.
 - T95 9M.C. ANT.
 - T96 9M.C. ANT.
 - T97 9M.C. ANT.
 - T98 9M.C. ANT.
 - T99 9M.C. ANT.
 - T100 9M.C. ANT.

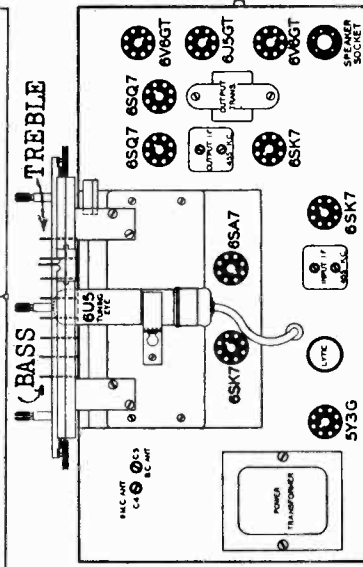
BELMONT RADIO CORP.

MODEL 1100
Series A

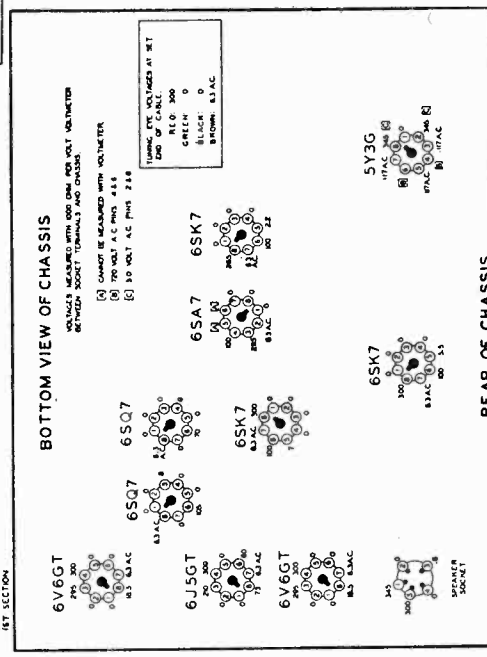
FOR TUNER DATA, SEE INDEX



Sept. 1940



- T13 110157 9 mc. Oscillator Coil
- T14 110156 6 mc. Oscillator Coil
- T15 110158 12 mc. Oscillator Coil
- T16 110159 15 mc. Oscillator Coil
- T17 108177B Input I.F. Coil—455 Kc.
- T18 108130E Output I.F. Coil—455 Kc.
- T19 105115 Output Transformer
- T20 114207 12" Dynamic Speaker
- T21 125118 Power Transformer—50-60 cycles
- S1 125117 R.F. Oscillator Bandswitch
- S2 125117 R.F. Oscillator Bandswitch
- S3 125133 Radio-phonograph Switch
- S4 On-off Switch on volume control
- S5 125130 Brass Switch
- S6 125131 Brass Switch
- P1 10794 2 6-8 Volts Pilot Lights T44
- B1 11622 1.25 Volt Bias Cell



BOTTOM VIEW OF CHASSIS

REAR OF CHASSIS

RESISTORS

Code No.	Description
R1	25M ohm—1/2 W.
R2	25M ohm—1/2 W.
R3	1 megohm—1/2 W.
R4	250 ohm—1/2 W.
R5	5M ohm—1/2 W.
R6	1 megohm—1/2 W.
R7	25M ohm—1/2 W.
R8	6M ohm—2 watt
R9	10M—2 watt
R10	1 megohm in tuning indicator cable
R11	700 ohm—1/2 W.
R12	10M ohm—1/2 W.
R13	130235 1500 ohm—1/2 W.
R14	130235 1500 ohm—1/2 W.
R15	130192 2M ohm—1/2 W.
R16	130192 2M ohm—1/2 W.
R17	13020 100M ohm—1/2 W.
R18	13031 500M ohm—1/2 W.
R19	130317 250 ohm—2 watt
R20	1303 500M ohm—1/2 W.
R21	13020 100M ohm—1/2 W.
R22	130238 400M ohm—1/2 W.
R23	102284 500M ohm volume control and line switch (S4)
R24	13073 15M ohm—1/2 W.
R25	13094 50M ohm—1/2 W.
R26	130218 5M ohm—1/2 W.
R27	13094 50M ohm—1/2 W.
R28	1303 500M ohm—1/2 W.
R29	130172 250M ohm—1/2 W.
R30	1303 500M ohm—1/2 W.
R31	130172 250M ohm—1/2 W.
R32	1307 40M ohm—1/2 W.
R33	13080 150M ohm—1/2 W.
R34	130309 350M ohm—1/2 W.
R35	130172 250M ohm—1/2 W.
R36	130174 50 ohm—1/2 W.
R37	13080 150M ohm—1/2 W.

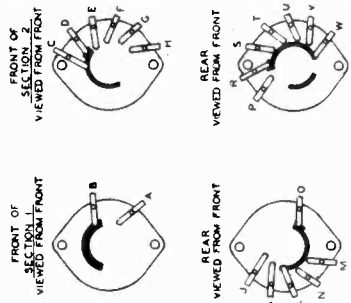
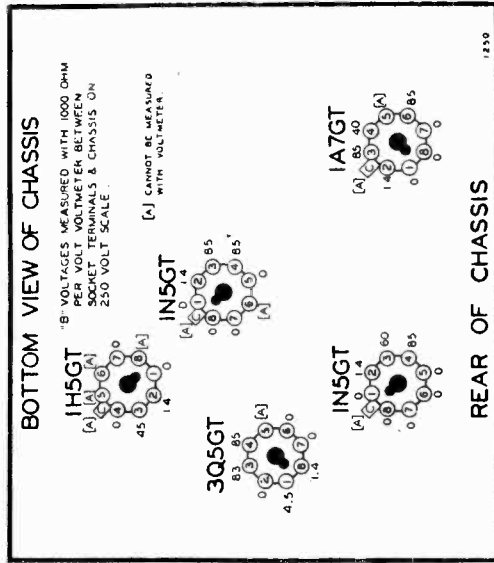
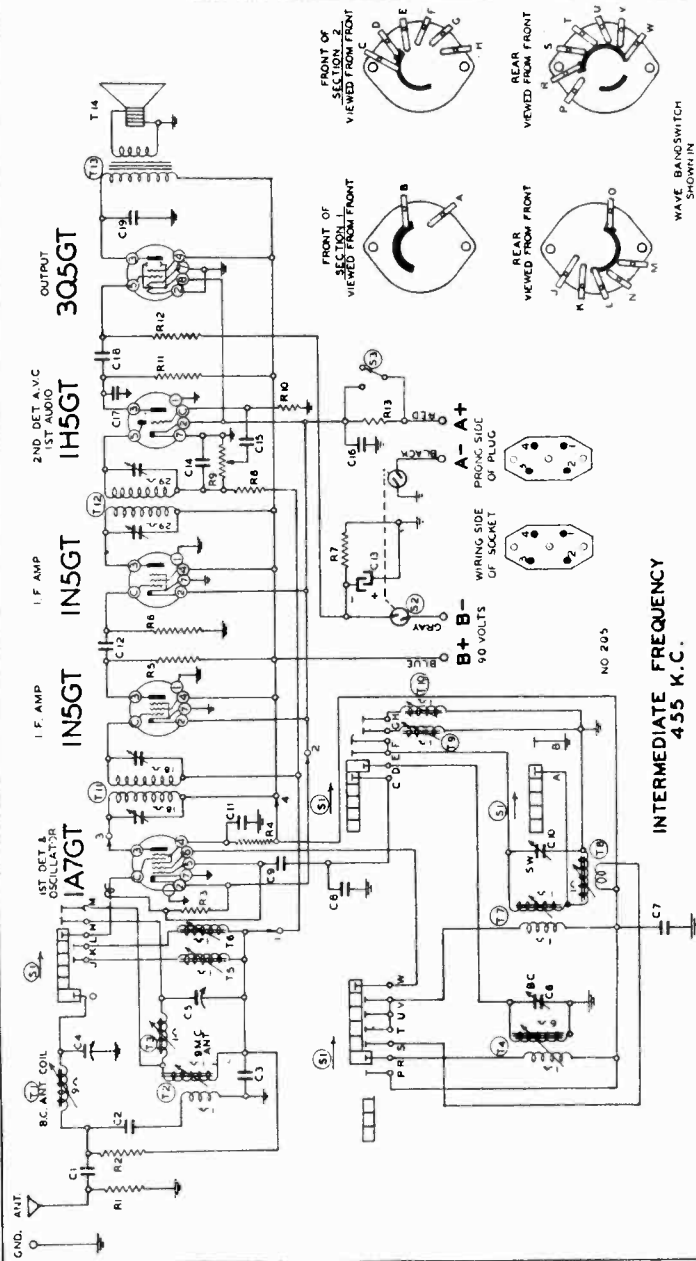
CONDENSERS

C1	.0005 mica
C2	.002 x 600 V.
C3	B.C. Antenna Trimmer
C4	9 mc. Antenna Trimmer
C5	.0005 mica
C6	1 x 200 V.
C7	.00001 mica Tubular
C8	9 mc. R.F. Trimmer
C9	B.C. R.F. Trimmer
C10	1 x 400 V.
C11	1 x 400 V.
C12	.02 x 600 V.
C13	.0005 mica
C14	.02 x 600 V.
C15	19112 30.0 mid. lyric
C16	124144 B.C. Oscillator Trimmer
C17	19112 30.0 mid. lyric x 450 W.V.
C18	129167 .0002 silver mica
C19	12938 .00025 mica
C20	124145 9 mc. Oscillator Trimmer
C21	19112 10.0 mid. lyric
C22	191969 16 mid. x 350 W.V.
C23	130065 .015 x 600 V.
C24	10065 .015 x 600 V.
C25	1001 .1 x 400 V.
C26	10022 .05 x 200 V.
C27	10013 .05 x 200 V.
C28	10099 .05 x 200 V.
C29	129161 .0001 mica
C30	129161 .0001 mica
C31	10020 .1 x 200 V.
C32	.0005 mica

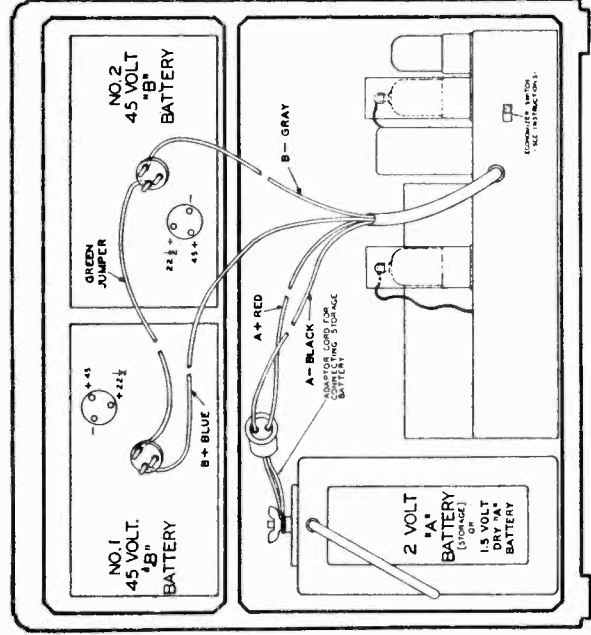
- T1 111207 Loop Antenna Assembly
- T2 11195 B.C. Antenna Coil
- T3 11190 9 mc. Antenna Coil
- T4 11189 6 mc. Antenna Coil
- T5 11191 12 mc. Antenna Coil
- T6 11192 15 mc. Antenna Coil
- T7 10959 9 mc. R.F. Coil
- T8 10958 6 mc. R.F. Coil
- T9 10960 12 mc. R.F. Coil
- T10 10961 15 mc. R.F. Coil
- T11 10962 B.C. R.F. Coil
- T12 110161 B.C. Oscillator Coil

BELMONT RADIO CORP.

BBC(509) Series A Form No. 5129-1,500-9-40
 PRO. 220



INTERMEDIATE FREQUENCY
 455 K.C.



WAVE BANDSWITCH
 SHOWING
 BRAGGCAST POSITION

- RESISTORS**
- | Code No. | Description |
|----------|---|
| R1 | 50M ohm-1/2 w. 20% |
| R2 | 100M ohm-1/2 w. 20% |
| R3 | 200M ohm-1/2 w. 20% |
| R4 | 50M ohm-1/2 w. 10% |
| R5 | 50M ohm-1/2 w. 10% |
| R6 | 20M ohm-1/2 w. 20% |
| R7 | 1 megohm-1/2 w. 10% |
| R8 | 400 ohm-1/2 w. 10% |
| R9 | 10236 Volume Control |
| R10 | 10 megohm-1/2 w. 20% |
| R11 | 250M ohm-1/2 w. 20% |
| R12 | 1 megohm-1/2 w. 20% |
| R13 | 1 ohm-1/2 w. 10% |
| R13 | 2.3 ohm-1/2 Watt 10% in "A" Cable Adapter |

- CONDENSERS**
- | Code No. | Description |
|----------|---------------------------|
| C1 | 129158 .0002 mica 10% |
| C2 | 100112 .001 x 200 volt |
| C3 | 1009 .05 x 200 volt |
| C4 | 124138 B.C. ant. trimmer |
| C5 | 124138 9 mc. ant. trimmer |
| C6 | 124139 B.C. osc. trimmer |
| C7 | 10064 .25 x 200 volt |

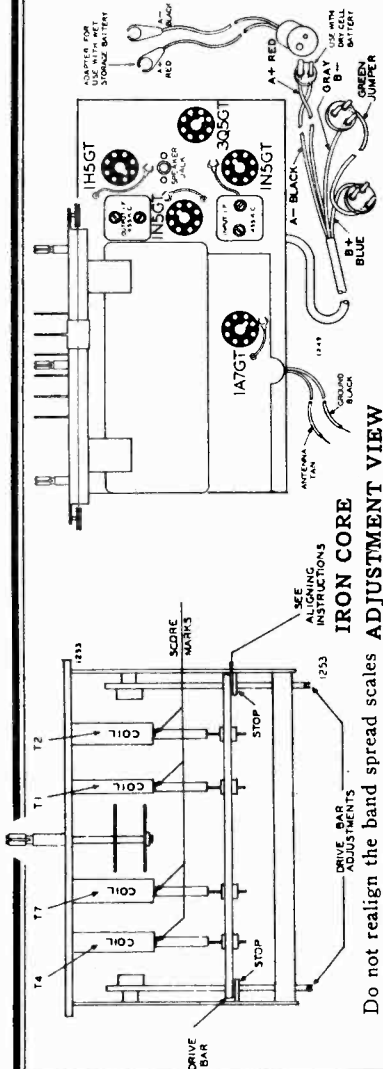
MISCELLANEOUS

- | Code No. | Description |
|----------|--|
| C8 | 129170 .00009 mica 3% |
| C9 | 1295 .0001 mica 20% trimmer |
| C10 | 124145 9 mc. osc. coil |
| C11 | 100124 .1 x 200 volt |
| C12 | 100112 .001 x 200 volt |
| C13 | 119116 20 mid. x 25 volt lyric |
| C14 | 12912 .00025 mica 20% |
| C15 | 100025 .002 x 600 volt |
| C16 | 100104 .5 x 100 volt |
| C17 | 1295 .0001 mica 20% |
| C18 | 10026 .02 x 400 volt |
| C19 | 10012 .003 x 600 volt |
| T1 | 111216 B.C. ant. coil |
| T2 | 111213 9 mc. ant. coil |
| T3 | 111212 6 mc. ant. coil |
| T4 | 10168 B.C. osc. coil |
| T5 | 111214 12 mc. ant. coil |
| T6 | 111215 15 mc. ant. coil |
| T7 | 10165 9 mc. osc. coil |
| T8 | 10164 6 mc. osc. coil |
| T9 | 10166 12 mc. osc. coil |
| T10 | 10167 15 mc. osc. coil |
| T11 | 10817C Input I.F. complete |
| T12 | 108185D Output I.F. complete |
| T13 | 105119 P.M. speaker |
| T14 | 114220 Band switch |
| S1 | 125138 On-off switch on volume control |
| S2 | 12588B Battery switch |
| S3 | 12588B Battery switch |

MODEL 509

BELMONT RADIO CORP.

- Power Consumption**
 A Battery - - - - - 300 MA
 B Battery - - - - - 13.5 MA
- Power Output** - - - - - 210 MW Undistorted
- Sensitivity for 50 Milliwatt Output:** 10 Microvolts Average
- Selectivity - 38 KC Broad at 1000 Times Signal at 1000 KC**
- Tuning Frequency Range Broadcast Band - 535 to 1730 KC**
- 49M Band - - - - - 5.9 to 6.1 MC
 31M Band - - - - - 9.1 to 10 MC
 25M Band - - - - - 11.4 to 12.1 MC
 19M Band - - - - - 14.9 to 15.4 MC
- Intermediate Frequency** - - - - - 455 KC
- Speaker** - - - - - 6 in. PM Dynamic



Setting the Pushbuttons

Make a list of your 6 favorite stations. Push out the call letters of these stations from the call letter sheets supplied. Insert a call letter in the slot on top of each pushbutton.

Next pull one of the pushbuttons all the way out as far as it will come (pull, with fingers on top and bottom of button). Now tune in the station you want with the tuning knob—Tune back and forth until the station is clear and distinct. Now push the button hard all the way in to lock the station in place. (push directly on front of button). Continue setting each pushbutton in the same way. Pressing the proper button will now tune the station you want. If it does not do so you did not push the button hard enough to lock it in place when setting up the station.

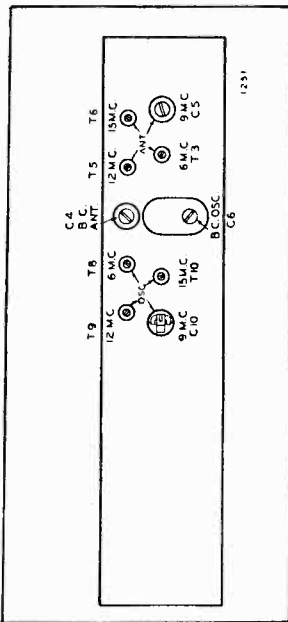
IRON CORE ADJUSTMENT VIEW

Do not realign the band spread scales unless you are positive they are out of adjustment. When adjustment is necessary proceed as follows.

First refer to the "Iron Core Adjustment View" now turn the tuning knob until the drive bar comes within 1/64 to 1/32 from the stops. (A piece of blotting paper is about the right thickness and will serve as a gauge). The clearance of the bar must be the same at both stops. If far off you can raise one drive screw gently and equalize them. Minor adjustments may be made with the drive bar adjustments.

Next rotate each iron core until the fine score marks are even with the edge of the coil forms.

- Tone control—Treble
- Volume control—Maximum all adjustments.
- Connect radio chassis to ground post of signal generator with a short heavy lead.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.



TRIMMER VIEW

The following equipment is required for aligning:
 • An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
 • Output indicating meter.
 • Non-metallic screwdriver.
 • Dummy antennas—1 mf., 200 mmf., and 400 ohms.

To change stations simply repeat the procedure above.

BAND	Frequency Setting	SIGNAL GENERATOR Dummy Antenna	Connection to Radio	Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted In Order Shown	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 1A7	Broadcast	Set Dial at 1730 Kc.	Two Trimmers on Top	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Grid of 1A7	Broadcast	Set Dial at 1730 Kc.	Two Trimmers on Top	Input I. F.	Adjust to maximum output
31 METER BAND	9.6 Mc.	400 ohms	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) C10	Osc. Ant.	Adjust to maximum output
	6.1 Mc.	400 ohms	Antenna lead	49M	Set Dial at 6.1 Mc.	(See Trimmer View) T8	Osc. Ant.	Adjust to maximum output
	11.8 Mc.	400 ohms	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T9	Osc. Ant.	Adjust to maximum output
	15.2 Mc.	400 ohms	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T10	Osc. Ant.	Adjust to maximum output
BROAD-CAST BAND	1730 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1730 Kc.	(See Trimmer View) C6	Osc. Ant.	Adjust to maximum output
	1400 Kc.	200 mmf.	Antenna lead	Broadcast	Tune to Generator Sig.	Rotate Core T1 (See Iron Core Adjustment View)	Ant.	Adjust to maximum output

BUICK MOTOR

The 1939 Buick Sonomatic radio is a six tube single unit, superheterodyne receiver with an 8" dynamic speaker.

BUICK MODEL 1308221
(980598) AUTO RADIO

6 D-916

Date: 10-17-38

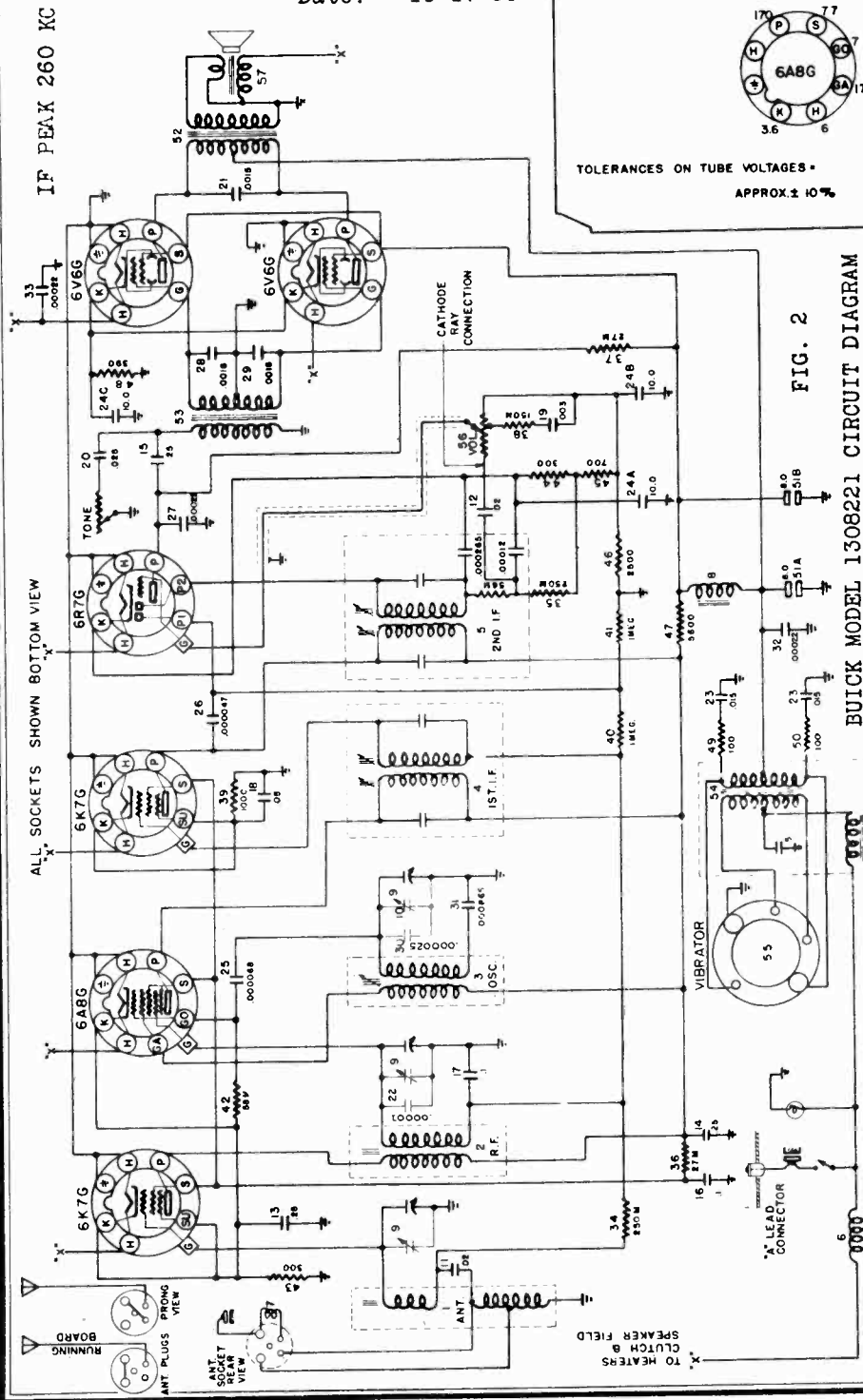
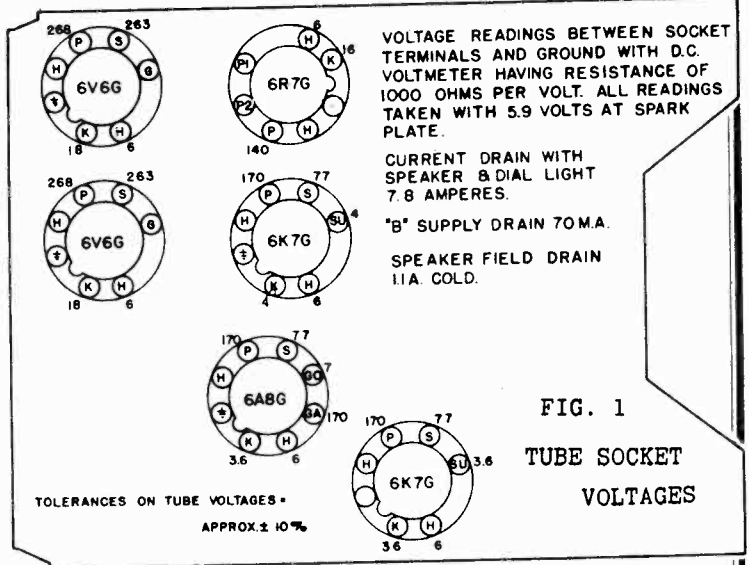


FIG. 2
BUICK MODEL 1308221 CIRCUIT DIAGRAM



VOLTAGE READINGS BETWEEN SOCKET TERMINALS AND GROUND WITH D.C. VOLTMETER HAVING RESISTANCE OF 1000 OHMS PER VOLT. ALL READINGS TAKEN WITH 5.9 VOLTS AT SPARK PLATE.

CURRENT DRAIN WITH SPEAKER & DIAL LIGHT 7.8 AMPERES.

"B" SUPPLY DRAIN 70 M.A.

SPEAKER FIELD DRAIN 1.1 A. COLD.

FIG. 1
TUBE SOCKET VOLTAGES

TOLERANCES ON TUBE VOLTAGES - APPROX. ± 10%

TUNING CONTROLS: Tuning is accomplished by means of the conventional manual tuning control, or by means of five push buttons which mechanically rotate the variable condenser gang to preselected frequencies. An electric clutch is provided which automatically disconnects the manual tuning mechanism when a button is pressed.

NOTE: Do not attempt to operate the push button tuning unless the set is connected to a 6 volt battery and the switch turned "on". Setting up the push buttons for any desired station may be done as follows:

1. Remove the button by depressing the spring located on the bottom of each button, and pulling straight out.
2. Loosen the screw with a coin or a screw driver.
3. Carefully tune in the desired station by means of the manual control.
4. Push the loosened screw in as far as possible and tighten.

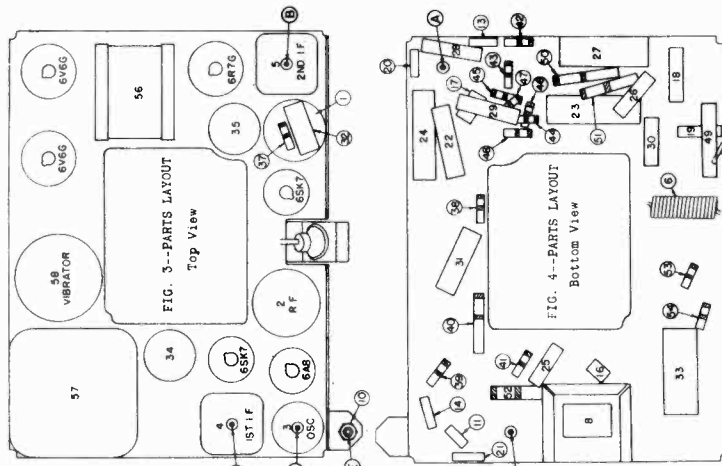


FIG. 3--PARTS LAYOUT Top View

FIG. 4--PARTS LAYOUT Bottom View

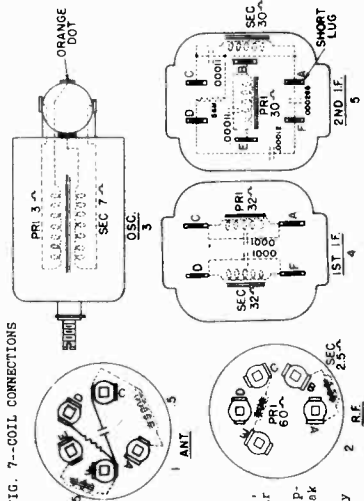


FIG. 7--COIL CORRECTIONS

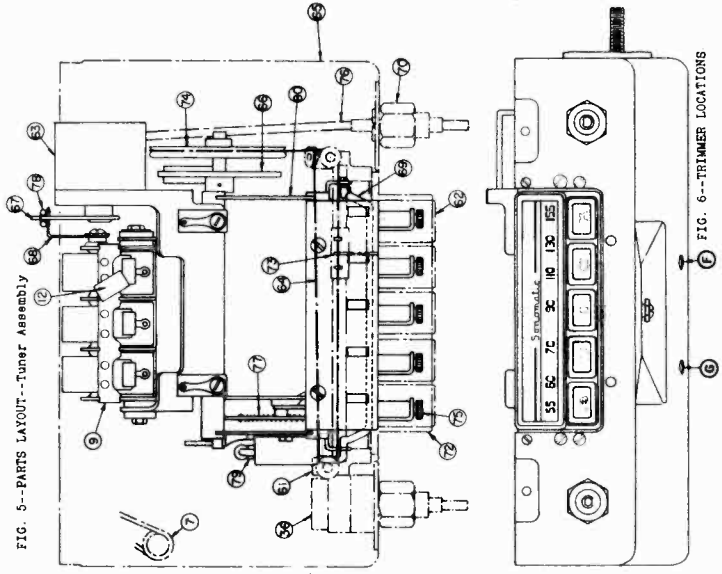


FIG. 5--PARTS LAYOUT--Tuner Assembly

FIG. 6--TRIMMER LOCATIONS

1. Aligning I.F. Stages at 260 Kilocycles
 - (a) Connect the ground lead of the signal generator to the chassis.
 - (b) Connect the signal lead of the signal generator to the grid cap of the 6A8 tube through a .25 mfd. condenser leaving the grid cap in place.
 - (c) Connect the output meter from the plate prong of one 6V6G tube to the plate prong of the other 6V6G tube.
 - (d) Set the signal generator to 260 kilocycles and turn volume control on full.
 - (e) Set the condenser gang to a point around 600 kilocycles where no station is received.
 - (f) Adjust the four screws of the two I.F. transformers, one on top and one on the bottom of each transformer, in the order ABA and CDC (illus. 4 & 5, Figs. 3 & 4) until maximum output is obtained. Repeat these adjustments with as low an output from the signal generator as possible for a readable indication on the output meter.
 - (g) Checking Selectivity Curves: The Cathode Ray Oscillograph should be used to check the shape of the I.F. curve after completing the alignment procedure. Slight readjustments of the I.F. transformers may be necessary to obtain a symmetrical curve. Connect the Cathode Ray Oscillograph from the point as shown on the schematic circuit diagram or from "D" lug on the second I.F. Coil (Fig. 7).

2. Aligning at 1560 Kilocycles
 - (a) Turn tuning condenser plates all the way out and against the high frequency stop.
 - (b) Set the signal generator to 1560 kilocycles and adjust the oscillator trimmer (illus. E, Fig. 3) for maximum output.
3. Aligning at 1400 Kilocycles
 - (a) Remove the .25 mfd. condenser and connect the signal lead of the signal generator to the antenna connection of the set through a .00005 condenser.
 - (b) Set the signal generator to 1400 kilocycles.
 - (c) Rotate the variable plates of the gang condenser until the signal is tuned for maximum output.
 - (d) Adjust the R.F. and antenna parallel trimmers (illus. F & G, Fig. 6) for maximum output.

4. Alignment at 600 Kilocycles
 - (a) Set the signal generator to 600 kilocycles.
 - (b) Tune this signal in on the set.
 - (c) Adjust the oscillator coil iron core aligning screw (illus. H, Fig. 3) while rocking the condenser gang back and forth through the signal until maximum output is obtained.
 - (d) Repeat adjustment made under "Alignment at 1400 Kilocycles."
5. Adjustment of Radio to Car Antenna

The radio should be adjusted to the car antenna after mounting in the car. The following adjustment should be made:

 - (a) Tune in a weak station near the high frequency end of the dial (approximately 1400 K.C.).
 - (b) Adjust the Antenna Trimmer (illus. G, Fig. 6) for maximum volume. DO NOT DISTURB THE OSCILLATOR OR R.F. TRIMMERS WHILE MAKING THIS ADJUSTMENT.

- | | | | |
|----|---------|-------------|--|
| 61 | 7238400 | Bar | Pointer slide bar Assy. |
| 62 | 7239107 | Button | Push button Assy. |
| 63 | 7238712 | Clutch Assy | Includes bracket |
| 64 | 7239108 | Cord | Drive cord and spring Assy. |
| 65 | 7238420 | Cover | Bottom cover Assy. |
| 66 | 7236084 | Gear | Tuner gear Assy. |
| 67 | 7238493 | Leaf | Female joint leaf Assy. |
| 68 | 7236018 | Leaf | Male joint leaf Assy. |
| 69 | 7238685 | Lever | Switch lever Assy. |
| 70 | 7235510 | Nut | Spacer nut |
| 71 | 7238647 | Pin | Taper pin for tuner gear |
| 72 | 7238349 | Plate | Escutcheon |
| 73 | 7233348 | Pointer | Dial |
| 74 | 7239038 | Pulley | Pointer drive pulley Assy. |
| 75 | 7238213 | Screw | Reset screw |
| 76 | 7235916 | Shaft | Manual tuning shaft Assy. |
| 77 | 7235895 | Spring | Plunger return |
| 78 | 7237174 | Spring | Universal joint spring |
| 79 | 1213311 | Switch | Declutching switch Assy. |
| 80 | 7238705 | Tuner | Tuner Assy--Includes racks, pinions, plungers, reset screws and tuner gear |

ANTENNA SYSTEM: The 1940 Buick uses a roof peak antenna as standard equipment. Optional equipment is a vacuum operated whip antenna. The roof peak antenna has a capacity of .000055 mfd. and the vacuum operated .000067 mfd. The 1940 Buick Synchronous Radio is designed to operate satisfactorily with either type of antenna.

Date: 10-12-39 Buick 1314523 (980620)

6 D-917

MODEL 7240371

CADILLAC DIV.—GEN. MOTORS

Due to the fact that the iron cores have been sealed in place at the factory, only the trimmer adjustments as outlined under capacity alignment should be made unless the coils of the iron cored tuning unit are changed.

CAPACITY ALIGNMENT

1. I.F. Alignment at 260 K.C.
 - (a) Connect an output meter across the test terminals on the left side of speaker cover, leaving the speaker connected.
 - (b) Connect the ground lead of the signal generator to the chassis frame.
 - (c) Connect the signal lead of the signal generator to the grid of the 7B8 tube through the 0.1 mfd condenser.
 - (d) Turn set volume control on full and tone control to the extreme treble end. Set the signal generator at 260 KC. Tune the receiver to a frequency where no squeals or beat notes may be heard and so that when the tuning control is moved in narrow limits no appreciable change in output may be noted.
 - (e) Adjust the I.F. trimmers A, B, C, & D for maximum output, beginning with trimmer A.
2. Alignment at 1560 KC.
 - (a) Connect the signal lead of the signal generator to the receiver antenna connection through a 70 mfd. condenser or 7241819 alignment dummy.
 - (b) Turn the manual tuning control of the receiver to the stop at the extreme high frequency end of the dial.
 - (c) Set the signal generator to 1560 KC.
 - (d) Adjust the oscillator trimmer E for maximum output.

3. Alignment at 1400 KC.

- (a) Set the signal generator to 1400 KC.
- (b) Tune the receiver to the signal and adjust the trimmers F and G for maximum output. Signal generator signal should be as low as possible and still give a satisfactory meter reading.

This type of tuning circuit does not require alignment at 800 KC.

4. Alignment with Car Antenna

Antenna trimmer G must be adjusted to match car antenna when receiver is installed; use a weak station signal between 1000 and 1500 KC. The antenna should be fully extended when making this adjustment.

CAPACITY AND INDUCTANCE ALIGNMENT

To be used only when there is definite evidence of iron cores being out of adjustment.

1. I.F. Alignment at 260 KC.

Follow the procedure as outlined under I.F. Alignment at 260 KC Capacity Alignment.
2. Alignment at 1560 KC.
 - (a) Connect the signal lead of the signal generator to the antenna connection of the set through a 70 mfd condenser.
 - (b) Set signal generator to 1560 Kilocycles.
 - (c) Rotate the manual tuning mechanism until the high frequency stop is reached. Mechanically align the iron cores K, H, & J by setting the oscillator core K so that its front edge projects out $1 - 1/16$ " from the end of the coil form and the antenna and R.F. cores H & J

project 1 - $13/32$ " from the end of the respective coil windings. Note that one of the above measurements is from the coil form while the others are from the windings.

- (d) Adjust the oscillator trimmer E, R.F. trimmer F, and antenna trimmer G for maximum output.
3. Alignment at 1400 KC
 - (a) Set signal generator to 1400 K.C. and tune set to this signal.
 - (b) Adjust the R.F. core J for maximum output.
 - (c) Adjust the antenna core H for maximum output.
 4. Realignment at 1560 and 1400 KC
 - (a) Repeat alignment of trimmer E and trimmers F and G at 1560 KC.
 - (b) Repeat alignment of cores H and J at 1400 KC. Apply sheillac to the core screws to seal the adjustment.
 5. Alignment with car antenna

Antenna trimmer G must be adjusted to match car antenna when receiver is installed; use a weak station signal between 1000 and 1500 KC. The antenna should be fully extended when making this adjustment.

AUTOMATIC PERMEABILITY TUNING

The automatic push button tuning unit has been made compact by combining the manual and automatic tuning units so that they both use the same three iron cores which are ganged together in one reciprocating unit actuated by a small mechanical motor. This highly efficient three-circuit tuning system pushes the iron cores back and forth like pistons in the tuning coils, which varies the inductance of the coils by changing the permeability of the magnetic circuit.

For manual tuning, this is accomplished by first depressing and then rotating the manual station selector knob. For automatic tuning, pressing an automatic tuning button causes the cores to be moved to a pre-set position and locked in place by the button latch mechanism, which prevents the cores from shifting position until released by the use of another of the automatic push buttons or by use of the manual control. Changing the stations selected by the buttons is a simple operation. The button to be set to a new station is depressed until it locks in. Then the button is rotated exactly like a manual tuning knob until the desired station is tuned in. Pressing any tuning button will release the depressed button.

The call letters of the stations to which the automatic tuner is pre-set are inserted above the chrome plated selector buttons. Whenever the instrument panel lights are turned on, the call letters are illuminated. Identification of the station to which the radio is tuned is facilitated by three indications: the selector button is latched into its depressed position, the corresponding call letters are more brightly illuminated than the call letters of the other four stations, and, finally, the dial pointer indicates the station frequency.

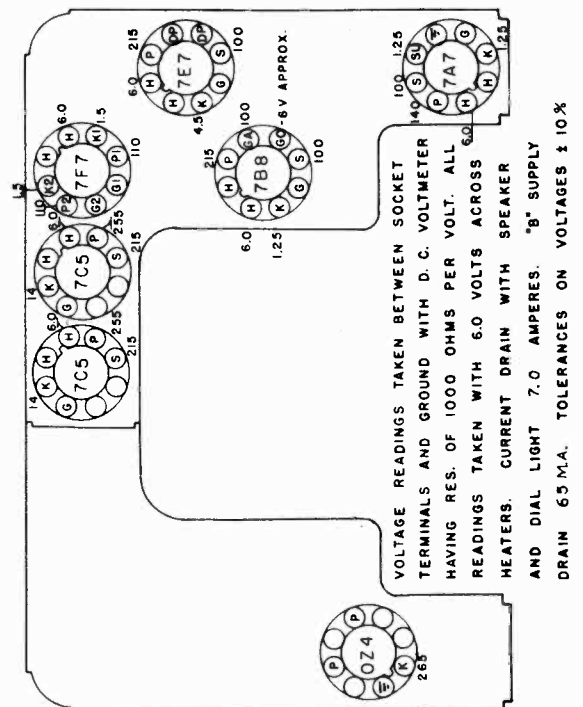
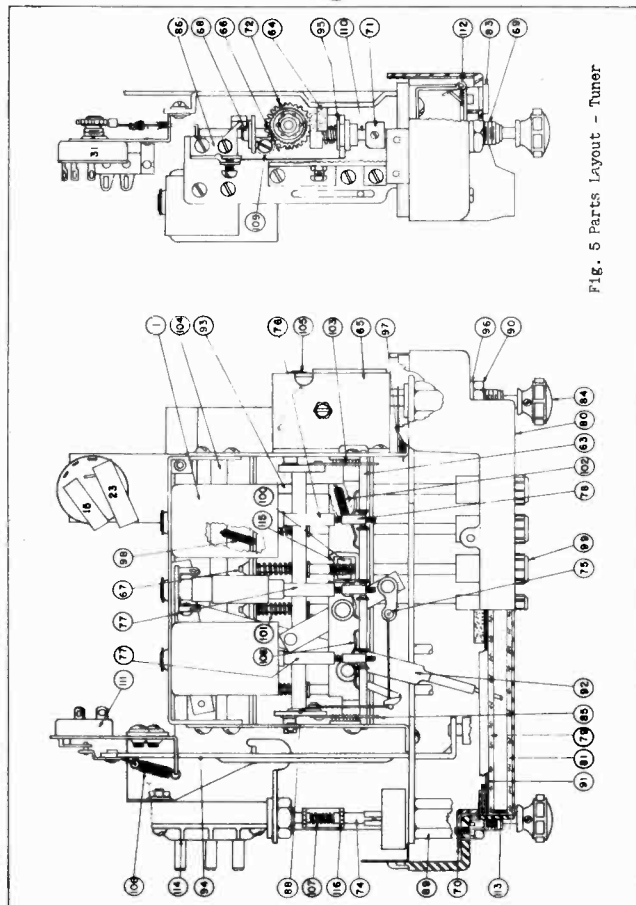
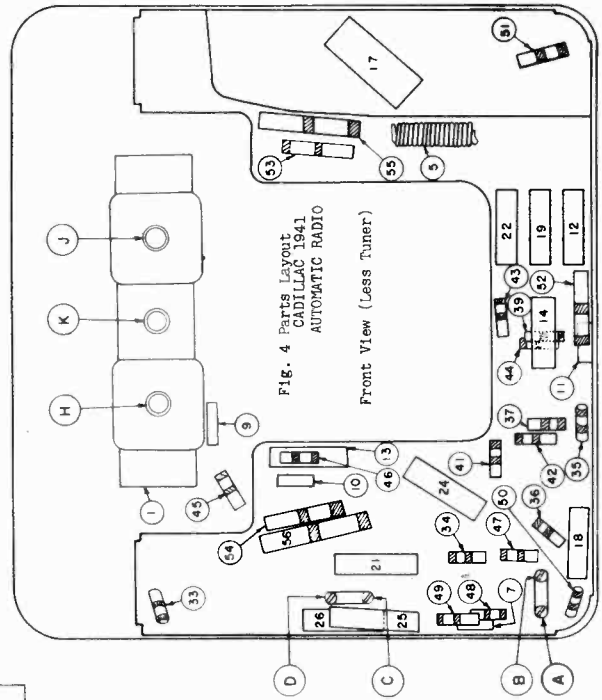
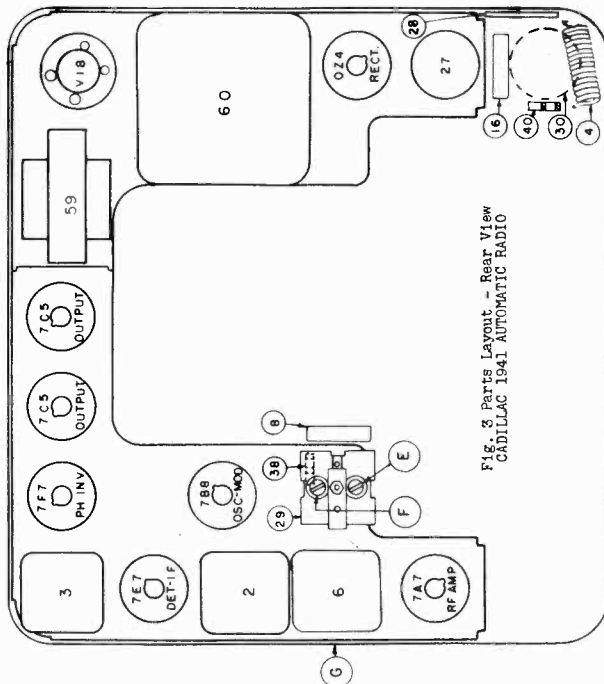
Note: Do not turn any button at any time unless a new station setting is desired, as the tuning position of a button is changed whenever it is turned regardless of whether it is depressed or not.

CADILLAC 1941 AUTOMATIC RADIO (Front Compl.) PART NO. 7240371

Power Output	5 Watts Undistorted at 6.0 volts.
Power Consumption	7.0 Amperes at 6.0 volts.
Sensitivity	2.5 Microvolts at 1 Watt output
Selectivity at 1000 times signal	35 KC
Tuning Range	
Manual Tuning	545 to 1560 KC
Automatic Tuning (All buttons)	545 to 1560 KC
Speaker	8" Permanent Magnet Dynamic
Intermediate Frequency Peak	260 KC
Antenna Trimmer Range	45 to 90 mfd

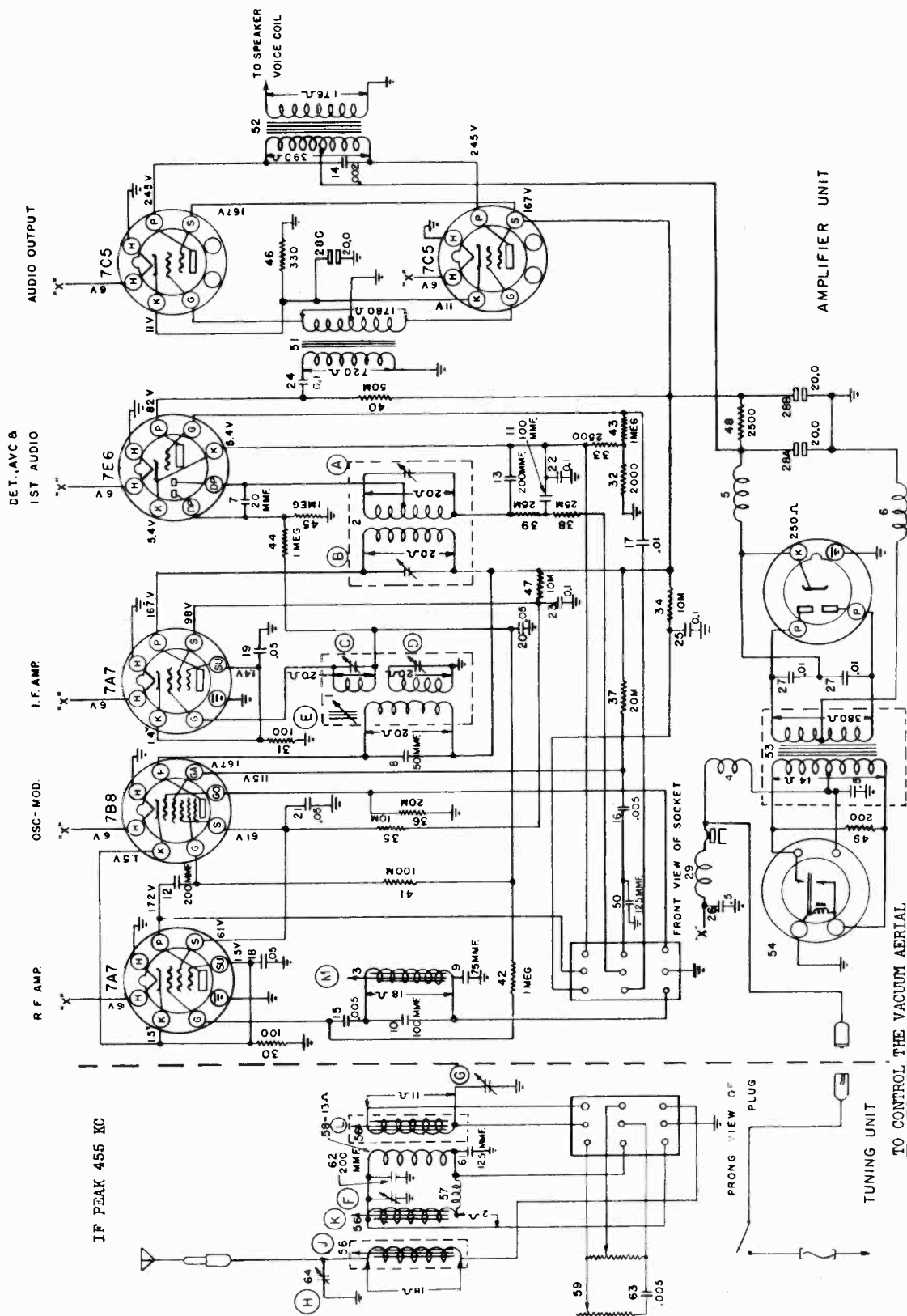
CADILLAC DIV.—GEN. MOTORS

MODEL 7240371



CADILLAC DIV.—GEN. MOTORS

MODEL 7240427



TO CONTROL THE VACUUM AERIAL

To the left of the volume control rod is the knob which controls the vacuum aerial. Pulling this button upward will raise the aerial and pushing it downward will lower the aerial. The vacuum aerial has two rods, one sliding within the other. For maximum reception both rods should be extended to their full height, the inner rod being extended manually.

MODEL 7240427

CADILLAC DIV.—GEN. MOTORS

CAPACITY AND INDUCTANCE ALIGNMENT

1. Aligning I.F. stages at 455 K.C.
Align the I.F. stages as outlined under paragraph 1 under "Capacity Alignment".
2. Mechanical Alignment of cores
 - (a) Turn the manual control of the set to the high frequency end, against stop.
 - (b) Remove the pointer plate (note insulating washers under mounting screws) without disturbing the tuning mechanism.
 - (c) Using a spare core as a gauge, adjust the oscillator core K so that its rear surface is exactly flush with the front end of the oscillator coil winding.
 - (d) Manually tune the set to a point where the front surface of the oscillator core is flush with the front end of the oscillator coil fiber mounting bushing.
 - (e) Adjust the antenna and R.F. cores J and L so that the front surfaces of these cores are flush with the front ends of the coil fiber mounting bushing. Mechanically align the cores so that all three are just at the point of entering their respective windings when the tuning mechanism is against the high frequency stop.
 - (f) Replace the pointer plate assembly.
3. Aligning at 1560 KC.
 - (a) Connect the signal lead of the signal generator to the antenna connection of the receiver through a 70 mmfd. condenser.
 - (b) Turn the manual control of the set to the high frequency end against stop.
 - (c) Set signal generator to 1560 KC.
 - (d) Adjust the oscillator trimmer "F" for maximum output.
4. Aligning at 600 KC.
 - (a) Leave the signal generator connected the same as before and set frequency to 600 KC.
 - (b) Tune in this frequency on the set.
 - (c) Adjust the R.F. trimmer G for maximum output.
 - (d) Adjust the antenna trimmer H for maximum output.
5. Aligning at 1400 KC.
 - (a) Set the signal generator to 1400 KC and tune set to this signal.
 - (b) Adjust the antenna core J and the R.F. core L for maximum output.
6. Realigning at 600 and 1400 KC.
 - (a) Repeat the alignment outlined under paragraphs 4 and 5 with as low an output from the signal generator as possible.
 - (b) Apply cement to the core screws to prevent their changing alignment.
7. Adjusting receiver to car antenna
After the receiver is installed in the car, readjust the antenna trimmer H on a weak station near 1400 KC.

TO CHANGE STATION SETTING OF PUSH BUTTONS

The five push buttons should be set up for five stations which are received favorably in your vicinity. The procedure for setting up the push buttons is as follows:

1. Turn on the radio and allow it to warm up from ten to fifteen minutes.
2. Depress button to be set up until it latches and remains depressed.
3. Without pressing or holding the button down, turn it, as in manual tuning, until the desired station is tuned in. This should be done very carefully until the station comes in sharp and clear, free from background noise.
4. Repeat this process for any other buttons which you wish to change.

The setting of any button may be changed at any time by following this procedure.

CAUTION: TURNING ANY OF THE PUSH BUTTONS CHANGES ITS STATION SETTING. DO NOT TURN ANY BUTTON UNLESS YOU WISH TO CHANGE THE SETTING.

CAPACITY ALIGNMENT

1. Aligning I.F. stages at 455 KC.
 - (a) Connect the ground lead of the signal generator to the chassis frame.
 - (b) Connect the signal lead of the signal generator to the grid of the 7B8. (grid side of condenser 12) through a 0.1 mfd. condenser.
 - (c) Connect an output meter across the speaker voice coil. (If speaker is disconnected a 4 ohm load may be used instead).
 - (d) Set signal generator to 455 KC.
 - (e) Turn the set volume control on full and tune the set to a position where no squeals or beat notes may be heard, and so that when the tuning control knob is rotated within narrow limits there is no appreciable change in output. The tone control should be rotated to its extreme high position (clockwise).
 - (f) Adjust the I.F. trimmers A, B, C, and D, and the I.F. core adjustment E until maximum output is obtained.
 - (g) Repeat these adjustments with as low an output from the signal generator as possible for more accurate alignment.
 - (h) Connect the signal generator to the antenna connection of the set through a 70 mmfd. Condenser.
2. Alignment at 1560 KC.
 - (a) Leave signal generator connected the same as for the I.F. trap adjustment.
 - (b) Tune the set to the extreme high frequency position against the stop.
 - (c) Set the signal generator to 1560 KC.
 - (d) Adjust the oscillator trimmer F for maximum output.
3. Alignment at 600 K.C.
 - (a) Set the signal generator to 600 KC and tune the set to this signal.
 - (b) Adjust the R.F. trimmer G and the antenna trimmer H for maximum output.

CHEVROLET DIV.—GEN. MOTORS

Solenoid Relief Valve

This valve is of the ball type and will operate only when the receiver is setting in normal operating position.

The automatic station selection tuning system is operated by a single bar. The system can be pre-set for five stations, each station having a corresponding number which is visible in small window to the right of tuning dial as that station is tuned in. To set the automatic tuning system to the five stations, proceed as follows:

1. Turn the receiver on and allow a sufficient length of time to permit the tubes to reach their normal operating condition.
2. Depress the automatic station selector until No. 5 is visible in the small window to the right of the dial.
3. Depress the large push-bar and hold in depressed position while carefully tuning in manually, the station which is to be represented by the figure 1 in the small window. Release bar and the first station has been set. Depress the push-bar and hold in that position then tune in manually the second station, and so on, until the five station positions have been set. To tune the receiver with the automatic station selector bar, merely keep depressing the bar until the program you wish to hear is tuned in. The numbers 1 to 5 which appear in the small window to the right of the dial, will indicate the station.

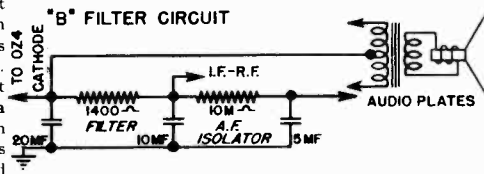
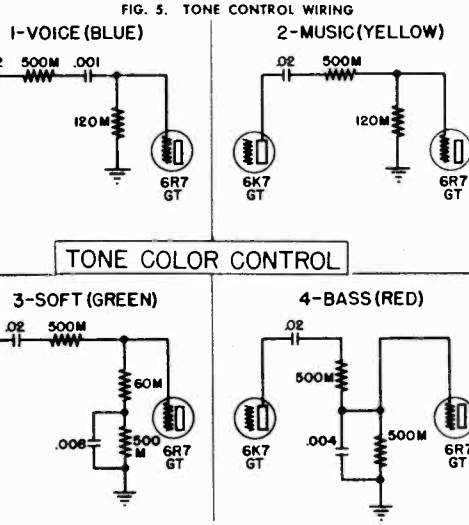
NOTE: The accuracy of the automatic station selector depends upon how accurately the station is tuned in manually when setting it up. Always tune to a point where the clearest reception is obtained.

Tube Complement

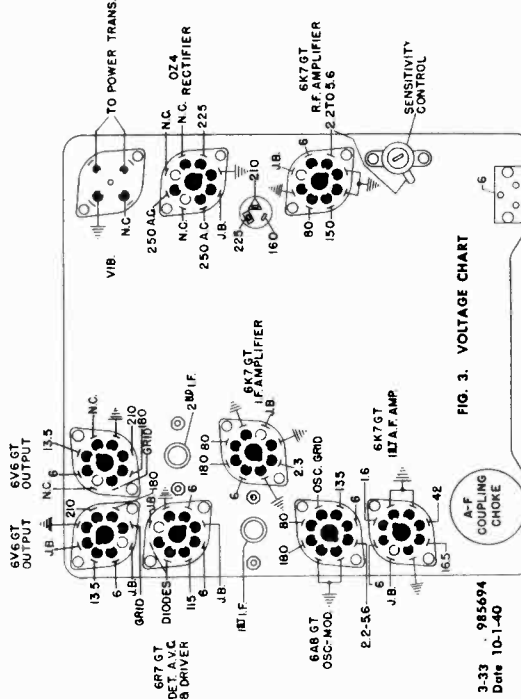
Type	Function	Type	Function
6K7GT	R.F. Amplifier	6K7GT	1st Audio (A.V.C. Control)
6A8GT	Osc.-Mod.	6V6GT	Output (Push-pull)
6K7GT	I.F. Amplifier	OZ4	Rectifier
6R7GT	2nd Det. A.V.C. Driver		

Circuit Description

The circuit used in this receiver is the conventional superheterodyne type and does not use any regeneration. The eight tubes employed are an R.F. amplifier; combination oscillator-modulator tube; 262.5 k.c. I.F. amplifier, the first transformer of which is triple tuned; push-pull output, and power supply. The 6R7GT tube supplies A.V.C. voltage to the grids of the 6K7GT R.F. amplifier; the 6A8GT and the 6K7GT 1st A.F. tube. Bias for the 6K7GT R.F. amplifier and the 6A8GT is developed across a 750 ohm variable resistor (sensitivity control, item 59) which has a fixed minimum of approximately 140 ohms. The bias for the 6K7GT I.F. amplifier is developed across a 450 ohm resistor (item 63). The bias for the 6K7GT 1st audio tube is developed across a 1500 ohm resistor (item 84). The bias for the 6R7GT tube is developed across two resistors, one of 350 ohms (item 73), the other of 2400 ohms (item 74). These two resistors form a voltage divider, feeding a portion of the bias voltage through the 300,000 ohm R.F.-A.V.C. load resistor (item 66) to the grid of the 6R7GT providing approximately one volt (q). Bias for the 6V6GT output tubes is developed across a 220 ohm resistor (item 83), between the 6K7GT 1st audio plate and the 6R7GT (driver) grid for the resistor capacity network comprising the tone color control. The 6R7GT plate is coupled through a .1 mfd. condenser to one side of the center tapped audio input choke.



MODEL 985694



ALL MEASUREMENTS TAKEN WITH A 1000 OHMS PER VOLT 250-VOLT RANGE VOLTMETER
ALL MEASUREMENTS TAKEN FROM SOCKET
N.C.—LUGS WITH NO CONNECTION
CONNECTIONS TO CHASSIS.
N.C.—LUGS WITH NO CONNECTION
A.F. COUPLING CHOKE
3-33 985694
Date 10-1-40

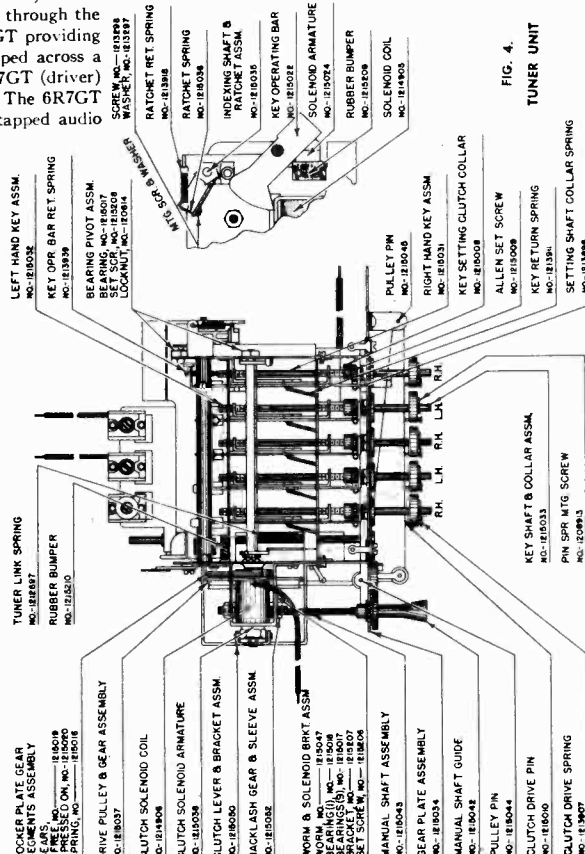


FIG. 4. TUNER UNIT

CHEVROLET DIV.—GEN. MOTORS

MODEL 985694

Circuit Alignment

The adjustable condensers in this receiver have been very carefully adjusted at the factory and will require no further adjustment (excepting antenna trimmer) unless tampered with or a defective I.F. coil has been replaced. If realignment is found necessary the circuits can be adjusted only with the use of a signal generator and an output meter.

1. Aligning I.F. Stages at 262.5 Kilocycles

The I.F. amplifier may best be aligned by first using a modulated signal generator and an output meter in the conventional manner, and then making the final adjustment with a radio frequency modulated signal generator and oscillograph. The accuracy of the automatic tuning system partially depends upon the symmetry of the I.F. wave form. In most cases the symmetry is only approximate without the aid of the oscillograph equipment.

- Connect one terminal of the output meter to the plate of one of the 6V6GT output tubes, and connect the other terminal through a .1 mfd. condenser (not electrolytic) to the plate of the other 6V6GT output tube.
- Connect the ground lead from the signal generator to the frame of the receiver chassis. Connect the output of the signal generator through a .02 mfd. condenser to the grid of the 6K7GT I.F. amplifier tube leaving the tube's grid clip in place.
- Turn the volume control on full. Adjust station selector to low frequency (55) end of dial and press the tone control button to the "music" position.
- Adjust the signal generator to 262.5 kilocycles.
- Adjust the trimmer condensers located on the 2nd I.F. transformer for maximum reading on the output meter. NOTE: Use the lowest signal generator output that will give a reasonable reading on the output meter.
- Connect the output of the signal generator to the grid of the 6A8GT tube leaving the tube's grid clip in place.
- Open the middle trimmer (front) on the 1st I.F. transformer two or three turns of the adjusting screw. Care should be taken that the adjustment screw does not become dislodged from the nut.
- Adjust the other two trimmers (rear) on the 1st I.F. transformer for maximum reading on the output meter.
- Adjust the middle trimmer (front) on the I.F. transformer for maximum reading on the output meter. NOTE: Do not readjust the trimmers on the 2nd I.F. transformer.

2. Oscillograph Alignment

For more accurate adjustment of the I.F. amplifier a cathode ray oscillograph, in conjunction with a radio frequency modulated signal generator, may be used to obtain visual alignment. It will also allow adjusting for a more symmetrical wave form.

- Disconnect the conventional signal generator from the receiver.
- Connect the vertical plates of the oscillograph to the receiver connecting the (H) terminal through a .02 mfd. condenser to the grid cap of the 6K7GT audio amplifier tube, leaving the tube's grid clip in place. Connect the ground terminal to the frame of the receiver chassis.
- Connect the output of the R.F. modulated signal generator also through a .02 mfd. condenser to the grid cap of the 6A8GT tube leaving the tube's grid clip in place. Connect the ground lead to the frame of the receiver chassis.
- Adjust the signal generator to 260.5 kilocycles.
- With the modulator switch of the signal generator turned off a horizontal line will appear on the window of the oscillograph. By means of the amplitude control on the oscillograph adjust the length of the line so that it is equal to the width of the celluloid scale supplied with the oscillograph.
- Turn the frequency modulator switch of the signal generator on.
- Adjust the vertical control of the oscillograph so that the image is just within the top and bottom lines of the oscillograph scale. NOTE: Use the lowest signal generator output that will give a stable image on the oscillograph window. If too much signal input is used the humps desired on the wave form will not be visible even at perfect alignment.
- Readjust the middle trimmer condenser on the 1st I.F. transformer for maximum symmetry about the vertical resonance line in the center of the celluloid scale. The hump or shoulder appearing on each side of the wave form will be equal distance from the numbers of the curve when maximum symmetry is reached.

3. Aligning the R.F. Amplifier

NOTE: The tuning of this receiver is not accomplished in the conventional manner. Tuning is accomplished by specially designed iron cores which are moved in and out of the coils to vary the inductance. There are three matched cores mounted to a carriage and which move as a single unit. The adjustment (tracking alignment) of the iron cores is very critical, therefore they should not be tampered with. The permeability tuning unit is precision tested and aligned, then sealed at the factory, and should need no further adjustment.

NOTE: Do not touch iron core adjustments. See instructions under permeability tuning unit replacement procedure.

TO ALIGN THE R.F. AMPLIFIER

- Connect the output of the signal generator through a 40 mmfd. condenser and use the regular Chevrolet shielded lead-in to the antenna connection of the receiver.
- Connect the generator ground lead to the frame of the receiver chassis.
- Adjust the signal generator to 1610 kilocycles.
- Adjust the station selector knob until the high frequency (1610) stop is reached. The dial pointer should be at the indexing mark on dial (below 155).
- Adjust the shunt trimmer condensers for maximum output. The adjustment should be made in the following order: Oscillator—Antenna—R.F. NOTE: After the radio is installed in the car the antenna trimmer should again be adjusted. Using a very weak signal around 1550 kilocycles, which is just audible with volume control on full, the antenna trimmer should be peaked for maximum output.

4. Permeability Unit Replacement Procedure

Each unit is made of matched parts. The iron cores in any one unit must be of the same group. There are four groups or classifications graded according to permeability and coded with a dot of paint on the screw end of the core. The code and value is as follows:

Code	Value
Red	2% to minus 1%
Blue	Minus 1% to mean value
Yellow	Mean value to plus 1%
Purple	Plus 1% to plus 2%

3-33 985694
Date 10-1-40

A. To Replace Iron Core Only:

- Remove speaker from case. This will give access to permeability tuning unit mounted to key assembly.
- Remove the two screws holding the bakelite core support strip to the carriage. Carefully remove assembly from carriage.
- Note the physical location of core to be replaced, then carefully remove defective core.
- Clean the cement from core fastener and then insert the new core (be sure new core is coded similar to cores used in set) in fastener so it is approximately in the same position as the one removed. Replace core assembly on carriage being very careful to insert cores in coil forms so as not to damage either.
- If either or both the antenna or R.F. cores have been changed, align them as follows:
 - Set the signal generator to 1610 kilocycles.
 - Turn control until carriage is all the way out. Pointer on dial should be at indexing mark (below 155).
 - Adjust the antenna and R.F. cores for maximum output.
 - Adjust the signal generator to 1400 kilocycles.
 - Readjust the antenna and R.F. cores to peak at 1400 kilocycles.
 - Adjust the signal generator to 1610 kilocycles.
 - Adjust the shunt trimmer condensers for maximum output.
- The alignment procedure after changing the oscillator iron core, is as follows:
 - Insert core (same code) into core retainer to approximately the same physical position as one removed.
 - Adjust the signal generator to exactly 1610 kilocycles.
 - Move carriage (with manual tuning knob) to minimum position (pointer at 1610 kilocycles).
 - Adjust the oscillator trimmer condenser for maximum output, then adjust antenna and R.F. trimmer for maximum output.
 - Move carriage in approximately $\frac{3}{8}$ of an inch.
 - Adjust the signal generator to 1400 kilocycles.
 - Adjust the oscillator core, the antenna and R.F. cores for maximum output.
 - Adjust the signal generator to exactly 1610 kilocycles and touch up the shunt trimmer condenser.

B. Replacing Complete Permeability Unit:

To facilitate this work, remove chassis from case.

- Remove the top and bottom covers from the case, then remove the speaker.
- Unsolder the "a" connection and motor noise choke from log on spark plate (mounted to case).
- Remove p.k. screws holding chassis in case and remove the chassis and front panel from case.
- To remove tuning unit (key assembly, etc.):
 - Remove the dial pointer from drive string.
 - Unsolder the two ground bonds, antenna connection, its shield, the blue, green, and black leads of the tuning unit, and also the A.V.C. resistor attached to the junction block.
 - Unsolder the clutch coil and the solenoid coil leads from the push-bar switch.
 - Loosen the set screw in the indexing shaft and remove long flexible shaft.
 - Loosen the unit on the volume control.
 - Remove the four screws which attach the whole tuning unit to the chassis.
 - Unsolder the .001 mfd. grid coupling condenser from antenna trimmer on unit. Unhook the spring and connecting link connecting the rocker arm and tuning carriage.
 - Remove permeability assembly by removing three screws accessible through keys on tuning unit and replace with new assembly.
 - The adjustments necessary on new units are the same as outlined under paragraph headed "Aligning the R.F. Amplifier".

IMPORTANT: The permeability unit must not present any load or drag to the rest of the tuning unit. The method of determining whether or not there is too much friction is to hold the unit (permeability only) so that the iron cores will move in and out of the coils of their own weight. If they do not, too much friction is present. The total linear motion of the iron cores rack is 1.375 inches. Always seal iron core screws after an adjustment.

Automatic Tuning Unit

When the push-button bar is depressed, the following action takes place. The lower rear side of the bar pushes in lever on the solenoid. When the solenoid switch makes contact it closes the "A" circuit to both the magnetic clutch solenoid coil and the key operating bar solenoid. The clutch solenoid disconnects the manual drive mechanism. While this is occurring the large solenoid is pulling down the key operating bar. This bar has an arm on the right side which is cam shaped on the end which moves lever on indexing shaft ratchet. This movement causes the indexing shaft to pull on key back far enough to permit the key operating bar to engage lower hook of key. The key is then drawn back by the key operating bar until the key rocker bar is lined up by the key toggle fingers. The movement of the key rocker bar is transmitted through a link which moves the permeability tuning rack (iron core assembly) tuning in station for which that position was set. The indexing shaft has five studs so spaced that while one stud is pushing a key back so the key operating bar will engage the lower hook on the key, the next stud on the shaft is indexed ready to push the next key back. This follows in sequence. In the end of the indexing shaft is a flexible drive cable which operates the station indicator drum. This entire action takes place instantaneously when the push button is depressed.

Adjustments

The solenoid clutch face gap should be approximately .026 inches. This is adjusted by bending the clutch operating bar just above the pivot. The backlash gears on both the clutch and the rocker bar are adjusted on tooth.

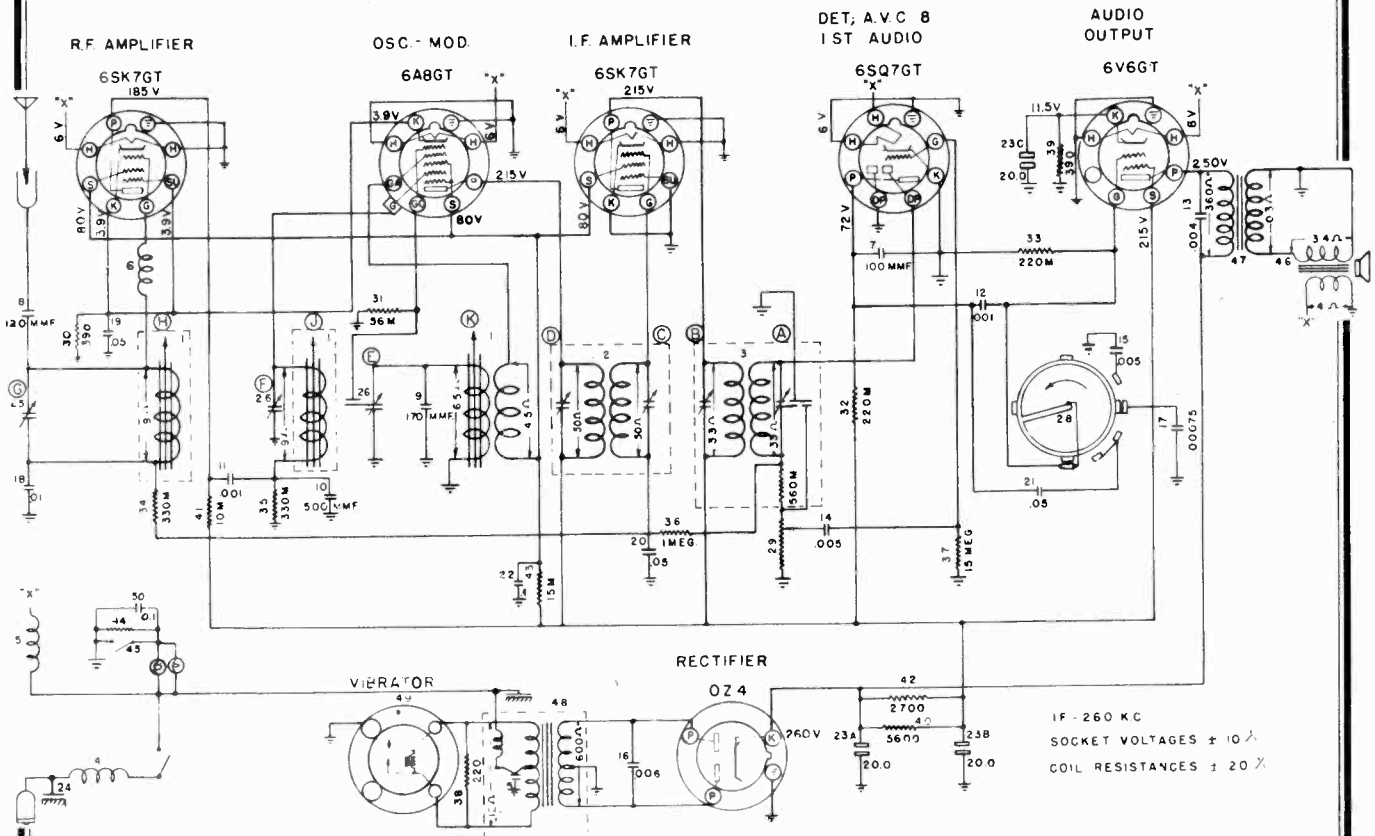
Key Adjustment

To adjust a key the two fingers should be parallel (straight up and down). Turn the rocker bar until it is exactly vertical. Push key in until both fingers are against the rocker bar. With the key in this position the key setting clutch shaft (1215033) should have its "C" washer bearing against the end of the key and the clutch shaft locking collar should also be bearing against key. The shaft must turn freely and not bind or be rough. With the key in the above position adjust the gap against the key setting clutch to approximately .010 clearance between the inside edge of the hook on key (which engages the key operating bar) and the outside face of the rear key guide bar, should be $\frac{3}{16}$ of an inch. Adjust and tighten set screw in key clutch shaft locking collar.

IMPORTANT: Do not put oil on solenoid armature or on the clutch solenoid armature.

CHEVROLET DIV.—GEN. MOTORS

MODEL 985695



3-34 . 985695
Date 10-1-40

FIG. 1. CIRCUIT DIAGRAM

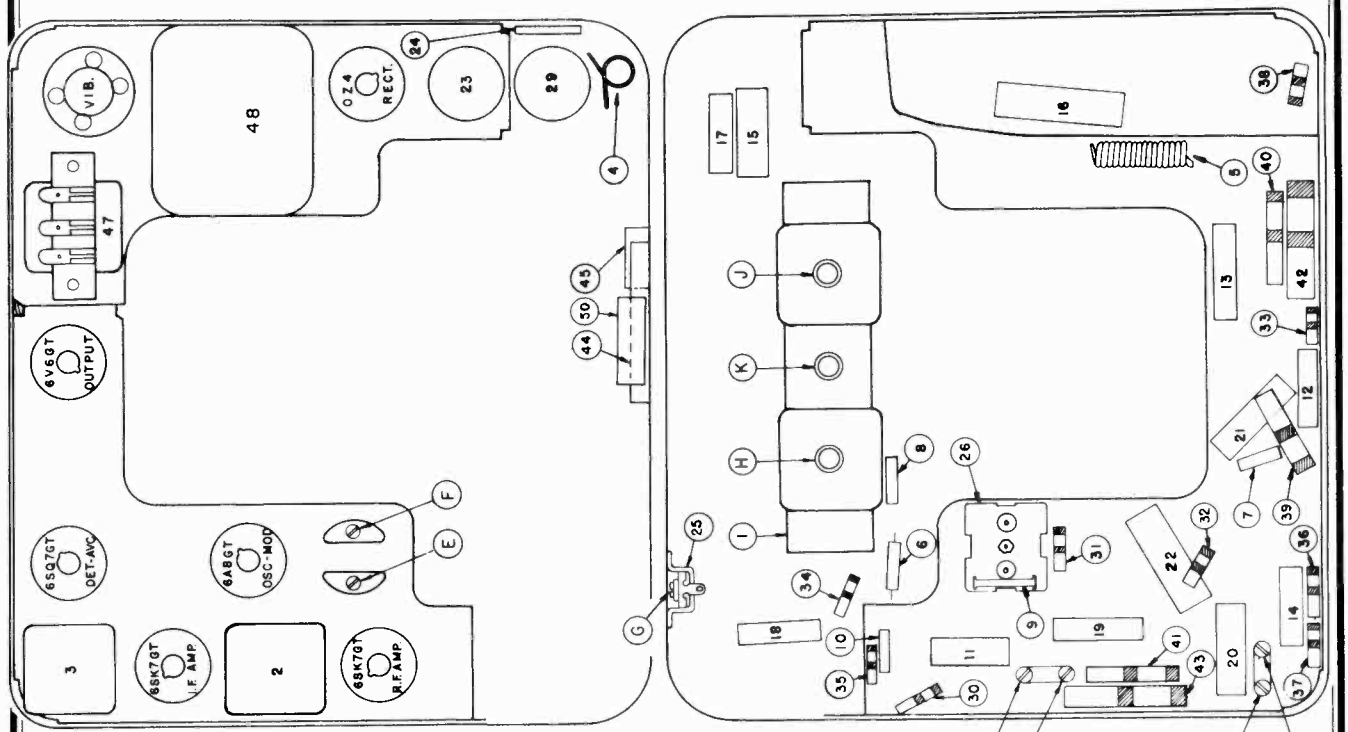


FIG. 2. PARTS LOCATING DIAGRAMS (TOP AND BOTTOM VIEWS)

CHEVROLET DIV.—GEN. MOTORS

Circuit Description

The circuit used in this receiver is the conventional superheterodyne type and does not use any regeneration. A special tone control circuit is employed to give the desired tone without distortion. The tuning circuits are tuned by varying the inductance of the antenna, R.F. and oscillator coils by means of iron cores which slide in and out of the coils like pistons. The alignment of the cores has been sealed at the factory and they should not require readjustment unless the coils have been changed.

Circuit Alignment

The trimmer condensers in this receiver have been carefully adjusted at the factory and should require no further adjustment (except the antenna trimmer) unless tampered with or a coil has been replaced. It is advisable not to attempt any adjustment unless it is definitely known that alignment is necessary. Due to the fact that the iron cores are sealed in place at the factory, only the trimmer adjustment as outlined under "Capacity Alignment" should be made, unless the coils of the iron core tuning unit are changed. A signal generator and an output meter must be used to align the receiver circuit correctly. To make all alignment adjustments the front and back covers must be removed. All trimmer condensers are readily accessible.

Capacity Alignment

1. I.F. Alignment at 260 Kilocycles

- (a) Connect a .1 mfd. condenser between the plate prong of the 6V6GT output tube and one terminal of the output meter. Connect the second terminal of the output meter to ground. This will protect the meter from DC voltages.
- (b) Connect the ground lead of the signal generator to the chassis frame.
- (c) Connect the signal lead of the signal generator to the grid cap of the 6ABGT tube through a .1 mfd. condenser. Leave the grid connection on the tube in place.
- (d) Turn the set volume control on full and put tone control on "music" position. Adjust the signal generator to 260 kilocycles. Tune the receiver to a frequency where no squeals or beat notes may be heard and so that when the tuning control is moved through narrow limits no appreciable change in output may be noted.
- (e) Adjust the I.F. trimmers (a), (b), (c), and (d) for maximum output.

2. Aligning at 1560 Kilocycles

Set the signal generator to 1560 kilocycles.

- (a) Connect the signal lead of the signal generator to the receiver antenna connection through a 70 mmfd. condenser.
- (b) Turn the manual tuning control of the receiver to the stop at the extreme high frequency end of the dial.
- (c) Adjust the signal generator to 1560 kilocycles.
- (d) Adjust the oscillator trimmer (e) for maximum output.
- (e) Adjust the R.F. trimmer (f) for maximum output.
- (f) Adjust the antenna trimmer (g) for maximum output.

3. Aligning at 1400 Kilocycles

- (a) Adjust the signal generator to 1400 kilocycles.
- (b) Tune the receiver to the signal and readjust the trimmers (f) and (g) for maximum output. The signal generator output should be as low as possible and still give a satisfactory meter reading. NOTE: This type of tuning does not require alignment at 600 k.c.

4. Alignment with Car Antenna

Antenna trimmer (g) must be adjusted to match car antenna when the receiver is installed. Use a weak station signal near 1400 kilocycles. When a weak signal has been tuned in turn volume control on full and adjust antenna trimmer for maximum output. NOTE: When making this adjustment the antenna should be fully extended.

Capacity and Inductance Alignment

This should be used only when there is definite evidence of the iron cores being out of adjustment.

1. I.F. Alignment at 260 Kilocycles

The same procedure as previously outlined should be followed.

2. Aligning at 1560 Kilocycles

- (a) Connect the signal lead of the signal generator to the antenna connection of the set through a 70 mmfd. condenser.
- (b) Adjust the signal generator to 1560 kilocycles.
- (c) Rotate the manual tuning mechanism until the high frequency stop is reached. Mechanically align the iron cores (k), (h) and (j), by setting the oscillator core (k) so that its front edge sticks out 1 1/2" from the end of the coil form, and the antenna and R.F. cores (h) and (j) stick out 1 3/4" from the end of the respective coil windings.
- (d) Adjust the oscillator trimmer (e), the R.F. trimmer (f) and the antenna trimmer (g) for maximum output.

3. Aligning at 1400 Kilocycles

- (a) Adjust the signal generator to 1400 kilocycles and tune the set to this signal.
- (b) Adjust the R.F. core (j) for maximum output.
- (c) Adjust the antenna core (h) for maximum output. NOTE: When checking maximum output remove hand from vicinity of the cores as body capacity will affect readings.

4. Realignment at 1560 and 1400 Kilocycles

- (a) Repeat alignment of trimmer (e) and trimmers (f) and (g) at 1560 kilocycles.
- (b) Repeat alignment of cores (k) and (j) at 1400 kilocycles. When this adjustment has been made seal the core screws with cement.

5. Alignment with Car Antenna

Antenna trimmer (g) must be adjusted to match car antenna when receiver is installed. Use a weak station signal near 1400 kilocycles that is audible with volume control on full. Adjust antenna trimmer for maximum output. NOTE: The antenna should be fully extended when making this adjustment.

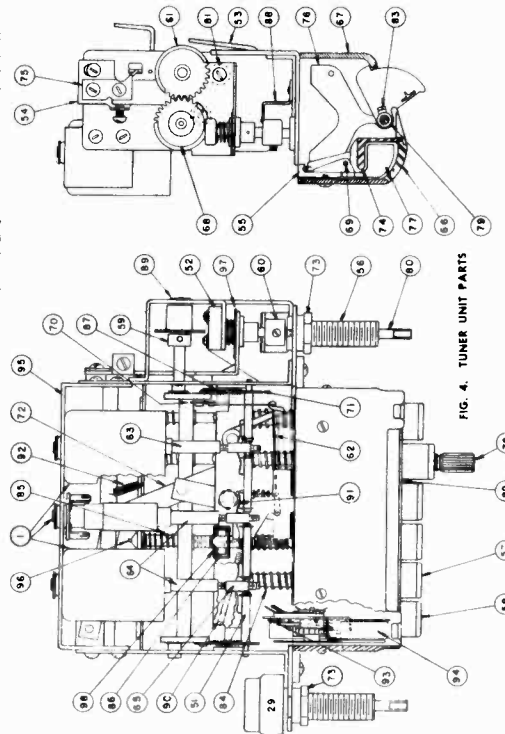
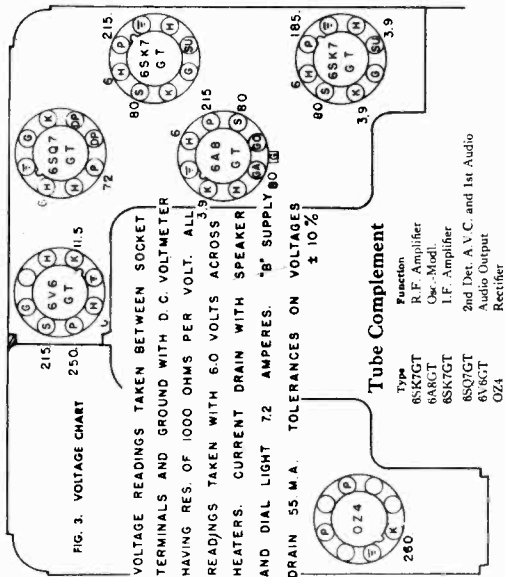


FIG. 4. TUNER UNIT PARTS



This auto radio is a six-tube single unit radio designed especially for 1941 Chevrolet automobiles. The complete radio mounts behind the instrument panel, and has six push-buttons (five for tuning and one for tone control). The manual tuning control, volume control knob and the dial extend through the instrument panel, blending with the design of the car interior. An elliptical speaker is used and is mounted in front of the receiver and projects its tone through the ornamental grille of the 1941 Chevrolet instrument panel. The tuning is accomplished by a mechanical unit of rugged construction assuring accuracy. A special compensating condenser is employed in the oscillator circuit to minimize tuning circuit changes due to normal variations in car voltages and temperature ranges. The power supply consists of an OZ4 rectifier tube used in conjunction with a full wave primary type vibrator.

ANTENNA CIRCUIT

The antenna circuit is directly coupled to the antenna. The antenna coil is tuned by means of an iron core and the circuit is adjusted for slight variations in antenna capacity by means of an antenna trimmer located on the bottom of the receiver case.

ANTENNA SYSTEM

There are two antenna systems available for use with this receiver: the telescopic cowl antenna, and the telescopic reel-type antenna. Either of these antennas will operate very efficiently when used with this Chevrolet radio.

CHEVROLET DIV.—GEN. MOTORS

1. Aligning I.F. Stages at 455 Kilocycles

- (a) Connect the signal lead of the test oscillator to terminal "X" on variable condenser 25A (see parts layout) which is the grid lead of the 6SA7GT tube through a .1 mfd. condenser.
- (b) Connect the ground lead of the test oscillator to the chassis frame.
- (c) Connect a .1 mfd. condenser between the plate prong of the 6V6GT output tube and one terminal of the output meter. Connect the second terminal of the output meter to ground. This will protect the meter from d.c. voltages.
- (d) Set the signal generator at 455 kilocycles.
- (e) Turn volume control on full.
- (f) Adjust the trimmer condensers (a), (b), (c), and (d), on the I.F. transformers for maximum output.

These adjustments should be repeated several times, and during alignment the signal generator output should be kept to as low a value as is consistent with obtaining a readable indication on the output meter.

2. Aligning at 1560 Kilocycles

- (a) Leave the signal generator leads connected the same as for aligning the I.F. circuit.
- (b) Turn the rotor plates of the gang condenser all the way out and against the high frequency stop (h).
- (c) Set the signal generator at 1560 kilocycles.
- (d) Adjust condenser (e), (see parts layout) for maximum output.

NOTE: It is very important that this frequency be set accurately as a slight missetting will cause the receiver to be out of track over the entire high frequency end of the dial.

3. Aligning the Antenna Stage

- (a) Remove the signal lead of the signal generator from the grid of the 6SA7GT tube and connect to the antenna terminal of the receiver through a .000075 mfd. mica condenser connected in place of the .1 mfd. condenser previously used. NOTE: It is very important that a .000075 mfd. mica condenser be used when aligning the antenna stage of the receiver in order that this circuit can be made to track properly.
- (b) Adjust the signal generator to 1400 kilocycles.
- (c) Turn the condenser rotor plates until the 1400 k.c. signal is tuned in with maximum output.
- (d) Adjust antenna trimmer (g), (see parts layout) for maximum output.

4. Aligning at 600 Kilocycles

- (a) Adjust the signal generator to 600 kilocycles.
- (b) Turn the condenser rotor plates until the signal from the generator is tuned in with maximum output.
- (c) Maintain a low output signal from the signal generator and adjust the oscillator padding condenser (f), (see parts layout) while rocking the variable condenser gang tuning shaft back and forth through the signal.
- (d) This operation should be continued until no further increase in output can be obtained.
- (e) After the above operation, turn the condenser rotor plates to the high frequency stop position. Check the 1560 k.c. setting and if necessary readjust trimmer (e) then return to 1400 k.c. for final antenna trimmer adjustment.

NOTE: If the entire alignment procedure has been accomplished correctly the receiver should be uniformly sensitive over the entire frequency range.

MODEL 985697

CHEVROLET DIV.—GEN. MOTORS

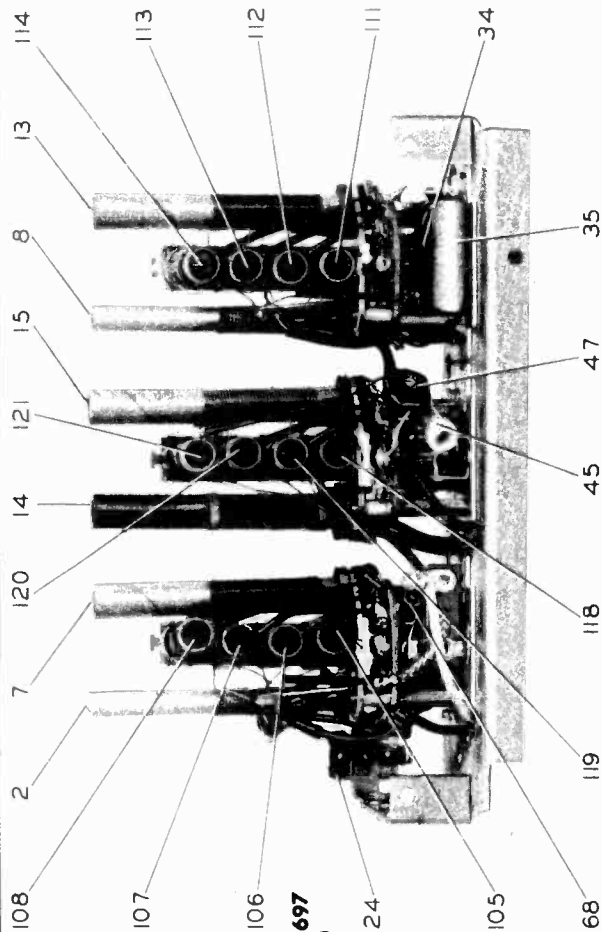
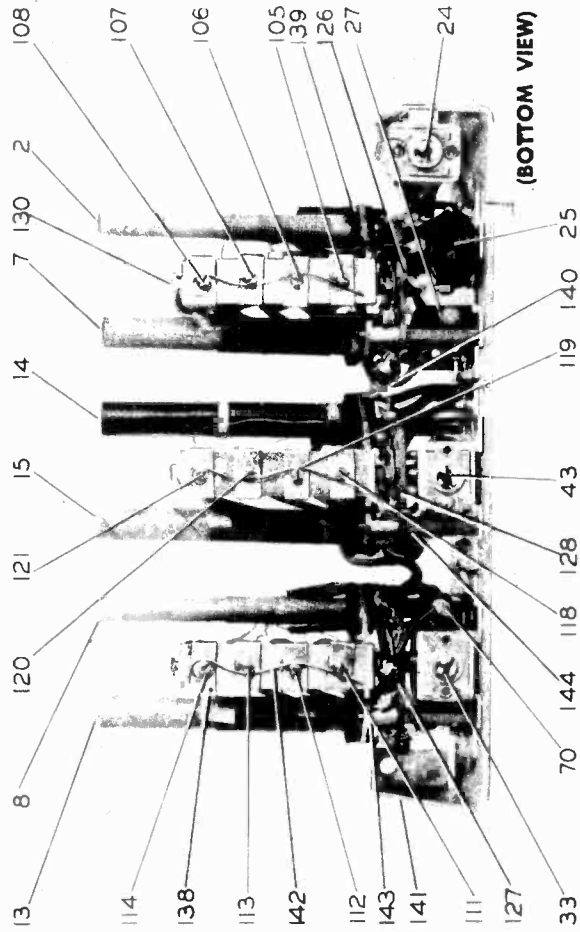


FIG. 9. COIL ASSEMBLIES (TOP VIEW)



(BOTTOM VIEW)

3-36 - 985697
Date 10-1-40

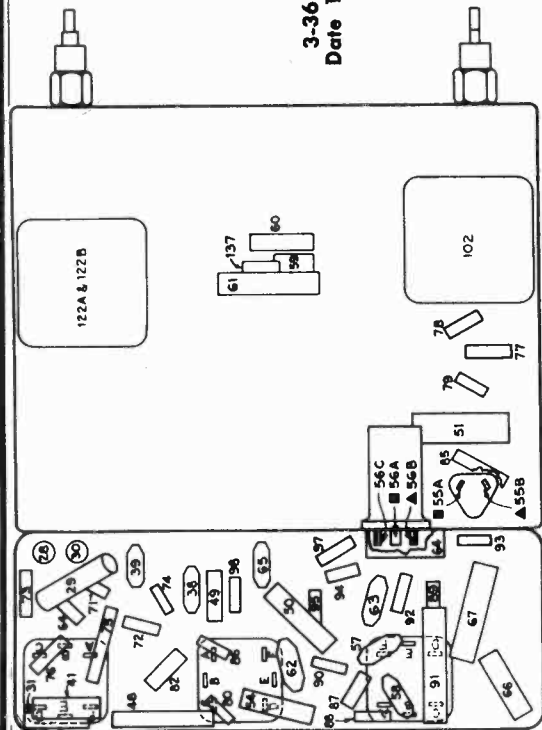
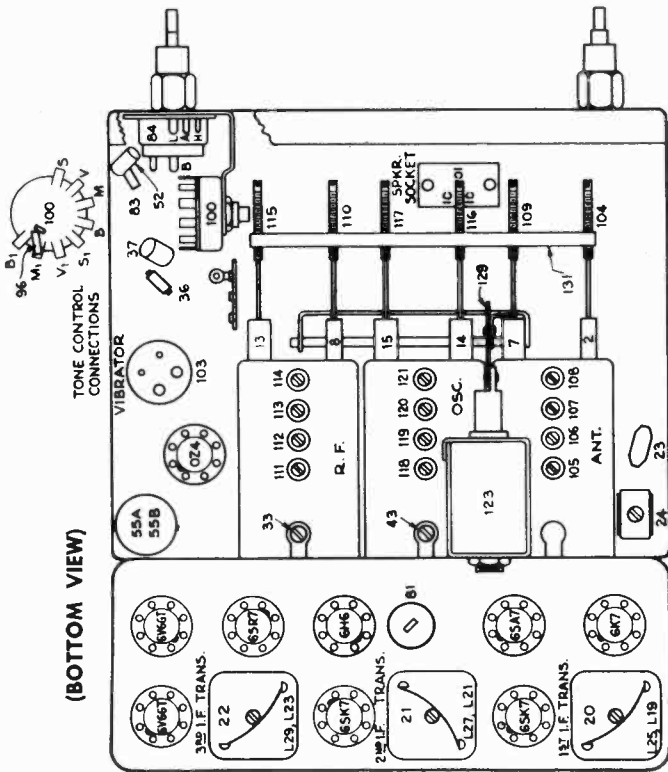


FIG. 4. PARTS LOCATING DIAGRAM (TOP VIEW)



CHEVROLET DIV.—GEN. MOTORS

MODEL 985697

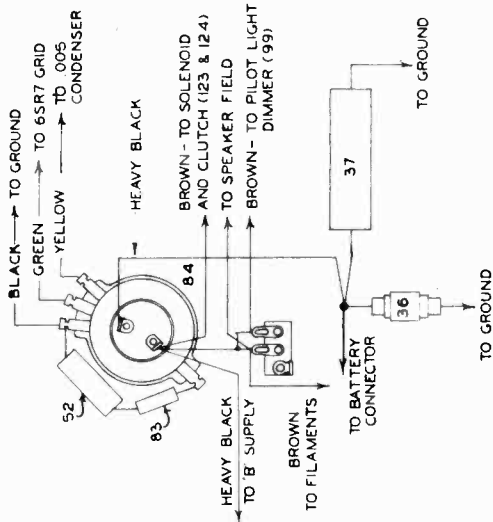
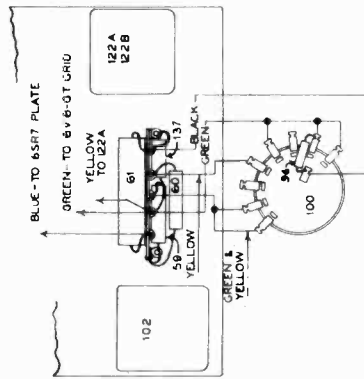


FIG. 7. VOLUME CONTROL WIRING



3-36 985697
Date: 10-1-40

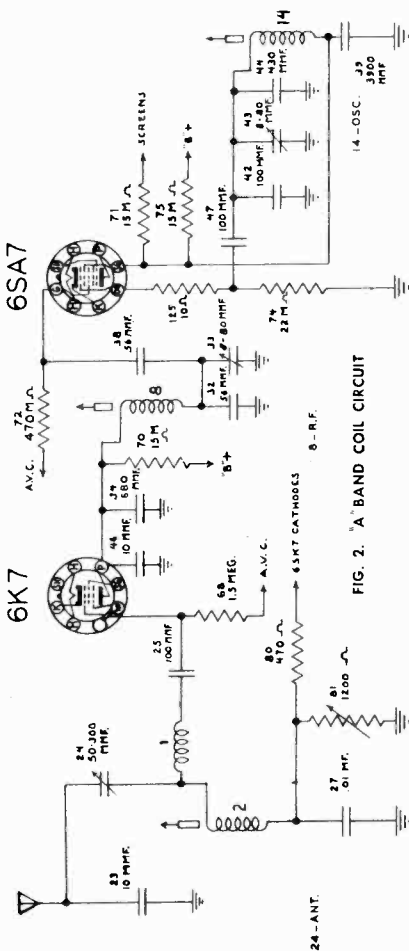


FIG. 2. 'A' BAND COIL CIRCUIT

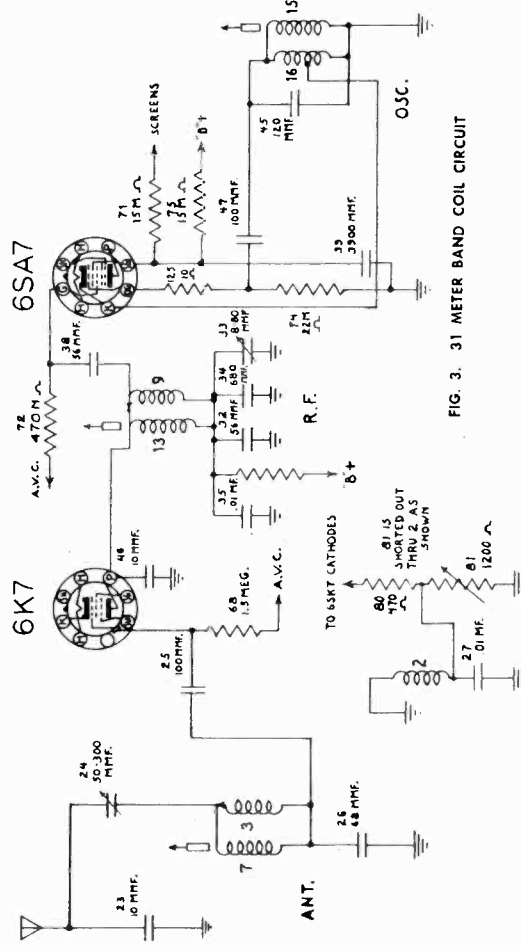


FIG. 3. 31 METER BAND COIL CIRCUIT

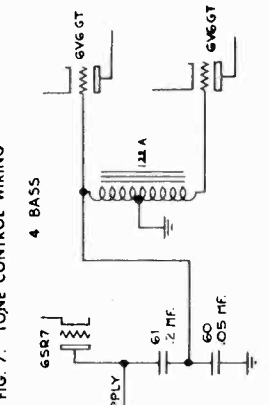


FIG. 6. TONE CONTROL POSITION WIRING

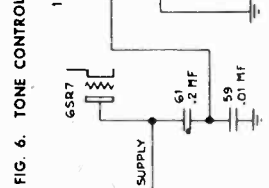
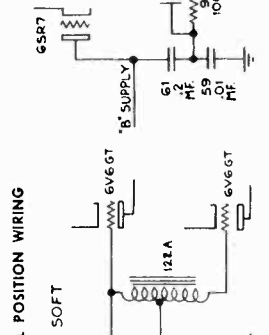
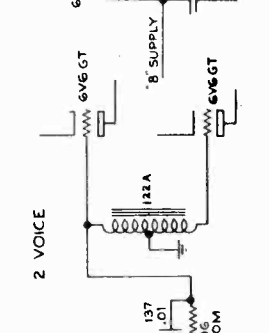
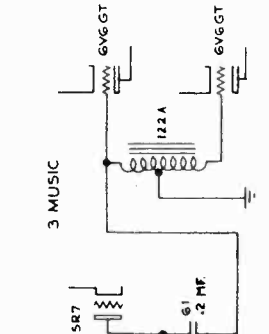


FIG. 6. TONE CONTROL POSITION WIRING

CHEVROLET DIV.—GEN. MOTORS

MODEL 985697

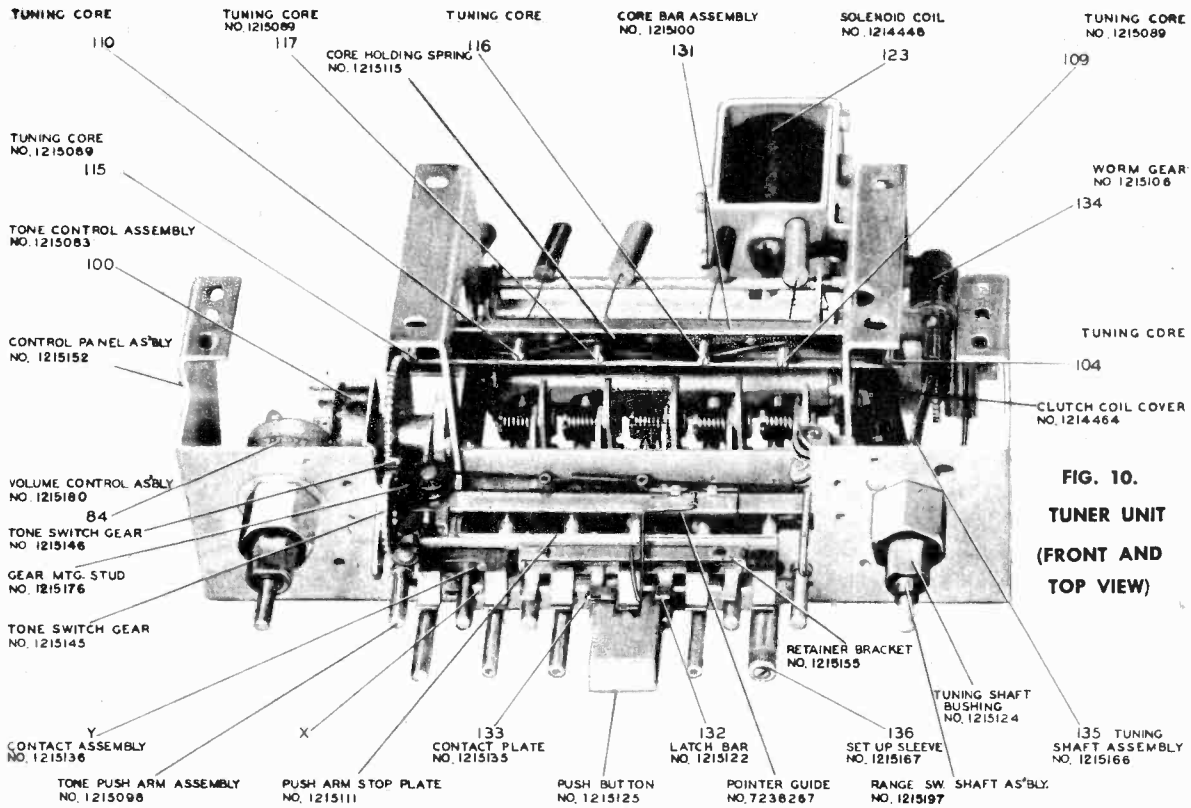


FIG. 10.
TUNER UNIT
(FRONT AND
TOP VIEW)

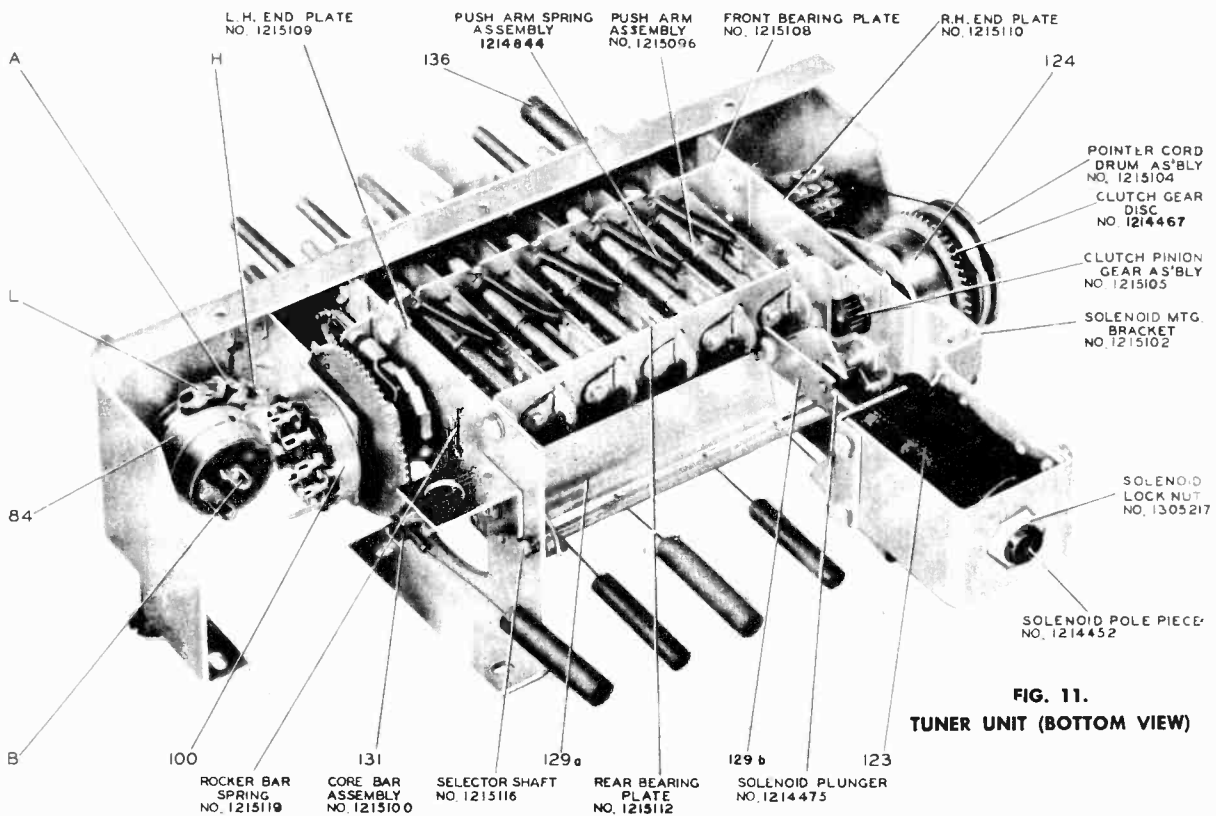


FIG. 11.
TUNER UNIT (BOTTOM VIEW)

CHEVROLET DIV.—GEN. MOTORS

MODEL 985697

Circuit Alignment

The adjustable condensers and magnetite cores in this receiver have been very carefully adjusted at the factory and should require no further adjustment (except antenna trimmer, item 24) unless tampered with or a defective unit has been replaced. It is advisable not to attempt any adjustment unless it is definitely known that an adjustment is necessary.

To align the circuits of this receiver correctly a signal generator and an output meter must be used. In aligning the receiver it is very important that the correct frequencies be used and that all alignment adjustments be made in sequence, starting with the I.F. amplifier, then aligning the broadcast band, and finally the short wave band. Slight misadjusting of either the I.F. or R.F. circuits will result in a weak set over most of the dial. All R.F. and I.F. adjustments are accessible after removing the speaker cover, top cover and rear bottom cover. The I.F. primary windings are adjusted by magnetite core screws Nos. 150, 152 and 154, located on top of the I.F. transformers (Fig. 1); and the secondary windings are adjusted by core screws Nos. 151, 153 and 155, located at the bottom of each I.F. transformer (Fig. 1).

1. Aligning I.F. Stages at 455 Kilocycles

- Connect one terminal of the output meter to the plate of one of the 6V6GT output tubes and connect the other terminal through a .1 mfd. condenser to the plate of the other 6V6GT output tube.
- Connect the output of the signal generator through a .01 mfd. condenser to the grid of the 2nd I.F. tube, 6SK7 (Pin No. 4). Connect the ground lead from the signal generator to the frame of the receiver chassis.
- Turn the volume control on full.
- Adjust the signal generator to 455 kilocycles.
- Adjust core screws (154 and 155) on the 3rd I.F. transformer for maximum reading on the output meter. NOTE: Always use the lowest signal generator output that will give a reasonable deflection on the output meter.
- Connect the signal generator lead through the .01 condenser to the grid of the 1st I.F. tube, 6SK7 (Pin No. 4), and adjust core screws (152 and 153) in the 2nd I.F. transformer for maximum output.
- Connect the signal generator lead through the .01 condenser to the grid of the 6SA7 tube (Pin No. 8) and adjust core screws (150 and 151) in the 1st I.F. transformer for maximum output.

2. Aligning the R.F. Amplifier

The main tuning cores should never be touched unless a coil or core is replaced. Where one of these parts has been replaced the complete broadcast band alignment procedure (No. 3) should be followed. Generally when checking the R.F. circuits for proper peaking the following procedure and sequence must be used. There are fifteen trimmer screws properly labeled "Antenna", "Oscillator", and "R.F.". The broadcast band is designated by the letter "A" and the four short wave bands are designated by the numbers indicating the bands—31, 25, 19 and 16. The labels all appear on the coil assembly shields.

(a) "A" Band, or Broadcast:

If the dial pointer is right on calibration, merely trim the "A" band, antenna and R.F. trimmers at 600 kilocycles. If the pointer is slightly off calibration it can be corrected by resetting the oscillator trimmer slightly and then trim the antenna and R.F. circuits for maximum output. (NOTE: When the radio is installed in the car the antenna trimmer should be aligned on the "A" band between 1000 and 1200 kilocycles.)

(b) 31 Meter Band:

Using a signal of 9.6 megacycles, tune in the signal with the receiver. If the pointer is slightly off calibration readjust the oscillator trimmer and then trim antenna and R.F. trimmers for maximum output at 9.6 megacycles.

(c) 25 Meter Band:

Using a signal of 11.8 megacycles tune in the signal with the receiver. If the pointer is slightly off calibration readjust the oscillator trimmer and then trim the antenna and R.F. trimmer for maximum output at 11.8 megacycles.

(d) 19 Meter Band:

Using a signal of 15.2 megacycles tune in the signal with the receiver. If the pointer is slightly off calibration readjust the oscillator trimmer and then trim the antenna and R.F. trimmers for maximum output at 15.2 megacycles.

(e) 16 Meter Band:

Using a signal of 17.8 megacycles tune in the signal with the receiver. If the pointer is slightly off calibration readjust the oscillator trimmer and then trim the antenna and R.F. trimmers for maximum output at 17.8 megacycles.

NOTE: The 31-meter band affects the tuning of the other short wave bands, therefore it must always be aligned first. It is equally important that the antenna trimmer (item 24) be aligned first on the broadcast band for proper tracking.

3. Broadcast Band Alignment

Six adjustments are provided which include trimmers Nos. 24, 33 and 43, associated with circuits Nos. 2, 8, 14 and the three iron cores Nos. 104, 110 and 116, which are mounted in front of the coil assemblies in conjunction with the core-draw-bar No. 131. If complete realignment is found necessary the R.F. circuits should be adjusted in the following sequence:

- Tune the receiver to the extreme high frequency end of the band.
- Turn each of the three core screws (104, 110 and 116) in a counterclockwise direction ten turns. NOTE: This is done in order to separate the cores from the coil windings far enough so that the cores will have no effect on the frequency of the circuits.
- Connect the signal generator through a 35 mmf. condenser to the standard Chevrolet shielded antenna lead-in. Connect the ground lead from the signal generator to the shield of the antenna lead-in cable.
- Connect one terminal of the output meter to the plate of one of the 6V6GT output tubes, and connect the other terminal through a .1 mfd. condenser to the plate of the other 6V6GT output tube.
- Adjust the frequency of the signal generator to 1590 kilocycles and peak trimmers Nos. 24, 33 and 43 for maximum signal output, at the same time reducing the signal generator output to as low a value as is consistent with a reliable indication on the output meter.
- Change the frequency of the signal generator to 1560 kilocycles and turn the oscillator core screw (116) clockwise until maximum output is obtained.
- Change the frequency of the signal generator to 1200 kilocycles and tune the receiver for maximum signal at 1200 kilocycles.

(b) Adjust core screws (104 and 110) for maximum signal output.

(i) Change the frequency of the signal generator to 600 kilocycles.

(i) Tune the receiver for maximum signal output at 600 kilocycles.

(k) Adjust the antenna and R.F. trimmers (24 and 33) for maximum output.

(l) Reset the signal generator to 1200 kilocycles and tune the receiver for maximum output at 1200 kilocycles.

(m) Adjust the antenna and R.F. cores (104 and 110) for maximum output.

Complete Short Wave Alignment

Because of the extensive range of this receiver, it is necessary that the short wave bands be completely aligned in exact accordance with the following procedure. Be sure to make all adjustments in the order specified.

- Check broadcast band antenna trimmer (item 24) for maximum peaking. This is very important.
- Tune the receiver so that the dial pointer is at the extreme high frequency end of the 31-meter band, and adjust the magnetite core screws (109, 115 and 117) so that each core end is flush with the coil forms (items No. 7, No. 13 and No. 15) which extend beyond the shield.
- Turn the magnetite trimmer core screws (105, 106, 107, 108, 111, 112, 113, 114, 118, 119, 120 and 121) in a counterclockwise direction, as far as they will go. NOTE: Do not force the cores against their stops as too much force may fracture the core.
- Connect the signal generator through a 35 mmf. condenser and the Chevrolet shielded antenna lead-in, to the antenna connection of the receiver. Connect the ground lead from the signal generator to the shield of the lead-in.
- Turn the band indicator to 31 meters and turn the volume control to the maximum position.
- Adjust the signal generator frequency to 9.6 megacycles and move the pointer to 9.6 megacycles on the dial scale.
- Turn the core screw (118) in a clockwise direction until the first peak is obtained, and then adjust carefully for maximum reading on the output meter.
- Turn the core screw (111) in a clockwise direction until the 2nd peak is obtained, if more than one peak can be found, and adjust for maximum reading on the output meter at the same time reducing the signal generator output to as low a value as is consistent with a reliable indication on the output meter.
- Turn the core screw (105) in a clockwise direction or until 2nd peak is obtained, and adjust for maximum reading on the output meter.
- Change the signal generator frequency to 11.8 megacycles, the band indicator to 25 meters, and move the pointer meter to 11.8 megacycles on the dial scale.
- Turn the core screw (119) in a clockwise direction, until 1st peak is obtained, and adjust for maximum reading on the output meter.
- Turn core screws (112 and 106) in a clockwise direction until 2nd peak is obtained, and adjust for maximum reading on output meter.
- Change the signal generator frequency to 15.2 megacycles, the band indicator to 19 meters, and move the dial pointer in 15.2 megacycles on the dial scale.
- Turn core screw (120) in a clockwise direction until the 1st peak is obtained and adjust for maximum reading on the output meter.
- Turn core screws (113 and 107) in a clockwise direction until 2nd peak is obtained, and adjust for maximum reading on output meter.
- Change the signal generator frequency to 17.8 megacycles, the band indicator to 16 meters, and move the pointer to 17.8 megacycles on the dial scale.
- Adjust core screw (121) by turning in a clockwise direction until 2nd peak is obtained and adjust for maximum output.
- Adjust core screws (114 and 108) by turning in a clockwise direction until 1st peak is obtained and adjust for maximum reading on output meter.
- Repeat all operations starting with (e) until no further improvement can be obtained.

General Alignment Information

Alignment of the short wave bands should never be attempted without first peaking trimmer condenser No. 24 in accordance with the procedure outlined under "Broadcast Band Alignment" (3). A slight misalignment of this trimmer condenser will result in unsatisfactory short wave operation, the reason being that trimmer condenser No. 24, is in the circuit on all bands but it should be peaked on the broadcast band only.

The most satisfactory method of aligning or checking the spread band ranges is on actual reception of short wave stations of known frequency by adjusting the magnetite core oscillator coil for each band, so that the short wave stations come in at the correct points on the dial. In exceptional cases, when the set is being serviced in a location where the noise level is high enough to prevent reception of short wave stations a signal generator should be used for alignment, but an extremely high degree of accuracy is required in the frequency settings of the signal generator as a slight error will produce considerable inaccuracy on the spread band dial.

When adjusting the magnetite core trimmer in the auxiliary short wave coils, if more than one peak is found, select the peak specified in the alignment procedure for each band.

4. Adjusting Antenna Compensating Condenser

This adjustment should be made after the receiver has been properly installed in the car. Tune the receiver to a weak signal at the high frequency end of the broadcast band at about 1200 kilocycles. This signal should be just audible with volume control on full. Adjust the antenna compensating condenser for maximum signal strength. NOTE: When aligning the antenna trimmer condenser, be sure that the antenna is fully extended.

5. Instructions for Removal of Coil Unit

- Remove the top, rear bottom, and speaker cover from the receiver.
- Remove the row of tubes immediately behind coil unit assembly.
- Remove the two No. 8 self-tapping screws that hold the antenna connector to the side of the case, then unsolder the antenna cable shielding from the two grounding lances which will leave this part entirely free. Pry up the clips which hold the leads from the R.F. coils to the chassis. Free these leads. Unsolder the leads from the antenna, R.F. and oscillator coil assembly which is to be removed.
- Remove the two No. 8 screws which hold the solenoid mounting bracket to the main tuner frame. Place the solenoid out of the way, taking care that the armature does not get damaged. Unsolder the small condenser (item 23) from the case.
- Remove the $\frac{3}{8}$ hex. head screw from the end of the switch shaft to be found at the center of the coil unit base. Remove the two nuts from the end of the band indicator shaft. The short link arm which is retained by these nuts is to be removed after the main assembly is

CHEVROLET DIV.—GEN. MOTORS

free. Remove the two $\frac{1}{8}$ hex. head screws that hold the coil unit base to the main coil assembly bracket.

- (f) Turn the tuning indicator to the high frequency end of the band, then remove the three No. 8 self-tapping screws and the two No. 8 machine screws that hold the coil unit mounting bracket to the chassis. Remove the sleeve covered tension wire on the core bar, part No. 1215115, and back out the threaded portion of the two cores. This will leave the wire only passing through the threaded holes in the core bar. Carefully pull the cores from the coil forms by drawing the whole assembly towards the I.F. transformers. With the coil unit assembly in this position the affected coil can be removed by first moving it away from the coil unit assembly bracket until the projections at its base just clear the bracket, then raising the base end and withdrawing the unit over the I.F. transformer. CAUTION: When performing this operation take care that the band indicator shaft is not withdrawn with the coil unit assembly bracket.

8. To Disassemble Coil Units

- (a) Turn all trimmer screws until they are within the coil unit cover.
- (b) Remove the small spring steel clip, part No. 1215134, which anchors the coil bracket to the end of the cover. Two corners of this clip dig into the aluminum of the cover and care must be exercised when removing it so that no damage is done to the protruding coil tubes.
- (c) Remove the two $\frac{1}{2}$ nuts holding the shield can in place and slide the cover off.

9. Reassembling Coil Units

- (a) Replace the cable clamp which holds the coil leads located between the 6K7 and the 6SR7.
- (b) In replacing the cores into the coil tubes, grasp the threaded stud end, raise the core and work it into the coil tube.
- (c) When the oscillator coil is removed be sure that the two detent balls at the switch shaft do not get lost.
- (d) The two nuts which hold the short link arm to the band indicator shaft must be taken up tight.
- (e) While replacing the coil unit mounting bracket be sure that the three bronze clips enter their slots in the shield cans properly.

10. Stiff Manual Tuning

Excessive stress on the worm bearing caused by tension or compression in the flexible manual tuning shaft (item 135) may cause stiff manual tuning. Such stress can readily be eliminated by loosening and retightening the set screw in the worm (item 134).

11. Tone Control

The four positions of the tone control are: Soft, Voice, Music and Bass. The tone control and its tone compensating network in the circuit is between the audio amplifier and the output stage. When the switch is in the "soft" position, the 100,000 ohm resistor (item 96) and the .01 mfd. condenser (item 137) are shorted out resulting in maximum lows. Some of the high audio frequencies are bypassed to ground through the .01 condenser (item 59). In the "voice" position the high audio frequency response remains the same as in the soft position but the 100,000 ohm resistor and the .01 condenser are in series with the primary of the driver stage transformer (item 122A) resulting in a reduced low frequency response. With the tone control switch in the "music" position, none of the high frequencies are bypassed and maximum lows are available because the 100,000 ohm resistor (item 96) and the .01 mfd. condenser (item 137) are shorted out. When the switch is in the "bass" position the high frequencies are bypassed to ground through the .05 condenser (item 60). The low frequency response remains the same as when the switch is in the music position.

12. Band Switching Circuits

The two switch sections as shown on the schematic diagram in the antenna stage and in the R.F. stage are actually one switch wafer in each case. The top section on the diagram is that set of contacts toward the coils as viewed from the coils. The lower set of contacts is that set of contacts away from the coils. The switch sections are all shown in the 16-meter band position. Referring to the top wafer sections, when the upper rotor fingers touch terminals No. 2, the 16-meter band is in the circuit. Terminals No. 3 are the 19-meter band contacts. Terminals No. 4 are the 25-meter band contacts. Terminals No. 5 are the 31-meter band contacts. Terminals No. 6 are the "A" band or broadcast band contacts.

The "A" band coil circuit shows the actual simplified circuit diagram for the "A" band without the switch contacts being shown. The same applies to the 31-meter band coil circuit. Coils 7, 13, 15 and 16 remain in the circuit at all times for short wave operation. When switching to the 25-meter band, coil No. 3 is replaced by coil No. 4. Coil No. 9 is replaced by coil No. 10. Coil No. 17 is switched across coils Nos. 15 and 16, thus on each of the 25, 19 and 16-meter bands there are three oscillator coils in parallel at the same time. The sensitivity control is removed from the circuit for short wave operation thereby giving full sensitivity on short waves.

In order to provide good tracking sensitivity only perfectly matched main tuning cores are used in the receivers on the "A" band (No. 104, 110 and 116). The cores are color coded with a spot of red, yellow or green paint on the stud-end of the core. Only one particular color will be used in each receiver. When servicing one of these cores always replace the defective core assembly with a replacement core bearing the exact color coding, or replace all three cores with a new set of cores of another color code.

Circuit Description

The circuit used in this receiver is the conventional superheterodyne type with two stages of I.F. and six tuned I.F. circuits. In the short wave position the band switch operates by shunting respective coils (with their magnetite trimmer cores) across the main variable tuning inductances in the antenna, R.F. and oscillator circuits. When tuning either of the four short wave bands the signal is fed through the 100 mmf. condenser

(item 25) to the grid of the R.F. amplifier tube 6K7 which also receives its A.V.C. bias through the 1.5 megohm resistor (item 68).

In the broadcast band position the filter choke (item 1) is included in the circuit and in conjunction with the input capacity of the tube constitutes a low-pass filter which effectively prevents unwanted disturbances from reaching the R.F. tube. The variable trimmer (item 24) is used for compensating the slight variations in the effective capacities of the antenna and the shielded lead-in cable. Bias for the 6K7 tube is developed across the 560 ohm resistor (item 69).

The 6SA7 tube serves the combined functions of 1st detector and oscillator. In the short wave position the oscillator section of 6SA7 uses the conventional Hartley circuit, however the band switching arrangement of this section differs slightly from that of the antenna and RF sections, in that a 31-meter auxiliary oscillator coil (item 16) is permanently shunted across the main tuning coil (item 15) and a tap is brought out for return to the cathode. In changing to the 25, 19 and 16 meter bands, the respective auxiliary oscillator coils (items 17, 18 and 19) are shunted in parallel to the previous combination. The negative coefficient 120 mmf. condenser (item 45) in parallel to the main tuning coil (item 15) constitutes the temperature compensating arrangement for the short wave bands. In the broadcast band the oscillator uses a modified Colpitts circuit arrangement formed by the main tuning inductance (item 14) 3900 mmf. condenser (item 39) and condensers consisting of items 42, 43 and 44 in which item 42 is the negative temperature coefficient condenser.

The two 6SK7 tubes are used in the two stage I.F. amplifier. In the short wave position, both tubes get their bias from the 470 ohm resistor (item 80), but in the broadcast position a 1200 ohm variable resistor (item 81) is connected in series with the 470 ohm resistor and is adjusted in the factory for uniform sensitivity. The variable resistor (item 81) increases the bias on the 6SK7 tubes, therefore the I.F. stage gain in the broadcast position is less than that in the short wave position so that the desired sensitivity is obtained on all bands.

The 6SR7 tube serves three distinct functions. The diode plate No. 2 is used for signal detection. Diode No. 1 is used for supplying bias for the noise limiter circuit, while the triode part is used for the audio amplifier. Diode plate No. 1 gets its signal from the primary of the 3rd I.F. transformer through the 68 mmf. condenser (item 57) and inasmuch as the secondary of the transformer is loaded with a 150,000 ohm resistor (item 88) the bias for the noise-limiter circuit is more than twice the DC voltage of the rectified signal. The bias for the tube is developed across the 1000 ohm resistor (item 94).

The 6H6 tube performs two functions: Plate No. 1 is used in the noise-limiter circuit, and plate No. 2 is used for supplying A.V.C. after the 2nd cathode of the 6H6 tube is connected to the cathode of the 6R7. The voltage developed across the 1000 ohm resistor (item 94) also acts as a delayed bias for the A.V.C. system.

The two 6V6GT tubes are used in the push-pull output circuit and both get their bias from the 330 ohm resistor (item 91). The OZ4 tube is used as the cold cathode rectifier with a conventional nonsynchronous type vibrator.

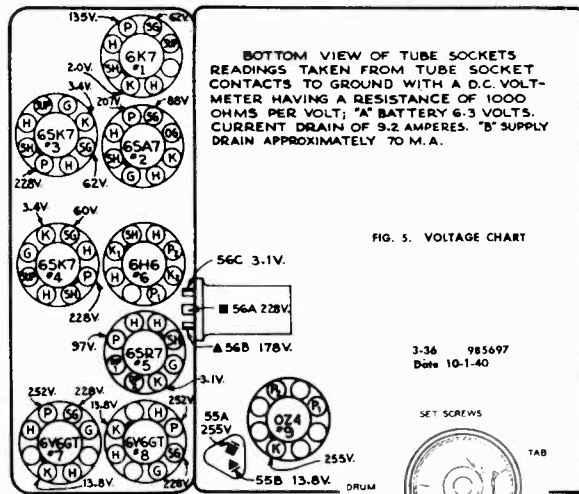


FIG. 5. VOLTAGE CHART

3-36 985697
 Date 10-1-40

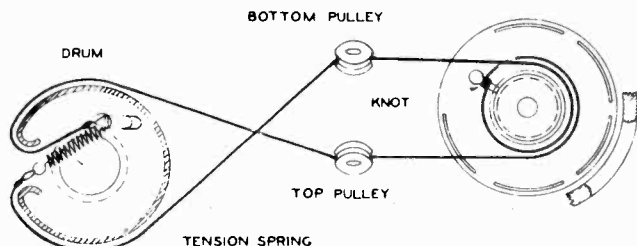


FIG. 9. CORD DRIVE FOR BAND INDICATOR DRUM

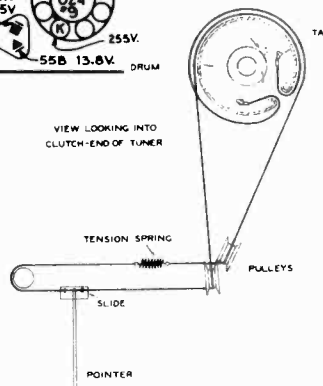
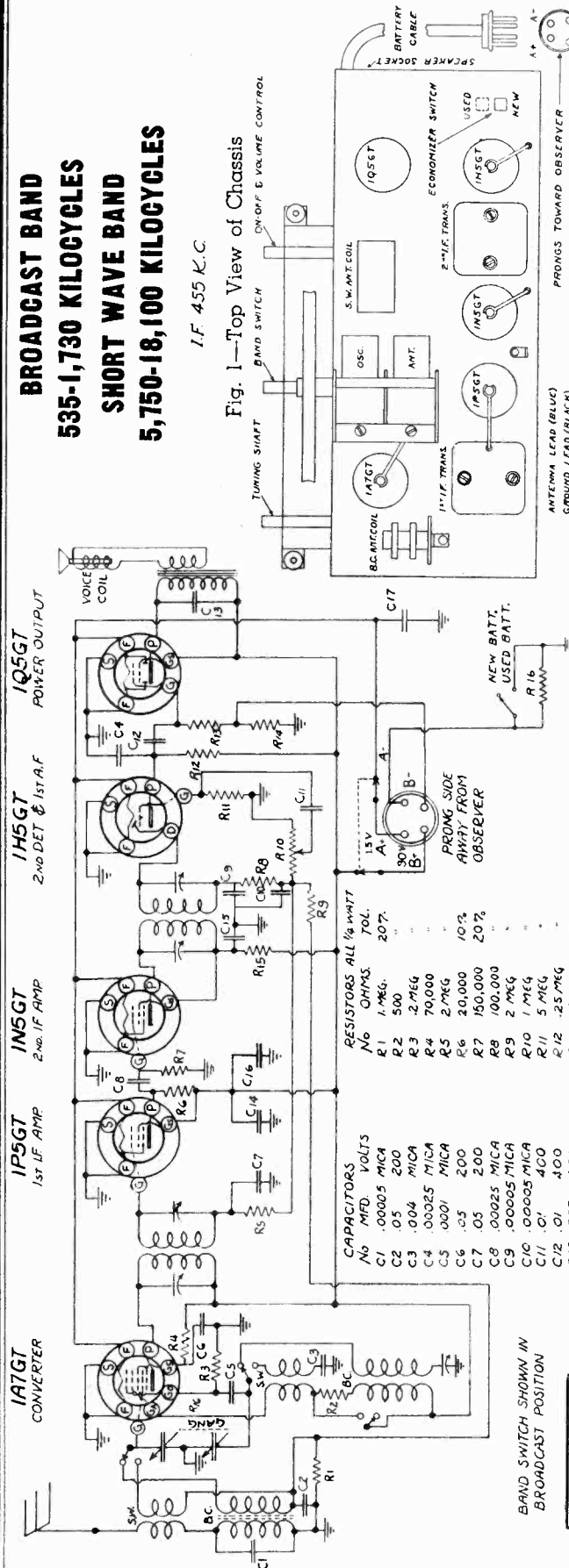


FIG. 8. DIAL POINTER CORD DRIVE

BROADCAST BAND
535-1,730 KILOCYCLES
SHORT WAVE BAND
5,750-18,100 KILOCYCLES
I.F. 455 K.C.



Short Wave Oscillator Coil (Part No. 3721)
Looking at the connection end in a clockwise direction starting at the mounting lug side the connections are: No. 1, Plate; No. 2, B+; No. 3, Grid; No. 4, Pad.
 Primary—No. 1 and No. 2—Resistance .8 ohm.
 Secondary—No. 3 and No. 4—Resistance .07 ohm.

First I.F. Transformer (Part No. P3048)
Primary—Blue white, plate; red white B+—Resistance 12.1 ohms.
 Secondary—White, grid; black white, AVC—Resistance 24.9 ohms.

Second I.F. Transformer (Part No. P3736)
Primary—Blue white, plate; red white B+—Resistance 15.1 ohms.
 Secondary—White, grid; black white, AVC—Resistance 11.8 ohms.

VOLTAGE CHART

All voltages measured with a 1,000 ohm per volt meter on 150 volt scale. For the following voltages the "B" battery section of the power pack should read 94½ volts under load.

Component	Voltage
1A7GT TUBE	
Plate—P—to ground	86½
Screen—Gs—to ground	86½
1H5GT	
Plate—P—to ground	24
1Q5GT	
Plate—P—to ground	84
Screen—Gs—to ground	86½
Grid—G—to ground	2½

Speaker (Part No. P-4045) b PM Type.
 D.C. voice coil resistance.....2.6 ohms
 Voice coil impedance at 400 cycles.....2.9 ohms

Broadcast Antenna Coil (Part No. G6096)
Looking at the connection end starting at the chassis in a clockwise direction the terminals are: No. 1, AVC; No. 2, grid; No. 3, Ant.; No. 4, ground. No. 4 is grounded to the mounting bracket.
 Primary—No. 3 and No. 4—Resistance 25.3 ohms.
 Secondary—No. 1 and No. 2—Resistance 2.1 ohms.
 A gimmik coil of 5.5 mmid. connects to terminals No. 2 and No. 3.

Short Wave Antenna Coil (Part No. P3722)
Looking at the connection end in a clockwise direction starting at the mounting lug side the connections are: No. 1, AVC; No. 2, Ant.; No. 3, Grid; No. 4, Ground.
 Primary—No. 2 and No. 4—Resistance .3 ohm.
 Secondary—No. 1 and No. 3—Resistance .07 ohm.

Broadcast Oscillator Coil (Part No. P3723)
Looking at the connection end (with dot) in a clockwise direction starting at the chassis the terminals are: No. 1, grid; No. 2, plate; No. 3, B+; No. 4, ground.
 Primary—No. 2 and No. 3—Resistance 2.8 ohms.
 Secondary—No. 4 and No. 1—Resistance 4.9 ohms.

MODELS A5, J6, XJ6
A7, B7, J55, XJ55,
XJ55-PH, 62-B7, A77

CONTINENTAL RADIO & TELEV. CORP.

BROADCAST BAND ALIGNMENT

Adjust the signal generator to 1630 K.C. and connect the output to the antenna lead, through a .0002 mfd. mica condenser. Set the gang condenser to minimum capacity and adjust the oscillator trimmer to receive this signal. After this has been carefully done, the next step is to set the signal generator to 1400 K.C. and after tuning in the signal adjust the B.C. antenna trimmer to peak. In case of bent plates, set the signal generator and the receiver to 600 KC and bend the plates into the position for maximum output.

SHORT WAVE BAND ALIGNMENT

Set the signal generator to 6000 K.C., tune the signal and adjust the short wave antenna trimmer to give maximum output. Set the signal generator to 3000 K.C., tune the signal and then slowly increase or decrease the short wave antenna padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter.

MODELS J6, XJ6, A7, B7, A77, 62-B7

PROCEDURE FOR SETTING UP PUSH BUTTONS

Loosen one of the push buttons by inserting a screw driver thru the center hole in the push button to the locking screw and turn the locking screw counter-clockwise one full turn and push in, while holding this screw in tune in the desired station by means of the station selector. Turn the selector very slowly back and forth until the signal is clearest. Now while still holding the above screw in, tighten it by turning clockwise. Release and turn the station selector to one end of the dial; then check the button by pushing it down and if the station is tuned to the center of the area on the dial covered by the station the adjustment is correct.

Release the push button and repeat the above procedure for the remaining buttons.

If it is desired to change a button to a different station simply re-set by repeating the above procedure.

Punch the correct station call letter tabs from the set of sheets supplied and insert them from the side into the grooves in the front of the push buttons. Punch celluloid squares from the sheet supplied and insert them in the afore mentioned grooves over the station call letter tabs.

The dial is now set up for quick tuning and all that is necessary is to push the button of the desired station down and then release.

ALIGNMENT DATA

MODELS A5, A7, B7, 62-B7
I.F. ALIGNMENT

Adjust the signal generator to 455 K.C. and connect the output to the grid of the first detector tube (6SA7) through a .05 or .1 mfd. condenser. Align all I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT **

Adjust the signal generator to 1630 K.C. and connect the output to a shielded loop radiator and place this loop about two feet from the rotary loop antenna. If no loop radiator is available the output of the signal generator should be connected to the antenna clip of the rotary loop antenna thru a .0002 mfd. mica condenser. Set the gang condenser to minimum capacity and adjust the B.C. oscillator trimmer (upper left, front of chassis) to receive this signal. After this has been carefully done, the next step is to set the signal generator to 1400 K.C. and after tuning in the signal adjust the B.C. antenna trimmer (on rotary loop antenna) to peak. Set the signal generator to 600 K.C., tune the signal and then slowly increase or decrease the B.C. oscillator padding condenser (top of chassis, center) and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter.

Return to 1400 K.C. and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 K.C. * or to ANT. lead on

SHORT WAVE BAND ALIGNMENT

Adjust the signal generator to 18,100 K.C. and connect the output to the antenna clip, through a 400 ohm resistor. Set the gang condenser to minimum capacity and adjust the S.W. oscillator trimmer (lower left, front of chassis) to receive this signal. Set the signal generator to 16,000 K.C., tune signal and adjust the S.W. antenna trimmer (upper right, front of chassis) to peak. As there is no variable low frequency padding condenser on this band, the sensitivity of the receiver should be checked at 6000 K.C. to determine whether the circuits are in line at this frequency. Should the receiver lack sensitivity at 6000 K.C., the antenna and oscillator coils, as well as the padding condenser should be tested.

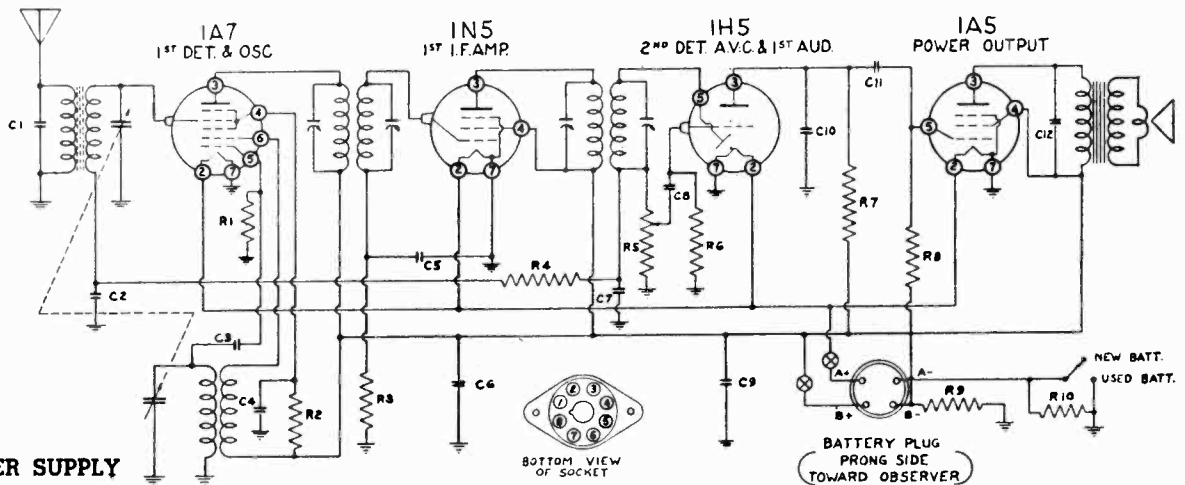
MODELS XJ5, XJ55, XJ55-PH

I.F. ALIGNMENT

Adjust the signal generator to 455 K.C. and connect the output to the grid of the first detector tube (12SA7) through a .05 or .1 mfd. condenser. Connect ground of signal generator to chassis ground through a .1 mfd. condenser. On XJ55 only connect ground of signal generator to common ground thru a .1 mfd. condenser. Align all I.F. trimmers to peak or maximum reading on the output meter.

CONTINENTAL RADIO & TELEV. CORP.

MODEL D4



POWER SUPPLY

This receiver is designed to operate on a single unit General 60B-6L or Burgess 6TA-60. The battery will fit inside the cabinet in back of the chassis.

A large single unit battery may also be used with this model such as the Burgess 17G-D60, Eveready 748, Ray-O-Vac No. AB-82, Bond 0528 or General 60DL-11L and will provide the most economical operation.

Speaker (Part No. P4311) 5" PM Type

- D.C. voice coil resistance 3.1 ohms
- Voice coil impedance at 400 cycles 3.5 ohms

Antenna Coil (Part No. G-6274)

Looking at the connection end starting at the chassis in a clockwise direction the terminals are: No. 1, AVC; No. 2, grid; No. 3, Ant.; No. 4, ground. No. 4 is grounded to the mounting bracket.

Primary—No. 3 and No. 4—Resistance 24.6 ohms.

Secondary—No. 1 and No. 2—Resistance 2.2 ohms.

A gimmik coil of 5.5 mmfd. connects to terminals No. 2 and No. 3.

Oscillator Coil (Part No. P4308) (Red & Brown Dots)

Looking at the connection end (with dots) starting at the chassis in clockwise direction the terminals are: No. 1, grid; No. 2, plate; No. 3, B+; No. 4, ground.

Primary—No. 2 and No. 3—Resistance 2.2 ohms.

Secondary—No. 4 and No. 1—Resistance 5.7 ohms.

First I.F. Transformer (Part No. P4323)

Primary—Blue white, plate; red white, B+ — Resistance 12.1 ohms

Secondary—White, grid; black white, AVC — Resistance 24.9 ohms

Second I.F. Transformer (Part No. P3980)

Primary—Blue white, plate; red white, B+ — Resistance 15.1 ohms

Secondary—White, grid; black white, AVC — Resistance 11.8 ohms

ISSUE A
JUNE 1940

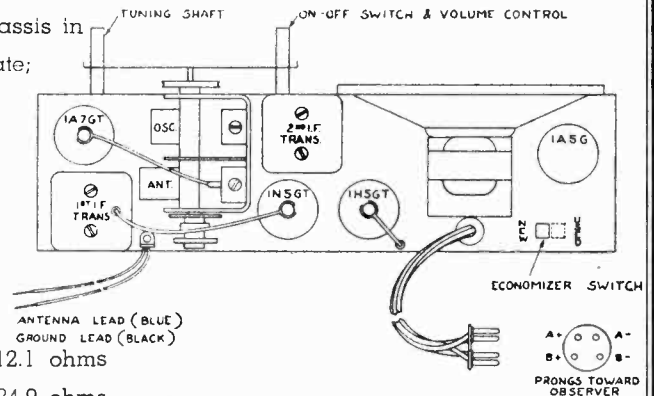
I.F. FREQUENCY = 455 K.C.

RESISTORS		
No.	Ohms	Watts
R1	200,000	1/2
R2	30,000	1/2
R3	5,000,000	1/4
R4	2,000,000	1/4
R5	1,000,000	V.C.
R6	5,000,000	1/4
R7	500,000	1/4
R8	1,000,000	1/4
R9	600—10%	1/4
R10	1	1/2

No.	Capacity (Mfd.)	Volts
C1	.00005	Mica
C2	.05	200
C3	.00005	Mica
C4	.05	200
C5	.05	200
C6	.1	200
C7	.0001	Mica
C8	.01	400
C9	6. (Elect.)	150
C10	.0001	Mica
C11	.01	400
C12	.001	600

CONVENTIONAL ALIGNMENT
SEE SPECIAL SECTION -- VOL. VIII

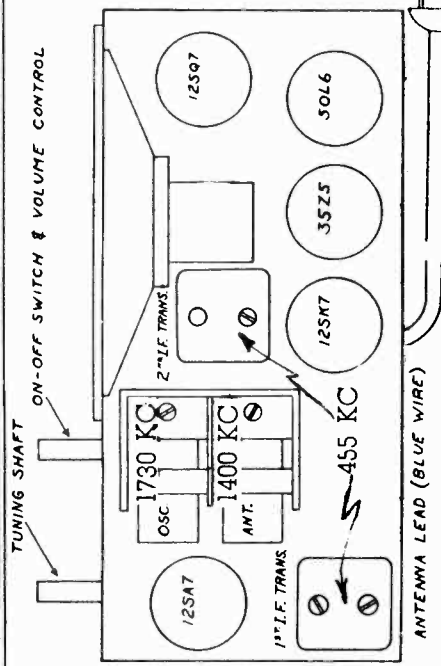
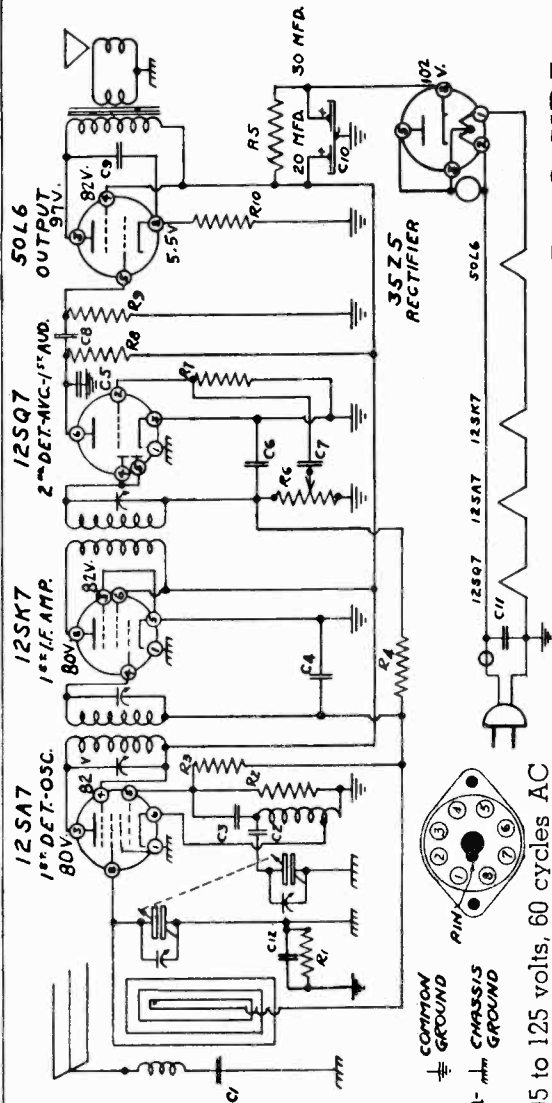
Fig. 1—Top View



ALIGNMENT:

IF - 455kc thru .05 or .1mf cond.
BC - With 1730kc sig. thru .0002mf cond., gang at minimum, adj. osc. trim. If gang cond. plates are bent, adj. with 600kc sig.

MODELS D5, XD5



On XD5 only connect ground of signal generator to common ground thru a .1 mfd. condenser.

Speaker (Part No. P3553) 5" PM Type

D.C. voice coil resistance.....3.4 ohms

Voice coil impedance at 400 cycles.....3.8 ohms

Oscillator Coil (Part No. P3748) (D5 only)

Looking at the connection end in a clockwise direction starting at the chassis the terminals are No. 1, end of winding; No. 2, start of winding; No. 3, tap.

No. 2 and No. 1—Resistance 4.9 ohms.

No. 3 and No. 1—Resistance 4.3 ohms.

Oscillator Coil (Part No. P3917) (XD5 only)

Looking at the connection end in a clockwise direction starting at the chassis the terminals are No. 1, tap; No. 2, start of winding; No. 3, end of winding.

No. 3 and No. 1—Resistance 4.9 ohms.

No. 2 and No. 1—Resistance 4.3 ohms.

First I.F. Transformer (Part No. P3923)

Primary—Blue, plate; red, B+—Resistance 21.8 ohms.

Secondary—White, grid; black, AVC—Resistance 20.9 ohms.

Secondary I.F. Transformer (Part No. P3924)

Primary—Blue, plate; red B+—Resistance 23.8 ohms.

Secondary—White, grid; black, AVC—Resistance 23.7 ohms.

Electrolytic Condenser (Part No. P3355)

Red, 30 mfd., 150 volt; green, 20 mfd., 150 volt; black, negative for both sections.

105 to 125 volts, 60 cycles AC
105-125 volts DC

For CONVENTIONAL ALIGNMENT see Spec. Section Vol. VIII

C2, C12 and R1 are used in Model XD5 only.

In D5 Model only, all common grounds are connected to chassis ground.

CONDENSERS	
No. Capacity Volts	C8 .002 600
C9	.01 400
C10	{ 20.0 150
C11	{ 30.0 150
C12	.05 400
C4	.2 200
C5	.0005 Mica
C6	.00025 Mica
C7	.01 400

RESISTORS	
No.	Ohms
R1	150,000 ½ Watt
R2	20,000 ½ Watt
R3	15,000,000 ½ Watt
R4	2,000,000 ½ Watt
R5	1,000 1 Watt
R6	500,000 Vol. Cont.
R7	5,000,000 ½ Watt
R8	250,000 ½ Watt
R9	500,000 ½ Watt
R10	150 ½ Watt

D5 & XD5

ISSUE A

JUNE 1940

Models D5 and XD5 are the same except for a few parts and that the XD5 is approved by the Underwriters Laboratories. A condenser is used in the XD5 model to provide a floating ground.

Voltages—Line 115 Volts AC—Power Consumption 30 Watts.

Volume Control maximum. Meter 1000 ohms per volt, 150 volt scale.	80 volts
Plate (3) of 12SA7 tube to common ground.	82 volts
Screen (4) of 12SA7 tube to common ground.	80 volts
Plate (8) of 12SK7 tube to common ground.	82 volts
Screen (3) of 12SK7 tube to common ground.	97 volts
Plate (3) of 50L6 tube to common ground.	82 volts
Screen (4) of 50L6 tube to common ground.	82 volts
Cathode (2) of 50L6 tube to common ground.	5.5 volts
Cathode (8) of 35Z5 tube to common ground.	102 volts

CONTINENTAL RADIO & TELEV. CORP.

ALIGNING FREQUENCIES:
 IF trims. - 455KC; BC-OSC. - 1550KC;
 BC-PAD (nearest tuning shaft on front
 of chassis) - 540KC; Re-check BC-OSC.
 - Finally BC-ANT. at 1400 KC.

CONVENTIONAL ALIGNMENT
 SEE SPECIAL SECTION -- VOL.VIII

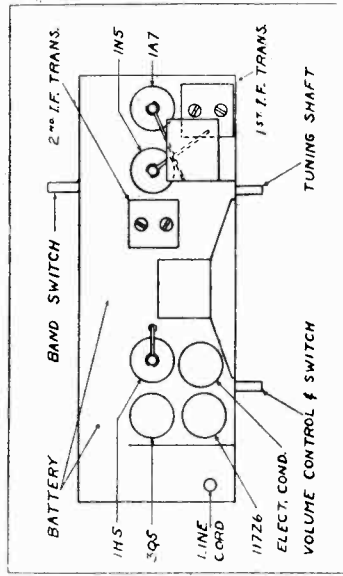
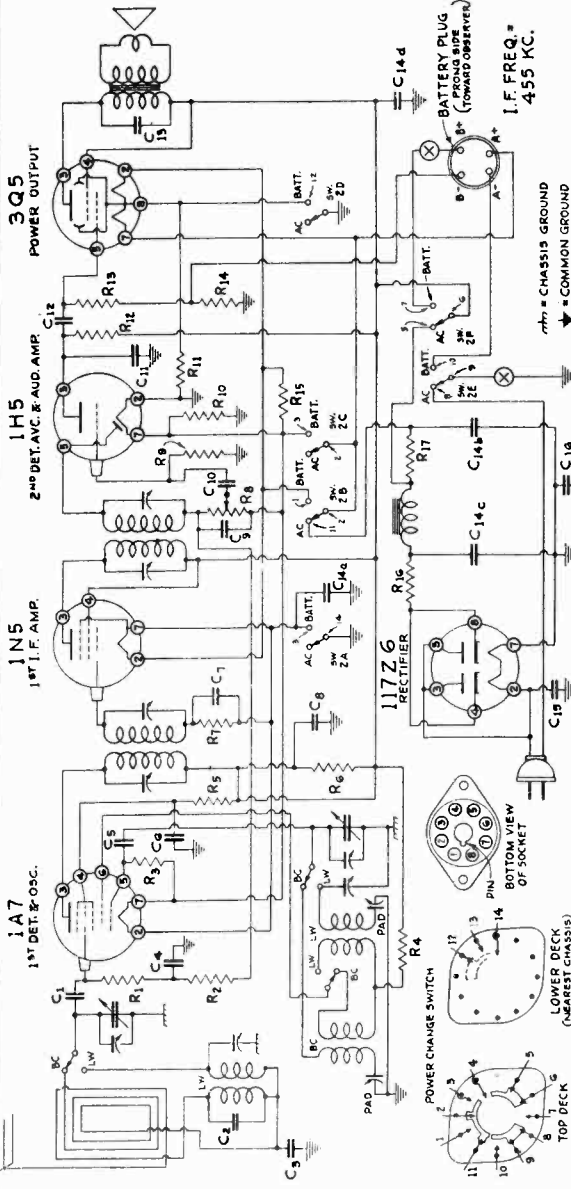


Fig. 1—Top View
 NOTE: POWER CHANGE SWITCH 2A THRU 2F, AND SWITCH POINT 4 IS NOT USED.
 THE PICTORIAL VIEW SHOWN IN THE AC-DC

ISSUE A
FEB. 1940



RESISTORS		CONDENSERS	
RES.	RESISTANCE	TYPE	CAPACITY
R1	1,000,000	C1	50.00
R2	200,000	C2	100
R3	50,000	C3	50.00
R4	100,000	C4	50.00
R5	50,000	C5	50.00
R6	100,000	C6	50.00
R7	50,000	C7	50.00
R8	100,000	C8	50.00
R9	50,000	C9	50.00
R10	100,000	C10	50.00
R11	50,000	C11	50.00
R12	100,000	C12	50.00
R13	50,000	C13	50.00
R14	100,000	C14	50.00
R15	50,000	C15	50.00
R16	100,000	C16	50.00
R17	50,000	C17	50.00
R18	100,000	C18	50.00
R19	50,000		
R20	100,000		
R21	50,000		
R22	100,000		
R23	50,000		
R24	100,000		
R25	50,000		

Voltages—Line 117.5 Volts AC—Power Consumption 25 Watts.
 Volume control maximum and no signal tuned in. Meter 1000 ohms per volt, 150 volt scale.
 Plate (3) of 1A7 tube to common ground..... 100 volts
 Screen (4) of 1A7 tube to common ground..... 62 volts
 Anode grid (6) of 1A7 tube to common ground..... 100 volts
 Filament (2) to (7) of 1A7 tube..... 1.35 volts
 Plate (3) of 1N5 tube to common ground..... 100 volts
 Screen (4) of 1N5 tube to common ground..... 102 volts
 Filament (2) to (7) of 1N5 tube..... 1.3 volts
 Plate (3) of 1H5 tube to common ground..... 1.35 volts
 Filament (2) to (7) of 1H5 tube..... 98 volts
 Plate (3) of 3Q5 tube to common ground..... 102 volts
 Screen (4) of 3Q5 tube to common ground..... 102 volts
 Filament (7) to (8) of 3Q5 tube..... 1.3 volts
 Filament (2) to (8) of 3Q5 tube..... 1.35 volts
 Plate (3) or (5) of 117Z6 tube to common ground..... 117.5v. (AC)
 Cathode (4) or (8) of 117Z6 tube to common ground..... 128 volts
 Filament (2) to (7) of 117Z6 tube..... 117.5v. (AC)

Speaker (Part No. P4004) 5' PM Type
 D.C. voice coil resistance..... 3.2 ohms
 Voice coil impedance at 400 cycles..... 3.5 ohms

L. W. Antenna Coil (Part No. P4019)
 Looking at the connection end (with dot) in a clockwise direction starting at the mounting lug the terminals are: No. 1, grid; No. 2, ant.; No. 3, sec. ground; No. 4, pri. ground.
 Primary—No. 2 and No. 4—Resistance..... 139.7 ohms
 Secondary—No. 3 and No. 1—Resistance..... 29.4 ohms

B. C. Oscillator Coil (Part No. P4018)
 Looking at the connection end (with dot) in a clockwise direction starting at the chassis the terminals are No. 1, grid; No. 2, plate; No. 3, B+; No. 4, pad.
 Primary—No. 2 and No. 3—Resistance..... 2.9 ohms
 Secondary—No. 4 and No. 1—Resistance..... 9.1 ohms

L. W. Oscillator Coil (Part No. P4017)
 Looking at the connection end (with dot) in a clockwise direction starting at the chassis the terminals are: No. 1, pad; No. 2, B+; No. 3, plate; No. 4, grid.
 Primary—No. 3 and No. 2—Resistance..... 4.8 ohms
 Secondary—No. 1 and No. 4—Resistance..... 11.9 ohms

First I.F. Transformer (Part No. P3962)
 Primary—Red white, B+; blue white, plate—Resistance..... 11.8 ohms
 Secondary—White, grid; black white, AVC—Resistance..... 23.9 ohms
Second I.F. Transformer (Part No. P3980)
 Primary—Blue white, plate; red white B+—Resistance..... 15.1 ohms
 Secondary—White, grid; black white, AVC—Resistance..... 11.8 ohms

Power Change Switch
 The power change switch connects the tube filaments in series (7½ volt) on AC-DC operation and parallel (1½ volt) on battery operation.

MODELS J5, XJ5
J55, XJ55, XJ55PH

CONTINENTAL RADIO & TELEV. CORP.

Band Switch

right (535 to 1630 kilocycles)
left (2.8 to 6.58 megacycles)



BOTTOM VIEW
OF SOCKET

**MODEL
J5 & XJ5**

Speaker (Part No. P4169) 5" Dynamic.

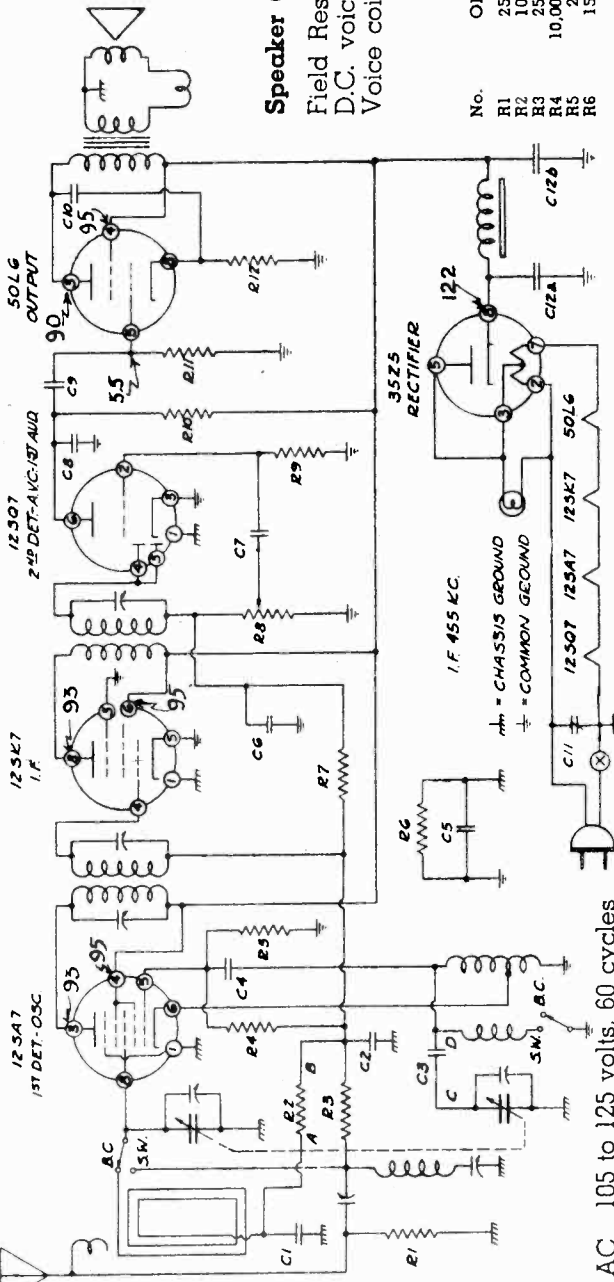
Field Resistance 400 ohms
D.C. voice coil resistance 3.6 ohms
Voice coil impedance at 400 cycles 4.0 ohms

RESISTORS.

No.	Ohms	Watts	No.	Ohms	Watts
R1	250,000	1/4	R7	2,000,000	1/4
R2	100,000	1/4	R8	500,000	1/4
R3	250,000	1/4	R9	5,000,000	1/4
R4	10,000,000	1/4	R10	250,000	1/4
R5	25,000	1/4	R11	500,000	1/4
R6	150,000	1/4	R12	150—10%	1/4

CONDENSERS

No.	Capacity (Mfd.)	Volts	No.	Capacity (Mfd.)	Volts
C1	.05	200	C8	.0005	Mica
C2	.05	200	C9	.01	400
C3	.02	200	C10	.02	400
C4	.0001	Mica	C11	.05	400
C5	2	200	C12a	30	Elec.
C6	.00025	Mica	C12b	20	Elec.
C7	.005	400			



AC 105 to 125 volts, 60 cycles
or DC 105-125 volts For CONVENTIONAL ALIGNMENT see Spec. Section Vol. VIII.

In model J5 all common grounds become chassis grounds, C1, C3, C5, R2, and R6 are omitted.

Point "A" is connected to point "B" and point "C" to point "D".

Voltages—(tube to common ground) Line 117 Volts AC—

Volume Control maximum. Meter 1000 ohms per volt, 150 volt scale.

Models J5 and XJ5 are the same except for a few parts and that the XJ5 is approved by the Underwriters Laboratories. A condenser is used in the XJ5 model to provide a floating ground.

Oscillator and Short Wave Antenna Coil (Part No. G6187) J5 & XJ5
(PART NO. G6201) XJ55-PH

Looking at the five terminal connection end in a clockwise direction starting at the mounting bracket, the connections are: No. 1, ground; No. 2, grid; No. 3, B.C. osc. tap; No. 4, open; No. 5, open. Looking at the other end in a clockwise direction starting at the mounting bracket, the connections are: No. 6, pad; No. 7, open; No. 8, switch; No. 9, ant.

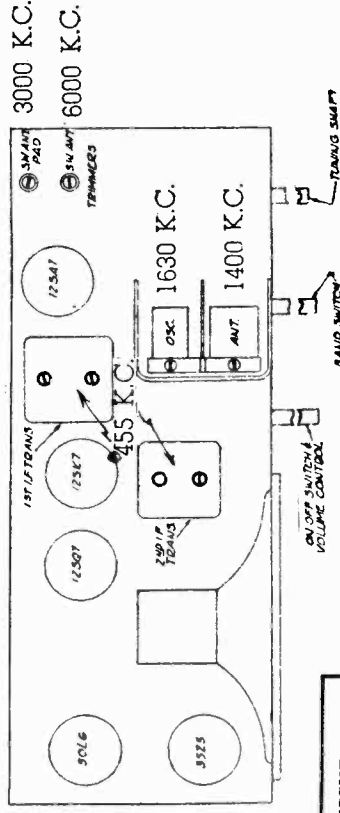
No. 3 and No. 2 6.5 ohms
No. 1 and No. 2—Resistance... 6.9 ohms No. 6 and No. 9 3 ohm
No. 1 and No. 3—Resistance... 4 ohm No. 8 and No. 2 3 ohm

First I.F. Transformer (Part No. P3923)

Primary—Blue, plate; red, B+—Resistance 20.4 ohms.
Secondary—White, grid; Black, AVC—Resistance 20.3 ohms.

Second I.F. Transformer (Part No. P3924)

Primary—Blue, plate; red B+—Resistance 22.2 ohms.
Secondary—White, diode; black, AVC—Resistance 22.1 ohms.

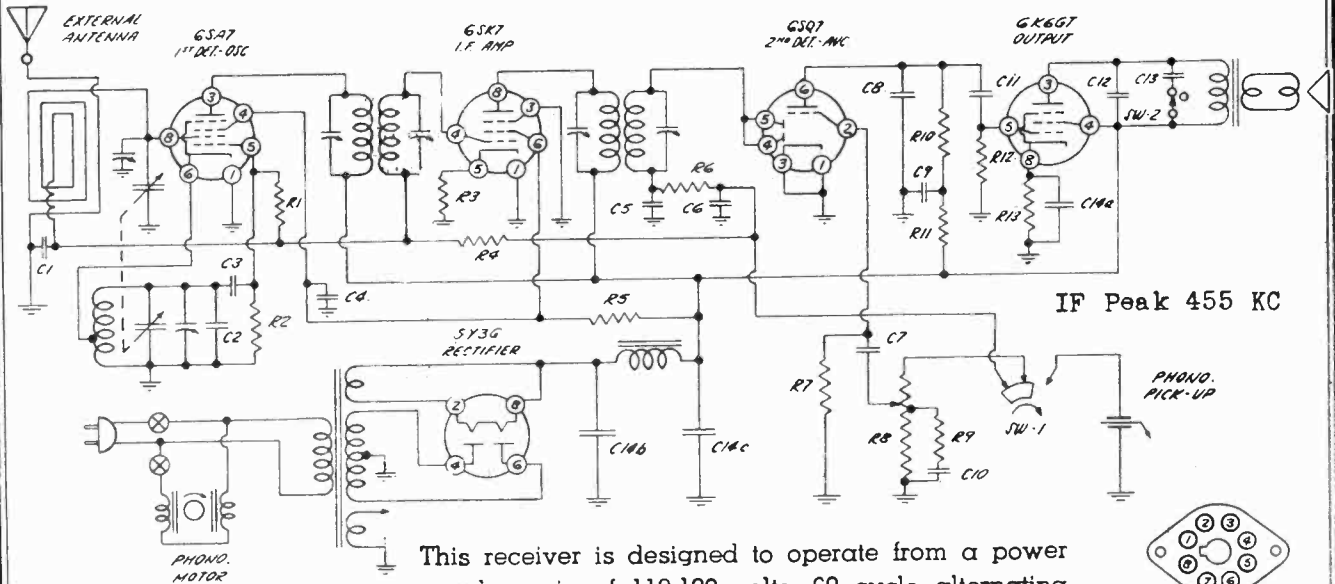


On XJ5 only connect ground of signal generator to common ground thru a .1 mfd. condenser.

ISSUE A
APRIL 1940

CONTINENTAL RADIO & TELEV. CORP.

MODEL K5



This receiver is designed to operate from a power supply main of 110-120 volts, 60 cycle alternating current (A.C.) **Never plug in a D.C. outlet.**



RESISTORS				CONDENSERS				
No.	Ohms	Watts	No.	Ohms	V.C.	No.	Capacity (Mfd.)	Volts
R1	10,000,000		R8	500,000		C1	.05	200
R2	20,000	1/2	R9	20,000	1/2	C2	.000025	Mica 200
R3	100-10%	1/2	R10	250,000	1/2	C3	.00005	Mica 400
R4	2,000,000	1/2	R11	50,000	1/2	C4	.05	400
R5	15,000-10%	2	R12	500,000	1/2	C5	.0001	Mica 400
R6	50,000	1/2	R13	600-10%	1/2	C6	.0001	Mica 25
R7	5,000,000	1/2				C7	.01	400
						C8	.00025	Mica 350
						C9	.1	400
						C10	.02	200
						C11	.01	400
						C12	.002	600
						C13	.02	400
						C14a	20.	25
						C14b	20.	350
						C14c	20.	350

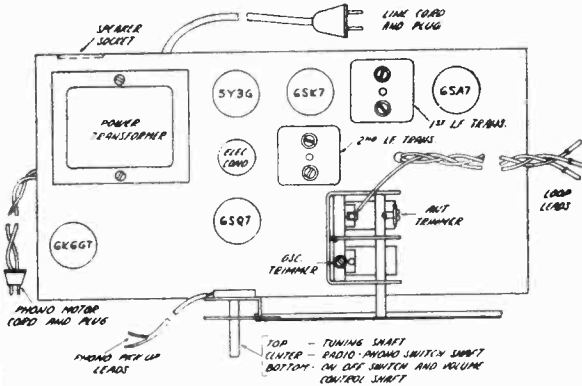


Fig. 3—Top View of Chassis

ALIGNMENT: IF - 455kc thru .05 or .1mf cond. BC - With 1630kc thru shielded loop radiator, 2 ft. from loop antenna; OR to blue lead of loop antenna thru .0002mf cond., gang at minimum, adjust osc. trim. With 1400kc adj. Ant. trim. - If gang plates are bent adj. with 600kc.

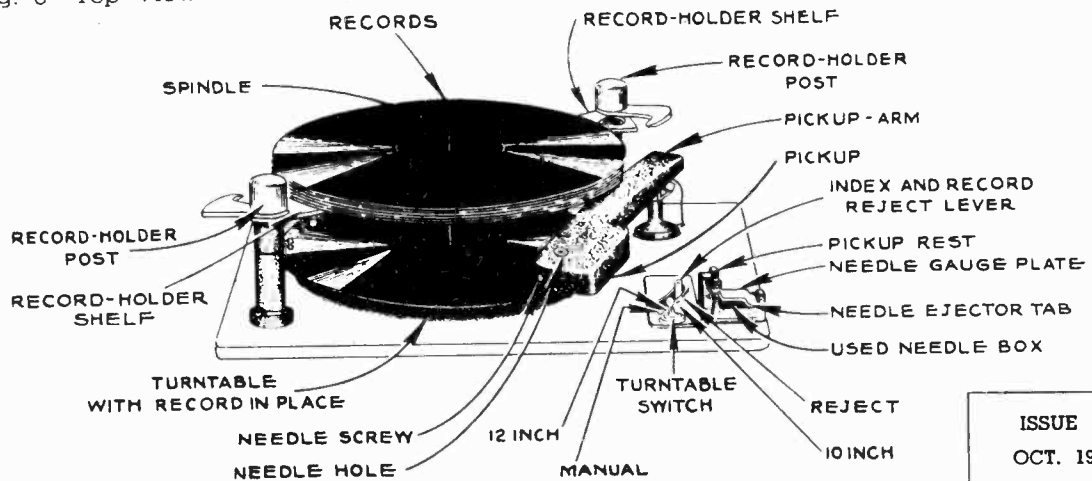


Fig. 2—Top View of Automatic Record Changer

ISSUE A
OCT. 1940

MODEL K5

CONTINENTAL RADIO & TELEV. CORP.

AUTOMATIC RECORD CHANGER

This Record Changer will automatically play a series of eight 10" or seven 12" records of the standard 78 R.P.M. type. Records of the last few years with the standard eccentric or spiral stopping groove on the inside and an eccentric on the outside will operate the automatic mechanism. However, records of any size up to 12" may be played manually.

OPERATION

Before operating the phonograph, either automatically or manually, be sure that the pickup is down and can be moved by hand. If not, a "cycle" must be completed to bring it down. To do this, throw Turntable Switch "On." The turntable will begin to revolve and the cycle of motion on the pickup arm will be resumed. When the pickup arm comes down, turn off the Turntable Switch.

CAUTIONS

1. Never use force to start or stop the motor or any part of the record-changing mechanism of pickup arm.
2. The use of records which have become warped or damaged through improper care, may cause the mechanism to jam and damage the instrument. Records which have become warped, will slide on one another when playing, resulting in unsatisfactory reproduction.
3. This instrument is not recommended for playing 10" and 12" records in mixed sequences. If this service is desired, all records must be perfectly flat and free from warp. The index and record reject lever must be set at 10" and after playing the last selection, the pickup will come down in position for a 10" record and repeat the playing in position for a 10" record unless the turntable switch is turned off. Any jamming of the mechanism under these conditions indicates that the records used are not perfectly flat or that their edges are not sufficiently smooth to permit normal operation of the separators in dropping each record in sequence onto the turntable.
4. Do not leave records on the record holder posts, as they are liable to warp, particularly so in warmer climates. Keep your records in a record file (album or cabinet) when not in use.
5. The needle must be installed according to directions under "Pickup and Top-Loading Needle Socket" for proper operation of this instrument.
6. The two red mounting bolts which hold the Automatic Record Player solid for shipping must be removed before using the Automatic Record Player so it can "float" on the spring mountings.
7. LEVELING—When a record has been played the pickup moves out, another record is dropped down, and the needle is fed automatically into the starting groove of this record. If the needle fails to enter the starting groove, raise the right-hand side of the cabinet by inserting thin spacers under the feet on that side. If the needle slides over a few grooves, raise the left-hand side of the cabinet in a similar manner.

NEEDLE EJECTOR

The extending tab on the needle gauge plate of the needle box operates the needle ejector. To change a needle, place pickup in rest position, loosen needle screw and press the extending tab on the needle gauge plate to drop the used needle into the box below. Release tab allowing the needle gauge plate to swing back, and then insert a new needle in the pickup as described above.

RECORD HOLDER SHELVES

To place a record on the turntable or to remove records, raise the record holder shelves by lifting with the fingers under the shelf, and swing clear with the outer edge of record. Also push back vertical lever adjacent to the rear record holder post. The turntable is now accessible. Before loading the magazine for automatic operation, swing the record holder shelves back into position.

AUTOMATIC OPERATION

1. See that the pickup is over the needle gauge plate with the needle properly in place. If not, complete a "cycle" as explained in the first paragraph under "Operation."
2. With the Index and Record Reject Lever at "Manual", place the first of the series of records on the turntable and the remainder of the series (up to seven 10" or six 12" records) on the record holder posts (as shown in Fig. 2). The records should be arranged in the desired order with the desired selection face up and the last selection on top.
3. Set the Index and Record Reject Lever to the proper position. (See Controls: Index and Record Reject Lever.)

Speaker (Part No. P-4515) 6 1/2" P.M. Type.

D.C. voice coil resistance.....2.8 ohms
Voice coil impedance at 400 cycles.....3.1 ohms

Oscillator Coil (Part No. P-4495)

Looking at the connection end in a clockwise direction starting at the chassis terminals are No. 1, end of winding; No. 2, start of winding; No. 3, tap; No. 1 and No. 2—Resistance.....4.5 ohms
No. 1 and No. 3—Resistance.....4.05 ohms
No. 2 and No. 3—Resistance......45 ohms

First I.F. Transformer (Part No. P-4108)

Primary—Blue, plate; red, B+ Resistance.....18.2 ohms
Secondary—White, grid; black, AVC Resistance.....15.1 ohms

Second I.F. Transformer (Part No. P-4109)

Primary—Blue, plate; red, B+ Resistance.....20.8 ohms
Secondary—White, diode; black, AVC Resistance.....17.4 ohms

4. Push the turntable switch to the left—"On"—turntable should commence to revolve.

5. When the turntable has attained speed, lift pickup and lower gently on to the record so that the needle point enters the outside groove.

6. Adjust volume control to the desired intensity and tone control to the preferred setting.

7. Close the lid of the cabinet to eliminate mechanical reproduction of sound by the needle. The whole series of records will now play without further attention, and the last record will repeat until the Turntable Switch is turned off. Allow the record-changing mechanism to complete its cycle before the turntable is stopped. Then lift the pickup, swing the arm to the right beyond the edge of the record and lower it onto the pickup rest with the pickup over the needle gauge plate. The record player is then ready for reloading, or for manual operation.

TO PLAY RECORDS MANUALLY: MANUAL OPERATION

1. Proceed as in step 1, under "Automatic Operation."
2. Place a record on the turntable with the desired selection upwards.
3. Set the Index and Record Reject Lever to "Manual" position.
4. Proceed as in steps 4, 5, 6, and 7 under "Automatic Operation."

When the playing is finished, be sure that the turntable has stopped and the pickup is in the rest position over the needle gauge plate. Never leave the pickup with the needle resting on a record or the turntable.

VOLTAGE CHART

All voltages measured with a 1,000 ohm per volt meter on the 300 volt scale. Line voltage 117 volts A.C. Volume control maximum and no signal tuned in. Power consumption 75 watts.

6SA7 TUBE
Plate (3) to ground.....255
Screen (4) to ground.....93

6SK7 TUBE
Plate (8) to ground.....255
Screen (6) to ground.....93

6E6G TUBE
Plate (3) to ground.....240
Screen (4) to ground.....258
Cathode (8) to ground.....18

5Y3G TUBE
Filament (8) to ground.....286

NEEDLES

The use of high grade long playing needles is absolutely essential for the proper operation of this instrument, as the regular needles are only good for one or at the most two records. If any needle is used too long, distortion and poor quality will be obtained and also the records will be damaged.

PICKUP AND TOP-LOADING NEEDLE SOCKET

The pickup is the new crystal type, with a hole in the top for insertion of needles. When not playing records, the pickup arm should be moved out to the right beyond the turntable and placed at rest on the support with the edge of the pickup arm in the groove and the pickup over the needle gauge plate. The pickup must be in this position to change needles.

To insert a needle initially, loosen the needle screw on the front of the pickup, place needle in hole at top so that it drops down against the needle plate and then tighten the needle screw.

TURNTABLE SWITCH

The Slide Switch located just in front of the Index and Record Reject Lever controls the current to the turntable motor. To start the turntable, push the switch to the "On" position. To stop the turntable, push the switch to the "Off" position.

CONTINENTAL RADIO & TELEV. CORP.

MODEL E6

6DBG TUBE VOLTAGE 117 V.A.C. 6.2 V. Bat.

Plate (3) to ground	160	146
Screen (4) to ground	82	76
Cathode (8) to ground	4.3	3.3

6S7G TUBE

Plate (3) to ground	160	146
Screen (4) to ground	82	76
Cathode (8) to ground	4.1	3.2

6G6G TUBE

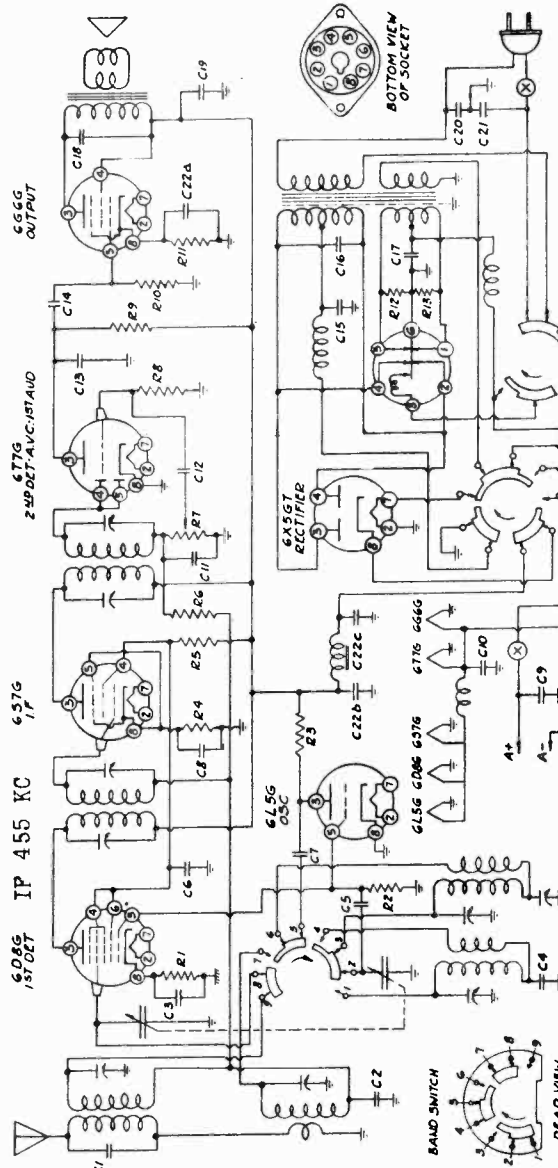
Plate (3) to ground	152	139
Screen (4) to ground	163	148
Cathode (8) to ground	7.5	6.9

6X5GT TUBE

Cathode (8) to ground	169	154
-----------------------	-----	-----

No.	Ohms	Watts	Ohms	Watts
R1	800	1/2	R8	15,000,000
R2	60,000	1/2	R9	250,000
R3	15,000	1/2	R10	500,000
R4	1,000	1/2	R11	500
R5	20,000	1/2	R12	100
R6	1,000,000	1/2	R13	100
R7	500,000	V.C.		

No.	Capacity (Mid.)	Volts	Capacity (Mid.)	Volts
C1	.0001	200	C13	.00025
C2	.05	200	C14	.01
C3	.05	200	C15	.1
C4	.004-5%	100	C16	.015
C5	.0001	100	C17	5
C6	.0001	400	C18	.005
C7	.0005	100	C19	.1
C8	.05	20	C20	.05
C9	.5	10	C21	.05
C10	.0005	10	C22a	20
C11	.0001	400	C22b	20
C12	.01	400	C22c	20



Band switch shown in broadcast position in schematic and in short wave position in pictorial view in lower left corner.

Speaker (Part No. P-4243) 6" PM Type.
 D.C. voice coil resistance 5.1 ohms
 Voice coil impedance at 400 cycles 5.5 ohms

B.C. and S.W. Oscillator Coil (Part No. P-4226)
 Looking at the mounting bracket end in a clockwise direction starting at the chassis, the connections are: No. 1, pad; No. 2, open. Looking at the other end in a clockwise direction starting at the chassis the connections are: No. 3, plate; No. 4, plate; No. 5, pad; No. 6, grid; No. 7, grid.

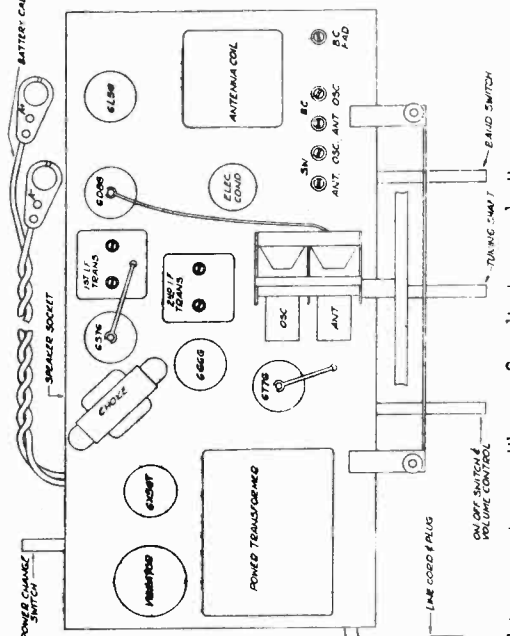
S.W. Primary—No. 4 and No. 5—Resistance 44 ohm
 B.C. Primary—No. 1 and No. 3—Resistance 1.3 ohms
 S.W. Secondary—No. 5 and No. 6—Resistance09 ohm
 B.C. Secondary—No. 1 and No. 7—Resistance 5.8 ohms

B.C. and S.W. Antenna Coil (Part No. P-4225)
 Starting with the lug that is connected direct to ground in a clockwise direction, the terminals are: No. 1, ground; No. 2, open; No. 3, pad; No. 4, grid; No. 5, grid; No. 6 ant.

S.W. Primary—No. 6 and No. 2—Resistance35 ohm
 B.C. Primary—No. 1 and No. 2—Resistance 24.1 ohms
 S.W. Secondary—No. 3 and No. 4—Resistance07 ohm
 B.C. Secondary—No. 3 and No. 5—Resistance 2.9 ohms

First I.F. Transformer (Part No. P-4245)
 Primary—Blue, plate; red, B+—Resistance 26.2 ohms
 Secondary—White, grid; black, AVC—Resistance 26.6 ohms

Second I.F. Transformer (Part No. P-4244)
 Primary—Blue, plate; red, B+—Resistance 15.1 ohms
 Secondary—White, grid; black, AVC—Resistance 11.8 ohms



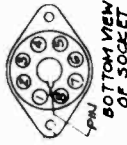
This receiver is designed to operate on either a 6 volt storage battery or a power supply main of 110-120 volts, 60 cycle alternating current (A.C.) Never plug in to a D.C. outlet.

MODELS J6, XJ6

CONTINENTAL RADIO & TELEV. CORP.

Band Switch
right (535 to 1630 kilocycles)
left (2.8 to 6.58 megacycles)

MODEL J6 & XJ6



Speaker (Part No. P4169) 5" Dynamic.

Field Resistance 400 ohms
D.C. voice coil resistance 3.6 ohms
Voice coil impedance at 400 cycles.. 4.0 ohms

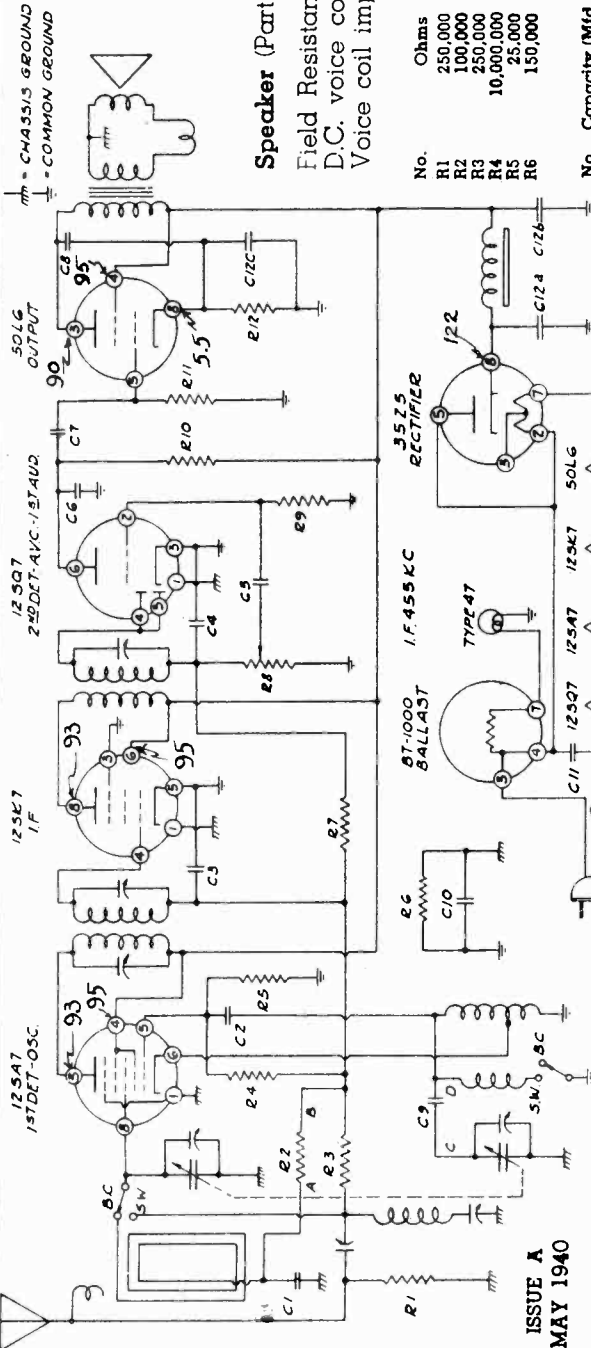
RESISTORS	
No.	Watts
R1	1/4
R2	1/4
R3	1/4
R4	1/4
R5	1/4
R6	1/4

No.	Ohms	Watts
R7	2,000,000	1/4
R8	500,000	V.C.
R9	5,000,000	1/4
R10	250,000	1/4
R11	500,000	1/4
R12	150-10%	1/4

CONDENSERS

No.	Capacity (Mfd.)	Volts
C1	.05	200
C2	.0001	Mica
C3	.05	200
C4	.0025	Mica
C5	.005	400
C6	.0005	Mica
C7	.01	400

No.	Capacity (Mfd.)	Volts
C8	.02	400
C9	.02	200
C10	.2	200
C11	.05	400
C12a	30.	150
C12b	20.	150
C12c	20.	85



ISSUE A
MAY 1940

AC 105 to 125 volts, 60 cycles or DC 105-125 volts. In model J6 all common grounds become chassis grounds, C1, C9, C10, R2 and R6 are omitted. Point "A" is connected to point "B" and point "C" to point "D."

Voltages—tube to common ground Line 117 Volts AC—Power Consumption 50 Watts.

Volume Control maximum. Meter 1000 ohms per volt, 150 volt scale.

Models J6 and XJ6 are the same except for a few parts and that the XJ6 is approved by the Underwriters Laboratories. A condenser is used in the XJ6 model to provide a floating ground.

• On XJ6 only connect ground to common ground through a .1 mfd. condenser.

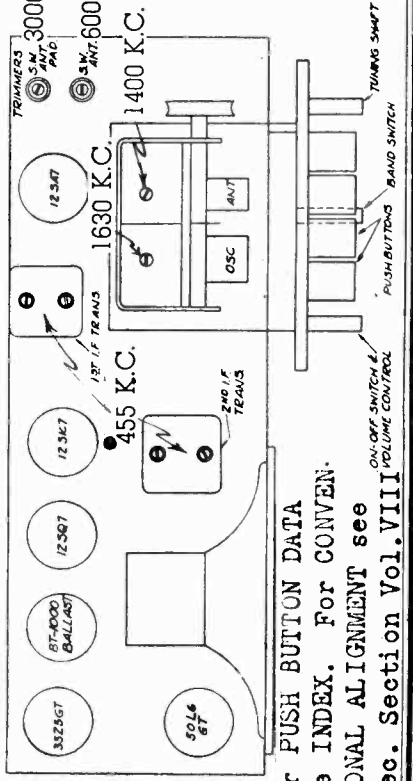
Oscillator and Short Wave Antenna Coil (Part No. G6187)

Looking at the five terminal connection end in a clockwise direction starting at the mounting bracket, the connections are: No. 1, ground; No. 2, grid; No. 3, B.C. osc. tap; No. 4, open; No. 5, open. Looking at the other end in a clockwise direction starting at the mounting bracket, the connections are: No. 6, pad; No. 7, open; No. 8, switch; No. 9, ant.

First I.F. Transformer (Part No. P3794)
No. 1 and No. 2—Resistance...6.9 ohms
No. 6 and No. 9—.3 ohm
No. 8 and No. 2—.3 ohm

Second I.F. Transformer (Part No. P3924)
Primary—Blue, plate; red, B+—Resistance.....19.9 ohms
Secondary—White, grid; black, AVC—Resistance.....19.8 ohms

Electrolytic Condenser (Part No. P3531)
Primary—Blue, plate; red B+—Resistance 22.2 ohms.
Secondary—White, diode; black, AVC—Resistance 22.1 ohms



For PUSH BUTTON DATA see INDEX. For CONVENTIONAL ALIGNMENT see Spec. Section Vol. VIII

MODEL A7

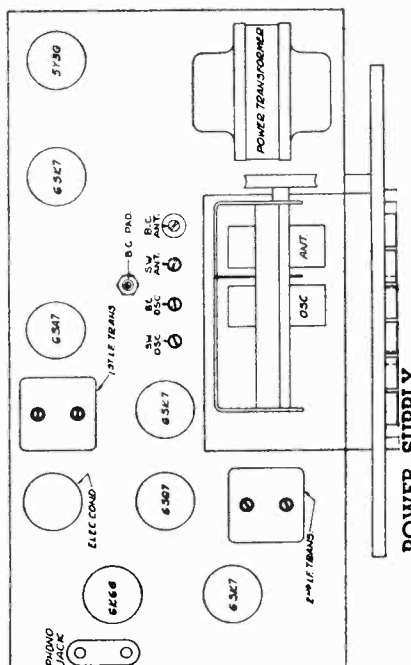
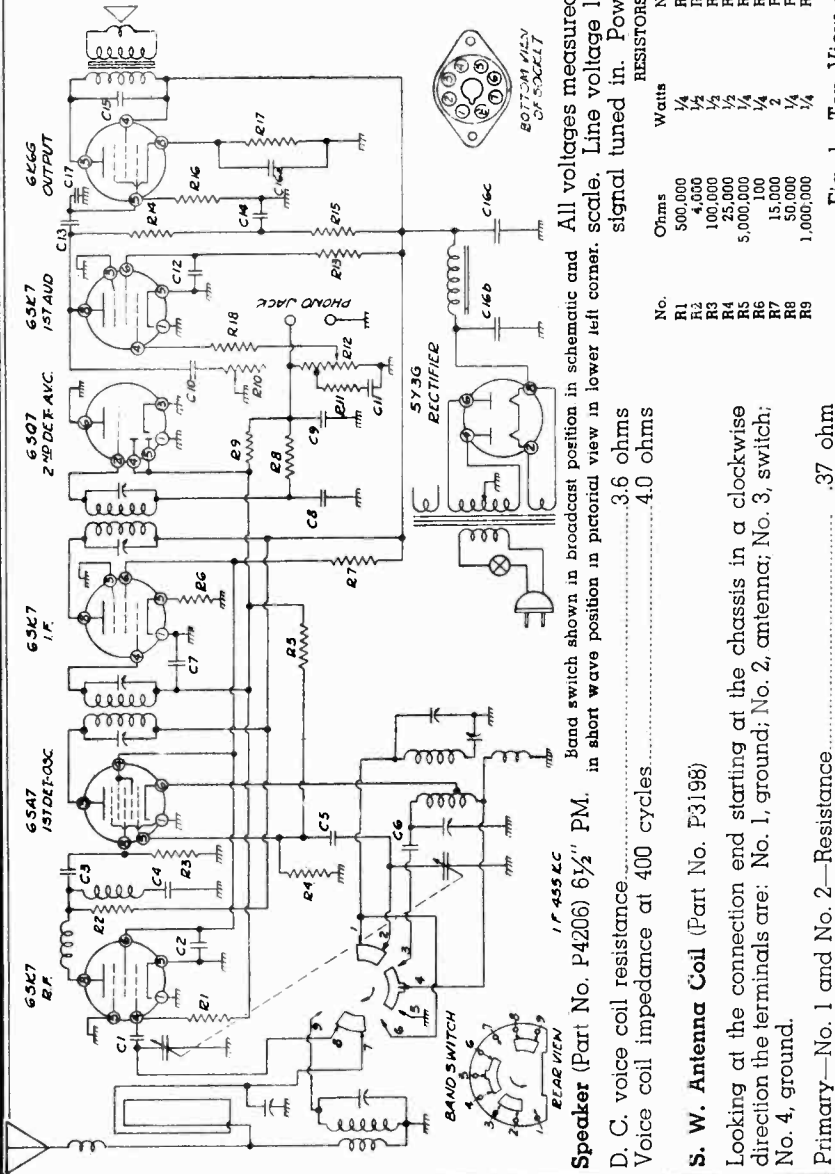
6SK7 (RF) TUBE	Plate (8) to ground.....	208
	Screen (6) to ground.....	93
6SA7 TUBE	Plate (3) to ground.....	255
	Screen (4) to ground.....	93
6SK7 (IF) TUBE	Plate (8) to ground.....	255
	Screen (6) to ground.....	93
6SK7 (AF) TUBE	Plate (8) to ground.....	20
	Screen (6) to ground.....	10
6K6G TUBE	Plate (3) to ground.....	240
	Screen (4) to ground.....	258
	Cathode (8) to ground.....	18
5Y3G TUBE	Filament (8) to ground.....	266

All voltages measured with a 1,000 ohm per volt meter on the 300 volt scale. Line voltage 117 volts A.C. Volume control maximum and no signal tuned in. Power consumption 60 watts.

CONDENSERS	
No.	Capacity (Mfd.)
C1	.0001 Mica
C2	.05 Mica
C3	.0001 Mica
C4	.00006-5% Mica
C5	.0001 Mica
C6	.003-5% Mica
C7	.05 Mica
C8	.0001 Mica
C9	.00025 Mica
C10	.002 Mica

RESISTORS	
No.	Ohms
R1	500,000
R2	4,000
R3	100,000
R4	25,000
R5	5,000,000
R6	100
R7	15,000
R8	50,000
R9	1,000,000
R10	1/4
R11	1/4
R12	1/4
R13	1/4
R14	2,000,000
R15	50,000
R16	2
R17	1/4
R18	150,000

CONDENSERS	
No.	Capacity (Mfd.)
C11	.05
C12	.25
C13	.01
C14	.005
C15	.005
C16a	20.
C16b	20.
C17a	20.
C17b	.0001



Speaker (Part No. P4206) 6 1/2" P.M. Band switch shown in broadcast position in schematic and in short wave position in pictorial view in lower left corner.

D. C. voice coil resistance..... 3.6 ohms
 Voice coil impedance at 400 cycles..... 4.0 ohms

S. W. Antenna Coil (Part No. P3195)
 Looking at the connection end starting at the chassis in a clockwise direction the terminals are: No. 1, ground; No. 2, cathode; No. 3, switch; No. 4, ground.
 Primary—No. 1 and No. 2—Resistance..... .37 ohm
 Secondary—No. 3 and No. 4—Resistance..... .08 ohm

Oscillator Coil (Part No. P4194)
 Looking at the mounting strip end in a clockwise direction starting at the chassis, the terminals are: No. 1, ground; No. 2, cathode; No. 3, open; No. 4, pad; No. 5, switch; No. 6, grid; No. 7, grid; No. 8, open.
 B.C. Primary—No. 1 and No. 5—Resistance..... .29 ohm
 S.W. Primary—No. 5 and No. 2—Resistance..... .06 ohm
 B.C. Secondary—No. 4 and No. 6—Resistance..... 5.7 ohms
 S.W. Secondary—No. 2 and No. 7—Resistance..... .08 ohm

First I.F. Transformer (Part No. P4108)
 Primary—Blue, plate; red, B+—Resistance..... 18.2 ohms
 Secondary—White, grid; black, AVC—Resistance..... 15.1 ohms

Second I.F. Transformer (Part No. P4109)
 Primary—Blue, plate; red, B+—Resistance..... 20.8 ohms
 Secondary—White, diode; black, AVC—Resistance..... 17.4 ohms

POWER SUPPLY
 This receiver is designed to operate from a power supply main of 110-120 volts, 60 cycle alternating current (A.C.). **Never plug in a D.C.**

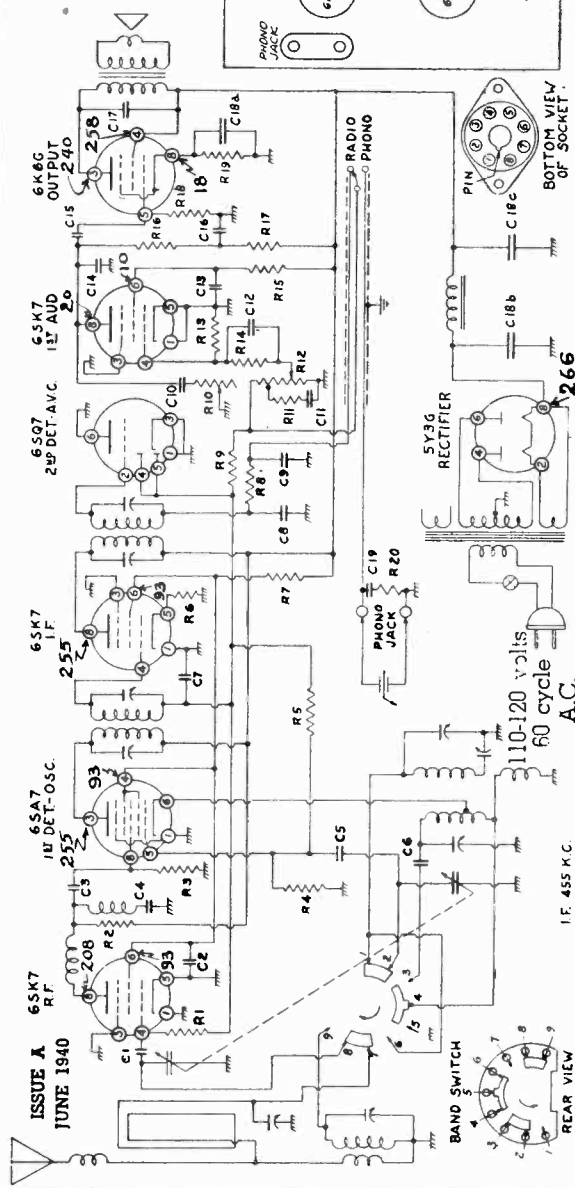
ISSUE C
 OCT. 1940

FOR ALIGNMENT & PUSH-BUTTON TUNER DATA, -- SEE INDEX

CONTINENTAL RADIO & TELEV. CORP.

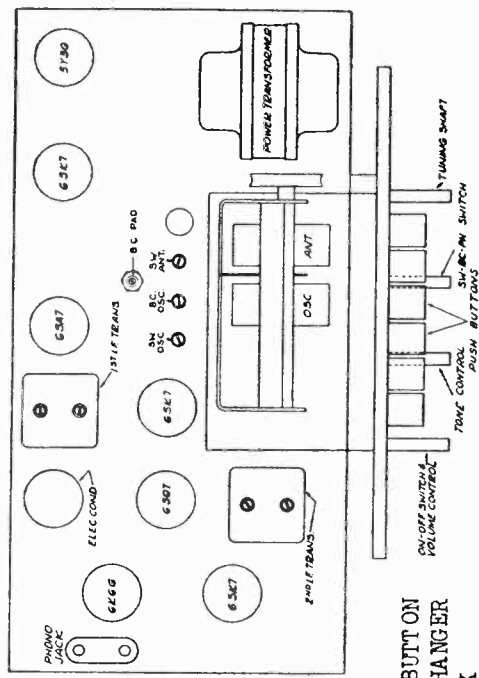
MODEL B7
Issues A and B
MODEL 62-B7

Band Switch
left 535 to 1630 kilocycles
right 5,800 to 18,100 kilocycles
MODEL B7



Band switch shown in broadcast position in schematic and in short wave position in pictorial view in lower left corner.
All voltages to ground with a 1,000 ohm per volt meter on the 300 volt scale. Line voltage 117 volts A.C. Volume control maximum and no signal tuned in. Power consumption, 60 watts.

FOR ALIGNMENT, PUSH-BUTTON TUNER, PHONO RECORD-CHANGER DATA --- SEE INDEX



- Speaker** (Part No. P4283) 10" PM.
- D. C. voice coil resistance 3.7 ohms
- Voice coil impedance at 400 cycles 4.1 ohms
- S. W. Antenna Coil** (Part No. P3198)
Looking at the connection end starting at the chassis in a clockwise direction the terminals are: No. 1, ground; No. 2, antenna; No. 3, switch; No. 4, ground.
- Primary—No. 1 and No. 2—Resistance37 ohm
- Secondary—No. 3 and No. 4—Resistance08 ohm
- Oscillator Coil** (Part No. P4194)
Looking at the mounting strip end in a clockwise direction starting at the chassis, the terminals are: No. 1, ground; No. 2, cathode; No. 3, open; No. 4, pad; No. 5, switch; No. 6, grid; No. 7, grid; No. 8, open.
- B.C. Primary—No. 1 and No. 5—Resistance29 ohm
- S.W. Primary—No. 1 and No. 2—Resistance06 ohm
- B.C. Secondary—No. 4 and No. 6—Resistance 5.7 ohms
- S.W. Secondary—No. 2 and No. 7—Resistance08 ohm
- First I.F. Transformer** (Part No. P4108)
Primary—Blue, plate; red, B+—Resistance 18.2 ohms
- Secondary—White, grid; black, AVC—Resistance 15.1 ohms
- Second I.F. Transformer** (Part No. P4109)
Primary—Blue, plate; red, B+—Resistance 20.8 ohms
- Secondary—White, diode; black, AVC—Resistance 17.4 ohms

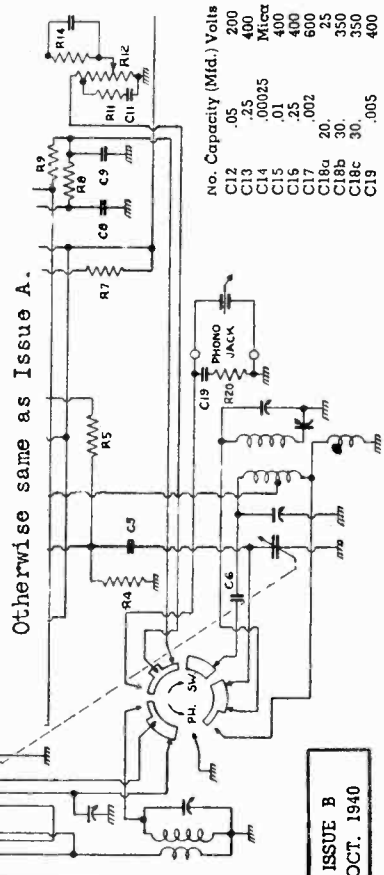
CONDENSERS

No.	Capacity (Mfd.)	Volts
C1	.0001	Mica
C2	.05	400
C3	.0001	Mica
C4	.00006	5% Mica
C5	.0001	Mica
C6	.003	5% Mica
C7	.05	200
C8	.00005	Mica
C9	.0001	Mica
C10	.002	600
C11	.05	200

RESISTORS

No.	Ohms	Watts
R1	500,000	1/4
R2	2,500	1/2
R3	100,000	1/2
R4	25,000	1/2
R5	5,000,000	1/4
R6	100	1/4
R7	15,000	2
R8	50,000	1/4
R9	1,000,000	1/4
R10	500,000	1/4
R11	15,000	1/4

Otherwise same as Issue A.

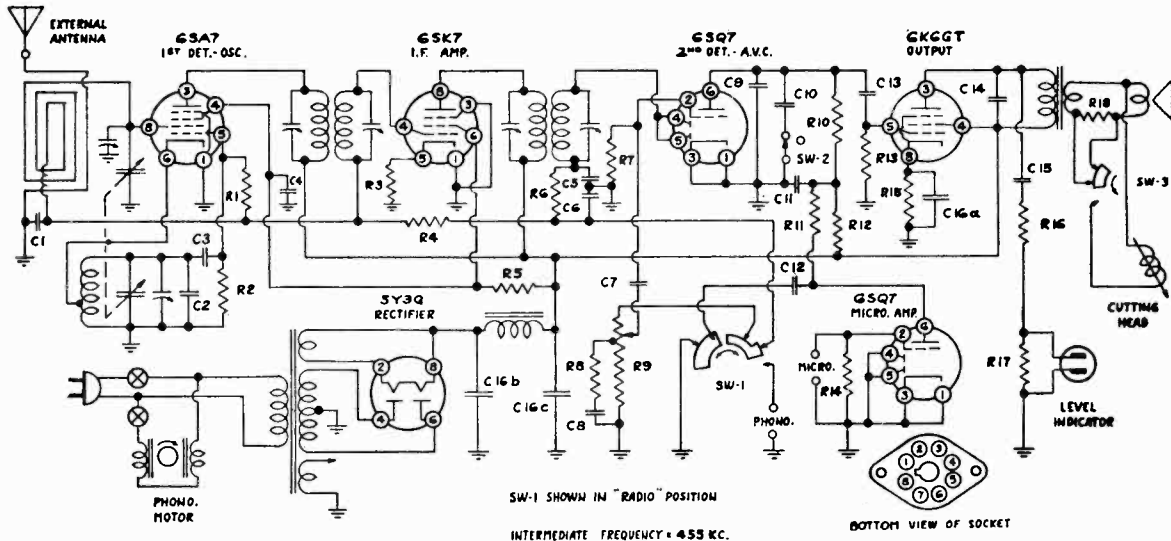


No.	Capacity (Mfd.)	Volts
C12	.05	200
C13	.25	400
C14	.00025	Mica
C15	.01	400
C16	.25	400
C17	.002	600
C18a	20	25
C18b	30	350
C19	.005	400

ISSUE B
OCT. 1940

MODEL K7

CONTINENTAL RADIO & TELEV. CORP.



SW-1 SHOWN IN "RADIO" POSITION

BOTTOM VIEW OF SOCKET

INTERMEDIATE FREQUENCY = 455 KC.

Fig. 1—Top View

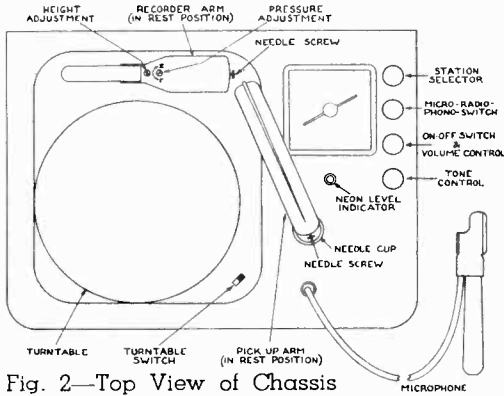
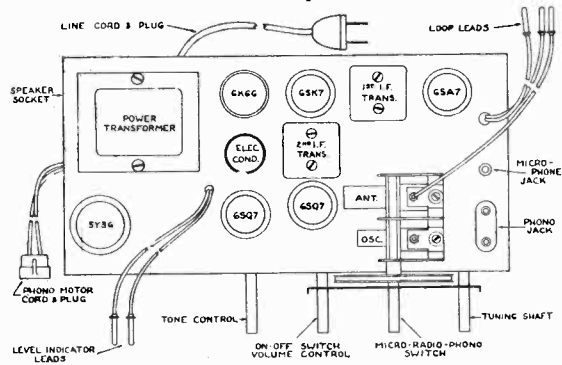


Fig. 2—Top View of Chassis

RESISTORS

No.	Ohms	Watts	No.	Ohms	Watts
R1	10,000,000	1/2	R10	250,000	1/2
R2	20,000	1/2	R11	250,000	1/2
R3	100—10%	1/2	R12	50,000	1/2
R4	2,000,000	1/2	R13	500,000	1/2
R5	15,000—10%	2	R14	5,000,000	1/2
R6	50,000	1/2	R15	600—10%	1/2
R7	5,000,000	1/2	R16	250,000—10%	1/2
R8	20,000	1/2	R17	500,000—10%	1/2
R9	500,000	V.C.	R18	50	1/2

FOR PHONO RECORDER DATA
SEE INDEX



CONDENSERS

No.	Capacity (Mfd.)	Volts	No.	Capacity (Mfd.)	Volts
C1	.05	200	C10	.002	400
C2	.00025	Mica	C11	.1	450
C3	.00005	Mica	C12	.005	800
C4	.05	400	C13	.01	400
C5	.0001	Mica	C14	.002	800
C6	.0001	Mica	C15	.002	400
C7	.01	400	C16a	20.	85
C8	.02	200	C16b	20.	350
C9	.00025	Mica	C16c	20.	350

ALIGNING FREQUENCIES:

IF - 455kc. BC-OSC. - 1730kc thru .0002mf; cond. gang at minimum.
BC-ANT. - 1400kc; check gang cond. plates at 600kc.

VOLTAGE CHART

Never plug in a D.C. outlet.

All voltages measured with a 1,000 ohm per volt meter on the 300 volt scale. Line voltage 117 volts A.C. Volume control maximum and no signal tuned in. Power consumption 90 watts.

6SA7 TUBE

Plate (3) to ground.....	255
Screen (4) to ground.....	93

6SK7 TUBE

Plate (8) to ground.....	255
Screen (6) to ground.....	93

6K6G TUBE

Plate (3) to ground.....	240
Screen (4) to ground.....	258
Cathode (8) to ground.....	18

5Y3G TUBE

Filament (8) to ground.....	266
-----------------------------	-----

ISSUE A
OCT. 1940

CONVENTIONAL ALIGNMENT
SEE SPECIAL SECTION--VOL. III

Speaker (Part No. P-4490) 6 1/2" P.M. Type.
D.C. voice coil resistance.....2.8 ohms
Voice coil impedance at 400 cycles.....3.1 ohms

Oscillator Coil (Part No. P-4495)

Looking at the connection end in a clockwise direction starting at the chassis the terminals are No. 1, end of winding; No. 2, start of winding; No. 3, tap.
No. 1 and No. 2—Resistance..... 4.5 ohms
No. 1 and No. 3—Resistance..... 4.05 ohms
No. 2 and No. 3—Resistance..... .45 ohm

First I.F. Transformer (Part No. P-4108)

Primary—Blue, plate; red, B+
Resistance.....18.2 ohms
Secondary—White, grid; black, AVC
Resistance.....15.1 ohms

Second I.F. Transformer (Part No. P-4109)

Primary—Blue, plate; red, B+
Resistance..... 20.8 ohms
Secondary—White, diode; black, AVC
Resistance.....17.4 ohms

MODELS A11-PH,
62-B7

CONTINENTAL RADIO & TELEV. CORP.

This Record Changer will automatically play a series of up to twelve 10", ten 12" or ten mixed 10" and 12" records of the standard 78 R. P. M. type. Records of the last few years with the standard eccentric or spiral stopping groove on the inside and an eccentric on the outside will operate the automatic mechanism. However, records of any size up to 12" may be played manually.

SHIPPING BOLTS

The automatic record changer is held solid for shipping by four bolts and before placing unit in operation the four channel shaped nuts must be loosened. The aforementioned four channel shaped nuts are located underneath the record changer and should be turned counter-clockwise until they are free from the wood rail of the cabinet.

DO NOT REMOVE THE BOLTS

If it is necessary to later ship this radio the four channel shaped nuts must be tightened to the shipping position.

CAUTIONS

1. Never use force to start or stop the motor or any part of the record changing mechanism or pickup arm.
2. The use of records which have become warped or damaged thru improper care may cause the mechanism to jam and damage the instrument. Records which have become warped will slide on one another when playing, resulting in unsatisfactory reproduction.
3. Do not leave records on the selector arms, as they are liable to warp, particularly so in warmer climates. Keep your records in a record file (album or cabinet) when not in use. This will protect them from warping and dust.
4. The Changing Cycle consists of the time interval beginning when the pickup arm automatically lifts at the end or center section of the record and moves out to its extreme position; the new record drops and the pickup arm resets itself on the outer edge of this new record. During this cycle, the pickup arm should not be handled. **WHEN IT IS DESIRED TO STOP THE MECHANISM CARE SHOULD BE TAKEN TO SEE THAT THIS CHANGING CYCLE IS COMPLETE.**
5. No damage will be done if you forget to turn off changer after it has played its entire load of records. It will simply repeat the last record until stopped.
6. **LEVELING.** For proper operation of the record changer the unit must be level.

PHONOGRAPH NEEDLES

Various types and kinds of needles are available for use in phonograph pickup arms. All have their virtues, as well as their faults, for use in ordinary phonographs, where needles can be changed after each record. For playing up to twelve records at one set-up, as with this Changer, no attempt should be made to use ordinary steel or fibre points, since continued use of worn points will be likely to ruin both quality of reproduction and the records as well. Any kind of needle can be used which has a point durable enough to play ten records or more without damaging them.

It should be remembered that, no matter what the quality of the pickup arm, amplifying system and speaker, all of the recorded music must pass through the needle. For this reason, it is absolutely essential that particular care be taken to use good needles, and to see that they are changed often enough so the records are not damaged and the quality of the music is not impaired.

It is recommended that a sapphire point needle be used as it is the only needle that can be satisfactorily used on both commercial records and home recordings. If any other type of needle is used it is necessary to change the needle every time it is desired to play home recordings after playing commercial records. If the same needle is used on both kinds of records (except sapphire types) the home recordings will be quickly damaged. A sapphire needle will play several thousand records before requiring replacement. Never under any condition should a needle be removed from the pickup arm and then re-installed.

To install a needle raise the pickup arm to a nearly vertical position, loosen needle screw and insert needle. The needle screw should now be firmly tightened.

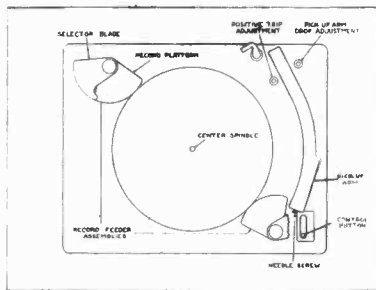


Fig. 1

LOADING

Turn the record feeder assemblies until they snap into place and then place the selected records (up to twelve 10", ten 12" or a mixed stack of 10" and 12" records, not exceeding ten) over the center spindle so they will rest on the record platforms of the record feeder assemblies.

The Record Feeder Assemblies consist of a top plate or Selector Blade which is tapered at the edge for the purpose of selecting the bottom record on the stack and to drop it during the changing cycle. The lower plate is called the Record Platform and it is upon this plate that the records are placed. Place the record desired last on top.

STARTING THE CHANGER

1. Turn on the radio and set the "Phono-Band Switch" to the "Phono" position.
2. Push the control button (see Fig. 1) to the "Rej." (Reject) position and release. The motor will start and the record changer will go into automatic operation.
3. Adjust volume control to the desired intensity and tone control to the preferred setting.
4. Close cabinet to eliminate mechanical reproduction of sound by the needle.
5. When the playing is finished, be sure turntable is stopped and tone arm is in the rest position. Never leave the tone arm with the needle resting on a record or the turntable.

REJECTING A RECORD

To reject a record it is only necessary to push the control button on the record changer panel to the "Rej." (Reject) position for a few seconds and then release. A record can be rejected any time the needle is in contact with the record.

UNLOADING

1. Switch off the motor while the needle is in contact with a record.
2. Return the pickup arm to the rest position.
3. Lift the record feeder assemblies upward and turn them out of the way.
4. Lift the played records from the turntable.
5. Turn the record feeder assemblies until they snap back into position.

The changer may now be loaded with a new stack of records.

MANUAL OPERATION

Manual operation is used for all home recordings and records without spiral grooves.

1. Lift the record feeder assemblies upward and turn them out of the way.
2. Place record on turntable with the desired selection upward.
3. Push the control button to the first or "Man." (Manual) position.
4. When the turntable has attained speed, lift pickup arm and lower gently on to the record so the needle point enters the outside groove.
5. Adjust volume control to the desired intensity and tone control to the preferred setting.
6. Close cabinet to eliminate mechanical reproduction of sound by the needle.
7. When the playing is finished, be sure turntable is stopped and pickup arm is in the rest position. Never leave the pickup arm with the needle resting on a record or the turntable.

This record changer is provided with two trip mechanisms so that automatic changing can be secured from records with the conventional Eccentric Center Groove or with records lacking the Eccentric Center Groove, but which are recorded sufficiently near the center so that the Positive Trip comes into operation.

THE RATCHET TRIP

The Ratchet Trip requires no adjustment as its range of operation is greater than that of any standard records.

THE POSITIVE TRIP

The Positive Trip can be adjusted to operate at a definite point from the center spindle in the following manner. Remove the button covering the hole on the left side of the pickup arm. Using a small screw driver rotate the screw-head appearing thru this hole.

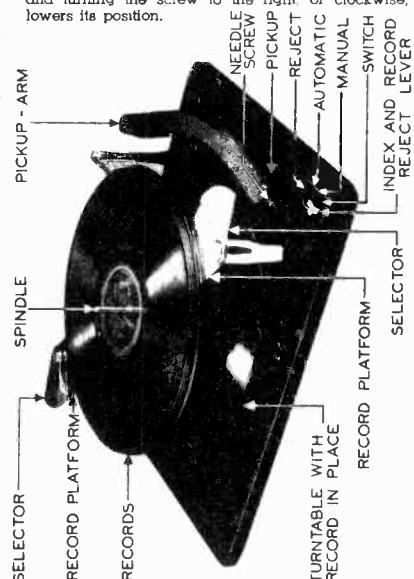
(Caution: This screw can be rotated only one half turn or 180 degrees. Therefore, slight adjustments are all that should be required.) A slight turn to the right or in a clockwise direction makes the trip operative earlier in the playing cycle or farther from the center of the record. Turning this screw slightly to the left or in a counter-clockwise direction causes the positive trip to set later in the playing cycle or nearer to the center of the record. The exact adjustment can be determined only by playing a record with its last groove located at the desired distance from its center.

PICKUP ARM DROP POINT

This Record Changer is provided with an adjustment controlling the position at which the Pickup arm is dropped on the outer edge of the record. This adjustment has a constant relationship for 10 or 12 inch records. Therefore, one adjustment on either diameter of record is sufficient. To make this adjustment, remove the button on the right side of the pickup arm and with a small screw driver, rotate the exposed screw head slightly. (Caution: This screw also can be rotated only one half turn or 180 degrees. Therefore, slight adjustments are all that should be required.) Turning to the right or in a clockwise direction causes the needle to drop farther from the edge of the record. Turning to the left or counter-clockwise direction causes the needle to drop nearer the edge of the record. The proper position for the needle to drop is approximately $\frac{1}{8}$ from the edge of the record and in the blank space at this point, that is, in the space at the edge of the record where there are no grooves.

PICKUP ARM LIFT

This Record Changer is designed so that the pickup will start at the proper position on the top record of 12 ten inch records or the turntable. This is based upon the use of a needle which is inserted with approximately $\frac{5}{16}$ " protruding from the underside of the pickup arm. Adjustment for this is readily available by lifting the pickup arm to its maximum position. Turning the hexagon headed screw thus exposed on the underside of the Pickup Arm makes the adjustment. Turning the screw to the left or counter-clockwise raises the operating position of the Pickup Arm and turning the screw to the right or clockwise, lowers its position.



MODELS
CONTINENTAL RADIO & TELEV. CORP. All, A11-PH, B11

MODELS All, A11-PH, B11

All adjustments should be made with the volume control in the maximum position, to prevent the AVC from operating and giving false readings.

I.F. ALIGNMENT

Remove the chassis from the cabinet, disconnect and adjust the signal generator to 455 KC and connect the output to the grid of the first detector tube (6SA7) through a .05 or .1 mfd. condenser. Align all I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT

(Band No. 1, 1st Part)
Adjust the signal generator to 1630 KC and connect the output to the green antenna loop lead through a .0002 mica condenser. Set the gang condenser to minimum capacity and adjust the B.C. oscillator trimmer. (See Fig. 1) to receive this signal. The other broadcast band adjustments are made later.

POLICE BAND ALIGNMENT

(Band No. 2)
Adjust the signal generator to 7000 KC and connect the output to the black antenna loop lead through a 400 ohm resistor. With the gang condenser at minimum capacity adjust the police oscillator trimmer. (See Fig. 1) to receive this signal. Set the signal generator to 5000 KC and adjust the police antenna trimmer to peak.

31 METER BAND ALIGNMENT

(Band No. 3)
Set the signal generator to exactly 9450 KC and connect the output to the black antenna loop lead through a 400 ohm resistor. With the gang condenser at maximum capacity adjust the iron slug down screw on right side of chassis) to receive signal. The antenna air trimmer is now adjusted by first loosening the large nut and then moving the plug in or out until the point of maximum output is reached. This air trimmer should now be locked in place by means of the large nut and not changed during the rest of the alignment. If a signal generator of sufficient accuracy is not available adjust approximately, then tune in a station of known frequency and readjust until the station comes in at the correct dial setting.

25 METER BAND ALIGNMENT

(Band No. 4)
Set the signal generator to exactly 11,650 KC and connect the output to the black antenna loop lead through a 400 ohm resistor. With the gang condenser at maximum capacity adjust the iron slug (center screw on right side of chassis) to receive signal. This is the only adjustment on this band.

19 METER BAND ALIGNMENT

(Band No. 5)
Set the signal generator to exactly 15,050 KC and connect the output to the black antenna loop lead through a 400 ohm resistor. With the gang condenser at maximum capacity adjust the iron slug (upper screw on right side of chassis) to receive signal. This is the only adjustment on this band.

BROADCAST BAND ALIGNMENT

(Band No. 1, 2nd Part)
Re-install the receiver completely in its cabinet. Adjust the signal generator to 1400 KC and connect the output to a shielded loop radiator and place this loop about two feet from the rotary loop antenna. If no loop radiator is available the output of the signal generator should be connected to the antenna clip of the rotary loop antenna through a .0002 mica condenser. Tune signal and adjust the B.C. antenna trimmer (on rotary loop antenna) to peak. Set the

signal generator to 600 KC, tune the signal and then slowly increase or decrease the B.C. oscillator padding condenser. (See Fig. 1) and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter.

Return to 1400 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 KC.

Speaker (Part No. P4382) 12" Dynamic

Field Resistance..... 600 ohms
D.C. Voice Coil Resistance..... 5.4 ohms
Voice Coil Impedance at 400 cycles..... 6.0 ohms

Short Wave Antenna Coil (Part No. G6282)

Looking at the five lug connection end starting at the chassis in a clockwise direction the terminals are: No. 1, switch; No. 2, sec. tap; No. 3, sec. tap; No. 4, ground; No. 5, antenna; other end, No. 6, trimmer.

Primary—No. 4 and No. 5—Resistance..... .3 ohm
Secondary (Police)—No. 1 and No. 4—Resistance..... .5 ohm
Secondary (S.W.)—No. 4 and No. 6—Resistance..... .5 ohm

B.C. Oscillator Coil (Part No. G6288)

Starting at the mounting bracket in a clockwise direction the connections are: No. 1, pad; No. 2, ground; No. 3, grid; No. 4, cathode.

Primary—No. 2 and No. 4—Resistance..... .14 ohm
Secondary—No. 1 and No. 3—Resistance..... .41 ohms

First I.F. Transformer (Part No. P4360)

Primary—Blue, plate; red, B+—Resistance..... 19.6 ohms
Secondary—White, grid; black, AVC—Resistance..... 16.9 ohms

Second I.F. Transformer (Part No. P4361)

Primary—Blue, plate; red, B+—Resistance..... 19.3 ohms
Secondary—White, diode, black, AVC—Resistance..... 16.6 ohms

Power Transformer (Part No. P3476)

Primary—115 volt, 60 cycle; black leads; Resistance..... 2.5 ohms
Secondary—63 volt; filament; green leads; Resistance..... 12 ohm
Secondary—5 volt; rectifier filament; yellow leads; Resistance..... .11 ohm
Secondary—High voltage; red leads; Resistance..... 123.7 ohms
High voltage center tap; red and white lead; Resistance to one side..... 59.8 ohms
Resistance to other side..... 64.3 ohms

PROCEDURE FOR SETTING UP PUSH BUTTONS

The push buttons under the dial will provide instant tuning to any one of six stations. Make a list of the desired stations: two between 540 and 1080 kilocycles, two between 670 and 1270 kilocycles, and the last two between 1000 and 1630 kilocycles. The adjustments of the push buttons are reached from the rear and are located above the chassis in the center. The top of the plate is numbered from 1 to 6 inclusive and there are two adjustments under each number. Numbers 1 and 2 cover the two stations between 1000 and 1630 kilocycles, numbers 3 and 4 cover the two stations between 670 and 1270 kilocycles and numbers 5 and 6 cover the two stations between 540 and 1080 kilocycles. To set the aforementioned adjustments proceed as follows:

1. Turn band switch to band (1) (band indicator located in lower center of dial).
 2. Tune in, by means of the station selector knob, the station selected above for number 1.
 3. Turn band switch to (P.B.) position.
 4. Loosen wing nut and remove the tuning eye located directly above the permeability tuner.
 5. Turn the adjustment screw directly under number 1 until the station tuned in step number 2 is again received and then carefully adjust it until the tuning eye is the nearest to closed.
 6. Turn the adjustment directly below the aforementioned adjustment until the tuning eye is the nearest to closed and the station is received the clearest.
- The above procedure is repeated for each of the five remaining stations. The tuning eye should then be carefully replaced.

MODEL B11

Voltages—Line 117 volts A.C. Power consumption 165 watts. Volume control maximum. Loop antenna not connected and set tuned off station. Meter 20,000 ohms per volt. Meter scales used are as follows: Scale "A," 10 volts; Scale "B," 50 volts; Scale "C," 250 volts; Scale "D," 1,000 volts.

6A87 RF Tube Meter Scale Voltage
Plate (8) to ground..... "C"..... 225 volts
Screen (6) to ground..... "C"..... 180 volts
Cathode (5) to ground..... "A"..... 2.6 volts

6SA7 1st Det.-Osc. Tube Meter Scale Voltage
Plate (3) to ground..... "D"..... 260 volts
Screen (4) to ground..... "C"..... 130 volts
Cathode (6) to ground..... "A"..... 0.0 volts

6S87 I.F. Amp. Tube Meter Scale Voltage
Plate (8) to ground..... "D"..... 230 volts
Screen (6) to ground..... "C"..... 125 volts
Cathode (5) to ground..... "A"..... 1.7 volts

6SQ7 2nd Det., AVC Tube Meter Scale Voltage
Plate (6) to ground..... "A"..... 0.0 volts
6U5 Tuning Eye and Volume Level Indicator Tube
Target Plate (4) to ground..... "D"..... 260 volts
6SQ7 Microphone Amp. Tube
Plate (6) to ground..... "B"..... 25 volts
Grid (2) to ground..... "A"..... 0.0 volts

6SK7 1st Audio Tube Meter Scale Voltage
Plate (8) to ground..... "C"..... 70 volts
Screen (6) to ground..... "B"..... 30 volts

615GT Driver Tube Meter Scale Voltage
Plate (3) to ground..... "C"..... 85 volts
Cathode (8) to ground..... "A"..... 0.0 volts

6SR7 Inverter Tube Meter Scale Voltage
Plate (6) to ground..... "C"..... 75 volts
Diode Plate (4) to ground..... "A"..... —3 volts
Cathode Plate (5) to ground..... "A"..... —3 volts

6F6G Output Tubes Meter Scale Voltage
Plate (3) to ground..... "D"..... 260 volts
Screen (4) to ground..... "D"..... 260 volts
Cathode (8) to ground..... "B"..... 15 volts

5U4G Rectifier Tube Meter Scale Voltage
Filament (8) to ground..... "D"..... 340 volts

MODELS All, A11-PH

Voltages—Line 117 volts A.C. Power consumption 150 watts. Volume control maximum. Loop antenna not connected and set tuned off station. Meter 20,000 ohms per volt. Meter scales used are as follows: Scale "A," 10 volts; Scale "B," 50 volts; Scale "C," 250 volts; Scale "D," 1,000 volts.

6A87 RF Tube Meter Scale Voltage
Plate (8) to ground..... "C"..... 170 volts
Screen (6) to ground..... "C"..... 155 volts
Cathode (5) to ground..... "A"..... 2.9 volts

6SA7 1st Det.-Osc. Tube Meter Scale Voltage
Plate (3) to ground..... "C"..... 175 volts
Screen (4) to ground..... "C"..... 105 volts

6AF6 Tuning Eye Tube Meter Scale Voltage
Target (5) to ground..... "C"..... 115 volts

6SK7 I.F. Tube Meter Scale Voltage
Plate (8) to ground..... "C"..... 175 volts
Screen (6) to ground..... "C"..... 108 volts

6SK7 1st Aud. Tube Meter Scale Voltage
Plate (8) to ground..... "B"..... 38 volts

615GT Driver Tube Meter Scale Voltage
Plate (3) to ground..... "C"..... 86 volts

615GT Inverter Tube Meter Scale Voltage
Plate (3) to ground..... "C"..... 86 volts

6F6G Output Tube Meter Scale Voltage
Plate (3) to ground..... "C"..... 168 volts
Screen (4) to ground..... "C"..... 175 volts
Cathode (8) to ground..... "B"..... 15.5 volts

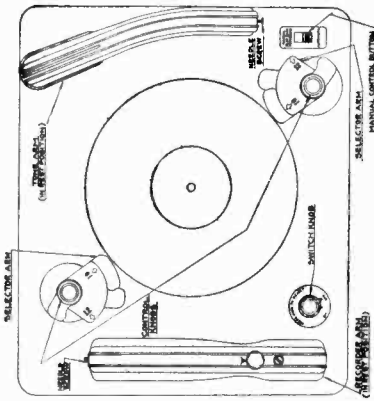


Fig. 2

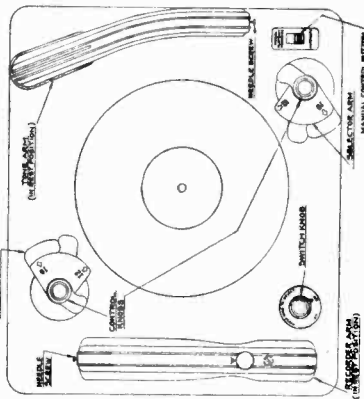


Fig. 3

the record changer will go into automatic operation.

4. Adjust volume control to the desired intensity and tone control to the preferred setting.
5. Close lid of the cabinet to eliminate mechanical reproduction of sound by the needle.
6. When the playing is finished, be sure turntable is stopped and tone arm is in the rest position. Never leave the tone arm with the needle resting on a record or the turntable.

REFLECTING A RECORD

To reflect a record, it is only necessary to press the switch knob on the record changer panel for a few seconds and then release. A record can be reflected any time the needle is in contact with the record.

UNLOADING

First switch off the motor. Grasp each post by its knob at the top and turn them out of the way. Return the tone arm to the rest position. Then lift the played records from the turntable. Return the posts to the proper playing position as indicated by the arrows on the selecting arms. (See Fig. 2 and 3). The Changer may then be loaded with a new stack of records according to the size shown on the selecting arms.

MANUAL OPERATION

Manual operation is used for all home recordings and records without spiral grooves.

1. Move the manual control button as far as possible toward the needle screw and then move the tone arm to its extreme outside position. The combination of movements will result in the manual control button snapping into position at the end of the escutcheon plate and will completely free the tone arm from all locked or automatic positions.
2. Place record on turntable with the desired selection upward.
3. Turn the switch knob on the record changer panel to "On."
4. When the turntable has attained speed, lift tone arm and lower gently on to the record so the needle point enters the outside groove.
5. Adjust volume control to the desired intensity and tone control to the preferred setting.
6. Close lid of the cabinet to eliminate mechanical reproduction of sound by the needle.
7. When the playing is finished, be sure turntable is stopped and tone arm is in the rest position. Never leave the tone arm with the needle resting on a record or the turntable.

AUTOMATIC RECORD CHANGER

both quality of reproduction and the records as well. Any kind of needle can be used which has a point durable enough to play ten records or more without damaging them.

It should be remembered that, no matter what the quality of the tone arm, amplifying system and speaker, all of the recorded music must pass through the needle. For this reason, it is absolutely essential that particular care be taken to use good needles, and to see that they are changed often enough so the records are not damaged and the quality of the music is not impaired.

It is recommended that a sapphire point needle be used as it is the only needle that can be satisfactorily used on both commercial records and home recordings. If any other type of needle is used it is necessary to change the needle every time it is desired to play home recordings after playing commercial records. If the same needle is used on both kinds of records (except sapphire types) the home recordings will be quickly damaged. A sapphire needle will play several thousand records before requiring replacement. Never under any condition should a needle be removed from the tone-arm head and then re-installed.

To install a needle raise the tone arm to a nearly vertical position, loosen needle screw and insert needle. The needle screw should now be firmly tightened.

SETTING FOR SIZE OF RECORD

On each post there are selecting arms (See Fig. 2 and Fig. 3) and their position determines the setting for different size records. To set for 10 or 12 inch records, it is merely necessary to grasp the posts by the knobs at the top, lift, and turn until the 10" or 12" arrows are pointing toward the center of the turntable. When in either the 10" or 12" position, the posts will snap into place except when they are lifted by hand. Figure 2 shows the Record Changer with the selecting arms set for 10" records and ready to be loaded; the tone arm in the rest position. Figure 3 shows the setting for 12" records.

LOADING

After both selecting arms are adjusted so the arrows marked with the desired record size point to the center, the selected records (up to fourteen 10" or ten 12") are placed over the center pin so they will rest on the selecting arms. Place the record desired last on top.

STARTING THE CHANGER

1. Move the manual control button (See Figure 2) to the "AUTOMATIC" position.
2. Turn on the radio and push in the "PHONO GRAPH" push button.
3. Turn the switch knob on the Record Changer panel to "ON." The motor will then start and

This Record Changer will automatically play a series of fourteen 10" or ten 12" records of the standard 78 R.P.M. type. The records must all be one size when loading and may consist of less records than listed above. Records of the last few years with the standard eccentric or spiral stopping groove on the inside and an eccentric on the outside will operate the automatic mechanism. However, records of any size up to 12" may be played manually.

CAUTIONS

1. Never use force to start or stop the motor or any part of the record changing mechanism or pickup arm. The turntable is weighted for recording and will require about one minute to come to rest after the motor is turned off.
2. The use of records which have become warped or damaged thru improper care may cause the mechanism to jam and damage the instrument. Records which have become warped will slide on one another when playing, resulting in unsatisfactory reproduction.
3. Do not leave records on the selector arms, as they are liable to warp, particularly so in warmer climates. Keep your records in a record file (album or cabinet) when not in use. This will protect them from warping and dust.
4. If the automatic record changer is turned off by the motor switch knob while the mechanism is going thru a "change cycle," the motor will not stop until the cycle is completed and the tone arm is again in playing position. The tone arm may now be lifted to the rest position. It is desired to turn the record changer off by the use of any other switch than the one on the changer itself, be sure to turn it off while the needle is resting upon record; otherwise the selecting arms cannot be correctly reset.
5. No damage will be done if you forget to turn off changer after it has played its entire load of records. It will simply repeat the last record until stopped.
6. LEVELING—For proper operation of the record changer and recorder the unit must be level.

PHONOGRAPH NEEDLES

Various types and kinds of needles are available for use in phonograph tone arms. All have their virtues, as well as their faults, for use in ordinary phonographs, where needles can be changed after each record. For playing ten or more records at one set-up, as with this Changer, no attempt should be made to use ordinary steel or fibre points, since continued use of worn points will be likely to ruin

ANTENNA CONTROL

The antenna control knob is located above the dial scale and controls the position of the rotary loop antenna. On weak stations this knob should be turned right or left to the position of maximum output. In extremely noisy locations the knob should be turned to the point of minimum noise.

TELEVISION CONNECTIONS

The sound channel output from the second detector of a Television Receiver may be plugged directly into the Phono Jack, thus using the speaker and audio system of this receiver. The above connections will greatly reduce the cost of Television Receiving Equipment, because it eliminates the need for a speaker and audio system in the above equipment.

MODELS K7, B11

CONTINENTAL RADIO & TELEV. CORP.

RECORDER

This recorder will make up to 12 inch recordings. The recordings may be made from the microphone or radio; also the microphone and radio may be blended together in one recording.

CAUTIONS

1. Never try to record on a blank that is warped even though it be just slight.
2. When recording the recording needle will cut a fine thread, just a little thicker than a human hair, from the record blank and this thread should pile up toward the center of the blank. After the recording is completed, this thread may be gathered up and removed. Although it is possible to remove this thread continually with a soft brush while the record is being cut, considerable care must be taken so that the thread is not tangled around the recording needle or the turntable slowed up by touching it; since either will cause poor recordings.
3. If the shavings cut from the record gather under the recording needle the needle screw should be loosened and then retightened, being sure to keep the needle all the way in. The resulting minute change in the angular position of the needle will probably correct the trouble.
4. The recorder arm must be in the rest position when playing back recordings or using the automatic record changer.
5. Never try to remove or replace a recorded or plain blank with the motor running.
6. Be sure the recording needle is tight after each recording. Should it loosen during a recording, it will chatter and ruin the record.
7. The recording needle is razor sharp and must not be dropped or allowed to rest on the turntable. The recording needle should only be in contact with the record while actually recording or adjusting the Recorder Arm Height.

6. After the recording is complete (never record closer than one and one-half inches from the center) the recorder arm should be returned to its rest position. Never leave the recorder arm resting on record or turntable.

TO RECORD FROM THE MICROPHONE

The procedure is the same as recording a radio program except (the volume control is set to minimum and the microphone volume control is used **Mod. B11**) (**Mod. K7, Phono-Radio-Micro Sw. turned to Mike Position**)

TO RECORD MICROPHONE AND RADIO**PROGRAM AT THE SAME TIME**

The procedure is the same as recording a radio program except the microphone volume control is also used. The two may be blended as desired or only one used part of the time and by changing the volume controls slowly, fading from one to the other is obtained. **Model B11 only.**

PLAYBACK

As soon as a recording is completed it may be instantly played back after the recorder arm is returned to its rest position and the "Phono" button is pushed in. (See Manual Playback)

RECORDER ARM PRESSURE ADJUSTMENT

The pressure on the recording needle which determines the groove depth is controlled by the plated knob on the top of the recorder arm. This knob has engraved upon it the letters "L, M and H" indicating Light, Medium and Heavy pressures and provides an easy means of compensating for different types of recording needles, blanks or for the wearing of the recording needle after it is used. In general, the machine is properly set at the factory so that it will cut the average record correctly when this knob is in the "M" position. **No "M" Pos. for Mod. K7.**

If the groove is too shallow, the playback needle will not stay in the groove. If it is too deep, not enough wall will be left between grooves and the playback needle will break through from one track to the next after a few playings.

The proper depth of groove will leave about the same space between the groove as the groove is wide. Hold a finished record toward the light and you can usually see if the grooves are spaced correctly.

A properly cut groove will leave a shaving just a little heavier than a human hair.

RECORDER ARM HEIGHT ADJUSTMENT

The height of the recorder arm can be varied by means of the slotted screw head which is on the top of the arm and toward the back, approximately flush with the surface. In order to make this adjustment, it is necessary to insert a recording needle and, with the motor turned OFF and a record blank on the turntable, place the recorder arm VERY CAREFULLY in the cutting position. Now raise or lower the recorder arm by means of the above mentioned adjustment until the needle screw is approximately centered in the slot at the front end of the recorder arm.

RECORDING NEEDLE

The recording needle or cutting stylus supplied with this recorder is a "Permo Point" and will make about 350 six-inch recordings. The condition of the recording needle may be determined by comparing the color of the newly recorded portion of the record with the unrecorded portion. A good recording needle will result in grooves having a higher brilliance than the unrecorded portion; as the needle wears or if the needle is poor to begin with the cut portion will have less lustre and will eventually appear gray.

In case the recording needle tends to chatter as it is recording, it is advisable to replace it with a new needle.

The recording needle may be removed and replaced as desired, provided the adjustments are checked before recording. In all events, every precaution must be taken to protect the cutting point at all times; in cutting it should be lowered GENTLY on the blank with the turntable running.

INSTALLING NEW RECORDING NEEDLE

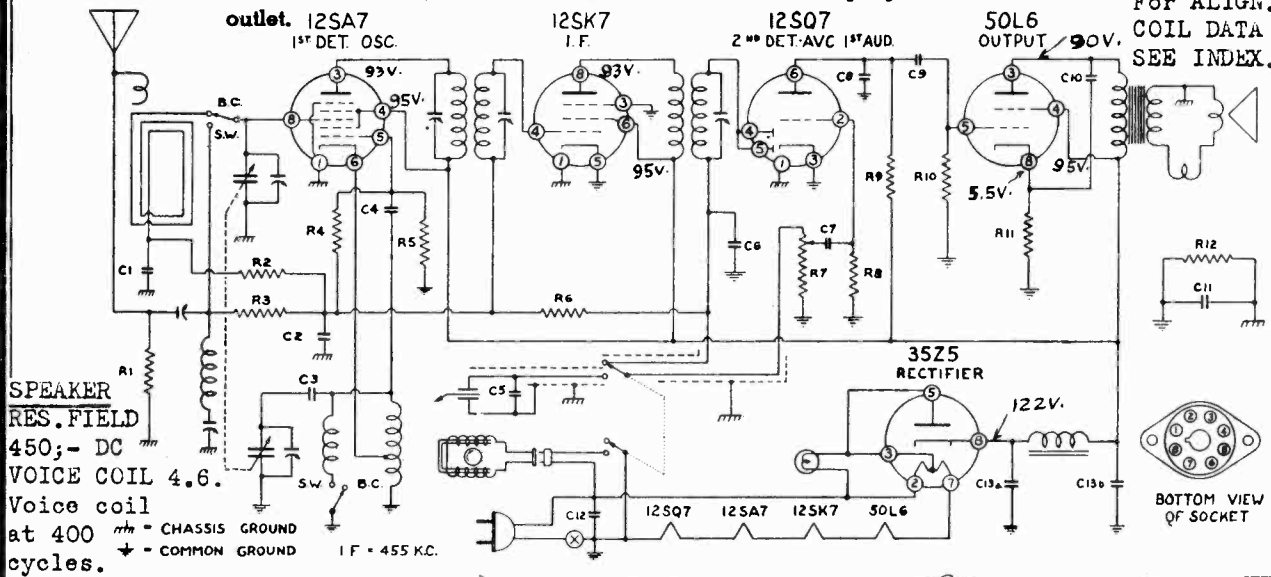
The recording needle is provided with a flat on one side and should be inserted in the needle hole so this flat is toward the needle screw, now with the needle aif the way in tighten it by means of the needle screw. The recorder arm adjustments must now be checked. See "Recorder Arm Height Adjustment" and "Recorder Arm Pressure Adjustment."

TO RECORD A RADIO PROGRAM

1. Place a blank recording disc on the turntable with the driving pin, located in the top of the turntable about one inch from the center, in one of the three holes provided.
2. Set "Phono-Radio-Micro" Switch to Radio Position. (**Model K7**)
2. Move the manual control button as far as possible toward the needle screw and then move the tone arm to its extreme outside position. The combination of movements will result in the manual control button snapping into position at the end of the escutcheon plate and will completely free the tone arm from all locked or automatic positions. (**Model B11**)
3. Turn radio on and tune desired station.
4. Turn phonograph motor on.
5. Lift recorder arm about three inches and move it to the edge of the blank. This will switch from playback to record and decreases the volume. While holding the recorder arm adjust the volume control until the volume level indicator (tuning eye) almost closes and lower the recorder arm gently on to the record so the recording needle starts about one-fourth inch in from the edge of the blank disc. On loud music passages the volume level indicator should completely close.

CONTINENTAL RADIO & TELEV. CORP.

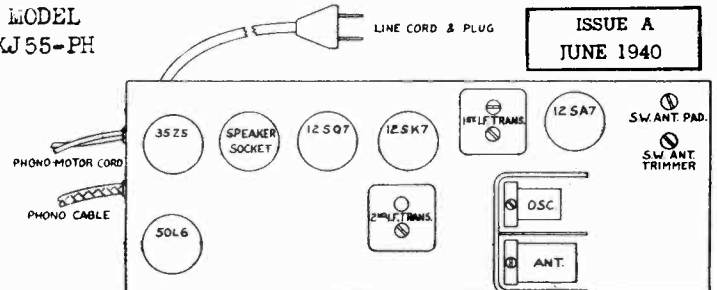
This receiver is designed to operate from a power supply main of 110-120 volts, 60 cycle alternating current (A.C.). **Never plug in a D.C. outlet.** 12SA7 1st DET. OSC. 12SK7 I.F. 12SQ7 2nd DET-AVC-1st AUD. 50L6 OUTPUT 90V. For ALIGN. & COIL DATA - SEE INDEX.



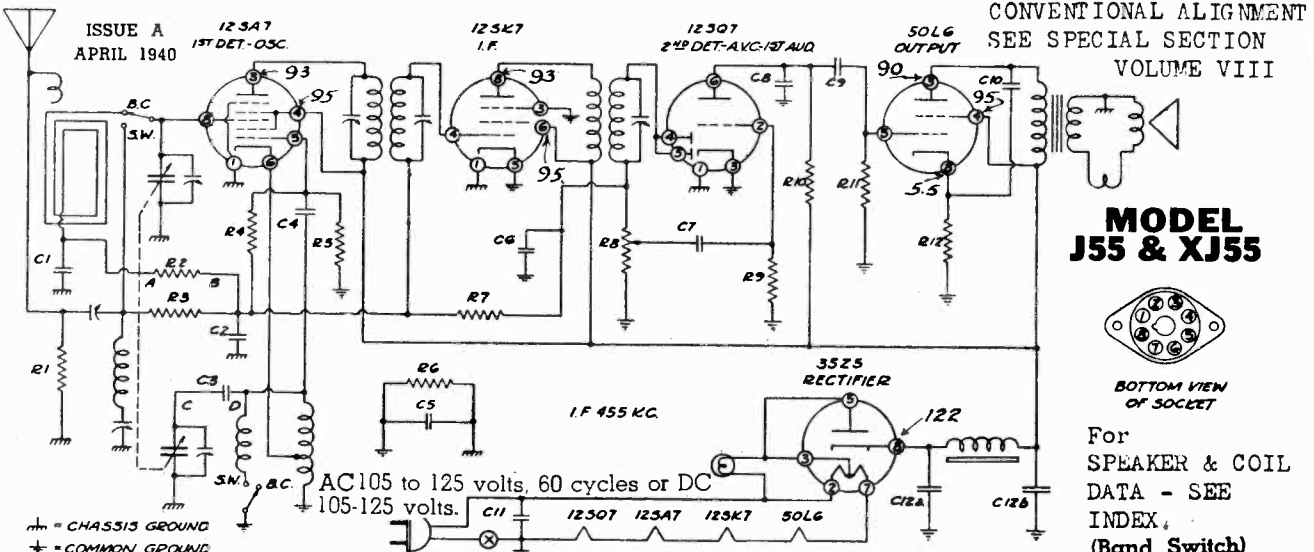
SPEAKER RES. FIELD 450;- DC VOICE COIL 4.6. Voice coil at 400 cycles. CHASSIS GROUND COMMON GROUND I F = 455 KC.

RESISTORS			CONDENSERS		
No.	Ohms	Watts	No.	Capacity (Mfd.)	Volts
R1	250,000	1/4	C1	.05	200
R2	100,000	1/4	C2	.05	200
R3	250,000	1/4	C3	.02	200
R4	10,000,000	1/4	C4	.0001	Mica
R5	25,000	1/4	C5	.005	400
R6	2,000,000	1/4	C6	.00025	Mica
R7	500,000	V.C.	C7	.005	400
R8	5,000,000	1/4	C8	.0005	Mica
R9	250,000	1/4	C9	.01	400
R10	500,000	1/4	C10	.02	400
R11	150-10%	1/4	C11	.2	200
R12	150,000	1/4	C12	.05	400
			C13a	30.	150
			C13b	20.	150

MODEL XJ55-PH

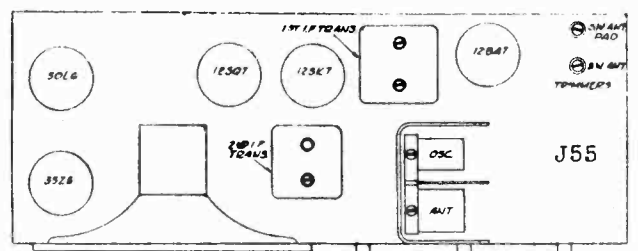


ISSUE A JUNE 1940



ISSUE A APRIL 1940. In model J55 all common grounds become chassis grounds, C1, C3, C5, R2, and R6 are omitted. Point "A" is connected to point "B" and point "C" to point "D."

CONDENSERS			RESISTORS		
No.	Capacity (Mfd.)	Volts	No.	Ohms	Watts
C1	.05	200	R7	2,000,000	1/4
C2	.05	200	R8	500,000	V.C.
C3	.02	200	R9	5,000,000	1/4
C4	.0001	Mica	R10	250,000	1/4
C5	.2	200	R11	500,000	1/4
C6	.00025	Mica	R12	150-10%	1/4
C7	.005	400			

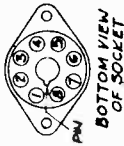


right 535 to 1630 kilocycles left 2.8 to 6.58 megacycles

MODEL A 77

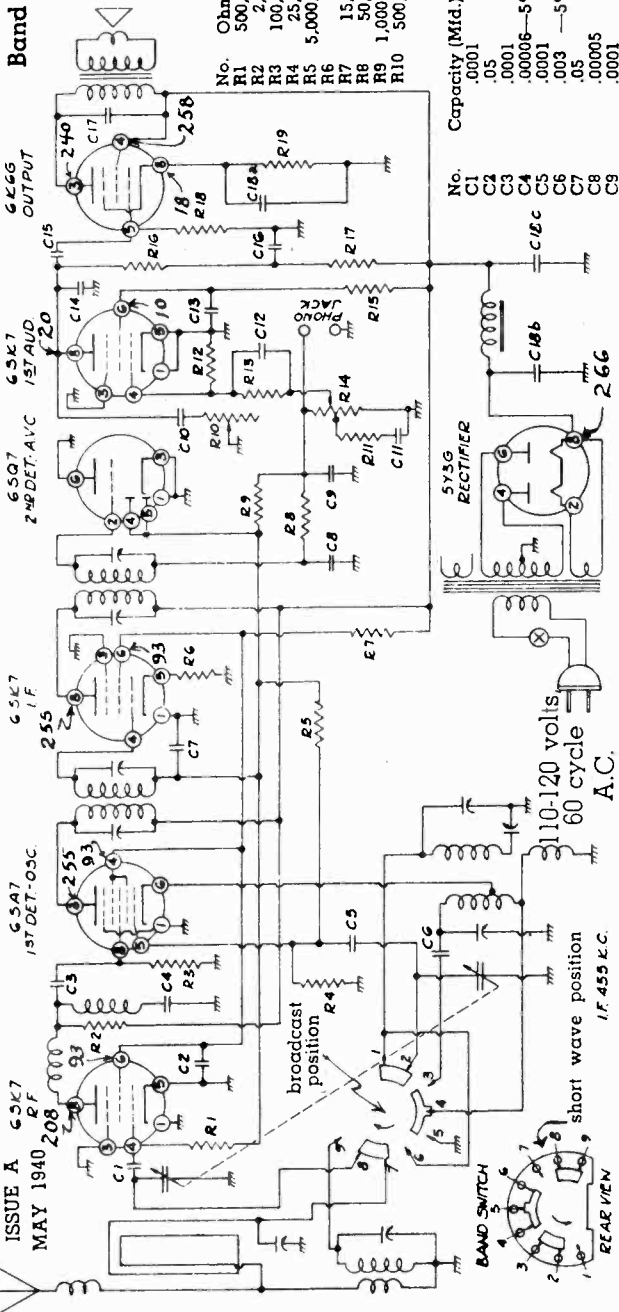
CONTINENTAL RADIO & TELEV. CORP.

535 to 1630 kilocycles
1582 to 1630 kilocycles.



MODEL A77

Band Switch



RESISTORS

No.	Ohms	Watts
R1	15,000	1/4
R2	2,000,000	1/4
R3	2,000,000	1/4
R4	500,000	1/4
R5	2,000,000	1/4
R6	250,000	1/4
R7	50,000	1/4
R8	50,000	1/4
R9	1,000,000	1/4
R10	500,000	1/4
R11	15,000	1/4
R12	2,000,000	1/4
R13	2,000,000	1/4
R14	500,000	1/4
R15	2,000,000	1/4
R16	250,000	1/4
R17	50,000	1/4
R18	500,000	1/4
R19	600-10%	1/4
T.C.		

CONDENSERS

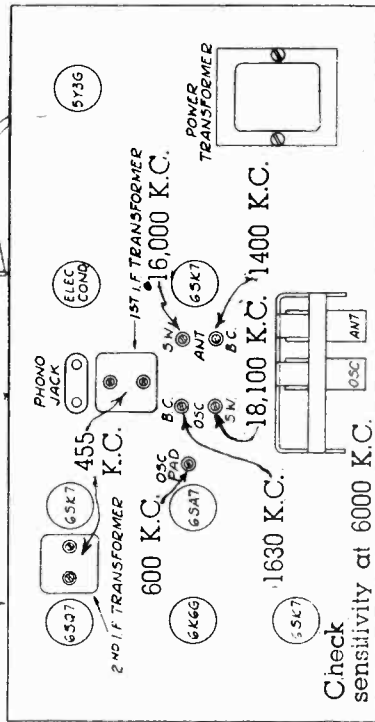
No.	Volts	Capacity (Mfd.)
C1	Mica	.0001
C2	Mica	.05
C3	Mica	.0001
C4	Mica	.00006-5%
C5	Mica	.0001
C6	Mica	.003-5%
C7	Mica	.05
C8	Mica	.00005
C9	Mica	.0001
C10	Mica	.002
C11	Mica	.0001
C12	Mica	.05
C13	Mica	.25
C14	Mica	.00025
C15	Mica	.01
C16	Mica	.25
C17	Mica	.002
C18a	Mica	20
C18b	Mica	30
C18c	Mica	30

All voltages measured with a 1,000 ohm per volt meter on the 300 volt scale. Line voltage 117 volts A.C. Volume control maximum and no signal tuned in. Power consumption 60 watts.

Speaker (Part No. P4283) 10' PM.

D. C. voice coil resistance 3.7 ohms
Voice coil impedance at 400 cycles 4.1 ohms

LINE CORD PLUG



See Index for PUSH-BUTTON TUNER data--
ON-OFF SWITCH
VOLUME CONTROL

CONVENTIONAL ALIGNMENT see Spec. Section
TUNING SHAFI-VOL. VIII.

S. W. Antenna Coil (Part No. P3198)

Looking at the connection end starting at the chassis in a clockwise direction the terminals are: No. 1, plate; No. 2, B+; No. 3, grid; No. 4, pad.

Primary—No. 3 and No. 4—Resistance08 ohm
Secondary—No. 1 and No. 2—Resistance37 ohm

Oscillator Coil (Part No. P4194)

Looking at the mounting strip end in a clockwise direction starting at the chassis, the terminals are: No. 1, ground; No. 2, cathode; No. 3, open; No. 4, pad; No. 5, switch; No. 6, grid; No. 7, grid; No. 8, open.
B.C. Primary—No. 1 and No. 5—Resistance29 ohm
S.W. Primary—No. 1 and No. 2—Resistance06 ohm
B.C. Secondary—No. 4 and No. 6—Resistance 5.7 ohms
S.W. Secondary—No. 2 and No. 7—Resistance08 ohm

First I.F. Transformer (Part No. P4108)

Primary—Blue, plate; red, B+—Resistance 18.2 ohms
Secondary—White, grid; black, AVC—Resistance 15.1 ohms

Second I.F. Transformer (Part No. P4109)

Primary—Blue, plate; red, B+—Resistance 20.8 ohms
Secondary—White, diode; black, AVC—Resistance 17.4 ohms

MODEL 10
 MODELS 11, J11
 MODELS 12, J12,
 13, J13, 14, J14

THE CROSLEY CORP.

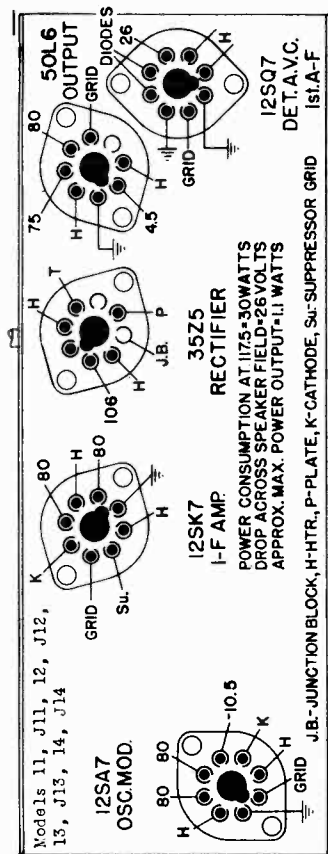


Fig. 4—Socket Voltage Chart
 VOLTAGES MEASURED BETWEEN SOCKET PIN 8 GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS. PER. VOLT METER. READINGS MAY VARY 10%.

ALIGNMENT PROCEDURE

Aligning the R-F Amplifier. Models 11, J11

- Set the signal generator to 1650 kilocycles.
 - With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser (Fig. 3) B. C. "OSC" so that the 1650 kilocycle signal is heard. It is not necessary that the receiver tunes through this signal.
 - Set the signal generator to 1400 kilocycles.
 - Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.
 - Adjust the trimmer condensers B. C. "ANT" for maximum output. (Fig. 3).
- NOTE: Do not readjust the "OSC" trimmer.
- Repeat operations (d) and (e) for more accurate adjustments.

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the loop mounting bracket (Fig. 2) and consists of a coil and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram (item 45).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal into the antenna terminal through a 50 muf condenser into the antenna terminal of the receiver. With the gang condenser set at approximately 60 on the dial and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from DC by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning the I-F Amplifier To 455 Kilocycles.

- Connect the output of the signal generator through a 100 muf. condenser to the antenna connection (Blue or Red lead extending from rear of loop) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.
 - Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).
 - Set the signal generator to 455 kilocycles.
 - Adjust the 2nd I-F trimmer condenser, item 7, located in top of 2nd I-F assy., (Fig. 2) for maximum reading on the output meter.
 - Adjust the 1st I-F trimmer condensers, item 6, located on top of 1st I-F assy., (Fig. 2) for maximum output.
 - Repeat operations (d) and (e) for more accurate adjustments.
- ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER

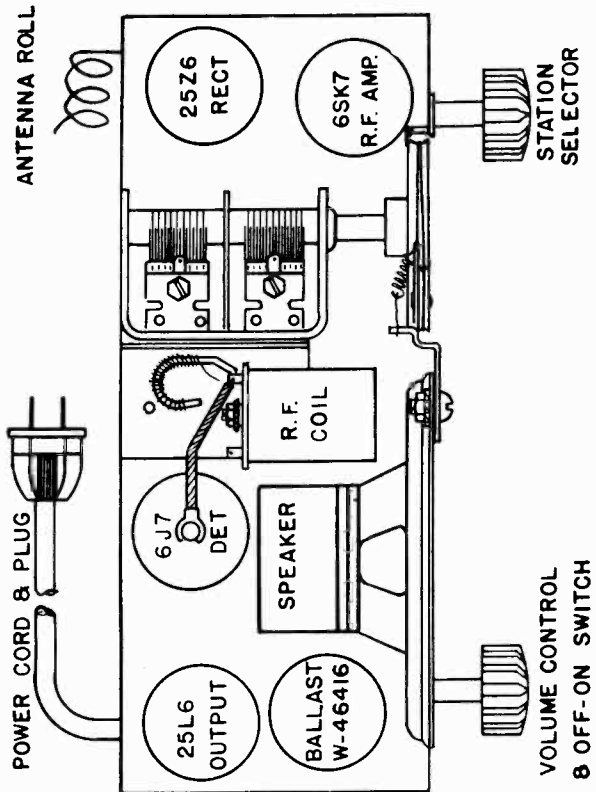


Fig. 2—Top View Chassis Model 10

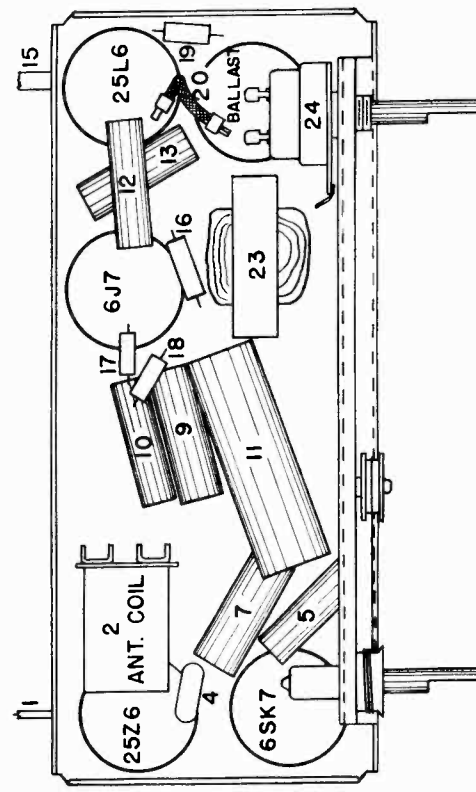
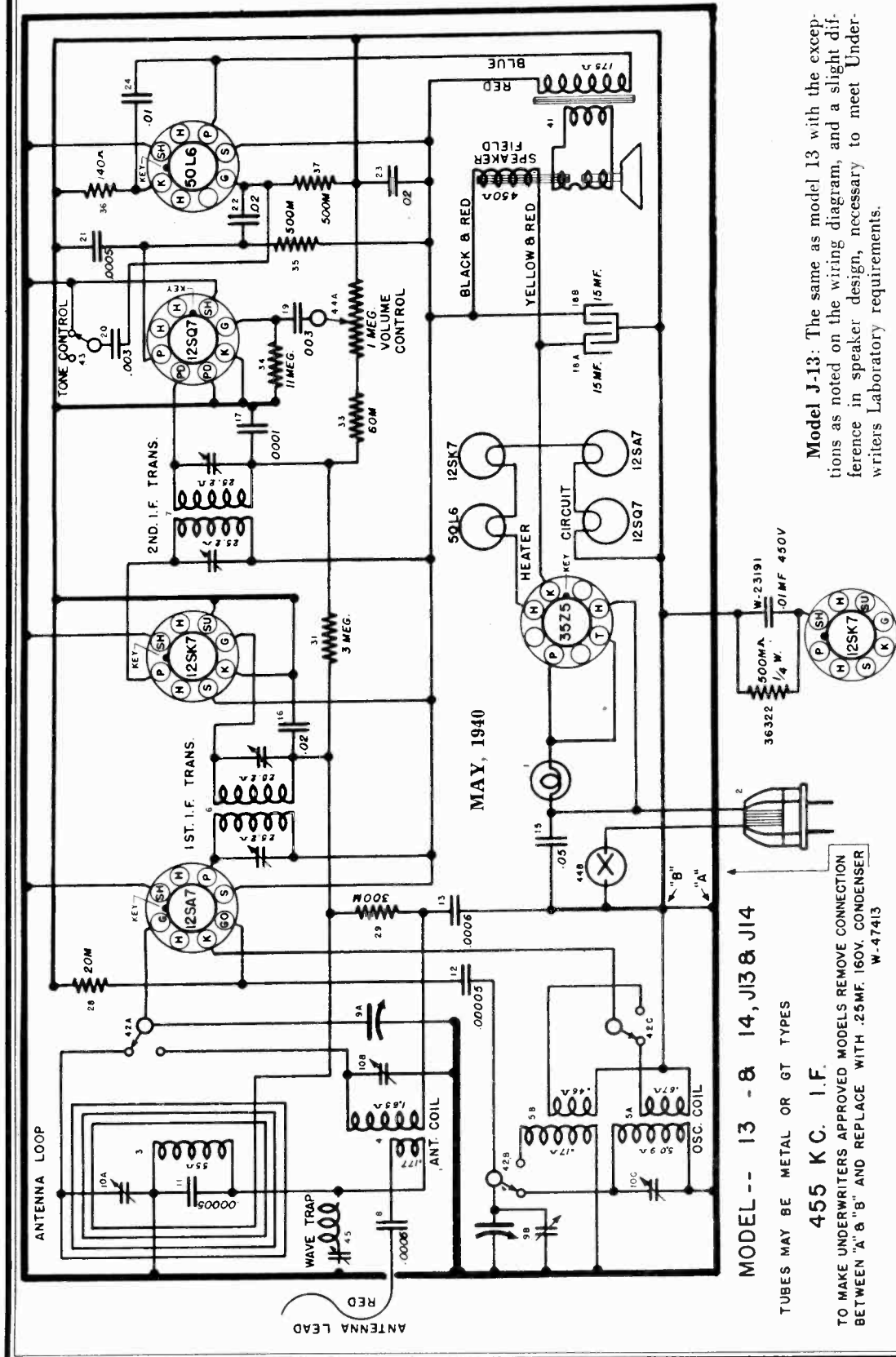


Fig. 3—Bottom View Chassis Model 10

THE CROSLY CORP.

MODELS 13, J13,
14, J14



MODEL -- 13 - 8 14, J13 & J14

TUBES MAY BE METAL OR GT TYPES

455 KC. I.F.

TO MAKE UNDERWRITERS APPROVED MODELS REMOVE CONNECTION BETWEEN "A" & "B" AND REPLACE WITH .25MF. 160V. CONDENSER W-47413

Model 13: This model is a five-tube, two band super-heterodyne receiver. It is designed for operation on 117 volt power circuits either D. C. or A. C. (50-60 cycles).
The tuning range is divided into two bands as follows:
540 to 1,600 Kilocycles (American Broadcast)
6.0 to 15.0 Megacycles (High Frequency or Foreign Band)

Model J-13: The same as model 13 with the exceptions as noted on the wiring diagram, and a slight difference in speaker design, necessary to meet Underwriters Laboratory requirements.

Model 14: The same as model 13 except the addition of a two position tone control connected as shown by items 43, a two position switch and 20, a .003 mf. condenser.

Model J-14: The same as model 14 with the exceptions as noted on the wiring diagram, and a slight difference in speaker design, necessary to meet Underwriters Laboratory requirements.

ON ALL U.L. APPR. MODELS ONLY
INCORPORATE SHELL HOOKUP
ON 12SK7 TUBE AS INDICATED

MODELS 13, J13,
14, J14

THE CROSLLEY CORP.

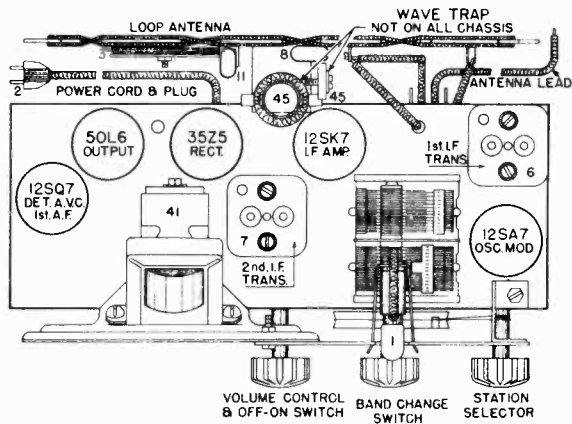


FIG. 2—Top View Model 13

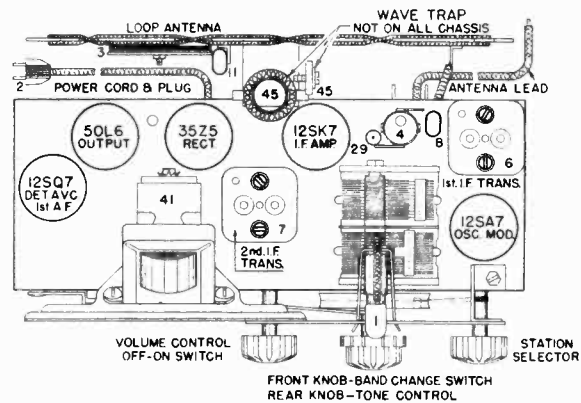


Fig. 3—Top View Model 14

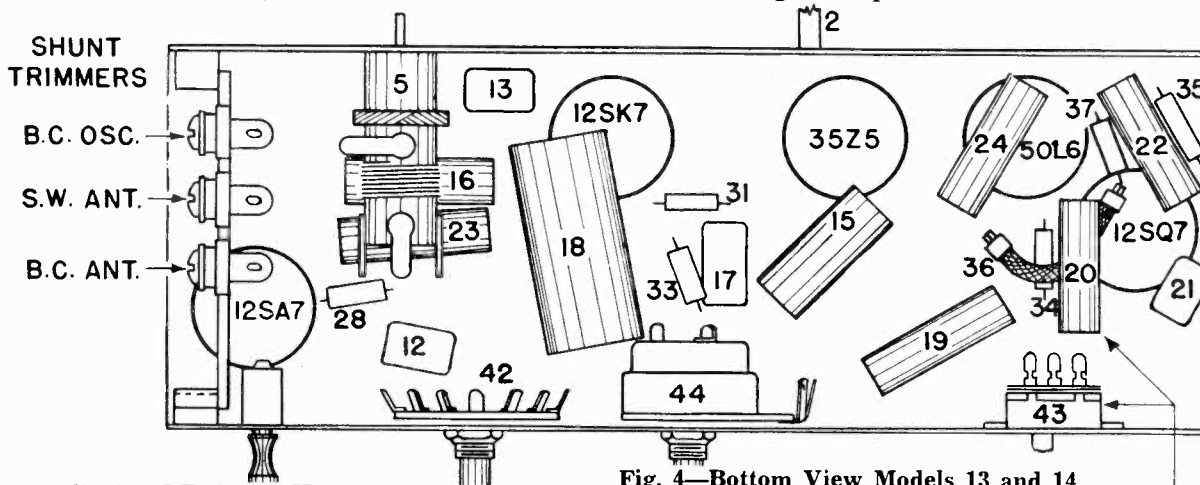


Fig. 4—Bottom View Models 13 and 14
USED ON MODEL
No. 14 ONLY

1.—Aligning I-F To 455 Kc.

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead extending from the rear of the chassis. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (.001 mf.) should be connected in series with the ground lead of the signal generator and the chassis.

(b) Open tuning gang condenser all the way (plates completely out of mesh). Turn volume control to maximum. On models 14 and J-14 turn tone control switch to right (treble). Turn band switch to the B. C. (left) position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the two trimmer condensers on top of 2nd I-F assembly (Fig. 3) for maximum output.

(e) Adjust the two trimmer condensers on top of the 1st I-F assembly (Fig. 3) for maximum output.

(f) Repeat (d) and (e) for more accurate adjustments.

2.—Aligning R-F Amplifier.

The short wave band 6-15 mc. must be aligned before the Broadcast Band 540-1600 kc.

(a) Connect the signal generator output lead through a dummy antenna (400 ohm carbon resistor) to lead (Blue or Red) extending from rear of chassis. Turn the band switch to S. W. (right) and open tuning condenser all the way.

(b) Set signal generator to 15.0 megacycles.

(c) Adjust the S. W. "OSC" trimmer condenser (Fig. 2) (on rear section of gang) for maximum output. The gang should just tune through this signal.

(d) Tune in 15.0 mc. signal with gang and while slowly rocking gang through signal, adjust the S. W. "ANT" trimmer condenser for maximum output. (Center trimmer on right end of chassis).

NOTE: When aligning the Short Wave band care should be exercised so that the circuits are aligned on the fundamental rather than on the image frequency which is approximately 910 kilocycles more than the fundamental. To check this increase the output of the signal generator approximately 10 times and try to tune in both, the fundamental, at the signal generator frequency as indicated on the dial and the image which should be approximately 910 kilocycles lower (approximately 14) on the dial.

(e) Repeat (c) and (d) for more accurate adjustments.

(f) Replace 400 ohm carbon antenna dummy with a .0001 mf. condenser. Turn band switch to the Broadcast band, open gang condenser all the way, etc.

(g) Set the signal generator to 1650 kilocycles.

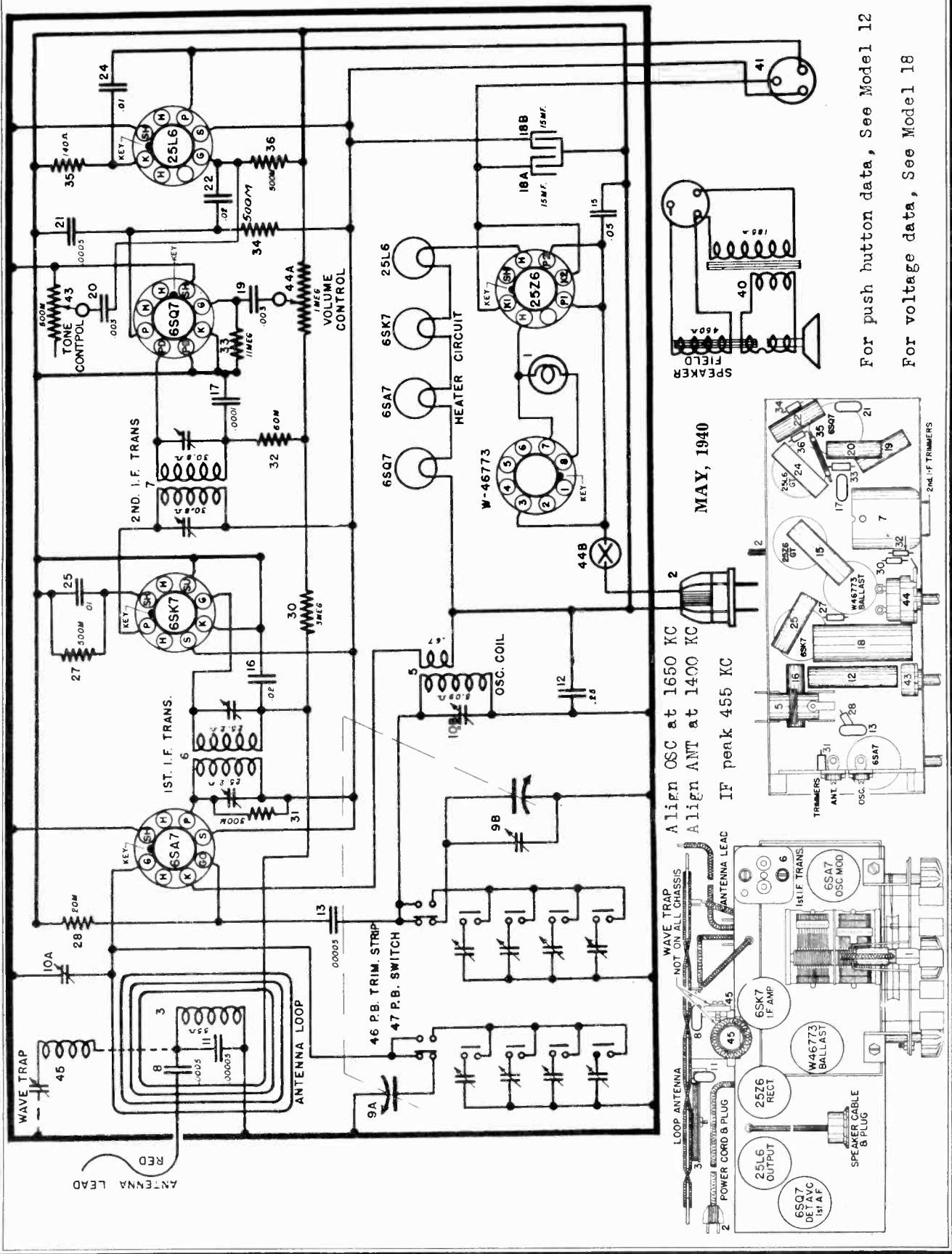
(h) Adjust B. C. "OSC" trimmer (rear trimmer right end of chassis) Fig. 3, for maximum output.

(i) Set signal generator to 1400 kilocycles.

(j) Tune in generator signal for maximum output then adjust B. C. "ANT" trimmer (front trimmer right end of chassis) Fig. 3, for maximum output.

(k) Repeat (h) and (j) for more accurate adjustments.

For voltage and wave trap data, See Model 11



For push button data, See Model 12
 For voltage data, See Model 18

MODELS 18, J18
MODELS 15, J15, 16, J16

THE CROSLLEY CORP.

1.—Aligning I-F To 455 Kc.

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead extending from the rear of the chassis. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (.001 mf.) should be connected in series with the ground lead of the signal generator and the chassis.

(b) Open tuning gang condenser all the way (plates completely out of mesh). Turn volume control to maximum, turn tone control switch to right (treble). Turn band switch to the B. C. (left) position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the two 2nd I-F trimmer condensers located through front chassis flange, below speaker (Fig. 3) for maximum output.

(e) Adjust the two trimmer condensers on top of the first I-F assembly (Fig. 2) for maximum output.

(f) Repeat (d) and (e) for more accurate adjustments.

2.—Aligning R-F Amplifier.

The short wave band 6-15 mc., MUST be aligned before the Broadcast Band 540-1600 kc.

(a) Connect the signal generator output lead through a dummy antenna (400 ohm carbon resistor) to lead (Blue or Red) extending from rear of chassis. Turn the band switch to S. W. (right) and open tuning condenser all the way.

(b) Set signal generator to 15.0 megacycles.

(c) Adjust the S. W. "OSC" trimmer condenser (Fig. 2) (on rear section of gang) for maximum output. The gang should just tune through this signal.

(d) Tune in 15.0 mc. signal with gang and while slowly rocking gang through signal, adjust the S. W. "ANT" trimmer condenser for maximum output. (Center trimmer on right end of chassis).

NOTE: When aligning the Short Wave band care should be exercised so that the circuits are aligned on the fundamental rather than on the image frequency which is approximately 910 kilocycles more than the fundamental. To check this increase the output of the signal generator approximately 10 times and try to tune in both, the fundamental, at the signal generator frequency as indicated on the dial and the image which should be approximately 910 kilocycles lower (approximately 14) on the dial.

(e) Repeat (c) and (d) for more accurate adjustments.

(f) Replace 400 ohm carbon antenna dummy with a .0001 mf. condenser. Turn band switch to the Broadcast band, open gang condenser all the way, etc.

(g) Set the signal generator to 1650 kilocycles.

(h) Adjust B. C. "OSC" trimmer (rear trimmer right end of chassis) Fig. 3, for maximum output.

(i) Set signal generator to 1400 kilocycles.

(j) Tune-in generator signal for maximum output then adjust B. C. "ANT" trimmer (front trimmer right end of chassis) Fig. 3, for maximum output.

(k) Repeat (h) and (j) for more accurate adjustments.

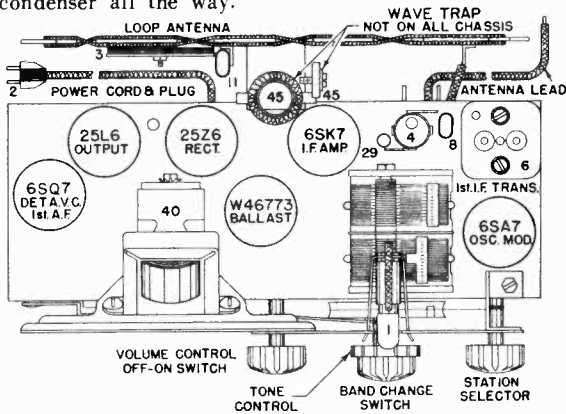


Fig. 2—Top View Model 18, J-18

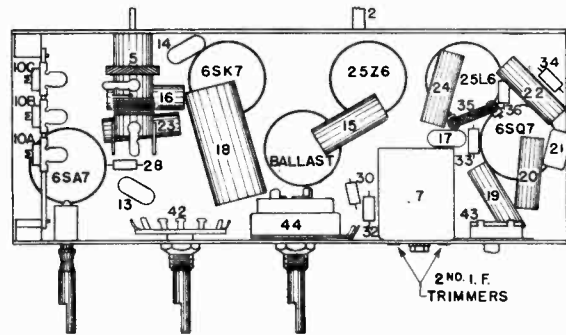
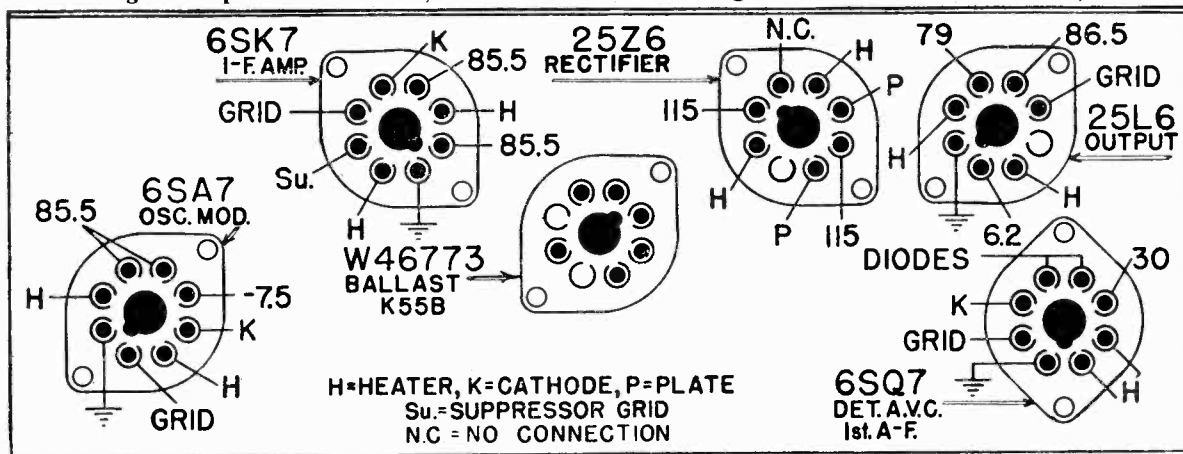


Fig. 3—Bottom View Models 18, J-18

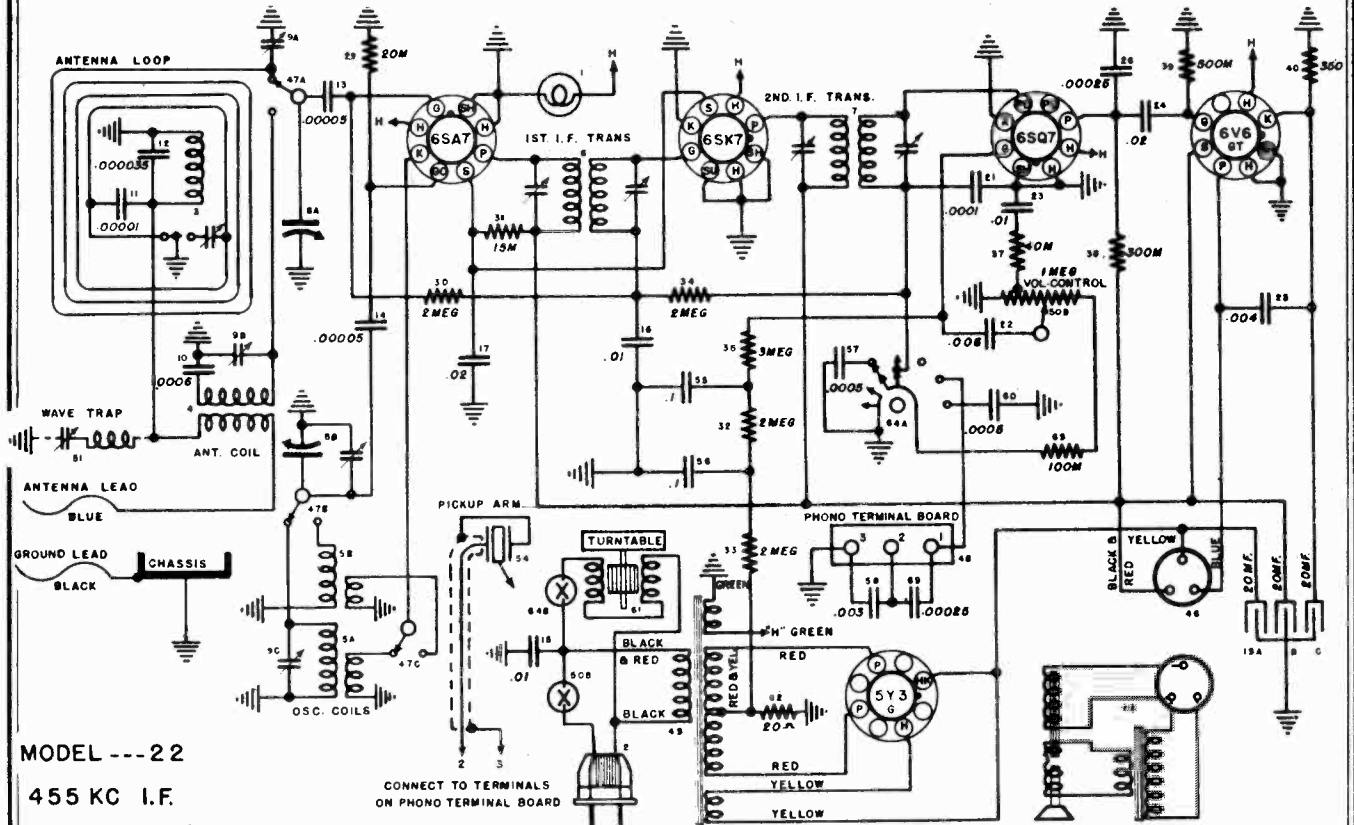


POWER CONSUMPTION AT 117.5 LINE = 50 WATTS
MAXIMUM POWER OUTPUT -----= 1.2 WATTS
DROP ACROSS SPEAKER FIELD -----= 28.5 VOLTS

For wave trap data, see Model 11

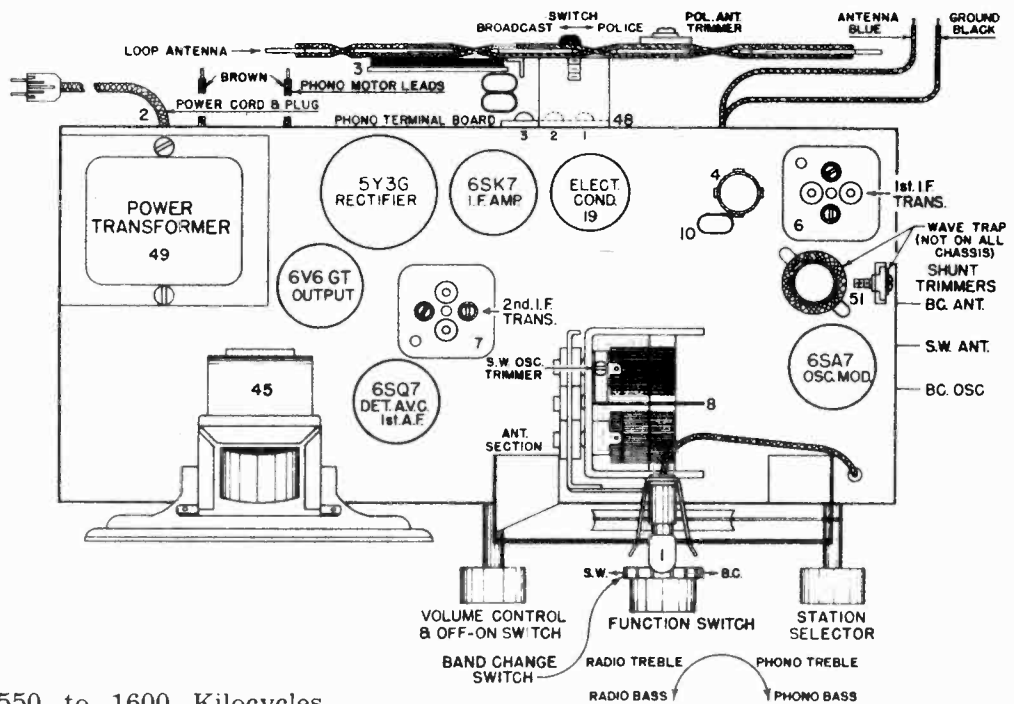
THE CROSLY CORP.

MODEL 22AS



MODEL ---22
455 KC I.F.

CONNECT TO TERMINALS
ON PHONO TERMINAL BOARD



Broadcast Band—550 to 1600 Kilocycles
Short Wave Band—6.0 to 15.0 Megacycles
Special Police Band—2.3 to 2.5 Megacycles

FIG. 2

MODEL 22AS
MODEL 20, 21, 23

THE CROSLLEY CORP.

PRELIMINARY

Output Meter Connections.....Plate to Screen of 6V6CT
Generator Ground Connection.....To chassis
Dummy Antenna to be in series with generator output.....See Chart Below
Position of Volume Control.....Fully On
Position of Tone Control.....Trebble or Speech

ALIGNMENT PROCEDURE CHART

Alignment Step	Dummy Antenna Setting	Frequency Setting	Input to Receiver	Band Switch	Tuning Control	Trimmer Adjusted	Remarks
1.	.002MF	455 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	Pol. I.F. (2)	Adjust for Maximum output Adjust for Maximum output.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Lead (Blue)	S. W.	Fully Open	S. W. "OSC"	Adjust for Peak. See foot note
3.	500 ohm (carbon)	15.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 15 on dial	S. W. "ANT"	Adjust for Maximum output Adjust for Peak. See foot note
4.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	B. C. "OSC"	Adjust for Peak. Make sure tip switch on loop is in B. C. position.
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 110 on dial	B. C. "ANT"	Adjust for Maximum output
6.	.0002 MF.	2.5 Mc.	Ant. Lead (Blue)	B. C. and switch on loop	Approx. 2.5 on dial	Pol. Ant on loop	Adjust for Maximum output

IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position). Repeat the original alignment procedure for more accurate adjustments.

Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram. The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .0002 mfd. condenser into the antenna lead of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser set to approximately 60 on the dial, and the volume control full on, adjust the wave trap trimmer condenser for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver, the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal, an antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

VOLTAGE CHART

ALL VOLTAGES MEASURED FROM SOCKET PIN TO CHASSIS @ 117.5 VOLT LINE

TUBE SECTION	1	2	3	4	5	6	7	8
6SA7—Osc. Mod	0	0	225	74	0	0	0	6.3 A.C. 0
6SK7—1. F. Amp	0	0	0	0	0	74	0	6.3 A.C. 225
6SQ7—Det. A.V.C.—1st. A.F.	0	0	0	0	0	0	100	6.3 A.C. 0
6V6GT—Output	0	0	209	225	0	0	0	6.3 A.C. 10.5
5Y3G—Rectifier	0	5.0 A.C.	0	316 A.C.	0	316 A.C.	0	283

All voltages measured with 1000 OHM/Volt Voltmeter except heaters. Voltages may vary 10% of values given.

DROP ACROSS SPEAKER FIELD.....58 Volts
MAXIMUM POWER OUTPUT @ 130 V. LINE.....6.5 Watts
MAXIMUM POWER CONSUMPTION @ 130 V. LINE.....*60 Watts

*Phone Motor 40 Watts additional.

CHASSIS NO. 20, 21 AND 23

further opened until correct peak is found.
(f) Repeat (a) to (e) for more accurate adjustments.

(2) Change the 400 ohm dummy antenna to a .0002 mf. (200 mfd.) condenser. Turn band switch to B. C. position (left), open gang condenser all the way, etc.

(a) Set signal generator to 1650 kilocycles.
(b) Adjust the B. C. "OSC" trimmer for maximum output (front trimmer, right end of chassis).

(c) Set signal generator to 1400 kilocycles.
(d) Tune-in 1440 kc. signal with tuning condenser, (should be approximately 14 on the dial), then adjust the B. C. "ANT" trimmer (rear trimmer, right end of chassis) for maximum output.

(e) Repeat (a) to (d) for more accurate adjustments.

(3) Using same dummy antenna (.0001 mf.) align the Special Police Band antenna trimmer (there is no oscillator adjustment for this band).
(a) Set signal generator to 2.5 kilocycles.
(b) Push switch on loop antenna to Pol. position and then tune-in the generator signal with gang, approx. 2.5 on the dial.
(c) Adjust trimmer on loop antenna for maximum output.

CAUTION: Be sure to push the switch on the loop antenna back to B. C. position if receiver is to be used for broadcast reception.
WAVE TRAP
Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram.
The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .0002 mfd. condenser into the antenna lead of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser set to approximately 60 in the dial, and the volume control full on, adjust the wave trap trimmer condenser for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver, the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal, an antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits may be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to the plate and screen of the 6K6G output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic in series with one of the leads.

Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the antenna lead (Blue). Connect the ground lead from the signal generator to the ground lead (black) of the receiver.
(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the Broadcast Band. (Left). Push switch on loop ant. to B. C. position.
(d) Set the signal generator to 455 kilocycles.
(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.
(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

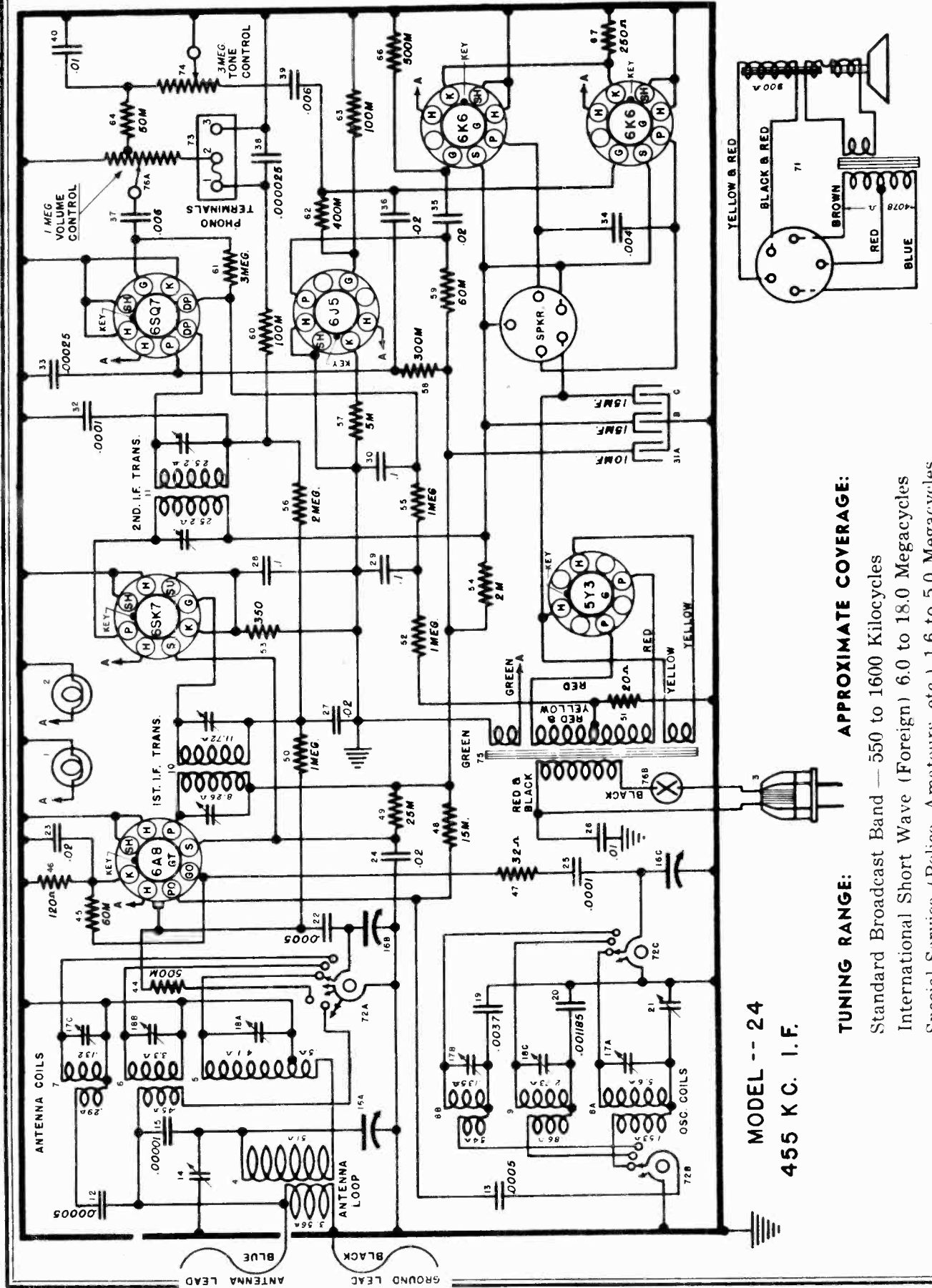
(g) Check operations (e) and (f) for more accurate adjustments.
ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning The R-F Circuits.
(1) Connect the signal generator output through a 400 ohm carbon resistor to the antenna lead (Blue) of the receiver and the generator return to the ground lead (Black).
(a) Set signal generator to 15.4 megacycles.
(b) Open tuning condenser all the way (rotor completely out of mesh) turn band switch to the right, (short wave) and volume on full. On models 21 and 23 turn tone control to treble position.
(c) Adjust the S. W. "OSC" trimmer, located on gang condenser, for maximum output.
(d) Set signal generator to 15.0 megacycles.
(e) Tune-in signal generator frequency with the station selector knob (approximately 15 on the dial) and while slowly rocking the station selector knob adjust the S. W. "ANT" trimmer condenser, center trimmer on right end of chassis, for maximum output.

NOTE: Check the image frequency by increasing the signal generator output. Tune-in 15 mc. signal and then the image which should come in around 14 on the dial. If image is not heard the oscillator is aligned on the wrong peak and S. W. "OSC" trimmer should be

THE CROSLY CORP.

MODEL 24



MODEL -- 24
 455 K.C. I.F.

TUNING RANGE:

- Standard Broadcast Band — 550 to 1600 Kilocycles
- International Short Wave (Foreign) 6.0 to 18.0 Megacycles
- Special Service (Police, Amateurs, etc.) 1.6 to 5.0 Megacycles

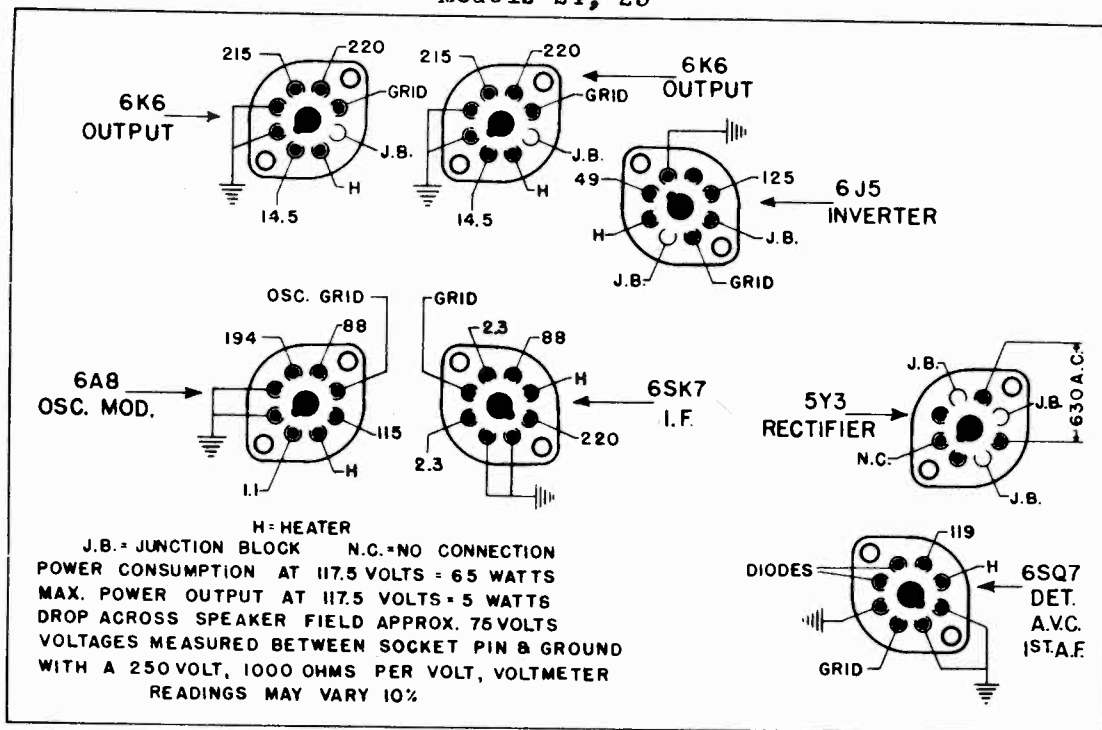
APPROXIMATE COVERAGE:

MODEL 24
MODEL 25

THE CROSLEY CORP.

SOCKET VOLTAGE CHART

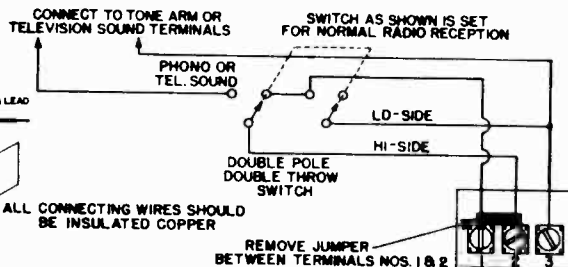
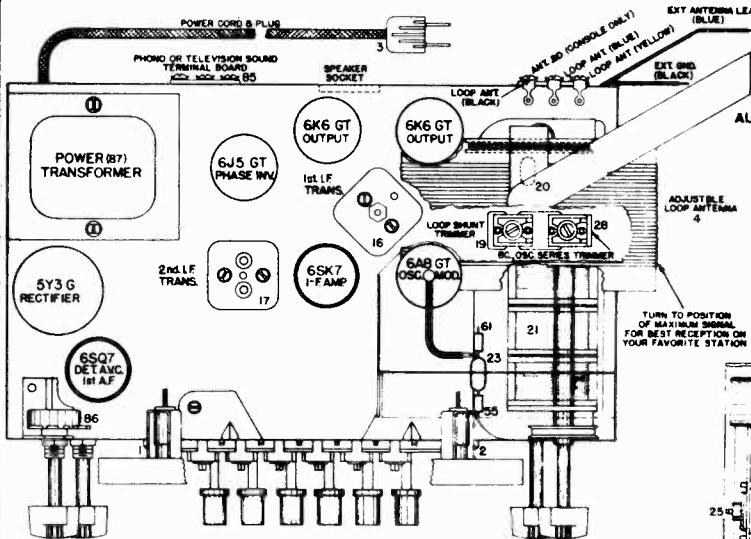
Models 24, 25



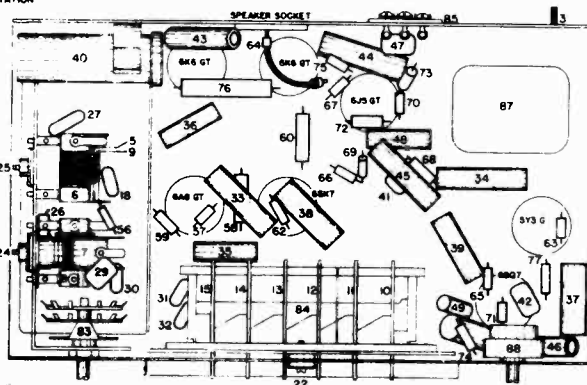
PHONO CONNECTIONS

Model 25

Model 25



Model 25
BOTTOM VIEW OF CHASSIS



THE CROSLEY CORP.

MODELS 25, 26,
26 (Revised),
29, 31BF**SET UP PROCEDURE**

Remove push button escutcheon. Turn the set on and leave operate a sufficient length of time to permit the tubes to reach their normal operating conditions.

NOTE: To simplify the set up and insure accurate adjustments the following pre-adjustments should be made.

Tighten all the "ANT" Trimmer screws just moderately tight. See Fig. 1.

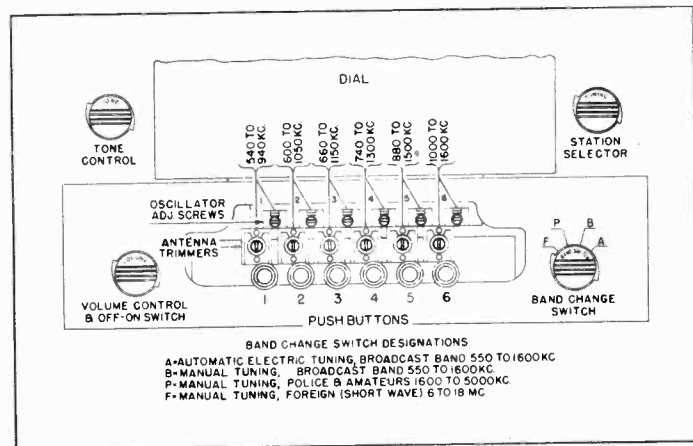


FIG. 1

Turn the "OSC" screws to the left (counter-clockwise) until the end of the screw is about flush (even) with the top of the "ANT" padded condenser. Note: Care should be exercised when adjusting the "OSC" screws so that the selected station is not passed over, turn screws slowly.

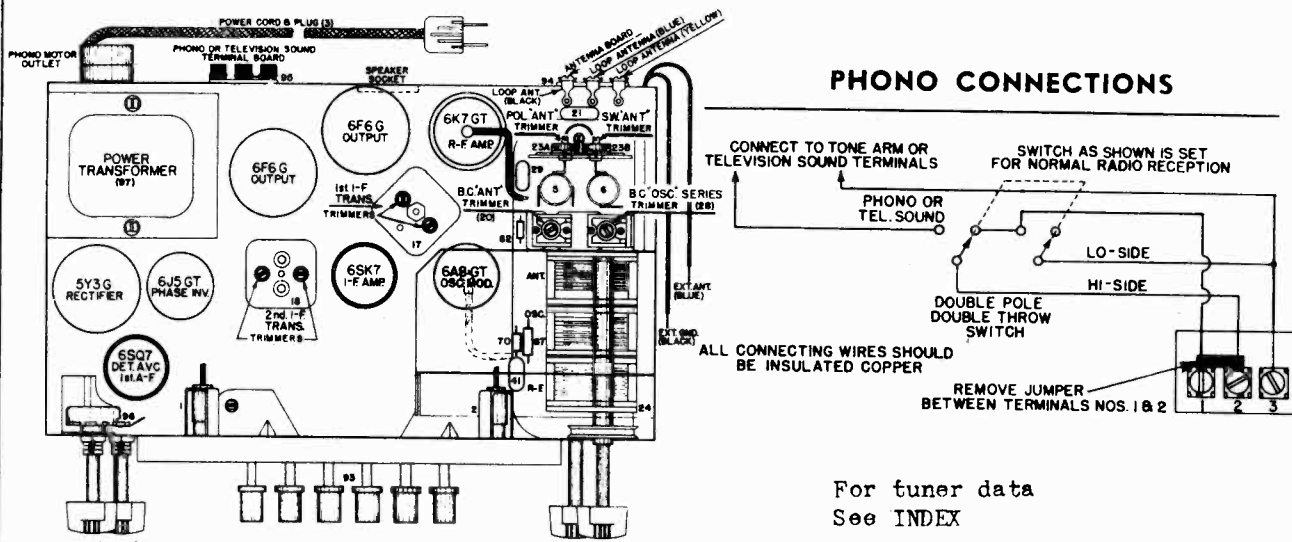
It is essential that the frequency (kilocycles) of the station selected is **within** the range of the push button to be set for that station, see Fig. 1.

1. Turn the band switch to "B" position, first notch from left end. Using the station selector knob (upper right) carefully tune in the station to which the No. 1 push button is to be set. Note program.
2. Turn the band switch to the left ("A") and using a small screw driver, carefully turn the "OSC" screw to the right (clockwise) for the No. 1 push button (first screw on left in the upper row), until the station you tuned in (Manually) is heard again. Adjust for maximum output in speaker.
3. Adjust the No. 1 push button "ANT" adjusting screw for maximum volume in speaker. **NOTE:** If this adjustment does not seem to have much effect adjust loop antenna for minimum signal from that station. then adjust the "ANT" screw for maximum signal.
4. Turn band switch one notch to right "B" then back to "A" to check if push button is correctly adjusted. There should be no change in tone quality when switched from one to the other.
5. The set-up for No. 1 push button is now complete. Set up remaining buttons to be set, following the same procedure, adjusting the "OSC" screw first, then the "ANT" padder screw.
6. After all the buttons have been set, they should be rechecked, turning the loop antenna for minimum pickup on each station to insure accurate adjustments.

To tune the receiver with the push buttons the Band Switch must be turned all the way to the left "A" then completely depress the button which represents the station you wish to hear.

MODELS 26,
26 (Revised)

THE CROSLEY CORP.



For tuner data
See INDEX

- Preliminary
- Output Meter Connections.....Plate to Plate of 6F6's
 - Generator Ground Connection.....To chassis or Ground Lead
 - Dummy Antenna to be in series with generator output.....See Chart Below
 - Position of Volume Control.....Fully On
 - Position of Tone Control.....Treble or Speech

ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.

SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS)
WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.)
PIN NUMBER

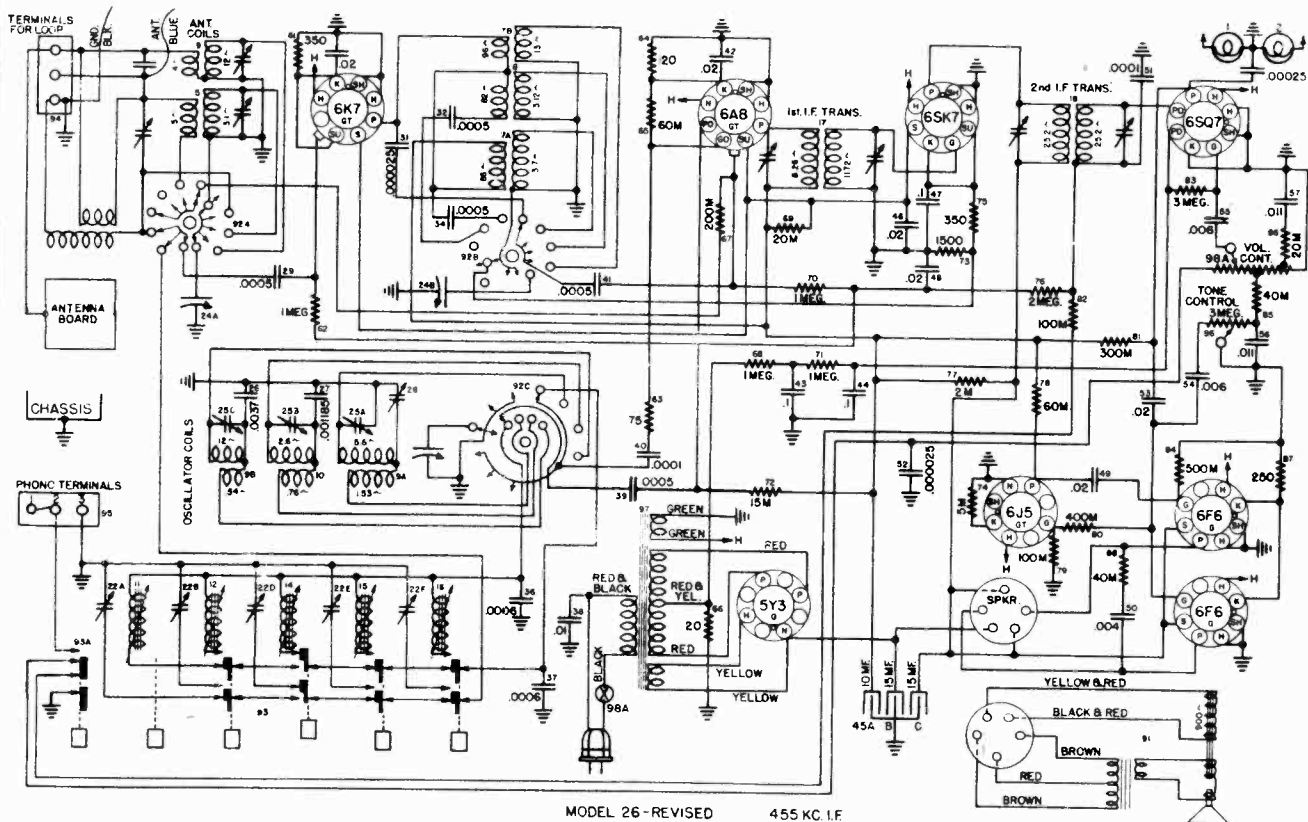
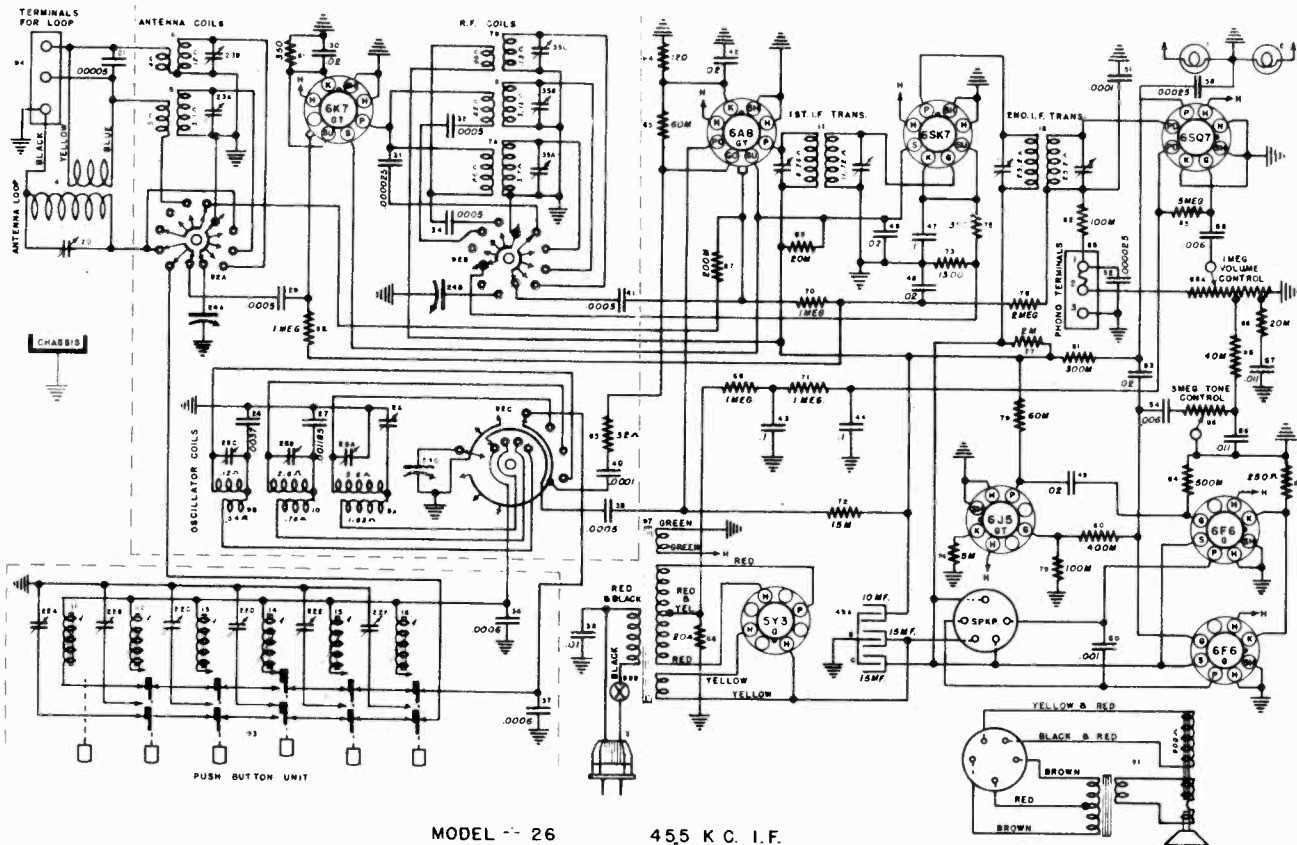
TUBE FUNCTION	1	2	3	4	5	6	7	8
6K7GT—R. F. Amp.....	0	0	187	75	0	J.B.	*6.3	2
6A8GT—Osc.-Mod.	0	0	187	75	0	130	*6.3	1
6SK7—I. F. Amp.....	0	0	2.3	0	2.3	78	*6.3	228
6SQ7—Det. A.V.C.-A. F.....	0	0	0	0	0	110	*6.3	0
6J5GT—Phase Invert.	0	0	120	0	0	J.B.	*6.3	5.5
6F6G—Output	0	0	220	230	0	J.B.	*6.3	14.5
6F6G—Output	0	0	220	230	0	J.B.	*6.3	14.5
5Y3G—Rectifier	NC	329.0	J.B.	*358.0	J.B.	*358	J.B.	329.0

*Measure with A. C. Voltmeter.

Max. POWER OUTPUT @ 117.5 V. LINE..... 8.0 Watts
POWER CONSUMPTION @ 117.5 V. LINE..... 85 Watts
DROP ACROSS SPEAKER FIELD..... 95.0 Volts

THE CROSLLEY CORP.

MODEL 26
MODEL 26 Revised



MODELS 28, 29,
J30, 31BF, 34BH

THE CROSLEY CORP.

Fully On
Trebble or Speech

Position of Volume Control
Position of Tone Control

ALIGNMENT PROCEDURE CHART Models 29, 31, 34

Align- ment Sequence	Signal Generator	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	02 MF.	45 Kc.	Grid of 6A6CT	B. C.	Fully open	2nd I.F. (2)	B.C. "OSC" Trimmer	Adjust for maximum output while rocking gang thru signal.
2.	.002 MF.	1550 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B.C. "OSC" Trimmer	B.C. "OSC" Trimmer	Adjust for maximum output while rocking gang thru signal.
3.	.002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B.C. "OSC" Trimmer	B.C. "OSC" Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment							
5.	.002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B.C. "ANT" Trimmer	B.C. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol. "OSC" Trimmer	Pol. "OSC" Trimmer	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 3.0	Pol. "ANT" Trimmer	Pol. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC" Trimmer	S. W. "OSC" Trimmer	Adjust for peak gang; does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" Trimmer	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.

Fully On
Trebble or Speech

Position of Volume Control
Position of Tone Control

ALIGNMENT PROCEDURE CHART Models 28, 30

Align- ment Sequence	Signal Generator	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	02 MF.	45 Kc.	Grid of 6A6CT	B. C.	Fully open	2nd I.F. (2)	B.C. "OSC" Trimmer	Adjust for maximum output while rocking gang thru signal.
2.	.002 MF.	1550 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B.C. "OSC" Trimmer	B.C. "OSC" Trimmer	Adjust for maximum output while rocking gang thru signal.
3.	.002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B.C. "OSC" Trimmer	B.C. "OSC" Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment							
5.	.002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B.C. "ANT" Trimmer	B.C. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol. "OSC" Trimmer	Pol. "OSC" Trimmer	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 3.0	Pol. "ANT" Trimmer	Pol. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC" Trimmer	S. W. "OSC" Trimmer	Adjust for peak gang; does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" Trimmer	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.

IMPORTANT ALIGNMENT NOTES
Models 28, 29, J30, 31BF, 34BH

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune in the generator frequency and then tune in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

IMPORTANT ALIGNMENT NOTES
Models 28, 29, J30, 31BF, 34BH

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune in the generator frequency and then tune in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.)

TUBE FUNCTION	1	2	3	4	5	6	7	8
6SK7 - Pre-Amp.	0	0	198	76.5	0	J. B.	+6.3	62
6SK7 - I. F. Amp.	0	0	0	2.4	0	2.3	78.5	1
6SQ7 - Det. A. V. C. - A. F.	0	0	0	0	0	0	+6.3	226
6J5GT - Phase Invert.	0	0	118.5	0	0	0	J. B.	6.0
6K8C - Output	0	0	228	236	0	0	+6.3	15.5
5Y3G - Rectifier	NC	310	J. B.	+300	J. B.	+300	J. B.	310

*Measure with A. C. Voltmeter.

SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.)

TUBE FUNCTION	1	2	3	4	5	6	7	8
6SK7 - Pre-Amp.	0	0	198	76.5	0	J. B.	+6.3	62
6SK7 - I. F. Amp.	0	0	0	2.4	0	2.3	78.5	1
6SQ7 - Det. A. V. C. - A. F.	0	0	0	0	0	0	+6.3	226
6J5GT - Phase Invert.	0	0	118.5	0	0	0	J. B.	6.0
6K8C - Output	0	0	228	236	0	0	+6.3	15.5
5Y3G - Rectifier	NC	310	J. B.	+300	J. B.	+300	J. B.	310

*Measure with A. C. Voltmeter.

MAX. POWER OUTPUT @ 117.5 V. LINE 50 Watts
POWER CONSUMPTION @ 117.5 V. LINE 86 Watts (Including Phono Motor)
TOTAL POWER CONSUMPTION @ 117.5 V. LINE 110 Watts
DROP ACROSS SPEAKER FIELD 74 Volts

Voltagess may vary 10% of values given.

J. B. - JUNCTION BLOCK

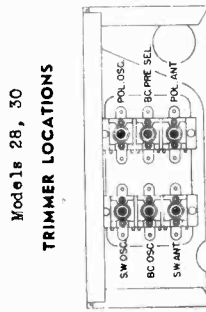
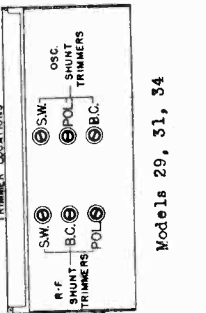
N. C. - NO CONNECTION

MAX. POWER OUTPUT @ 117.5 V. LINE 50 Watts
POWER CONSUMPTION @ 117.5 V. LINE 86 Watts (Including Phono Motor)
TOTAL POWER CONSUMPTION @ 117.5 V. LINE 110 Watts
DROP ACROSS SPEAKER FIELD 74 Volts

Voltagess may vary 10% of values given.

J. B. - JUNCTION BLOCK

N. C. - NO CONNECTION

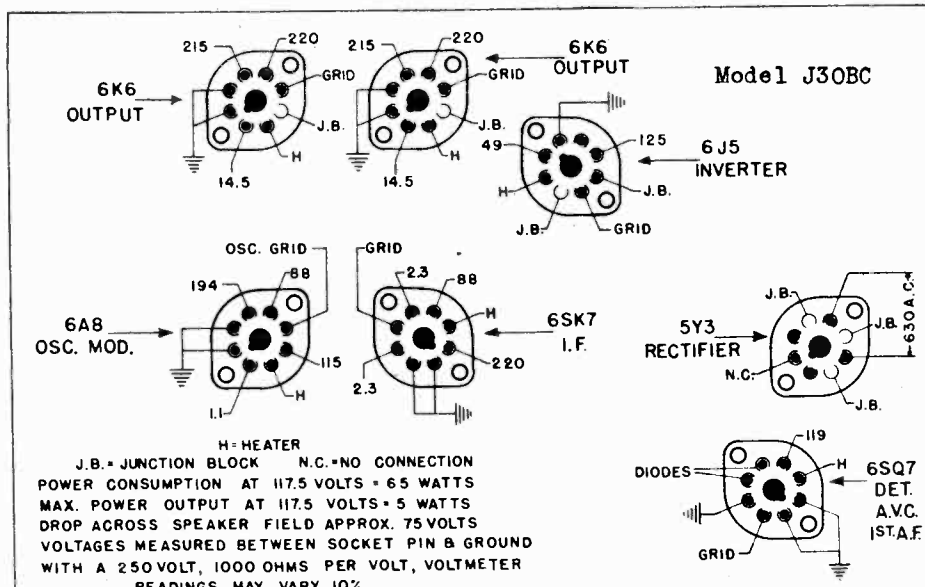


Models 28, 30

Models 29, 31, 34

MODELS 33BG,
J30BC, 31BF

THE CROSLLEY CORP.



J.B. = JUNCTION BLOCK N.C. = NO CONNECTION
 POWER CONSUMPTION AT 117.5 VOLTS = 65 WATTS
 MAX. POWER OUTPUT AT 117.5 VOLTS = 5 WATTS
 DROP ACROSS SPEAKER FIELD APPROX. 75 VOLTS
 VOLTAGES MEASURED BETWEEN SOCKET PIN & GROUND
 WITH A 250 VOLT, 1000 OHMS PER VOLT, VOLTMETER
 READINGS MAY VARY 10%

SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS)
 WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.)
 VOLTAGES MAY VARY 10% OF VALUES GIVEN

Model 31BF

TUBE	FUNCTION	SOCKET PIN NUMBER							
		1	2	3	4	5	6	7	8
6K7GT	R.F. Amplifier.....	GND.	GND.	280	110	3.25	J.B.	*6.5	3.25
6A8GT	Osc.-Mod.....	GND.	GND.	260	110	—NEG.	135	*6.5	3.00
6SK7	I-F Amplifier.....	GND.	GND.	GND.	GRID	3.6	110	*6.5	280
6SQ7	Det.-A.V.C.-1st A-F.....	GND.	GND.	1.75	A.V.C. DIODE	AUDIO DIODE	220	*6.5	GND.
6J5	Driver.....	GND.	6.5	145	J.B. 265	GRID	J.B. A.V.C.	GND.	4.85
6V6G	Output.....	GND.	GND.	300	280	GRID	J.B.	*6.5	18.5
6V6G	Output.....	GND.	GND.	300	280	GRID	J.B.	*6.5	18.5
6SQ7	Mic. Amp. & Ind. Rect....	GND.	GND.	GND.	LEVEL DIODE	N.C.	85	*6.5	GND.
6E5	Indicator—(Tun.-Level)								
5U4G	Rectifier.....								

*Measured with A.C. Voltmeter. N.C.—No Connection. GND.—Ground. J.B.—Junction Block.
 MAXIMUM POWER OUTPUT @ 117.5 V. Line=20 Watts @ Voice Coll.
 POWER CONSUMPTION @ 117.5 V. Line = Radio 115 Watts + Phono Motor 35 Watts = 150 Watts, Total.
 DROP ACROSS SPEAKER FIELD: Red/Black to Red/Gray = 25 Volts.
 Red/Gray to Red/Yellow = 45 Volts.

Position of Volume Control..... Fully On
 Position of Tone Control..... Treble or Speech

Model 33

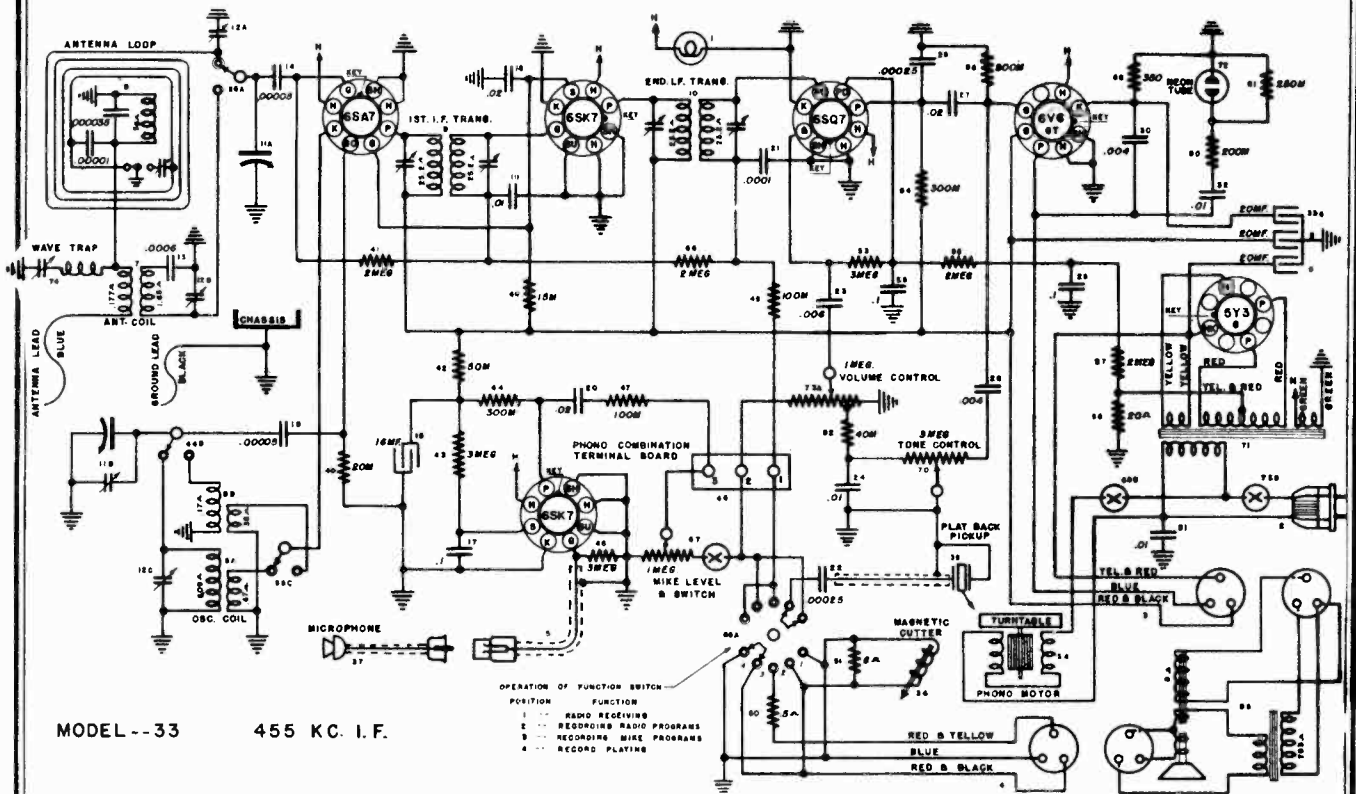
ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input to Receiver	Band Switch	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02MF.	455 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum output. Adjust for Maximum output.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Lead (Blue)	S. W.	Fully Open	S. W. "OSC" (on gang)	Adjust for Peak. See foot note.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 15 on dial	S. W. "ANT" center trimmer on right end	Adjust for Maximum while rocking gang back and forth.
4.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	B. C. "OSC" front trimmer on right end	Adjust for peak. Make sure the switch on loop is in B. C. position.
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" rear trimmer on right end	Adjust for Maximum output.
6.	.0002 MF.	2.5 Mc.	Ant. Lead (Blue)	B. C. and switch on loop to Pol	Approx. 2.5 on dial lower right corner	Pol. Ant on loop	Adjust for Maximum output.

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

THE CROSLY CORP.

MODEL 33BG
MODEL 31BF



MODEL --33 455 KC. I.F.

Model 33BG VOLTAGE CHART

ALL VOLTAGES MEASURED FROM SOCKET PIN TO CHASSIS @ 117.5 VOLT LINE

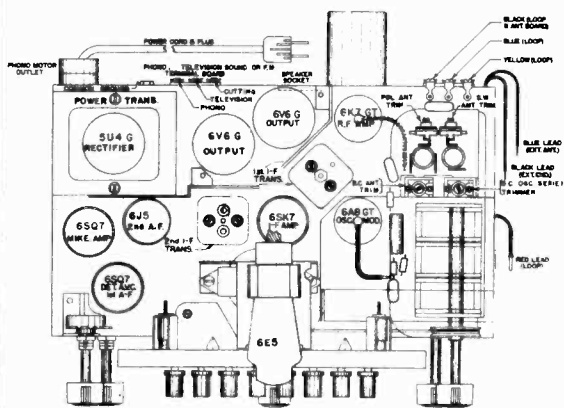
TUBE SECTION	SOCKET PIN NUMBER							
	1	2	3	4	5	6	7	8
6SA7—Osc.—Mod.	0	0	225	74	0	0	6.3	0
6SK7—I. F. Amp.	0	0	0	0	0	74	6.3	225
6SQ7—Det. A.V.C.—1st A.F.	0	0	0	0	0	100	6.3	0
6V6GT—Output	0	0	209	225	0	0	6.3	10.5
6SK7—Mike Amp.	0	0	0	0	0	+	6.3	+
5Y3G—Rectifier	0	5.0	0	316 A.C.	0	316 A.C.	0	283

All voltages measured with 1000 OHM/Volt Voltmeter except heaters. Voltages may vary 10% of values given.

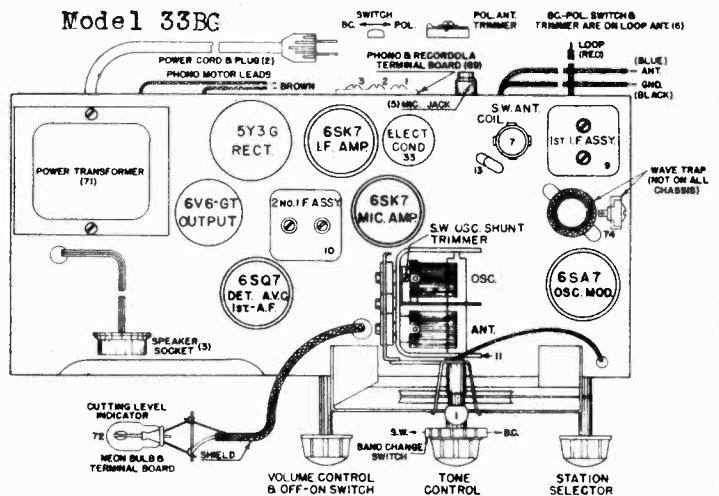
DROP ACROSS SPEAKER FIELD..... 58 Volts
 MAXIMUM POWER OUTPUT @ 130 V. LINE..... 6.5 Watts
 MAXIMUM POWER CONSUMPTION @ 130 V. LINE..... *60 Watts

*Phono Motor 40 Watts additional.

Model 31BF

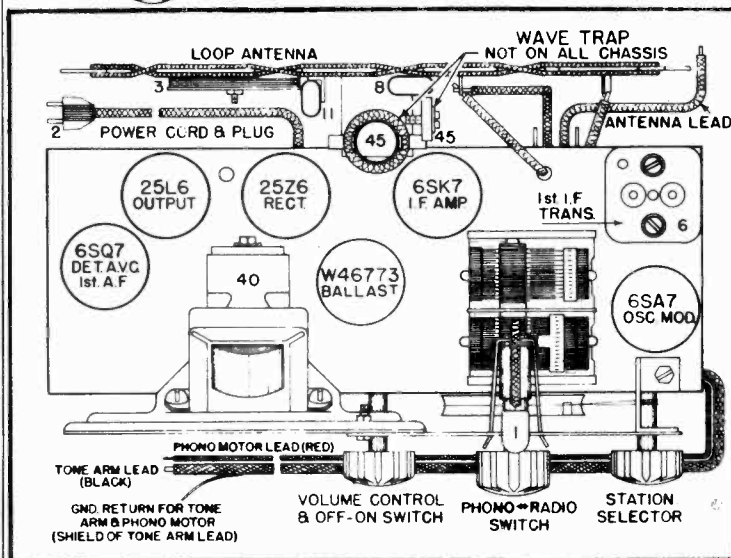
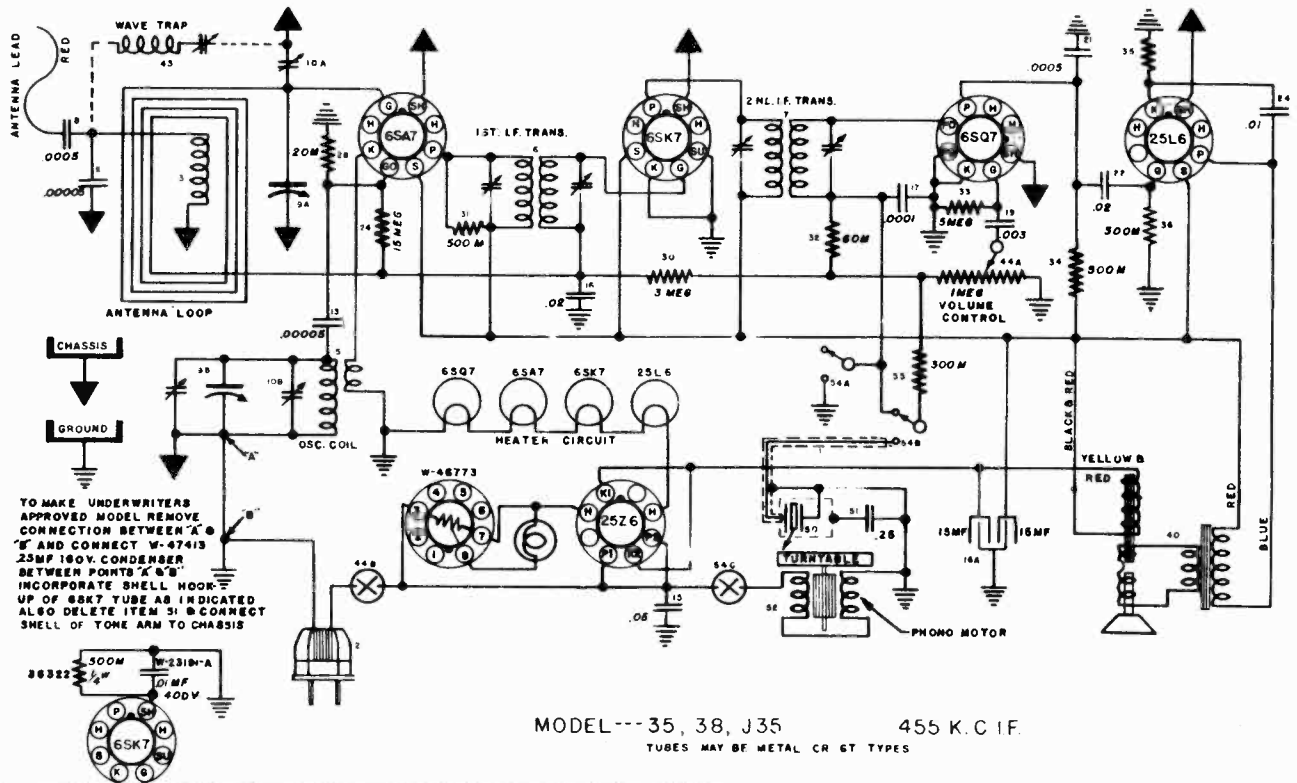


Model 33BG



THE CROSLY CORP.

MODELS 35AK, 38BM

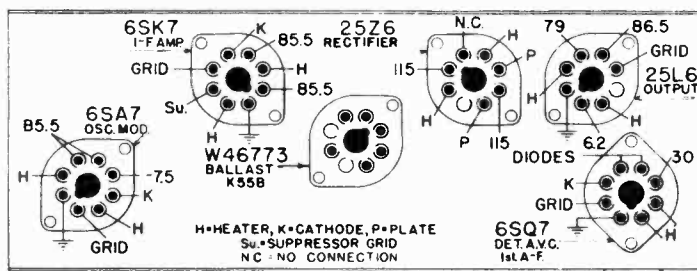


ALIGNMENT:

I.F. -- Set signal generator to 455 kc and connect to Red or Blue antenna lead through a 100 mmf dummy. Adjust 2nd i-f trimmers located through front chassis flange below speaker. Adjust 1st i-f trimmers for maximum output. See layout at left.

R.F. -- Set signal generator to 1650 kc. Condenser gang to minimum. Adjust B.C. OSC. trimmer so that signal is heard. Set signal generator to 1400 kc. Adjust tuning dial to 140 and adjust BC ANT. trimmer for maximum output.

NOTE: Do not readjust the OSC trimmer.

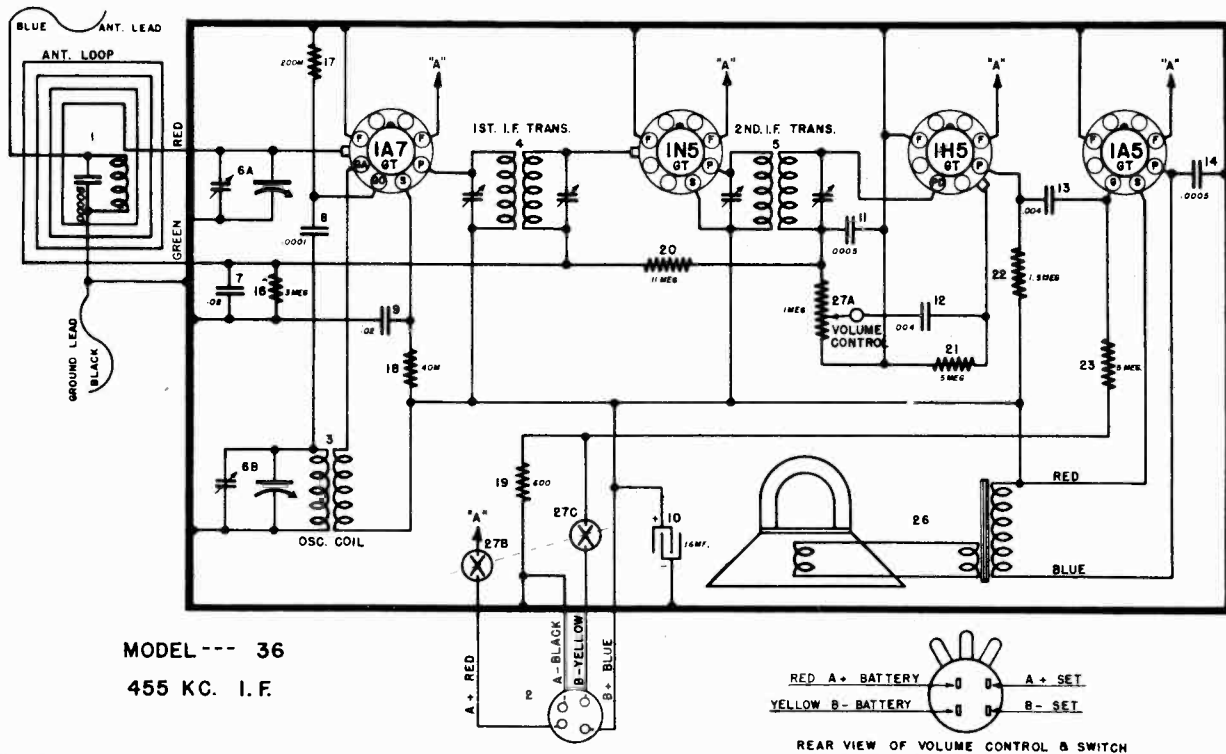


POWER CONSUMPTION AT 117.5 LINE = 50 WATTS
MAXIMUM POWER OUTPUT = 1.2 WATTS
DROP ACROSS SPEAKER FIELD = 28.5 VOLTS

Socket Voltage Chart

MODEL 36AM

THE CROSLEY CORP.



MODEL --- 36
455 KC. I.F.



REAR VIEW OF VOLUME CONTROL & SWITCH

TUBE SOCKET VOLTAGE READINGS (MEASURED FROM SOCKET PIN TO CHASSIS)

Tube	Function	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7-GT	Oscillator-Modulator	—	1.5	86	46	Neg.	86	—	—
1N5-GT	I-F Amplifier	—	1.5	86	86	—	J.B.	—	—
1H5-GT	Detector & 1st A-F Amp.	—	1.5	12	—	—	—	—	—
1A5-GT	Output	—	1.5	84	86	4.3*	—	—	J.B.

Power Output approximately 200 milliwatts. "A" Battery Drain approximately .20 Ampere at 1.5 Volts.
"B" Battery Drain approximately 9.0 Milliamperes at 90 Volts. *Measured across item 19. J.B. = Junction Block.

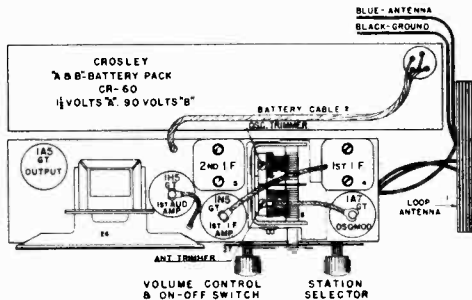


Fig. 1

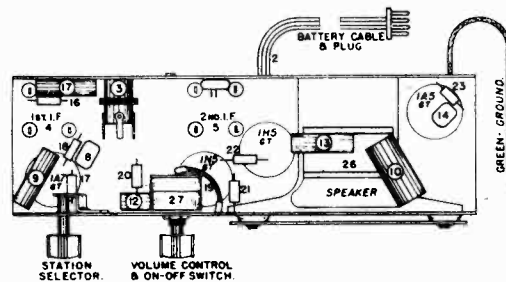


Fig. 2

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1A5GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 455 Kilocycles

- Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" lead or chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob on the right (ON).
- Set the signal generator to 455 kilocycles.
- Adjust both 2nd I-F trimmers for maximum reading on the output meter.
- Adjust both trimmers on the 1st I-F transformer for maximum output.

- Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" lead (Blue). (Check dial pointer to see that it covers complete range.)

- Set the signal generator to 1500 kilocycles.
- Open the condenser gang all the way.
- Adjust the "OSC" trimmer condenser on gang for maximum output.
- Set the signal generator to 1400 kilocycles.
- Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).
- Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**
- Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

MODEL A-150
MODEL A-350
MODEL A-450

THE CROSLLEY CORP.

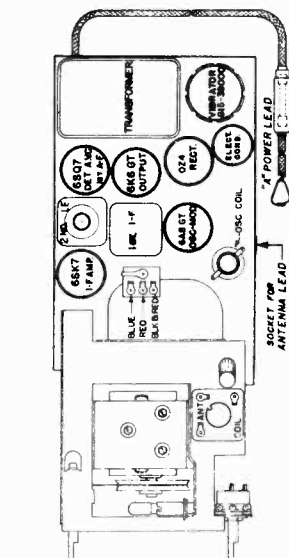


Fig. 2-A—Top View Model A-450

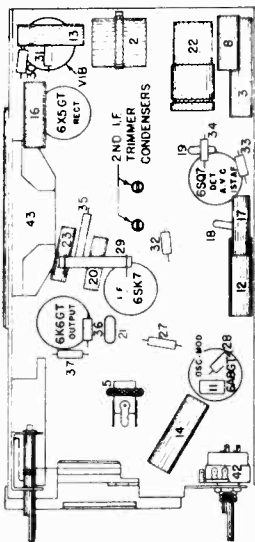


Fig. 3-A—Bottom View Model A-450

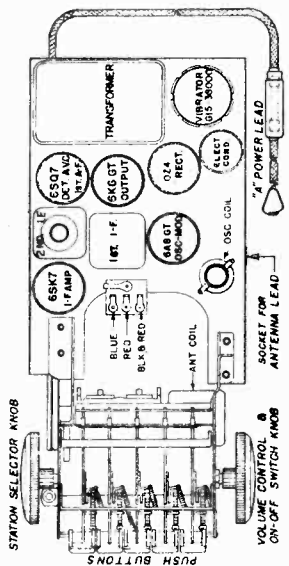


Fig. 2-B—Top View Model A-350

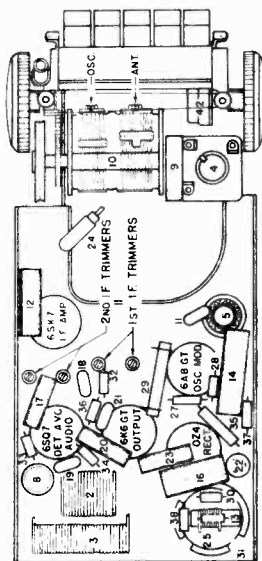


Fig. 3-B—Bottom View Model A-350

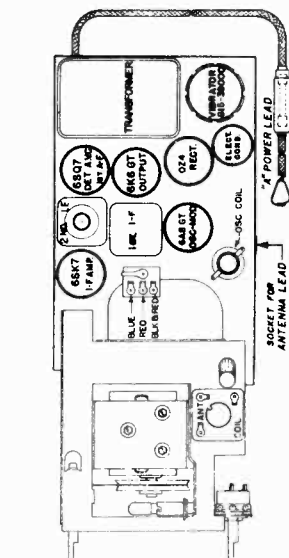


Fig. 2-C—Top View Model A-150

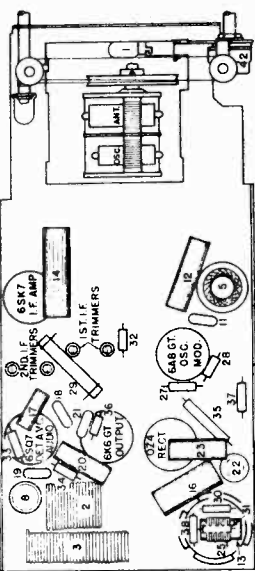


Fig. 3-C—Bottom View Model A-150

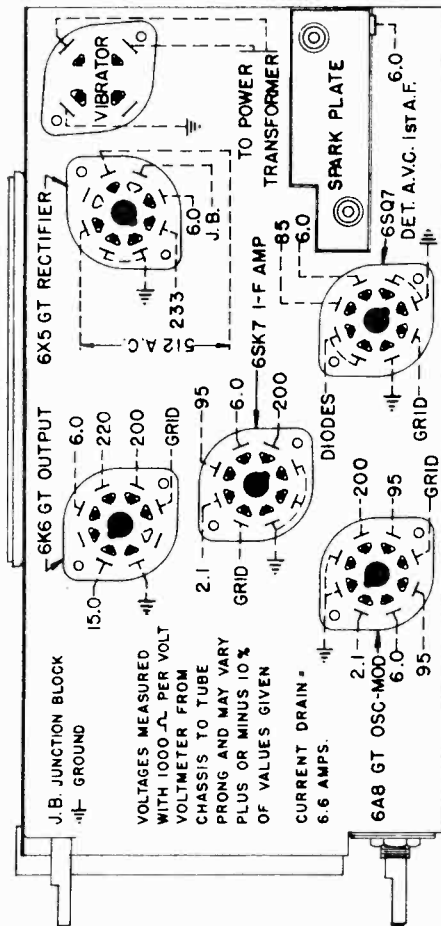


Fig. 4-A—Socket Voltage Chart Model A-450

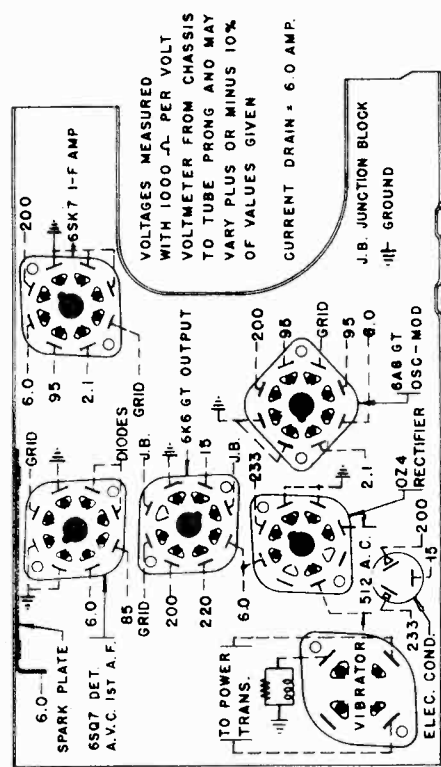
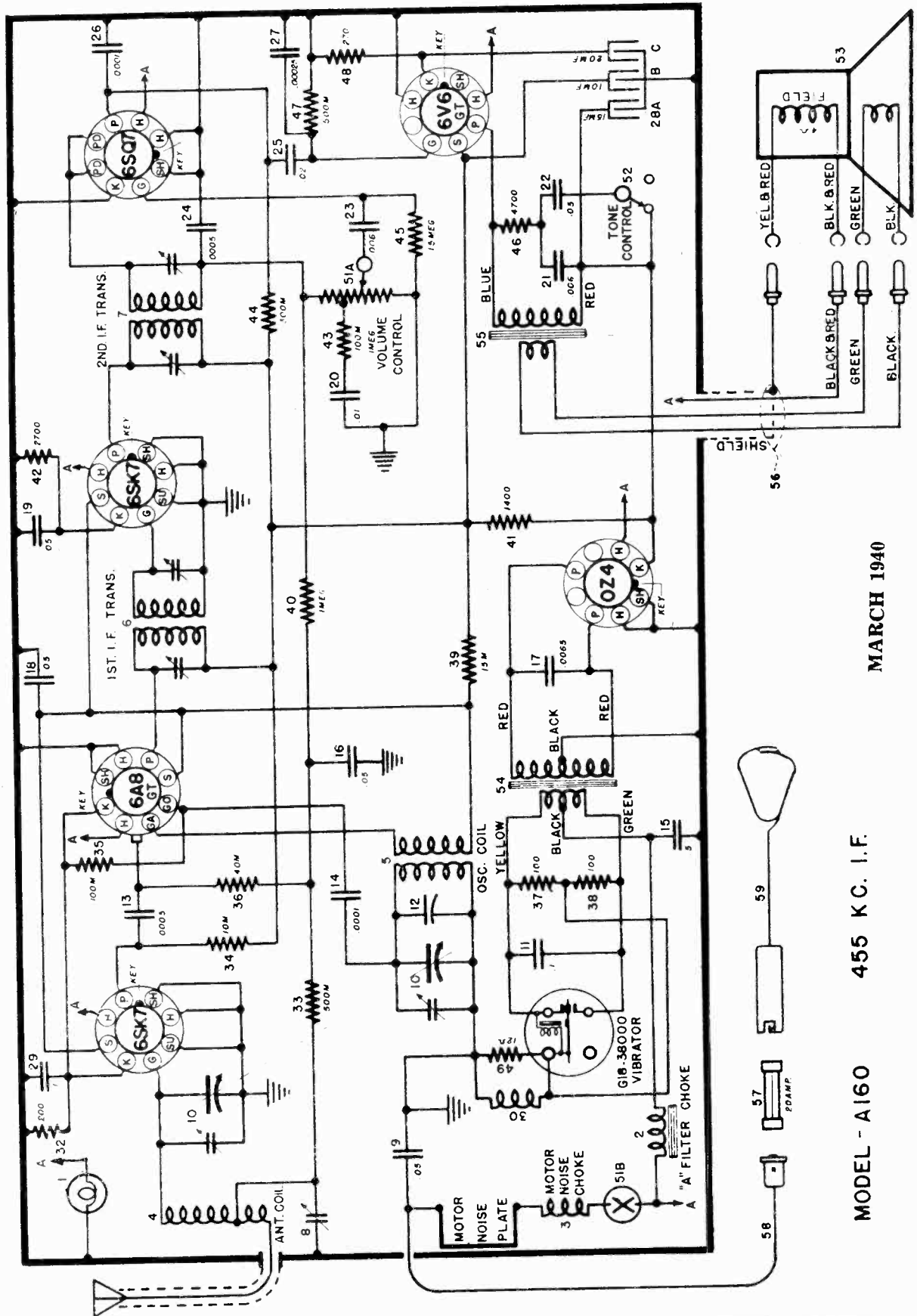


Fig. 4-B—Socket Voltage Chart Models A-150 and A-350

Conventional alignment; See Special Section Vol. VIII

THE CROSLY CORP.

MODEL A-160



MARCH 1940

MODEL - A160 455 KC. I.F.

For tuner See Model A250

MODEL A160

THE CROSLEY CORP.

SPEAKER INSTALLATION

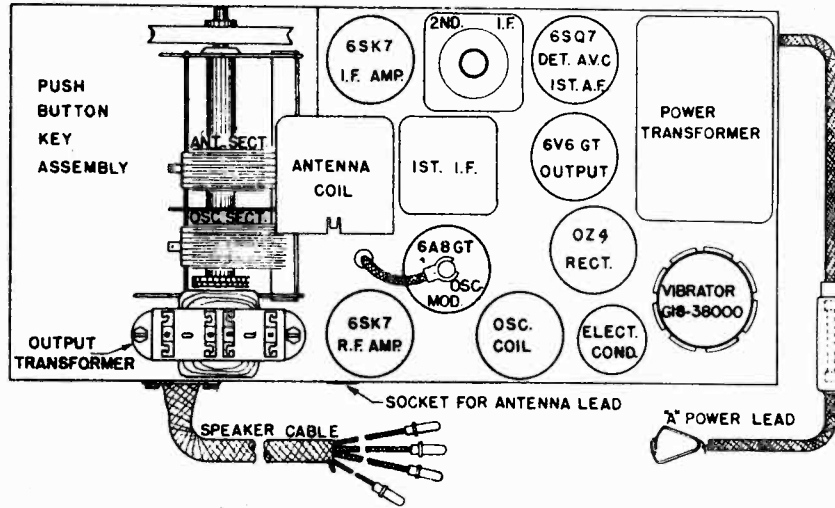
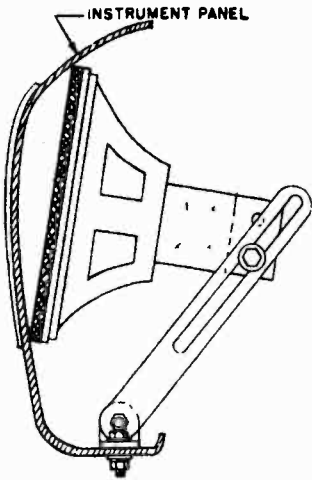


Fig. 5—Instr. Panel Mtg.

Fig. 2—Top View Model A-160

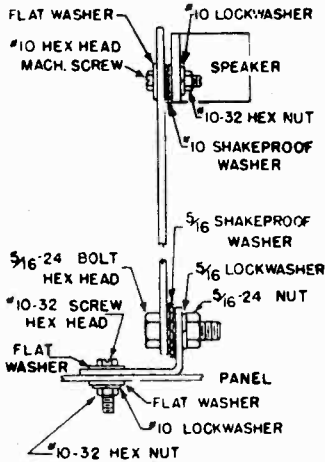


Fig. 6—Bracket Assembly

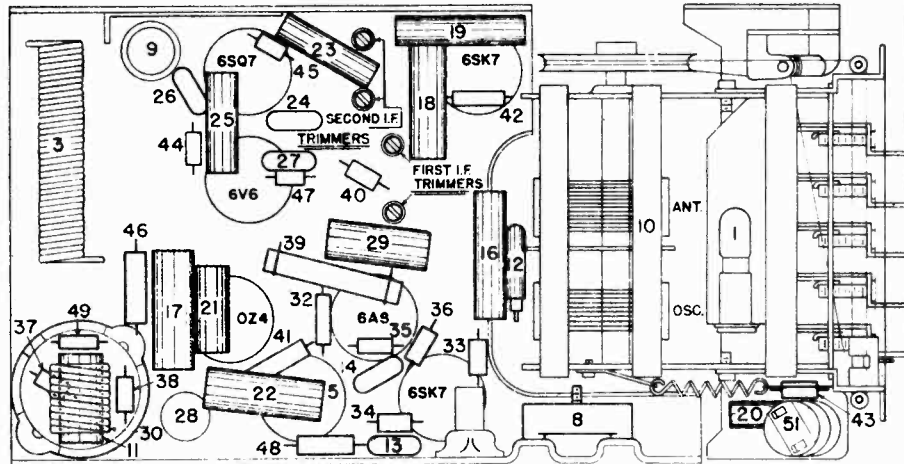


Fig. 3—Bottom View Model A-160

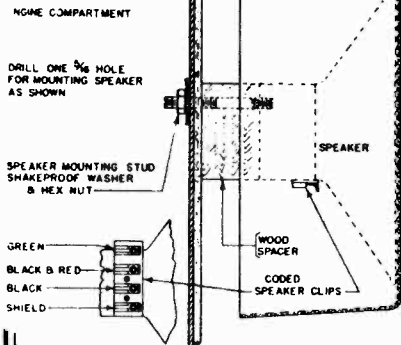


Fig. 7—Cowl Speaker Mtg.

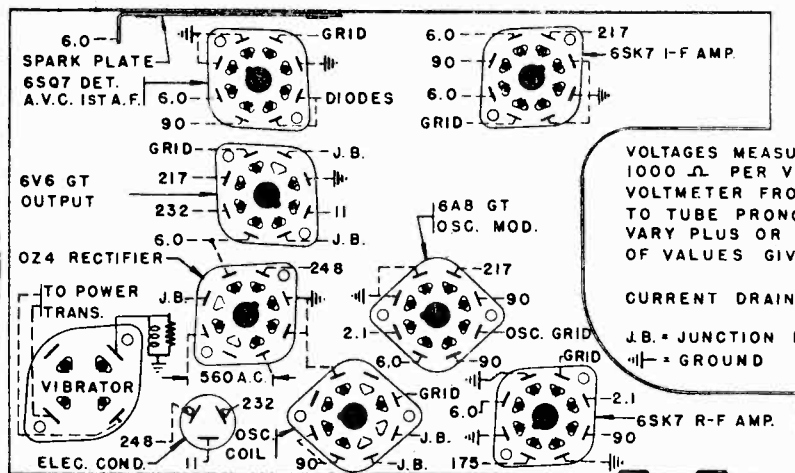


Fig. 4—Socket Voltage Chart Model A-160

THE CROSLY CORP.

MODEL A160
MODEL A250
MODEL 34BH

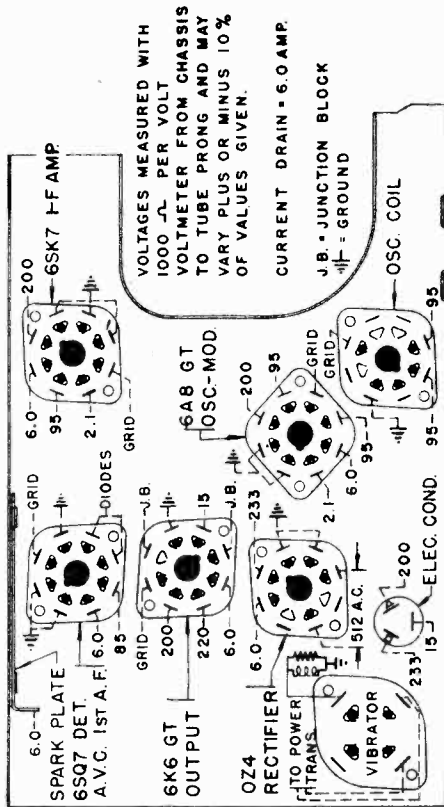


Fig. 3—Bottom View Model A-250

1. Aligning The I-F Amplifier (455 Kc.)

- (a) Connect the output of the signal generator through a .02 mf., or larger, condenser to the top cap of the 6A8GT oscillator-modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the chassis.
- (b) Set the signal generator to 455 kilocycles.
- (c) Open the tuning condenser all the way, turn the volume control on full.
- (d) Adjust both trimmers on the 2nd. I-F transformer for maximum output. (See figure 3).
- (e) Adjust both trimmers on the 1st I-F transformer for maximum output. (See figure 3).
- (f) Repeat (d) and (e) for more accurate adjustments. ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING TO PREVENT A. V. C. ACTION.

2. Aligning R-F Amplifier

To obtain the greatest gain from the R. F. amplifier,

SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	1	2	3	4	5	6	7	8
6K7GT	R-F Amp	195	78.6	2.0	6.3	2.0			
6A8GT	Osc-Mod.	195	136	6.3	1.0				
6SK7	I-F Amp.			5.5 B.C.	78.6	6.3	234		
				2.6 S.W.					
6SQ7	Det. A. V. C. 1st A-F	118	110	6.3	4.5				
6Y3GT	Phase Invert.	220	110	6.3	15.0				
6K6GT	Output	228	228	6.3	15.0				
6K6GT	Output	228	228	6.3	15.0				
6SK7	Mike Amp.			305 D.C.					
6Y3G	Rectifier			*325					
6E5	Indicator			225					
					*6.3				

*Measured with A. C. volt meter
VOLTAGE DROP ACROSS SPEAKER FIELD= 77 VOLTS
MAXIMUM POWER OUTPUT @ 130 V. Line= 7.5 Watts
POWER CONSUMPTION @ 117.5 V. Line= Radio 80 Watts, Phono Motor 35 Watts—TOTAL=115 WATTS
Voltages may vary 10% of values given.

Fig. 5—Socket Voltage Layout

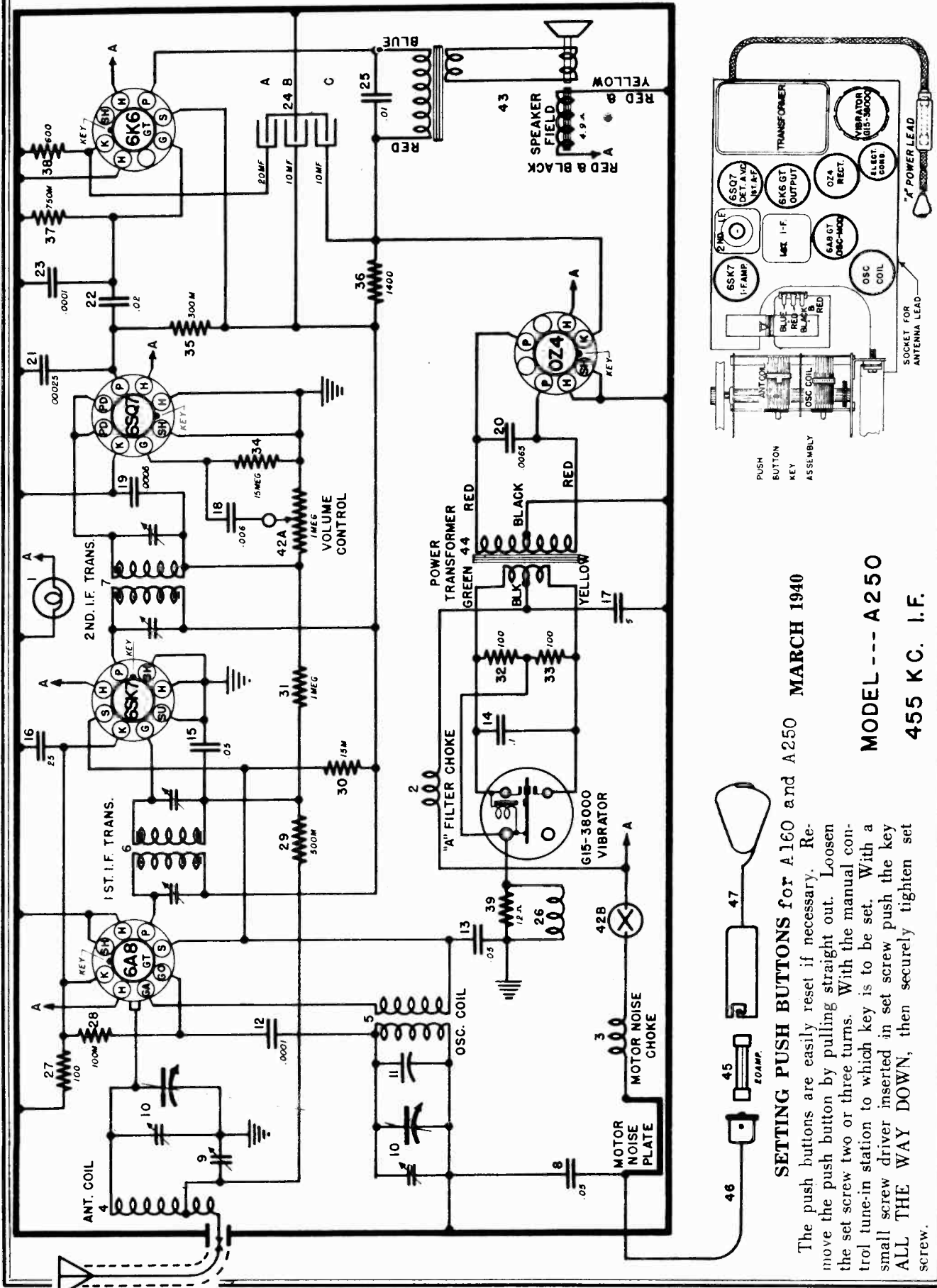
the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf.) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

- (a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.
- (b) Set the signal generator to 1400 kilocycles.

- (c) Check the pointer travel on the dial to see that it makes a complete trip, reset if necessary. Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
- (e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- (f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.
- (g) Repeat operation (e) for more accurate adjustment.

3. Adjusting Antenna Compensating Condenser.

- (a) Set the signal generator to 600 kilocycles.
- (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
- (c) Adjust the antenna compensating condenser, located to the right of antenna receptacle, for maximum output.
- (d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.
- (e) Set the signal generator to 1400 kilocycles again.
- (f) Tune in the 1400 kilocycle signal with the station selector for maximum output.
- (g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output. It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.
- (a) After the installation is complete, tune in a WEAK station between 55 and 65 on the dial.
- (b) Adjust the antenna compensating condenser for maximum volume in the speaker.



SETTING PUSH BUTTONS FOR A160 and A250 MARCH 1940

The push buttons are easily reset if necessary. Remove the push button by pulling straight out. Loosen the set screw two or three turns. With the manual control tune-in station to which key is to be set. With a small screw driver inserted in set screw push the key **ALL THE WAY DOWN**, then securely tighten set screw.

**MODEL --- A250
455 KC. I.F.**

THE CROSLLEY CORP.

Recorder data (Part 1)

I—RECORDERS

The quality and life of instantaneous home recordings is largely dependent upon the operators working knowledge of his equipment and the type blank discs and cutting needles used. For the operation and adjustment of the various controls read the operating instructions supplied with the receiver.

The type recorders used in Crosley equipment employ low impedance magnetic cutting heads and have crystal tone arms for play back. The turntable is rim driven. The deluxe recorder also has the automatic record changer capable of playing 14 ten inch or 10 twelve inch records at one loading.

A.—CUTTING NEEDLES

The cutting needle or stylus as furnished with the Crosley recorders will cut approximately 30, 6 1/2" records one side or 15, 6 1/2" records both sides (one hour life cutting time).

These needles are of the hardened steel type and the cutting point and edges are extremely sharp and quite easily damaged should they be bumped or scraped against a metal surface. The point of these needles is

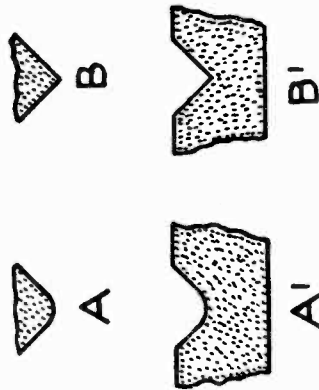


Figure 1

ground to a sharp "V" as shown in fig. 1B while the more expensive needles are of sapphire or a special metal alloy with their points having a very slight radius as shown in fig. 1A.

A simple rule of the thumb method for determining good wear is that the grooves cut out with a new or good needle have a high brilliance and as the needle wears the lustre of the cut section will be less and eventually appear gray.

If cutting needle tends to chatter as it is recording, it is advisable to replace it with a new one. (Also check the cutting arm height, see following paragraphs). The recording needle may be removed and replaced as desired, provided the adjustments are checked each time before recording. In all events, every precaution must be taken to protect the cutting point at all times; in

cutting it should be lowered GENTLY on the blank with turntable RUNNING.

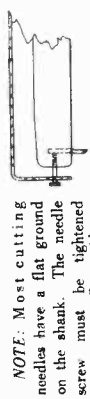


Figure 2

B.—PLAY BACK NEEDLES. (Use Recoton needles as furnished by Crosley for best results)

Instantaneous recordings (home recordings) require special play back needles if the quality and life of the record is to be retained. Needles purchased as "100% shadowgraphed" steel needles should be used at all times. This type needle is individually inspected to see that it has a perfectly rounded point of proper radius with no sharp edges or flat sides so that it will have no tendency to harm the record.

Several home recordings may be played with one needle, PROVIDED the needle does not touch a commercial record. Never play an instantaneous recording with a needle that has been used on a commercial record.

A rule of the thumb method for judging the amount of wear on a home recording when it is being played back is to watch the change in the color of that portion of the record which the needle has played in comparison with the rest of the record. The first time the record is played back after it has been recorded the grooves may turn slightly darker as the play-back needle passes over them, but the change should not be great. Further play-back should show little or no change in color, provided the play-back is in good condition and that the record is free from dust and dirt. Whenever any great changes in color does occur, it is advisable to immediately stop the record and put in a new needle.

C.—CUTTING ARM ADJUSTMENTS.

"Recorder with Automatic Record Changer," "Seaburg Type" used on Models 28AZ, 34BH, 31BF, and 43BF.

The height of the cutting arm can be varied by means of the slotted screw head which is on top of the arm and near the back approximately flush with the top surface of the arm. In order to make this adjustment, it is necessary to insert a cutting needle and, with the motor turned OFF and a record blank on the turntable, place the recording arm in the cutting position. Now turn the cutting arm height adjusting screw UNTIL THE NEEDLE SCREW IS CENTERED IN THE

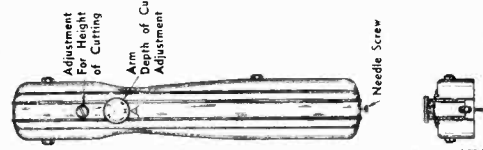


Figure 3

SLOT THROUGH WHICH IT PROTRUDES (AT FRONT END OF RECORDER ARM).

Any change in the cutting arm height adjustment will change the vertical angle of the cutting needle therefore it is absolutely essential that the depth of cut be rechecked.

"Recorder as used in Model 33BG." (General Industries Type).

The height adjustment of the cutting arm on this recorder is accomplished by raising the cutting arm and loosening the locknut of the cutting arm Height Adjusting Screw, see fig. 4. Place needle in cutting arm and place a record blank on turntable. Carefully lower cutting arm on record, with the motor turned OFF.

Set the Arm Height Adjusting Screw so that there is

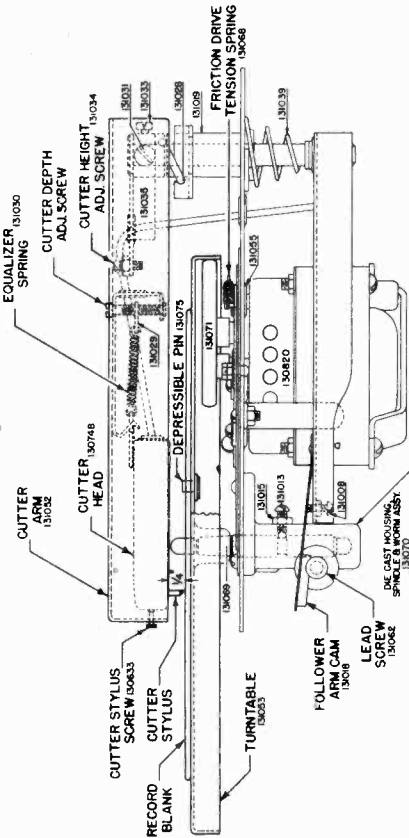


Figure 4

exactly 1/4" space between the surface of the record and the bottom edge of the cutting arm (Front) see fig. 4.

NOTE: A change in cutting arm height adjustment may affect the depth of cut or vice-versa.

C.—ADJUSTING DEPTH OF CUT.

The correct depth of cut is important to insure maximum record life and good reproduction quality.

The depth of cut which is determined by the cutting

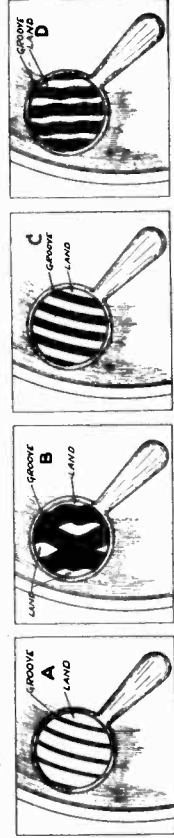


Figure 5

needle pressure on the blank disc should be such THAT THE WIDTH OF THE GROOVE IS APPROXIMATELY THE WIDTH OF THE SPACE (LAND) BETWEEN THE GROOVES. With no sound applied the ratio of 60 percent groove and 40 percent land is the ideal cutting depth for most conditions. The importance of the depth of cut CANNOT BE OVER EMPHASIZED, since too light a cut or too heavy a cut will tend to give distortion and generally poor results.

Illustrations A, B, C, and D in fig. 5, are typical results obtained. "A" shows a groove which is cut too light, "C" a groove of approximately 60-40 or which is the generally preferred depth, "D" illustrates an appearance of a groove of "C" depth after recording while "B" illustrates a too heavy a cut (over 60-40) with an excessive amount of (too high a cutting level) signal applied to cutting head causing an overcut of the

grooves. The adjustment of the depth of cut is accomplished by rotating the chrome knob on the cutting arm of the recorder with automatic record changer, see fig. 3. This knob has the letters "L, M, and H" engraved on it indicating Light, Medium and Heavy pressures. In general, the machine is properly adjusted and set at the factory so that it will cut the average record correctly when this knob is in the "M" position.

On the recorder as employed in Model 33BG the

Recorder data (Part 2), Auto. record changer

THE CROSLLEY CORP.

(H) *Tension On Rubber Idler Drive Wheel* (Item 83, Fig. 6) *Too Great:*

If the tension on the Rubber Idler Drive Wheel is too great, this will result in a "wow" or a rumble in the recording. To decrease the tension on Rubber Idler Drive Wheel, loosen the screw holding the lug which is located beneath the Rubber Idler Drive Wheel and turn it slightly in a clockwise direction. This will reduce the spring tension on the Rubber Idler Drive Wheel. When the spring tension is correct, the spring will be approximately at right angles to the lug.

(I) *Tension On Rubber Idler Drive Wheel* (Item 83, Fig. 6) *Too Weak:*

This will cause very bad speed variation. Turntable will slow down and then speed up as audio current of varying intensity reaches the cutter cartridge.

RECORDS AS USED IN MODEL 33BG

(a) *Possible Mechanical causes of Poor Recordings.* Thread from record cuttings getting down on to Turntable Drive Wheel (Fig. 4, Section 1). This will cause very bad speed variation of turntable. Cuttings may also wrap around motor shaft and cause motor to slow down or stop. To remove record cuttings, the turntable should be lifted by applying an even lifting force at opposite edges of the turntable. The rubber drive wheel should be taken off—Remove hairpin retainer and fibre washer and left wheel off, remove all cuttings and replace wheel.

NOTE: It is very important that NO GREASE or OIL be gotten on the surface of the rubber on drive wheel.

Turntable Drive Wheel may become damaged by—

1. By permitting turntable to drop and cut into the outside surface of the rubber drive wheel.
2. Stopping the turntable by hand while the motor is still running is liable to cause a flat spot on the surface of rubber drive wheel.
3. Permitting oil or grease to come in contact with the rubber surface of drive wheel.

NOTE: If the rubber drive wheel has been damaged in any of the above ways, replace with a new one.

(b) *Mechanical Vibration Transmitted to Recorder while a record is being cut.*

It is VERY IMPORTANT THAT THE BASE UPON WHICH RECORDER RESTS REMAINS QUIET, as any vibration such as people walking across the floor or shaking of instrument will seriously affect the quality of the finished recording.

(c) *Recorder Not Level.*

It is very important that recorder is standing level. This can be checked by placing a smooth marble on uncut record.

(d) *Tension On Turntable Drive Wheel.*

If the tension on the rubber drive wheel is too great the usual result is a rumble in the recording. To decrease the tension on the drive wheel, loosen screw holding the tension spring lug, located beneath the drive wheel and turn lug a few degrees in a clockwise direction.

If the tension on the rubber drive wheel is too weak, a very marked change in the turntable speed will be noted during cutting operation. To increase tension move the tension spring lug a few degrees in a counter-clockwise direction.

cuttings then removed. The Rubber Idler Drive Wheel should be taken off—this can be accomplished by unsnapping the small snap cotter ring and slipping Rubber Idler Drive Wheel off its shaft, after which all record cuttings can be removed.

NOTE: It is very important that no grease or oil be gotten on the surface of the Rubber Idler Drive Wheel.

(B) *Tight pivot bearings:* Check cartridge pivot arm pivot screw (Item 107, Fig. 6) and Traverse arm pivot screws (Item 101, Fig. 8). These bearings should all be free, but have no looseness or play.

If the pivot screw, (Item 108, Fig. 6) of the Cutter Cartridge is tight, the Cutter Cartridge cannot follow a slight up and down variation of the record or turntable. A record cut in this manner will, when played back, have a high scratch level, rough cutting and a tendency for the needle to jump from one groove to another.

(C) *Damaged Rubber Idler Drive Wheel* (Item 83, Fig. 6) *Rubber Idler Drive Wheel may have become damaged by:*

1. Allowing oil or grease to come in contact with same.
2. By allowing turntable to drop and cut into the outside surface of the Rubber Idler Drive Wheel.
3. Stopping the turntable by hand while the motor is running will cause a flat spot on the surface of the Rubber Idler Drive Wheel.

NOTE: If the Rubber Idler Drive Wheel has been damaged in any of the above mentioned ways, it should be replaced with a new one.

(D) *Vibration Reaching the Recorder While A Blank is Being Cut.*

It is very important the floor or the surface upon which the Recorder rests remain quiet as any vibration such as people walking across the floor or shaking of the instrument in which the recorder is mounted will seriously affect the quality of the finished recording.

(E) *Recorder Not Level:* It is very important that the Recorder is standing level. This can be checked by placing a small level on the turntable and checking same in two positions at right angles to each other and then leveling instrument in which Recorder is mounted.

(F) *Bent or Damaged Turntable Spindle:* If the Turntable Spindle (Item 59 Fig. 6) has been bent in shipment, or by someone exerting a heavy pressure on one side, it should be replaced with a new one. A bent Turntable Spindle will cause the surface of the Turntable to move up and down while it is turning and, of course, will seriously effect the quality of both recording and play-back.

NOTE: When removing the Turntable an even upward lifting force should be applied at opposite edges of the Turntable while Turntable Spindle is gently tapped downward on its top end.

(G) *Record Cutting Causing A Band Between Turntable Spindle* (Item 59, Fig. 6) *and Its Bearing:*

It is very important that all record cuttings are removed from Turntable Spindle and its bearing.

nals. During recording this shadow will vary in width in accordance with the loud and soft passages of the program.

For the models equipped with a Neon Tube as a Cutting Level Indicator the volume level should be raised to a point where the neon tube elements give an even pinkish glow during loud or peak signals. The correct cutting level can only be found by experimentation as the level is dependent upon the type and condition of cutting needle and blank disc used.

F.—RECORDS (BLANK & CUT)

The record blanks for instantaneous home recordings differ from commercial records in many respects. Commercial records are usually made of shellac compound pressings formed under hydraulic pressure, resulting in recordings which are extremely resistant to wear but which are quite brittle and easily broken. Record blanks for instantaneous recordings are quite soft in comparison with commercial records but their durability is about as good as that of the cheaper grade phonograph record provided they are given the proper care.

NEVER USE REPRODUCING NEEDLE ON INSTANTANEOUS RECORD THAT HAS BEEN USED TO PLAY COMMERCIAL PHONOGRAPH RECORD.

The Crosley home recording disc is of the non-flammable or slow burning type. Always exercise care in the storage of home recordings. Keeping them clean, free from dust and dirt will add many hours to the life of the record.

NEVER ATTEMPT TO PLAYBACK AN INSTANTANEOUS RECORDING ON A MECHANICAL PHONOGRAPH.

NOTE: Excessive rumble which may sometimes be encountered during the playback of home recordings usually can be eliminated entirely (on Models 33BG, 28AZ, and 34BH) by just turning the microphone ladder or level control in a clockwise direction until the switch clicks.

II—SERVICE NOTES

Recorder with Automatic Record Changer.

(Models 28AZ, 34BH, 31BF, and 48BF)

1.—FUNCTION OF MANUAL CONTROL BUTTON AND RELATIVE PARTS

When Manual Control Button (Item 84, Fig. 6) is moved to the Manual Play-Back recording position, it moves the Manual Control Slide (Item 102, Fig. 7) which in turn moves Clutch Lock Slide (Item 103, Fig. 7) into a position which prevents Engagement Clutch Cam Assembly (Item 79, Fig. 8) from rotating. When Engagement Clutch Cam Assembly is in the above mentioned position and is not free to rotate, the Changer will not go into its changing cycle.

Also when the Manual Control Button is in the above mentioned position, the Manual Control Slide has moved the Locator Lock Slide (Item 106, Fig. 7) into a position where it engages the Tone Arm Locator & Bushing Assembly (Item 12, Fig. 7) and prevents same from bearing against Tone Arm Lever Assembly (Item 19, Fig. 7) allowing the Tone Arm to swing freely without

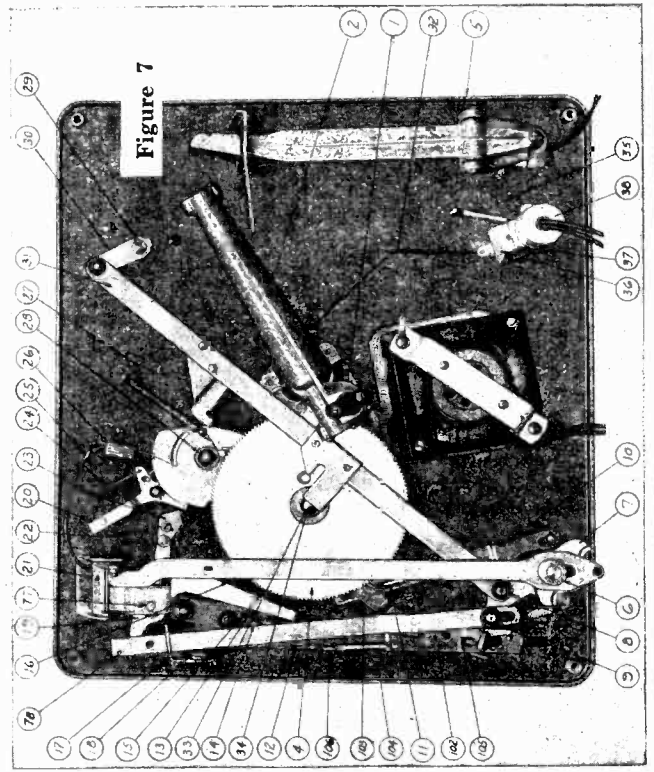
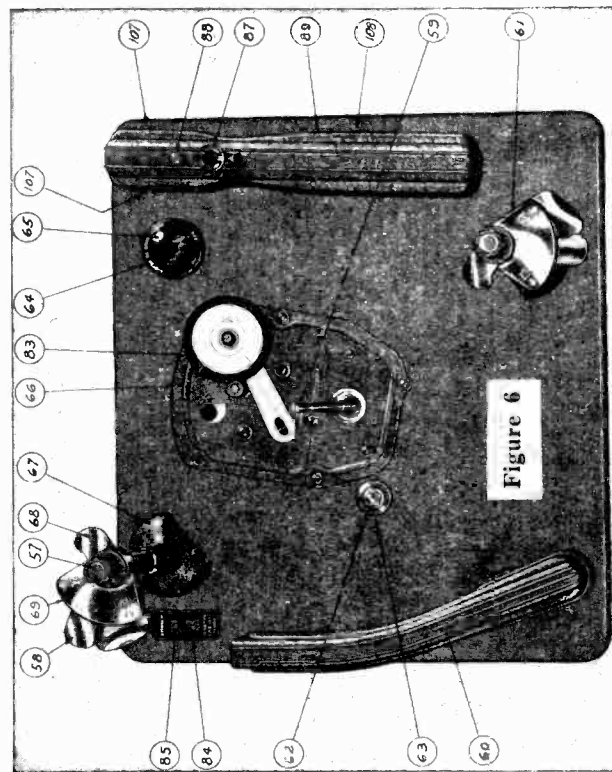
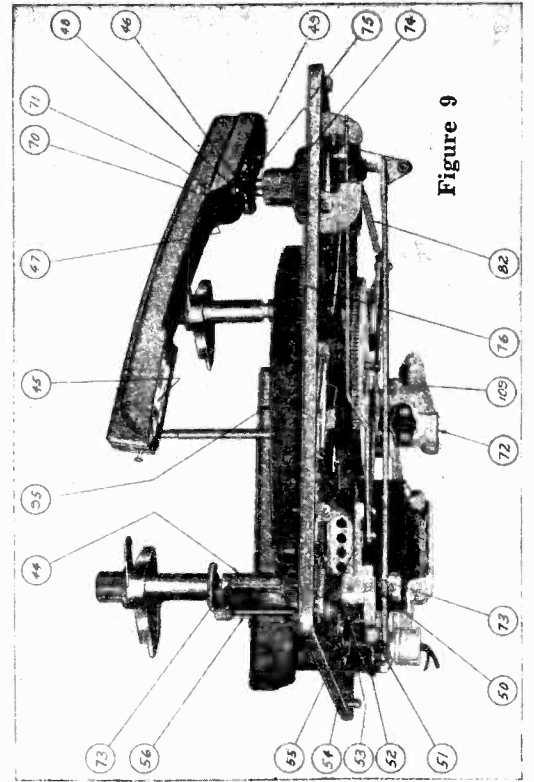
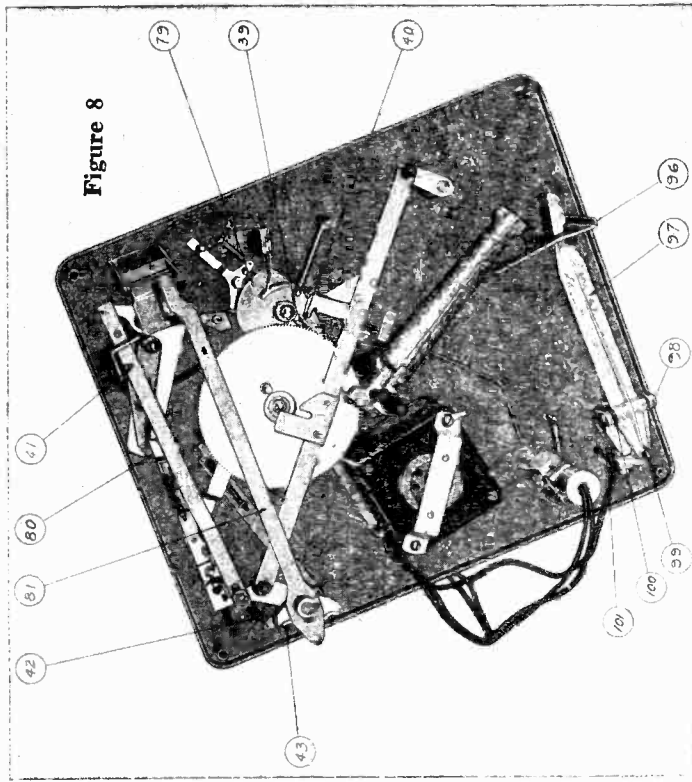
2.—POSSIBLE MECHANICAL CAUSES OF POOR RECORDINGS

(A) Threads from record cuttings getting down onto Rubber Idler wheel (Item 83, Fig. 6) and between drive wheel and motor pulley. This will cause very bad speed variation of the turntable and, of course, will result in very inferior recordings. Cuttings may also wrap around motor shaft and cause motor to slow down or stop.

To remove the record cuttings, the turntable should be lifted by applying an even lifting force at opposite edges of the turntable while the turntable spindle is gently tapped downward on its top end, and the record

THE CROSLY CORP.

Automatic record changer



Automatic record changer

THE CROSLLEY CORP.

record changer will go into automatic operation of its own accord.

4.—PLAYING AN INDIVIDUAL RECORD

An individual record can be played in the same manner as a stack of records would be played, i. e., if it is a 10-inch record, follow the instructions pertaining to 10-inch records. If it is a 12-inch record, follow the instructions pertaining to 12-inch records.

A 10-inch record may be played manually by turning the selecting arm knobs to the unloading position and leaving them in this position—records may then be put on or taken off the turntable by merely moving the tone arm outward until it catches, and placing the 10-inch records over the spindle and down onto the turntable. The "ON" and "OFF" switch knob is then pushed down and the 10-inch record will be played and repeated if left on the turntable. To remove the record it is only necessary to move the tone arm outward until it catches, and lift the record off of the turntable.

5.—TURNING OFF RECORD CHANGER

Turn switch knob to "OFF" position while the tone arm is still on the record. If the switch knob should be turned off while Record Changer is going through a change cycle, it will be difficult to adjust the selector arms correctly for the automatic playing of 10-inch or 12-inch records.

1.—TO PREPARE CHANGER FOR OPERATION

(A) Setting Record Changer to Play Ten-Inch Records:

Turn both knobs until the arrows are pointing toward the center of the turntable. When in this position any number up to and including fourteen 10-inch records can be played.

(B) Setting Record Changer to Play Twelve Inch Records:

Turn both knobs until the arrows marked "12" are pointing toward the center of the turntable. When in this position any number up to and including ten 12-inch records can be played.

2.—LOADING

(A) If 10-inch records are to be played, set knobs as described in (A) above and place any number up to and including 14 records (ten inch only) over center pin so that they will rest on the selecting arms.

(B) If 12-inch records are to be played, set knobs as described in (B) above and place any number up to and including 10 records (twelve inch only) over center pin so that they will rest on the arms.

3.—STARTING THE RECORD CHANGER

1. Turn on the radio (allowing approximately 30 seconds for the tubes to warm up) and throw the phonograph-radio knob or control to the phonograph position.

2. Turn the switch knob on the Record Changer panel to "ON". The motor will then start and the

III—AUTOMATIC RECORD CHANGER

General Instructions

1.—FUNCTION OF RECORD CHANGER WHEN IT IS GOING THRU A CHANGE CYCLE—

The Record Changer plays and automatically changes 14 or less ten-inch records or 10 or less 12-inch records.

The Record Changer is started by turning the switch control knob, (Item 65, Fig. 11) to "ON"; this starts the motor and moves trip rod (Item 32, Fig. 12), which rotates trip lever assembly (Item 20, Fig. 12), causing it to disengage from Engagement Clutch Cam, (Item 79, Fig. 12). The Engagement Clutch Cam will then rotate due to tension from spring, (Item 27, Fig. 12). This causes it to contact the pin on the top side of Drive Gear Assembly, (Item 4, Fig. 12) as it starts to rotate. Item 29, moves the Drive Shaft Assembly, (Item 31, Fig. 12), to the position shown in Fig. 12. Also the tone arm reset link (Item 80, Fig. 12), has moved to where it has released the latch, (Item 18, Fig. 12), and carried the tone arm to its extreme outward position. The Tone Arm lifter link (Item 81, Fig. 12), has raised the tone arm to its extreme height, by means of the Lifter Plate Assembly, (Item 21, Fig. 12). The tone arm is kept from "floating" free by the friction of the Tone Arm Brake Spring which also compresses the tone arm booster spring, (Item 13, Fig. 12) due to its very light tension.

The Drive Gear Assembly (Item 4, Fig. 12) continues to rotate which causes the top pin to disengage from the Automatic Engagement Clutch Cam which is moved back to latch with the tone arm trip lever, and the lower pin to engage the drive link assembly, moving it back to its initial position. This swings in the tone arm to either the 10-inch or 12-inch record playing position and the top pin disengages from the Drive Gear Assembly. The Brake Spring allowing the Tone Arm Booster Spring to act.

2.—PHONOGRAPH NEEDLES

Various types and kinds of needles are available for use in phonograph tone arms.

For playing ten or more records at one setup with this Record Changer, no attempt should be made to use ordinary needles with steel or fibre points, since continued use of worn needle points will damage the records being played.

Any needle can be used that is designed to play 15 or more records. It is well to keep in mind that even if the amplifying system, speaker and tone arm are of the best quality, a poor needle will result in poor reproduction of music.

There are a number of good semi-permanent types of needles on the market which are rated in number of plays. It is usually more economical to use one of these needles which is rated at 1000 plays or more.

It is very important to remember not to remove and then replace any needle that has been used.

3.—CHASSIS MOUNTING

On the bottom surface of the panel are four mounting

6.—UNLOADING RECORDS

1. Turn switch knob to "OFF" position.
2. Remove any records remaining on the selector arms.
3. Move tone arm outward until it catches in outward position.
4. Turn selector arms so that records will clear them.
5. Remove records from turntable.

7.—LUBRICATION

(A) Motor: The motor is equipped with oilless bearing and requires no lubrication.

(B) Turntable Spindle Bearings: Are lubricated at the factory and do not require any lubrication for one year. After one year they should be oiled with 1 or 2 drops of a light grade oil. The top bearing can be oiled by lifting off turntable. Make sure when replacing turntable to see that pin in Turntable Spindle slips into slot on bottom surface of Turntable hub and also care should be taken not to injure Rubber Idler Drive Wheel.

Never under any circumstances allow oil to come in contact with Rubber Idler Drive Wheel.

(C) Spindles Due To Records Rubbing On Turntable Spindle: This can be eliminated by gently lining up the stack of records.

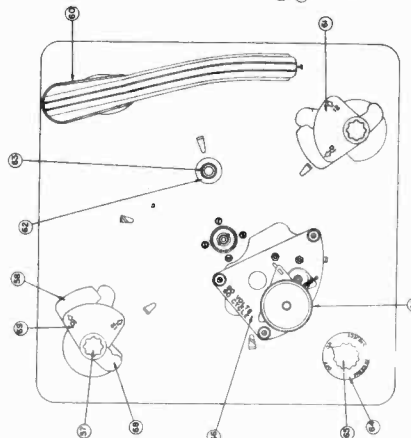


Figure 11

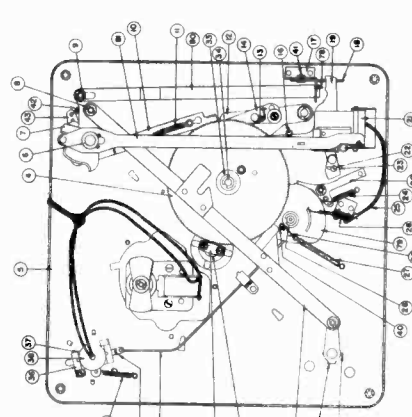


Figure 12

THE CROSLEY CORP.

Auto. record changer,
Phono motors,
Tone arms

9.—TONE ARM LOWERS ON RECORD TOO SUDDENLY

If the Tone Arm lowers too suddenly, the Spring Washer (Item 50, Fig. 3) which is located between the Tone Arm Litter Link Assembly (Item 81, Fig. 2) and Selector Crank Shaft Assembly Post (Item 7, Fig. 2) not under sufficient pressure. The set screws in the Selector Shaft Collar (Item 2) should be tightened and the Selector Shaft Collar pressed upward slightly and set screws tightened.

point. If the clearance is greater, it would be due to the pressure on the Spring Washer (Item 50, Fig. 13) being too great. This will prevent the Tone Arm Litter Asses Spring (Item 52, Fig. 13) from returning the Tone Arm Litter Link Assembly (Item 81, Fig. 2) to its normal position. To relieve the pressure on the Spring Washer, loosen the Selector Shaft Collar (Item 6, Fig. 11) slightly.

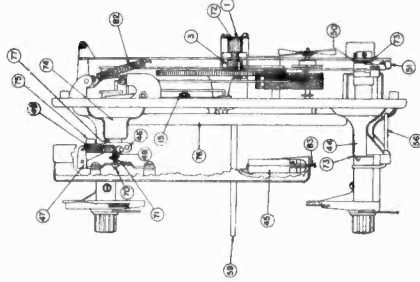


Figure 13

V.—PHONO MOTORS & TONE ARMS
As Used on Models 22AS and 35AK

The miscellaneous parts for the Phono motors and tone arms as used in models 22 and 35 combination receivers are illustrated below along with their part numbers.

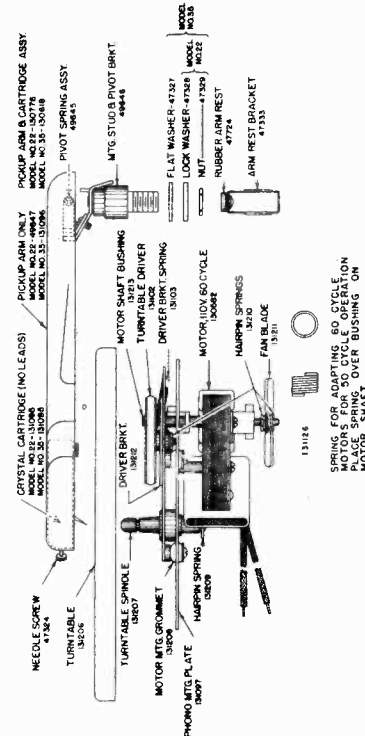


Figure 14

IV.—SERVICE NOTES

1.—PICKUP DOES NOT INDEX PROPERLY ON TEN OR TWELVE INCH RECORDS

(A) Adjustment for correct indexing of 10-inch records:

1. Swing tone arm outward until tone arm lever assembly (Item 19, Fig. 12) latches with tone arm latch (Item 18, Fig. 12) which is held to the tone arm shaft (Item 7, Fig. 13) by two set screws.
2. Make sure these set screws are tight and that there is a slight play between the tone arm lever assembly and the panel (Item 5, Fig. 12). This will give proper clearance at ball race assembly (Item 74, Fig. 13).
3. The tone arm lever assembly (Item 19, Fig. 12) is held against tone arm latch lever (Item 18, Fig. 12) by the tension of tone arm locator lever spring (Item 16, Fig. 12).
4. Next loosen the clamping screw in the Stylus Bracket Assembly (Item 46, Fig. 13).
5. Now move tone arm (Item 60, Fig. 11) until its outside edge is $\frac{3}{16}$ " from the outside edge of the panel (Item 5, Fig. 12) and re-tighten screw securely.

2.—RECORD CHANGER DOES NOT GO INTO ITS CHANGING CYCLE AT END OF RECORD

(A) *Worn or Damaged Stop Groove:* If the stop groove in the record is worn out or damaged, discard such a record.

(B) *Cut-off Adjustment May Be Incorrect:* The Record Changer should go into its changing cycle when the needle enters the stop groove and has traveled to within a distance of $1\frac{1}{2}$ " from the center of the turntable shaft.

If the Record Changer does not go into its changing cycle when the needle has reached the above-mentioned distance, the Tone Arm Trip Lever Shoe (Item 23, Fig. 12), should be moved toward the outside edge of the panel. To do this, it is necessary to loosen the thumb nut (Item 22, Fig. 12), and then retighten after adjustment has been made.

If the Record Changer goes into its changing cycle before the needle has reached a distance of $1\frac{1}{2}$ " from the center of the turntable, the Tone Arm Trip Lever Shoe should be moved inward toward the center of the Record Changer.

3.—RECORD CHANGER DOES NOT GO INTO ITS CHANGING CYCLE WHEN SWITCH KNOB IS TURNED ON

When the switch is turned to "ON" the Record Changer should start its changing cycle. If it does not, the following points should be checked:

1. Make sure motor is running.
2. Check Trip Rod (Item 32, Fig. 12) to make sure it releases Trip Lever Assembly (Item 20, Fig. 12), from Engagement Clutch Cam Assembly (Item 79, Fig. 12), when Switch Knob is being turned on. If Trip Lever Assembly is not released, Trip rod should be shortened by bending until Trip Lever clears Engagement Clutch Cam Assembly, when Switch Knob is turned.
3. Make sure that Clutch Reset Pawl (Item 40, Fig. 12) clears Drive Link Assembly (Item 31, Fig. 12).

4.—RECORD CHANGER CONTINUES TO REPEAT ITS CHANGING CYCLE WITHOUT PLAYING RECORDS

(A) Trip Lever Assembly (Item 20, Fig. 2) does not latch in Engagement Clutch Cam Assembly (Item 79, Fig. 12), which may be due to causes listed below:

1. Trip Rod (Item 32, Fig. 12), may be bent so that it is too short, holding Trip Lever Assembly from contacting Engagement Clutch Cam Assembly.
2. Springs (Item 24 or 35, Fig. 12) may be disconnected.

5.—NO SOUND WHEN NEEDLE IS ON MOVING RECORD

1. Mating switch (Item 26, Fig. 12), may be out of adjustment. The contacts of this switch should be open whenever its long blade is not resting on the shoe of the Engagement Clutch Cam Assembly (Item 79, Fig. 12). If the contacts remain closed after the long blade has left the shoe, they should be adjusted by bending until there is a separation of approximately $1/32$ ".

Switch should be checked to make sure contacts are closed when long blade is resting on the shoe of the Engagement Clutch Cam Assembly.

2. The lugs on the Mating switch may have been bent together.
3. Pickup cartridge in Tone Arm may have been damaged or may be defective.

6.—TONE ARM ADJUSTMENTS FOR 12" RECORDS

1. Turn both Control Knobs until the arrows marked "12" are pointing toward the center of the turntable.
2. Place a twelve inch record on the turntable.
3. Start Record Changer and note where needle contacts record. Correct contacting is about $\frac{1}{8}$ " from the outside edge of record.
4. Set Rod (Item 56, Fig. 13), is operated by Selector Arm (Item 61, Fig. 11). The 12" Set Link (Item 10, Fig. 11), operates as a stop when Record Changer is set for 12" records. When Tone Arm Locator Assembly (Item 12, Fig. 11) contacts 12" Set Link the tone arm should be in the correct position to play a 12" record.

If at this point, the position of Tone Arm is incorrect, loosen the screw which holds the Tone Arm Locator Shoe 12" (Item 14, Fig. 11) and move in either direction as required and tighten screw.

7.—TONE ARM ADJUSTMENTS FOR 10" RECORDS

1. Turn both knobs until the arrows marked "10" are pointing toward the center of the turntable and start Record Changer.
2. Place a 10" record on the turntable and start Record Changer.
3. Note where needle contacts record. Correct contacting is about $\frac{1}{8}$ " from the outside edge of record. If contacting of needle is not correct as mentioned, loosen the screw which holds Tone Arm Locator Shoe 10" (Item 15, Fig. 13) and slide shoe in or out as required, then tighten screw.

8.—TONE ARM HEIGHT ADJUSTMENTS

Set the Record Changer for ten-inch records, turn Switch to "ON" and allow Record Changer to play the changing cycle with no record on the turntable. The clearance between Turntable and the bottom surface of the Tone Arm should be approximately $\frac{1}{16}$ ". Usually this clearance can be obtained by adjusting the Tone Arm Adjustment Screw (Item 70, Fig. 13). It is well to check the following points before making any adjustment.

Check clearance between Roller (Item 51, Fig. 13), and Selector Crank Shaft Assembly (Item 7, Fig. 12). There should be approximately $1/32$ " clearance at this

10

11

12

13