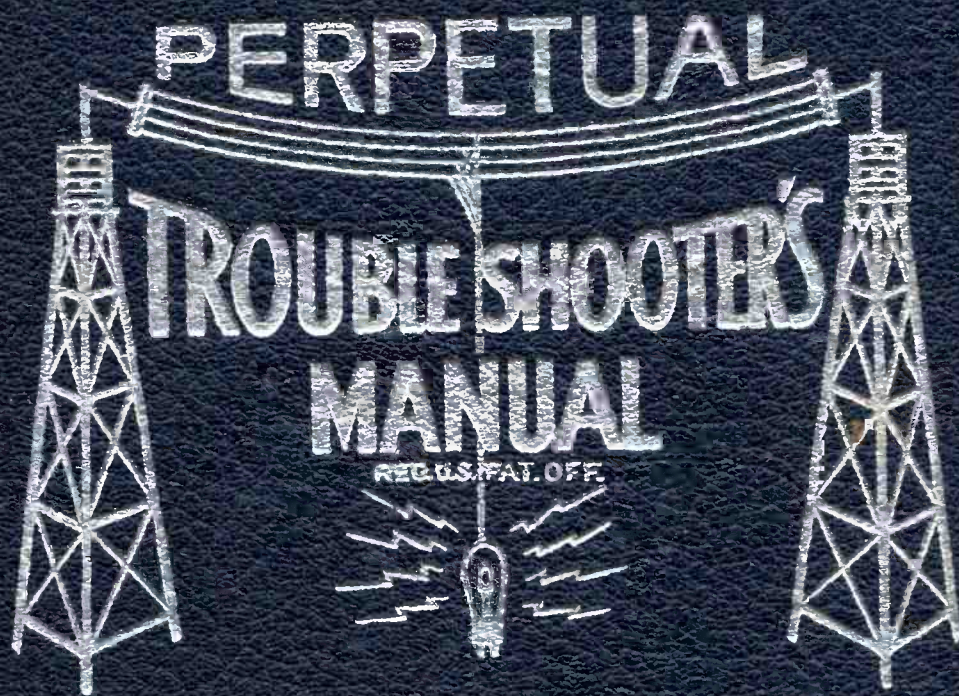


VOLUME XI



JOHN F. RIDER

**PERPETUAL**  
**TROUBLE SHOOTER'S MANUAL**

Reg. U.S. Pat. Off.

**VOLUME XI**

by

**JOHN F. RIDER**



**JOHN F. RIDER PUBLISHER, INC.**

**404 Fourth Avenue**

**New York City**

*Other Books*  
by  
**JOHN F. RIDER**

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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  
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

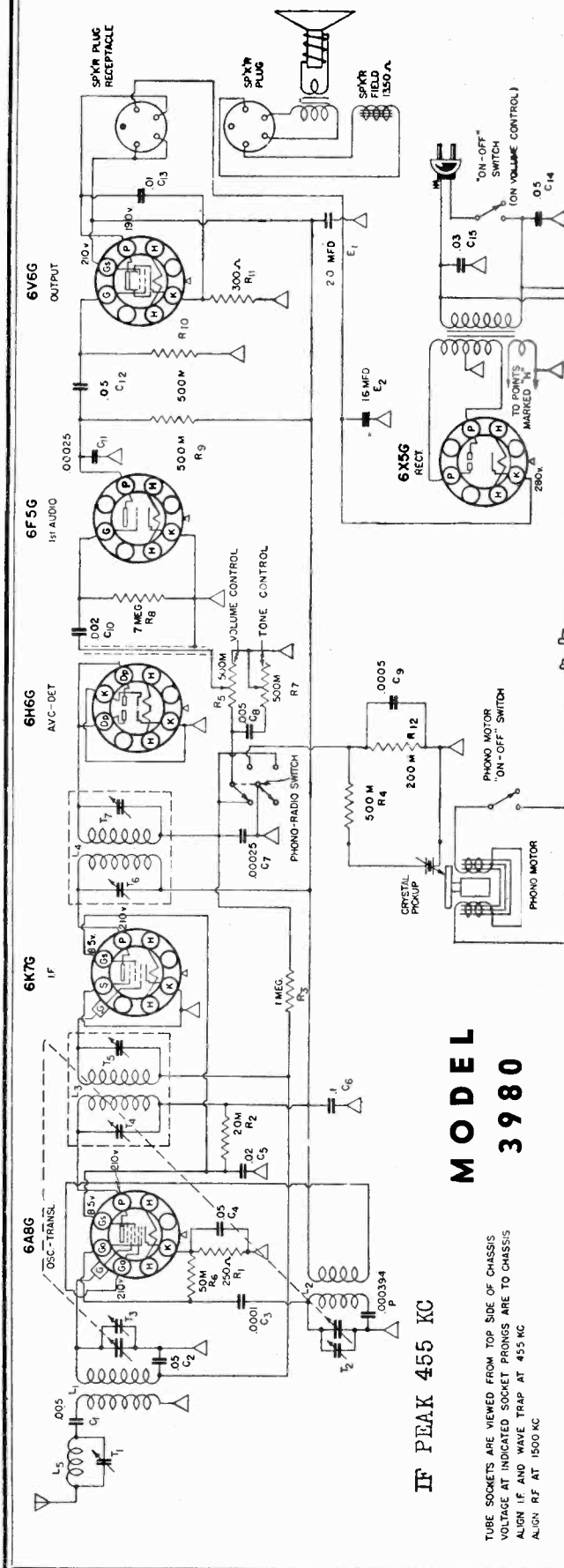
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Printed in U. S. A.

MODEL 3980  
Schematics, Socket  
Trimmers, Voltage

AIR KING PRODUCTS CORP. MODELS 4, 23X, 9722,  
9822, 9822A, 9823, 9922

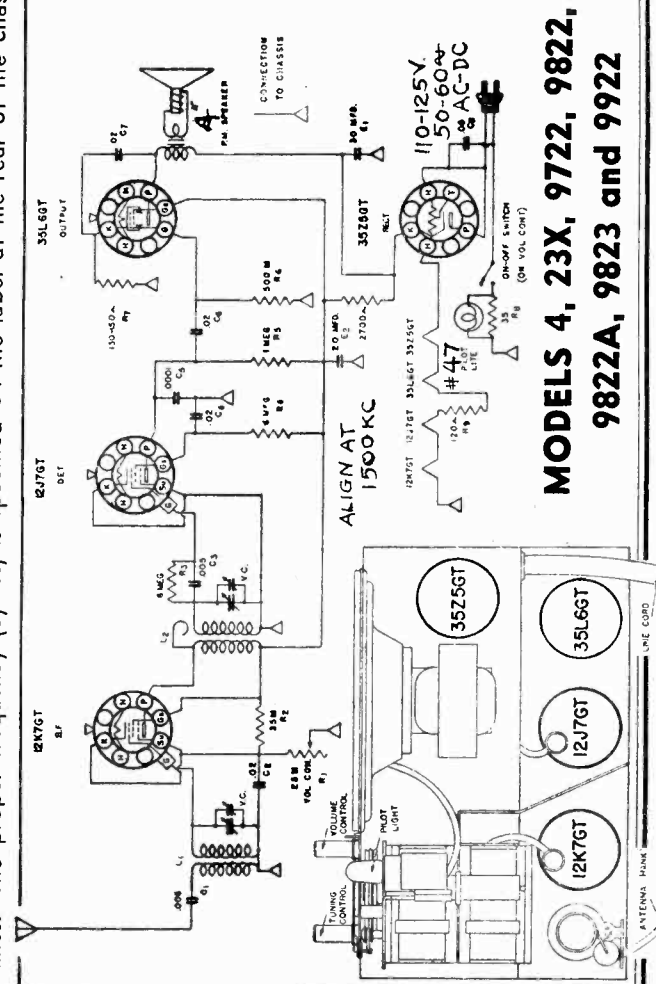


**MODEL  
3980**

IF PEAK 455 KC

TUBE SOCKETS ARE VIEWED FROM TOP SIDE OF CHASSIS  
VOLTAGE AT INDICATED SOCKET PRONGS ARE TO CHASSIS  
ALIGN IF AND WAVE TRAP AT 455 KC  
ALIGN RF AT 1500 KC

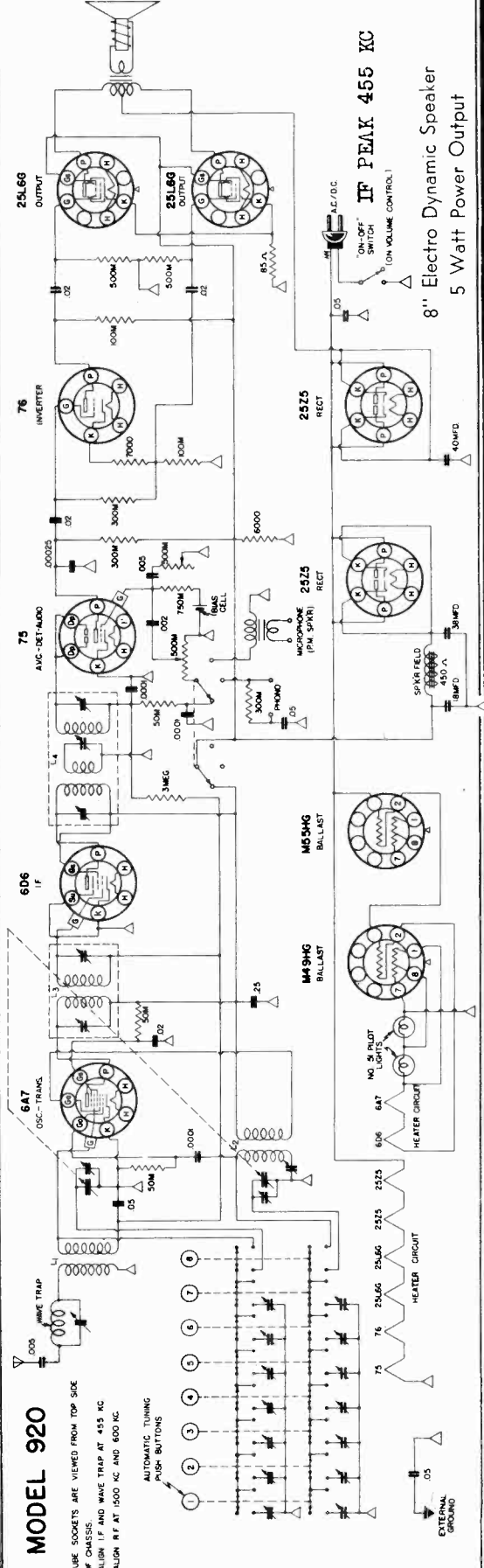
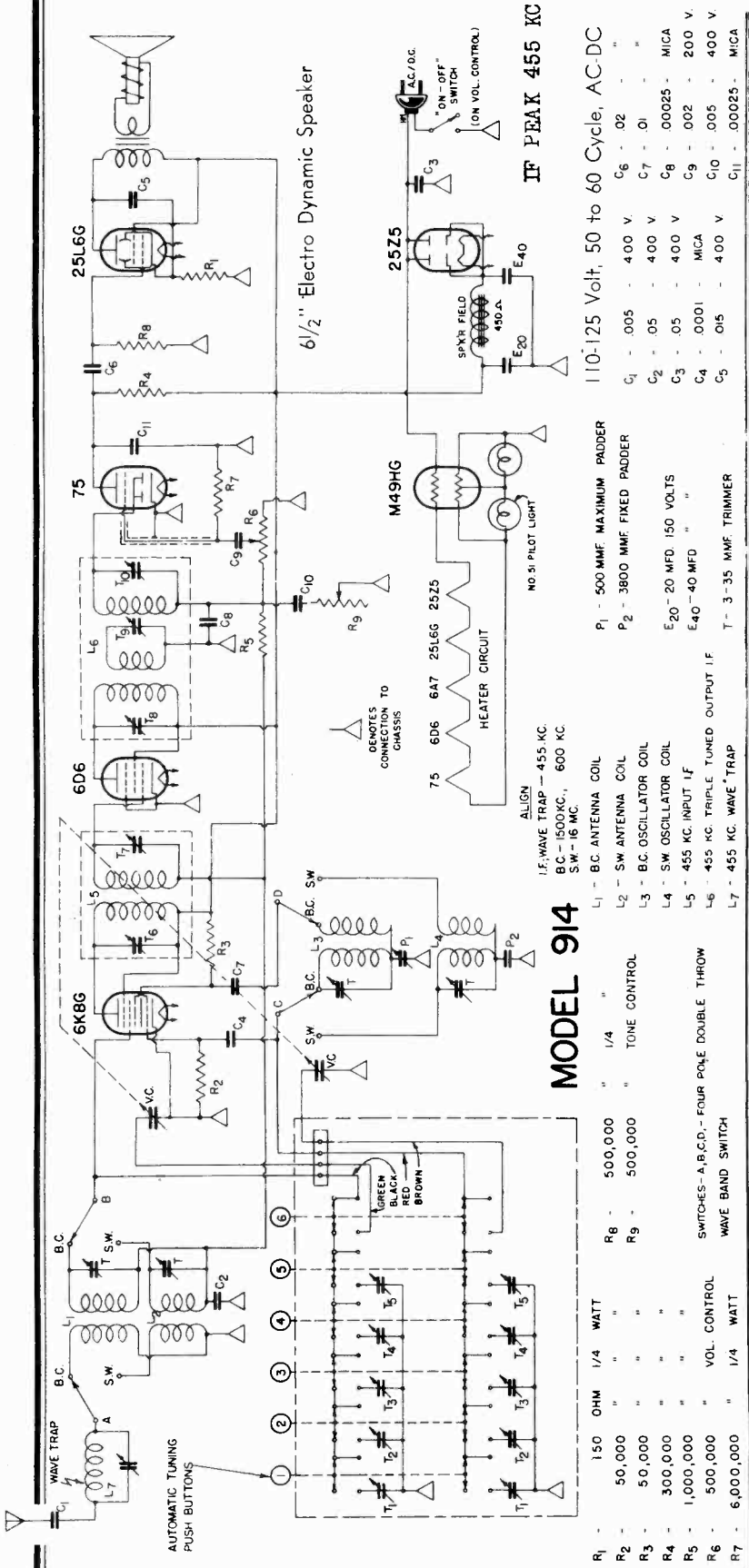
The receiver is designed for operation from 115 volt alternating current, 25-60 cycle (AC) supply lines. The proper frequency (cycles) is specified on the label at the rear of the chassis.



**MODELS 4, 23X, 9722, 9822,  
9822A, 9823 and 9922**

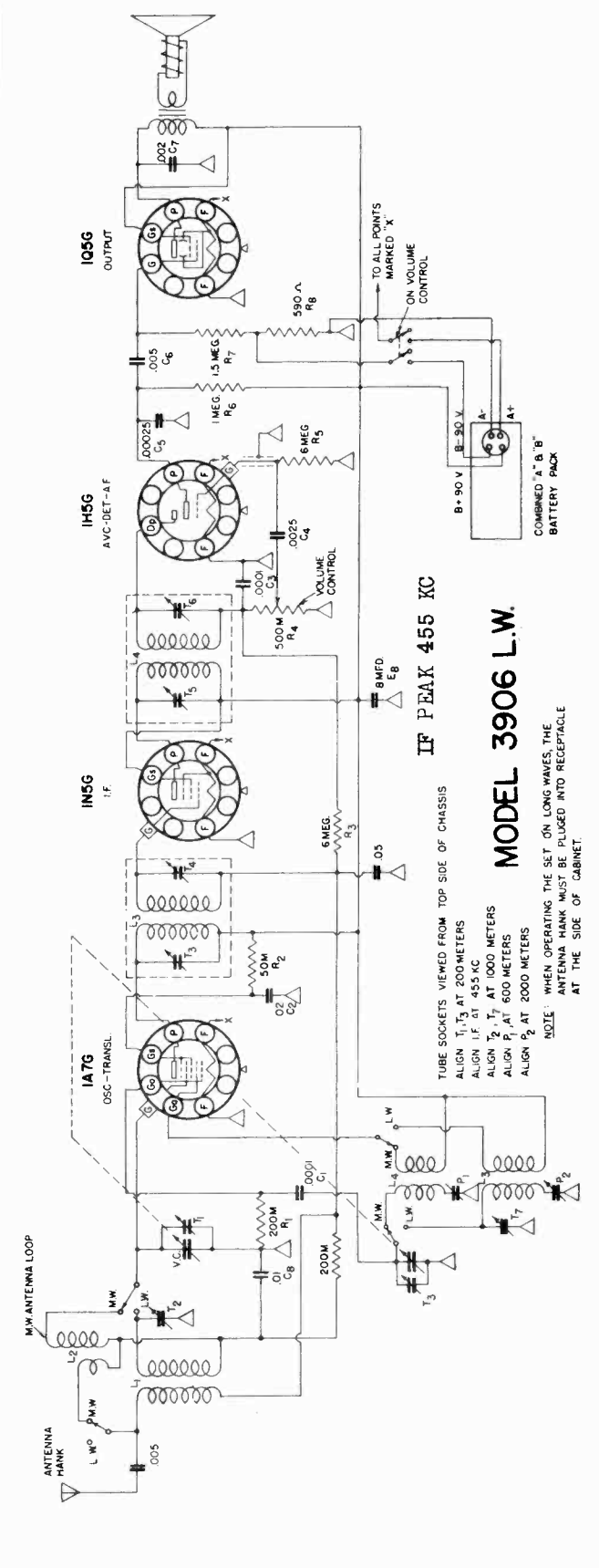
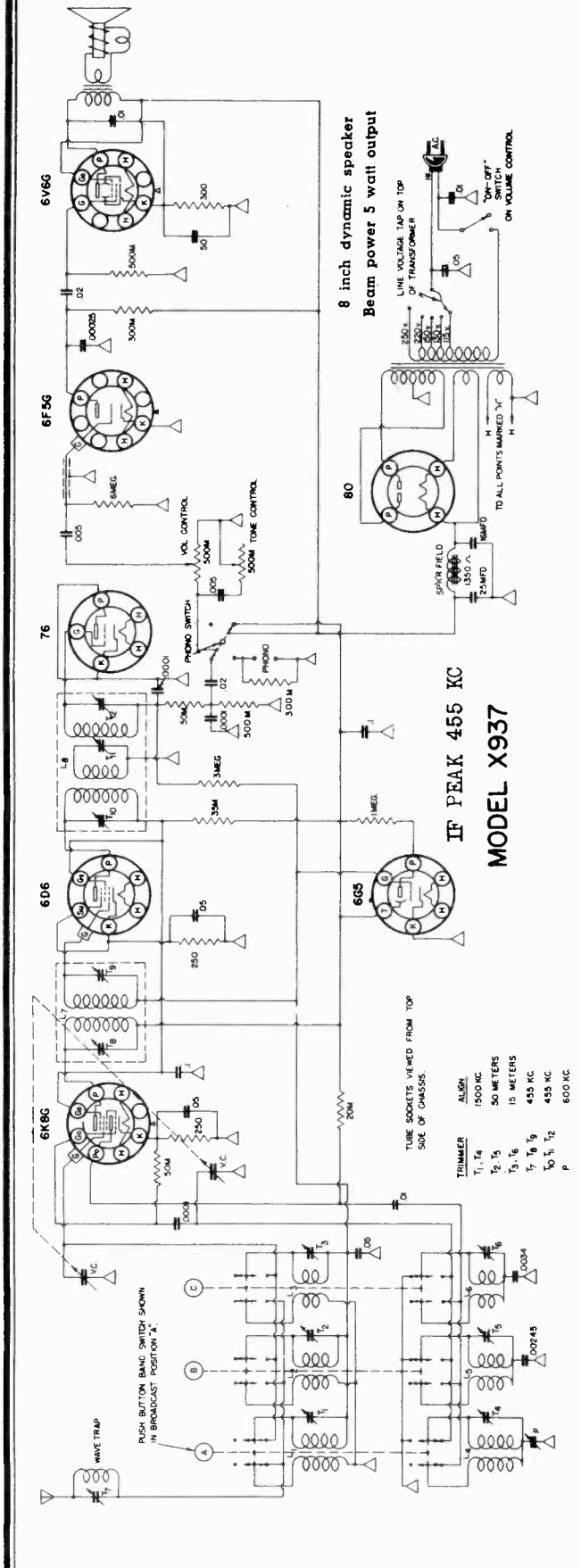
MODEL 914  
MODEL 920  
Schematics

AIR KING PRODUCTS CORP.



AIR-KING PRODUCTS CORP.

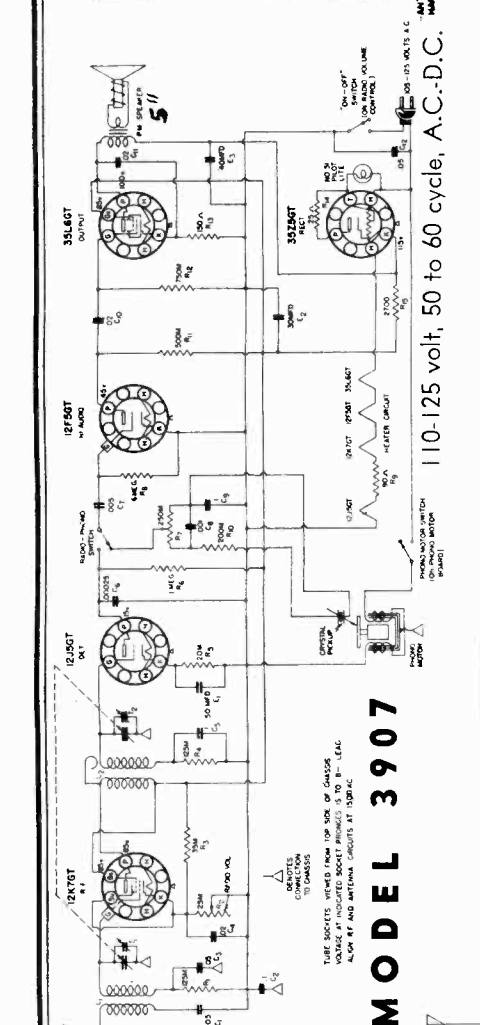
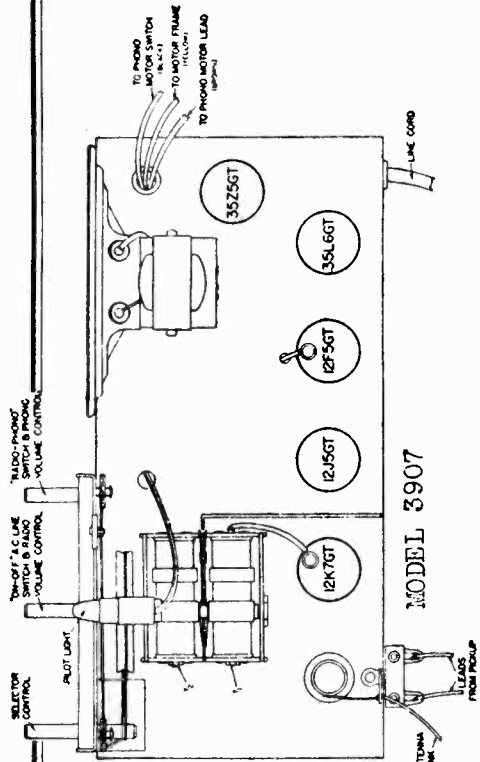
MODEL X937  
MODEL 3906 LW  
Schematics



MODEL 3907  
MODEL 4000

AIR KING PRODUCTS CORP.

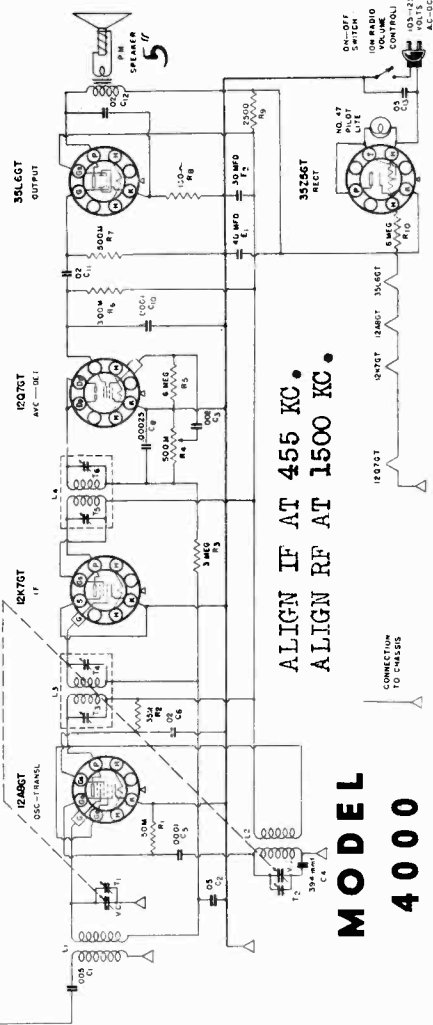
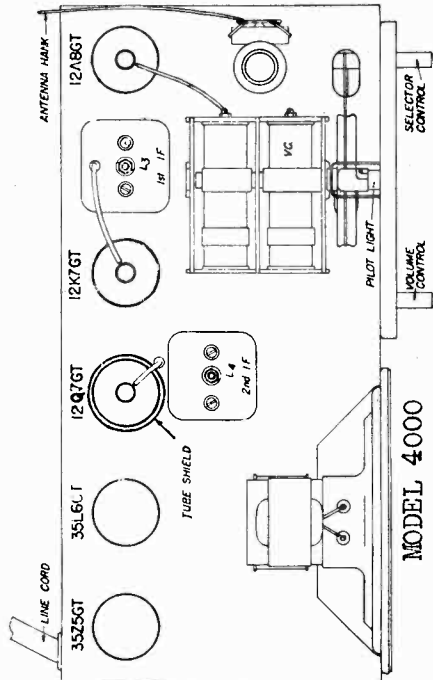
MODEL 4000A  
Schematics, Socket



**MODEL 3907**

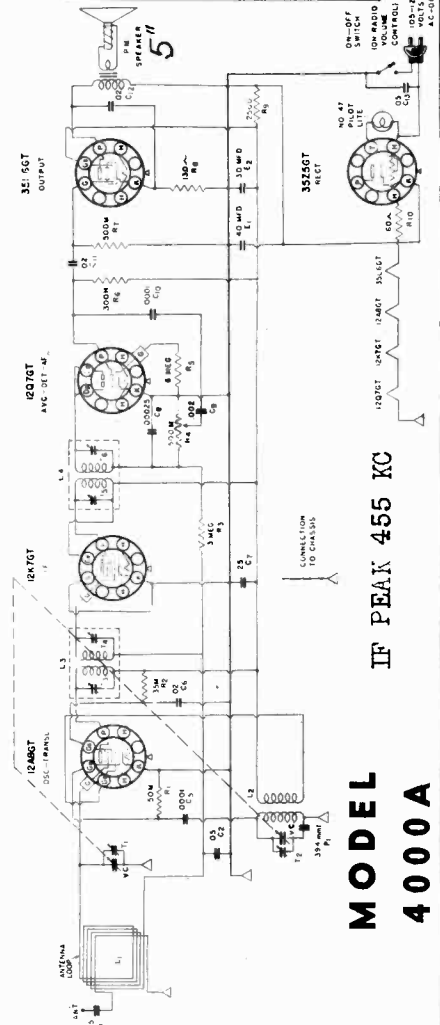
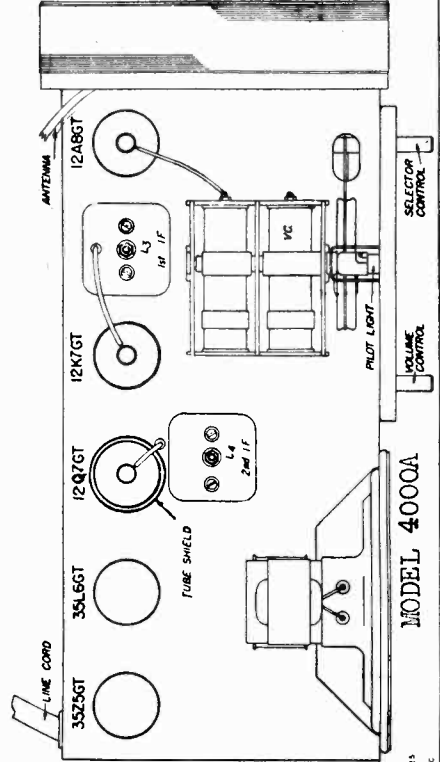
TUBE SOCKETS VIEWED FROM TOP SIDE OF CHASSIS  
VOLTAGE AT INDICATED SOCKET PRONGS IS TO B-LEAD  
ALSO AT ANTENNA CIRCUITS AT 158KΩ

110-125 volt, 50 to 60 cycle, A.C.-D.C.



**MODEL 4000**

ALIGN IF AT 455 KC.  
ALIGN RF AT 1500 KC.

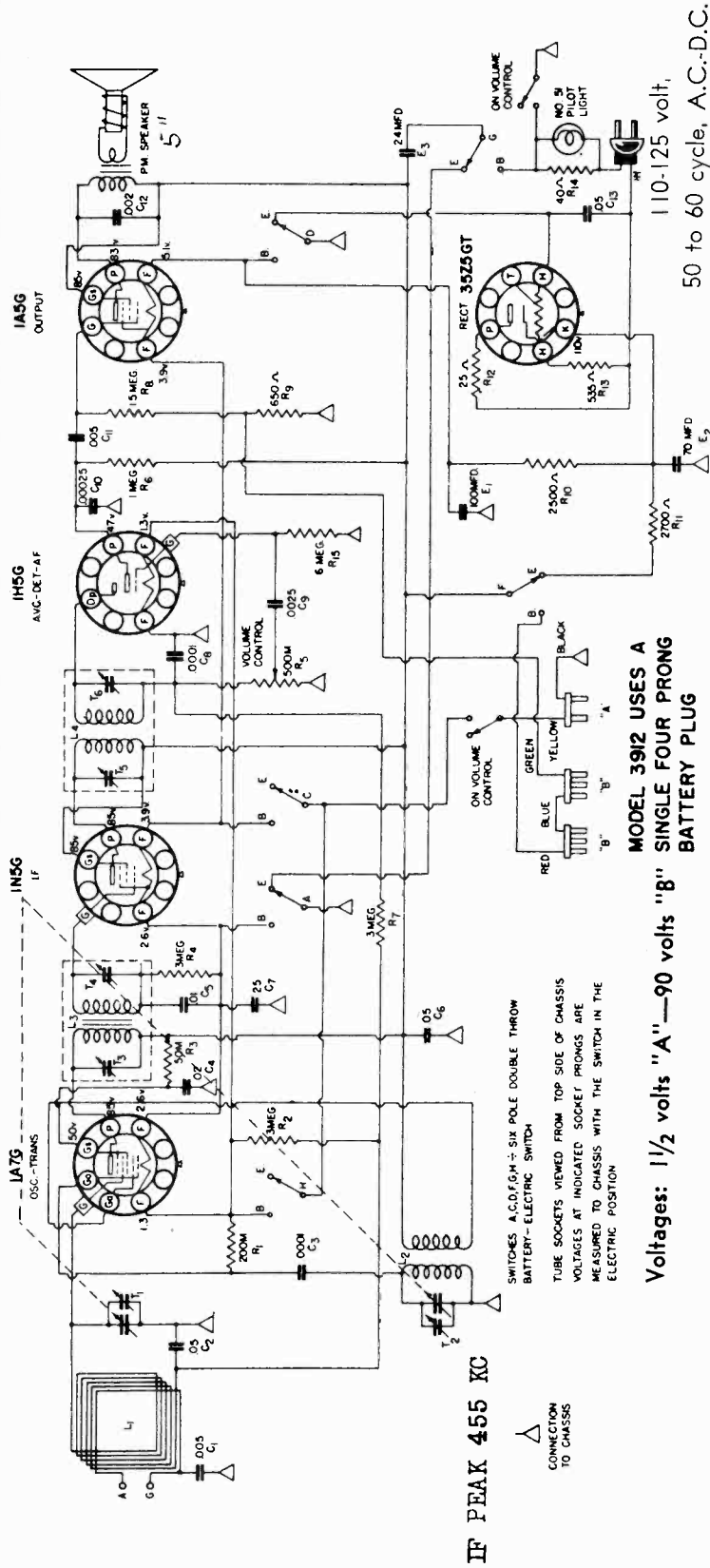


**MODEL 4000A**

IF PEAK 455 KC

AIR KING PRODUCTS CORP.

MODELS 3912, 3916  
Schematic, Socket  
Voltage



IF PEAK 455 KC

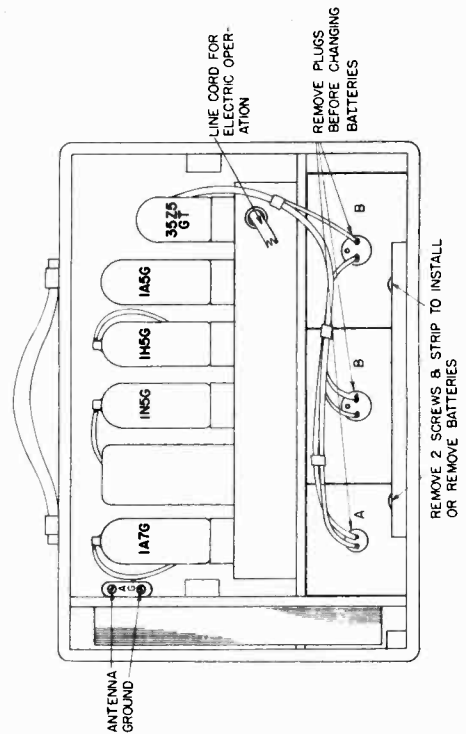
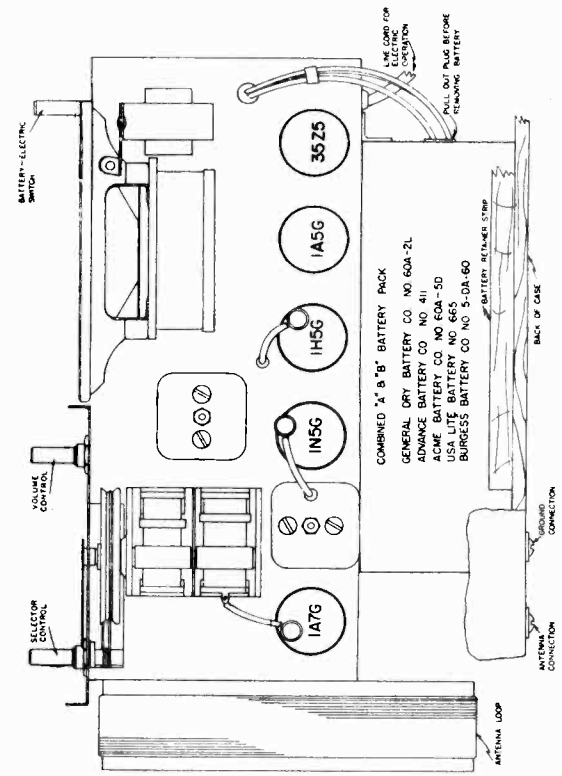
CONNECTION TO CHASSIS

SWITCHES A.C.D.F.M. SIX POLE DOUBLE THROW  
BATTERY-ELECTRIC SWITCH  
TUBE SOCKETS VIEWED FROM TOP SIDE OF CHASSIS  
VOLTAGES AT INDICATED SOCKET PRONGS ARE  
MEASURED TO CHASSIS WITH THE SWITCH IN THE  
ELECTRIC POSITION

MODEL 3912 USES A  
SINGLE FOUR PRONG  
BATTERY PLUG

110-125 volt,  
50 to 60 cycle, A.C.-D.C.

LOCATION OF TUBES & BATTERIES

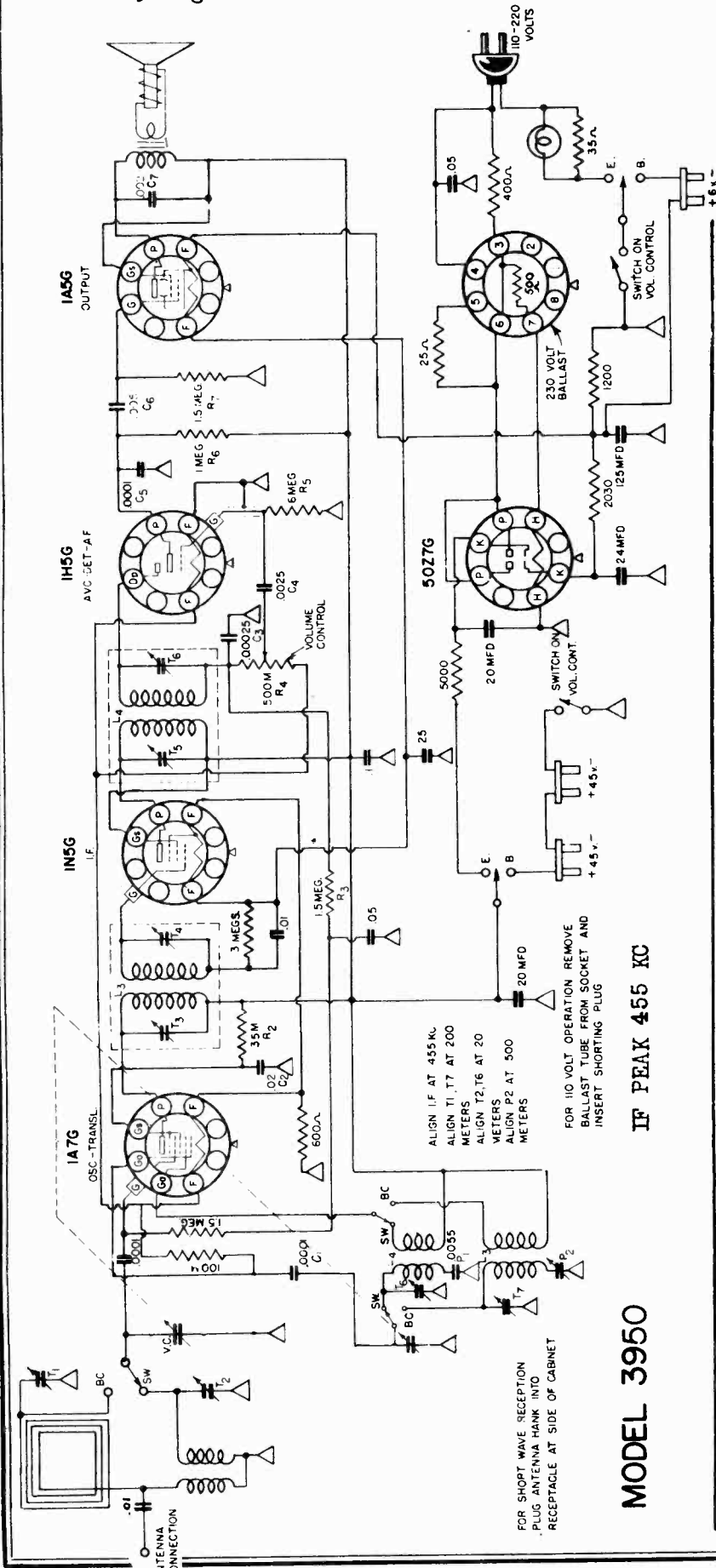




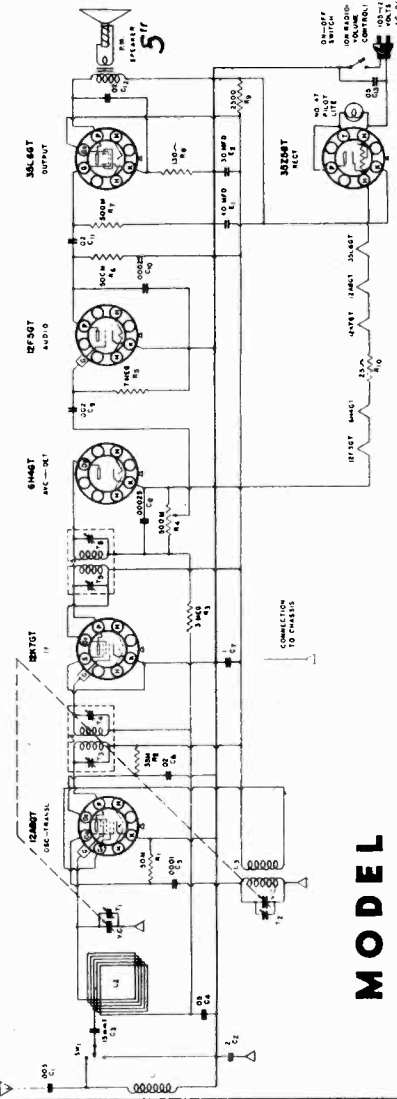
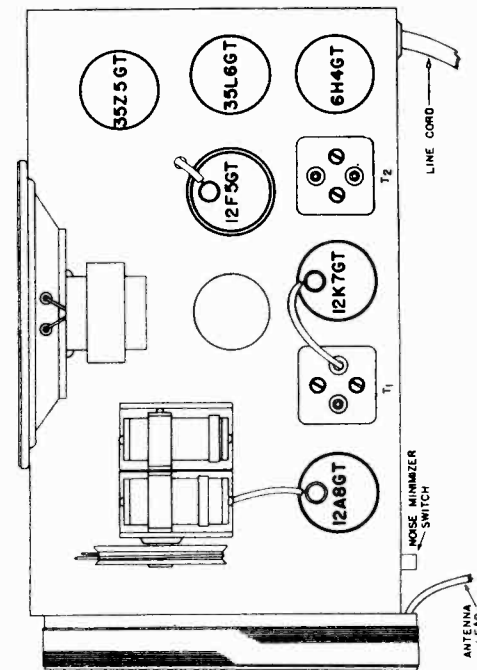
**MODEL 3950**  
Schematic, Alignment

**AIR KING PRODUCTS CORP.**

**MODEL 4001**  
Schematic, Socket Alignment



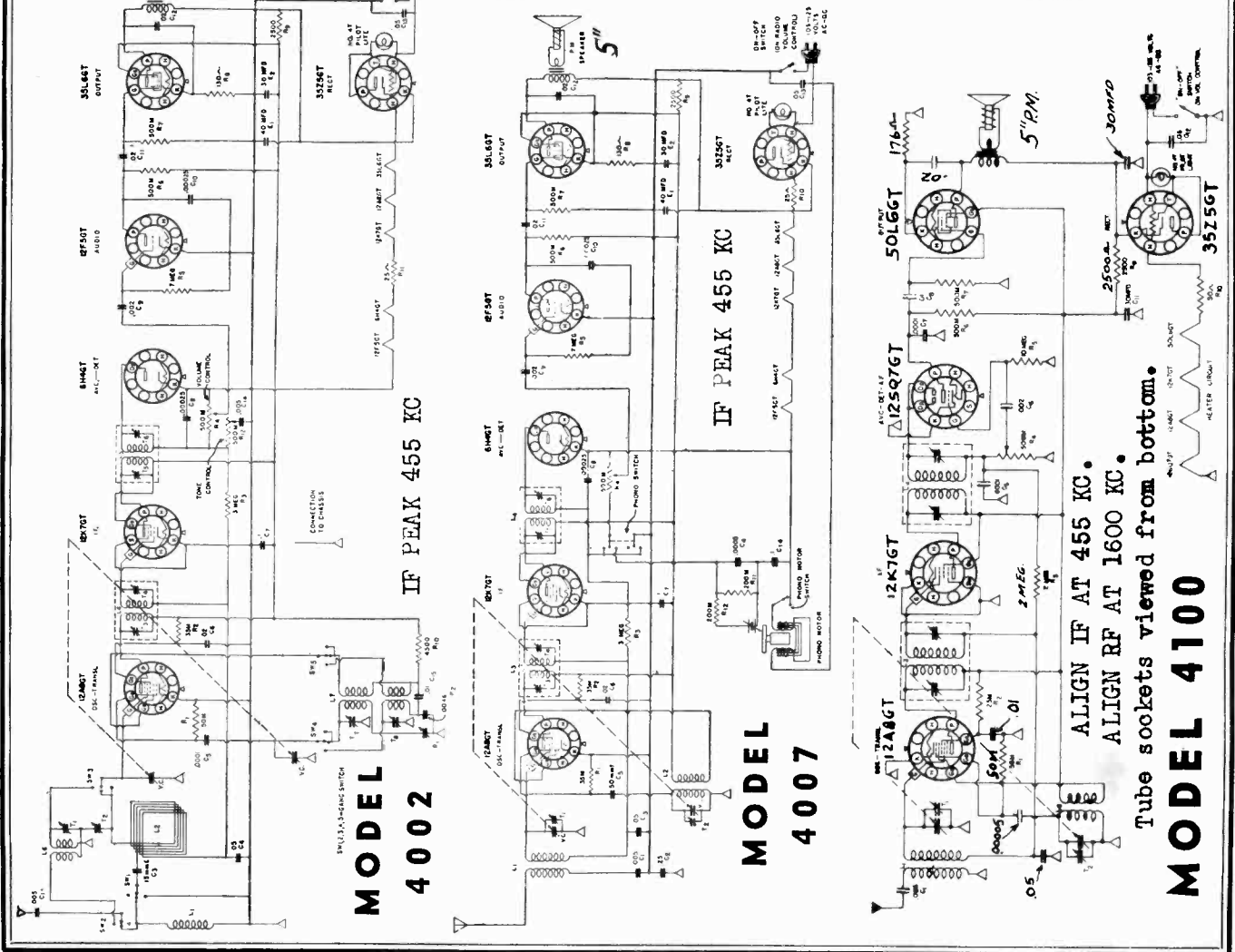
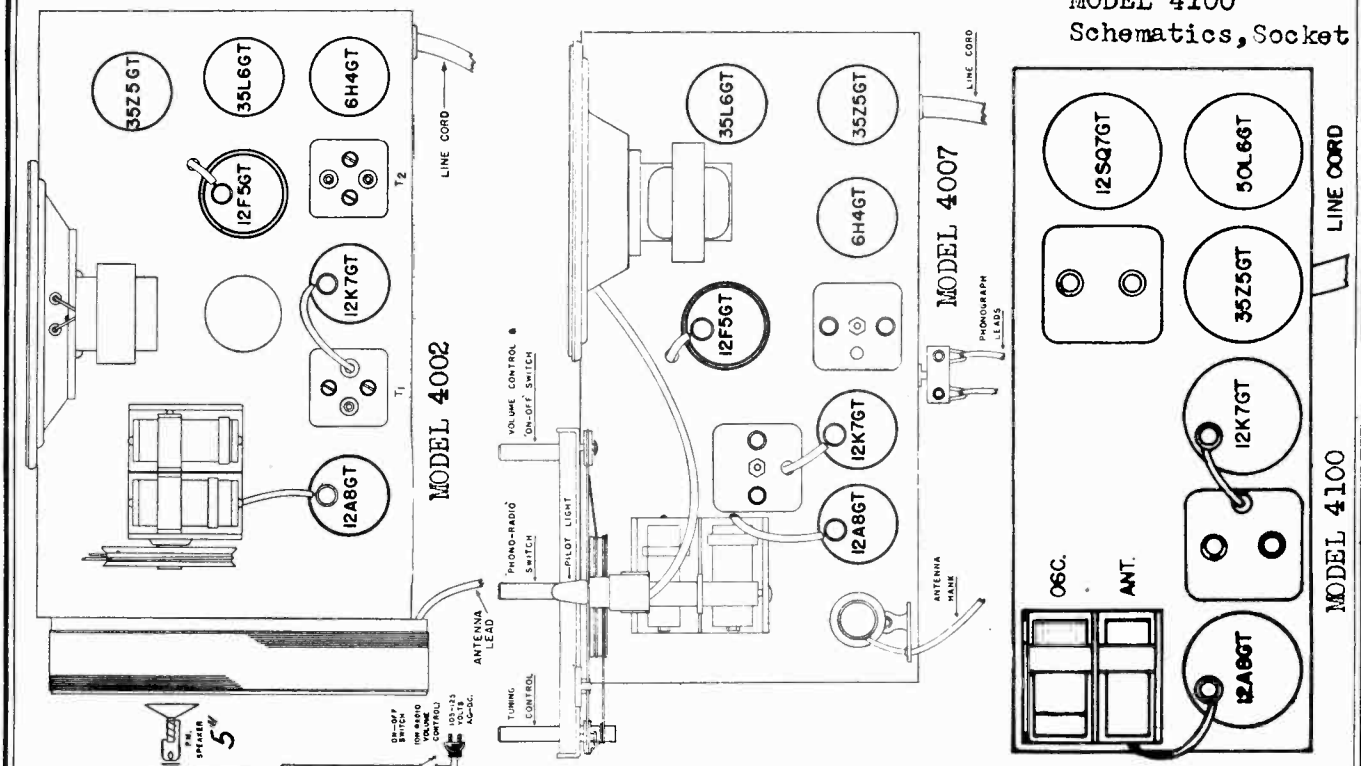
**MODEL 3950**



**MODEL 4001**

AIR KING PRODUCTS CORP.

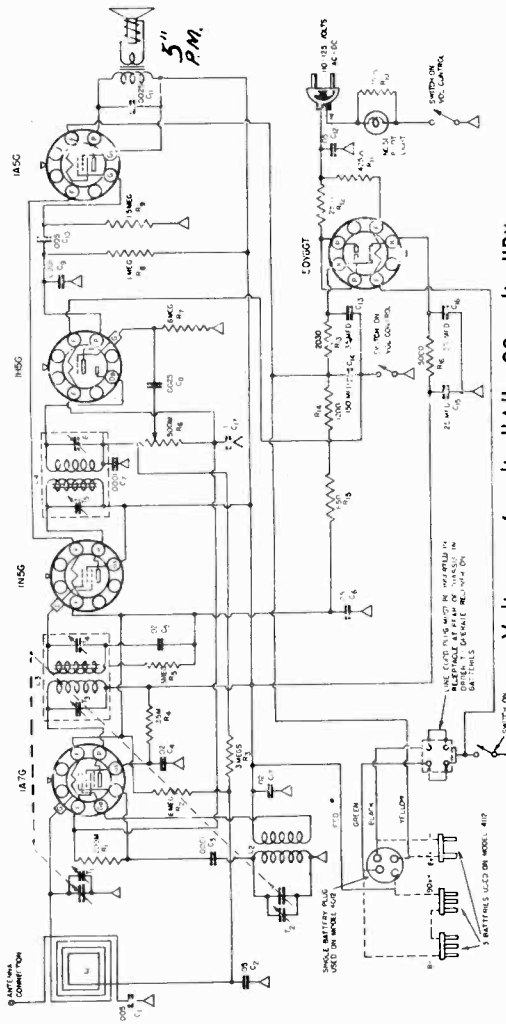
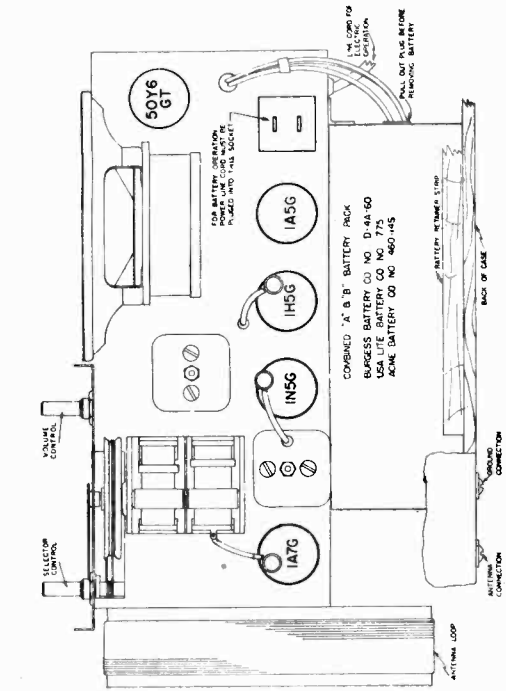
MODEL 4002  
 MODEL 4007  
 MODEL 4100  
 Schematics, Socket



ALIGN IF AT 455 KC.  
 ALIGN RF AT 1600 KC.  
 Tube sockets viewed from bottom.  
**MODEL 4100**

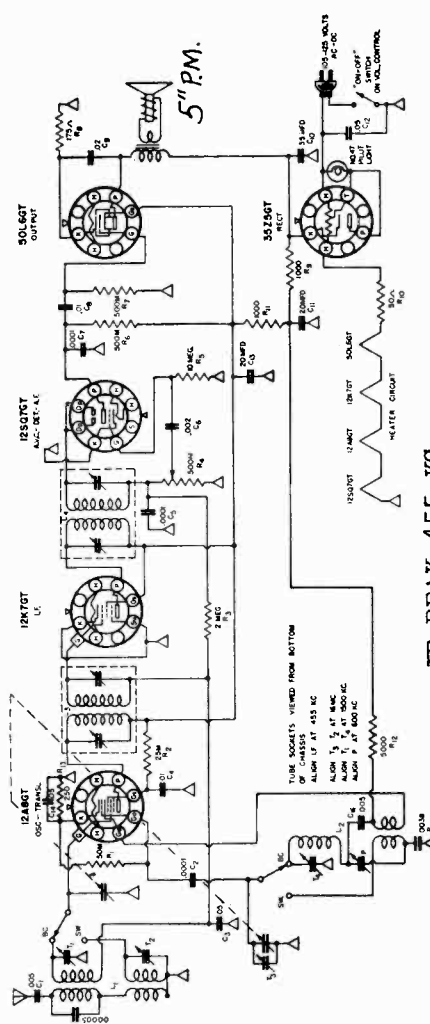
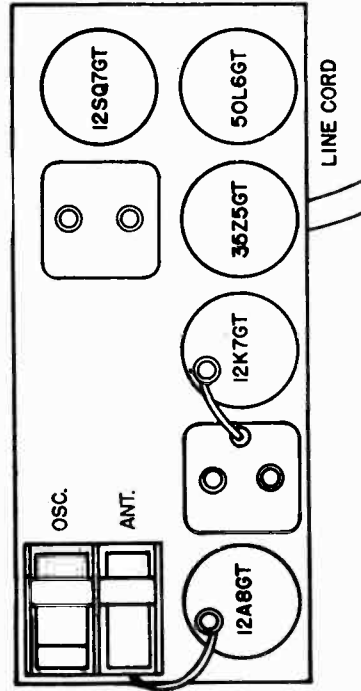
MODEL 4012  
 MODEL 4200  
 Schematics, Socket

AIR KING PRODUCTS CORP.



**MODEL 4012**

IF PEAK 455 KC



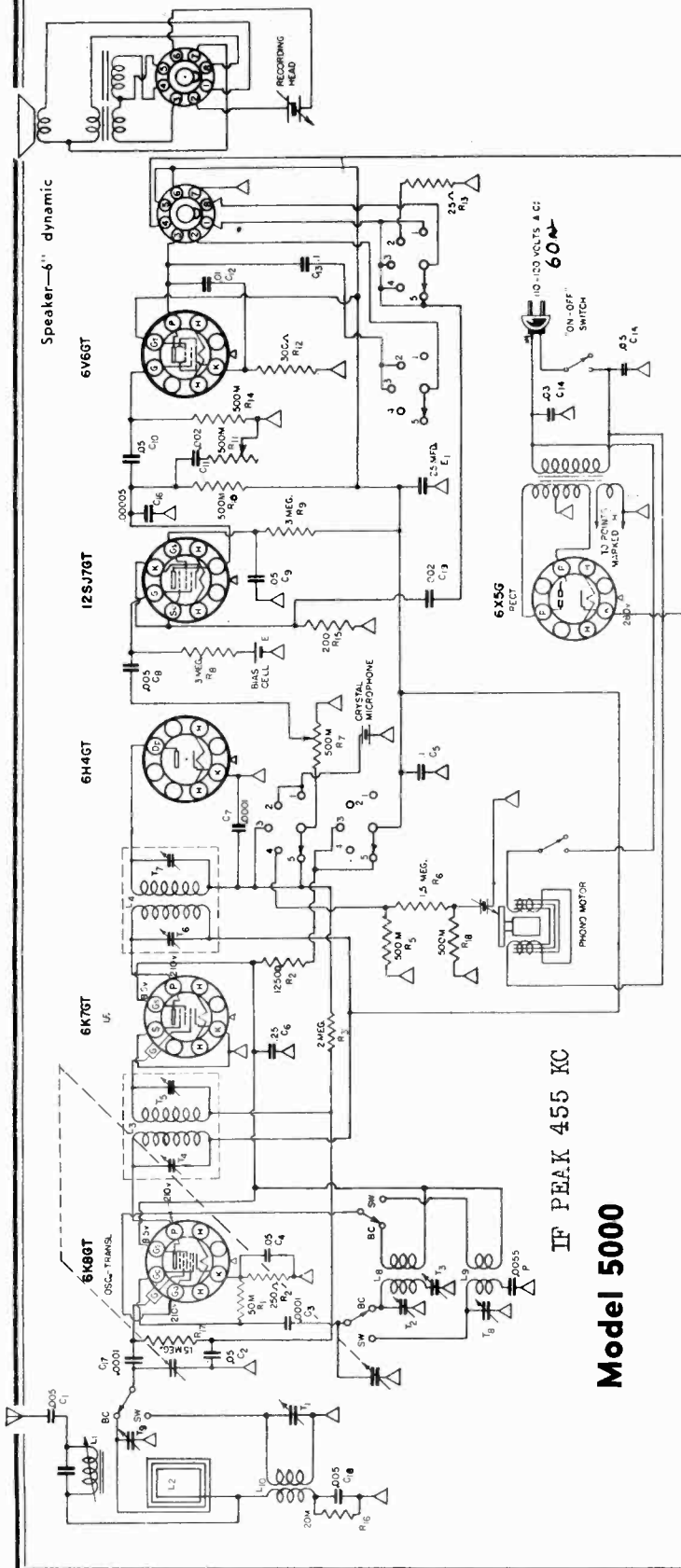
**MODEL 4200**

IF PEAK 455 KC

Socket, Trimmers  
Recording Data

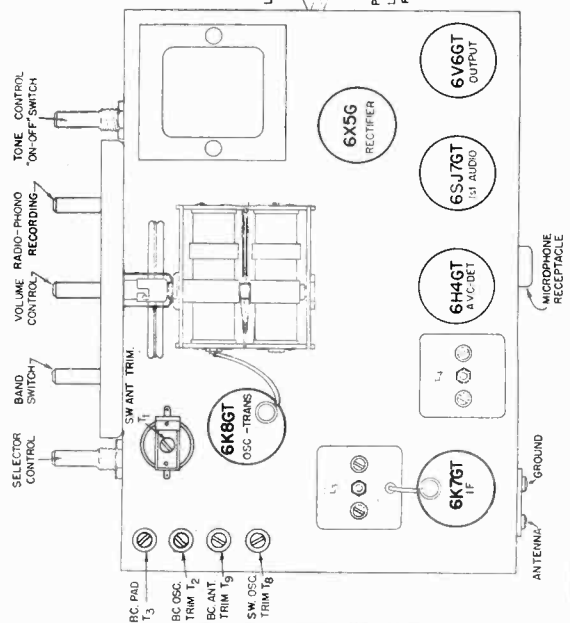
AIR KING PRODUCTS CORP.

MODEL 5000  
Schematic, Voltage



Model 5000

TUBE SOCKET LOCATIONS



RADIO

To record radio programs set "Phonoradio Switch" so that number "5" is opposite brass marker above the knob. Set volume control for loud and clear reception. Then set switch so that number "3" is opposite the marker and record the program. Do not allow needle to cut disc when it reaches the inner label. Do not allow the fine threads which form to collect under the needle, brush lightly with a soft cloth or brush towards the center of the disc.

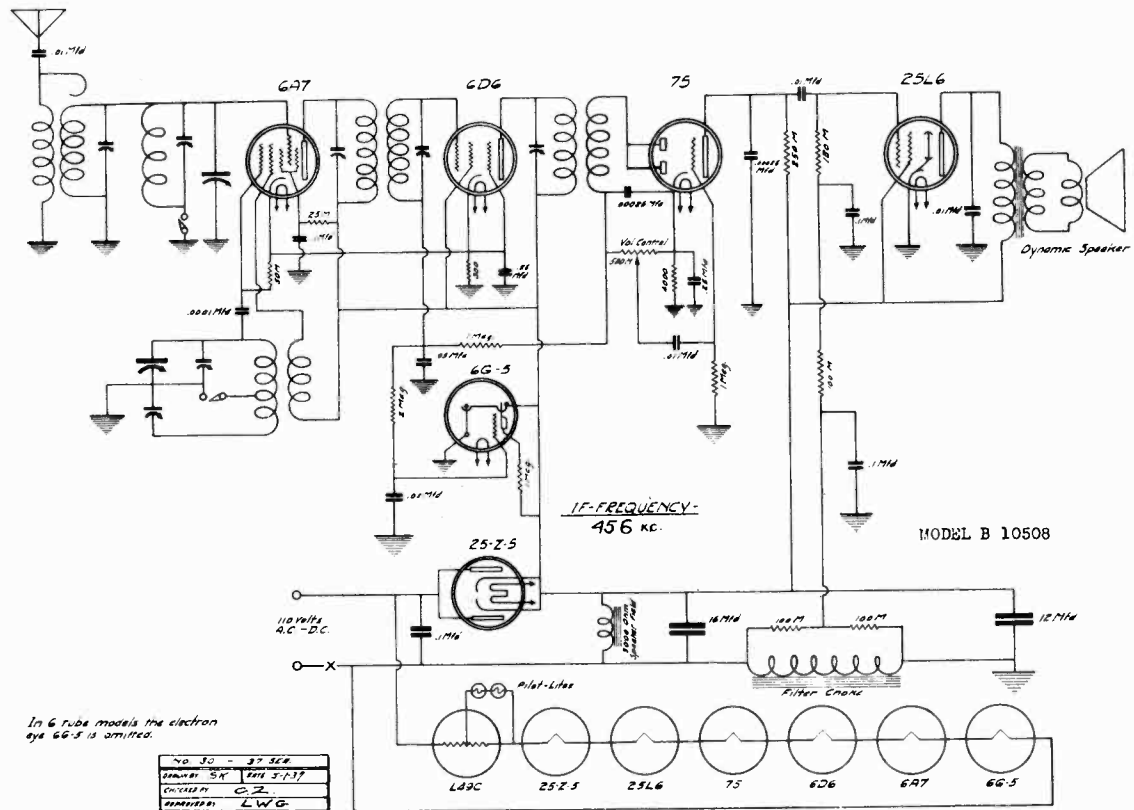
MICROPHONE

For microphone recording set switch so that number 1 is opposite marker and test for operation. Then turn switch so that number "2" is opposite the marker. Turn volume control fully to the right. In speaking use normal voice with microphone at least six inches from the mouth.

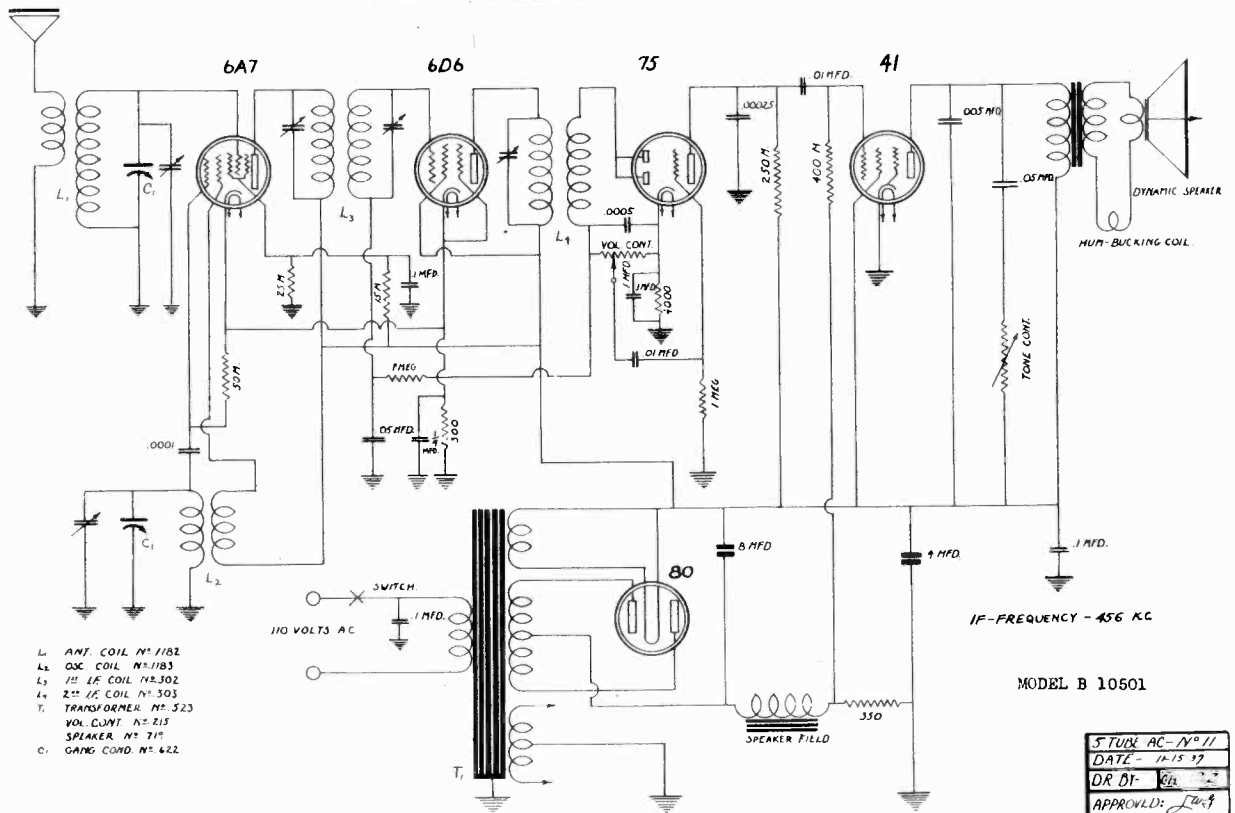
NOTE:-Be sure needle is firmly in place and that the flat side points towards the rear of the cabinet. Check that the small pin projects through one of the three holes on the blank to prevent the disc from slipping.

ALLIED RADIO CORP.

MODEL B10501  
MODEL B10508  
Schematics



In 6 tube models the electron eye 6G-5 is omitted.



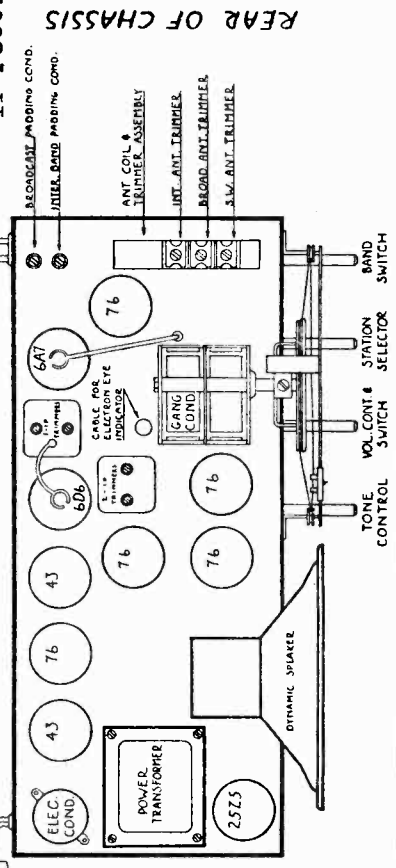
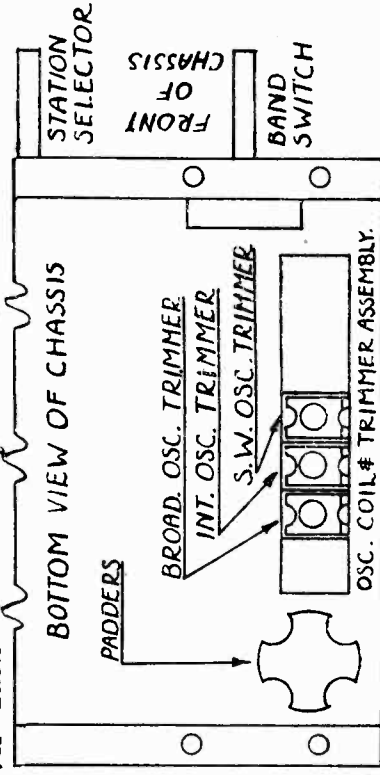
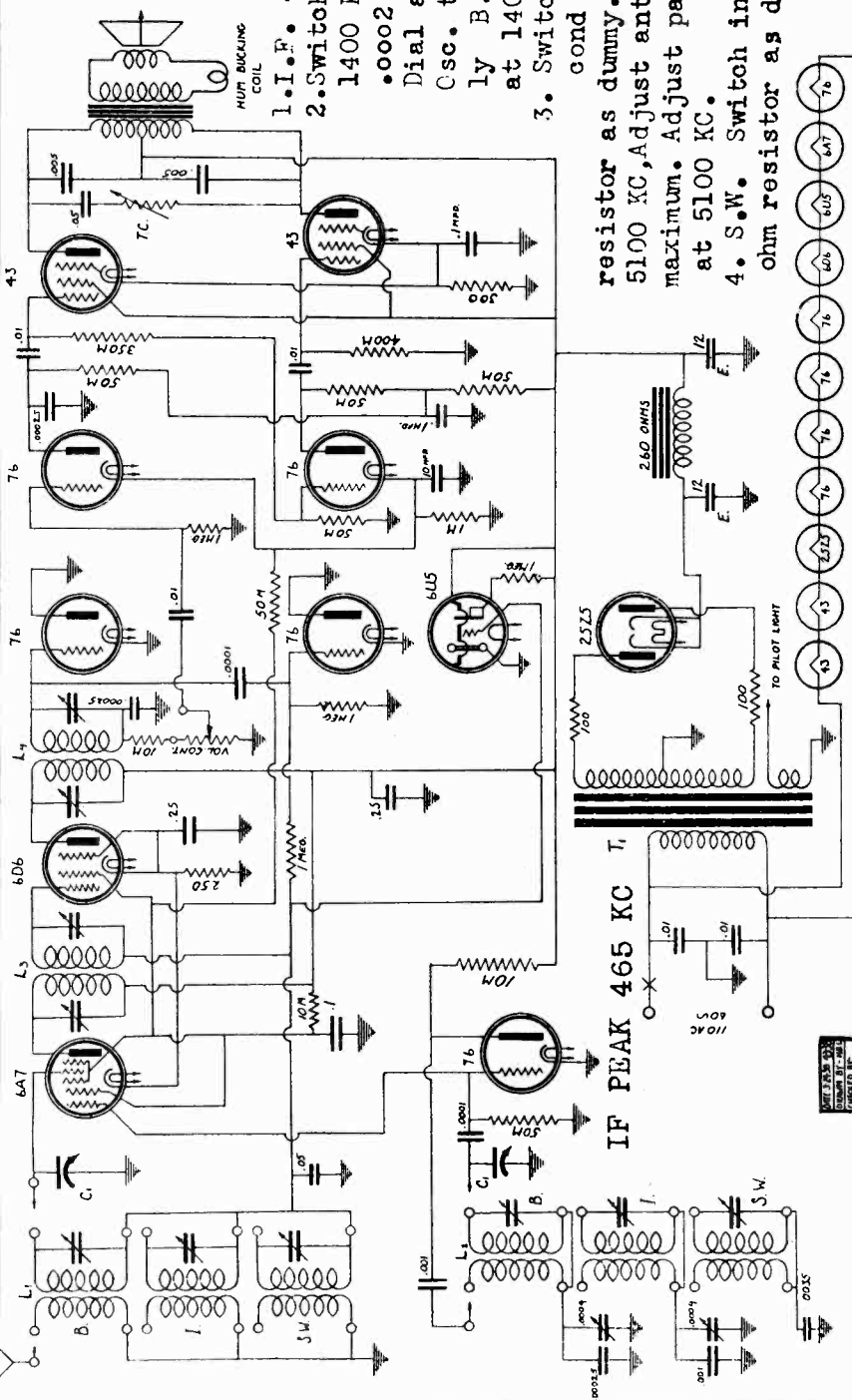
MODELS B10718, B10719  
Schematic Alignment  
Socket, Trimmers

ALLIED RADIO CORP.

- L<sub>1</sub>-ANT. COIL ASSEMBLY NO. 1194
- L<sub>2</sub>-OSC. COIL ASSEMBLY NO. 1195
- L<sub>3</sub>-1ST IF TRANSFORMER NO. 301
- L<sub>4</sub>-2ND IF TRANSFORMER NO. 310
- T<sub>1</sub>-POWER TRANSFORMER NO. 52A
- L<sub>5</sub>-DYNAMIC SPEAKER NO. 741 & NO. 742
- VOL. CONT. # SWITCH NO. 221
- 6A7 TUBE NO. 305
- C<sub>1</sub>-VARIABLE COND. NO. 624
- E-ELECTROLYTIC FILTER COND. NO. 1729
- BAND SWITCH NO. 123
- PADDER COND. NO. 1012

ALIGNMENT

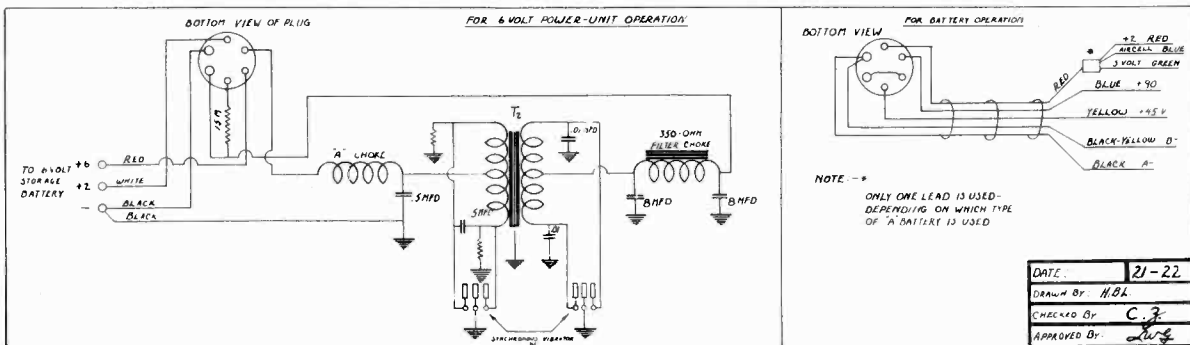
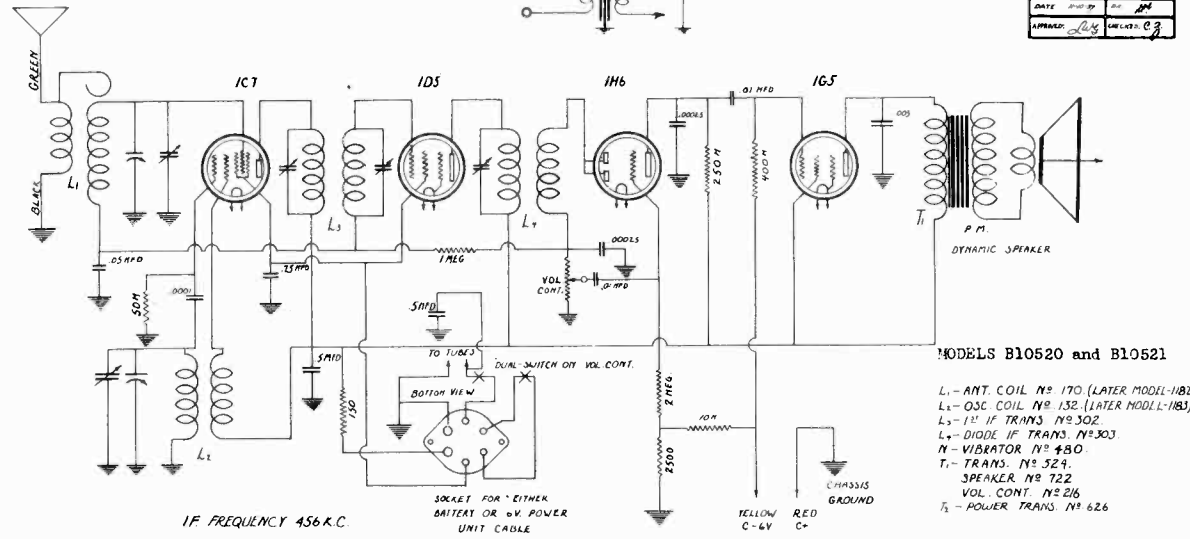
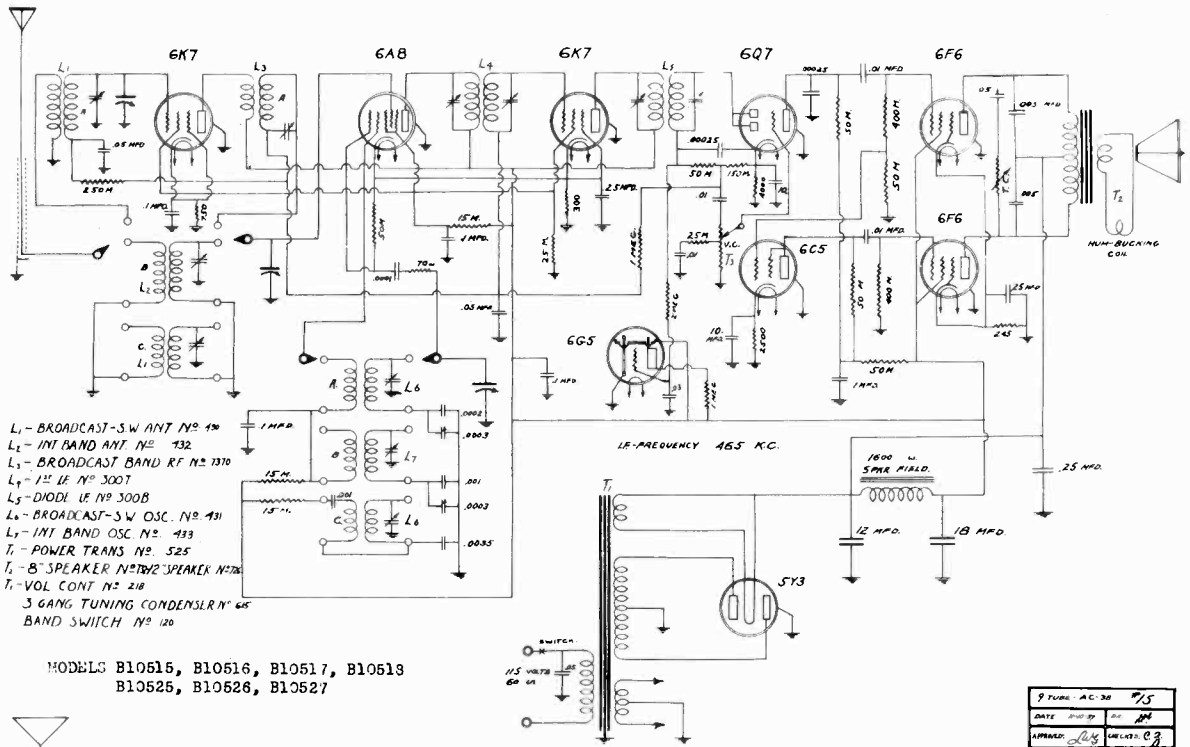
1. I.F. 465 KC to grid of 6A7.
2. Switch in B.C., Osc. at 1400 KC to antenna post, use .0002 dummy, Vol. Cont. Max. Dial at 1400KC Adjust B.C. Csc. trimmer to max. Similarly B.C. Pad at 600 KC. Recheck at 1400 KC.
3. Switch in INT. use .0002 mfd cond with 400 ohm series resistor as dummy. Dial and oscillator at 5100 KC, Adjust ant. and osc. trimmers to maximum. Adjust pad at 1800 KC. Recheck at 5100 KC.
4. S.W. Switch in S.W. position. Use 400 ohm resistor as dummy, Oscillator and dial at 15.M.C. Adjust S.W. ant. and osc. trimmers to maximum, S.W. ant. and osc. trimmers to maximum, Sensitivity check .0035 cond for short.



Sensitivity check at 6000 KC  
If receiver lacks sensitivity check .0035 cond for short.

ALLIED RADIO CORP.

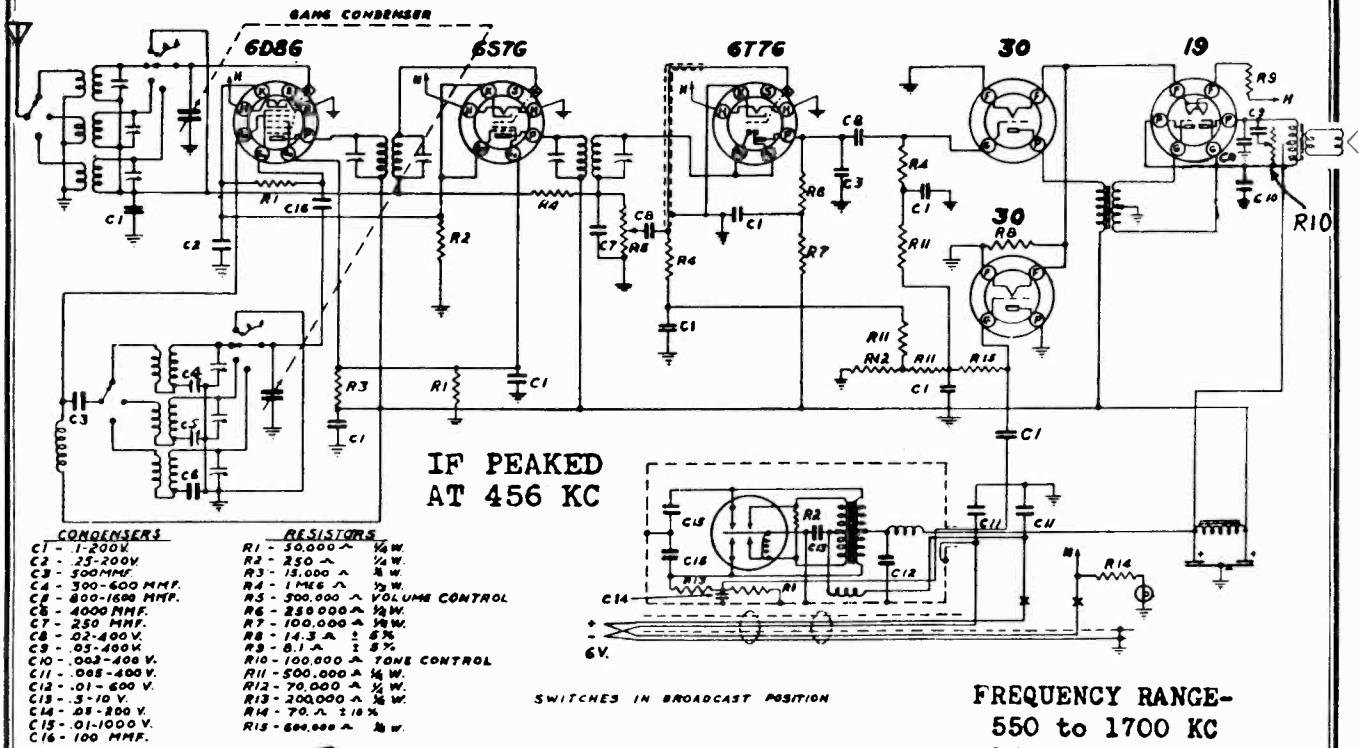
MODELS B10515 to B10518,  
B10525 to B10527  
MODELS B10520, B10521  
Schematics



MODELS B10545 to B10549,  
B10553

ALLIED RADIO CORP.

Schematic, Socket, Trimmers  
Alignment

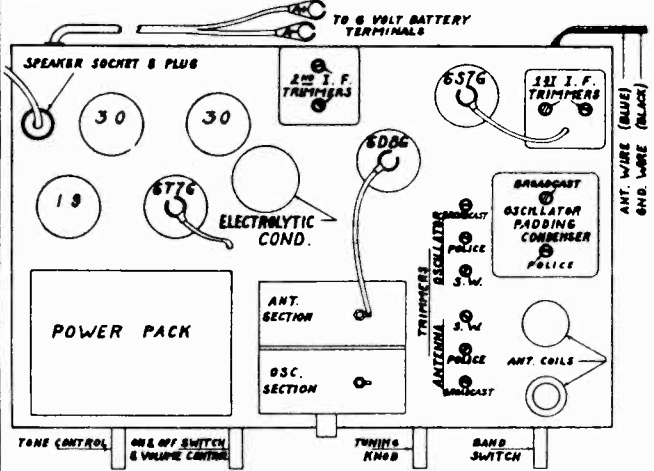


- CONDENSERS**
- C1 - 1-200K
  - C2 - 25-200V
  - C3 - 500MMF
  - C4 - 300-600 MMF.
  - C5 - 4000 MMF.
  - C6 - 250 MMF.
  - C7 - 250 MMF.
  - C8 - 02-400V.
  - C9 - 03-400V.
  - C10 - 003-400 V.
  - C11 - 005-400 V.
  - C12 - .01 - 600 V.
  - C13 - .5-10 V.
  - C14 - .05 - 800 V.
  - C15 - .01-1000V.
  - C16 - 100 MMF.

- RESISTORS**
- R1 - 50,000 Ω 1/2 W
  - R2 - 250 Ω 1/2 W
  - R3 - 15,000 Ω 1/2 W
  - R4 - 1 MEG Ω 1/2 W
  - R5 - 300,000 Ω 1/2 W
  - R6 - 250,000 Ω 1/2 W
  - R7 - 100,000 Ω 1/2 W
  - R8 - 14.3 Ω ± 5%
  - R9 - 8.1 Ω ± 5%
  - R10 - 100,000 Ω TONE CONTROL
  - R11 - 500,000 Ω 1/2 W
  - R12 - 70,000 Ω 1/2 W
  - R13 - 200,000 Ω 1/2 W
  - R14 - 70 Ω ± 10%
  - R15 - 600,000 Ω 1/2 W

IF PEAKED  
AT 456 KC

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



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 antenna. 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 KC. 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 16,000 KC and adjust the "short wave antenna" 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.

**SERVICE DATA FOR ALL BANDS**

If it is suspected that the oscillator has stopped but is doubtful due to the presence of the usual amount of noise level, it is suggested that the oscillator plate voltage be checked. To ascertain whether the tube is oscillating, ground the oscillator grid of the 6D8G (short stator and rotor plates of oscillator section on gang condenser). If oscillating properly, grounding the grid will cause an appreciable drop in oscillator voltage.

**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 (6D8G) 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.

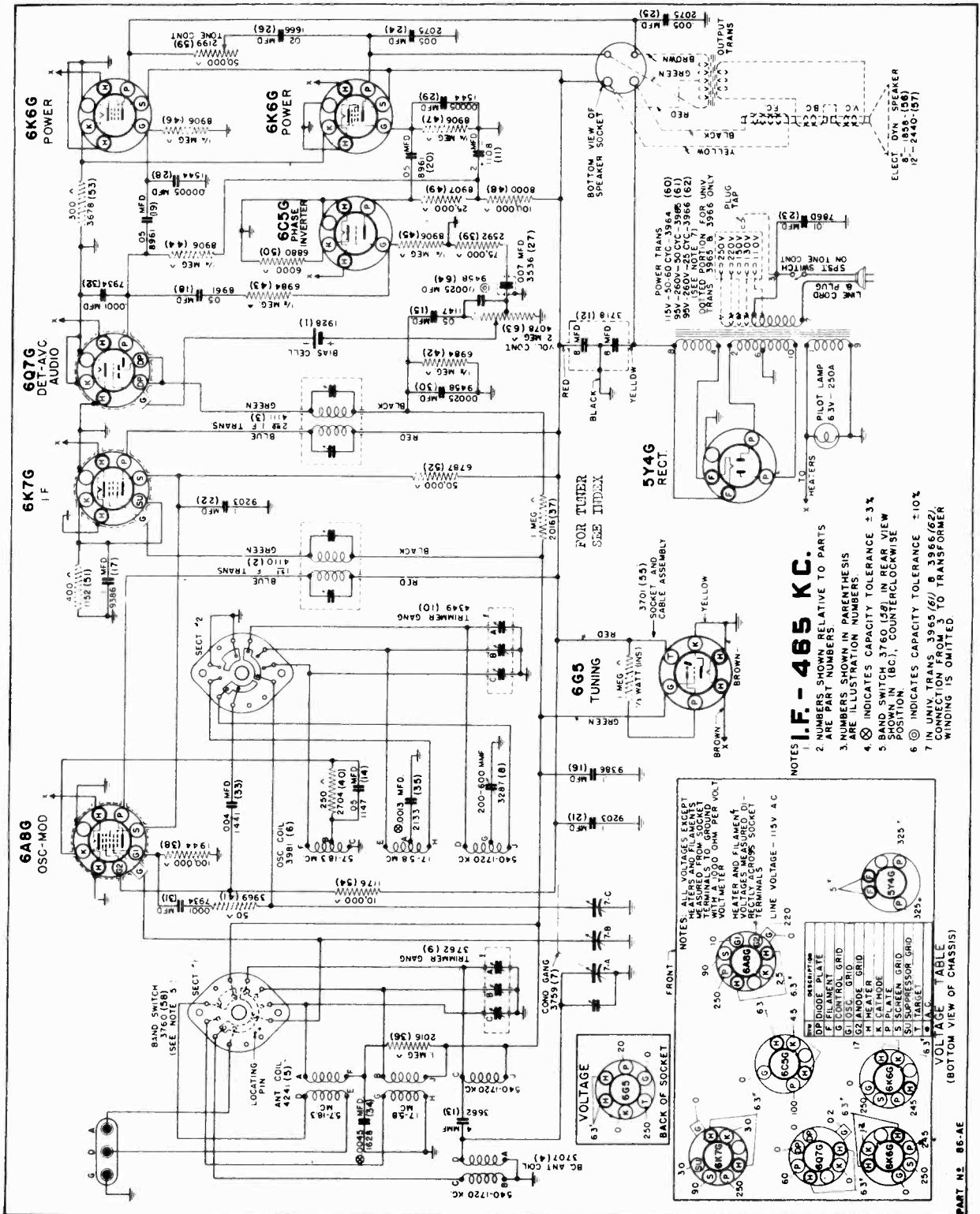
**BROADCAST BAND ALIGNMENT**

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 "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



ALLIED RADIO CORP.

MODELS B10565 to B10568  
Schematic, Voltage  
Socket



- NOTES**
- 1 I.F. - 465 KC.
  - 2 NUMBERS SHOWN RELATIVE TO PARTS ARE PART NUMBERS.
  - 3 NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.
  - 4 ⊗ INDICATES CAPACITY TOLERANCE ± 3%
  - 5 BAND SWITCH 3760 (59) IN REAR VIEW POSITION (BC), COUNTERCLOCKWISE POSITION
  - 6 ⊙ INDICATES CAPACITY TOLERANCE ± 10%
  - 7 IN UNIV. TRANS. 3965 (67) & 3966 (62) CONNECTION FROM TO TRANSFORMER WINDING IS OMITTED

**NOTES:** ALL VOLTAGES, EXCEPT HEATER AND FILAMENT VOLTAGES, MEASURED FROM SOCKET TERMINALS TO GROUND. VOLTAGE MEASURED ON PER VOLT VOLTMETER 50 OHM PER VOLT.

**VOLTAGE TABLE**  
(BOTTOM VIEW OF CHASSIS)

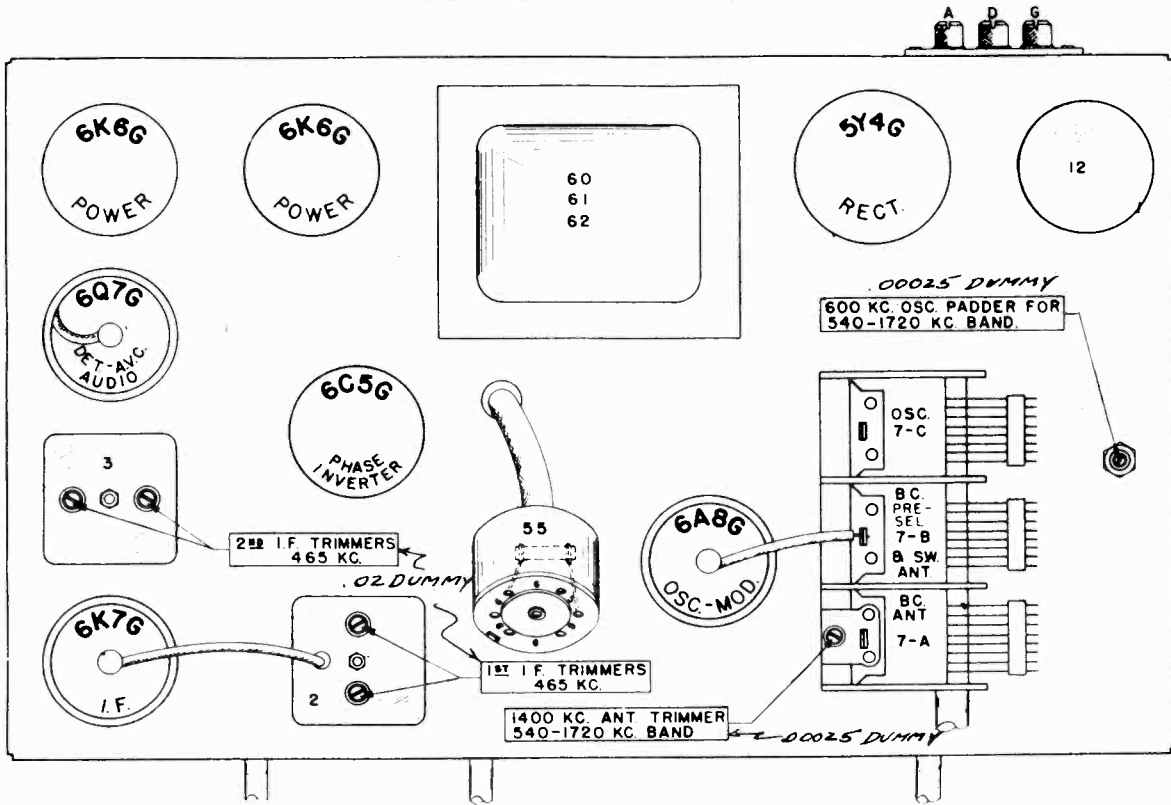
DESCRIPTION	VOLTAGE
DIODE PLATE	115V AC
ANTENNA	540-1720 KC
CONTROL GRID	0
OSC. GRID	0
ANODE GRID	0
HEATER	3.5V
PI PLATE	0
SCREEN GRID	0
SUPPRESSOR GRID	0

**VOLTAGE**  
FRONT  
BACK OF SOCKET

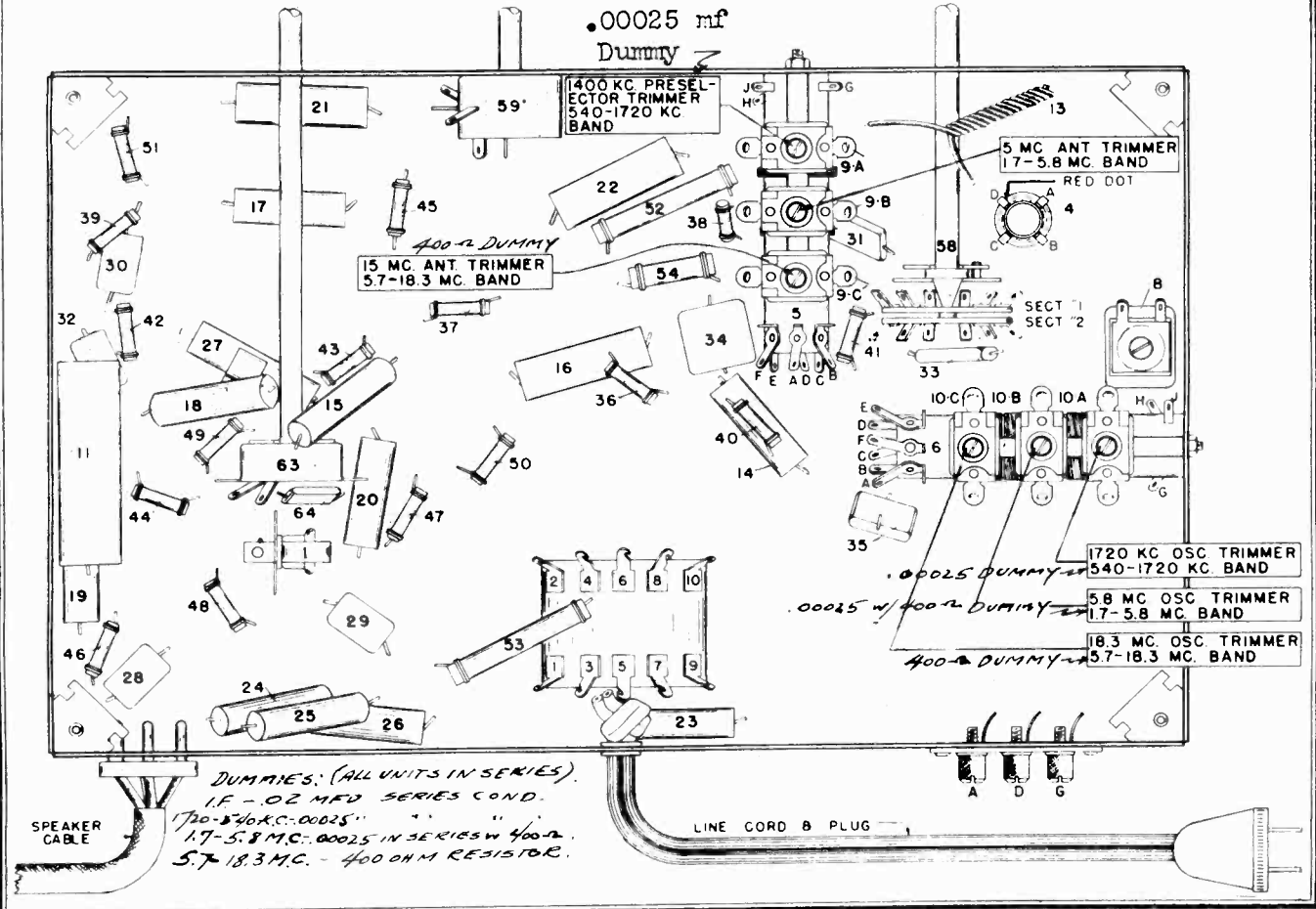
PART NO. 86-AE

MODELS B10565 to B10568

Trimmers, Alignment, Chassis ALLIED RADIO CORP.

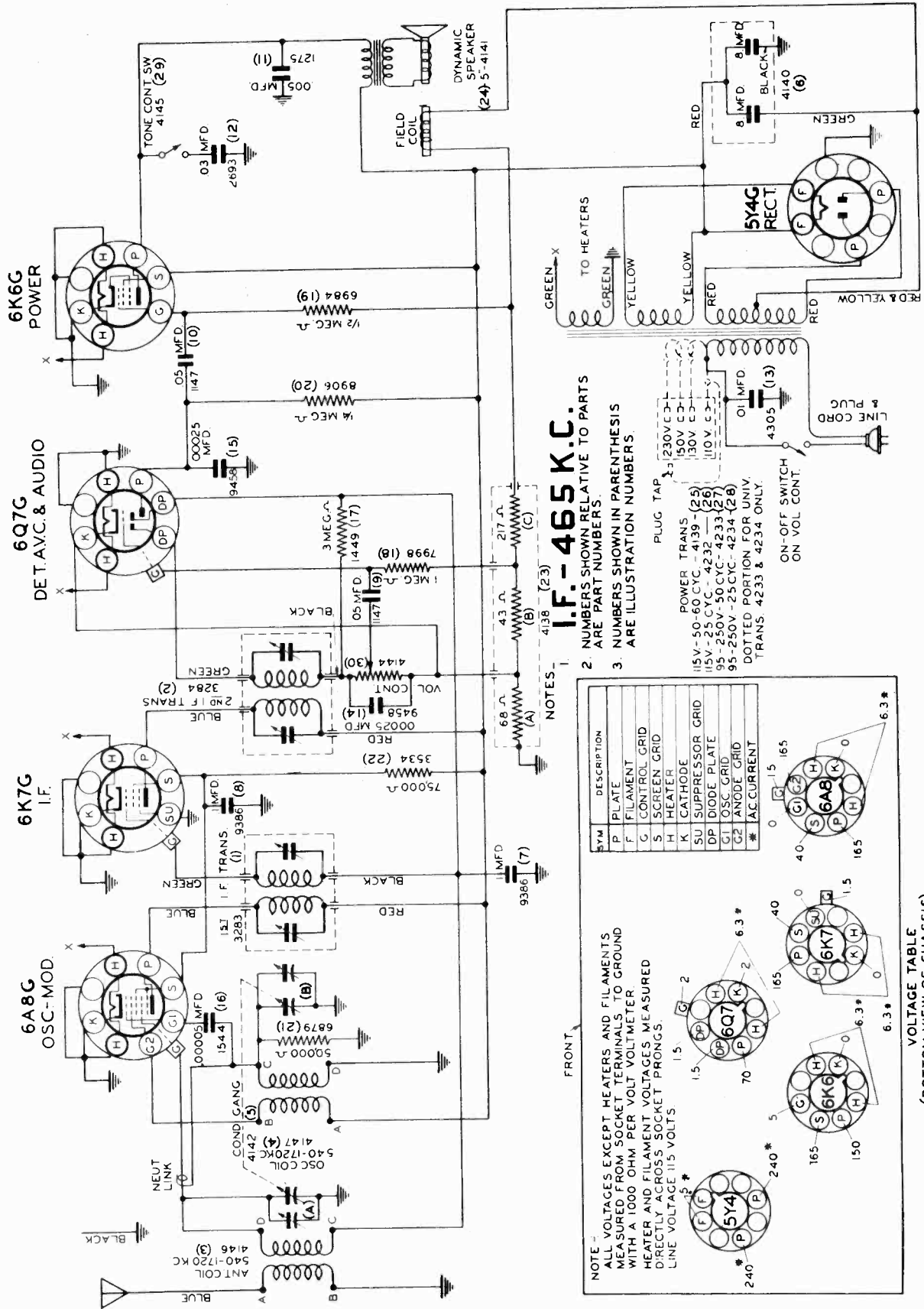


CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOL. VIII.



ALLIED RADIO CORP.

MODELS B10577, B10578  
Schematic, Voltage  
Socket

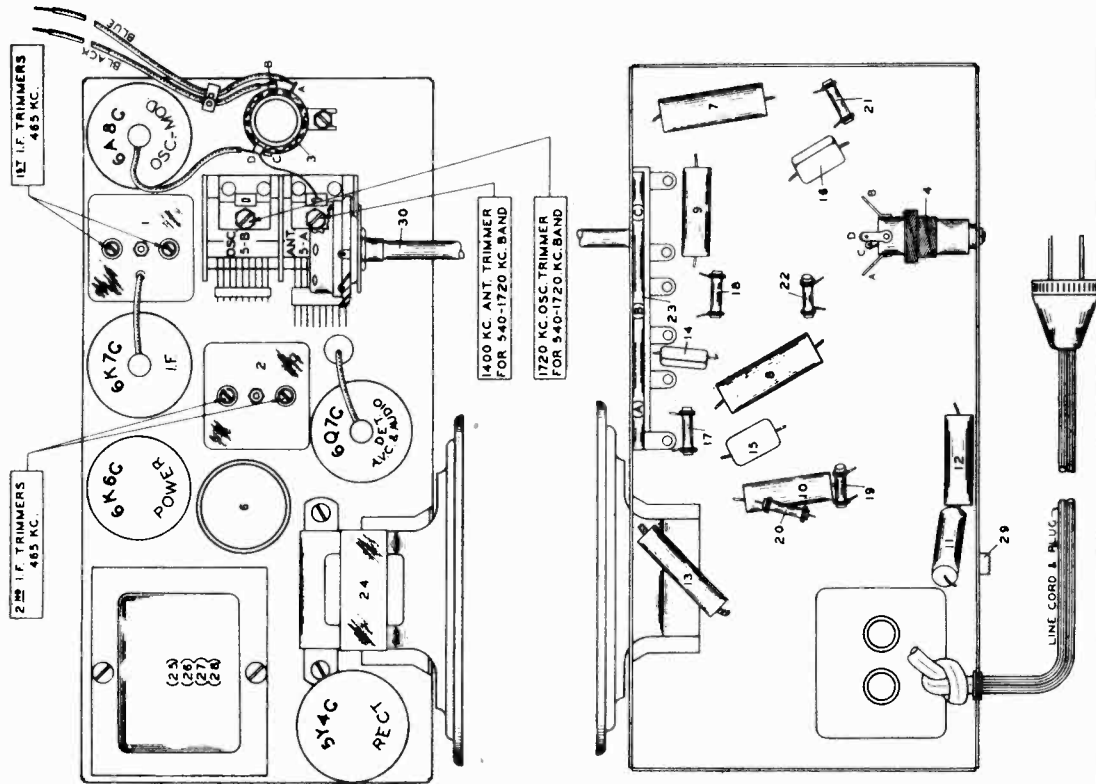


MODELS B10577, B10578

Chassis, Trimmers  
Alignment

ALLIED RADIO CORP.

- (c) Set receiver dial and test oscillator frequency to EXACTLY 1720 kilocycles.
- (d) 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.
- (e) Tune receiver dial and set test oscillator frequency to EXACTLY 1400 kilocycles.
- (f) Adjust trimmer on top of the front section gang condenser (antenna section) for maximum 1400 kilocycle test signal response.



THIS RADIO IS DESIGNED SO THAT IT MAY BE PLACED IN A HORIZONTAL OR UPRIGHT POSITION. AS THE OPERATION AND PERFORMANCE OF THE RECEIVER IS THE SAME IN EITHER POSITION, IT IS A MATTER OF PERSONAL PREFERENCE AS TO WHICH POSITION TO USE.

The approximate position on the dial that any nine stations will be tuned in may be quickly determined—by pressing a paper tab having the station call letters into the round depressions on the front of the cabinet.

THE STATIONS SELECTED MUST OPERATE ON A FREQUENCY 40 KILOCYCLES OR MORE APART. OTHERWISE IT WILL BE IMPOSSIBLE TO PLACE THE CALL LETTER TABS IN THEIR PROPER POSITION IN CABINET DEPRESSIONS.

While it will be found that only the approximate location will be indicated, the station call tabs properly located will be an extremely helpful tuning aid.

To set the proper station call letter tabs into the cabinet depressions proceed as follows:

- (a) Determine which nine stations call letters you wish to have on the cabinet—press call letter tabs out of the call letter sheets provided.
- (b) Carefully tune in the selected station that broadcast on the lowest frequency—the least number of kilocycles.
- (c) Place a little mucilage or celluloid on back of paper tab. Press the paper call letter tab—so that the printed call letters of the station tuned in are at the same angle as the printing on the dial—into the round depression on the cabinet front that is nearest to the dial pointer. By placing call letter tab on angle the call letter can easily be read with cabinet in either a horizontal or upright position.
- (d) Tune in the next selected station having the next lowest station frequency, pressing the call letter for this station into the round cabinet depression nearest to the dial pointer needle—continuing on in this way until station call letters have been placed into all nine cabinet depressions.

After the station call letters are set it will be a simple matter to determine the approximate dial position of any of these stations—just rotate tuning knob until dial pointer needle points to station call letter of desired station. It must be remembered that only the approximate tuning location will be indicated by the dial pointer needle—each station must be correctly tuned in by ROTATING THE TUNING CONTROL KNOB UNTIL A STATION IS TUNED IN WITH GREATEST CLARITY.

**ALIGNMENT PROCEDURE:**

**NOTE:** BE SURE TO FOLLOW PROCEDURE CAREFULLY WHEN ALIGNING. OTHERWISE THE RECEIVER WILL BE INSENSITIVE AND THE DIAL CALIBRATION WILL BE INCORRECT. THE TRIMMERS AND PADDING CONDENSERS WILL BE REFERRED TO BY THEIR FUNCTION AS INDICATED ON THE PARTS DIAGRAM.

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:**

- (a) 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 6A8G tube through a .02 Mfd. series condenser. DO NOT REMOVE GRID CLIP.
- (b) Set test oscillator to EXACTLY 465 kilocycles and turn receiver volume control on full.
- (c) Peak each of the second I.F. transformer trimmers.
- (d) Peak each of the first I.F. transformer trimmers.

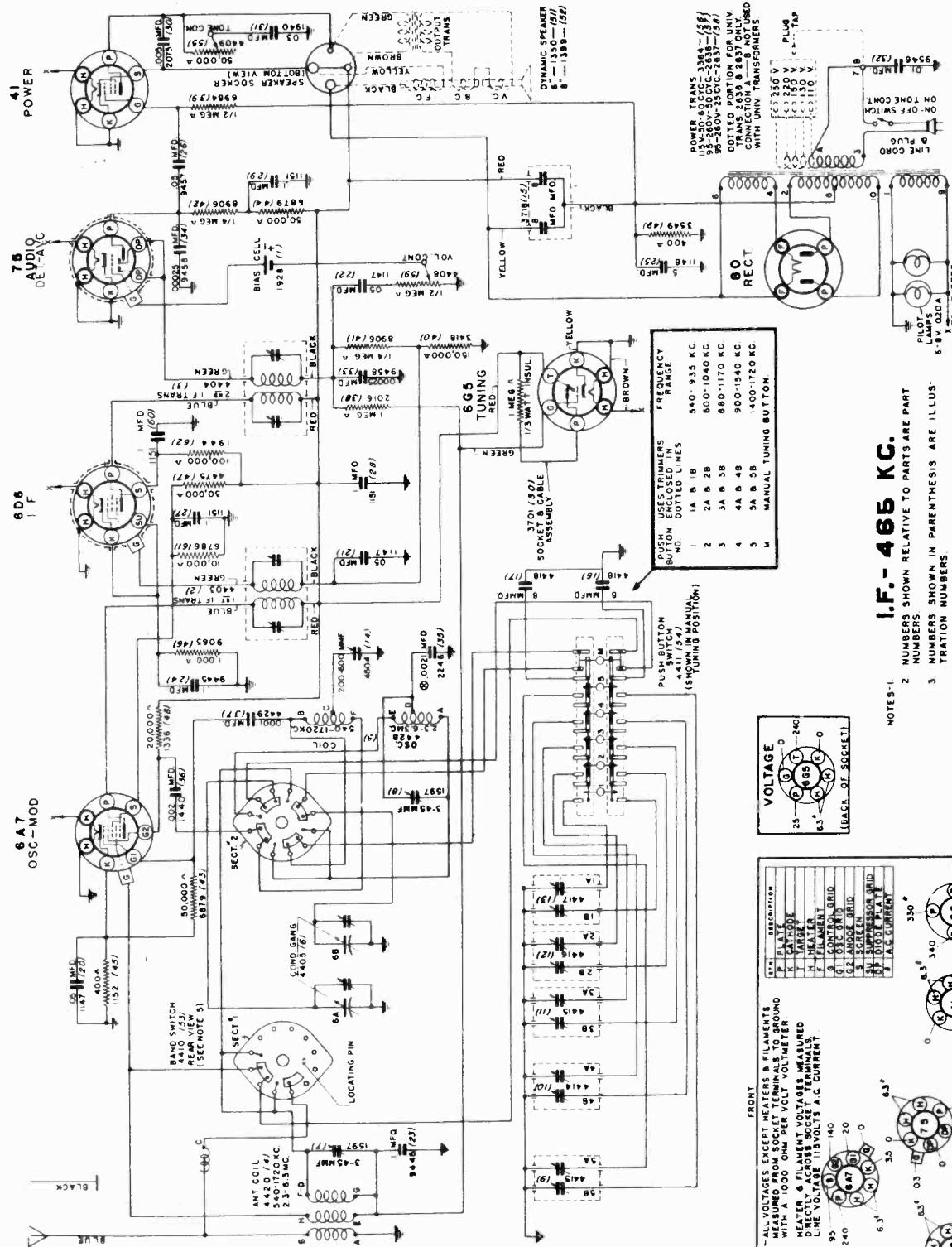
To assure most accurate trimmer setting repeat above adjustment several times always using lowest possible test oscillator output consistent with readable output meter scale deflection.

**ALIGNING 1720-540 KILOCYCLE BAND:**

- (a) Remove test oscillator lead from grid of 6A8G tube and attach it to the receiver antenna lead through a .00025 Mfd. series condenser.
- (b) 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.

ALLIED RADIO CORP.

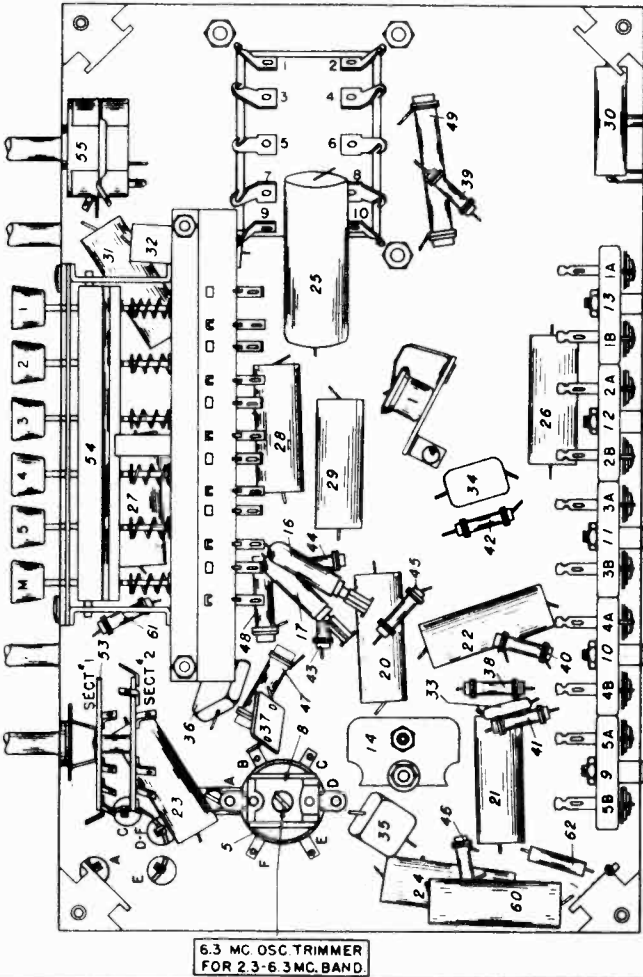
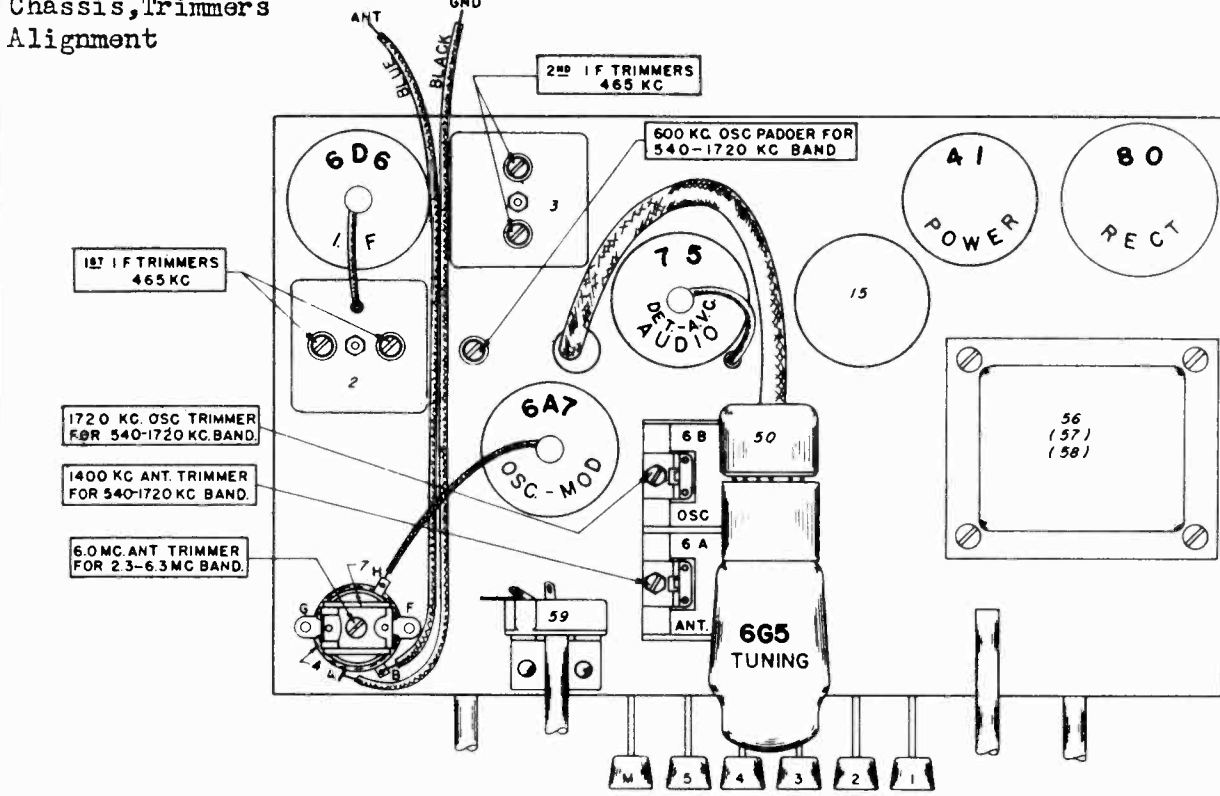
MODEL B10579  
Schematic, Voltage  
Socket



MODEL B10579

Chassis, Trimmers  
Alignment

ALLIED RADIO CORP.



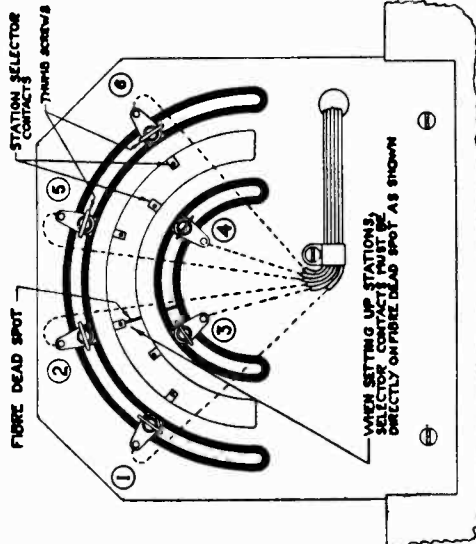
- ALIGNMENT PROCEDURE:**
- ALIGNING I.F. STAGE AT 465 KILOCYCLES:**
- Connect the ground lead of the test oscillator to the chassis or set ground lead. Connect the other lead of the test oscillator to the grid cap of the 6A7 tube through a .02 Mfd. series condenser. DO NOT RE-MOVE GRID CLIP.
  - Set test oscillator to EXACTLY 465 kilocycles and turn receiver volume control on full.
  - Peak each of the second I.F. transformer trimmers.
  - Peck 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.
- PLACE BAND SELECTOR SWITCH FOR 1720-540 K.C. OPERATION. PRESS IN MANUAL PUSH-BUTTON.**
- AND 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 paddor condenser which is accessible through the hole in the top of 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 megacycle 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.
  - Tune receiver dial and set test oscillator frequency to EXACTLY 6 megacycles, and adjust 6 M.C. antenna trimmer for maximum sensitivity.

MODEL B10579  
 ALLIED RADIO CORP. MODELS B10750, B10760, B10761,  
 B10762, B10770, B10771  
 Tuner Data

**SETTING UP SELECTOR MECHANISM**

MODELE B10750, B10770, B10771,  
 B10760, B10761, B10762.

- Using the manual selector knob, tune in station No. 1, the station near the left hand end of the dial—the 170 K.C. end. Make certain that the station is properly tuned in.
- From the back of the receiver loosen thumb screw No. 1 (See Figure 2) just enough to allow it to slide freely in the groove.
- Now adjust the thumb screw until the contact is resting directly on the fibre dead spot.
- Tighten thumb screw securely, making sure that in tightening you do not move the contact off the fibre dead spot.
- Check the above operation by pressing button No. 1 and note if there is any pointer movement. If there is no pointer movement, the contact is properly set. If the pointer moves, the contact was not set directly on fibre dead spot. In this case, the station should be re-tuned manually, and procedure No. 3 should be repeated.
- Using the same procedure, set up the remaining five stations, in each case using the station of the next highest frequency and the thumb screw having the same number as the corresponding button. Never skip buttons, always set up in numerical order from button 1 to 6 from left to right.
- After all the stations have been set up, insert the proper station call tabs (found with the instructions) into the recesses of their respective buttons.
- To receive any of the six stations set up as described above turn receiver "ON" by rotating the left hand knob to the right until the switch clicks. Allow the tubes to heat up, press the buttons designated by the call letter of the station desired and hold the button in until the pointer stops moving and the station comes in. Adjust tone and volume. **IMPORTANT:** Be sure the band switch is in the position for Standard Broadcast Reception.



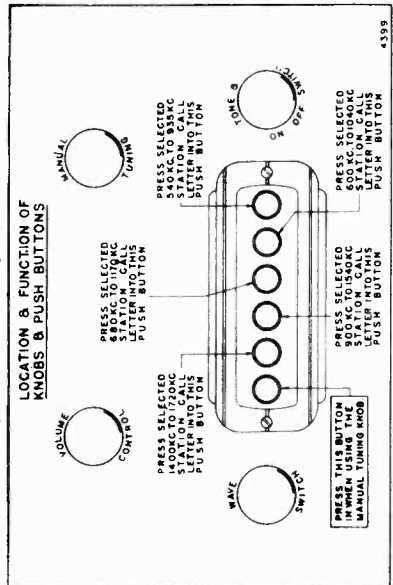
- BE SURE TO OPERATE THE SET AT LEAST ONE-HALF HOUR BEFORE ADJUSTING TRIMMERS. If the set is not thoroughly warmed up when the trimmers are adjusted, they may shift position after they become warm resulting in poor tone, weak signal, and excessive background noise.
- FOR BEST RESULTS SET PUSH-BUTTONS FOR-LOCAL OR STRONG, NEARBY STATIONS ONLY.** Obtain the call letters of the stations you wish "Push-Button" and call letters of the stations you wish "Automatic" and call letters of the stations you wish "Manual".
- Place band selector switch for operation on 1720-540 kilocycle band.
- Press in "MANUAL" tuning button—see diagram.
- It is advisable that if a station is selected whose transmitter frequency is between 540-935 kilocycles that the two trimmers marked "540-935 K.C." on paper label attached to back of chassis be adjusted first.
- Using "MANUAL" tuning knob carefully tune in selected station whose transmitter frequency is between 540-935 kilocycles.
- Press in push-button marked "540-935 K.C."—see diagram. **NOTE: STATION SIGNAL WILL DISAPPEAR OR MAY BE DISTORTED, AND IN SOME INSTANCES ANOTHER STATION MAY BE HEARD.**
- With a small screw driver carefully tune in the selected 540-935 kilocycle station by slowly adjusting trimmer 1A—then trimmer 1B. **WATCH TUNING FEEDBACK AND ADJUST TRIMMERS SO THAT THE TWO OPEN ENDS OF THE GREEN INVERTED "V" ON THE TUNING EYE ARE CLOSEST TOGETHER. AT THIS POINT THE SIGNAL WILL BE HEARD WITH GREATEST VOLUME AND CLEAREST TONE.**
- Adjust trimmer back of chassis 540-935 K.C. station tab and press into round depression in 540-935 KC push-button.
- After trimmers 1A and 1B have been properly set for the selected station operating between 540-935 kilocycles, adjust other trimmers in the same manner and in the following order:
  - Set trimmers 2A and 2B for selected station operating between 600-1040 kilocycles.
  - Adjust trimmers 3A and 3B for selected station operating between 800-1170 kilocycles.
  - Set trimmer 4A and 4B for selected station operating between 900-1540 kilocycles.
  - Adjust trimmers 5A and 6B for selected station operating between 1400-1720 kilocycles.

**INSTRUCTIONS FOR INSTALLING AND OPERATING "AUTOMATIC" PUSH BUTTON"**

Five stations operating in the 1720-540 kilocycle broadcast band may be "AUTOMATIC PUSH-BUTTON" tuned by properly setting the ten trimmer screws accessible through holes in the back of the chassis.

AS THE PUSH-BUTTONS ARE NOT PRE-SET AT THE FACTORY FOR ANY DEFINITE STATION BE SURE TO SET THEM BY:

- It is important to have the aerial, which will be used with the set, attached to the radio when adjusting the trimmers.



USE FOR STATION BETWEEN 540 TO 935 K.C.	USE FOR STATION BETWEEN 600 TO 1170 K.C.	USE FOR STATION BETWEEN 800 TO 1170 K.C.	USE FOR STATION BETWEEN 900 TO 1540 K.C.	USE FOR STATION BETWEEN 1400 TO 1720 K.C.
1A	2A	3A	4A	5A
1B	2B	3B	4B	5B

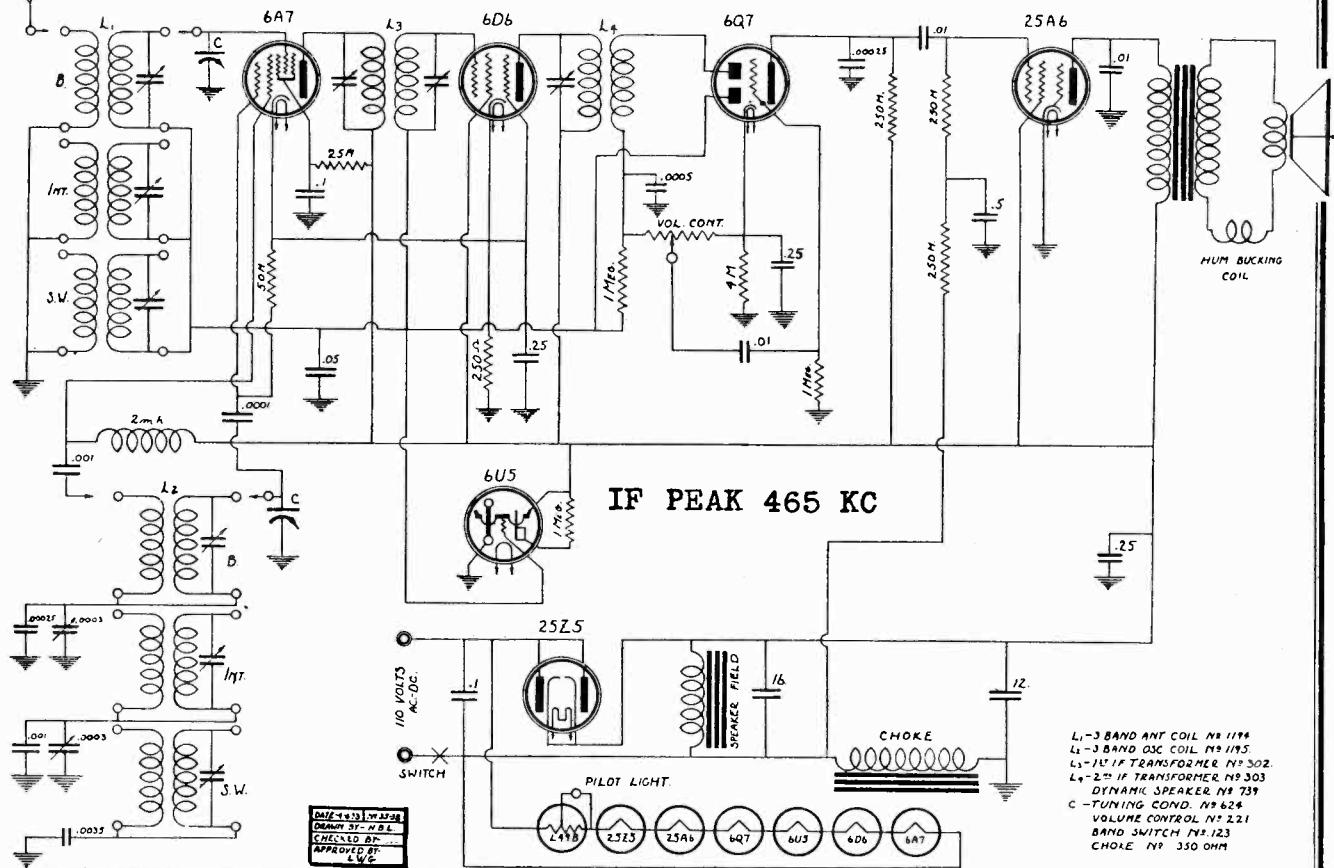
This diagram, which is similar to the one attached to the back of chassis over trimmer holes, shows the minimum-maximum range of the five groups of trimmers.

AS THE TRIMMERS SHOULD NEVER BE TOO LOOSELY OR TOO TIGHTLY ADJUSTED IT IS IMPORTANT THAT THE PROPER TRIMMERS BE USED.

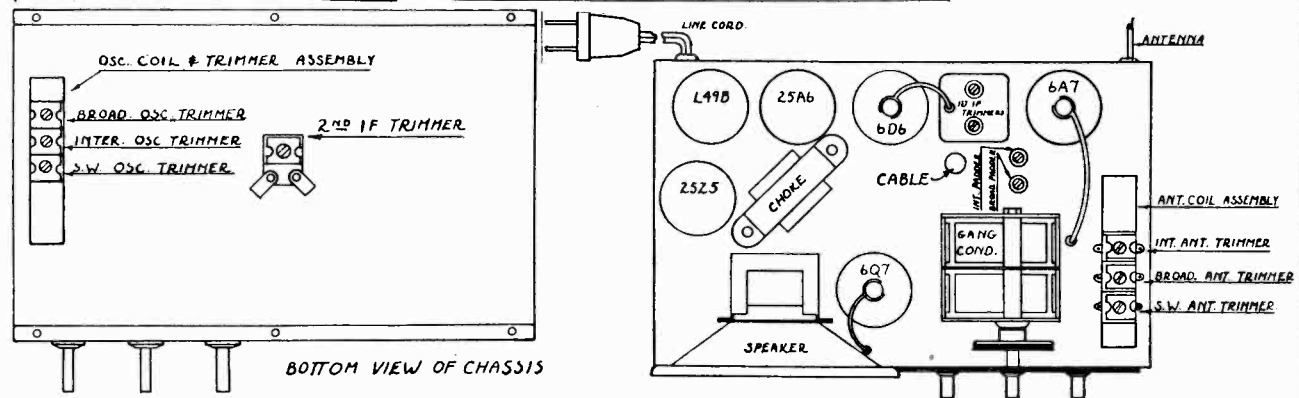
In some instances it may be necessary after a period of time to reset the trimmers as they may drift due to heat, humidity, etc.

MODELS B10702, B10706,  
B10707

ALLIED RADIO CORP. Schematic, Socket, Trimmers  
Alignment



- L1-3 BAND ANT COIL NO 1174
- L2-3 BAND OSC COIL NO 1175
- L4-11 IF TRANSFORMER NO 302
- L5-211 IF TRANSFORMER NO 303
- DYNAMIC SPEAKER NO 739
- C-TUNING COND. NO 524
- VOLUME CONTROL NO 221
- BAND SWITCH NO 123
- CHOKE NO 350 OHM



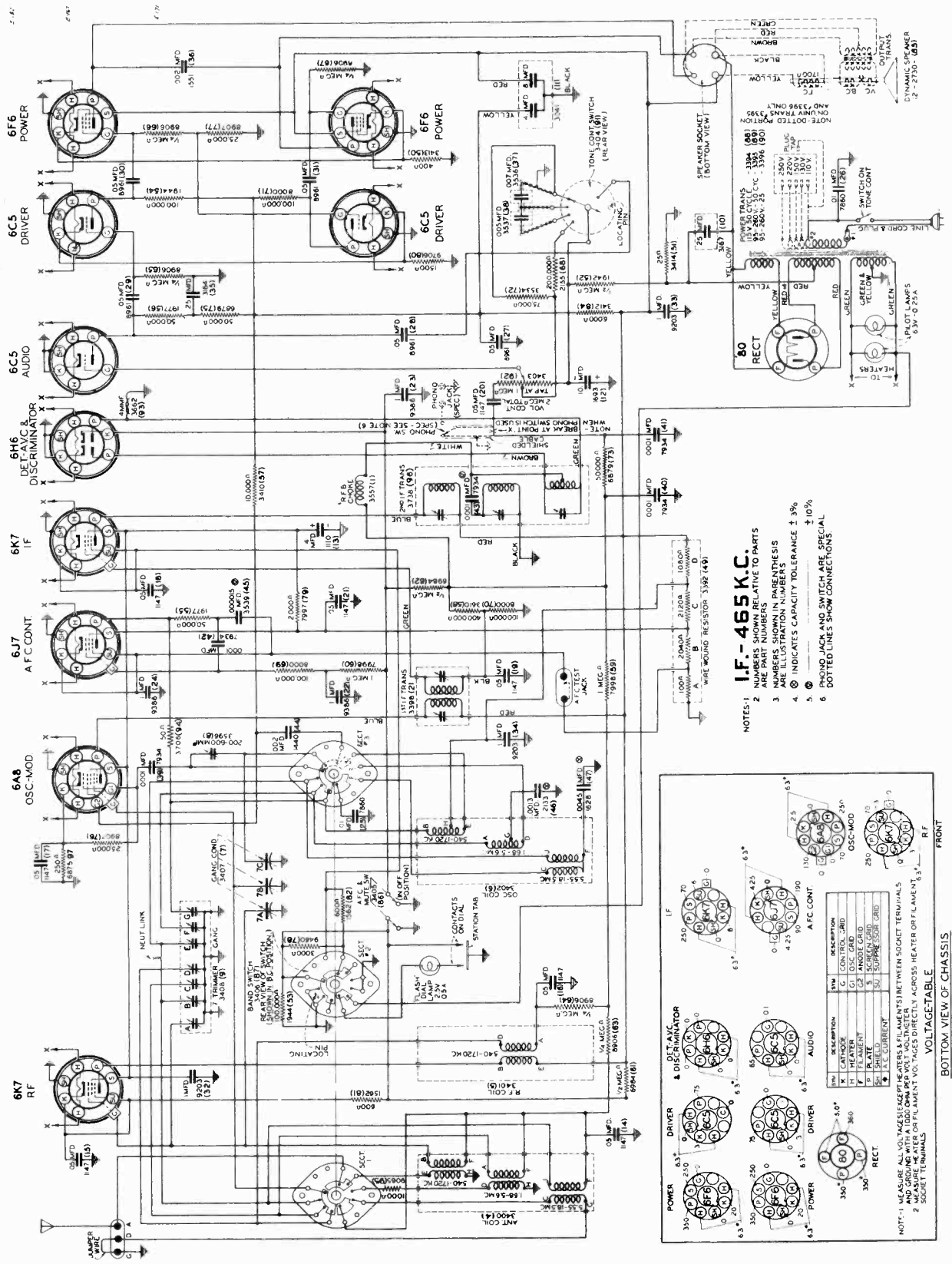
**ALIGNMENT**

- I.F. Set oscillator at 465 KC. Feed signal to grid of the 6A7 tube. Adjust trimmers on the intermediate frequency transformers for peak readings.
  - B.C. Turn switch to B.C. position. Set oscillator and receiver dial to 1400 KC. Use a .0002 mfd. condenser in the signal lead. Set volume control at maximum. Adjust B.C. OSC trimmer to maximum. Reset dial and oscillator to 600 KC and adjust B.C. Pad. Recheck at 1400 KC.
  - INT. Turn switch to INT. position. Use .0002 mfd. condenser with 400 ohm series resistor as dummy antenna. Set dial and oscillator at 5100 KC, Adjust antenna and oscillator trimmers to maximum. Reset dial and oscillator to 1800 KC and adjust padder. Recheck alignment at 5100 KC.
  - S.W. With switch in S.W. position, using a 400 ohm resistor as a dummy with oscillator and dial set to 15 MC., adjust S.W. antenna and oscillator trimmers to maximum
- Check sensitivity at 6000 KC. If receiver lacks sensitivity check the .0035 mica condenser for short circuit.



ALLIED RADIO CORP.

MODELS B10580, B10581  
B10582  
Schematic, Voltage  
Socket



MODELS B10580, B10581, B10582

ALLIED RADIO CORP.

Alignment, Tuner

**CATE INCORRECT ADJUSTMENT AND THE DISCRIMINATOR TRIMMER SHOULD BE SET TO ABOUT 1/2 CAPACITY AND THE ADJUSTMENT OF THE DISCRIMINATOR TRIMMER MADE ALL OVER AGAIN.**

**ALIGNING 1.88-5.6 MEGACYCLE BAND:**

- (a) Replace .00025 Mfd. test oscillator antenna lead series condenser with a 400 ohm resistor.
- (b) Adjust band selector switch to 1.88-5.6 megacycles, tune receiver dial and set test oscillator frequency to EXACTLY 5.6 megacycles. Bring in 5.6 megacycle test signal to maximum output by adjusting 5.6 M. C. oscillator trimmer.
- (c) Tune receiver dial and test oscillator frequency to EXACTLY 5 Megacycles and adjust 5 M.C. antenna trimmer for maximum sensitivity.

**ALIGNING 5.55-18.5 MEGACYCLE BAND:**

- (a) Leave 400 ohm resistor in series with test oscillator lead and place band selector switch for operation on 5.55-18.5 megacycle band, tune receiver dial and set test oscillator frequency to EXACTLY 18.5 megacycles.
- (b) Adjust 18.5 M.C. oscillator trimmer to bring in 18.5 megacycle test signal to maximum output.

**NOTE:** When adjusting this trimmer two peaks, the fundamental and the image peak will be noticed. CARE MUST BE TAKEN THAT THE FUNDAMENTAL PEAK AND NOT THE IMAGE PEAK IS USED FOR ALIGNING THE RECEIVER AT 18.5 MEGACYCLES. Always back off the trimmer to minimum capacity, then screw down the trimmer (add capacity) until the FIRST peak which is the fundamental and the proper one to use is tuned in. If the trimmer is screwed down beyond the point where the first peak is received the incorrect image peak will be tuned in. After completing adjustment of the oscillator trimmer at 18.5 megacycles, always check to see if the proper peak has been used. To do this leave test oscillator frequency at 18.5 megacycles, increase the output of the test oscillator and tune receiver dial to approximately 17.5 megacycles. Then vary the receiver dial slightly to the right and left of 17.5 megacycles, and if the fundamental peak was used in aligning at 18.5 megacycles the test oscillator signal will be heard at approximately 17.5 megacycles on the receiver dial.

- (c) Tune receiver dial and set test oscillator frequency to EXACTLY 15 megacycles.
- (c) Rock gang condenser slightly to right and left and adjust 15 M.C. antenna trimmer for maximum 15 megacycle test signal response.

To assure more accurate trimmer setting, repeat all above adjustments several times always using lowest possible test oscillator output consistent with readable output meter scale deflection.

**PROCEDURE FOR REMOVING RECEIVER FROM CABINET.**

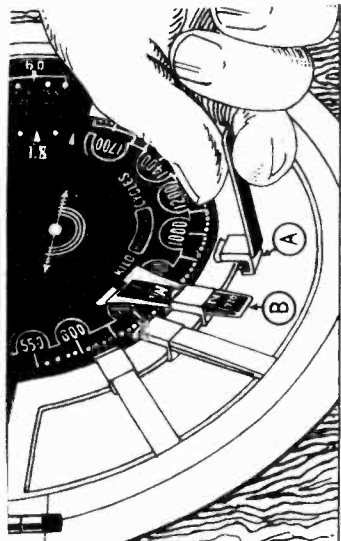
1. Unscrew the two knurled head screws mounted on front of the glass frame and then holding onto the screws pull dial glass away from the cabinet.
2. Swing "rapid tuning" lever to center position as shown, loosen (do not remove) screw thru hole in bottom center, and remove lever knob.
3. Loosen set screws on all five tuning knobs, and remove knobs from shafts. (Not shown in sketch).
4. Remove four bolts at bottom side of chassis mtg. shelf (not shown in sketch).
5. Remove wood screws on the pressure brackets at rear of chassis (not shown in sketch) and then slide receiver out of cabinet.
6. When replacing receiver in cabinet, reverse entire procedure given above.

(d) Place band selector switch for operation on 1720-540 K.C. broadcast band—and set receiver dial somewhere near 1000 kilocycles at a point where no station is heard.

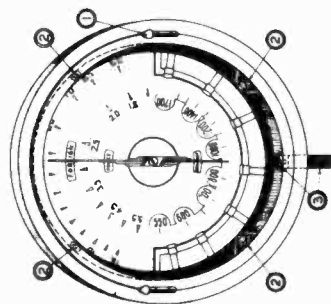
(e) Rotate A.F.C. switch knob from A.F.C. "on" to A.F.C. "off" position and note whether the milliammeter reading changes as the position of the A.F.C. switch is changed. No change in reading indicates probable proper discriminator trimmer adjustment, while a noticeable change indicates improper discriminator trimmer adjustment.

(f) **IMPORTANT: DO NOT ADJUST DISCRIMINATOR TRIMMER UNLESS IT IS ABSOLUTELY NECESSARY.** Place A.F.C. switch in A.F.C. "off" position and note milliammeter reading; then place A.F.C. switch in A.F.C. "on" position and CAREFULLY ADJUST DISCRIMINATOR TRIMMER UNTIL MILLIAMMETER READING IS EXACTLY THE SAME AS IT WAS WITH THE A.F.C. SWITCH IN THE "OFF" POSITION.

**NOTE:** As the discriminator trimmer screw is screwed in (increasing capacity) the milliammeter reading should decrease and as the discriminator trimmer is unscrewed (decreasing capacity) the milliammeter reading should increase. IF WHEN ADJUSTING THE DISCRIMINATOR TRIMMER THE MILLIAMMETER READING DOES NOT SHARPLY INCREASE OR DECREASE AS THE TRIMMER IS ADJUSTED, EVEN AFTER SEVERAL TURNS OF THE TRIMMER SCREW, THIS DOES NOT INDICATE PROPER BALANCING BUT DOES INDI-



Above Diagram shows method of inserting and setting tabs.



**ALIGNING I.F. STAGE AT 465 KILOCYCLES:**

- (a) Place automatic frequency control in the maximum left hand A.F.C. "off" position.
- (b) Attach the ground lead of the test oscillator to the chassis. Connect the other lead to the grid cap of the 6A8 tube through a .02 Mfd. series condenser. DO NOT REMOVE GRID CLIP.
- (c) Set test oscillator to EXACTLY 465 kilocycles and turn volume control on full.
- (d) Remove shields held in position by snap fasteners over A.F.C. test jack and over trimmer screw holes in the first and second I.F. transformer shield cans.
- (e) Peak second I.F. transformer trimmers for maximum 465 kilocycle output by adjusting the two trimmers accessible through the two top holes in the second I.F. transformer shield can. DO NOT TOUCH DISCRIMINATOR (BOTTOM) SCREW.
- (f) Peak each of the first I.F. transformer trimmers for maximum 465 kilocycle signal output.

**ALIGNING 1720-540 KILOCYCLE BAND:**

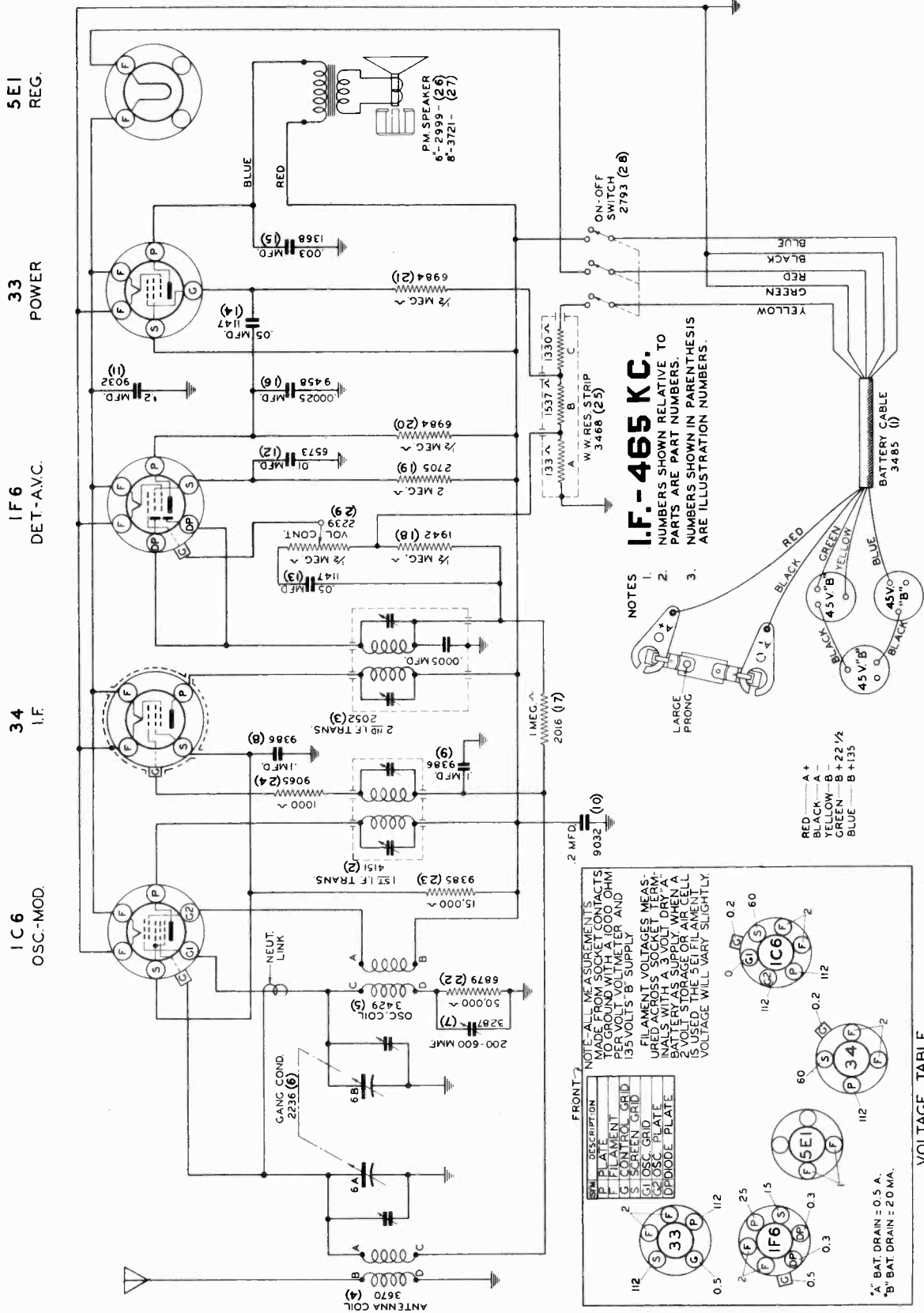
- (a) Check tuning dial adjustment by turning gang condenser until plates touch maximum capacity stop (completely in mesh), at which point the dial needle must be exactly even with the last line at the low frequency end of the dial calibration. If the dial needle does not point exactly to the last line, move needle to correct position.
- (b) Remove test oscillator lead from grid of 6A8 tube and connect to receiver "A" antenna post through a .00025 Mfd. condenser.
- (c) Adjust A.F.C. control to maximum left hand A.F.C. "off" position and band selector switch for operation on the 1720-540 kilocycle band.
- (d) Set test oscillator frequency and receiver dial to EXACTLY 1720 kilocycles, and BRING IN 1720 KILOCYCLE TEST OSCILLATOR SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING 1720 KILOCYCLE OSCILLATOR TRIMMER.
- (e) Tune receiver dial and set test oscillator frequency to EXACTLY 1400 kilocycles. Adjust 1400 K.C. R.F. and antenna trimmers for maximum sensitivity.
- (f) Set test oscillator frequency and receiver dial to approximately 600 kilocycles. Then while rocking gang condenser slightly to right and left, adjust 600 K.C. oscillator paddler for maximum signal response.

**ALIGNING DISCRIMINATOR CIRCUIT:**

- (a) After completing 1720-540 kilocycle adjustment, set test oscillator to EXACTLY 365 KILOCYCLES and connect to grid of 6A8 tube through a .02 Mfd. Condenser—insert lead of double scale 0 to 1 and 0 to 5 milliammeter into A.F.C. test jack located on top of chassis adjacent to the 6L7 tube. To avoid possibility of damaging the meter should one of the milliammeter leads short to the metal chassis. ALWAYS TURN OFF RECEIVER WHEN INSERTING OR REMOVING MILLIAMMETER LEADS FROM A.F.C. TEST JACK.
- (b) Short out A.F.C. mute switch by grounding the second from the left (looking at the front of the chassis) of the four lugs mounted on top of the dial assembly. The proper lug to ground is indicated in the "Note X" on chassis top parts view.
- (c) Turn receiver on, place A.F.C. switch knob in A.F.C. "off" position and if meter needle jumps off scale adjust output of test oscillator until an approximate 2 M.A. deflection is obtained on the 0 to 5 milliammeter scale.

ALLIED RADIO CORP.

MODELS B10588, B10589  
Schematic, Voltage  
Socket



**VOLTAGE TABLE**  
(BOTTOM VIEW OF CHASSIS)

SOCKET	DESCRIPTION	VOLTS
F	FILAMENT	112
P	CONTROL GRID	60
S	SCREEN GRID	112
G1	OSC. GRID	0.2
G2	OSC. PLATE	112
D	DIODE PLATE	0.2

NOTE - ALL MEASUREMENTS MADE FROM SOCKET CONTACTS TO GROUND WITH A 1000 OHM PER VOLT VOLTMETER AND 135 VOLTS "B" SUPPLY

FILAMENT VOLTAGES MEASURED ACROSS SOCKET TERMINALS BATTERY AS SUPPLY WHEN A 2 VOLT STORAGE OR AIR CELL IS USED. THE 5E1 FILAMENT VOLTAGE WILL VARY SLIGHTLY

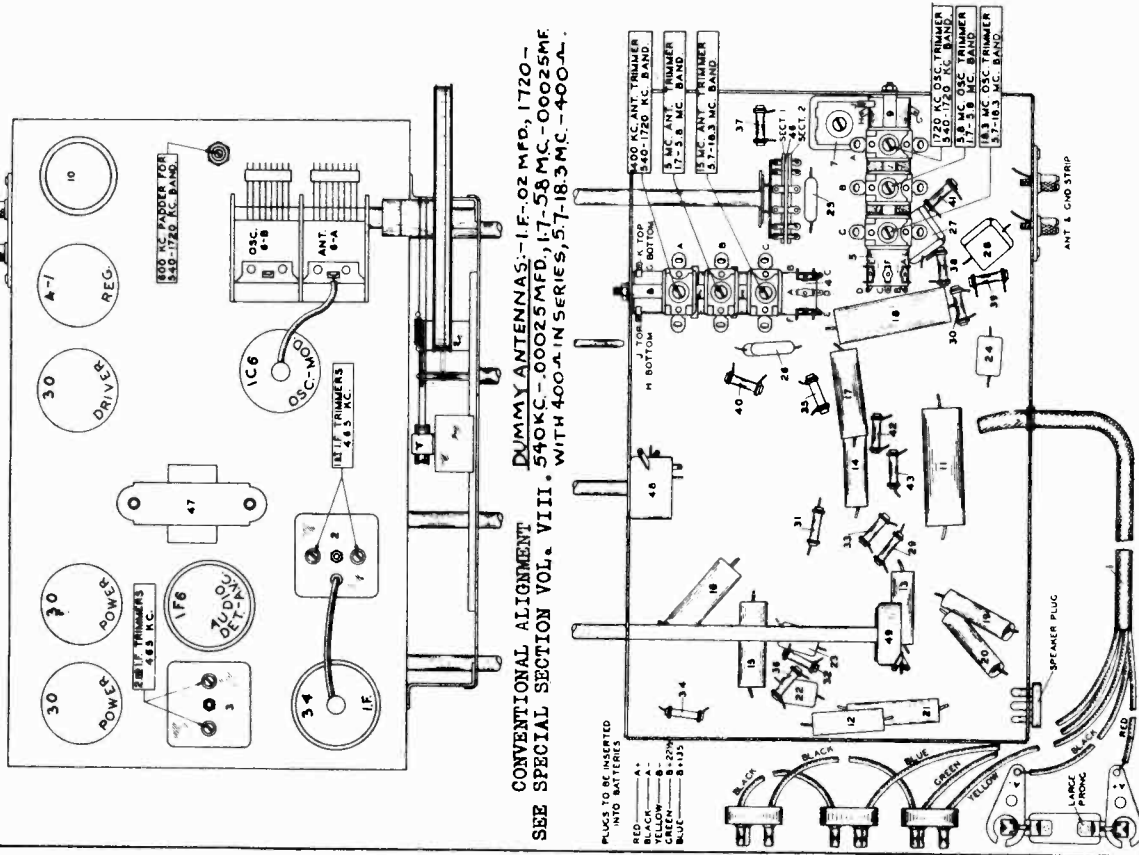
FRONT VIEW:  
 5E1: F 112, P 60, S 112  
 33: F 112, P 60, S 112  
 IF 6: F 112, P 60, S 112  
 IC 6: F 112, P 60, S 112

"A" BAT DRAIN = 0.5 A.  
"B" BAT DRAIN = 20 MA.

MODELS B10588, B10589  
 MODELS B10590 to B10593,  
 B10595, B10596  
 Chassis, Trimmers, Socket

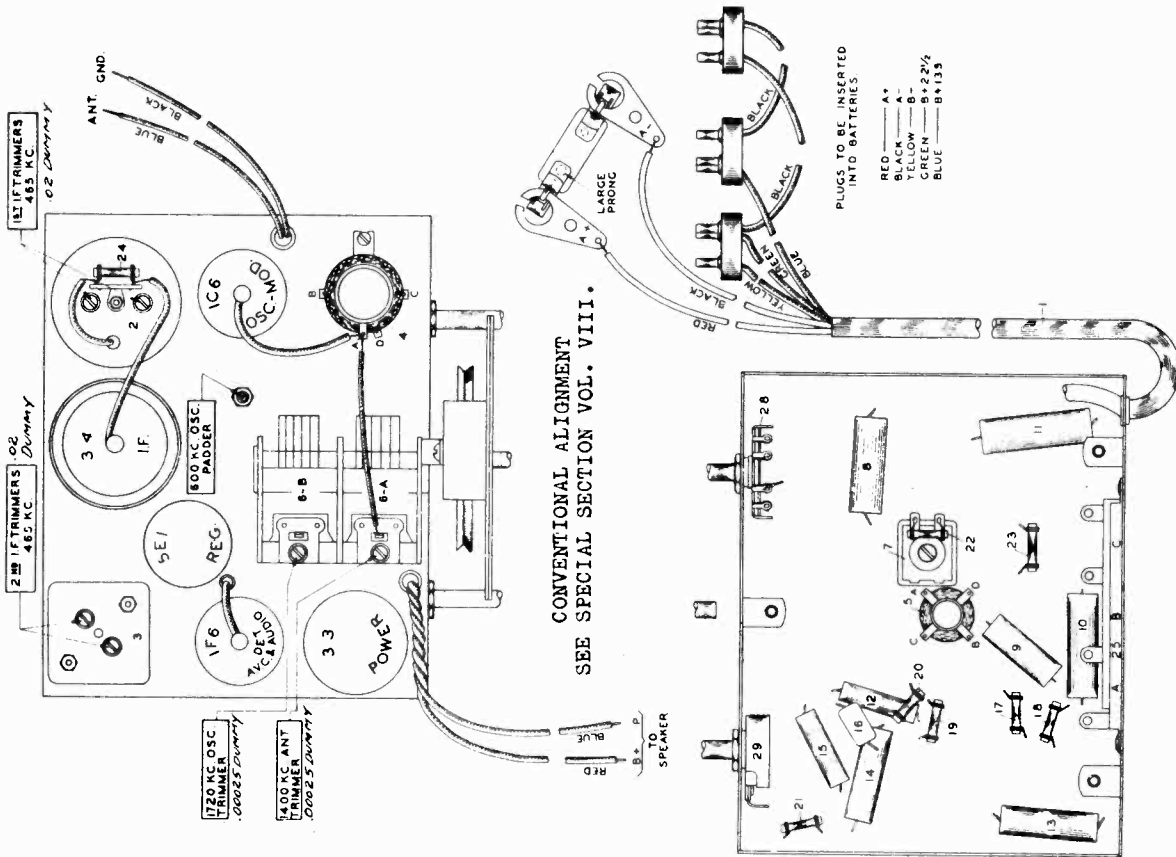
ALLIED RADIO CORP.

MODELS B10590, B10591, B10592  
 B10593, B10595, B10596.



CONVENTIONAL ALIGNMENT DUMMY ANTENNAS: - I.F. - 02 MFD, 1720 -  
 SEE SPECIAL SECTION VOL. VIII. 540 KC - 00025 MFD, 17-58 MC - 00025 MF.  
 WITH 400- $\mu$  IN SERIES, 57-18.3 MC - 400- $\mu$ .

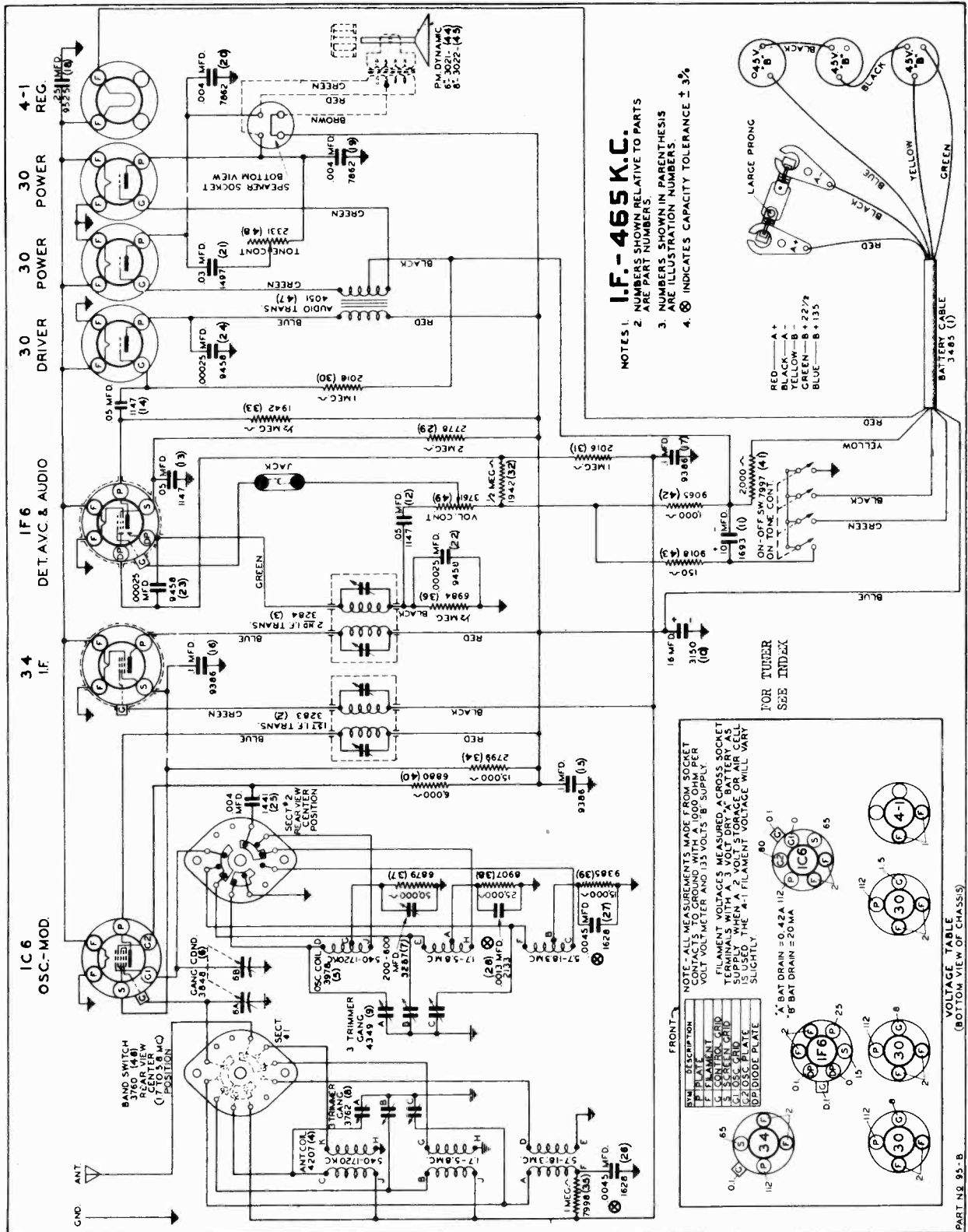
MODELS B10588 and B10589.



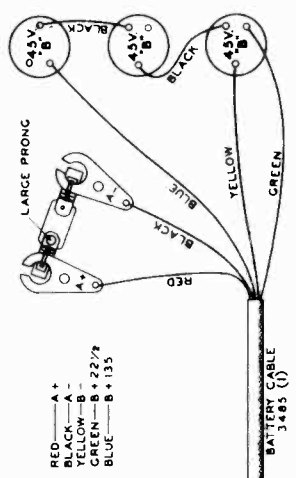
CONVENTIONAL ALIGNMENT  
 SEE SPECIAL SECTION VOL. VIII.

ALLIED RADIO CORP.

MODELS B10590 to B10593  
B10595, B10596  
Schematic, Voltage, Socket



**NOTES**  
 1. I.F. - 465 K.C.  
 2. NUMBERS SHOWN IN PARENTHESIS ARE PART NUMBERS  
 3. NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS  
 4. ⊗ INDICATES CAPACITY TOLERANCE ± 3%



NOTE - ALL MEASUREMENTS MADE FROM SOCKET CONTACTS TO GROUND WITH A 1000 OHM PER VOLT VOLTMETER AND 115 VOLTS 'B' SUPPLY  
 FILAMENT VOLTAGES MEASURED, A CROSS SOCKET TERMINAL WITH A 3 VOLT SOURCE FOR PER CELLS IS USED. THE 'A' FILAMENT VOLTAGE WILL VARY SLIGHTLY

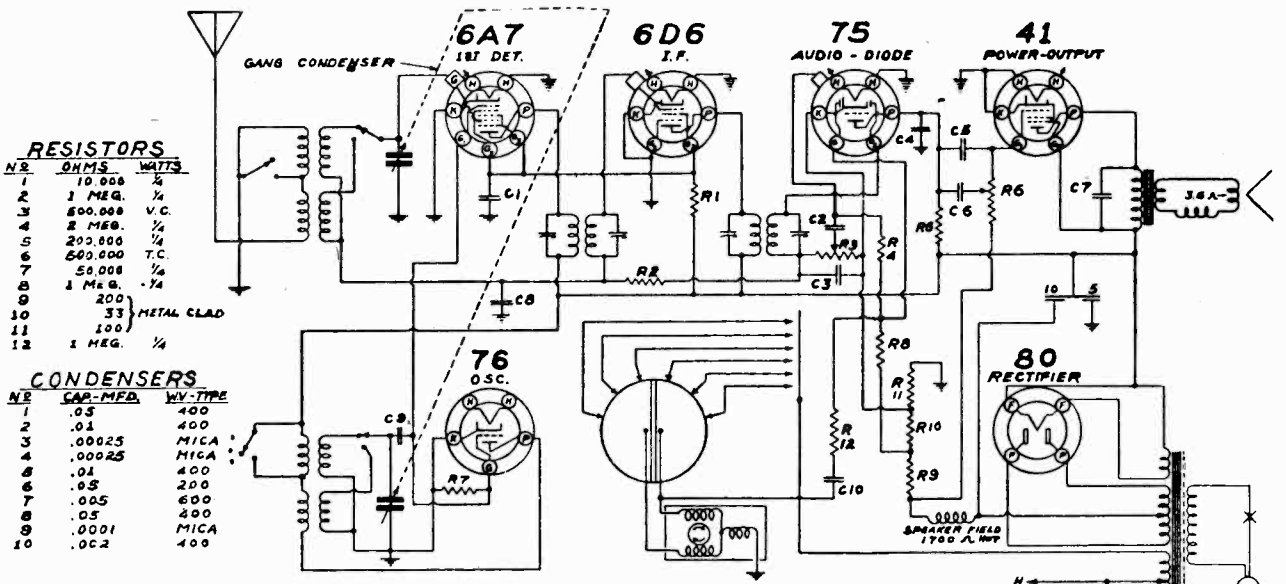
FOR TUNER  
SEE INDEX

VOLTAGE TABLE (BOTTOM VIEW OF CHASSIS)

PART NO. 95-B

MODELS B10750, B10760, B10761,  
B10762, B10770, B10771  
Schematic, Trimmers, Socket  
Alignment

ALLIED RADIO CORP.



**RESISTORS**

N <sup>o</sup>	OHMS	WATTS
1	10,000	1/4
2	1 MEG.	1/4
3	500,000	V.C.
4	2 MEG.	1/4
5	200,000	1/4
6	500,000	T.C.
7	50,000	1/4
8	1 MEG.	1/4
9	200	
10	33	METAL CLAD
11	100	
12	1 MEG.	1/4

**CONDENSERS**

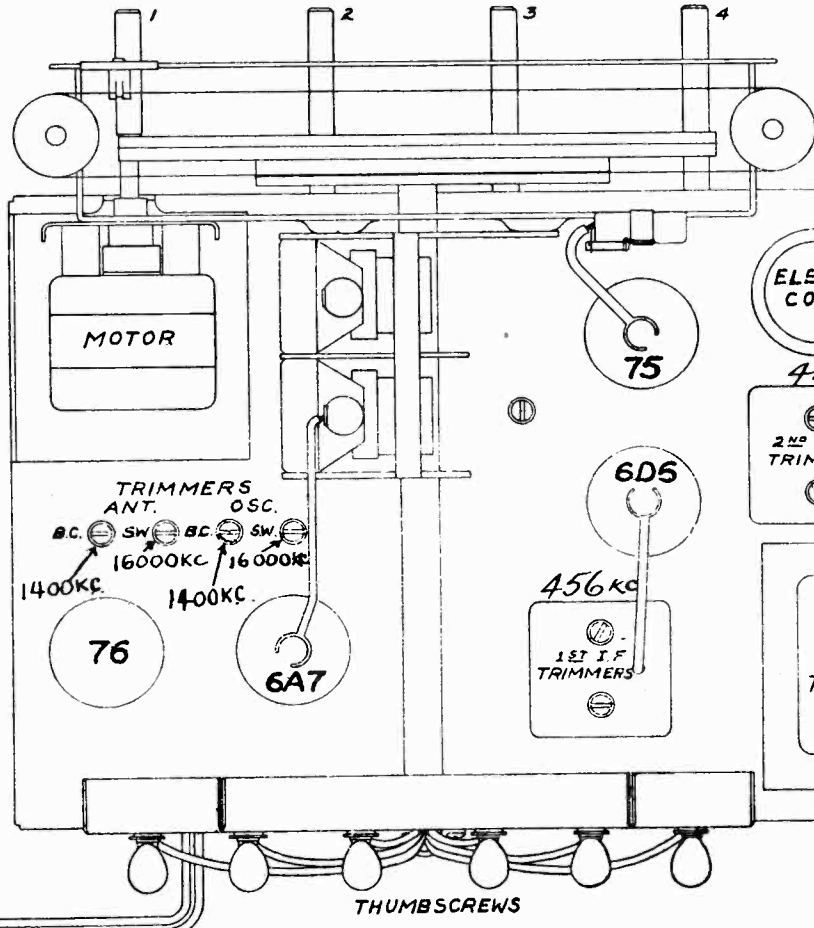
N <sup>o</sup>	CAP.-MFD.	VV-TYPE
1	.05	400
2	.01	400
3	.00025	MICA
4	.00025	MICA
5	.01	400
6	.05	200
7	.005	600
8	.05	400
9	.0001	MICA
10	.002	400

CONVENTIONAL ALIGNMENT  
SEE SPECIAL SECTION VOL. VIII

535 to 1730 Kilocycles  
5650 to 18,100 Kilocycles

IF PEAK 456 KC

BAND SWITCH IN BROADCAST POSITION  
I.F. = 456 K.C.  
V.C. = VOLUME CONTROL  
T.C. = TONE CONTROL



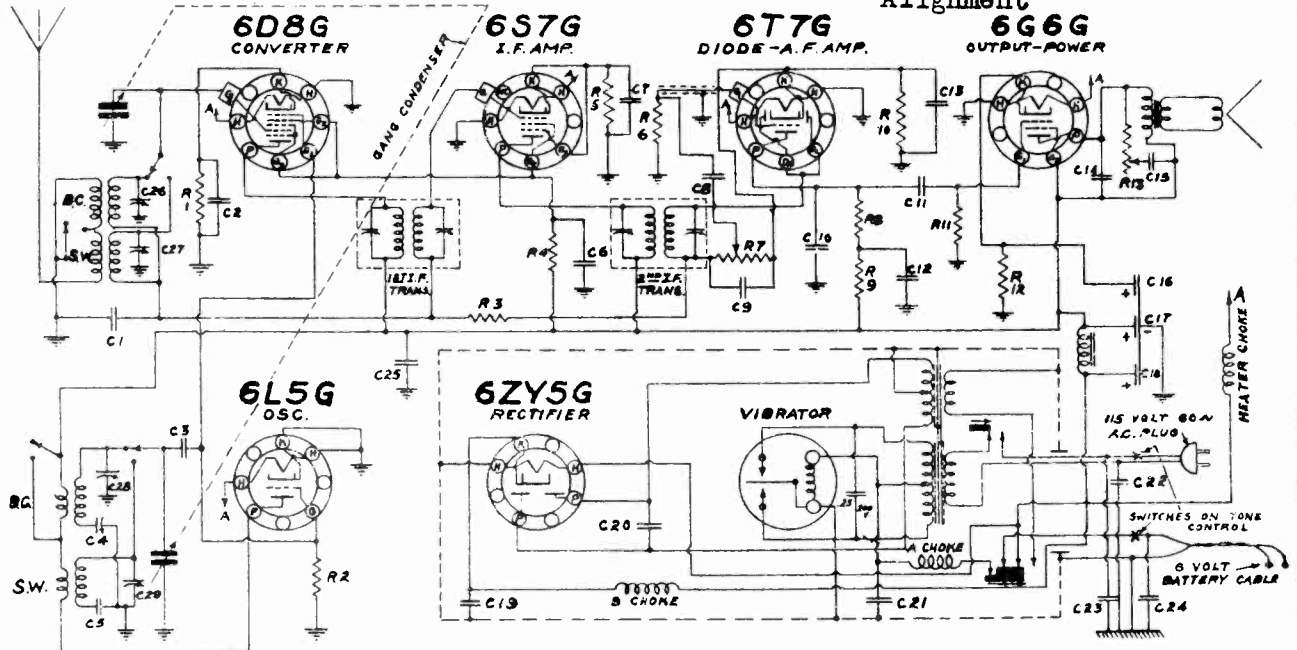
- KNOB 1 - STATION SELECTOR
- 2 - BAND SWITCH
- 3 - VOLUME CONTROL
- 4 - ON & OFF SWITCH & TONE CONTROL

ANT. WIRE - BLUE  
GND. WIRE - BLACK

SPEAKER SOCKET

ALLIED RADIO CORP.

MODELS B10782, B10784  
B10786  
Schematic, Socket, Trimmers  
Alignment



CONDENSERS

NR	CAPACITY	TYPE	NR	CAPACITY	TYPE
1	.05 Mfd.	200V.	18	.5 Mfd.	200V.
2	.05 Mfd.	200V.	14	.005 "	600V.
3	100 μmf.	MICA	15	.05 "	400V.
4	300-600 μmf.	"	16	.5 "	25V.
5	4000 μmf.	M. ±5%	17	B.	200V.
6	.1 Mfd.	200V.	18	"	200V.
7	.05 "	200V.	19	.01 "	600V.
8	.01 "	400V.	20	.015 "	500,000
9	250 μmf.	MICA	21	.5 "	10V.
10	280 "	"	22	.05 "	400V.
11	.01 Mfd.	400V.	23	.01 "	400V.
12	.1 "	200V.	24	.5 "	10V.
			25	.1 "	200V.

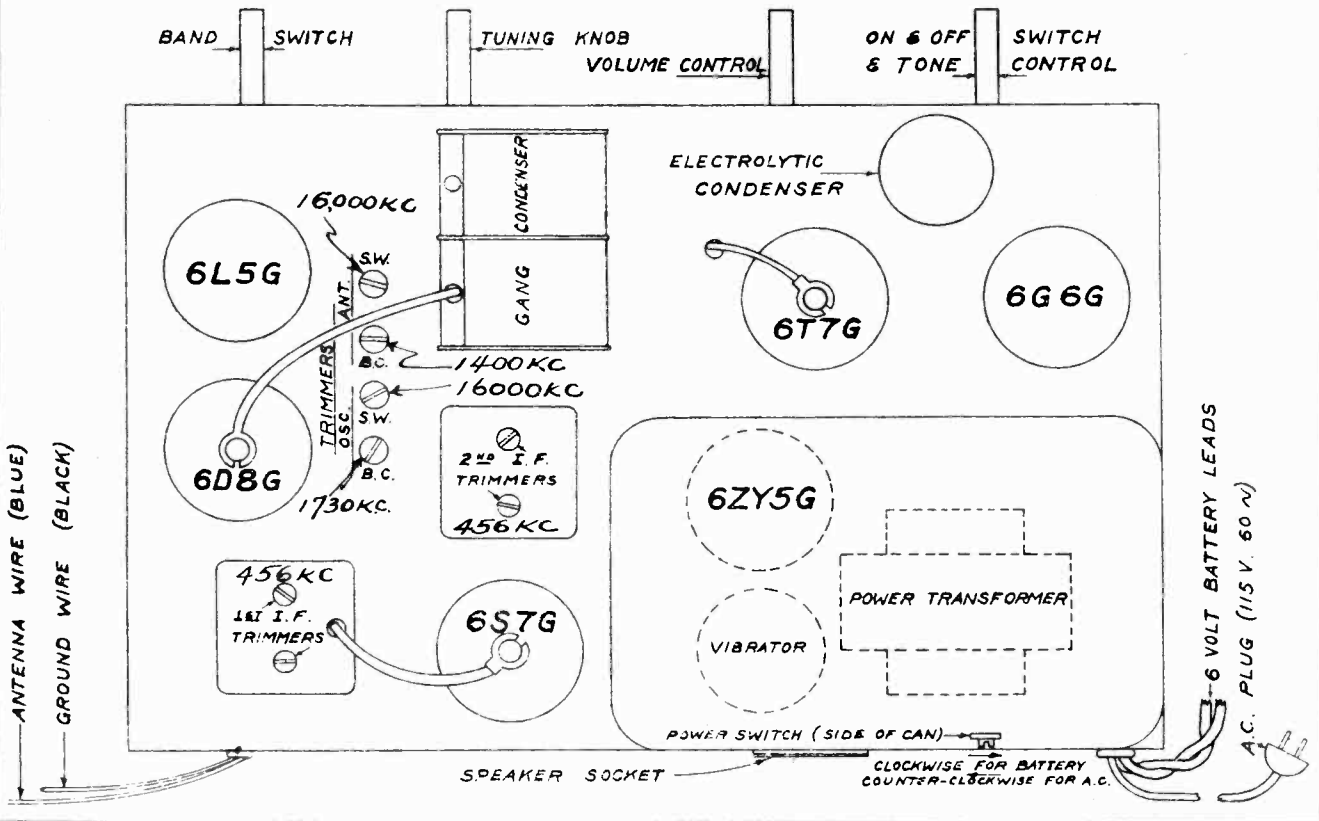
RESISTORS

NR	OHMS	WATTS	SPL. TOL.
1	1,500	1/4	± 10%
2	50,000	1/4	
3	1,000,000	1/4	
4	30,000	1/4	
5	1,000	1/4	± 10%
6	1,000,000	1/4	(VOL. CONT)
7	500,000	1/4	
8	500,000	1/4	
9	200,000	1/4	
10	10V.	1/4	± 10%
11	10,000	1/4	
12	500,000	1/4	
13	450	1/4	± 10% (TONE CONT)

IF PEAK 456 KC

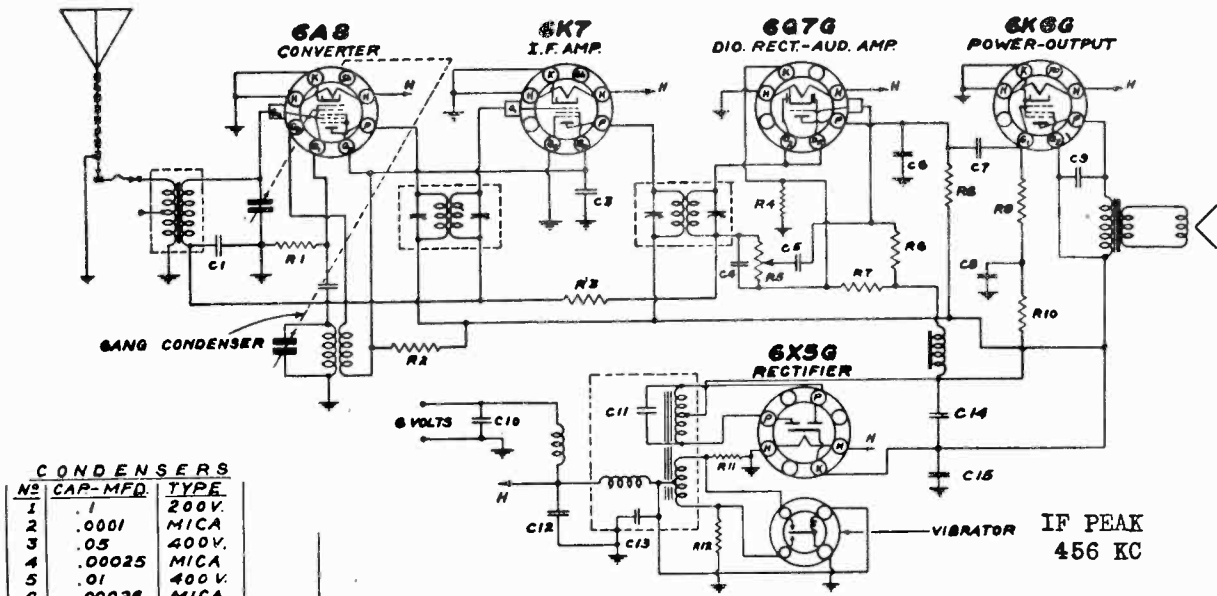
BAND SWITCH IN BROADCAST POSITION.  
POWER SWITCH IN BATTERY POSITION.  
I. F. = 456 K.C.  
C26 TO C29 - 2 TO 20 μmf. TRIMMERS

CONVENTIONAL ALIGNMENT  
SEE SPECIAL SECTION VOL. VII I



MODELS B10790, E10890  
Schematic, Alignment  
Socket, Trimmers

ALLIED RADIO CORP.

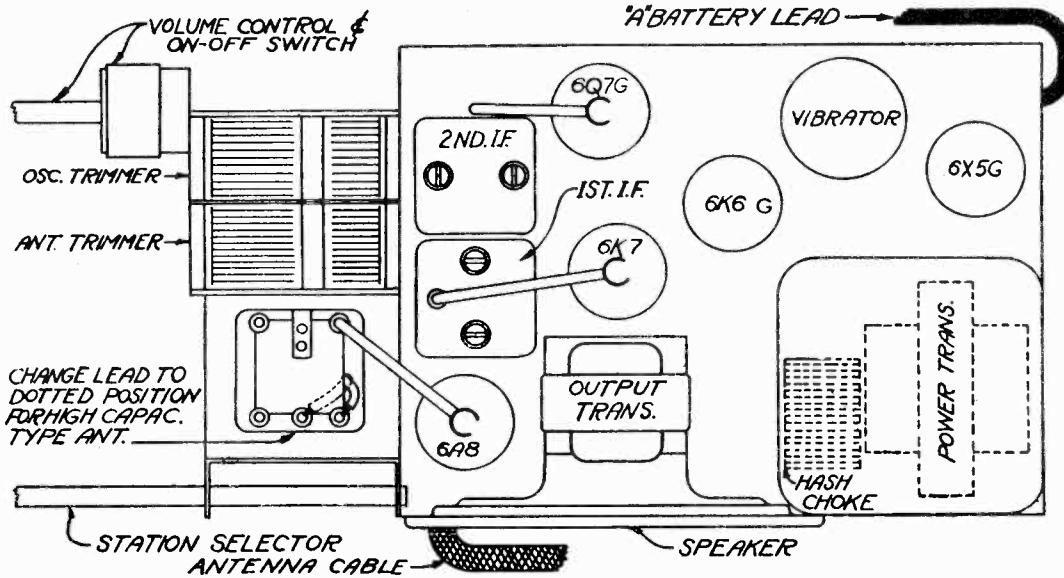
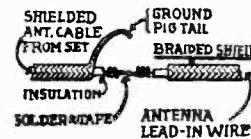


**CONDENSERS**

NO	CAP.-MFD.	TYPE
1	.1	200V.
2	.0001	MICA
3	.05	400V.
4	.00025	MICA
5	.01	400V.
6	.00025	MICA
7	.01	400V.
8	.1	200V.
9	.01	400V.
10	.25	120V.
11	.008	1500V.
12	.5	120V.
13	.5	120V.
14	8. } ELECT	400
15	8. }	W.V.

**RESISTORS**

NO	OHMS	WATTS	NO	OHMS	WATTS
1	50,000	1/4	7	(W.W) 40	1/2
2	15,000	1	8	200,000	1/4
3	1,000,000	1/4	9	500,000	1/4
4	(W.W) 60	1/2	10	100,000	1/4
5	500,000 V.C.		11	100	1/2
6	2,000,000	1/4	12	100	1/2



**IF. ALIGNMENT.** Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tubes (6A8) 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.

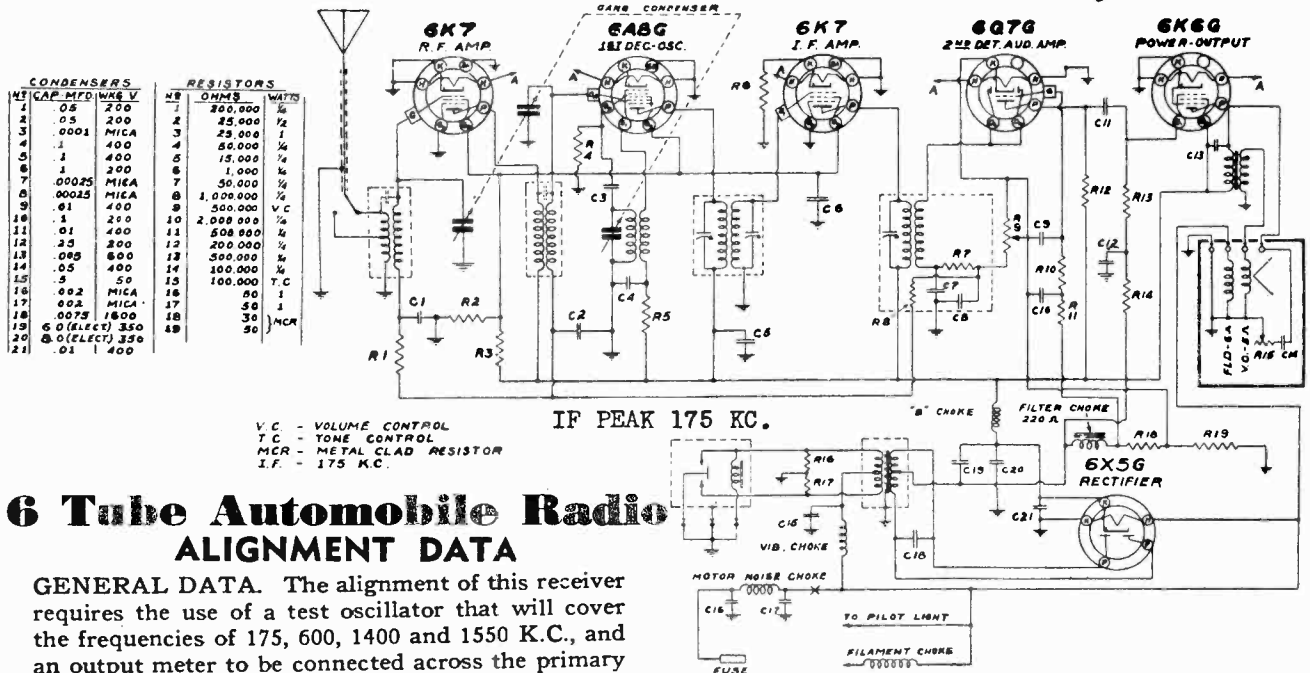
**BROADCAST BAND ALIGNMENT.** Connect the output of the oscillator to the antenna lead of the receiver through a 50 mmfd. condenser. This antenna

lead should be a two foot length of standard low capacity shielded loom fitted with the proper bayonet type plug to accommodate the antenna input receptacle on the receiver. Set the oscillator to 1550 KC and with the gang condenser at minimum, adjust the oscillator trimmer to receive this signal. Then set the oscillator to 1400 KC and adjust the antenna trimmer to give maximum output.



ALLIED RADIO CORP.

MODELS B10791, E10891  
Schematic, Alignment  
Socket, Trimmers



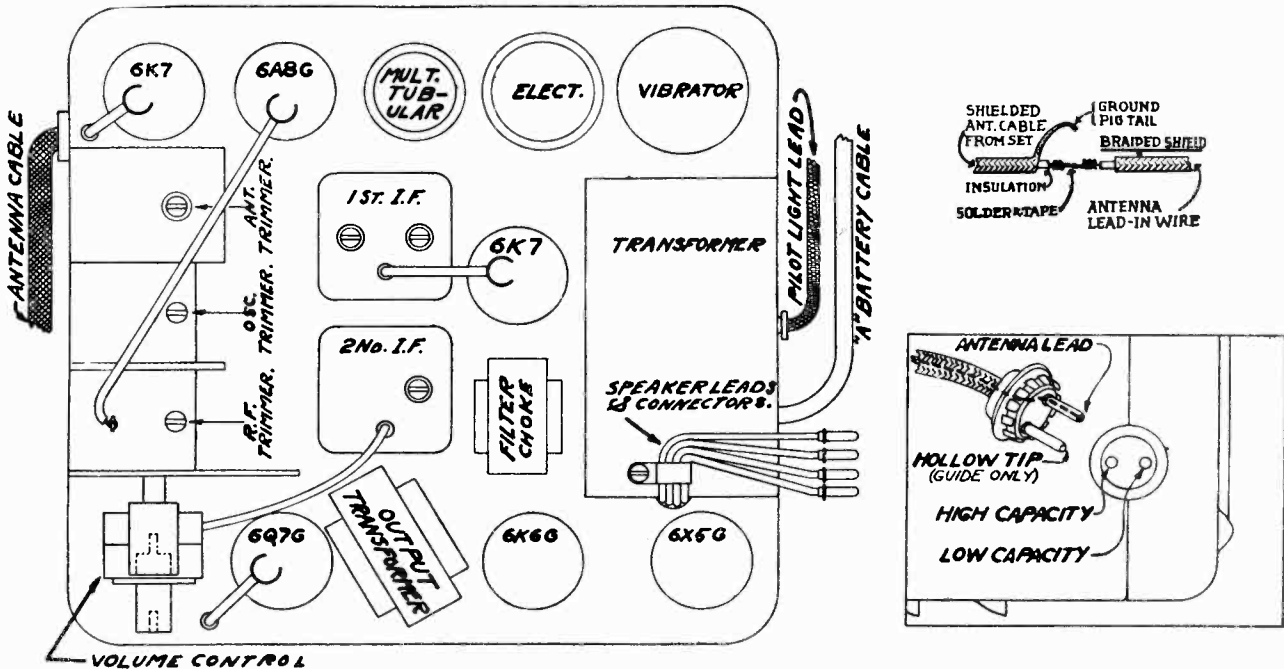
## 6 Tube Automobile Radio ALIGNMENT DATA

**GENERAL DATA.** The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 175, 600, 1400 and 1550 K.C., and an output meter to be connected across the primary or secondary of the output transformer. If possible, all alignment should be made with the volume control on maximum and the test oscillator output as low as possible to prevent the A.V.C. from operating and giving false readings.

**CORRECT ALIGNMENT PROCEDURE.** The intermediate frequency (I.F.) transformers should be aligned properly as the first step.

**I.F. ALIGNMENT.** Adjust the test oscillator to 175 K.C. and connect the output to the grid of the first detector tube, 6A8G, through a .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align the trimmers of the first and second I.F. transformers to peak or maximum reading on the output meter.

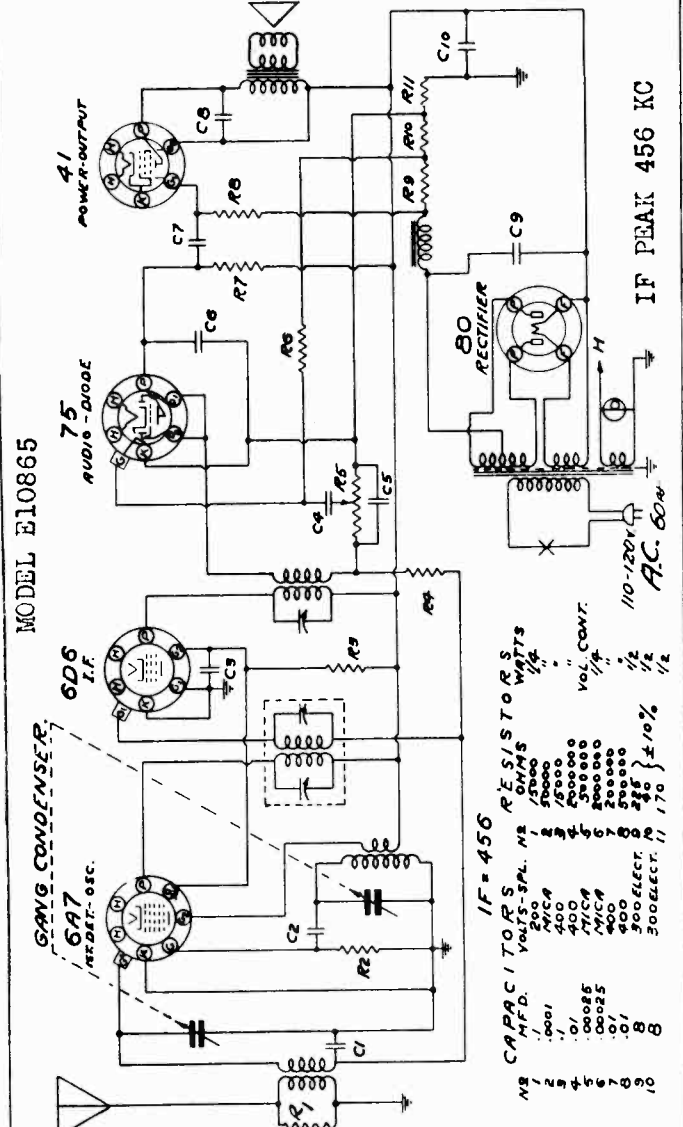
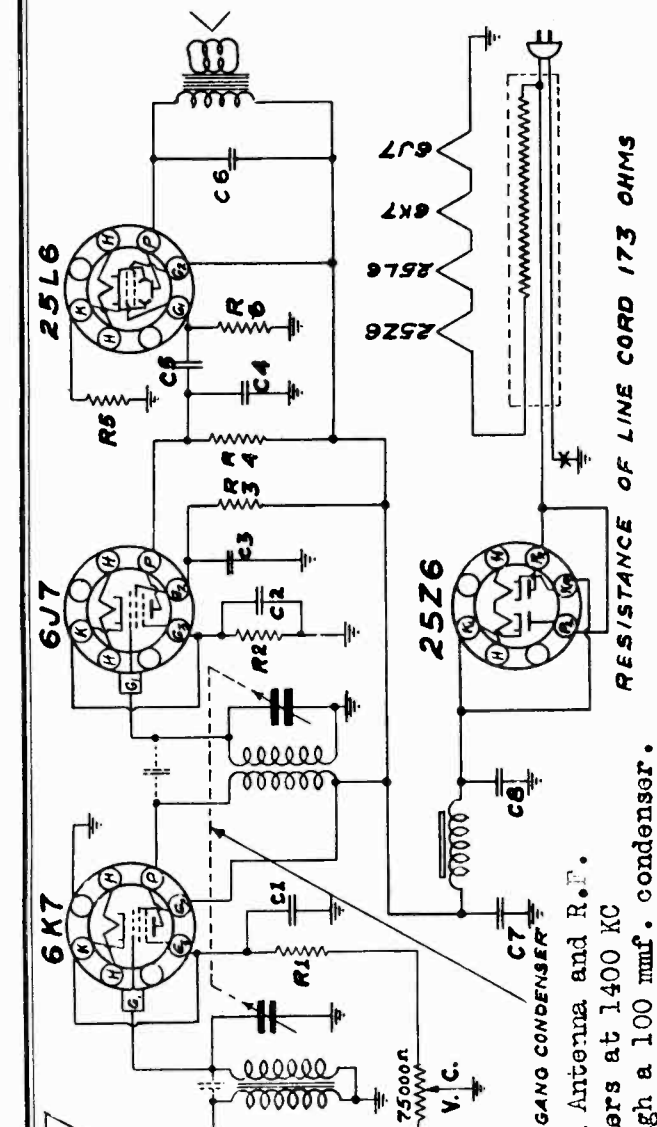
**R.F. ALIGNMENT.** Adjust the test oscillator to 1550 K.C. and connect the output to the antenna through a .00005 mfd. mica condenser to give the equivalent of a low capacity average auto antenna. When this adjustment is made, the signal must be introduced into the receiver through the shielded lead supplied with the receiver. The plug should be inserted to conform with the "Low Capacity" position. (See Figure 18). Set the gang condenser to minimum and adjust the ascillator trimmer to peak. (Center section of gang condenser). The next step is to set the test oscillator and receiver to 1400 K.C. and adjust the front and rear trimmers of the gang condenser to peak. The rear section of the gang condenser tunes the antenna amplifier stage (6K7 tube), and the front condenser section tunes the detector grid coil of the 6A8G tube.



MODEL E10855  
MODEL E10865

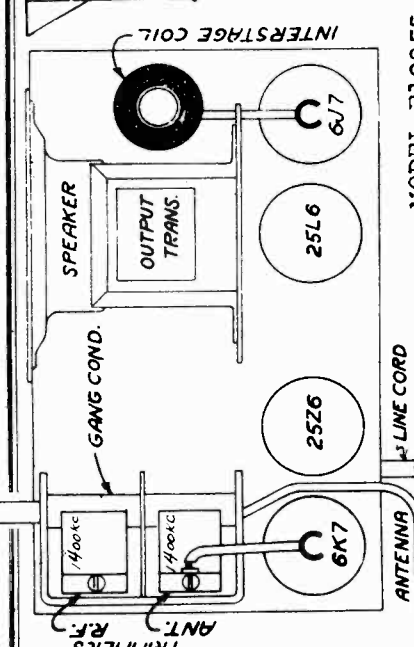
ALLIED RADIO CORP.

Schematics, Socket Alignment, Trimmers



MODEL E10865

MODEL E10855



MODEL E10855

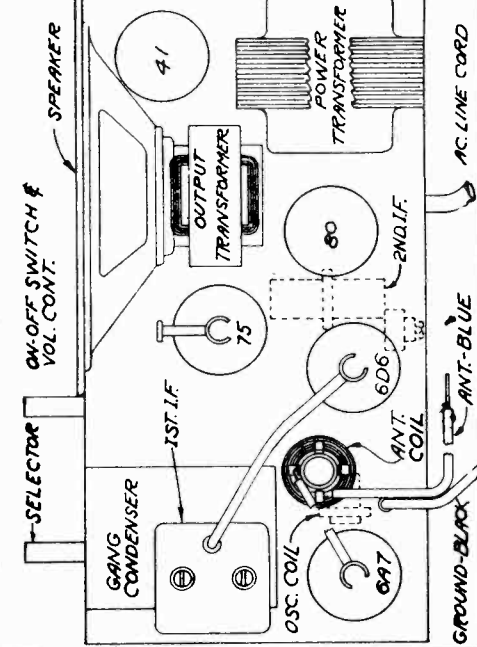
RESISTORS	
NO	OHMS
R1	250
R2	25,000
R3	2,000,000
R4	500,000
R5	110
R6	500,000

CAPACITORS	
NO	MFD.
C1	.1
C2	.25
C3	.1
C4	.00025
C5	.01
C6	.02
C7	10.0
C8	300

Align Antenna and R.F. trimmers at 1400 KC through a 100 mmf. condenser.

I.F. Align at 456 KC through .05 mfd. condenser. B.C. Osc. trimmer at 1730 KC using .0002 mfd. condenser. B.C. Ant. trimmer at 1400 KC.

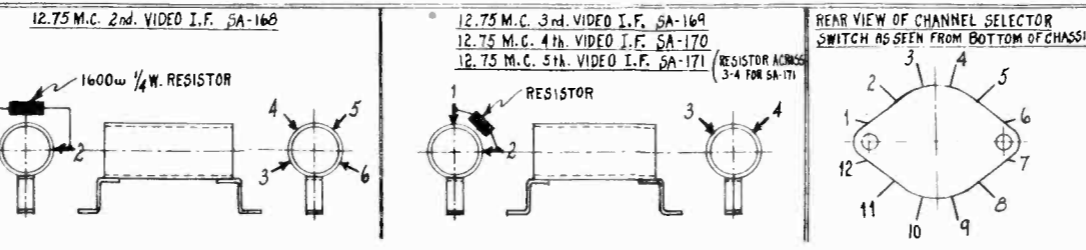
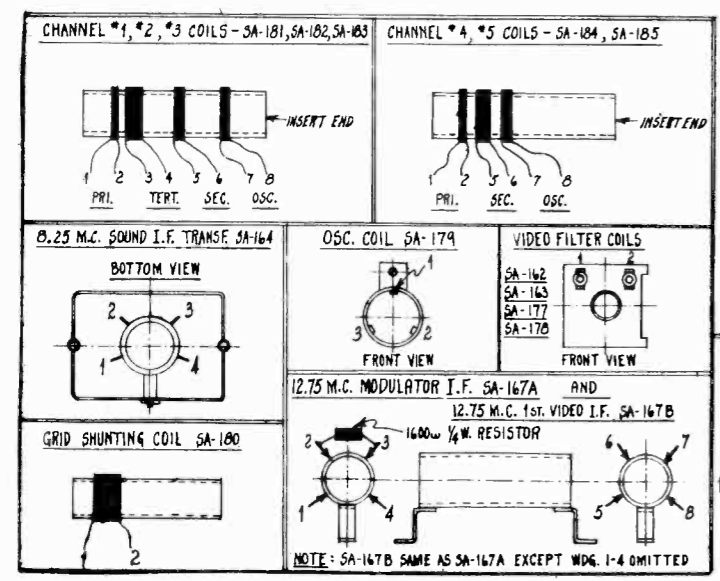
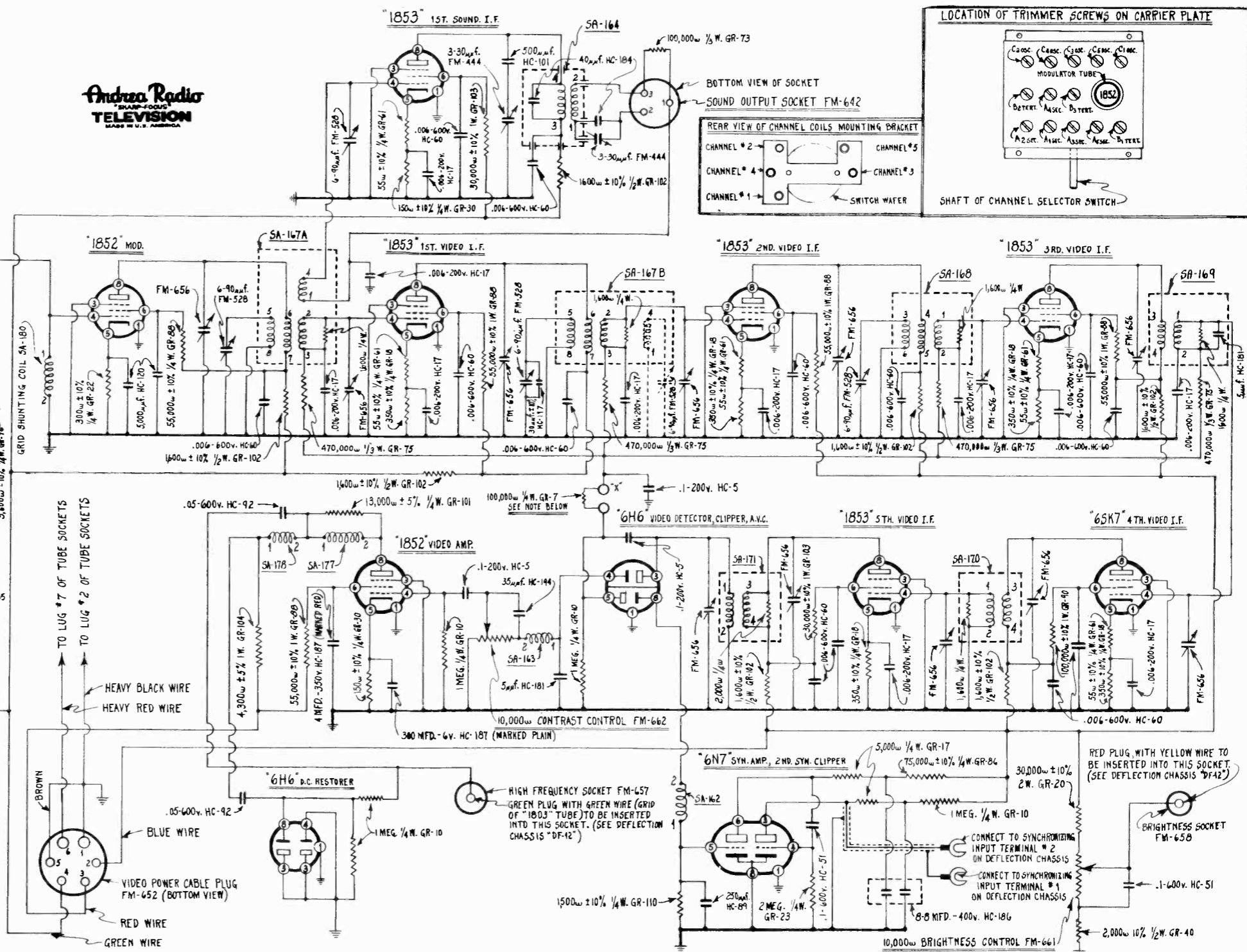
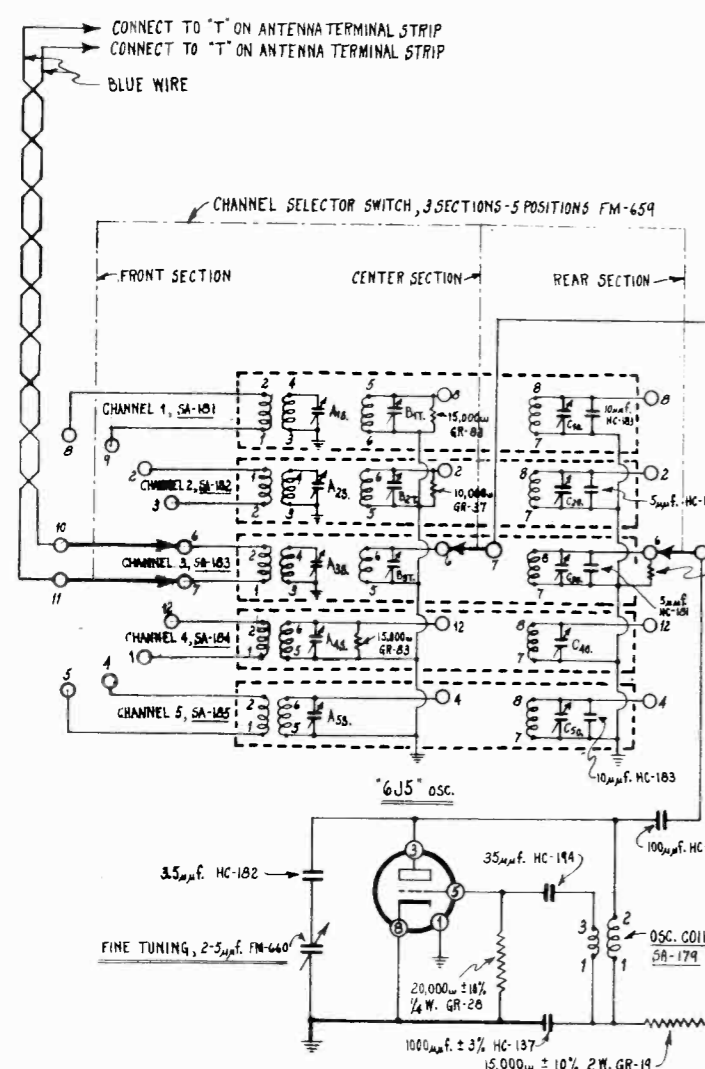
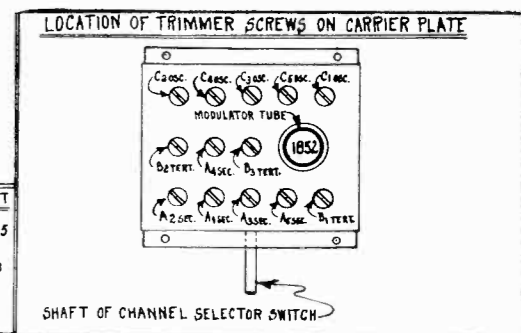


IF = 456

NO	CAPACITORS	RESISTORS	WATTS
1	.0001	200	1/4
2	.1	250	1/4
3	.00025	500,000	1/4
4	.00025	110	1/4
5	.01	110	1/4
6	.02	500,000	1/4
7	.02	500,000	1/4
8	.02	500,000	1/4
9	.02	500,000	1/4
10	.02	500,000	1/4

ANDREA RADIO CORP.

MODELS 2F-12, 3F-12  
Video Chassis VF-12  
Schematic, Trimmers, Coils

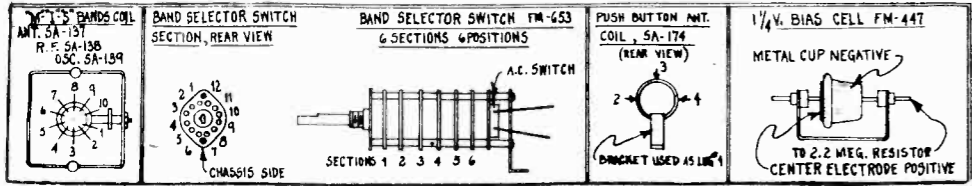
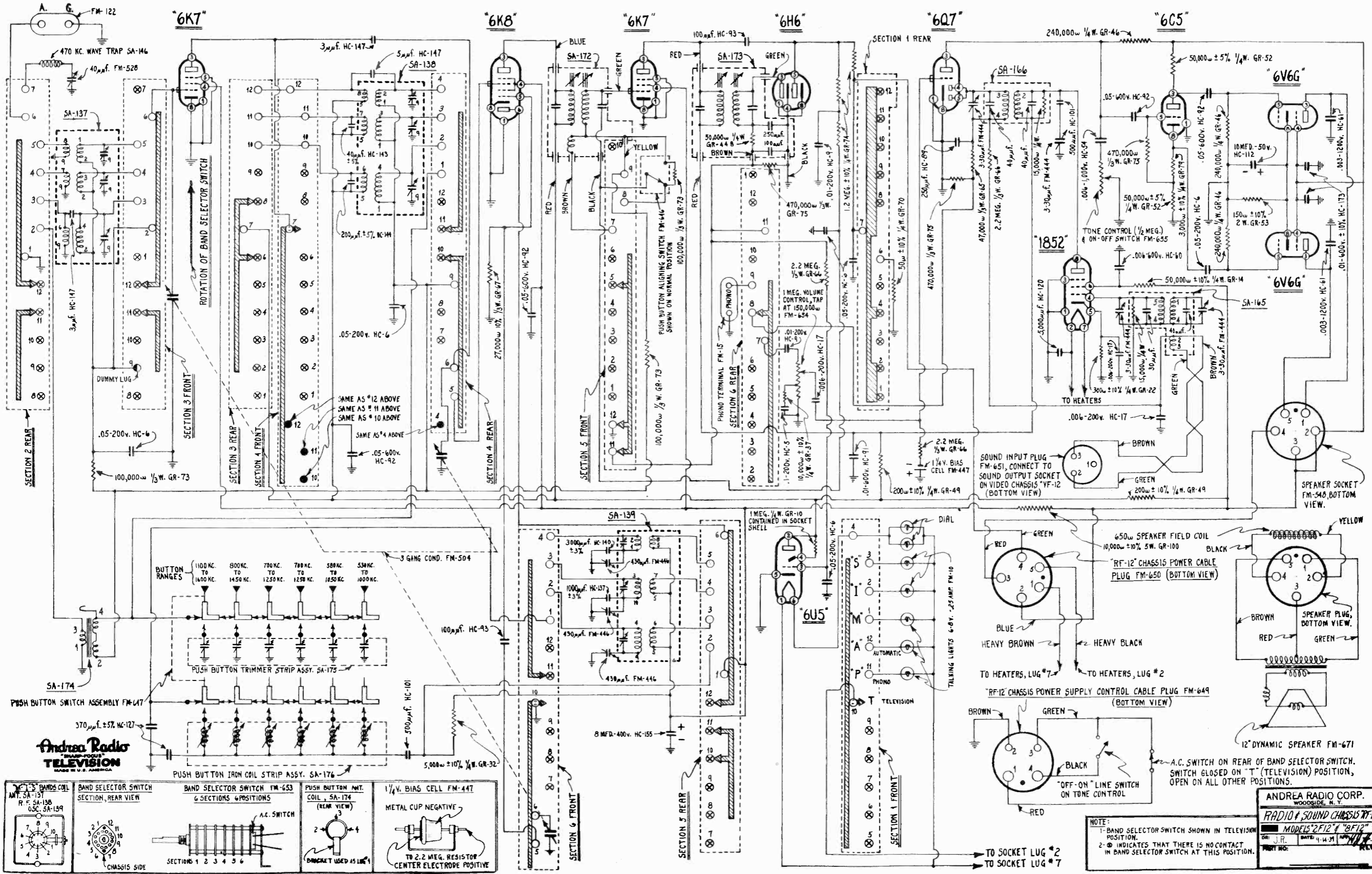


NOTE:  
1- AIR TRIMMERS CONNECTED ACROSS SEC., TERT., & OSC. MDGS. HAVE CAPACITY RANGE FROM 2μf. TO 10μf., AND OUR PART NO. IS FM-656. TRIMMERS MARKED FM-656, LOCATED THROUGH OUT CIRCUIT, HAVE CAPACITY RANGE FROM 2μf. TO 10μf. TOO.  
2- WHEN ALIGNING VIDEO I.F. STAGES AND CHANNEL ANTENNA CIRCUITS, REMOVE A.V.C. 100,000Ω RESIST. FROM "X" AND SUBSTITUTE ADJUSTABLE BATTERY BIAS AS SHOWN BELOW:

ANDREA RADIO CORP.  
WOODBRIDGE, N. Y.  
VIDEO CHASSIS "VF-12"  
MODELS 2F12, 3F12  
J.R. 4-11-31

MODELS 2F12, 8F12  
Radio Chassis RF-12  
Schematic, Coils

ANDREA RADIO CORP.



**NOTE:**  
 1- BAND SELECTOR SWITCH SHOWN IN TELEVISION POSITION.  
 2- ⊗ INDICATES THAT THERE IS NO CONTACT IN BAND SELECTOR SWITCH AT THIS POSITION.

**ANDREA RADIO CORP.**  
 WOODSIDE, N. Y.  
**RADIO & SOUND CHASSIS RF-12**  
 MODELS 2F12 & 8F12  
 DR: J.R. DATE: 4-14-37  
 PART NO. 417

ANDREA RADIO CORP.

MODELS 2F12, 8F12  
Controls, Assembly  
Chassis Wiring

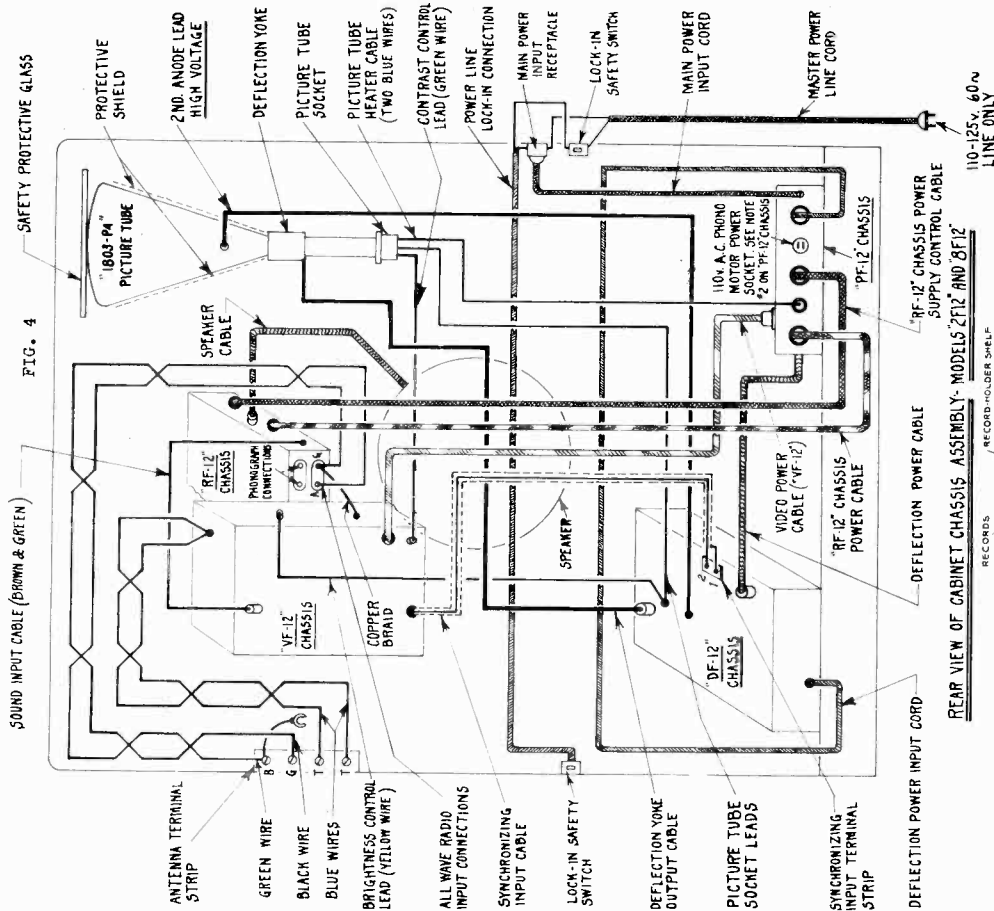


FIG. 4

110-125V. 60~  
LINE ONLY

REAR VIEW OF CABINET CHASSIS ASSEMBLY, MODELS 2F12 AND 8F12

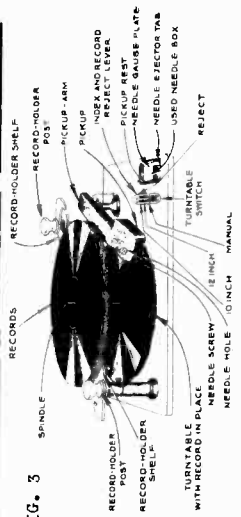


FIG. 3

TOP VIEW OF AUTOMATIC  
RECORD CHANGER

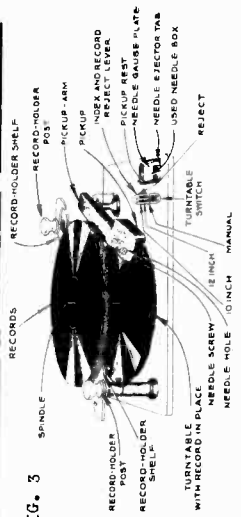


FIG. 2

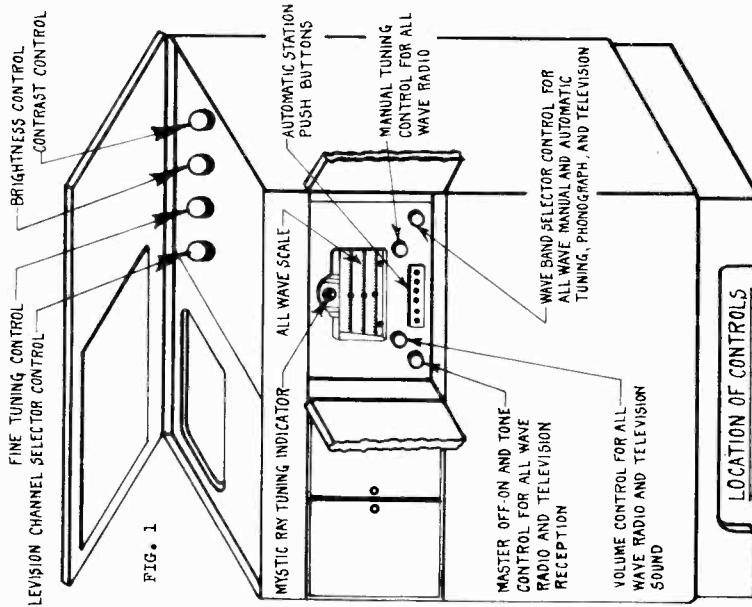


FIG. 1

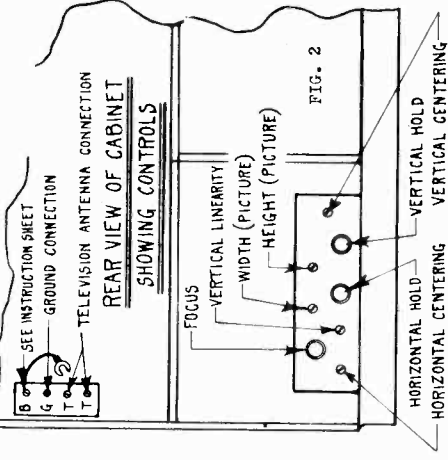
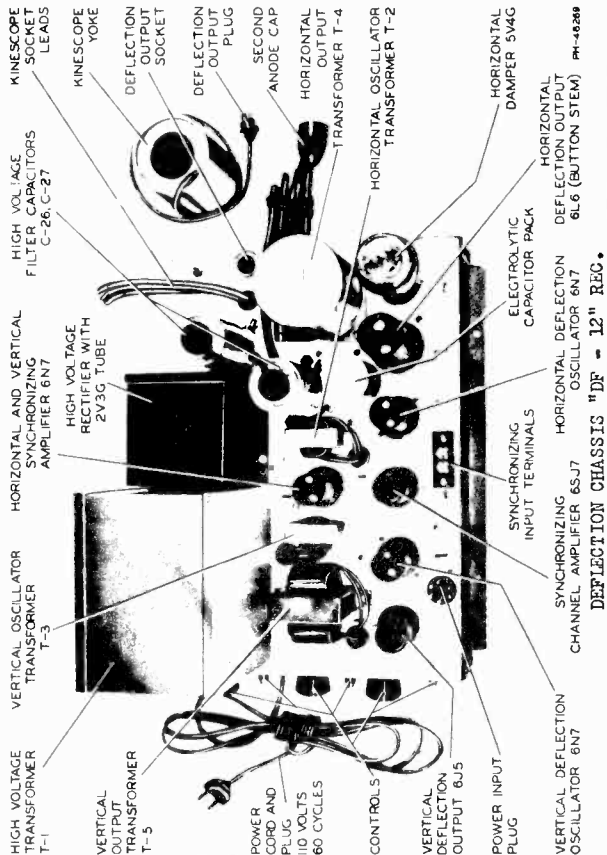


FIG. 2

MODELS 2F12,8F12  
Socket Layouts  
Deflection Chassis DF-12  
Notes, Layout, Controls

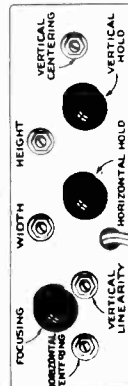
ANDREA RADIO CORP.



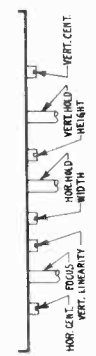
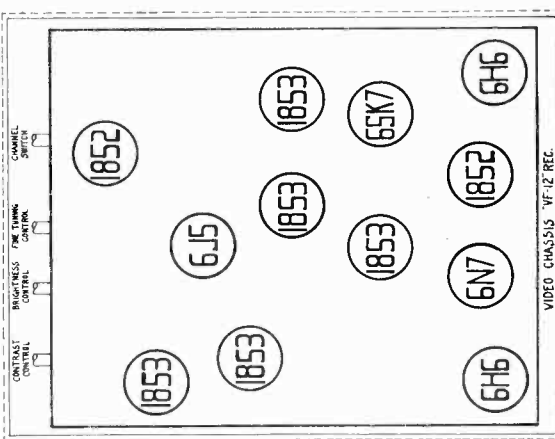
DEFLECTION CHASSIS - 'DF-12'

**CONTROLS** - There are eight controls on the end of the Deflection Chassis. Three of these are knobs and five are screwdriver adjustments.

1. **Horizontal Centering** - This is a screwdriver adjustment on the extreme left of the control panel. It serves to center the picture horizontally on the Kinescope screen and is made at the time of installation of the complete receiver. It will require resetting due primarily to the earth's magnetic field whenever the receiver location is changed, the cabinet turned around, or the Kinescope replaced.
2. **Focusing Control** - The next control is a knob for adjustment of the first anode voltage to properly focus the picture. Make this adjustment carefully when the receiver is first placed in operation and it should then remain permanent but may be occasionally checked to insure continuous best focusing. 110 VOLTS, 60 CYCLES.
3. **Vertical Linearity** - This is controlled by means of a screwdriver adjustment. It is operated in conjunction with the Height Control to give the correct vertical proportions to the picture. It may require readjustment if the Vertical Centering Control is reset.
4. **Width** - This screwdriver control determines the width of the picture and should be adjusted when the receiver is installed. Further adjustment will occasionally be necessary in order to compensate for the gradual reduction in horizontal deflection with tube life.
5. **Horizontal Hold** - This is a knob which controls the free running speed of the horizontal oscillator. It is adjusted to a point approximately at the center of the range in which the picture "locks in" horizontally. Synchronizing voltage, when properly applied, will hold the horizontal oscillator in step, and then correct setting will be indicated by the horizontal stability of the picture.
6. **Height** - This screwdriver control determines the height of the picture and should be adjusted in conjunction with vertical linearity when the receiver is installed. Further adjustment will occasionally be necessary in order to compensate for the gradual reduction in vertical deflection with tube life.
7. **Vertical hold** - This is a knob which controls the free running speed of the vertical oscillator. It is adjusted to a point approximately at the center of the range in which the picture "locks in" vertically. Synchronizing voltage, when properly applied, will hold the vertical oscillator in place in step and the correct setting will be indicated by the vertical stability of the picture.
8. **Vertical Centering** - This is a screwdriver adjustment on the extreme right of the control panel. It serves to center the picture vertically on the Kinescope screen and is made at the time of installation of the complete receiver. It will require resetting whenever the receiver location is changed, the cabinet turned around or the Kinescope replaced. Some readjustment of linearity may be required if the centering is shifted appreciably.

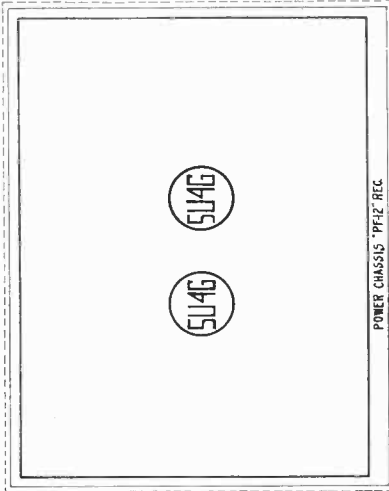


CONTROLS

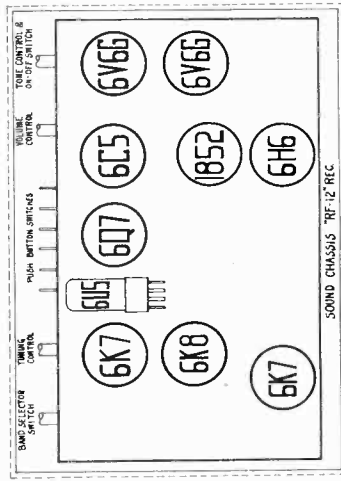


CONTROLS

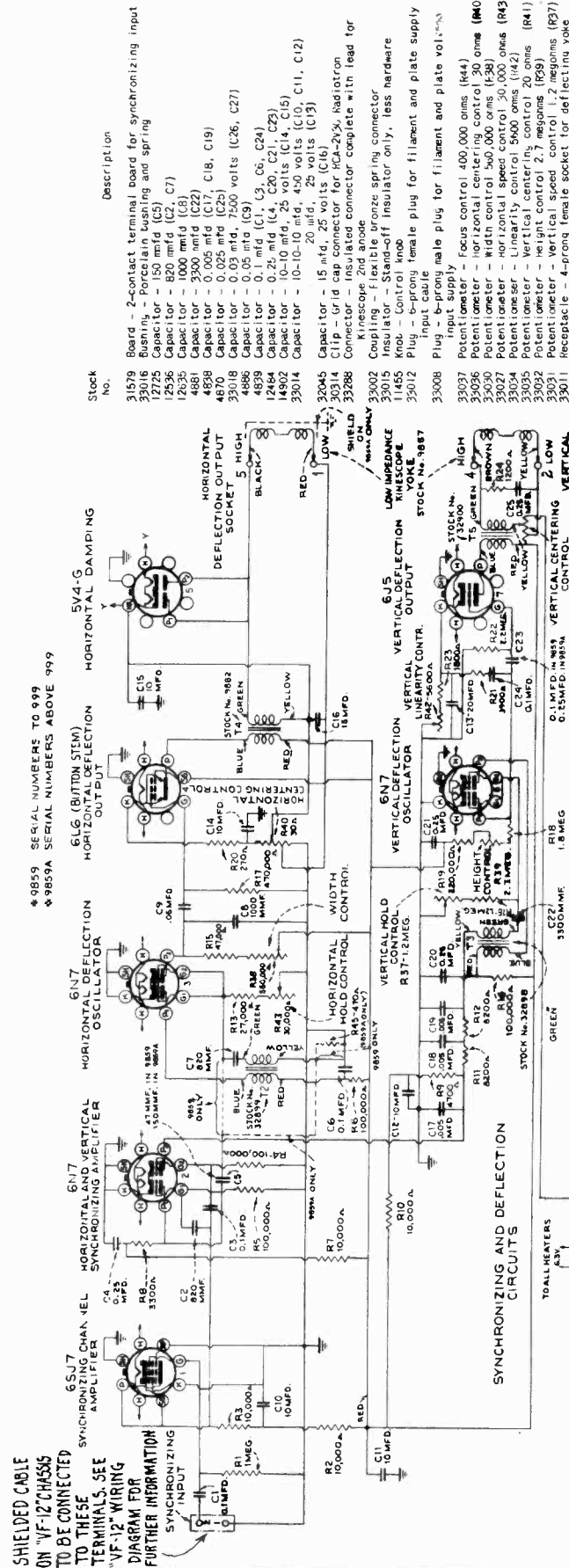
DEFLECTION CHASSIS



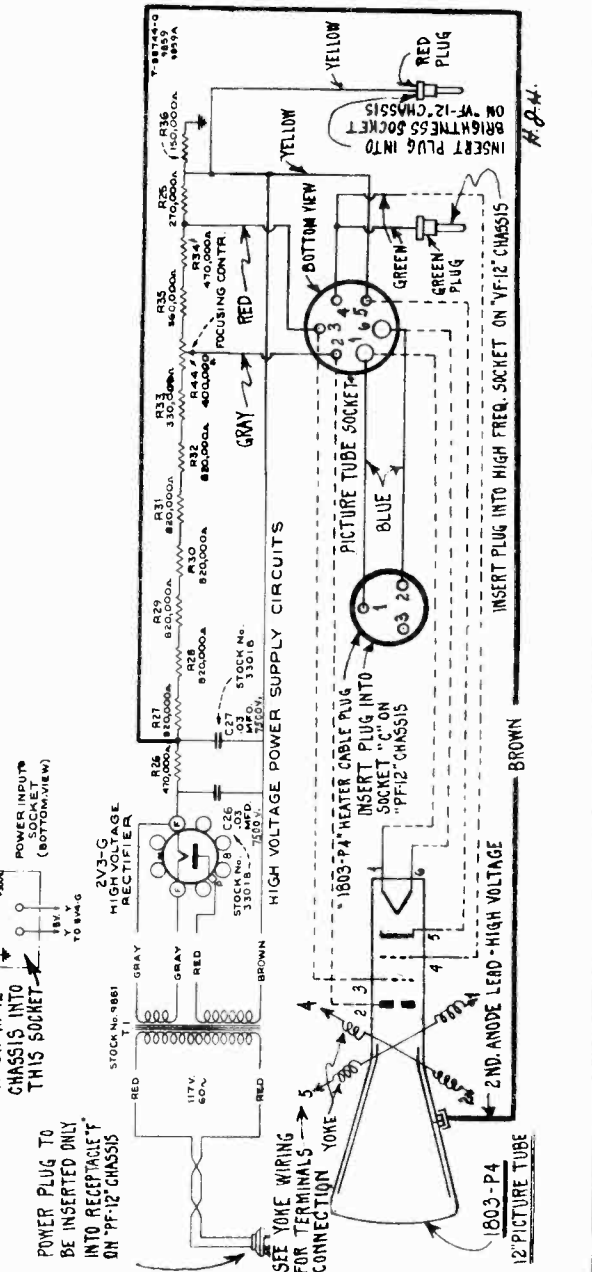
**CAUTION** - THE POWER SUPPLY TO THE DEFLECTION CHASSIS SHOULD NEVER BE CUT OFF WHILE THE HIGH VOLTAGE CAPACITOR IS TURNED ON. A BRIGHT SPOT MAY APPEAR ON THE KINESCOPE SCREEN IF THIS WARNING IS DISREGARDED. AN INTENSE BRIGHT SPOT THAT MAY CAUSE A BURN WILL ALSO APPEAR IF THE KINESCOPE YOKE IS REMOVED. THE YOKE PLUG PULLED OUT, OR BOTH DEFLECTION CIRCUITS RENDERED INACTIVE BY TUBE REMOVAL OR OTHER MEANS.



ANDREA RADIO CORP. MODELS 2F12, 8F12  
Deflection Chassis DF-12  
Schematic



Stock No.	Description
31579	Board - 2-contact terminal board for synchronizing input
33016	Bushing - Porcelain bushing and spring
12725	Capacitor - 150 mfd (C5)
12636	Capacitor - 820 mfd (C2, C7)
4881	Capacitor - 1000 mfd (C8)
4688	Capacitor - 3300 mfd (C22)
4670	Capacitor - 0.005 mfd (C17, C18, C19)
32486	Capacitor - 0.025 mfd (C25)
32486	Capacitor - 0.05 mfd (C26)
4839	Capacitor - 0.1 mfd (C1, C3, C5, C24)
12484	Capacitor - 0.25 mfd (C4, C20, C21, C23)
14902	Capacitor - 10-10 mfd, 25 volts (C14, C15)
33014	Capacitor - 10-10-10 mfd, 4.50 volts (C10, C11, C12)
	20 mfd, 25 volts (C13)
32045	Capacitor - 15 mfd, 25 volts (C16)
30314	Clip - Grid cap connector for 6CA-25X, Radiotron
33288	Connector - insulated connector complete with lead for Kinescope 2nd anode
33002	Coupling - ceramic ferrite spring connector
33015	Insulator - ceramic insulator only, less hardware
11455	Knob - Control knob
33012	Plug - 6-prong female plug for filament and plate supply input cable
33008	Plug - 6-prong male plug for filament and plate supply input supply
33037	Potentiometer - Focus control 400,000 ohms (R44)
35096	Potentiometer - Horizontal centering control 30 ohms (R40)
35090	Potentiometer - Width control 500,000 ohms (R38)
33027	Potentiometer - Horizontal speed control 30,000 ohms (R93)
33035	Potentiometer - Verticality control 5000 ohms (R42)
33035	Potentiometer - Vertical speed control 30,000 ohms (R41)
33032	Potentiometer - Height control 2.7 megohms (R39)
33031	Potentiometer - Vertical speed control 1.2 megohms (R37)
33011	Receptacle - 4-prong female socket for deflecting yoke
13219	Resistor - 270 ohms, 2 watts (R20)
30546	Resistor - 470 ohms, 1/2 watt (R21)
12267	Resistor - 1200 ohms, 1/2 watt (R24)
12194	Resistor - 1800 ohms, 1/2 watt (R23)
20753	Resistor - 3300 ohms, 1/2 watt (R8)
12955	Resistor - 3900 ohms, 1/2 watt (R21)
30494	Resistor - 4700 ohms, 1/2 watt (R9)
14075	Resistor - 8200 ohms, 1/2 watt (R11, R12)
12738	Resistor - 10,000 ohms, 1/2 watt (R2, R3, R7, R10)
12738	Resistor - 27,000 ohms, 1/2 watt (R4, R5, R6, R14)
12560	Resistor - 100,000 ohms, 1/2 watt (R13)
4122	Resistor - 150,000 ohms, 1/2 watt (R15)
41894	Resistor - 200,000 ohms, 1/2 watt (R36)
31899	Resistor - 270,000 ohms, 1/2 watt (R9)
33501	Resistor - 330,000 ohms, 1/2 watt (R33)
12285	Resistor - 470,000 ohms, 1/2 watt (R17)
33502	Resistor - 470,000 ohms, 1/2 watt (R26, R54)
33593	Resistor - 560,000 ohms, 1/2 watt (R35)
33554	Resistor - 820,000 ohms, 1/2 watt (R27, R28, R29, R30, R31, R32)
13750	Resistor - 1.2 megohm, 1/2 watt (R16)
5208	Resistor - 2 megohm, 1/2 watt (R18)
12876	Resistor - 2 megohm, 1/2 watt (R22)
33007	Socket - Steel socket assembly for focus control
18007	Socket - uctal base socket and retaining ring for 6L6 and 25X Radiotrons
18467	Socket - Octal base water type socket
32909	Support - Rectifier socket, plate and stand-off insulator assembly
9861	Transformer - High voltage power transformer (T1)
32899	Transformer - Horizontal oscillation transformer (T2)
9862	Transformer - Horizontal output transformer (T4)
32896	Transformer - Vertical oscillation transformer (T3)
28800	Transformer - Vertical output transformer (T5)
3657	Yoke - Deflection yoke complete with cable and plug

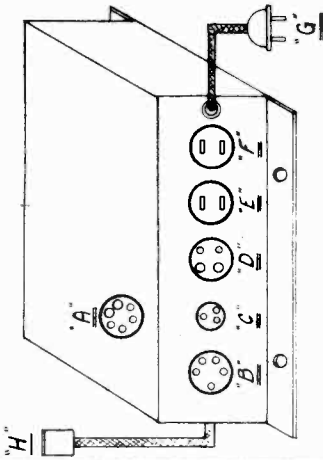


MODELS 2F12, 3F12  
Power Chassis PF-12

ANDREA RADIO CORP.

Schematic Notes

LOCATION OF RECEPTACLES ON PF-12 CHASSIS

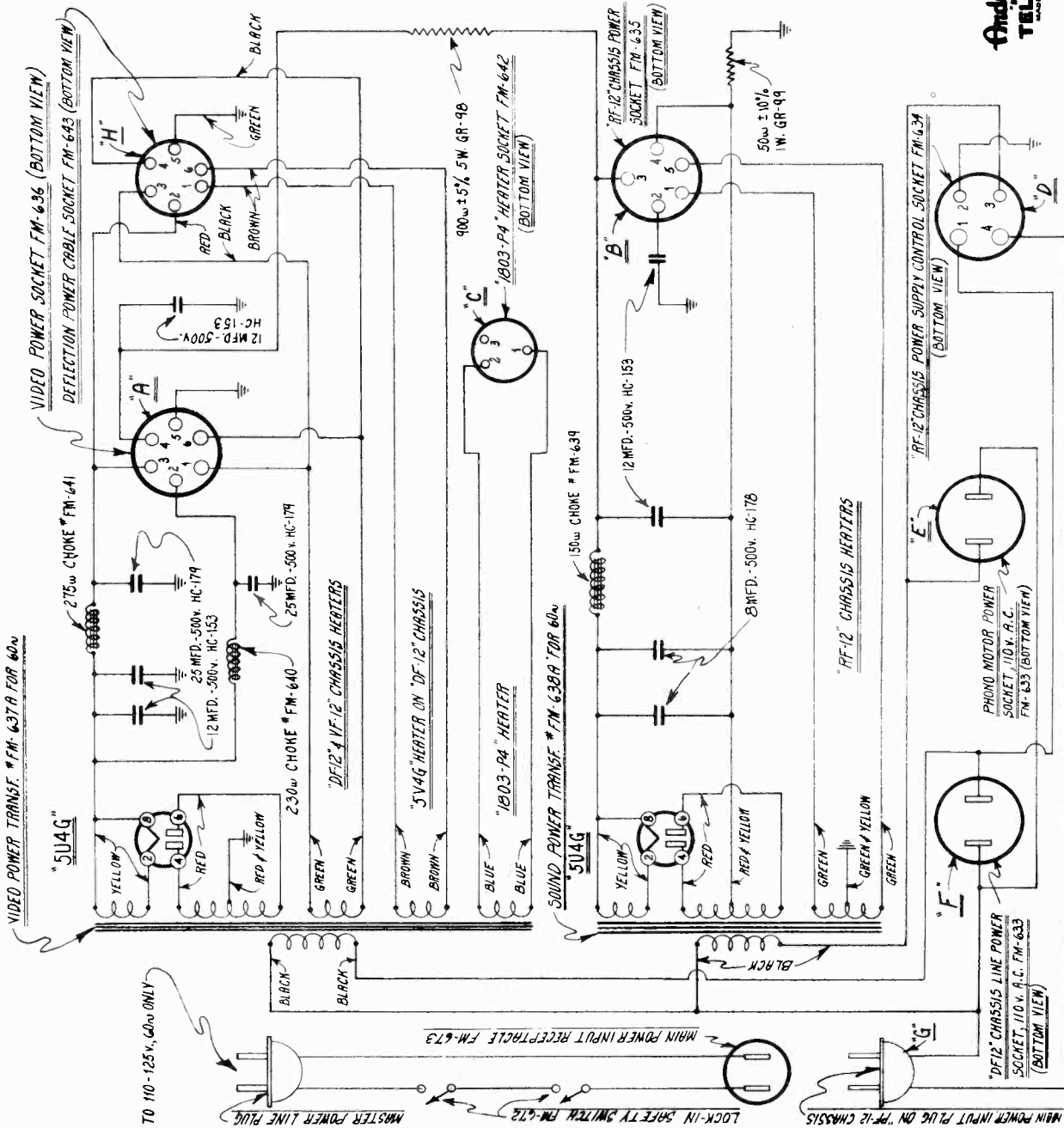


- "A" - RECEPTACLE FOR VIDEO POWER CABLE PLUG FROM "VF-12" CHASSIS.
- "B" - RECEPTACLE FOR "RF-12" CHASSIS POWER CABLE PLUG FROM "RF-12" CHASSIS.
- "C" - RECEPTACLE FOR "1803-P4" HEATER CABLE PLUG FROM CHASSIS.
- "D" - RECEPTACLE FOR "RF-12" CHASSIS POWER SUPPLY CONTROL CABLE PLUG FROM "RF-12" CHASSIS.
- "E" - RECEPTACLE FOR PHONO MOTOR POWER PLUG FROM MOTOR OF RECORD CHANGER. SEE NOTE 2 BELOW.
- "F" - RECEPTACLE FOR DEFLECTION LINE POWER PLUG FROM "DF-12" CHASSIS. SEE NOTE 1 BELOW.
- "G" - PLUG TO BE INSERTED INTO MAIN POWER INPUT RECEPTACLE LOCATED ON SIDE OF CABINET.
- "H" - DEFLECTION POWER CABLE SOCKET TO BE INSERTED INTO DEFLECTION POWER INPUT PLUG ON "DF-12" CHASSIS.

IMPORTANT: 1- POWER PLUG FROM "DF-12" CHASSIS MUST ONLY BE INSERTED INTO RECEPTACLE "F". IF INSERTED IN RECEPTACLE "E", THE POWER OF "DF-12" CHASSIS WILL NOT BE CONTROLLED.  
2- RECEPTACLE "E" TO BE USED ONLY FOR 110v. A.C. PHONO MOTOR POWER.

ANDREA RADIO CORP. WOODBRIDGE, N. Y.
POWER CHASSIS PF-12/2C
MODELS 2F12 & 3F12
DR. J.R. [unclear] [unclear]

Andrea Radio  
TELEVISION  
MADE IN U.S.A.





# ANDREA RADIO CORP.

## MODELS 2F12, 8F12 Operating Notes

**POWER RATING** The ANDREA 2F12 and 8F12 receivers operate only on 110 to 125 volt, 60 cycle AC current. Make sure your current supply is correct for the instrument before you plug it into the house outlet or socket.

This receiver is equipped with two safety lock-in switch devices and when the back is removed, power is cut off from all apparatus. The two switches are on the inside of the two side panels. No danger is possible from the high voltage television apparatus unless these two switches are simultaneously pushed in. Under no circumstances should these switches be tampered with.

**ANTENNA** A television receiving antenna and its installation must conform to much higher standards than an antenna for reception of international short wave and standard broadcast signals because:

1. At the ultra short wave lengths employed in television, intervening obstacles have a pronounced shielding effect, causing low intensity signals, and often severe trouble with multi-path transmissions. These produce blurring and multi-image pictures. See picture chart - figure 20 - for effect.
2. The picture signal is comprised of a very wide band or range of frequencies, all of which must be received with good efficiency.
3. The discernment of the eye is much more critical than that of the ear.

The receiver antenna should preferably be at a good height, without interruption in direct "line of sight" of the transmitter antenna, of the correct type, and correctly installed. Buildings and other structures may obstruct and reflect the television waves. Automobile ignition systems, diathermy apparatus in hospitals and airplanes flying low may all have an adverse effect.

Television pictures may be compared in certain ways with motion pictures. The illumination in the room should be dimmed - no light close to or falling on the screen. During the day it will usually suffice to draw the curtains.

The special ANDREA Teleceptor - picture and sound antenna - Model 66 - is available.

### TELEVISION OPERATION

**CAUTION** Before the receiver is turned on at any time, turn wave band Selector control knob (Fig.1) to either the S, I, M, A or P position, and rotate counter-clockwise contrast and brightness controls (Fig.1) all the way.

**HOW TO TURN RECEIVER ON** Turn master Off-on Tone Control knob clockwise (Fig.1) to switch power "on". Further rotation varies the tone of the television sound - full tone reproduction being with the knob turned fully counter-clockwise. **AND OFF** This knob is the master control knob for turning the entire instrument "off" or "on". After about 30 seconds, turn the Wave Band Selector knob (Fig.1) to position "M". This turns the television section of the instrument "on" and automatically removes the dial illumination. Allow sufficient time for the tubes to heat before proceeding further.

**HOW TO CONTROL TELEVISION SOUND VOLUME** Turning Volume Control knob (Fig.1) clockwise increases the television sound volume; counter-clockwise decreases volume.

**TELEVISION CHANNEL SELECTOR CONTROL SWITCH** The television Channel Selector Control (Fig.1) selects automatically the desired station and accompanying sound from which it is desired to receive television programs. This knob is marked 1,2,3,4,5 - representing the first, second, third, etc. television channel:

CHANNEL 1	44-50 MC	4	78-84 MC
"	50-56 MC	5	84-90 MC
"	56-62 MC		
"	62-68 MC		

Set the knob to the channel corresponding to the television station desired.

**FINE TUNING CONTROL** This control is used to obtain best picture reception by eliminating possible distortion from interfering signals which show a moving ripple in the picture. Should this control be incorrectly set, picture distortion will result. In most cases this control should be adjusted for each television channel by listening to the accompanying sound until maximum volume is obtained, using a medium or low level and noting that the picture is not distorted at this setting. See picture chart - (Fig.5) illustrates the test chart picture when all controls are correctly adjusted. (Fig.9) shows the effect on the picture of extraneous interference that in some cases can be eliminated by a slight readjustment of the fine tuning control. (Fig.10) shows what also may occur when the fine tuning control is incorrectly set.

**CONTRAST CONTROL** The contrast knob, located in the top panel (Fig.1), regulates the

contrast level of the picture. Turning this control slowly clockwise increases the picture contrast from grays to black and white. Excessive contrast gives blurred or feathered outline to the images which lack half tones, while too little contrast results in an extremely gray image without character or depth. The correct adjustment is to set the controls (both Contrast and Brightness) where black objects appear on the screen as a very dark gray. See picture chart - (Fig.5) shows the received test chart picture with the controls set correctly. (Fig.6) illustrates the picture with the contrast advanced too far.

**BRIGHTNESS CONTROL** For controlling brightness level of picture, observe the difference between operating this control and the Contrast control. Both controls should be operated together. For example, if the contrast is adjusted correctly and the picture illumination is too low or too bright, and the Brightness control readjusted for more or less illumination, the picture contrast will change. Hence, the Contrast control must be readjusted. Therefore, whenever the Contrast control is turned clockwise, the Brightness control must be turned counter-clockwise. (See picture chart - (Fig.7 and Fig.8).

**NOTE FIG.8** If the Brightness control is operated too high and the Contrast control too low white diagonal lines will be seen across the picture which indicates that the Brightness control must be reduced. In some cases, if the antenna pickup is insufficient, the same results will occur. Always remember to turn the Brightness and Contrast controls completely counter-clockwise when viewing is over. (Fig.7) indicates what occurs to the picture when the Brightness control is advanced too far. The picture is thin and lacks blacks.

**HOW TO RECEIVE THE PICTURE** Before turning the receiver on, proceed as follows:

1. Turn Brightness and Contrast controls (Fig.1) completely counter-clockwise.
2. Open doors of radio panels (Fig.1). Turn wave band Selector knob marked S-I-M-A-P-T to any position but "M".
3. Turn master Off-ON Control (Fig.1) clockwise until click is heard.
4. Turn Volume Control (Fig.1) 1/4 turn clockwise.
5. Turn Wave Band Selector knob S-I-M-A-P-T to position "M".
6. Turn Television Selector switch to correct position.
7. Turn Contrast control fully counter-clockwise and then turn Brightness Control clockwise slowly until a slight illumination appears on the screen. Then turn counter-clockwise until illumination just disappears.
8. Advance the Contrast Control until the picture appears at its best. Then advance Brightness Control clockwise slowly, if necessary, and readjust both controls for most suitable picture. A little practice of these adjustments will enable you to easily obtain the correct setting. Incorrect control settings give similar results to under or over exposed photograph prints.
9. If an interfering ripple is observed in the picture, adjustment of the fine tuning knob (Fig.1) may reduce or eliminate the trouble.
10. Readjust the sound volume and tone controls (Fig.1) to your liking.
11. Always turn wave band Selector knob (Fig.1) to any position but that marked "M" before turning receiver "off".

### RADIO OPERATION

**THE DIAL AND CONTROLS** In Fig.1 is shown the cabinet front, incorporating the controls necessary for correct operation.

Turn Master Power Off-ON Tone Control clockwise to apply power to receiver. Should tuning scale fail to light, then the Wave Band Selector knob is in position "M". Turning to another position will light the scale.

**WAVE RANGE SELECTOR CONTROL** The Wave Range Selector controls the type of service. The knob is marked S-I-M-A-P-T.

- "S" position - short wave reception.
- "I" position - intermediate short wave reception.
- "M" position - manual tuning of standard broadcast.
- "A" position - automatic push-button tuning of your six favorite Standard Broadcast stations.
- "P" position - phonograph operation.
- "T" position - television and accompanying sound.

**PHONOGRAPH** Model 8F12 contains an Automatic Record Changer which plays either eight 10" records or seven 12" records automatically. In Figure 3 is illustrated the method of operation.

Model 2F12 can be used with an external phonograph pickup of 4000 ohms or more by plugging into the phono jacks provided on the rear of the radio chassis.

**EXTERNAL INTERCONNECTING OF COMPONENTS**

Figure 4 illustrates the interconnecting of the parts in the cabinet chassis assembly.

MODELS 2F12,8F12

Operating Notes, Cont'd.  
Tuner Data

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SERVICE NOTES

**ANTENNA-GROUND** Connect the ANDREA Teleceptor transmission cable to the terminals marked "T" - "W".  
**ATTACH WELL-GROUNDED** insulated wire to terminal marked "G". Note that a wire from the rear of terminal marked "B" is connected to one side of screw terminal "W". This connection utilizes the Teleceptor antenna for all-wave reception.

Should a separate all-wave noise reducing antenna, such as the ANDREA No. 50, be used for broadcast reception, remove above wire connection from terminal "T" and connect to terminal "B". Connect all-wave coupler to terminal "B" and "G".

**HORIZONTAL CENTERING** The horizontal centering control is a screw driven adjustment located as shown in Fig. 2 and made at the time of installation. It serves to center the picture horizontally on the picture screen. It may require slight resetting if the receiver location is changed, tubes replaced or power line conditions varied. See picture chart - Figure 11 indicates what occurs when this control is incorrectly set. Figure 5 is the correct position.

**VERTICAL CENTERING** The Vertical Centering control is a screw driven adjustment shown in Fig. 2 and is used to center the picture vertically with respect to the screen opening. Resetting may be necessary for the same conditions outlined under "Horizontal Centering". See picture chart - Figure 12 indicates what occurs when this control is incorrectly adjusted. Figure 5 is the correct position.

**PICTURE HEIGHT** This control varies the height of the picture and is a screw driven adjustment made when the receiver is installed. See picture chart - Figure 13 shows what occurs when this control is incorrectly adjusted. Figure 5 is the correct position.

**PICTURE WIDTH** This control increases or decreases the width of the picture and is a screw driven adjustment made at the time of installation. See picture chart - Figure 14 shows what occurs when this control is incorrectly set. Figure 5 is the correct picture.

**FOCUS CONTROL** Located as shown in Fig. 2, this control is designed to bring the television images into sharp focus or definition. This control, once adjusted, should not be tampered with. When correctly focused the lines of which the picture is composed are sharply defined. A slight rotation one or other direction will indicate defocusing. See picture chart - Figure 15 illustrates what happens when the focus control is incorrectly set. Figure 5 when correctly set. What happens during a given program, scenes may be out of focus while others are sharp. This condition arises at the transmitter and cannot be corrected at the receiver.

**HORIZONTAL HOLD CONTROL** The purpose of this control is to reconstruct the receiver picture lines in exact synchronization with the transmitter. If they are not, the scan will be affected as follows:

- (a) Distortion in shape.
  - (b) Several images will be seen.
  - (c) Numerous black dashes over screen.
- A slight adjustment of this control in the one or the other direction will eliminate the above effects. See picture chart - Figures 16 and 17 shows what the picture looks like when this control is incorrectly set. Figure 5 shows the correct setting.

**VERTICAL HOLD CONTROL** This control synchronizes the pictures at the receiver vertically with the transmitter. When out of adjustment, the picture may slip or revolve upwards or downwards at either a slow or fast rate. Turn the control in one direction. If the revolving motion is faster, then turn in other direction until the picture "locks in" as a single complete scene. See picture chart - Figure 18 illustrates the effect on the picture when this control is incorrectly set. Figure 5 shows the correct picture setting.

**VERTICAL LINEARITY CONTROL** This is controlled by means of a screw driven adjustment. The adjustment must be correct and in conjunction with the Height control to give the correct vertical proportions to the picture. It may require readjustment if the Vertical Centering control is reset. See picture chart - Figure 19 indicates the unbalance in Vertical Height of the picture when this control is incorrectly set. Figure 5 shows the correct setting.

**SETTING RADIO STATION**

**BUTTON CONTROLS**

The simplicity of the ANDREA RADIO push-button controls, requiring only the use of a thin-blade screw driver, makes it easy to set them accurately. This is essential, for unless the buttons are set exactly, the tone quality will be destroyed.

**CHOOSING YOUR STATIONS**

Make a list of the desired six stations to operate on the push-buttons. Set down their call letters and put them in the order of their kilocycle ratings, the highest at the left to correspond to station 1 selecting button at the left. The kilocycle tuning ranges of the button controls are as follows:

Extreme Left	Station 1 - 1100 to 1500 KC.
	Station 2 - 600 to 1450 KC.
	Station 3 - 700 to 1250 KC.
	Station 4 - 700 to 1250 KC.
	Station 5 - 580 to 1050 KC.
Extreme Right	Station 6 - 550 to 1000 KC.

It is necessary to choose stations whose kilocycle ratings come within these push-button tuning ranges. The ranges given in the list above are conservative. Consequently, it may be possible to tune in a station which is just outside the range of any particular push-button control. For example, on Station 3, although the range is between 700-1250 KC., it may be possible to tune in a station in 1600 KC. Select the proper markers for the stations on your list, insert the markers in the same order as your kilocycle list, starting with Station 1 on the first button on the marker. Do not attempt to glue the markers in place. In the event you want to change a marker, you can pry it out with the point of a pin.

**ADJUSTING THE HIGH-BUTTON STATION CONTROLS**

Remove push-button escutcheon cover plate (Fig. 1). All station adjustment screws and switch are now accessible for station adjustment from the front of the cabinet.

Remember to set the push-button adjusting switch located in the right hand corner of the push-button opening is a small lever. When adjusting the station controls, and only at that time, the lever should be turned to upper position, designated by red dot. Push the selector switch in the "W" position for dial tuning.

Tune in the station manually using call letters you have put on the first push-button. Then turn the Band switch to position "A". Push in the push-button you are going to adjust, and turn the volume control to maximum. When the set has been turned "ON" for a few minutes so that it has become thoroughly warm, you will be ready to make the push-button adjustments. The adjusting screws can be reached easily. Each push-button has two adjustment controls marked "ANT" and "OSC", in pairs. The pair corresponding to Station 1 on your list at the extreme left. This set is so designed that the tuning indicator operates with the push-buttons as well as with manual tuning. Therefore you can adjust the controls with absolute accuracy by watching the opening and closing of the indicator.

The exact setting for each adjustment is obtained when the Mystic Ray indicator is closed as far as possible.

Use a thin-blade screw driver to adjust the screws: Do not force a thick blade into the station. First adjust the oscillator screw for Station 1, turning it until you hear the station you tuned in previously on the dial. If the speaker breaks into a howl during this adjustment, turn the Station 1 antenna screw to the right or left until the howl stops.

After you have an accurate setting of the oscillator screw, adjust the corresponding antenna screw for maximum volume. The final adjustment should be made by turning the oscillator screw while you watch the opening of the Mystic Ray indicator. Then, in the same way, get a final adjustment of the antenna tuning. Repeat the same routine adjustments for Station 2, turning the station on the dial first with "Wave Selector" switch in "W" position, then changing "OSC" screws. Continue this method for each station and button.

To check the accuracy of the settings, turn the Wave Band switch to position "M". The station should sound practically the same whether the switch is in the "A" or "M" position. If there is considerable difference, the station is not tuned accurately with the dial, or else the corresponding push-button controls were not set correctly. To change any button to another station, if the station's kilocycle rating is within the range of the corresponding controls, it is only necessary to put in a "new button marker, and to reset the controls in accordance with the preceding instructions.

**CAUTION**

This is very important: When all adjustments have been made, it is necessary to touch up each one again to assure absolute accuracy. After this has been done, turn the push-button adjusting lever down to black dot marked normal operation. Otherwise, possible efficiency and quality will result. Replace push-button escutcheon cover plate, taking care that the holes in cover align with buttons.

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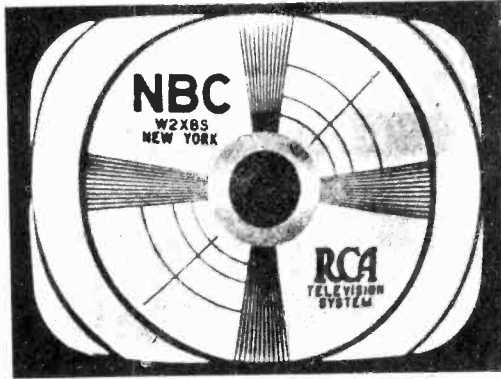


Figure 5—

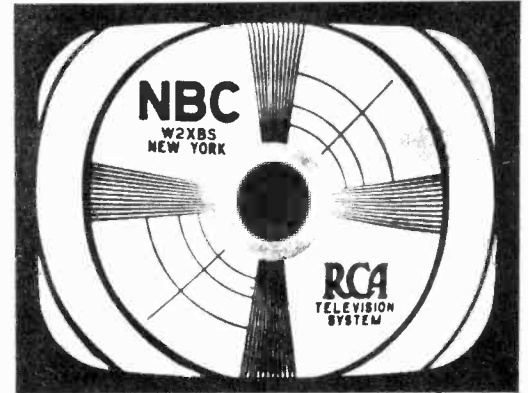


Figure 6—



Figure 7—



Figure 8—



Figure 9—

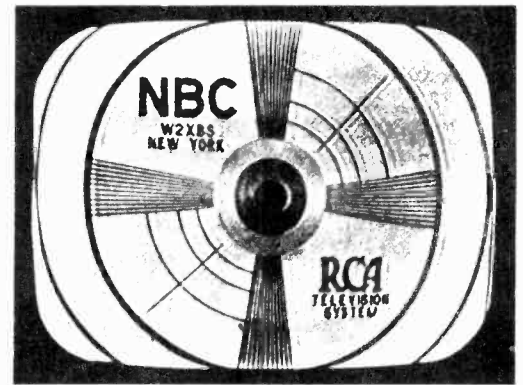


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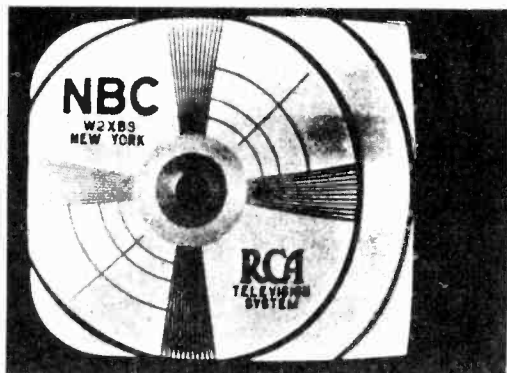


Figure 11—

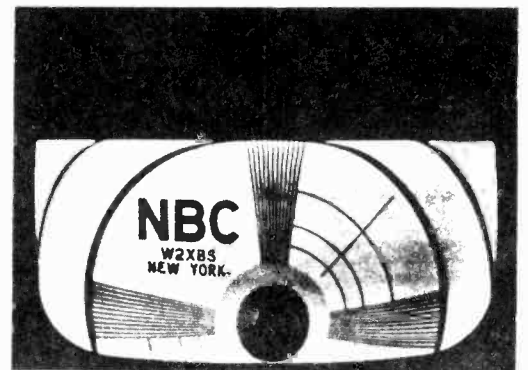


Figure 12—

MODELS 2F12,8F12  
Test Patterns

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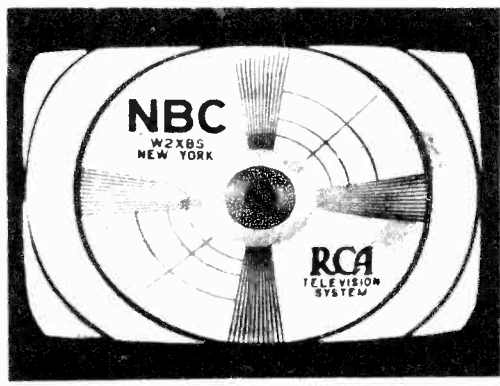


Figure 13—

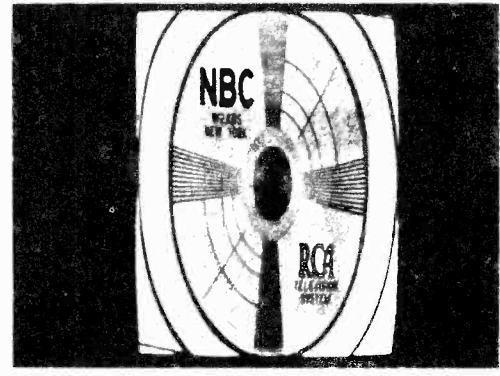


Figure 14—



Figure 15—

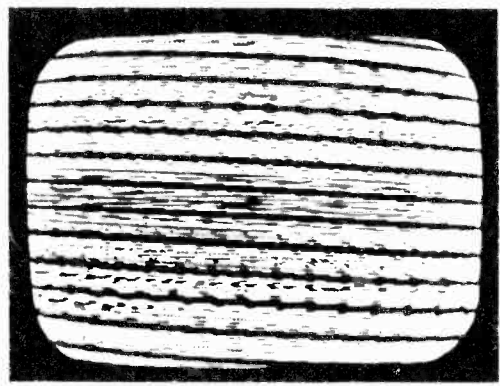


Figure 16—



Figure 17—

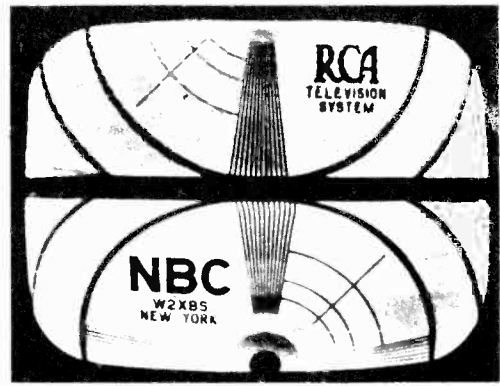


Figure 18—

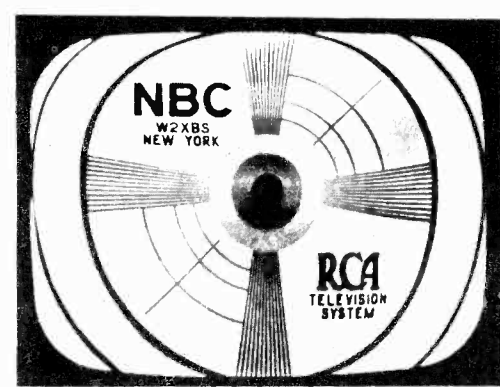


Figure 19—

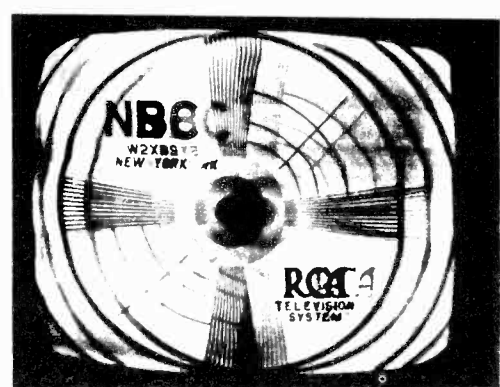
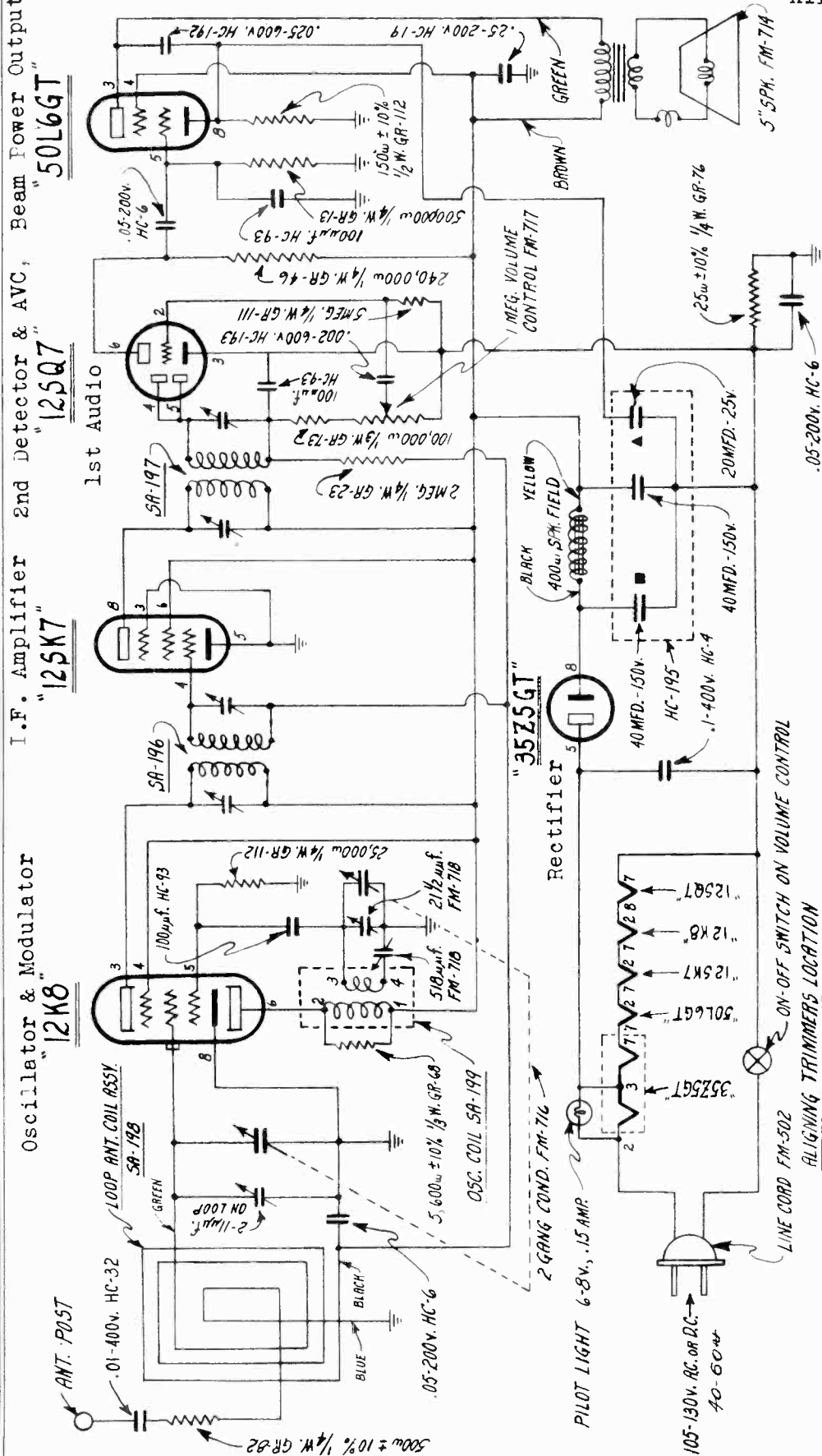


Figure 20—

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MODEL 12F5  
Chassis UF-5  
Schematic, Trimmers  
Alignment

Oscillator & Modulator "12K8"  
I.F. Amplifier "12SK7"  
2nd Detector & AVC, Beam Power Output "50L6GT"  
1st Audio "12SQ7"



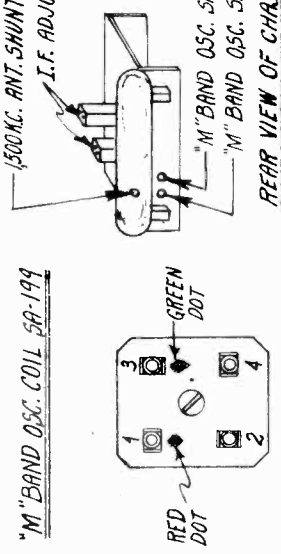
I.F. FREQUENCY = 455K.C.

"M" BAND : 600 K.C. OR 500 METERS  
1500 K.C. OR 200 METERS

IMPORTANT: RECEIVER MUST BE ALIGNED WITH LOOP CORRECTLY ASSEMBLED ON CHASSIS  
IF Align at 455 KC. Use .1 Mfd dummy to grid of 12 K8 tube.  
B.O. Use a .00025 Mfd. dummy to antenna post.  
CONVENTIONAL ALIGNMENT-SEE SPECIAL SECTION VOLUME VIII.

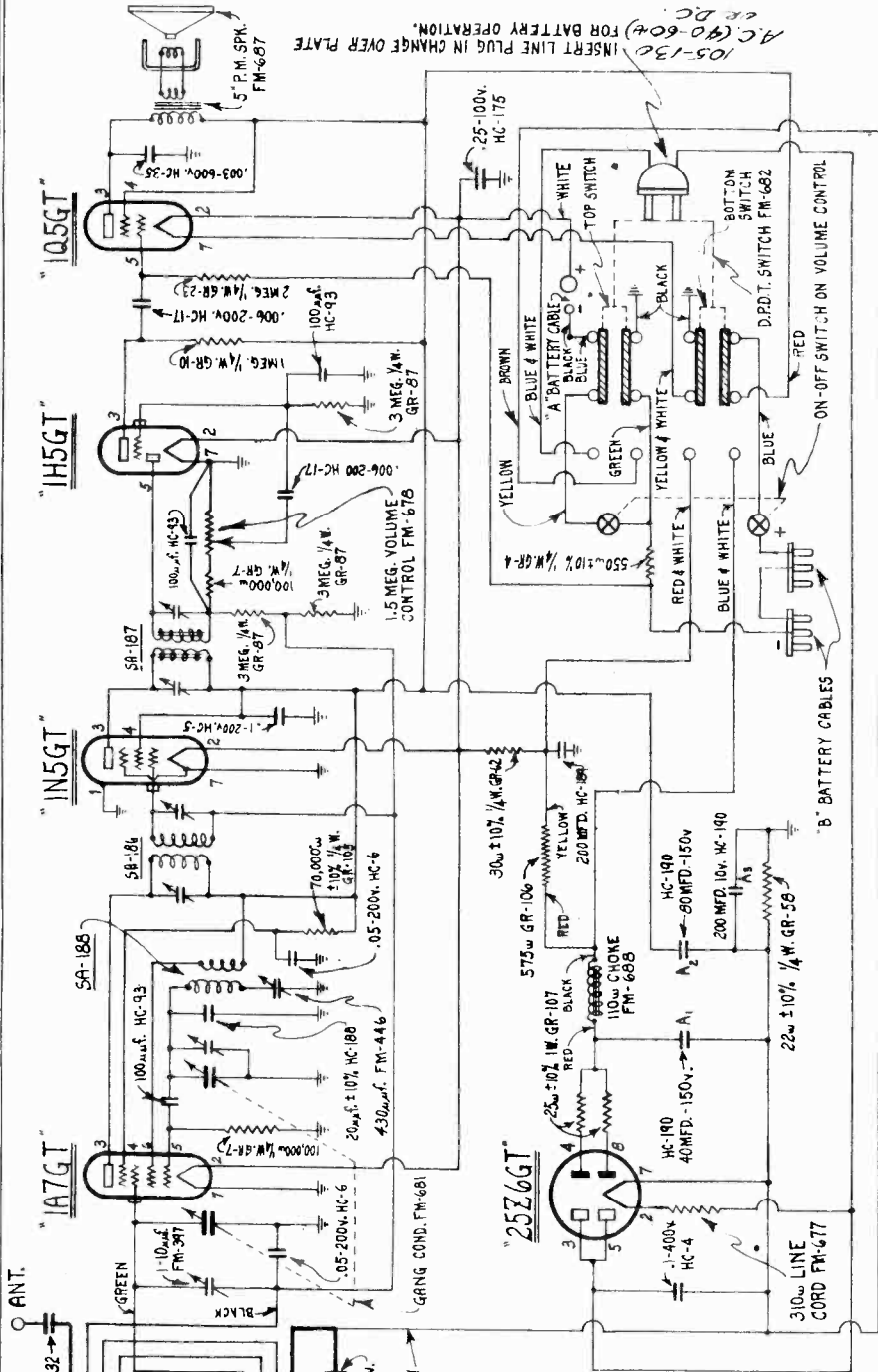
ANDREA RADIO CORP. WOODSIDE, N. Y.	
WIRING DIAGRAM "UF-5" REC	
MODEL "12F5"	
DR. J.R.	DATE: 11-18-39

ALIGNING TRIMMERS LOCATION



MODELS 21F5, 21AF5  
Chassis UF-51  
Schematic, Alignment

ANDREA RADIO CORP.



MODEL 21-F-5 AND 21A-F-5

WHEN R.F. REALIGNMENT IS NECESSARY, LOOP TRIMMING AT 1500 KC. AND OSC. AT 600 K.C. ADJUSTMENT MUST BE MADE WITH CHASSIS INSTALLED IN CABINET, AND BACK OF CABINET (CONTAINING LOOP) CLOSED, OTHERWISE POOR PERFORMANCE WILL RESULT.

A.C.-D.C. LINE PLUG MUST BE INSERTED IN CHANGE OVER PLATE FOR BATTERY OPERATION.

ALIGNMENT PROCEDURE

Set the signal generator at 455 kc., and connect the high side to the grid of the 1A7GT, through a .1 mfd. condenser. Align the two trimmers on the 1st and 2nd I.F. transformers, indicated in the illustration, for maximum output. Connect the high side of the signal generator through a 200 mmfd. condenser to the ANT post of the receiver, and the ground side to the GND post of the receiver. Connect a copper-oxide meter across the voice coil of the loudspeaker. Set the signal generator at 1500 kc., the dial pointer at 1500 kc., and adjust the oscillator trimmer on the gang condenser for maximum output.

With the back of the set closed, remove the plug button at the rear of the case and adjust the loop shunt condenser through the hole for maximum output at 1500 kc. Set the signal generator at 600 kc., and the dial pointer on the set at 600 kc. Remove the plug button at the back of the case, and adjust the oscillator series condenser through the hole for maximum output. While you make this adjustment, rock the tuning condenser control knob slightly for each small adjustment of the oscillator series condenser. Otherwise, the alignment will not be accurate.

Set the signal generator at 1500 kc., and check the dial calibration. If the calibration is off, readjust the oscillator shunt trimmer on the gang condenser.

TABLE OF REPLACEMENT BATTERIES

NAME	TYPE NO. OF "A" BATTERY	TYPE NO. OF "B" BATTERIES
Bright Star	No. 860	30-30
Burgess	No. 8F	B30
Eveready	No. 741	762
Usalite	No. 635	624

I.F. = 455 K.C.

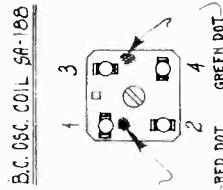
NOTE: "A1", "A2", "A3" ARE IN SAME CAN

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WOODSIDE, N. Y.

WIRING DIAG. FROM "UF-51" REC.

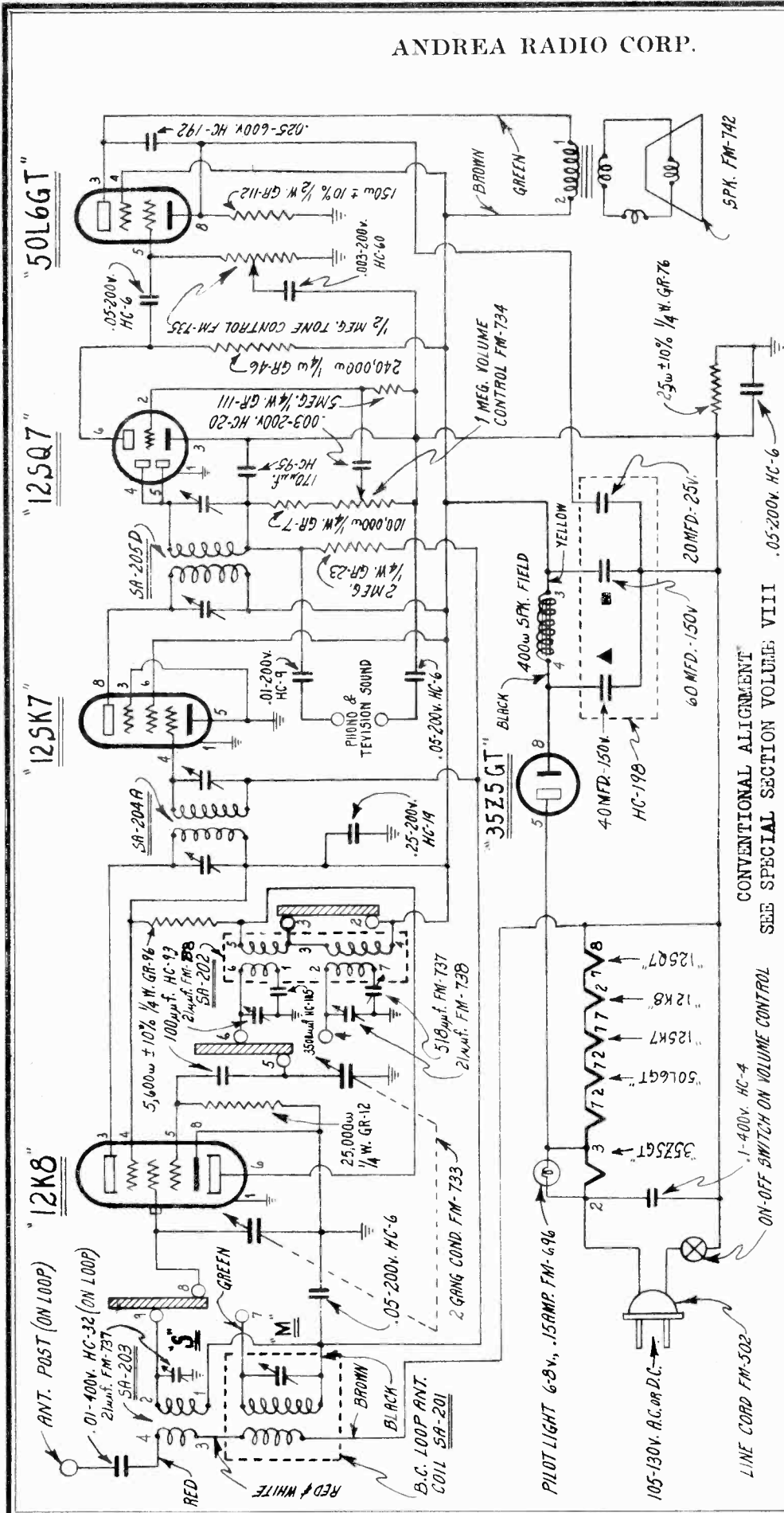
MAT: DR: J.R. DATE: 9-7-39 APP: H.P. REC: H.P.

PART NO.



ANDREA RADIO CORP.

MODEL 25G5  
Chassis UG5S  
Schematic, Coils  
Trimmers, Alignment



**NOTE:**  
BAND SELECTOR SWITCH SHOWN ON "S" BAND POSITION, TO THE EXTREME CLOCKWISE POSITION.

ANDREA RADIO CORP.  
WOODSIDE, N. Y.

WIRING DIAGRAM "UG55 REC."  
MODEL: 25G5

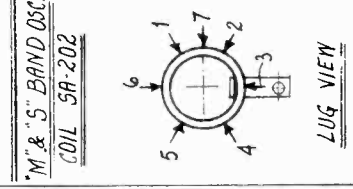
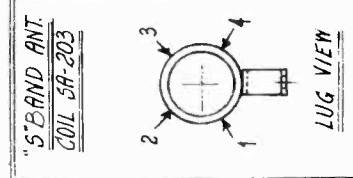
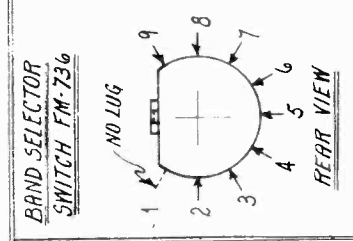
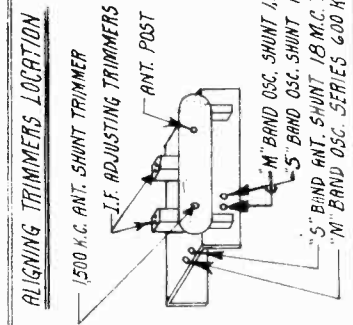
DR. J.R. DATE: 2-2-40 APP: [Signature]

**I.F. FREQUENCY = 455 K.C.**

"M" BAND: 600 K.C. OR 500 METERS  
1500 K.C. OR 200 METERS

"S" BAND: 18 M.C. OR 16.67 METERS

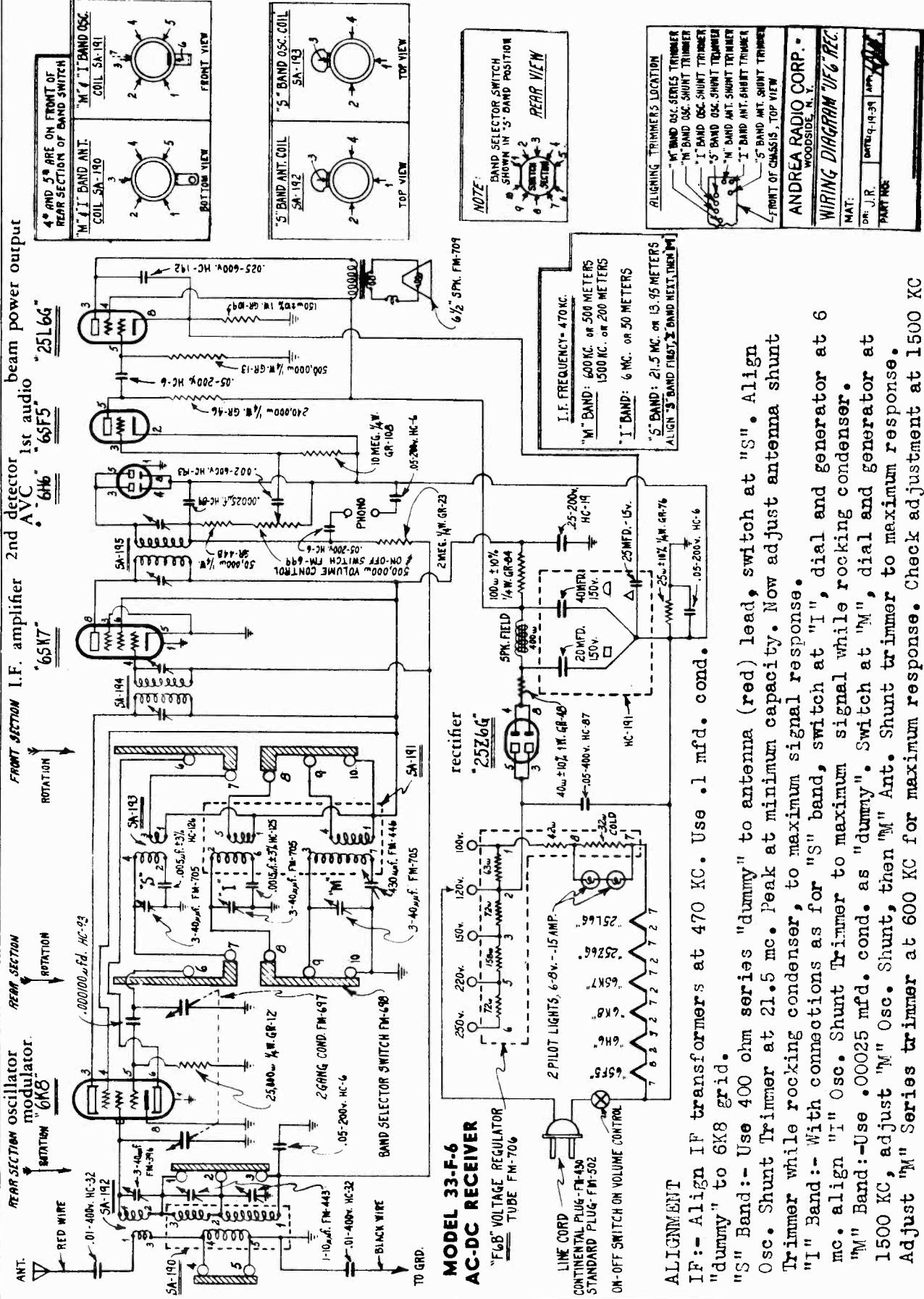
IMPORTANT: RECEIVER MUST BE ALIGNED WITH LOOP CORRECTLY ASSEMBLED ON CHASSIS



MODEL 33F6  
Chassis UF6

ANDREA RADIO CORP.

Schematic, Trimmers  
Alignment



**MODEL 33-F-6  
AC-DC RECEIVER**

"F6B" VOLTAGE REGULATOR  
TUBE FM-706

LINE CORD  
CONTINENTAL PLUG - FM-43W  
STANDARD PLUG - FM-502  
ON-OFF SWITCH ON VOLUME CONTROL

**ALIGNMENT**

IF:- Align IF transformers at 470 KC. Use .1 mfd. cond. "dummy" to 6K8 grid.

"S" Band:- Use 400 ohm series "dummy" to antenna (red) lead, switch at "S". Align Osc. Shunt Trimmer at 21.5 mc. Peak at minimum capacity, to maximum signal response.

Trimmer while rocking condenser, to maximum signal response.

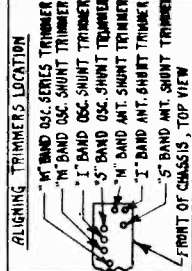
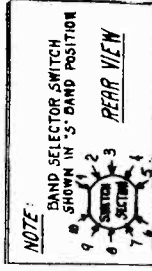
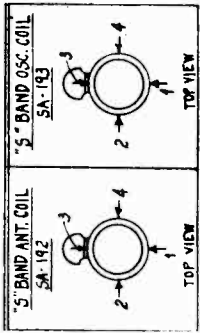
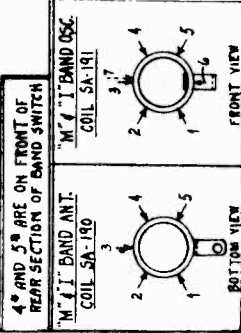
"I" Band:- With connections as for "S" band, switch at "I", dial and generator at 6 mc. align "I" Osc. Shunt Trimmer to maximum signal while rocking condenser.

"M" Band:- Use .00025 mfd. cond. as "dummy". Switch at "M", dial and generator at 1500 KC, adjust "M" Osc. Shunt, then "M" Ant. Shunt trimmer to maximum response.

Adjust "M" Series trimmer at 600 KC for maximum response. Check adjustment at 1500 KC

**PHONOGRAPH RECORDS:** Use a pick-up of 2,000 to 8,000 ohms. Lower resistance requires a matching transformer.

FRONT SECTION I.F. amplifier 2nd detector AVC 1st audio beam power output  
"6K8" "6SK7" "65F5" "25L6G"

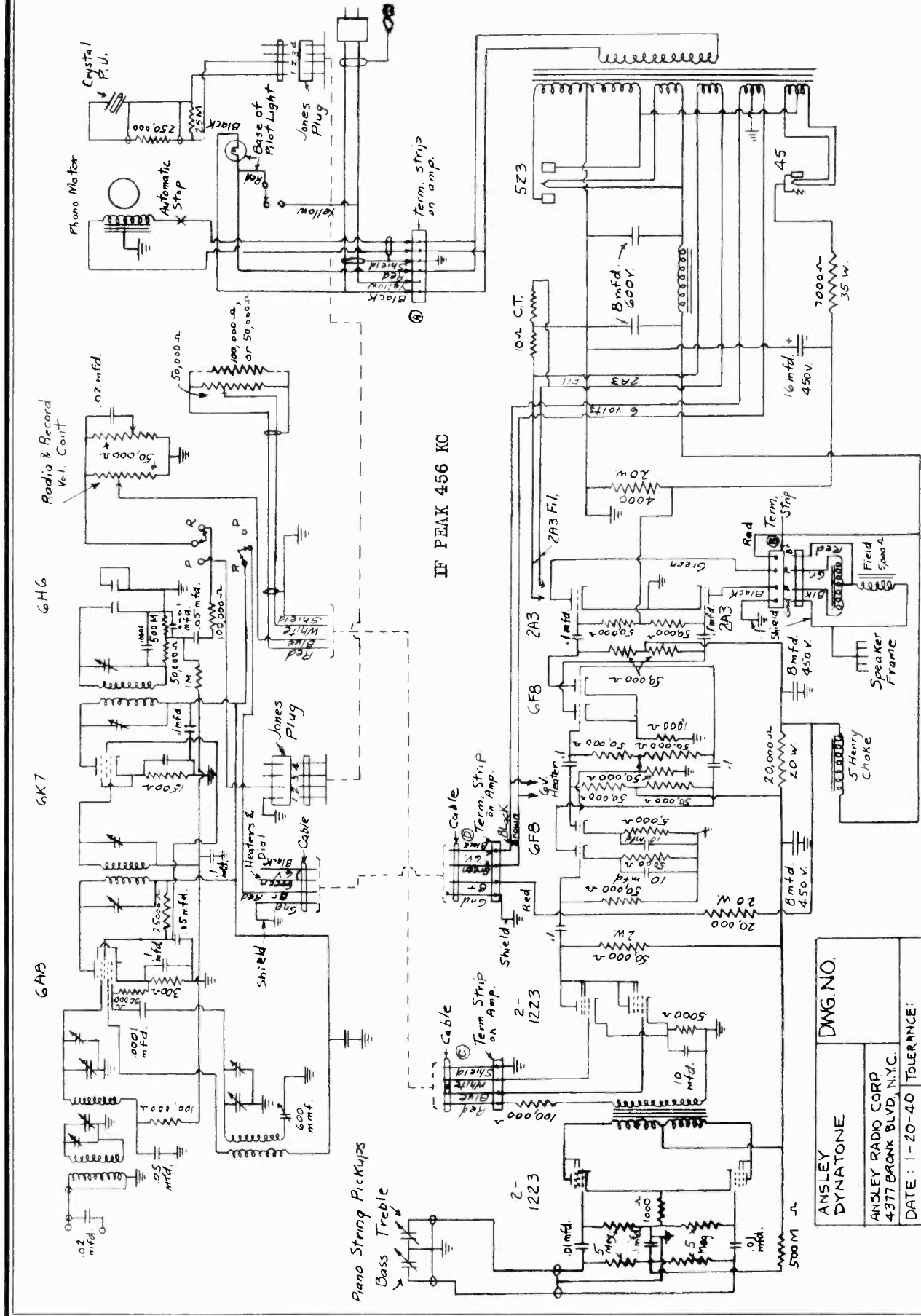


ANDREA RADIO CORP.  
WOODSIDE, N. Y.  
WIRING DIAGRAM UF6 REC.  
MAT: [Signature]  
DR: J.R. DATE: 9-19-31  
PART NO:



ANSLEY RADIO CORP.

MODEL Dynatone Schematic

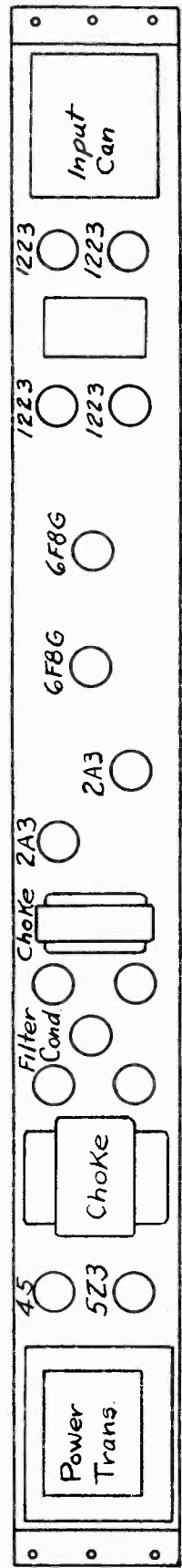
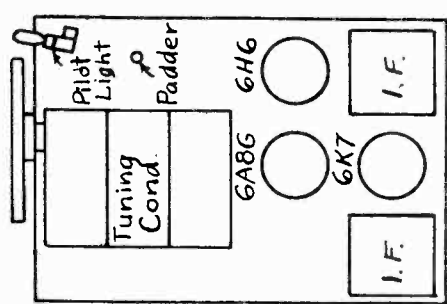


ANSLEY DYNATONE	DWG. NO.
ANSLEY RADIO CORP 4377 BRONX BLVD, N.Y.C.	
DATE: 1-20-40	TOLERANCE:
BY: A.M.S	APPROVED:
CHECKED: <i>AC</i>	REVISIONS:

MODEL Dynatone  
Socket, Notes

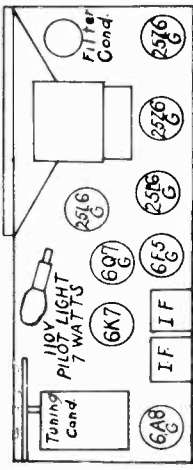
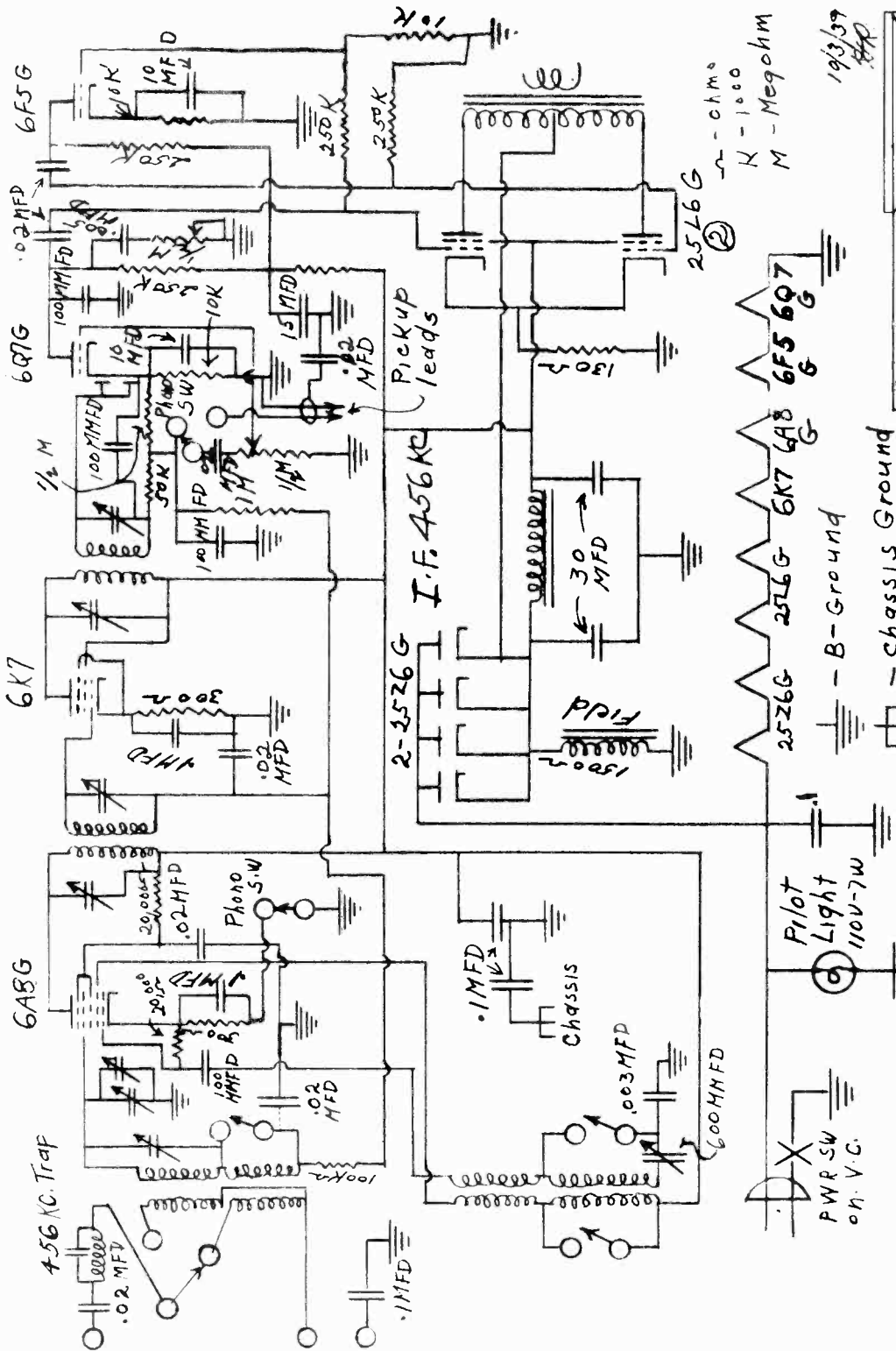
ANSLEY RADIO CORP.

**SERVICE: ELECTRICAL SYSTEM.** The most common cause of trouble is dirt falling bet. strings and pick-up heads causing noise. To elim. this shut off current, press down sustaining pedal, and bang on keys up and down: the keyboard. If not dislodged take off back panel and blow out obstruction with hand bellows. Another source of trouble might be tube with microphonic characteristics, which would show up as high-pitched whistle or singing noise in speaker. If any note is too loud or soft take off back panel, trace strings to lower end, loosen lock nut and turn screw back a bit to soften, or in a bit to louden the note, being careful that pick-up head never touches strings at their extreme of vibration. Tighten lock nut after this operation. Amplifier is located under top cover. For tuning strings remove the 2 large screws holding amplifier brackets to back frame. Amp. can then be tilted back and held in raised pos. by 2 hinged wooden strips designed to hold it up for tuning or service. **INSTALLATION (AC ONLY).** Ground spring clip. If pilot light does not indicate current flowing, a fuse in cable plug may have blown out. Use a five-ampere fuse - never more than 10-ampere. Connect lead-in wire from aerial to upper binding post marked "ANT: Gnd. conn. in cable usually suffices, but may be improved if cable clip is conn. to plate of wall socket, extra gnd. wire run from lower bind. post to clamp on radiator or pipe. **CONTROLS: RADIO DIAL.** Covers standard American bc band, 550 to 1,600 kc. **TUNING KNOB.** Operating pointer on radio dial. **TONE CONTROL KNOB.** For records and radio - variable. Turned to left, high freq. reduced, static and needle scratch reduced; to right for high fidelity. **VOL. CONTROL KNOB.** For records and radio, increasing to right. Should be turned to "off" pos. when neither is in use, or when switching from one to the other. **DYNAPHONE TURNABLE.** Motor speed regulator set for correct 78 r.p.m. with pointer in center of scale. **MAIN SWITCH & PILOT LIGHT.** Pilot light glows if power is on. **VOL. CONTROL FOR DYNATONE.** Turned to extreme left there is no amplification and harpsichord quality is produced; to right, piano quality; in median pos., to 6-ft. grand piano. Should be turned off when Dynatone or Radio is in use, unless to accompany a record at the keyboard. **SOFT PEDAL, at left. SUSTAINING PEDAL, at right.** Keyboard and action are standard in every way. Pedals are regular soft and sustaining or "loud", having usual functions in correct location of the lyre of the grand piano. There is nothing unusual about playing the ANSLEY DYNATONE. The pianist simply has the privilege of altering the general volume level and character of the tone by means of the controls provided; an advantage the earlier or acoustical piano cannot offer. Below the keyboard at the right, back of the small door, are the customary controls for Dynatone and Radio. In case of serious trouble with amplifier and power units, it may be necessary to disconnect and return to the factory. All connections to these parts are made with detachable plugs. **RADIO-DYNAPHONE SELECTOR KNOB.** Turn to the left to play records, to the right for radio.



ANSLEY RADIO CORP.

MODELS D-9-A, D-10-A  
Part 2.20  
Schematic, Socket



AERIAL. Three wires are brought out from the chassis. Green, Blue and Black. For the usual indoor aerial or single outside aerial, the Green and Black wires are connected together and the aerial connected to the Blue wire. Sometimes a ground connected to the Black and Green wires improves reception. If a special noise reducing aerial is used, the two leads from this aerial are connected to the Blue and Green wires and the Black wire is connected to a ground.

MODELS D-17A, D-18A, D-23A

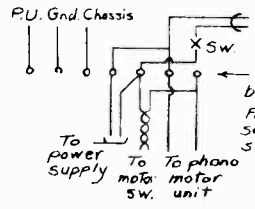
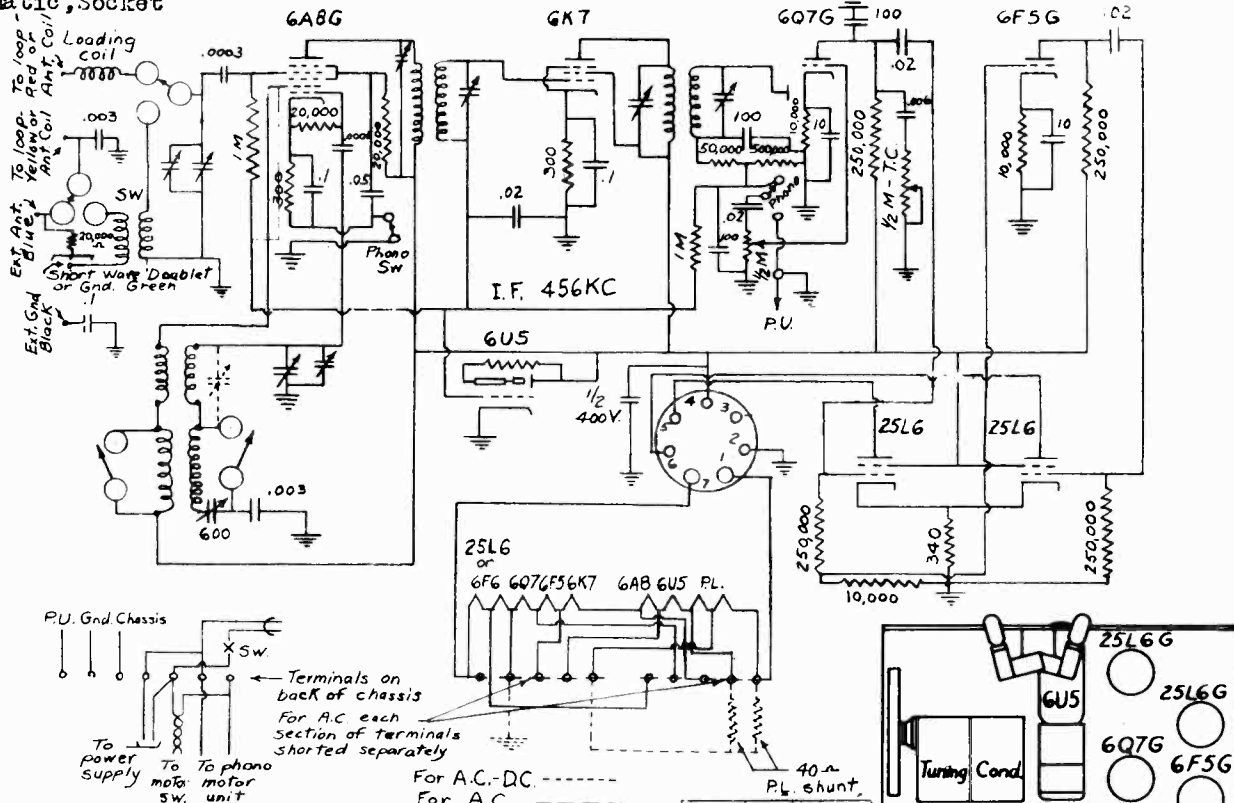
D29, D30

ANSLEY RADIO CORP.

Parts No. 1.10, 1.11

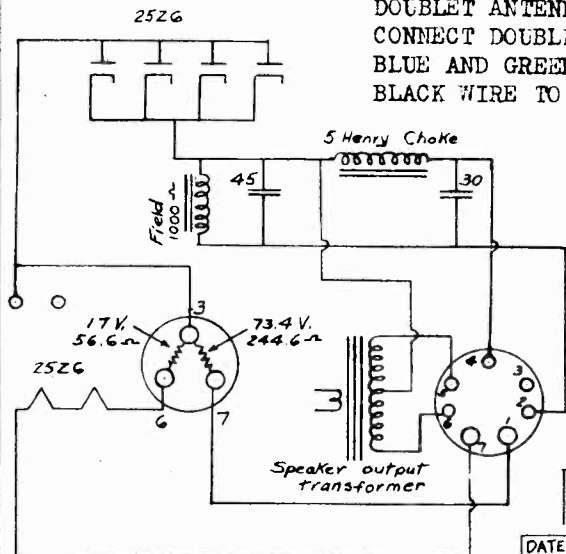
S.P.U. Schematics

Part 2.21 (Tuner)  
Schematic, Socket



**DOUBLET ANTENNA**  
CONNECT DOUBLET LEADS TO  
BLUE AND GREEN LEADS,  
BLACK WIRE TO GROUND.

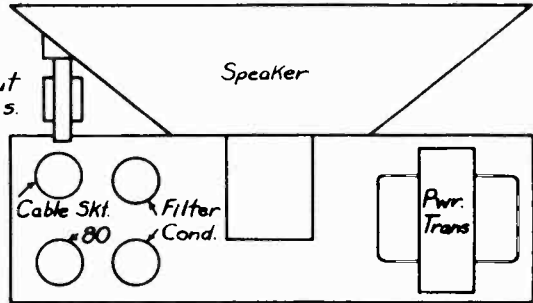
Part No. 2.21  
A.C.-DC or A.C  
Tuner  
Date: 11-10-39  
By: A.M.S.  
Checked:  
Used on Models - D-17-A,  
D-18-A, D-23-A, D-29,  
D-30.



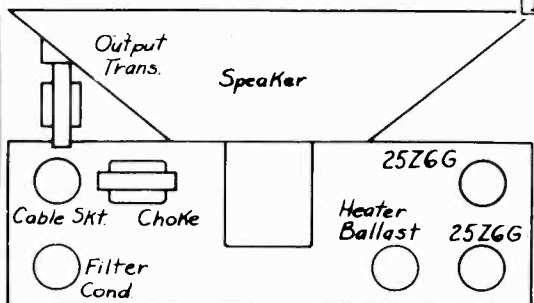
PART No. 1.11 A.C.-DC. POWER SUPPLY  
Used with 2.21 Tuner

POWER SUPPLIES  
USED WITH 2.21  
TUNER

DATE: 11-10-39 TOLERANCE:  
BY: A.M.S. APPROVED  
CHECKED: REVISIONS:  
USED ON MODELS - D-17-A,  
D-18-A, D-23-A, D-29,  
D-30.

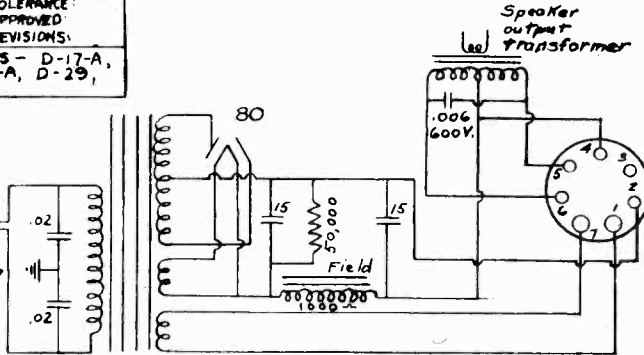


CHASSIS AC POWER SUPPLY PART 1.10



CHASSIS AC-DC POWER SUPPLY PART 1.11

To A.C.  
Terminals  
on receiver

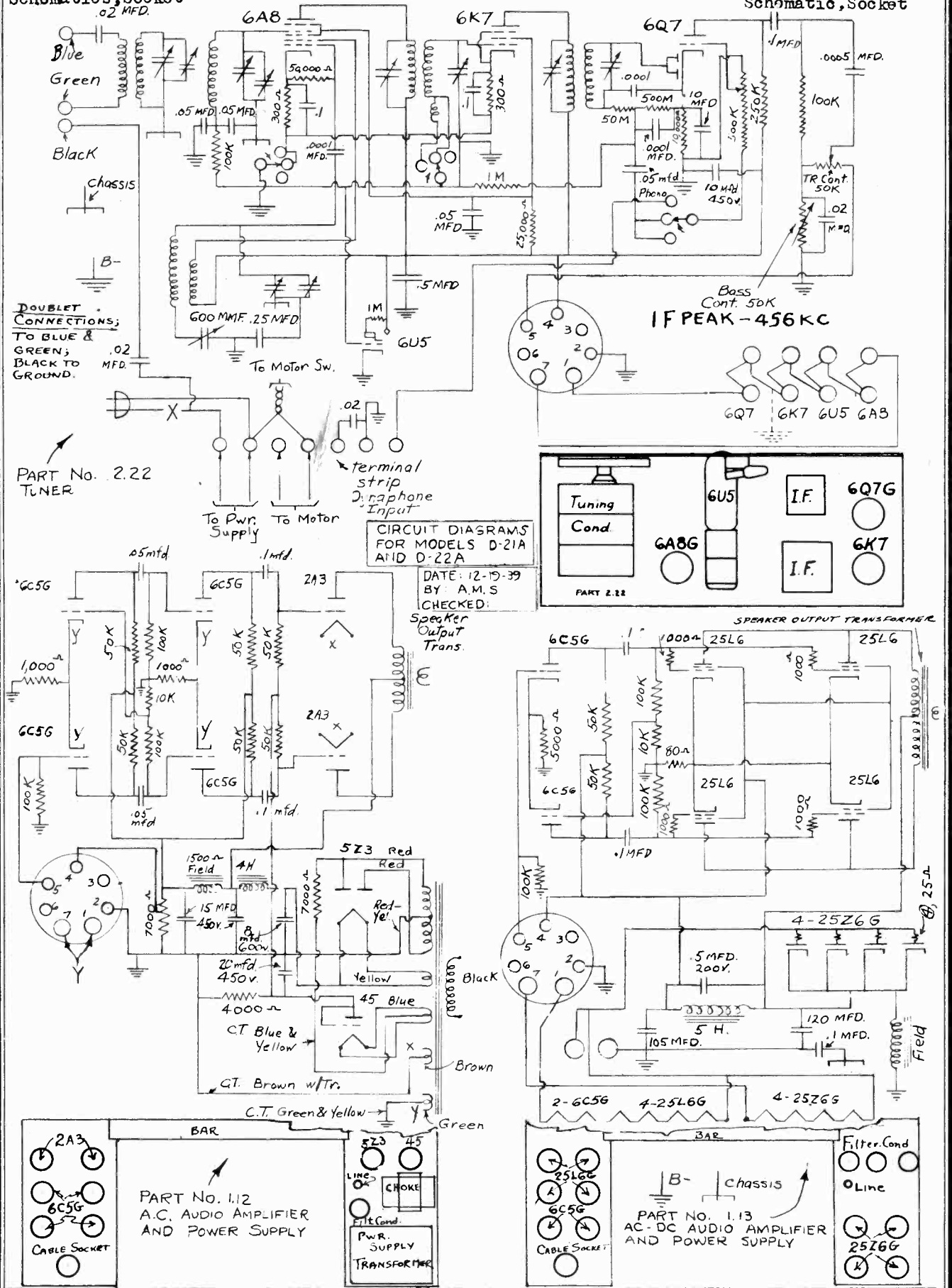


PART No. 1.10 A.C. POWER SUPPLY  
Used with 2.21 Tuner

Amplifier-S.P.U.  
Part Nos. 1.12, 1.13  
Schematics, Socket  
 $.02$  MFD.

ANSLEY RADIO CORP.

MODELS D-21A, D-22A  
Tuner Part No. 2.22  
Schematic, Socket

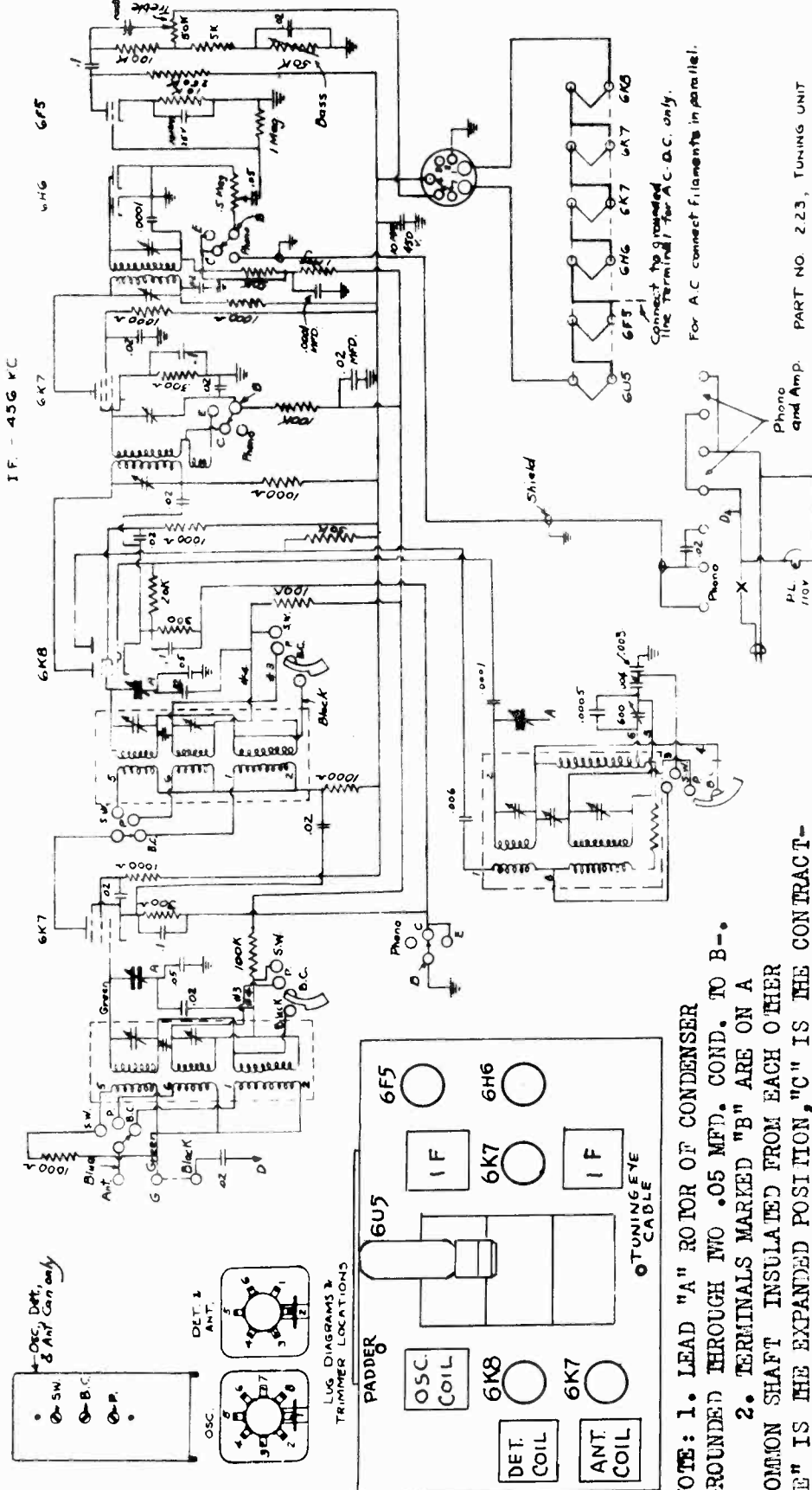


MODELS D-24A, D-25A

Part No. 2.23

Schematic, Socket, Notes

ANSLEY RADIO CORP.



- NOTE:**
1. LEAD "A" ROTOR OF CONDENSER GROUNDED THROUGH TWO .05 MFD. COND. TO B-.
  2. TERMINALS MARKED "B" ARE ON A COMMON SHAFT INSULATED FROM EACH OTHER "E" IS THE EXPANDED POSITION, "C" IS THE CONTRACTED POSITION OF THE IF, AND PHONO IS THE PHONO-GRAPH POSITION
  3. LEADS MARKED "D" ARE CONNECTED TOGETHER.

FOR AC AND AC-DC AMPLIFIERS AND POWER SUPPLIES (PARTS 1.12 AND 1.13) USED WITH THESE MODELS SEE INDEX.

**AERIAL AND GROUND CONNECTIONS.** If a regular indoor or outside aerial is used, connect it to the Blue wire and connect the Green and Black wires together to a ground connection --(a water pipe or radiator). If a special "doublet" aerial is used, connect the two leads from this to the Blue and Green wires and connect the Black wire to the ground.

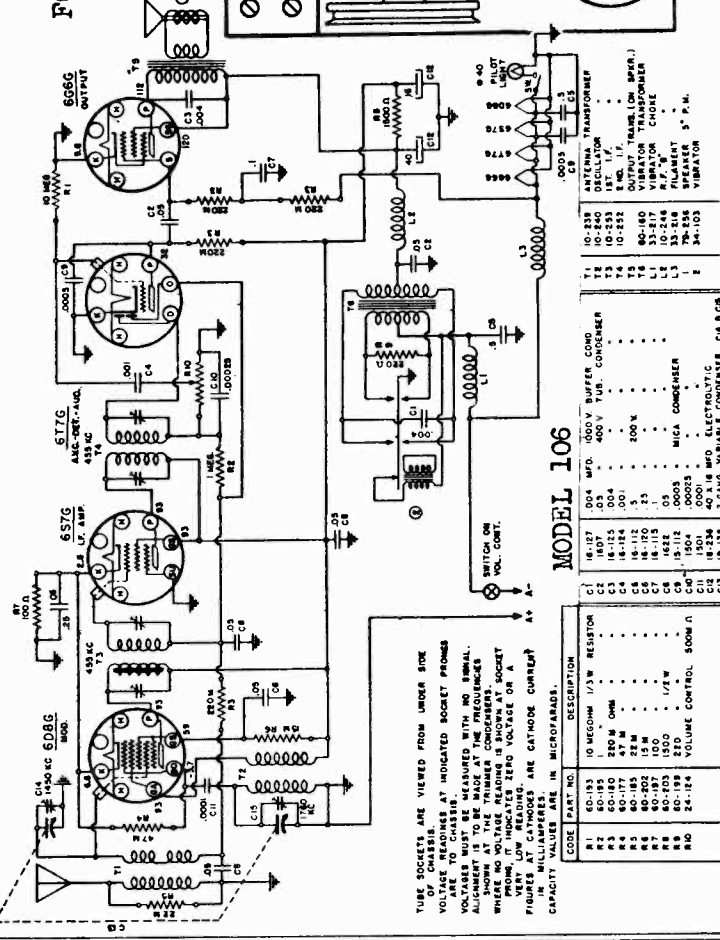
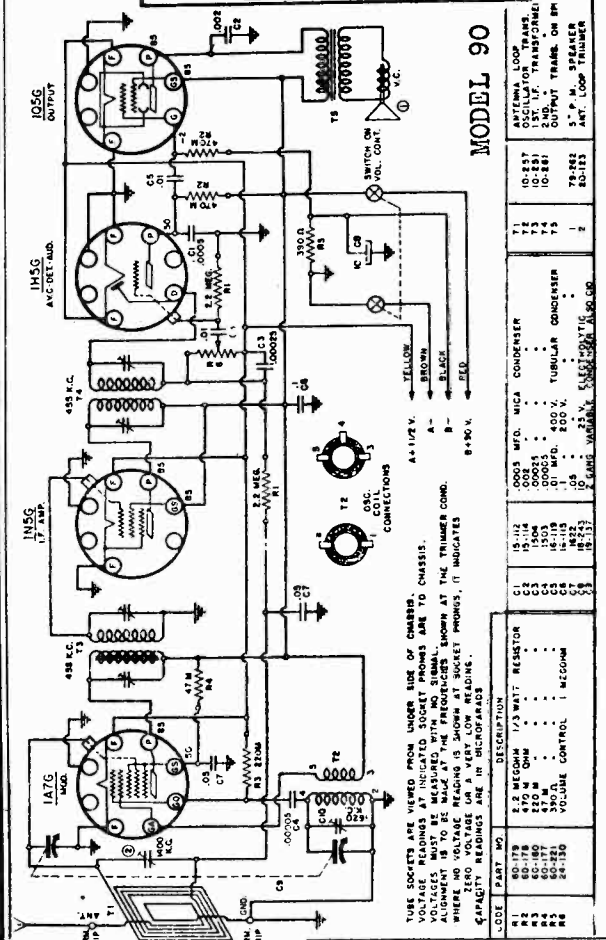
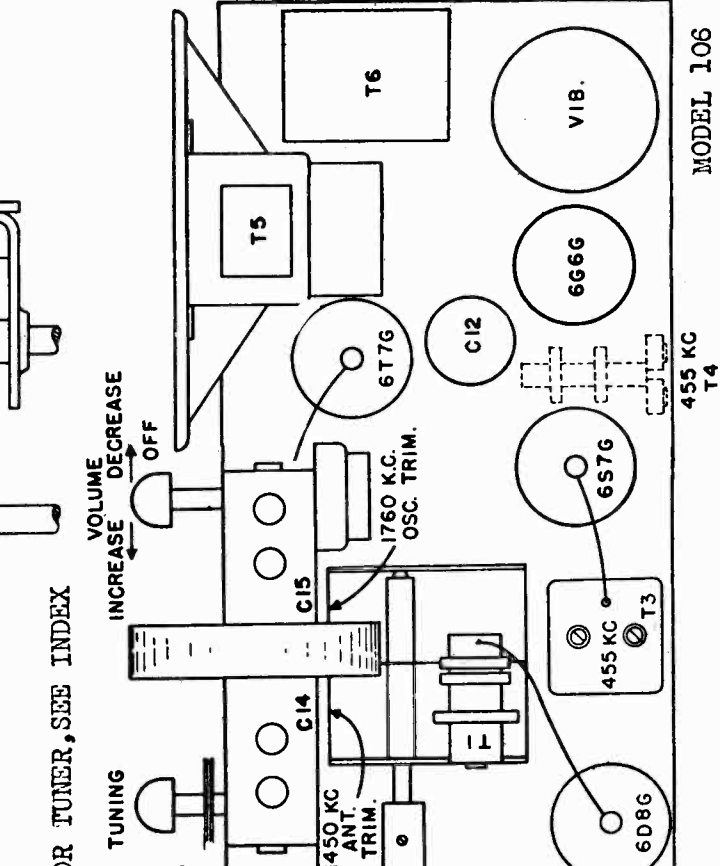
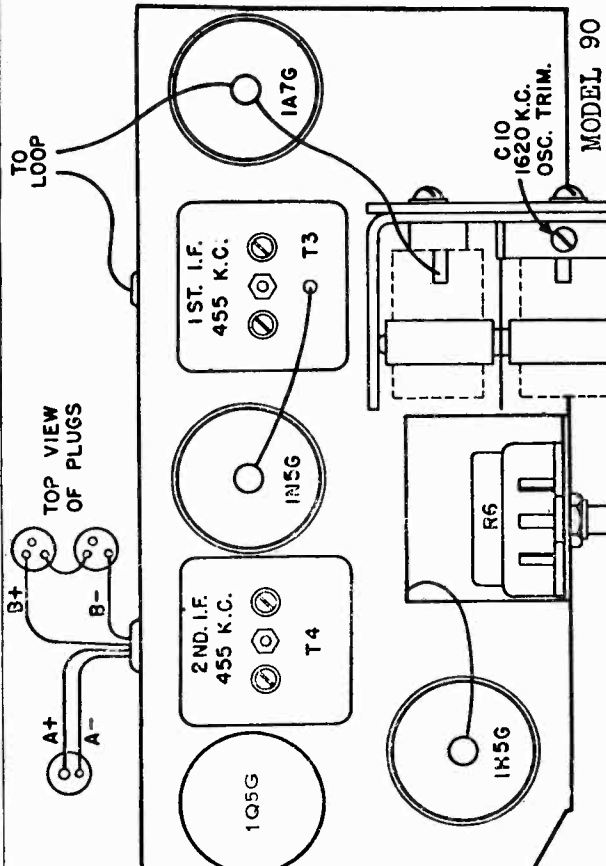
CIRCUIT DIAGRAM / FOR MODELS D-24A AND D-25A

DATE: 1-8-40  
BY: A.M.S.  
CHECKED

Schematics, Socket, Voltage Trimmers, Alignment

AUCRAT RADIO CO.

MODEL 90  
MODEL 106



MODEL 90

CODE	PART NO.	DESCRIPTION
R1	80-119	5.2 MEGOHM 1/4 WATT RESISTOR
R2	80-120	5.2 MEGOHM 1/4 WATT RESISTOR
R3	80-121	5.2 MEGOHM 1/4 WATT RESISTOR
R4	80-122	5.2 MEGOHM 1/4 WATT RESISTOR
R5	80-123	5.2 MEGOHM 1/4 WATT RESISTOR
R6	80-124	5.2 MEGOHM 1/4 WATT RESISTOR
C1	1S-112	0.005 MFD. MICA CONDENSER
C2	1S-113	0.005 MFD. MICA CONDENSER
C3	1S-114	0.005 MFD. MICA CONDENSER
C4	1S-115	0.005 MFD. MICA CONDENSER
C5	1S-116	0.005 MFD. MICA CONDENSER
C6	1S-117	0.005 MFD. MICA CONDENSER
C7	1S-118	0.005 MFD. MICA CONDENSER
C8	1S-119	0.005 MFD. MICA CONDENSER
C9	1S-120	0.005 MFD. MICA CONDENSER
C10	1S-121	0.005 MFD. MICA CONDENSER
C11	1S-122	0.005 MFD. MICA CONDENSER
C12	1S-123	0.005 MFD. MICA CONDENSER
C13	1S-124	0.005 MFD. MICA CONDENSER
C14	1S-125	0.005 MFD. MICA CONDENSER
C15	1S-126	0.005 MFD. MICA CONDENSER
L1	1S-127	0.005 MFD. MICA CONDENSER
L2	1S-128	0.005 MFD. MICA CONDENSER
L3	1S-129	0.005 MFD. MICA CONDENSER
L4	1S-130	0.005 MFD. MICA CONDENSER
L5	1S-131	0.005 MFD. MICA CONDENSER
L6	1S-132	0.005 MFD. MICA CONDENSER
L7	1S-133	0.005 MFD. MICA CONDENSER
L8	1S-134	0.005 MFD. MICA CONDENSER
L9	1S-135	0.005 MFD. MICA CONDENSER
L10	1S-136	0.005 MFD. MICA CONDENSER
L11	1S-137	0.005 MFD. MICA CONDENSER
L12	1S-138	0.005 MFD. MICA CONDENSER
L13	1S-139	0.005 MFD. MICA CONDENSER
L14	1S-140	0.005 MFD. MICA CONDENSER
L15	1S-141	0.005 MFD. MICA CONDENSER
L16	1S-142	0.005 MFD. MICA CONDENSER
L17	1S-143	0.005 MFD. MICA CONDENSER
L18	1S-144	0.005 MFD. MICA CONDENSER
L19	1S-145	0.005 MFD. MICA CONDENSER
L20	1S-146	0.005 MFD. MICA CONDENSER
L21	1S-147	0.005 MFD. MICA CONDENSER
L22	1S-148	0.005 MFD. MICA CONDENSER
L23	1S-149	0.005 MFD. MICA CONDENSER
L24	1S-150	0.005 MFD. MICA CONDENSER
L25	1S-151	0.005 MFD. MICA CONDENSER
L26	1S-152	0.005 MFD. MICA CONDENSER
L27	1S-153	0.005 MFD. MICA CONDENSER
L28	1S-154	0.005 MFD. MICA CONDENSER
L29	1S-155	0.005 MFD. MICA CONDENSER
L30	1S-156	0.005 MFD. MICA CONDENSER
L31	1S-157	0.005 MFD. MICA CONDENSER
L32	1S-158	0.005 MFD. MICA CONDENSER
L33	1S-159	0.005 MFD. MICA CONDENSER
L34	1S-160	0.005 MFD. MICA CONDENSER
L35	1S-161	0.005 MFD. MICA CONDENSER
L36	1S-162	0.005 MFD. MICA CONDENSER
L37	1S-163	0.005 MFD. MICA CONDENSER
L38	1S-164	0.005 MFD. MICA CONDENSER
L39	1S-165	0.005 MFD. MICA CONDENSER
L40	1S-166	0.005 MFD. MICA CONDENSER
L41	1S-167	0.005 MFD. MICA CONDENSER
L42	1S-168	0.005 MFD. MICA CONDENSER
L43	1S-169	0.005 MFD. MICA CONDENSER
L44	1S-170	0.005 MFD. MICA CONDENSER
L45	1S-171	0.005 MFD. MICA CONDENSER
L46	1S-172	0.005 MFD. MICA CONDENSER
L47	1S-173	0.005 MFD. MICA CONDENSER
L48	1S-174	0.005 MFD. MICA CONDENSER
L49	1S-175	0.005 MFD. MICA CONDENSER
L50	1S-176	0.005 MFD. MICA CONDENSER
L51	1S-177	0.005 MFD. MICA CONDENSER
L52	1S-178	0.005 MFD. MICA CONDENSER
L53	1S-179	0.005 MFD. MICA CONDENSER
L54	1S-180	0.005 MFD. MICA CONDENSER
L55	1S-181	0.005 MFD. MICA CONDENSER
L56	1S-182	0.005 MFD. MICA CONDENSER
L57	1S-183	0.005 MFD. MICA CONDENSER
L58	1S-184	0.005 MFD. MICA CONDENSER
L59	1S-185	0.005 MFD. MICA CONDENSER
L60	1S-186	0.005 MFD. MICA CONDENSER
L61	1S-187	0.005 MFD. MICA CONDENSER
L62	1S-188	0.005 MFD. MICA CONDENSER
L63	1S-189	0.005 MFD. MICA CONDENSER
L64	1S-190	0.005 MFD. MICA CONDENSER
L65	1S-191	0.005 MFD. MICA CONDENSER
L66	1S-192	0.005 MFD. MICA CONDENSER
L67	1S-193	0.005 MFD. MICA CONDENSER
L68	1S-194	0.005 MFD. MICA CONDENSER
L69	1S-195	0.005 MFD. MICA CONDENSER
L70	1S-196	0.005 MFD. MICA CONDENSER
L71	1S-197	0.005 MFD. MICA CONDENSER
L72	1S-198	0.005 MFD. MICA CONDENSER
L73	1S-199	0.005 MFD. MICA CONDENSER
L74	1S-200	0.005 MFD. MICA CONDENSER

FOR TUNER, SEE INDEX

MODEL 106  
Tuner Data  
MODEL 148  
MODEL 148-2

AUTOCRAT RADIO CO.

MODEL 168  
Tuner, Alignment, Socket, Trimmers  
MODEL 213 Phono-Oscillator  
Schematic

SETTING PUSH BUTTONS MODELS 106, 148, 148-2, 168, 359

MODEL 359 Tuner Data

1. By means of the Station Selector Knob tune in WITH THE RIGHT HAND AS ACCURATELY AS POSSIBLE the station having the lowest frequency—that is, your selected station which is tuned in nearest the right-hand side of the dial.
2. After the station has been tuned in accurately with the right hand, continue to hold it in its exact position firmly, and with the left hand loosen the Push-Button to be set up for that station by unscrewing the Push-Button about one turn to the left (counter-clockwise).
3. Continuing to hold the Station Selector Knob in its exact position, PUSH THE PUSH-BUTTON IN ALL THE WAY with the left hand.
4. After the Push-Button has been depressed all the way, tighten it gently toward the right (clockwise). Release Push-Button slowly and when in normal position grip button and tighten firmly.

The Push-Button tuning system is now correctly set up for your first selected station of lowest frequency and the Call Letter Tab for this station should be at the extreme right of the Call Letter Holder.

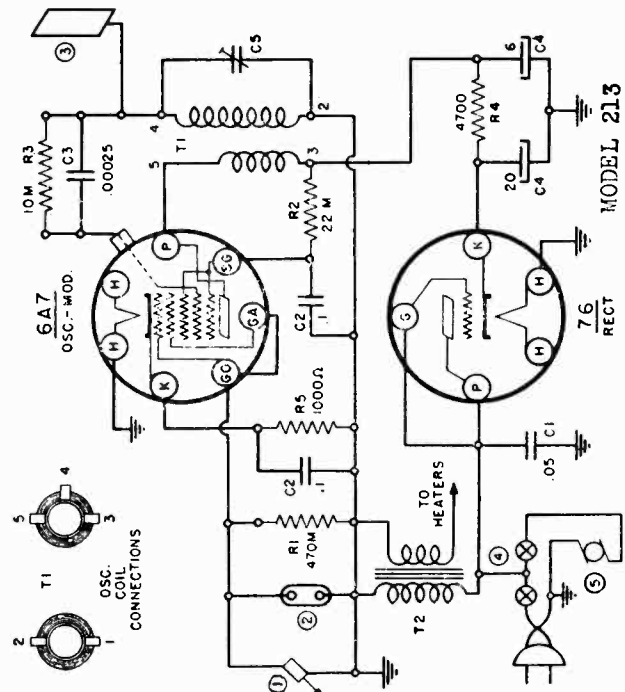
ALIGNMENT PROCEDURE MODELS 148, 148-2, 168.

All alignments must be made with the volume control turned full on and with the signal input from the generator reduced to as low a value as possible while still giving a sufficient output to be easily read on the output meter.

Connect the output meter, through a .5 M.F. condenser and a resistance of such a value as to make the total meter resistance approximately 7000 ohms, to plate of output tube and B+, or a low voltage A. C. meter may be used connected across speaker voice coil. The output meter remains connected during the entire alignment procedure.

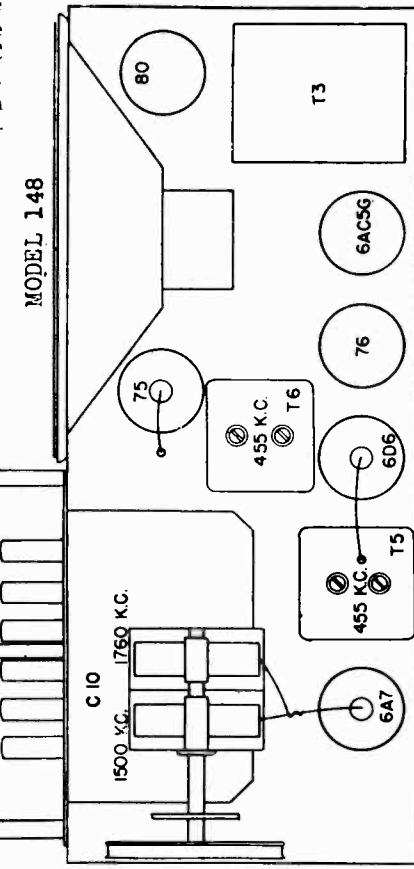
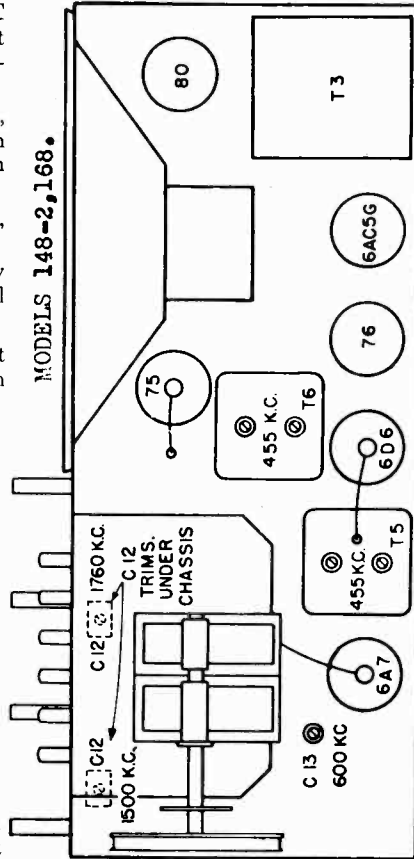
Connect the signal generator to the grid cap of the 6A7 tube through a .1 M.F. condenser. Connect the ground of the generator to the ground lead of the receiver. Set the dial to about 1000 K.C., feed in a 455 K.C. signal. Adjust first and second I.F. trimmers for maximum output. Refer to chassis lay-out for location of trimmers.

Turn the dial to the extreme high frequency end. Feed a 1760 KC signal to the receiver antenna lead through a .00025 MF mica condenser. Adjust the 1760 KC oscillator trimmer until maximum output is shown. Set the generator to 1500 KC and tune in this signal on the receiver. Then adjust the 1500 KC antenna trimmer to the maximum output. Then impress a 600 KC signal into the receiver antenna lead and tune in this signal on the receiver. Adjust oscillator padding condenser to the maximum output. Follow through with this procedure several times in order to obtain the best alignment adjustment possible. This completes the alignment.



Two Tube Phono-Oscillator.

CODE	PART NO	DESCRIPTION	CODE	PART NO.	DESCRIPTION
R1	60-178	470Ω OHM	C1	16-07	.05 MFD. 400V. TUB. COND.
R2	60-185	22 M	C2	16-115	.00025 MFD. MICA
R3	60-215	10 M	C3	15-04	20 X 6 MFD. 150V. ELECT.
R4	60-189	4700	C4	18-241	3 PLATE TRIMMER
R5	60-217	1000	C5	20-119	
T1	83-130	PICKUP MICROPHONE TERMINAL	T2	10-240	OSCILLATOR TRANS.
1	12-1	MICROPHONE PLATE SWITCH (DUAL)	T3	80-170	FILAMENT TRANS.
2	69-129		5	59-1	PHONOGRAPH MOTOR





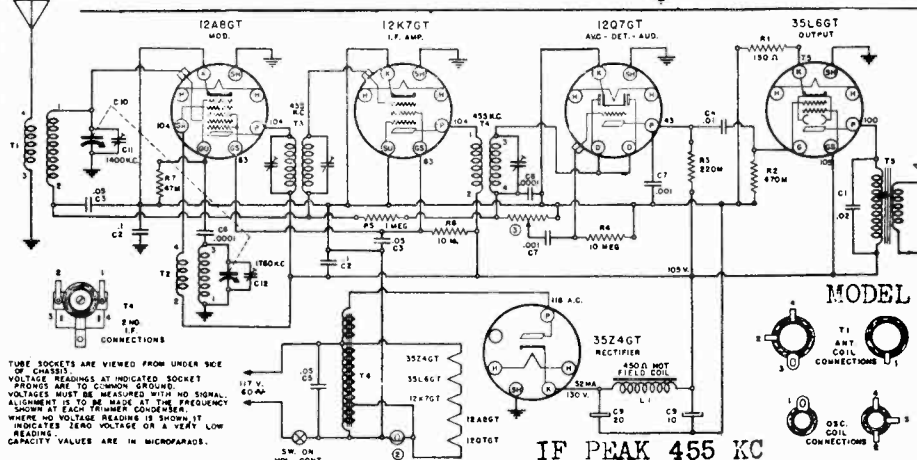
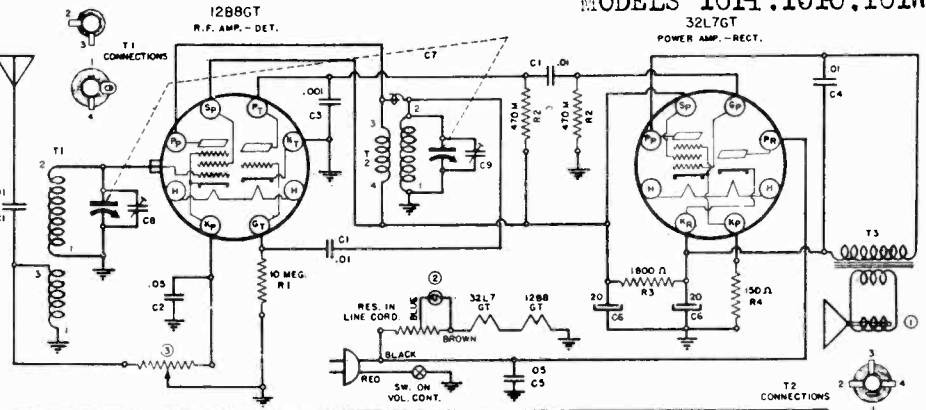
Schematics, Voltage

AUTOCRAT RADIO CO.

MODEL 91  
MODEL 95  
MODEL 98  
MODELS 101H, 101O, 101W

MODEL 91

CODE	PART NO.	DESCRIPTION
R1	60-193	10 MEGOHM 1/3 W. RESISTOR
R2	60-178	470 M OHMS
R3	60-229	180Ω
R4	60-184	150Ω
<b>CODE PART NO. DESCRIPTION</b>		
C1	16-121	01 MFD. 200V. TUBULAR COND.
C2	1622	05
C3	16-124	01 - 400V.
C4	16-119	01 -
C5	1607	05 -
C6	18-249	20 X 20 MFD. 150V. ELECTROLYTIC
C7	19-147	2 GANG VAR. COND. (ALSO C8 & C9)
<b>CODE PART NO. DESCRIPTION 9-22</b>		
T1	10-288	ANTENNA COIL
T2	10-289	R.F. COIL
T3	80-176	OUTPUT TRANSFORMER
1	79-270	P.M. SPEAKER
2	86-4	#47 PILOT LIGHT 150 MA.
3	24-136	VOLUME CONTROL WITH SWITCH



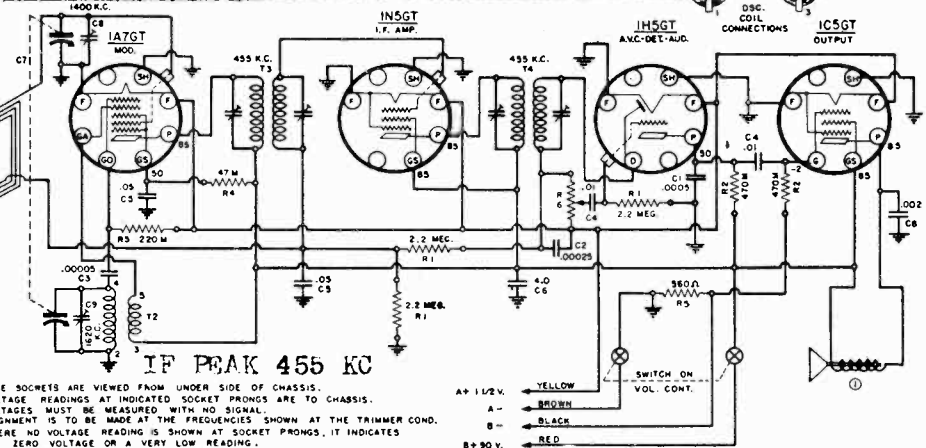
CODE	PART NO.	DESCRIPTION
C1	16-123	.02 MFD. 200V. TUBULAR CONDENSER
C2	16-119	.05
C3	1622	.05
C4	16-121	.01
C5	1607	.05 - 400V.
C6	16-124	.001 - 200V.
C7	1901	.0001 MICA CONDENSER
C8	18-249	20 X 10 MFD. ELECTROLYTIC COND. 157V.
C9	18-241	2 GANG VARIABLE CONDENSER, ALSO C10 & C12
C10	19-144	
<b>CODE PART NO. DESCRIPTION 9-55</b>		
T1	10-270	ANTENNA TRANSFORMER
T2	10-272	OSCILLATOR
T3	10-289	1ST. I.F.
T4	10-271	2ND. I.F.
T5	80-172	OUTPUT TRANS. (ON SPKR.)
T6	80-173	POWER TRANSFORMER
1	79-288	5" DYNAMIC SPEAKER
2	83-4	PILOT LIGHT #47
3	24-132	VOLUME CONTROL & SWITCH

TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS. VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO COMMON GROUND. VOLTAGES MUST BE MEASURED WITH NO SIGNAL. ALIGNMENT IS TO BE MADE AT THE FREQUENCY SHOWN AT EACH TRIMMER CONDENSER. WHERE NO VOLTAGE READING IS SHOWN, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING. CAPACITY VALUES ARE IN MICROFARADS.

IF PEAK 455 KC

MODEL 98

CODE	PART NO.	DESCRIPTION
C1	15-112	.0005 MFD. MICA CONDENSER
C2	1504	.00025
C3	1503	.00005
C4	16-121	01 MFD. 200 V. TUBULAR CONDENSER
C5	1622	05
C6	18-250	4.0 MFD. 150V.
C7	19-149	2 GANG VARIABLE COND. ALSO C8 & C9
C8	1622	.002 MFD. 400 V. TUBULAR CONDENSER
<b>CODE PART NO. DESCRIPTION 0-40</b>		
R1	60-179	2-2 MEGOHM 1/3 WATT RESISTOR
R2	60-178	470 M OHM
R3	60-180	47 M
R4	60-177	47 M
R5	60-201	1 MEG OHM
R6	24-138	1 MEGOHM VOLUME CONTROL
<b>CODE PART NO. DESCRIPTION 0-40</b>		
T1	82-2	ANTENNA LOOP
T2	10-284	OSCILLATOR COIL
T3	10-293	1 ST. I.F. TRANSFORMER
T4	10-281	2 ND. "
1	79-272	5" SPEAKER

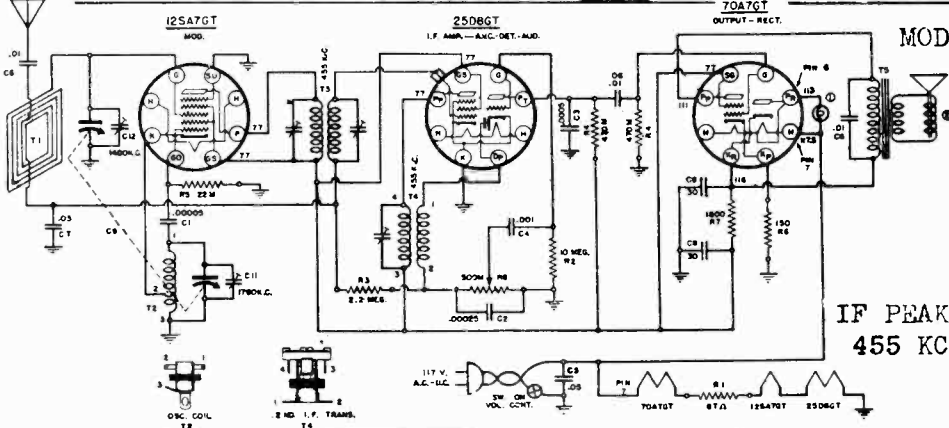


TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS. VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO CHASSIS. VOLTAGES MUST BE MEASURED WITH NO SIGNAL. ALIGNMENT IS TO BE MADE AT THE FREQUENCIES SHOWN AT THE TRIMMER COND. WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PRONGS, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING. CAPACITY READINGS ARE IN MICROFARADS.

IF PEAK 455 KC

A+ 1 1/2 V.  
A -  
B -  
C -  
B+ 90 V.

MODELS 101H, 101O, 101W.



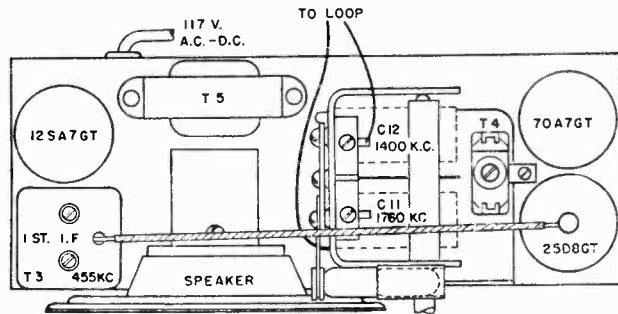
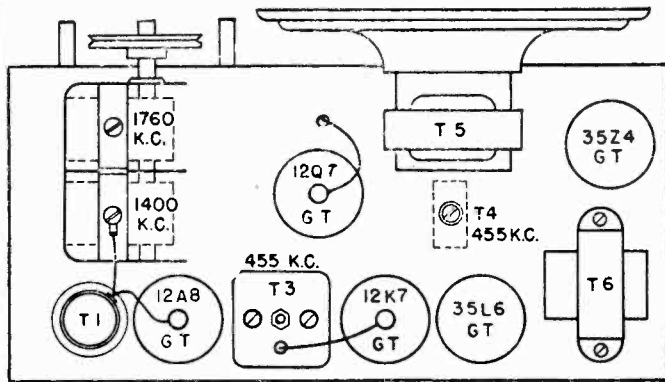
CODE	PART NO.	DESCRIPTION
C1	1503	.0005 MFD. MICA CONDENSER
C2	1504	.00025
C3	15-119	.00005
C4	16-121	01 MFD. 200 V. TUBULAR CONDENSER
C5	1622	05
C6	16-121	01 - 200V.
C7	1622	05
C8	18-251	30 X 30 MFD. 150V. ELECTROLYTIC COND.
C9	19-150	2 GANG VARIABLE COND. ALSO C10 & C11
<b>CODE PART NO. DESCRIPTION 0-30</b>		
T1	82-4	ANTENNA LOOP
T2	10-288	OSCILLATOR COIL
T3	10-293	1ST. I.F. TRANSFORMER
T4	80-178	2ND. I.F. TRANSFORMER
1	83-4	PILOT LIGHT #47
2	79-270	5" SPEAKER

IF PEAK 455 KC

AUTOCRAT RADIO CO.

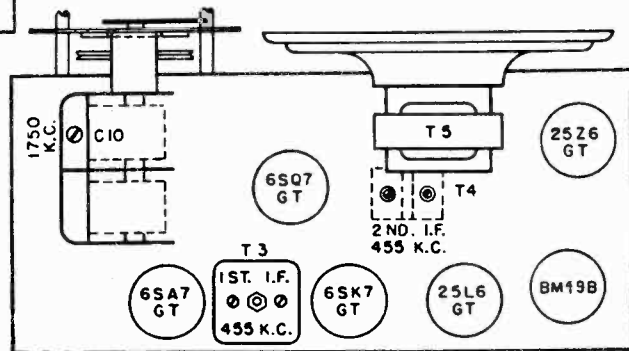
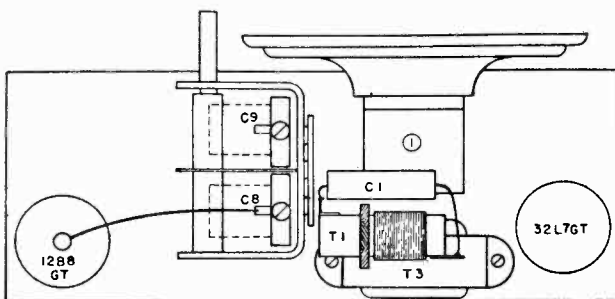
MODEL 91  
 MODEL 95  
 MODEL 98  
 MODELS 101I, 1010, 101W  
 MODELS 102I, 1020, 102W

MODELS 103I, 1030, 103W  
 MODELS 107I, 107W  
 MODELS 109, 110  
 Socket, Trimmers, Alignment



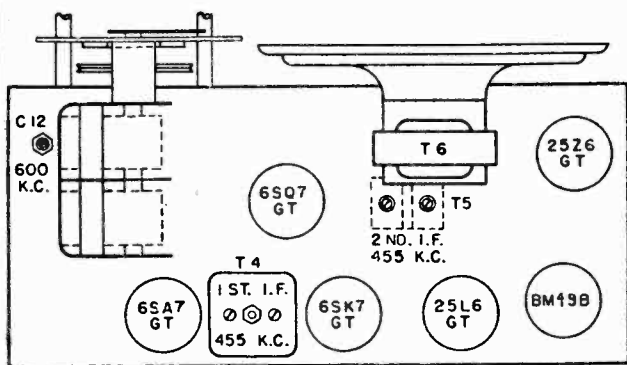
MODELS 101I, 1010, 101W.

MODEL 95

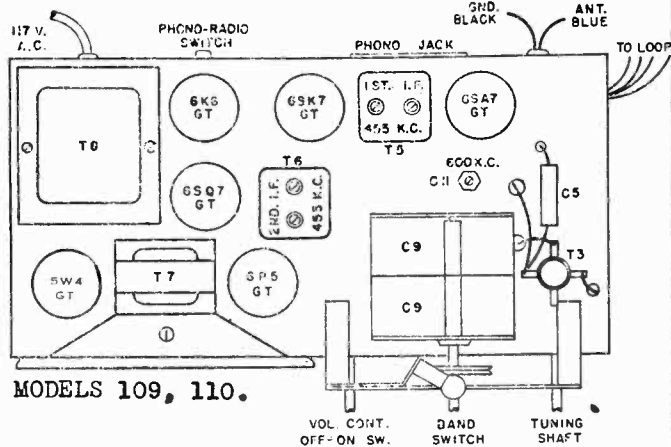


MODELS 103I, 1030, 103W.

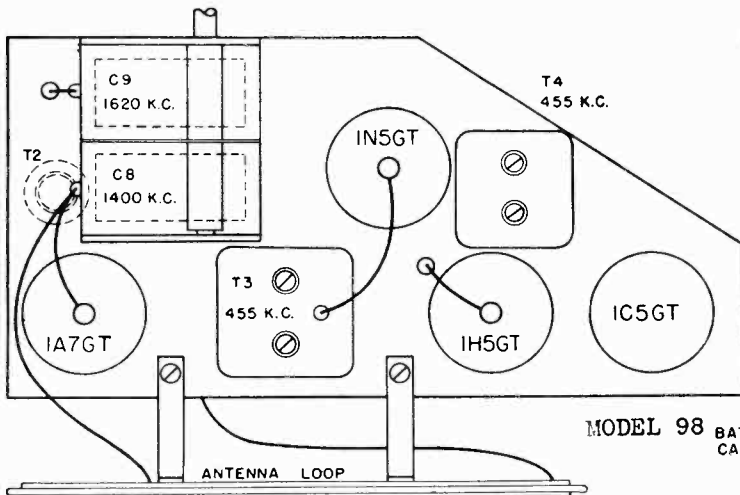
MODEL 91



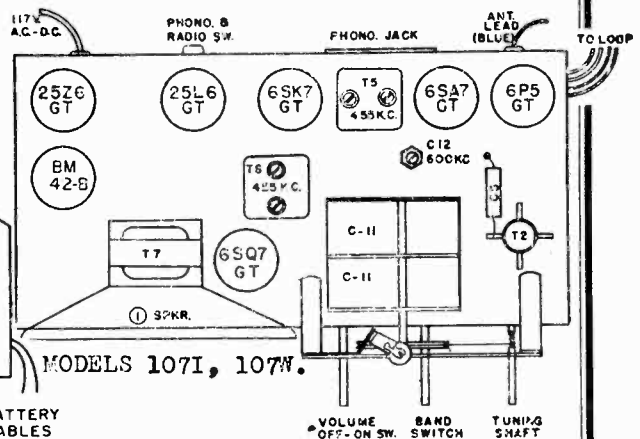
MODELS 102I, 1020, 102W



MODELS 109, 110.



MODEL 98 BATTERY CABLES



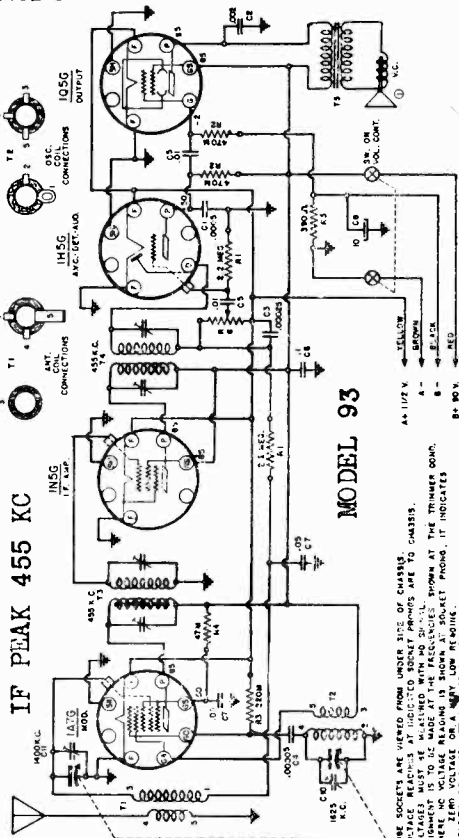
MODELS 107I, 107W.



AUTOCRAT RADIO CO.

Schematics, Socket Trimmers, Alignment

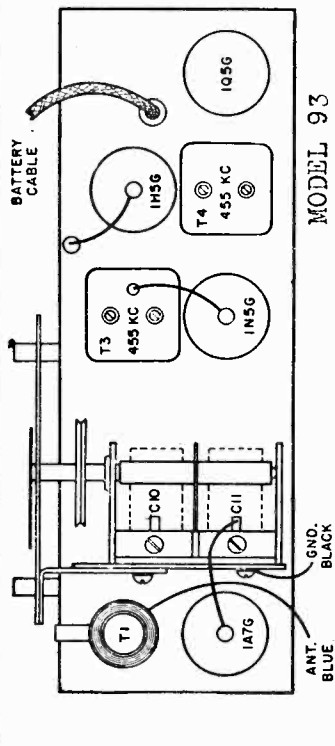
MODEL 93  
MODEL 94  
MODEL 96



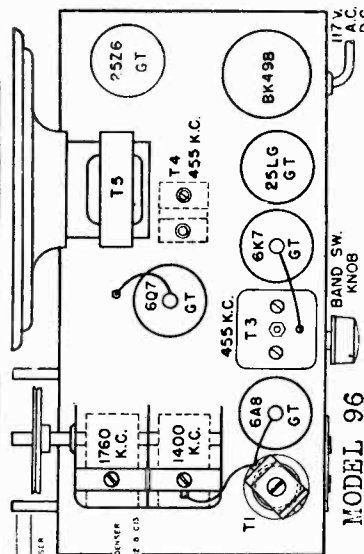
MODEL 93

TUBE SOCKET ARE VIEWED FROM UNDER SIDE OF CHASSIS. VOLTAGE READINGS AT INDICATED SOCKET POINTS ARE TO CHASSIS. ALIGNMENT IS TO BE MADE AT THE POINTS SHOWN AT THE TRIMMER COND. WHERE NO VOLTAGE READING IS SHOWN AT SOCKET POINT, IT INDICATES CAPACITY READING ARE IN MICROFARAD.

CODE	PART NO.	DESCRIPTION	CODE	PART NO.	DESCRIPTION
R1	60-128	2.2 MEG OHM 1/2 WATT RESISTOR	C1	15-112	1000 MFD 50V TUBULAR CONDENSER
R2	60-140	250 OHM 1/2 WATT RESISTOR	C2	15-112	1000 MFD 50V TUBULAR CONDENSER
R3	60-180	50 OHM 1/2 WATT RESISTOR	C3	15-104	500 MFD 50V TUBULAR CONDENSER
R4	60-195	10 OHM 1/2 WATT RESISTOR	C4	15-104	500 MFD 50V TUBULAR CONDENSER
R5	60-212	50 OHM 1/2 WATT RESISTOR	C5	15-112	1000 MFD 50V TUBULAR CONDENSER
R6	60-242	30 OHM 1/2 WATT RESISTOR	C6	15-112	1000 MFD 50V TUBULAR CONDENSER
R7	60-252	25 OHM 1/2 WATT RESISTOR	C7	15-112	1000 MFD 50V TUBULAR CONDENSER
R8	60-252	25 OHM 1/2 WATT RESISTOR	C8	15-112	1000 MFD 50V TUBULAR CONDENSER
R9	60-252	25 OHM 1/2 WATT RESISTOR	C9	15-112	1000 MFD 50V TUBULAR CONDENSER
R10	60-252	25 OHM 1/2 WATT RESISTOR	C10	15-112	1000 MFD 50V TUBULAR CONDENSER
C11	15-112	1000 MFD 50V TUBULAR CONDENSER	T1	78-251	5" P.M. SPEAKER
C12	15-112	1000 MFD 50V TUBULAR CONDENSER	T2	78-251	5" P.M. SPEAKER

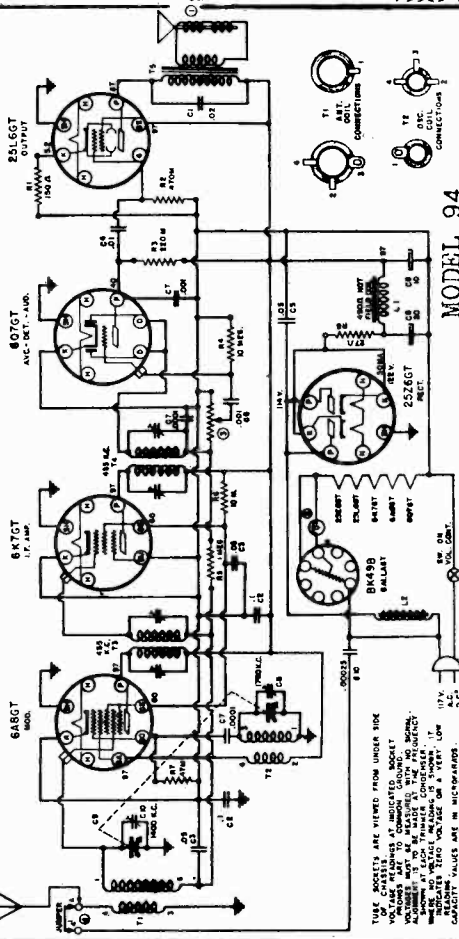


MODEL 93



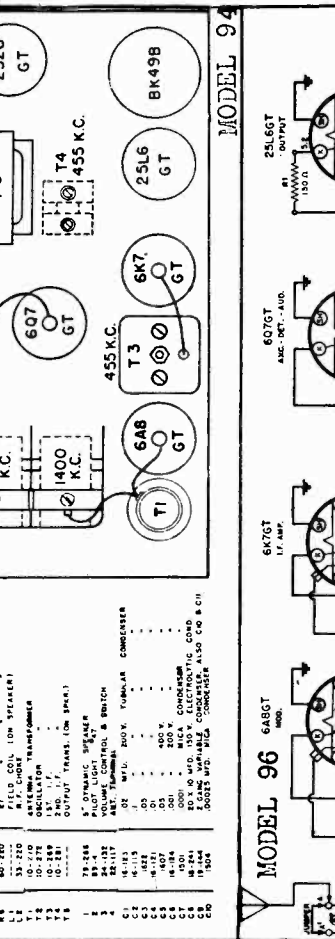
MODEL 96

CODE	PART NO.	DESCRIPTION
C1	15-112	1000 MFD 50V TUBULAR CONDENSER
C2	15-112	1000 MFD 50V TUBULAR CONDENSER
C3	15-112	1000 MFD 50V TUBULAR CONDENSER
C4	15-112	1000 MFD 50V TUBULAR CONDENSER
C5	15-112	1000 MFD 50V TUBULAR CONDENSER
C6	15-112	1000 MFD 50V TUBULAR CONDENSER
C7	15-112	1000 MFD 50V TUBULAR CONDENSER
C8	15-112	1000 MFD 50V TUBULAR CONDENSER
C9	15-112	1000 MFD 50V TUBULAR CONDENSER
C10	15-112	1000 MFD 50V TUBULAR CONDENSER
C11	15-112	1000 MFD 50V TUBULAR CONDENSER
C12	15-112	1000 MFD 50V TUBULAR CONDENSER
T1	78-251	5" P.M. SPEAKER
T2	78-251	5" P.M. SPEAKER
T3	78-251	5" P.M. SPEAKER
T4	78-251	5" P.M. SPEAKER
T5	78-251	5" P.M. SPEAKER
T6	78-251	5" P.M. SPEAKER

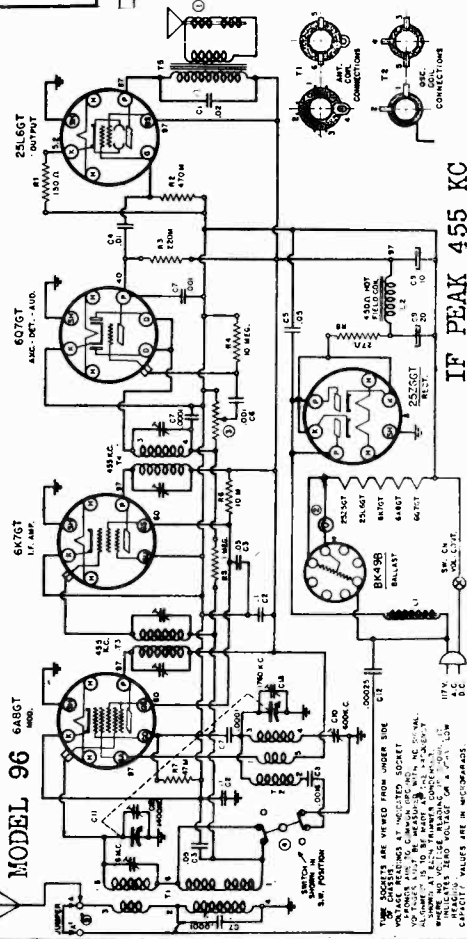


MODEL 94

CODE	PART NO.	DESCRIPTION
R1	60-184	150 OHM 1/2 WATT RESISTOR
R2	60-184	150 OHM 1/2 WATT RESISTOR
R3	60-184	150 OHM 1/2 WATT RESISTOR
R4	60-195	10 OHM 1/2 WATT RESISTOR
R5	60-212	50 OHM 1/2 WATT RESISTOR
R6	60-242	30 OHM 1/2 WATT RESISTOR
R7	60-252	25 OHM 1/2 WATT RESISTOR
R8	60-252	25 OHM 1/2 WATT RESISTOR
R9	60-252	25 OHM 1/2 WATT RESISTOR
R10	60-252	25 OHM 1/2 WATT RESISTOR
C1	15-112	1000 MFD 50V TUBULAR CONDENSER
C2	15-112	1000 MFD 50V TUBULAR CONDENSER
C3	15-112	1000 MFD 50V TUBULAR CONDENSER
C4	15-112	1000 MFD 50V TUBULAR CONDENSER
C5	15-112	1000 MFD 50V TUBULAR CONDENSER
C6	15-112	1000 MFD 50V TUBULAR CONDENSER
C7	15-112	1000 MFD 50V TUBULAR CONDENSER
C8	15-112	1000 MFD 50V TUBULAR CONDENSER
C9	15-112	1000 MFD 50V TUBULAR CONDENSER
C10	15-112	1000 MFD 50V TUBULAR CONDENSER
C11	15-112	1000 MFD 50V TUBULAR CONDENSER
C12	15-112	1000 MFD 50V TUBULAR CONDENSER
T1	78-251	5" P.M. SPEAKER
T2	78-251	5" P.M. SPEAKER
T3	78-251	5" P.M. SPEAKER
T4	78-251	5" P.M. SPEAKER
T5	78-251	5" P.M. SPEAKER
T6	78-251	5" P.M. SPEAKER



MODEL 94



MODEL 96

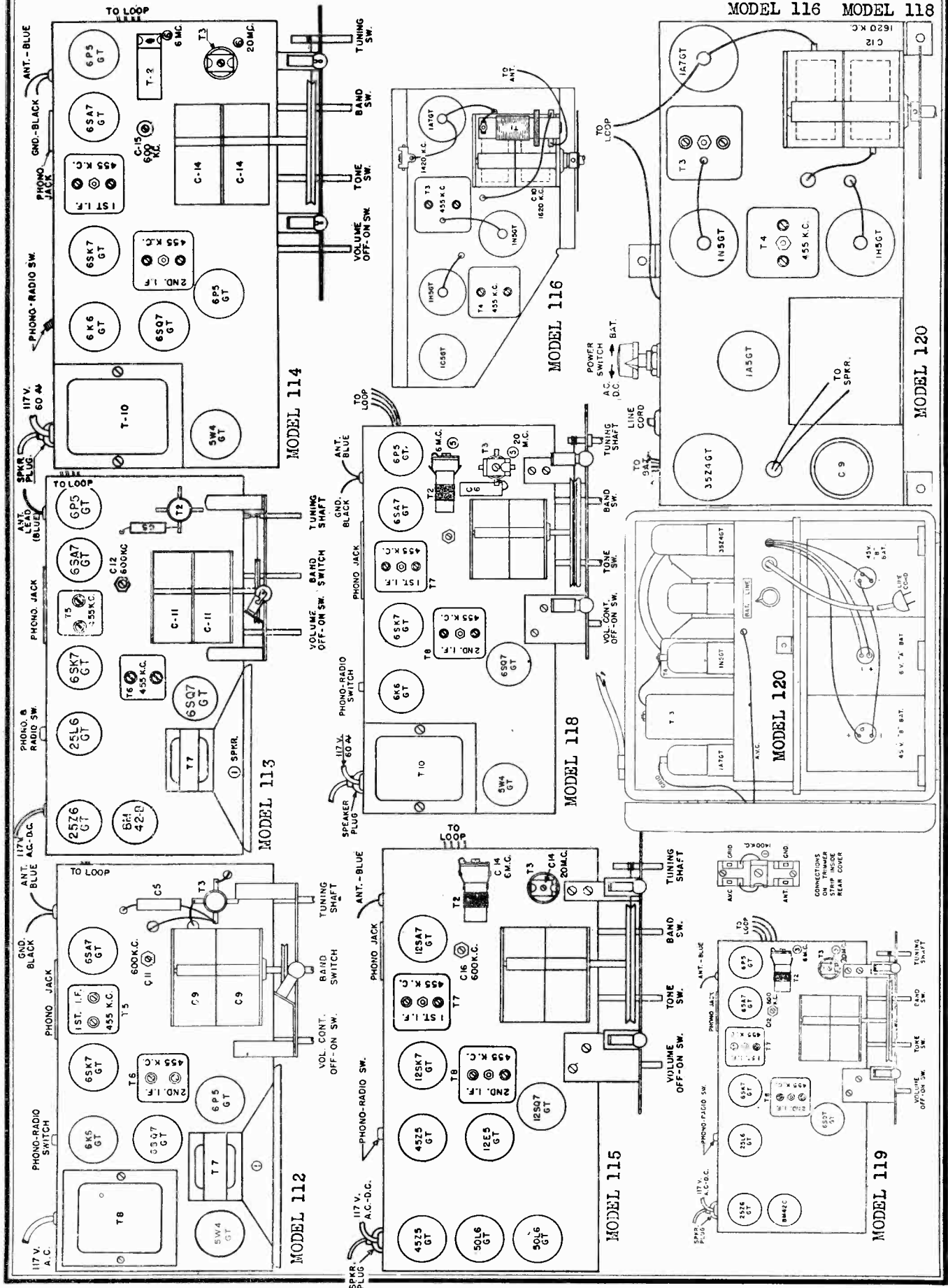




MODEL 119 MODEL 120  
 Socket, Trimmers, Alignment

AUCRAT RADIO CO.

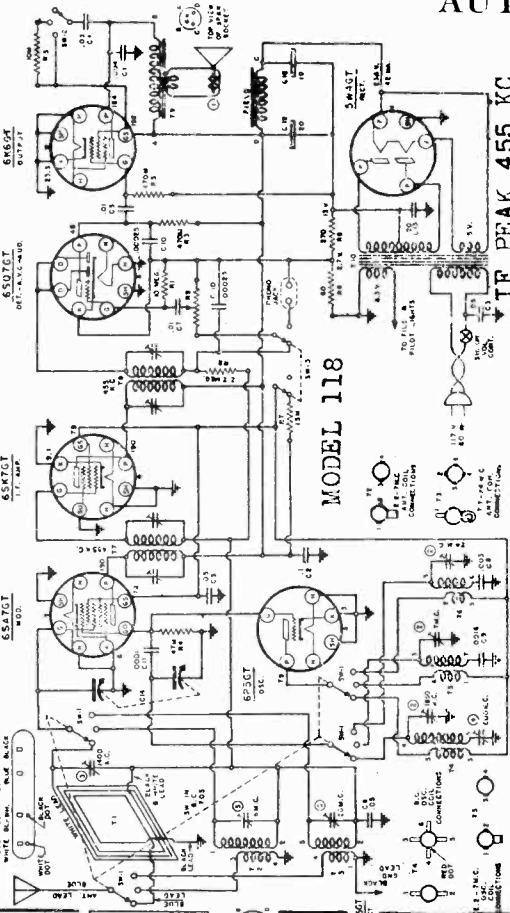
MODEL 112 MODEL 113  
 MODEL 114 MODEL 115  
 MODEL 116 MODEL 118



AUTOCRAT RADIO CO.

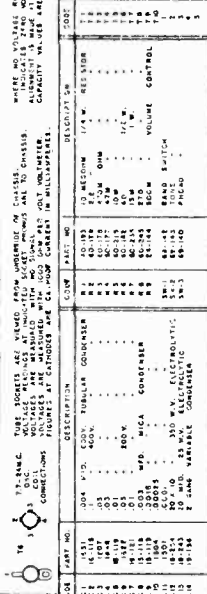
MODEL 118  
MODEL 119  
MODEL 120  
Schematics, Voltage

MODEL 115



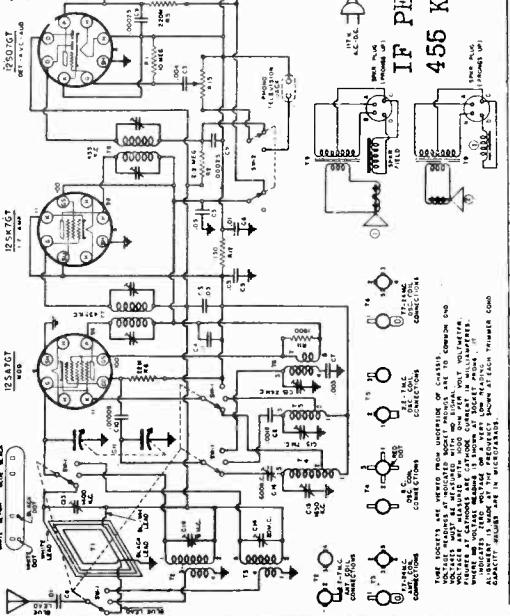
IF PEAK 455 KC

MODEL 118



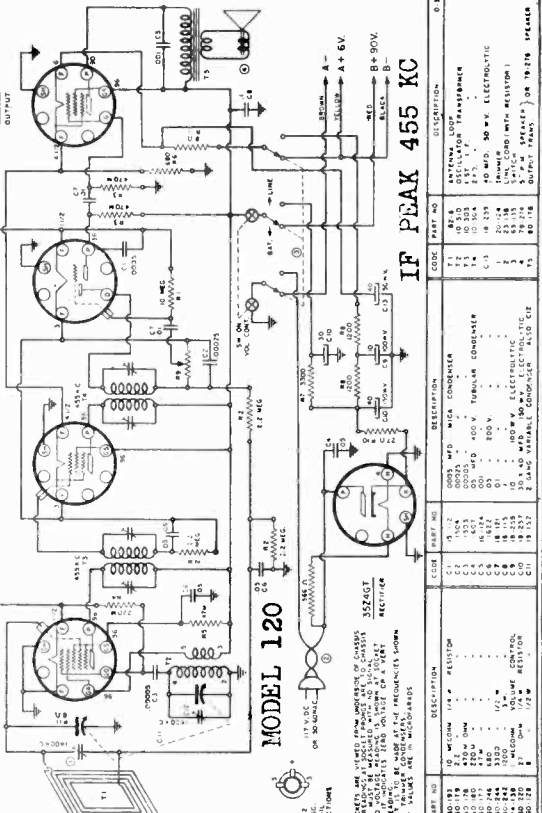
IF PEAK 455 KC

MODEL 115



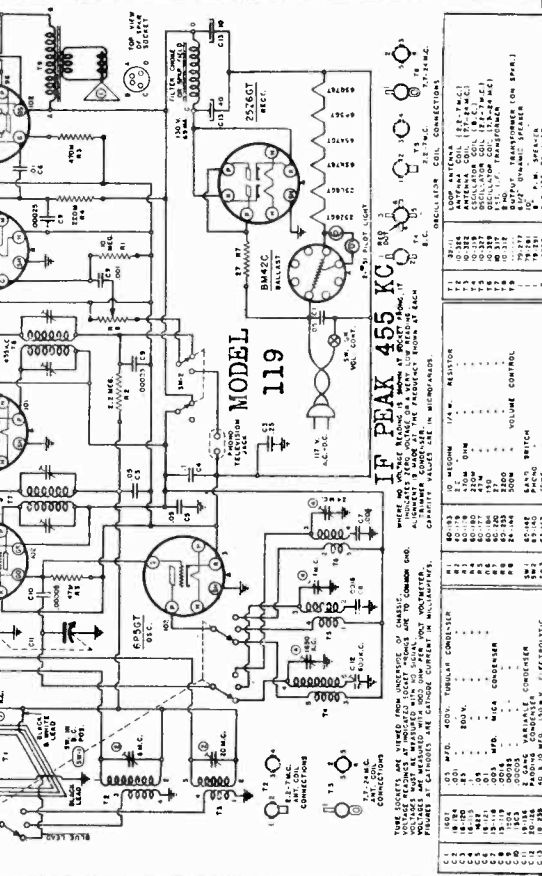
IF PEAK 455 KC

MODEL 120



IF PEAK 455 KC

MODEL 119



IF PEAK 455 KC

Table with columns: CODE, PART NO., DESCRIPTION, and PART NO. It lists various electronic components such as resistors, capacitors, and coils used in the radio chassis.

Table with columns: CODE, PART NO., DESCRIPTION, and PART NO. It lists various electronic components such as resistors, capacitors, and coils used in the radio chassis.

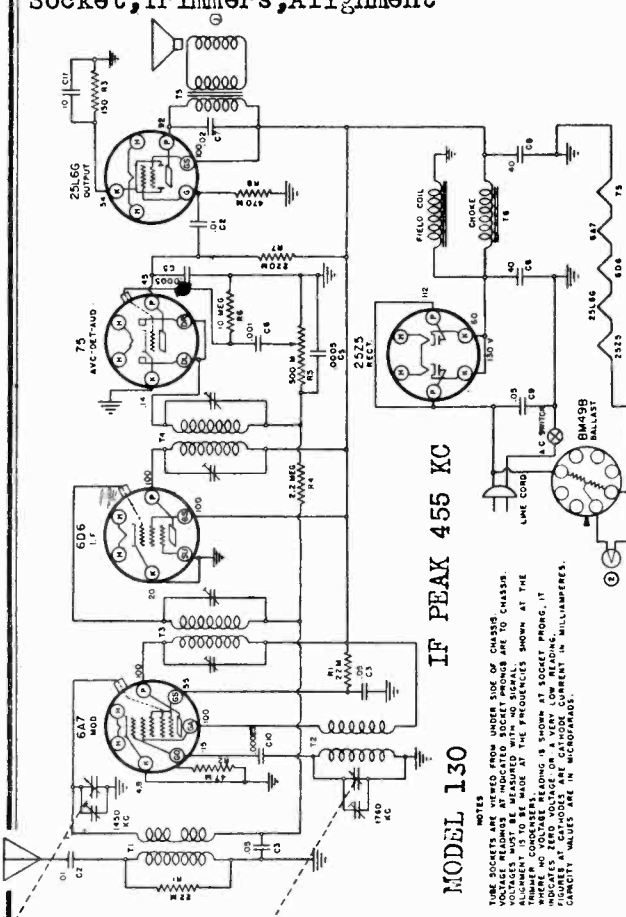




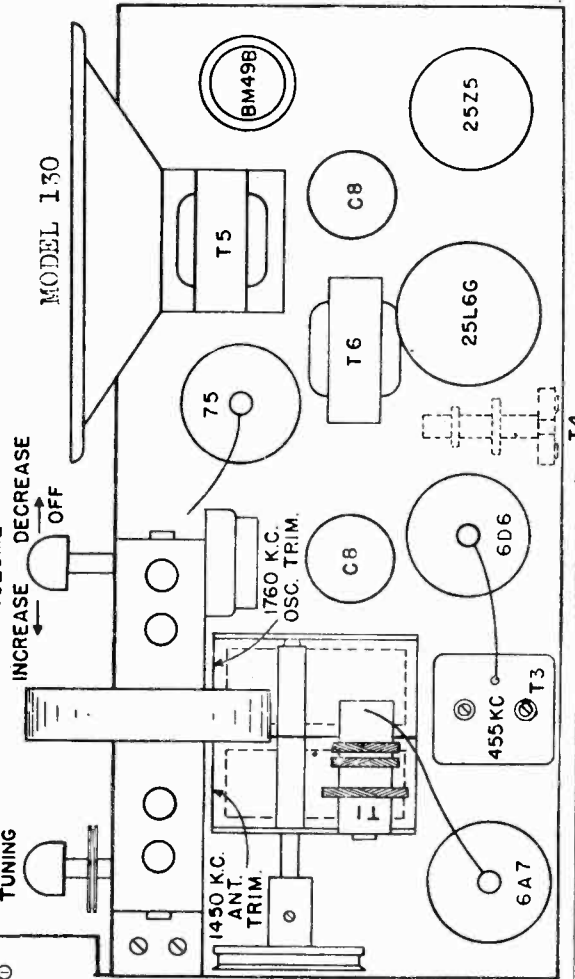
**MODEL 130**  
Schematic, Voltage  
Socket, Trimmers, Alignment

**AUTOCRAT RADIO CO.**

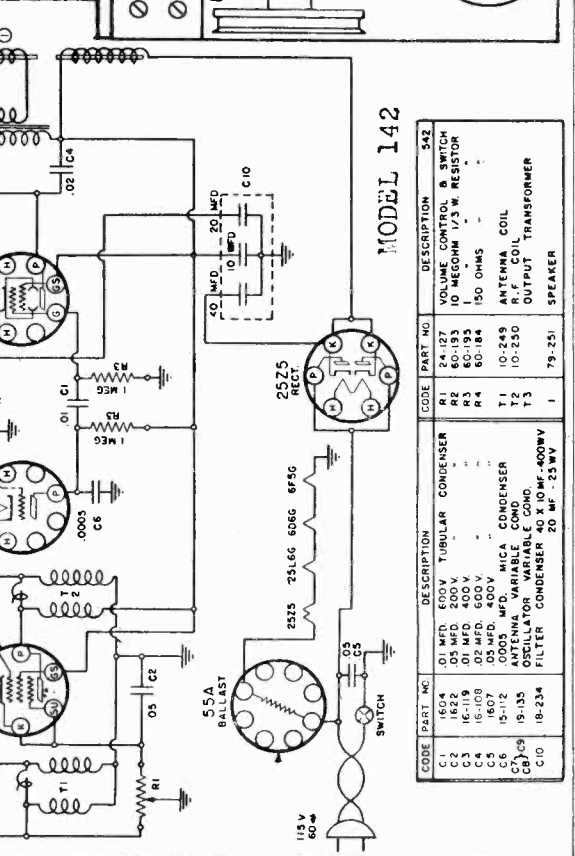
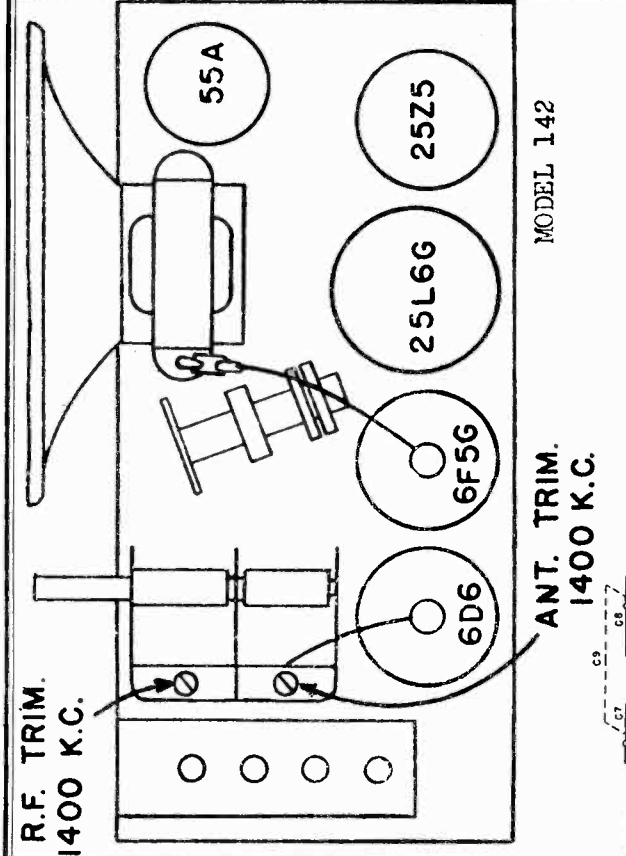
**MODEL 142**  
Schematic, Socket



CODE	PART NO.	DESCRIPTION
R1	50-105	22 M OHM RESISTOR
R2	50-114	50 OHM RESISTOR
R3	50-117	50 OHM RESISTOR
R4	50-124	50 OHM RESISTOR
R5	50-133	50 OHM RESISTOR
R6	50-135	50 OHM RESISTOR
R7	50-136	50 OHM RESISTOR
R8	50-138	50 OHM RESISTOR
R9	50-139	50 OHM RESISTOR
R10	50-140	50 OHM RESISTOR
C1	50-141	0.001 MFD 50V CAPACITOR
C2	50-142	0.001 MFD 50V CAPACITOR
C3	50-143	0.001 MFD 50V CAPACITOR
C4	50-144	0.001 MFD 50V CAPACITOR
C5	50-145	0.001 MFD 50V CAPACITOR
C6	50-146	0.001 MFD 50V CAPACITOR
C7	50-147	0.001 MFD 50V CAPACITOR
C8	50-148	0.001 MFD 50V CAPACITOR
C9	50-149	0.001 MFD 50V CAPACITOR
C10	50-150	0.001 MFD 50V CAPACITOR
T1	50-151	500 MC 400V VACUUM TUBE
T2	50-152	500 MC 400V VACUUM TUBE
T3	50-153	500 MC 400V VACUUM TUBE
T4	50-154	500 MC 400V VACUUM TUBE
T5	50-155	500 MC 400V VACUUM TUBE
T6	50-156	500 MC 400V VACUUM TUBE
T7	50-157	500 MC 400V VACUUM TUBE
T8	50-158	500 MC 400V VACUUM TUBE
T9	50-159	500 MC 400V VACUUM TUBE
T10	50-160	500 MC 400V VACUUM TUBE



CODE	PART NO.	DESCRIPTION
R1	50-161	22 M OHM RESISTOR
R2	50-162	50 OHM RESISTOR
R3	50-163	50 OHM RESISTOR
R4	50-164	50 OHM RESISTOR
R5	50-165	50 OHM RESISTOR
R6	50-166	50 OHM RESISTOR
R7	50-167	50 OHM RESISTOR
R8	50-168	50 OHM RESISTOR
R9	50-169	50 OHM RESISTOR
R10	50-170	50 OHM RESISTOR
C1	50-171	0.001 MFD 50V CAPACITOR
C2	50-172	0.001 MFD 50V CAPACITOR
C3	50-173	0.001 MFD 50V CAPACITOR
C4	50-174	0.001 MFD 50V CAPACITOR
C5	50-175	0.001 MFD 50V CAPACITOR
C6	50-176	0.001 MFD 50V CAPACITOR
C7	50-177	0.001 MFD 50V CAPACITOR
C8	50-178	0.001 MFD 50V CAPACITOR
C9	50-179	0.001 MFD 50V CAPACITOR
C10	50-180	0.001 MFD 50V CAPACITOR
T1	50-181	500 MC 400V VACUUM TUBE
T2	50-182	500 MC 400V VACUUM TUBE
T3	50-183	500 MC 400V VACUUM TUBE
T4	50-184	500 MC 400V VACUUM TUBE
T5	50-185	500 MC 400V VACUUM TUBE
T6	50-186	500 MC 400V VACUUM TUBE
T7	50-187	500 MC 400V VACUUM TUBE
T8	50-188	500 MC 400V VACUUM TUBE
T9	50-189	500 MC 400V VACUUM TUBE
T10	50-190	500 MC 400V VACUUM TUBE

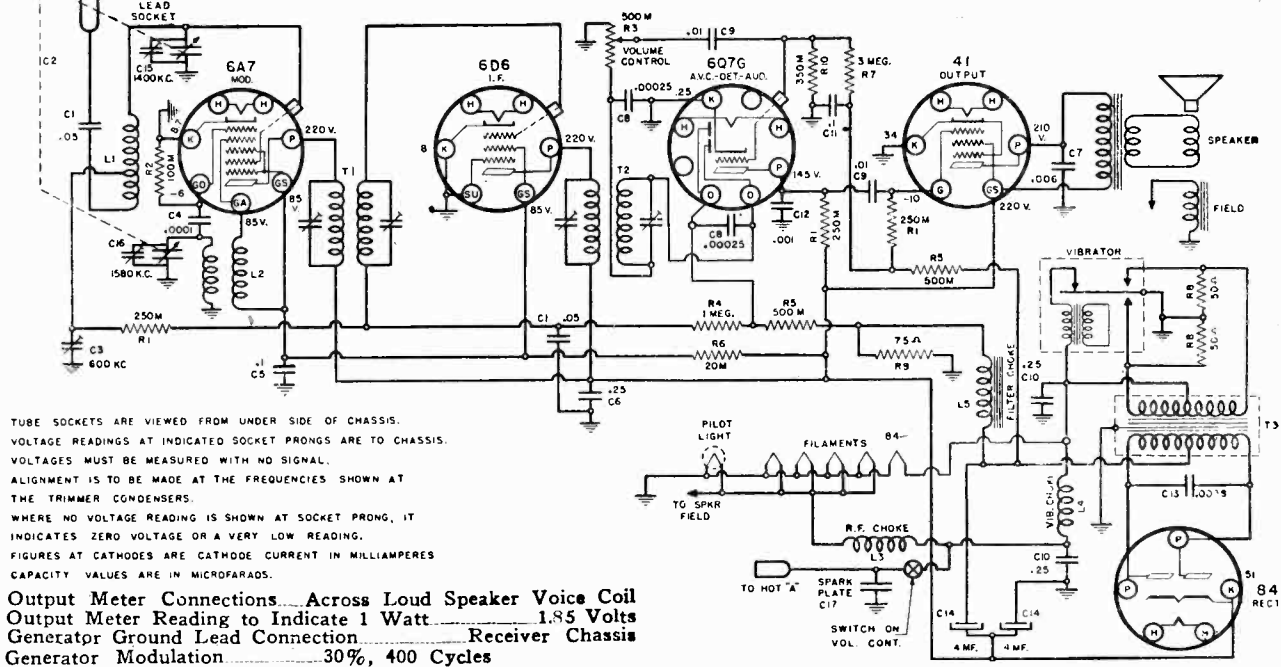


CODE	PART NO.	DESCRIPTION
R1	50-191	22 M OHM RESISTOR
R2	50-192	50 OHM RESISTOR
R3	50-193	50 OHM RESISTOR
R4	50-194	50 OHM RESISTOR
R5	50-195	50 OHM RESISTOR
R6	50-196	50 OHM RESISTOR
R7	50-197	50 OHM RESISTOR
R8	50-198	50 OHM RESISTOR
R9	50-199	50 OHM RESISTOR
R10	50-200	50 OHM RESISTOR
C1	50-201	0.001 MFD 50V CAPACITOR
C2	50-202	0.001 MFD 50V CAPACITOR
C3	50-203	0.001 MFD 50V CAPACITOR
C4	50-204	0.001 MFD 50V CAPACITOR
C5	50-205	0.001 MFD 50V CAPACITOR
C6	50-206	0.001 MFD 50V CAPACITOR
C7	50-207	0.001 MFD 50V CAPACITOR
C8	50-208	0.001 MFD 50V CAPACITOR
C9	50-209	0.001 MFD 50V CAPACITOR
C10	50-210	0.001 MFD 50V CAPACITOR
T1	50-211	500 MC 400V VACUUM TUBE
T2	50-212	500 MC 400V VACUUM TUBE
T3	50-213	500 MC 400V VACUUM TUBE
T4	50-214	500 MC 400V VACUUM TUBE
T5	50-215	500 MC 400V VACUUM TUBE
T6	50-216	500 MC 400V VACUUM TUBE
T7	50-217	500 MC 400V VACUUM TUBE
T8	50-218	500 MC 400V VACUUM TUBE
T9	50-219	500 MC 400V VACUUM TUBE
T10	50-220	500 MC 400V VACUUM TUBE



AUTOCRAT RADIO CO.

MODEL 359  
Schematic, Voltage, Socket  
Trimmers, Alignment, Notes

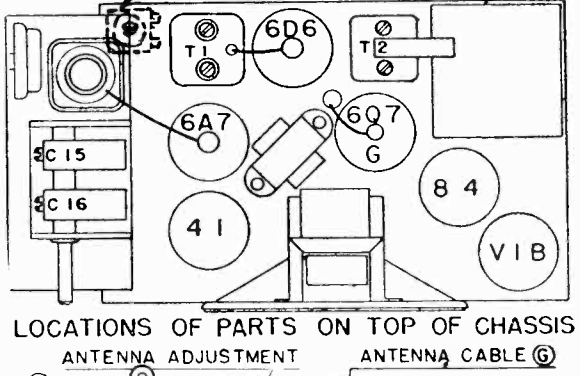
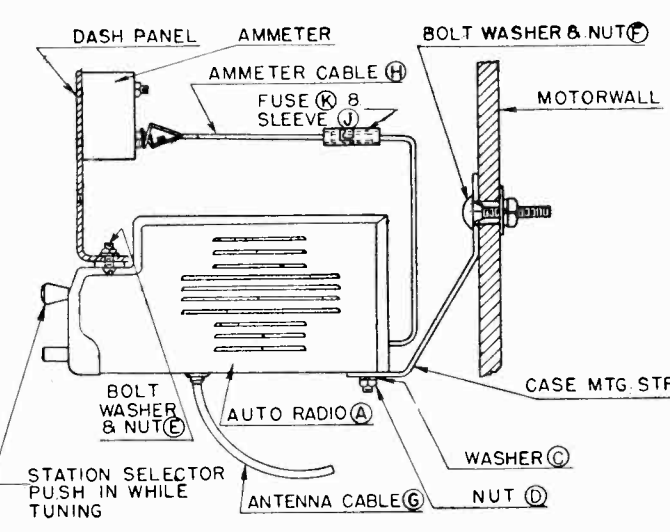


TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS.  
VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO CHASSIS.  
VOLTAGES MUST BE MEASURED WITH NO SIGNAL.  
ALIGNMENT IS TO BE MADE AT THE FREQUENCIES SHOWN AT THE TRIMMER CONDENSERS.  
WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PRONG, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING.  
FIGURES AT CATHODES ARE CATHODE CURRENT IN MILLIAMPERES  
CAPACITY VALUES ARE IN MICROFARADS.

Output Meter Connections... Across Loud Speaker Voice Coil  
Output Meter Ground Reading to Indicate 1 Watt... 1.85 Volts  
Generator Ground Lead Connection... Receiver Chassis  
Generator Modulation... 30%, 400 Cycles  
Position of Volume Control... Fully On

Position of Variable	Generator Frequency	Dummy Antenna	Generator Connection	Trimmer Adjustments (In Order Shown)	Trimmer Function
Closed	456 KC	.1 mfd.	6A7 Grid	T2, T1	I. F. Oscillator Trimmer
Fully Open	1580 KC	.0002 mfd.	Antenna Conn.	C16	Antenna Trimmer
1400 KC	1400 KC	.0002 mfd.	Antenna Conn.	C15	Antenna Trimmer
600 KC	600 KC	.0002 mfd.	Antenna Conn.	C3	Antenna Padder

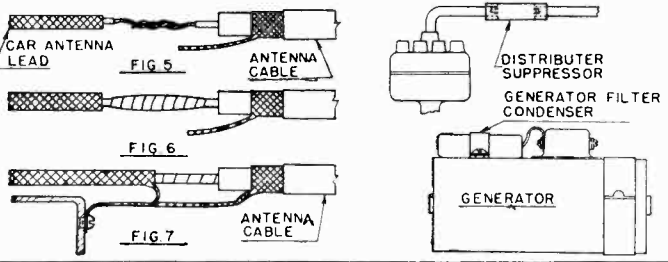
The variable condenser should be at 600 k.c. for antenna adjustment.  
The alignment procedure should be repeated in the original order, step by step, to insure greater accuracy. A final adjustment of antenna padder condenser C3 is always made after the receiver is installed in the car, in order to match the car antenna.  
Always keep the output power from the generator at its lowest possible value to prevent the A.V.C. of the receiver from interfering with accurate alignment.



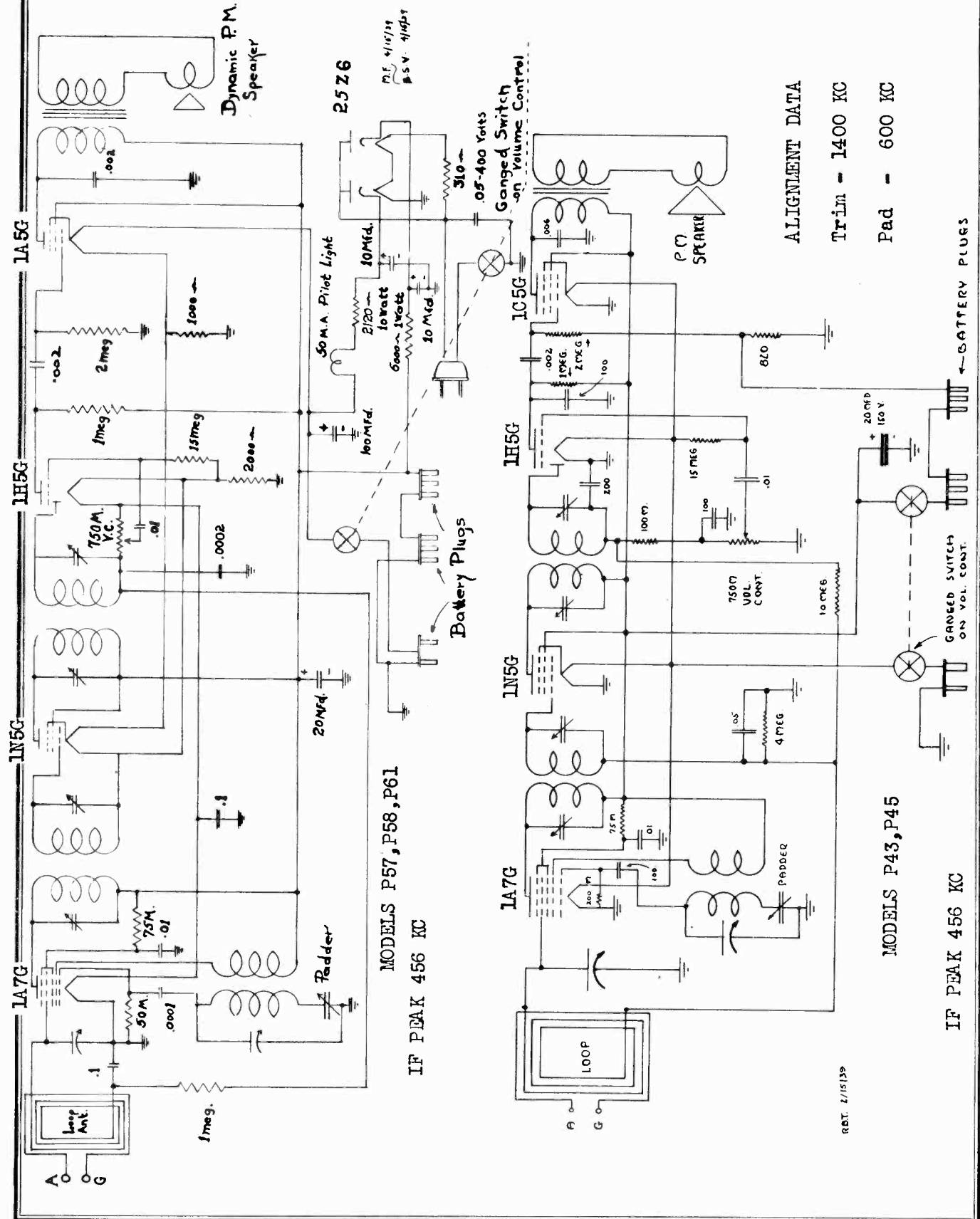
If an antenna was located coming from the corner post of the car, it will probably have an inner wire covered with the metal braid. (If it has a plug at its end, cut off the plug). Scrape clean and solder the white wire of the receiver's antenna lead to the inner wire of the car antenna lead. Be certain these inner wires do not at any time touch the outer shield. (See Fig. 5.)

After the connection is cleaned and connected, cover the joint carefully with tape. (See Fig. 6.)

Connect the pigtail of the receiver's antenna wire to the pigtail braid of the car's antenna lead-in. Wrap pig-tails and solder together using rosin core solder. **IMPORTANT**—Make certain when bolting soldered pigtail ends to car that the section is scraped clean and a good chassis ground. (See Fig. 7.)



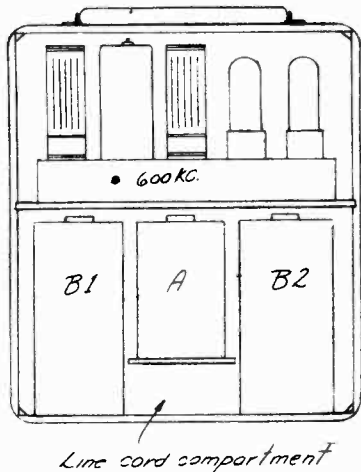
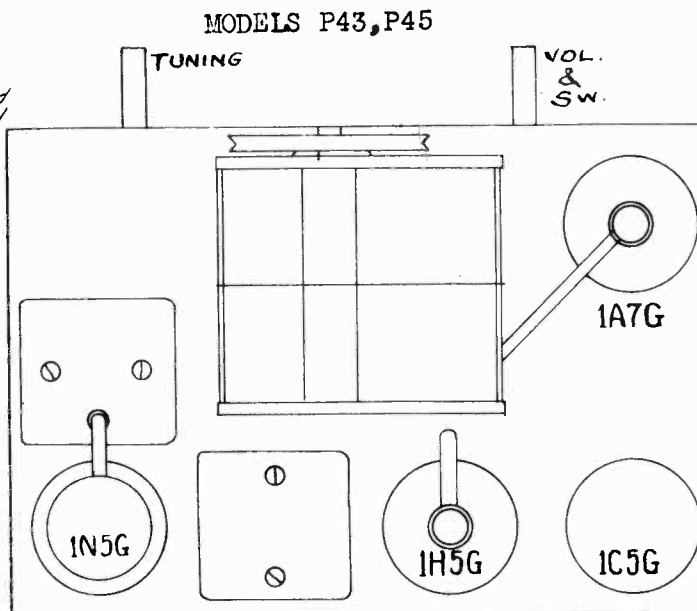
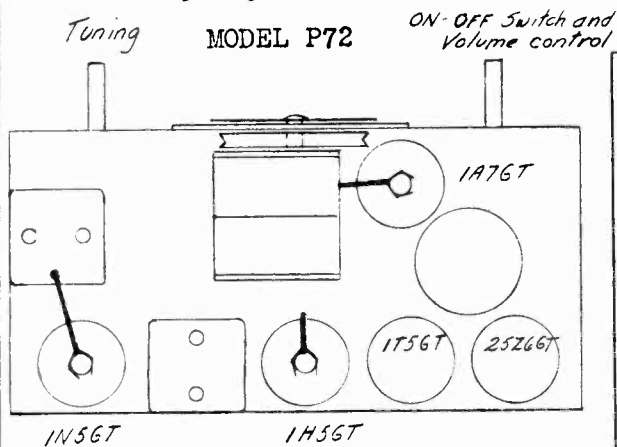
**AUTOMATIC RADIO MFG. CO., INC.** MODELS P43, P45  
MODELS P57, P58, P61  
Schematics



MODELS P43, P45  
 MODEL P57  
 MODEL P72

**AUTOMATIC RADIO MFG. CO., INC.**

Socket Layouts  
 MODELS 402, 403, 404, 405, 406, 408  
 MODELS 442, 443, 446 Tuner Data



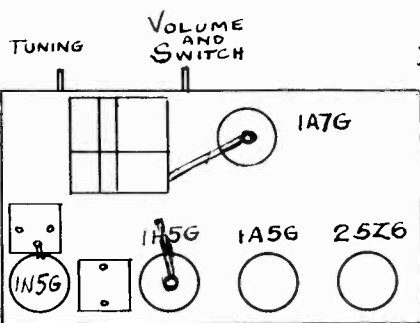
MODEL P72

**PUSH-BUTTON LINE-UP MODELS 442, 443, 446**

To adjust push-buttons to desired stations:

1. Press second button from right and tune in manually the one of the four desired stations having the lowest number of kilocycles (nearest right hand end of tuning dial). Note its program.
2. Press third button from right with volume control set to full volume, insert screwdriver blade into slot of large screw in corresponding hole at rear of set directly behind this button, and rotate one turn or two in either direction until same station is heard at maximum volume, then adjust small screw in same hole until greatest volume and best quality are obtained.
3. Adjust fourth button in the same manner to the desired station with the next higher kilocycle reading (next station to the left on the manual tuning dial).
4. Repeat this procedure for buttons 5 and 6.

In some cases it may be desirable to make a slight final readjustment on all four buttons some time after the original setting, to compensate for changes due to temperature and climatic conditions.



MODEL P57

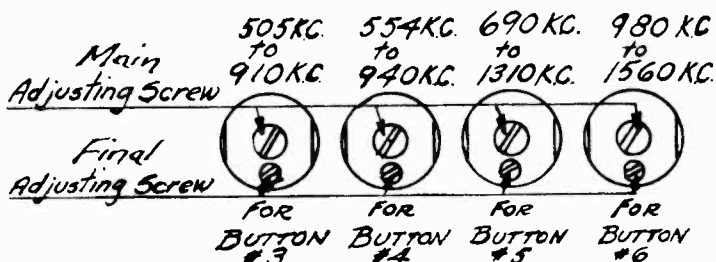
**PUSH-BUTTON DATA MODELS 402, 403, 404, 405, 406, 408**

1. Loosen all buttons by turning them counter-clockwise.
2. Locate a desired station by manual tuning.
3. Adjust one button to this station by pushing button in as far as it will go, keeping the station tuned in, then release.
4. When button returns to original position, tighten it by turning clockwise. Station is now tuned in permanently on this button.
5. Repeat operations 2, 3 and 4 on each succeeding button until all have been adjusted to stations desired.

In some cases it may be desirable to make a slight final readjustment on all four buttons some time after the original setting to compensate for changes due to temperature and climatic conditions.

**CAUTION:** In setting up push buttons, for consistent reception, be sure the adjustments are made to the local station on a network broadcast, and that a weaker, distant station with the same program is not selected.

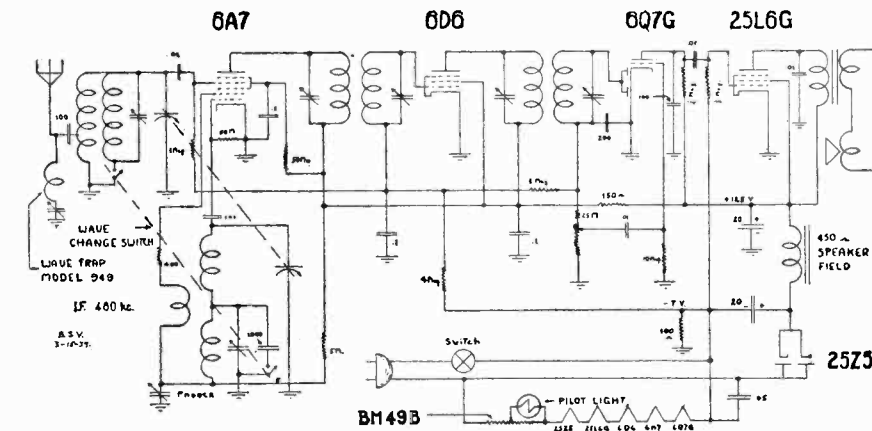
**PUSH-BUTTON DATA MODELS 442, 443, 446**



**NOTE:** To adjust to desired station, press in corresponding button directly in front. Turn main adjusting screw to obtain selected station, then turn final adjusting screw to obtain best clarity and volume. Do not turn volume control on full while making adjustments.

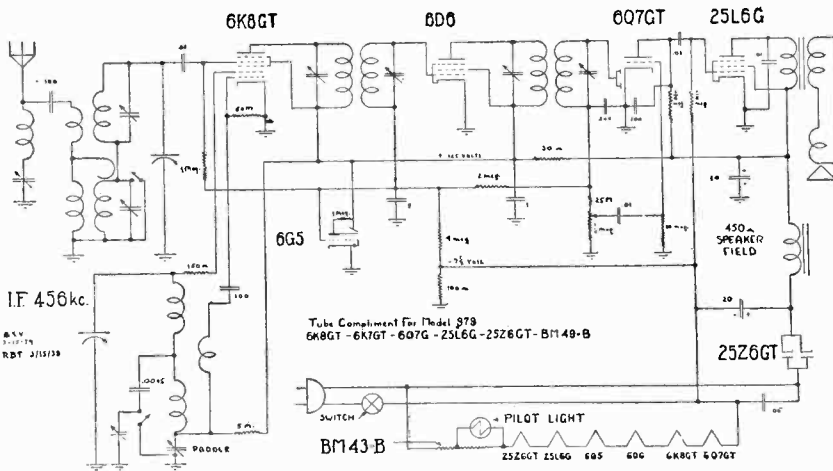
AUTOMATIC RADIO MFG. CO., INC.

MODELS M-66, M-77  
 MODELS 939, 949  
 MODELS 975, 979, 988  
 Schematics



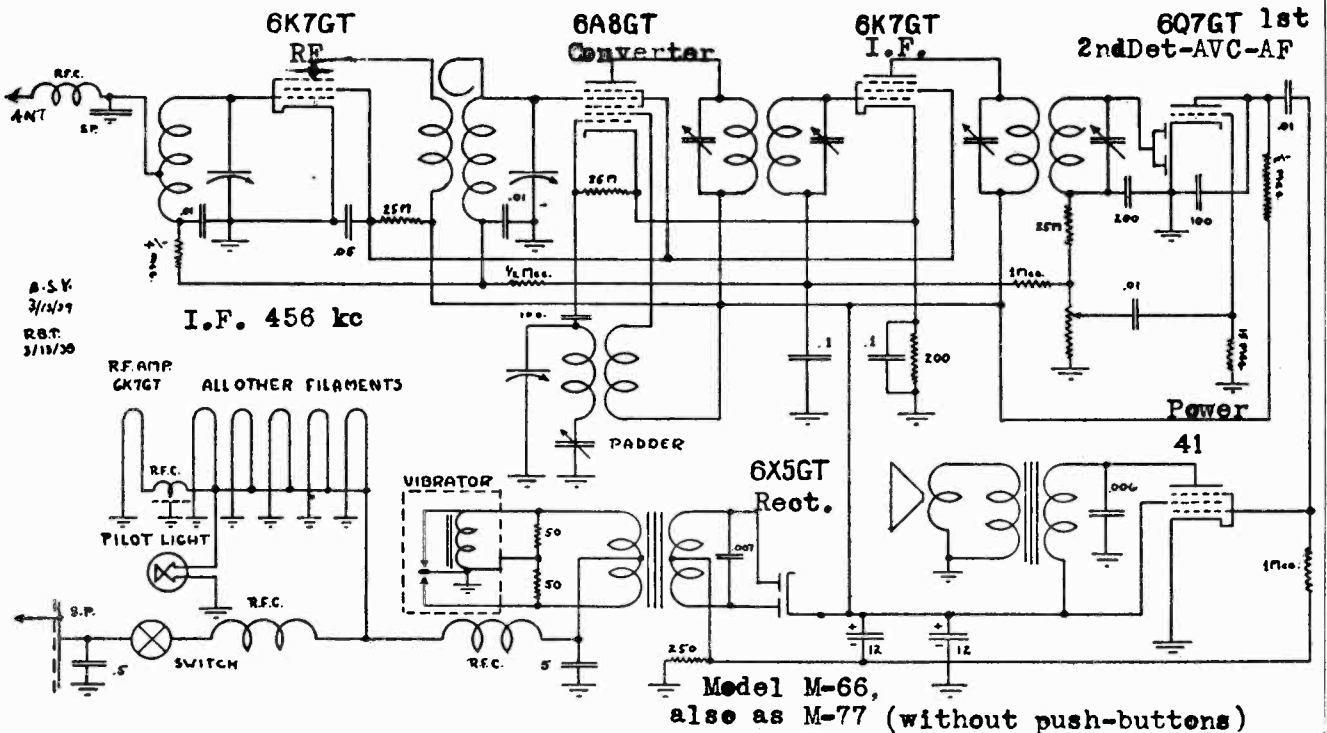
Models  
 939 and 949

6A7- Converter  
 6D6- I. F.  
 6Q7G- 2nd Det-AVC-1st AF  
 25L6G-Power  
 25Z5-Rect.



Models  
 975  
 979  
 988

6K8GT- Converter  
 6D6- I.F.  
 6Q7GT-2nd Det-AVC-1st AF  
 25L6G-Power  
 25Z6GT-Rect.



Model M-66,  
 also as M-77 (without push-buttons)

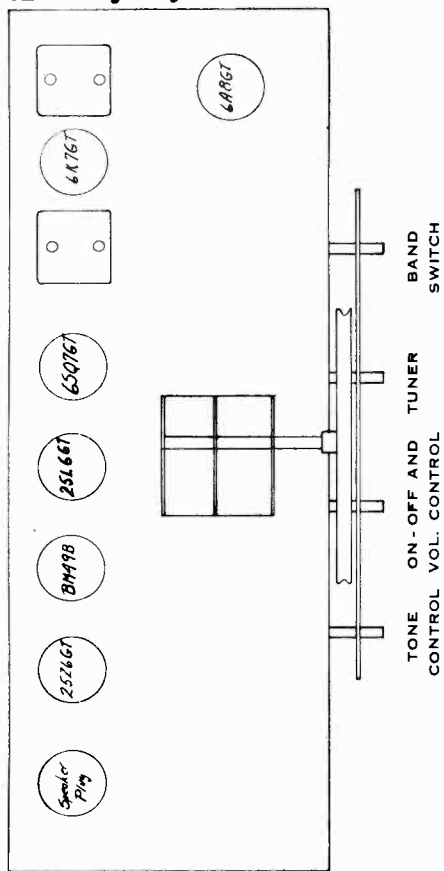
MODELS M-66, M-77  
 MODELS 400, 401  
 MODELS 402, 403, 406  
 MODELS 404, 405, 408

AUTOMATIC RADIO MFG. CO., INC.

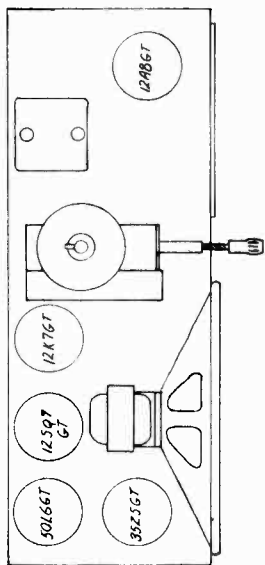
MODELS 440 to 444, 446  
 MODELS 448,  
 450, 452, 454  
 MODEL 480  
 Socket Layouts

TUBE LOCATION CHART —

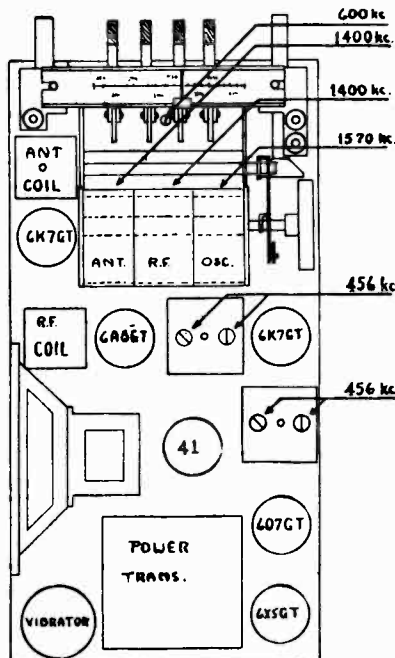
TUBE LOCATION — MODEL 480



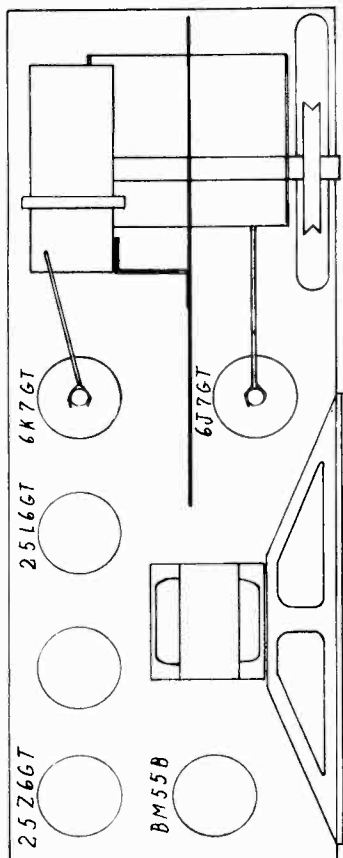
TUBE LOCATION CHART — MODELS 404-405-408



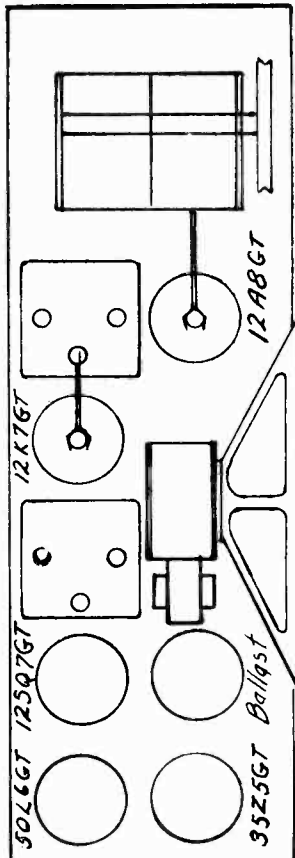
MODELS M66 & M77  
 VOLUME PUSHBUTTONS MANUAL



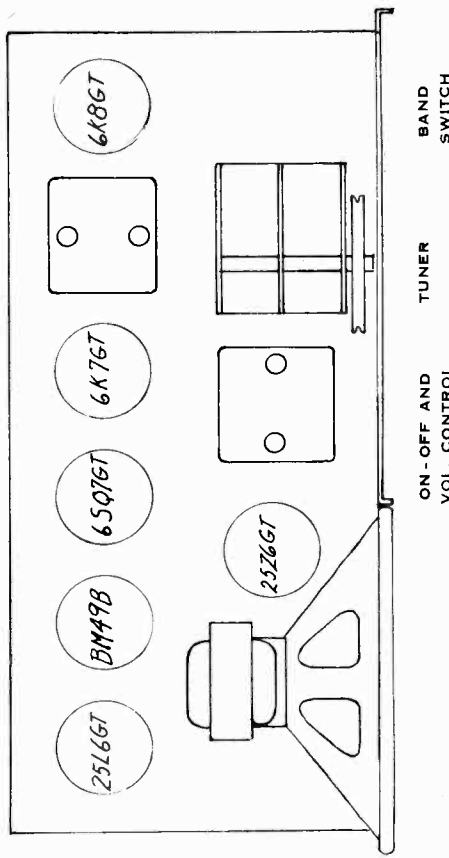
TUBE LOCATION CHART — MODELS 400-401



TUBE LOCATION — MODELS 440-441-442-443-444-446



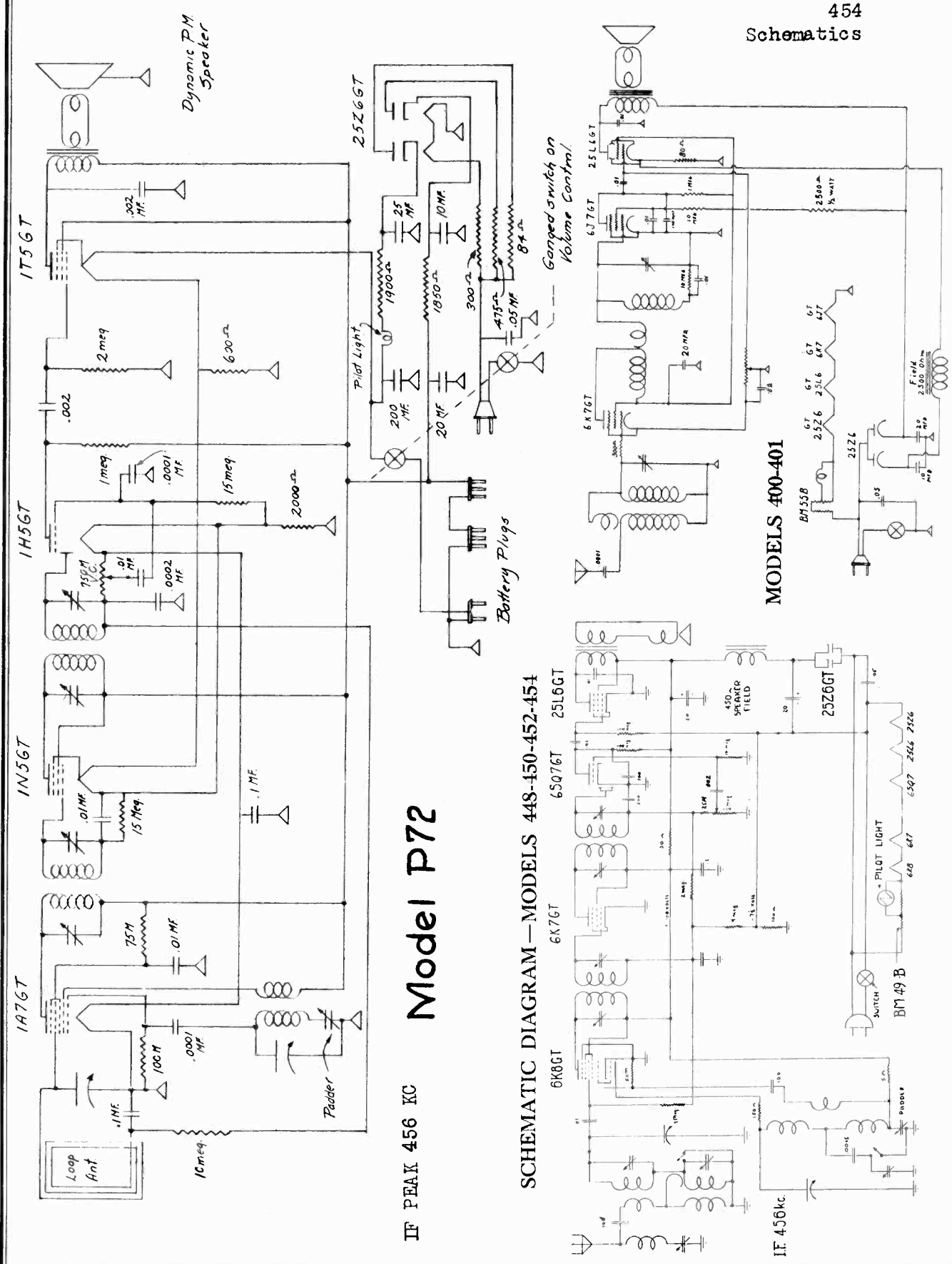
TUBE LOCATION — MODELS 448-450-452-454





AUTOMATIC RADIO MFG. CO. INC.

MODEL P72  
MODELS 400,401  
MODELS 448,450,452  
454  
Schematics



Model P72

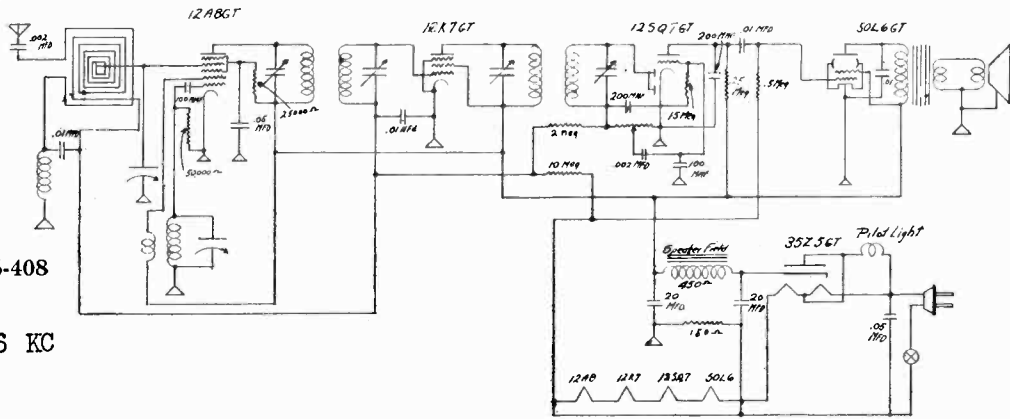
IF PEAK 456 KC

SCHEMATIC DIAGRAM—MODELS 448-450-452-454

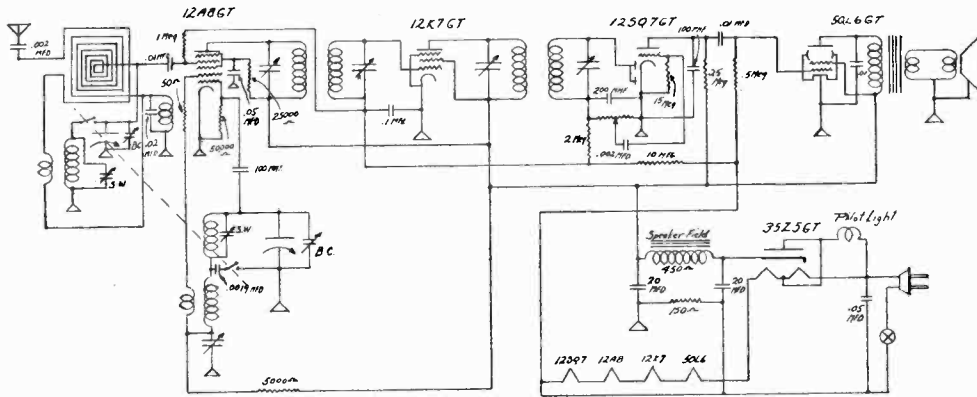
MODELS 400-401

MODELS 402 to 406, 408  
 MODELS 440, 441, 444 AUTOMATIC RADIO MFG. CO., INC.  
 MODELS 442, 443, 446  
 MODEL 480  
 Schematics

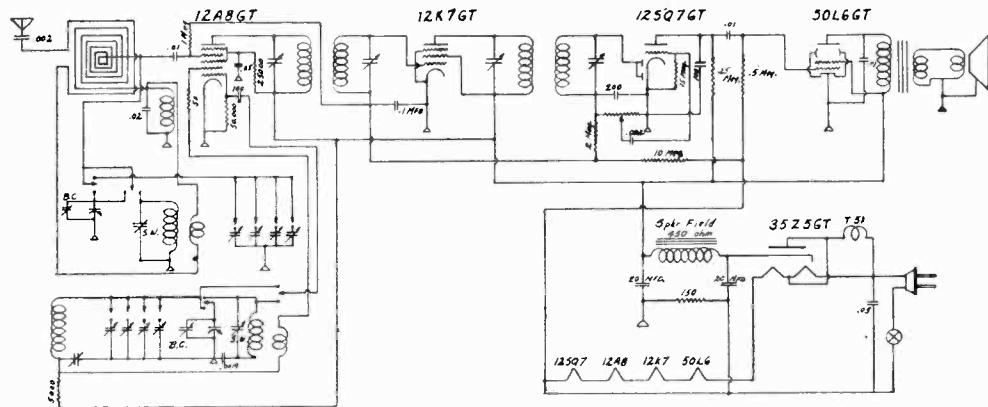
MODELS 402-403-  
 404-405-406-408  
 IF PEAK 456 KC



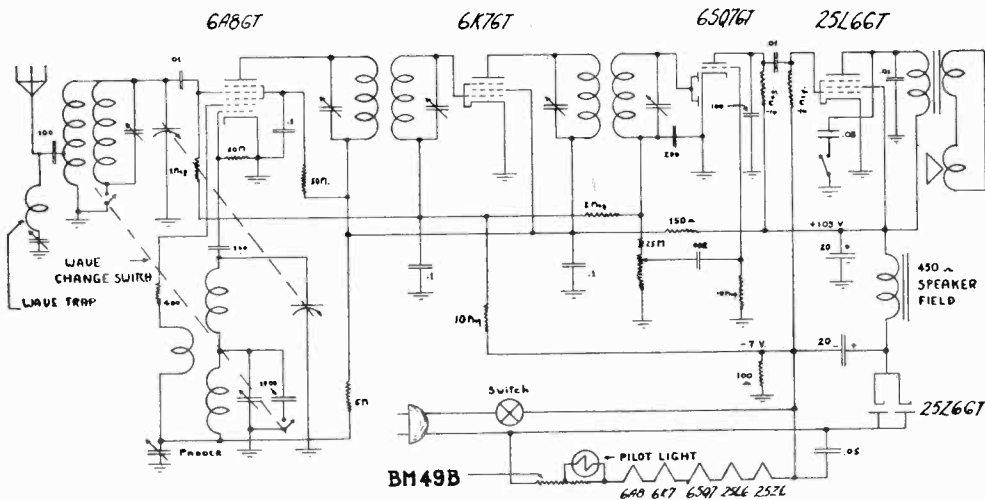
MODELS  
 440-441-444  
 IF PEAK 456 KC



MODELS  
 442-443-446  
 IF PEAK 456 KC



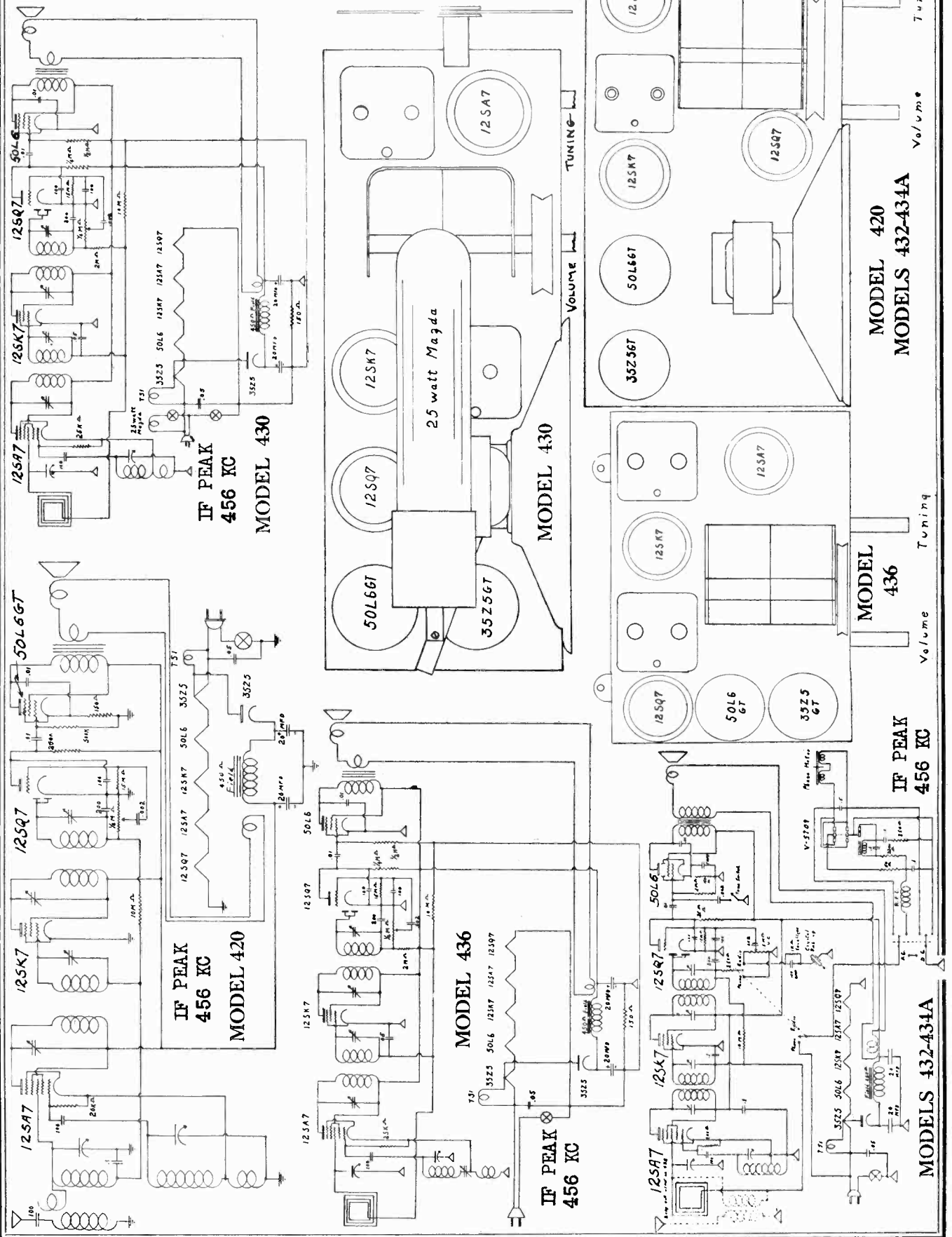
MODEL 480  
 IF PEAK 480 KC



MODELS 432, 434A  
MODEL 436  
Schematics, Socket

AUTOMATIC RADIO MFG. CO., INC.

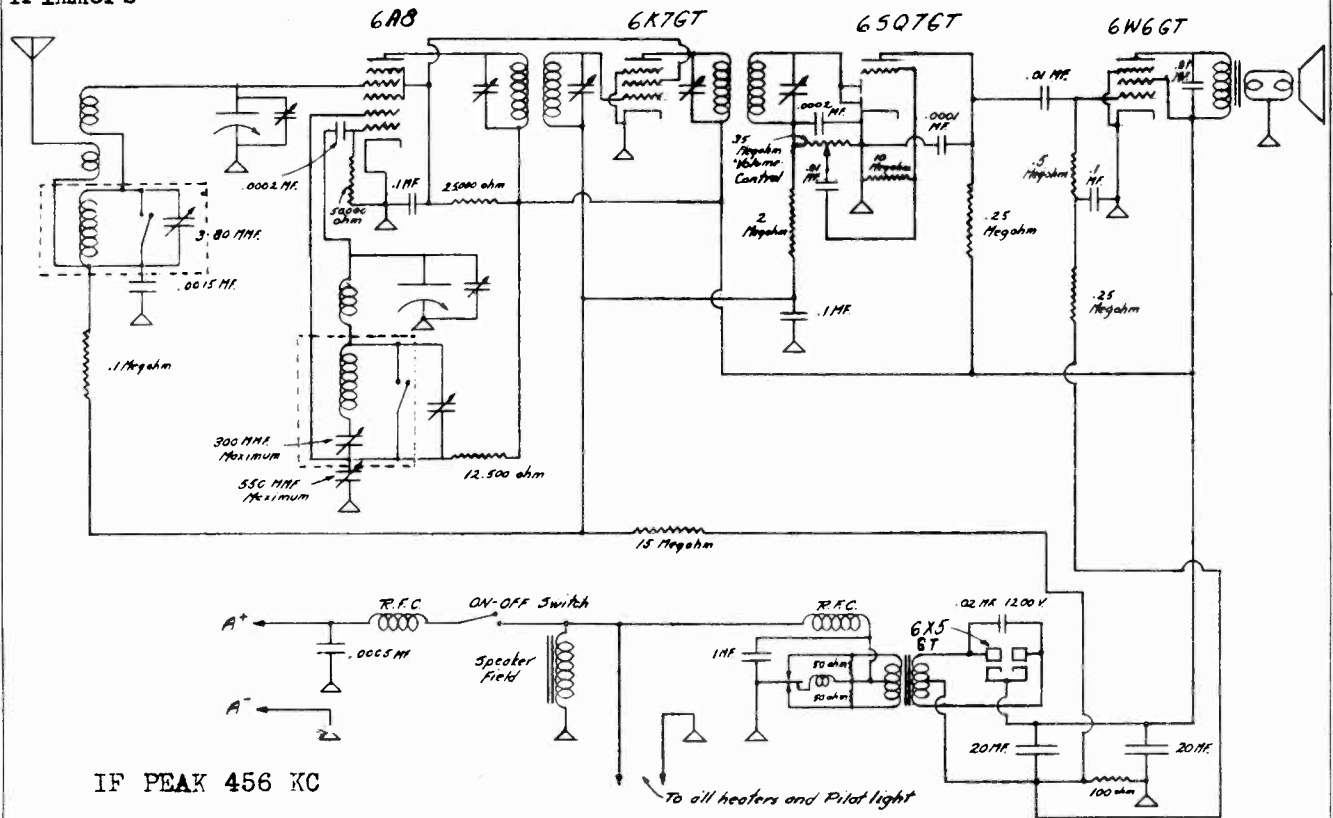
MODEL 420  
MODEL 430



## MODEL 911

Schematic, Alignment  
Trimmers

## AUTOMATIC RADIO MFG. CO., INC.

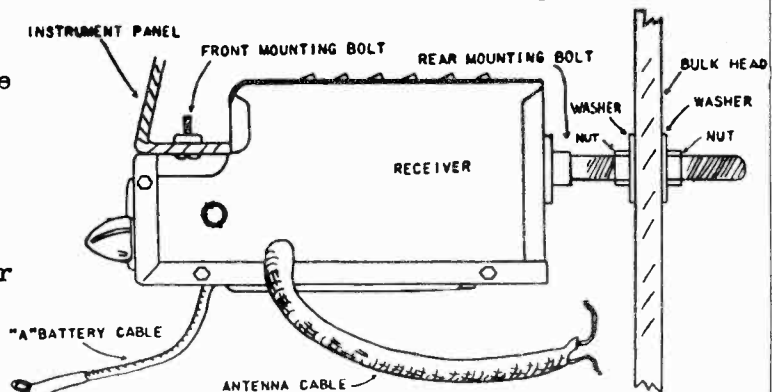
ALIGNMENT AND TRIMMER LOCATIONS

IF. Connect signal lead at 456 KC to the 6A8 control grid. Connect output meter across secondary of speaker output transformer. With weakest signal necessary to obtain .5 volt deflection on the output meter, peak the trimmers on the first and second IF transformers.

RF. Align intermediate band first. Follow procedure carefully. Connect a 200 mmf. condenser in series with the signal lead to the antenna terminal of the receiver. Turn the band switch counter-clockwise to the intermediate band position. Adjust oscillator trimmer located at the rear of the variable condenser, to 1560 KC with the variable condenser set at mechanical zero. Pad lower section of the dual padder, located under the composite coil, to 600 KC. Trim antenna section (front) of the variable condenser at 1400 KC.

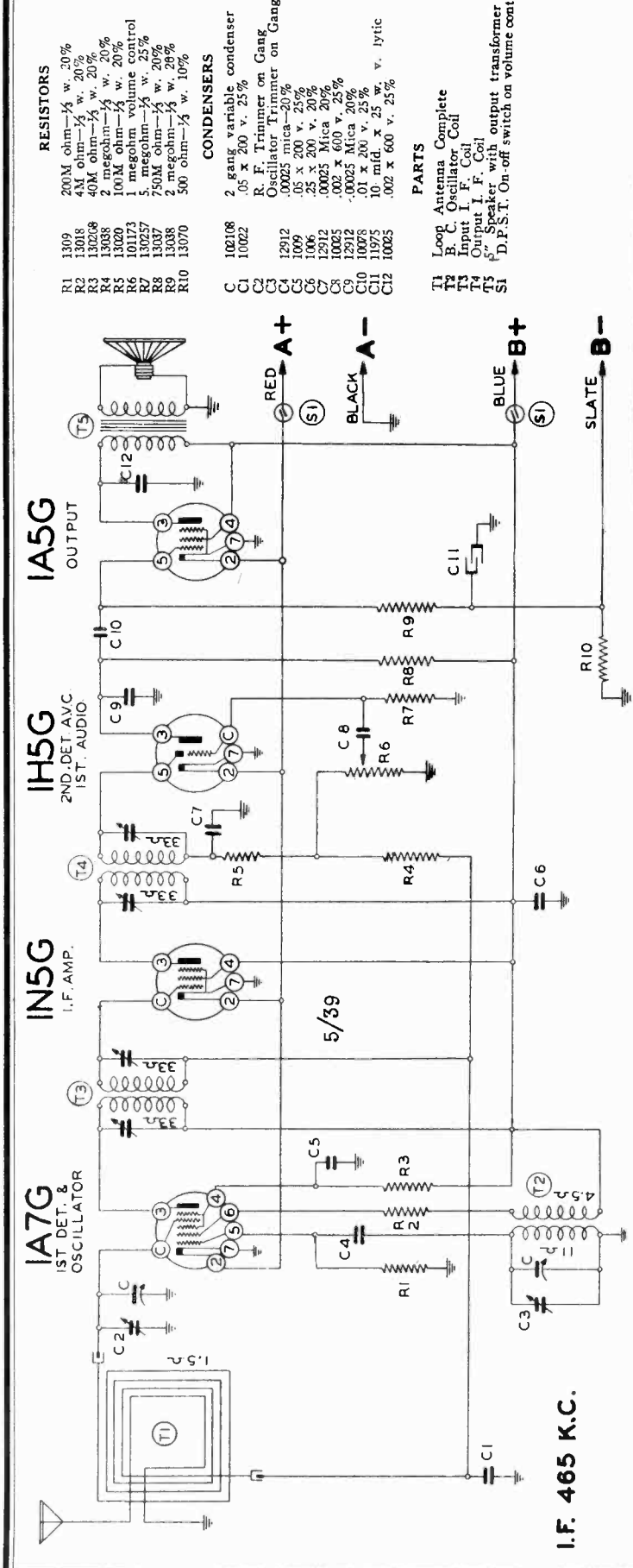
Turn wave switch to the clockwise or long wave position. Adjust oscillator trimmer mounted on the wave switch to 346 KC with the variable condenser set at mechanical zero. Pad upper section of the dual padder at 149 KC. Adjust antenna trimmer to 300 KC through hole on top of the antenna coil.

When installed in an automobile best results will be had on the long wave band if the trimmer is readjusted. Tune in some station near 900 meters; remove the plug located on the right hand side of the receiver; insert a screwdriver into the trimmer condenser slot; and rotate slowly in either direction until best results are obtained.

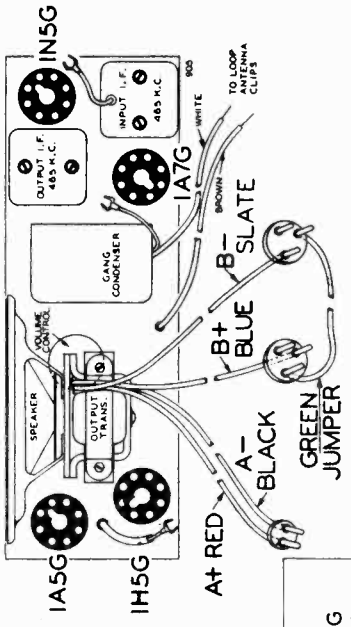


BELMONT RADIO CORP.

MODEL 407  
Schematic, Voltage, Socket  
Trimmers, Alignment

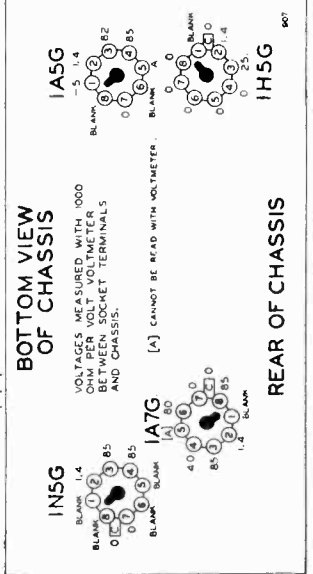
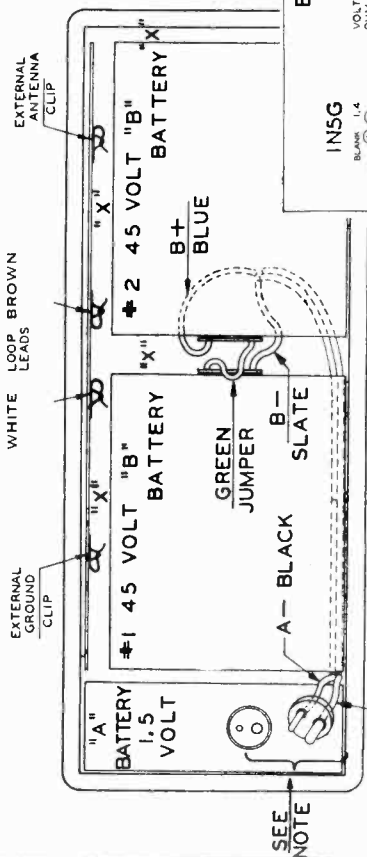


- RESISTORS**
- R1 1309 200M ohm— $\frac{1}{4}$  w. 20%
  - R2 13018 4M ohm— $\frac{1}{4}$  w. 20%
  - R3 130208 40M ohm— $\frac{1}{4}$  w. 20%
  - R4 13008 2 megohm— $\frac{1}{4}$  w. 20%
  - R5 130073 1.0M ohm— $\frac{1}{4}$  w. 20%
  - R6 130257 5 megohm— $\frac{1}{4}$  w. 25%
  - R7 13037 750M ohm— $\frac{1}{4}$  w. 20%
  - R8 13038 2 megohm— $\frac{1}{4}$  w. 20%
  - R9 130370 500 ohm— $\frac{1}{4}$  w. 10%
- CONDENSERS**
- C 102108 2 gang variable condenser .05 x 200 v. 25%
  - C2 C3 R. F. Trimmer on Gang
  - C4 Oscillator Trimmer on Gang
  - C5 .0025 mica—20%
  - C6 .05 x 200 v. 25%
  - C7 .0025 mica—20%
  - C8 .0025 mica—20%
  - C9 .01 x 200 v. 25%
  - C10 .01 x 200 v. 25%
  - C11 10 mid. x 25 v. lytic
  - C12 .002 x 600 v. 25%
- PARTS**
- T1 Loop Antenna Complete
  - T2 B. C. Oscillator Coil
  - T3 Input I. F. Coil
  - T4 Output I. F. Coil
  - T5 Speaker with output transformer
  - S1 D.F.S.I. On-off switch on volume control



When aligning IF and Osc. - disconnect loop and connect 1 meg. resistor bet. loop osc. from chassis. Trim osc. at 1650 Kc. To align loop, reconnect same and remove 1 meg. resistor. Trim at 1400 KC.

At right - Top View of Chassis

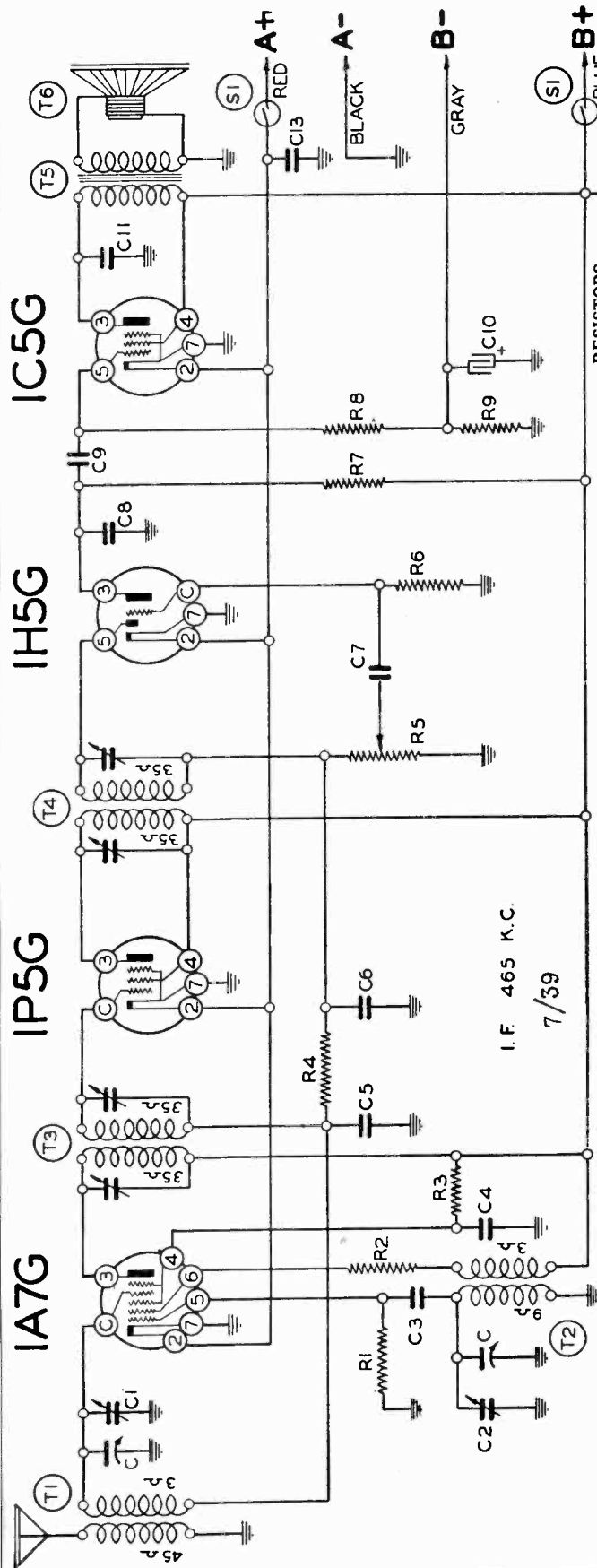


NOTE: The "A" battery should be placed in the cabinet so that the plug-in socket on the top of the battery is nearer to the side of the cabinet which is faced down than to the side of the cabinet which is facing up. Also, the "A" battery should be pushed all the way into the cabinet so that it fits between the left end of the radio chassis and the side of the cabinet.

I.F. 465 K.C.

MODEL 460, Series A  
Schematic, Voltage, Socket  
Trimmers, Alignment

BELMONT RADIO CORP.



I.F. 465 K.C.  
7/39

**RESISTORS**

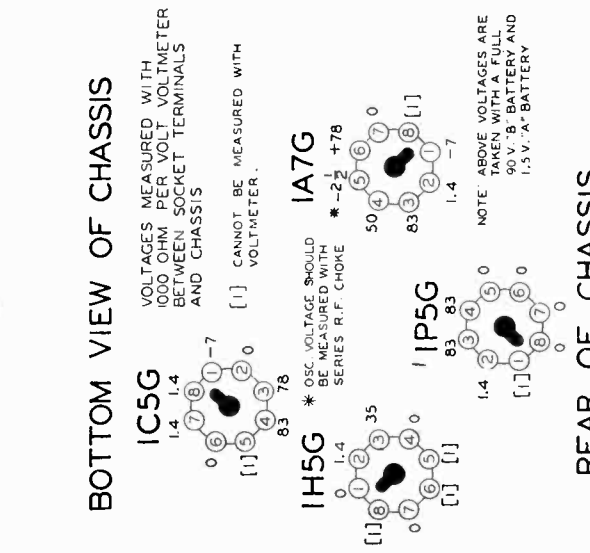
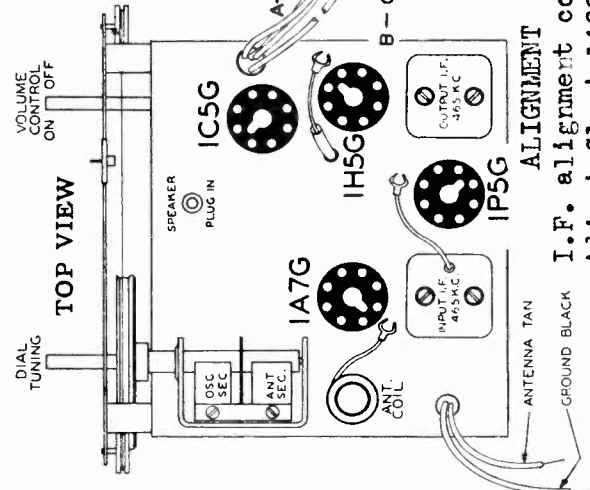
130266	200M ohm— $\frac{1}{2}$ w.
13018	4M ohm— $\frac{1}{2}$ w.
1307	40M ohm— $\frac{1}{2}$ w.
1304	3 megohm— $\frac{1}{2}$ w.
101175	1 megohm volume control
130257	5 megohm— $\frac{1}{2}$ w.
1303	500M ohm— $\frac{1}{2}$ w.
13019	1 megohm— $\frac{1}{2}$ w.
130200	700 ohm— $\frac{1}{2}$ w.

**CONDENSERS**

102110	2 gang variable condenser
	Antenna Trimmer on gang
	Oscillator trimmer on gang
C1	.00025 mica
C2	.05 x 200 v.
C3	.05 x 200 v.
C4	.0001 mica
C5	.003 x 600 v.
C6	.0001 mica
C7	.01 x 400 v.
C8	.01 x 400 v.
C9	10 mid. x 25 w. v.
C10	.003 x 600 v.
C11	.25 x 200 v.
C12	.1 x 200 v.
C13	.1 x 200 v.

**PARTS**

111132	Antenna Coil
110122	Oscillator Coil
108151B	Input I. F. - 465 kc.
108153	Output I. F. - 465 kc.
10591	Output Transformer
5 in. P. M. Speaker	
	Off-on switch on Volume control



**ALIGNMENT**  
I.F. alignment conventional  
Adjust C1 at 1400 kc  
Adjust C2 at 1730 kc

BELMONT RADIO CORP.

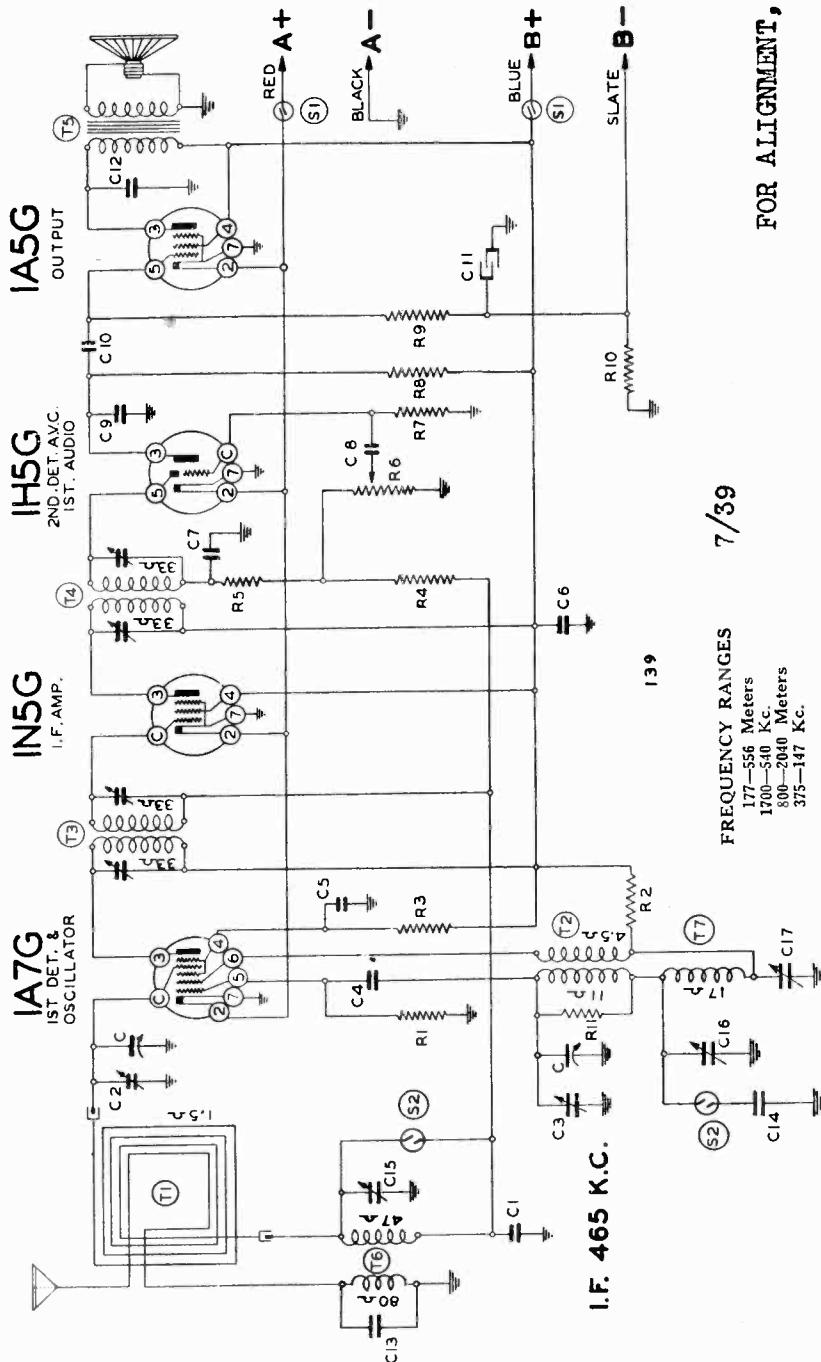
MODEL 411, Series A  
Schematic, Voltage  
Socket, Trimmers

RESISTORS

- R1 1309 200M ohm—1/4 w.—20%
- R2 13018 4M ohm—1/4 w.—20%
- R3 130206 40M ohm—1/4 w.—20%
- R4 13038 2 megohm—1/4 w.—20%
- R5 13020 100M ohm—1/4 w.—20%
- R6 130173 1 megohm volume control
- R7 130257 5 megohm—1/4 w.—25%
- R8 13037 1 megohm—1/4 w.—20%
- R9 13038 2 megohm—1/4 w.—20%
- R10 13070 50M ohm—1/4 w.—10%
- R11 130232 25M ohm—1/4 w.—10%

CONDENSERS

- C 102109B 2 gang variable condenser
- C1 .05 x 200 v.—25%
- C2 R.F. Trimmer on Gang
- C3 Oscillator Trimmer on Gang
- C4 .00025 mica—20%
- C5 .05 x 200 v.—25%
- C6 .25 x 200 v.—20%
- C7 .00025 mica—20%
- C8 .002 x 600 v.—25%
- C9 .00025 mica—20%
- C10 .01 x 200 v.—25%
- C11 11975 10 mid. x 25 w. v. lytic
- C12 10025 .002 x 600 v.—25%
- C13 12912 .01 x 200 v.—25%
- C14 10078 .01 x 200 v.—25%
- C15 124103 L.W. Antenna Trimmer
- C16 124103 L.W. Oscillator Trimmer
- C17 124103 L.W. Oscillator Padder

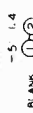


FOR ALIGNMENT, SEE INDEX

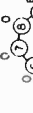
PARTS

- T1 111141 Loop Antenna Complete
- T2 110121 B.C. Oscillator Coil
- T3 108151 Input I.F. Coil
- T4 108152 Output I.F. Coil
- T5 114165 5" Speaker with output transformer
- T6 111140 L.W. Antenna Coil
- T7 110129 L.W. Oscillator Coil
- S1 D.P.S.T. On-off switch on volume control
- S2 12570B Band Switch

IA5G



IH5G



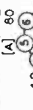
BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND CHASSIS.

IN5G



IA7G



REAR OF CHASSIS

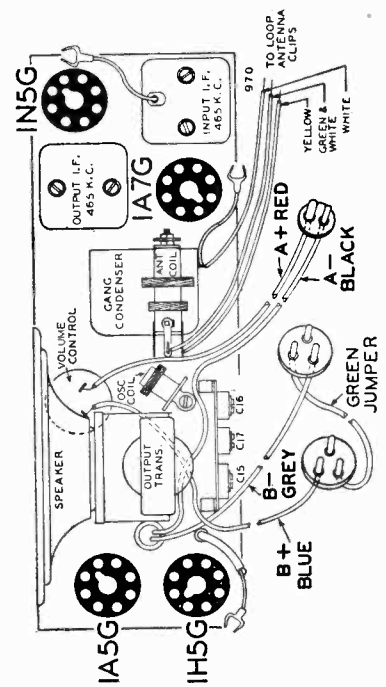


FIG. 2—TOP VIEW

MODEL 411, Series A  
MODEL 510, Series A  
Alignment

BELMONT RADIO CORP.

The alignment procedures for Belmont Model 411, Series A, and Model 510, Series A, are given below. Note "C" for Model 411 applies also to Models 407, 635, Series A, and 636, Series A and B.

MODEL 411 (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.	465 Kc.	.1 MFD.	Grid of 1A7G Tube	"M.W."	Rotor full open (Plates out of mesh)	Four trimmers on top (See Fig. 1)	Output and input I. F.	(See Note "A") Adjust to maximum output
MEDIUM WAVE BAND	1700 Kc.	.1 MFD.	Grid of 1A7G Tube	"M.W."	Rotor full open (Plates out of mesh)	Trimmer (C3) front section of gang (See Fig. 4)	Medium Wave Oscillator	(See Note "A") Adjust to maximum output
	1400 Kc.		See Note "C"	"M.W."	Set dial at 1400 Kc.	Trimmer (C2) rear section of gang (See Fig. 4)	Antenna	(See Note "B") Adjust to maximum output
LONG WAVE BAND	375 Kc.		See Note "C"	"L.W."	Rotor full open (Plates out of mesh)	Trimmer (C16)	Long Wave Oscillator	Adjust to maximum output
	375 Kc.		See Note "C"	"L.W."	Rotor full open (Plates out of mesh)	Trimmer (C15)	Antenna	Adjust to maximum output
	150 Kc.		See Note "C"	"L.W."	Set dial at 150 Kc.	Trimmer (C17)	Long Wave Osc. Pad.	Adjust to maximum rock dial. (See note "D")

TEST FREQUENCIES USED:

Kilocycles	Meters
I. F. 465	645.1
Long Wave 150	2000
Medium Wave 375	800
1400	214
1700	177

NOTE "A"—A 1 megohm resistor must be connected between the two loop antenna leads from the chassis when aligning the I. F. transformers and setting the oscillator trimmer, (C3). The loop antenna must be disconnected from the chassis.  
NOTE "B"—Remove the 1 megohm resistor from the loop antenna leads; mount the chassis and the loop antenna in the cabinet, connect the loop antenna to the chassis. Adjust trimmer (C2). (See note "C").  
NOTE "C"—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.  
NOTE "D"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained.

MODEL 510 (Series A)

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.	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.	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.	Terminal "B" (See Fig. 4)	Iron Cores All the way out	Trimmer (C6)	Oscillator	Adjust to maximum output
	1720 Kc.	200 MME.	Terminal "A" (See Fig. 4)	Iron Cores All the way out	Trimmer (C3)	Antenna	Adjust to maximum output (See Note "A")
	1400 Kc.	200 MME.	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 MME.	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 the gear teeth 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 current measurement is in tracking, the adjustment of the antenna coil at 1400 Kc. 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.

Connect -B of radio chassis to ground post of signal generator through .1 mf condenser.



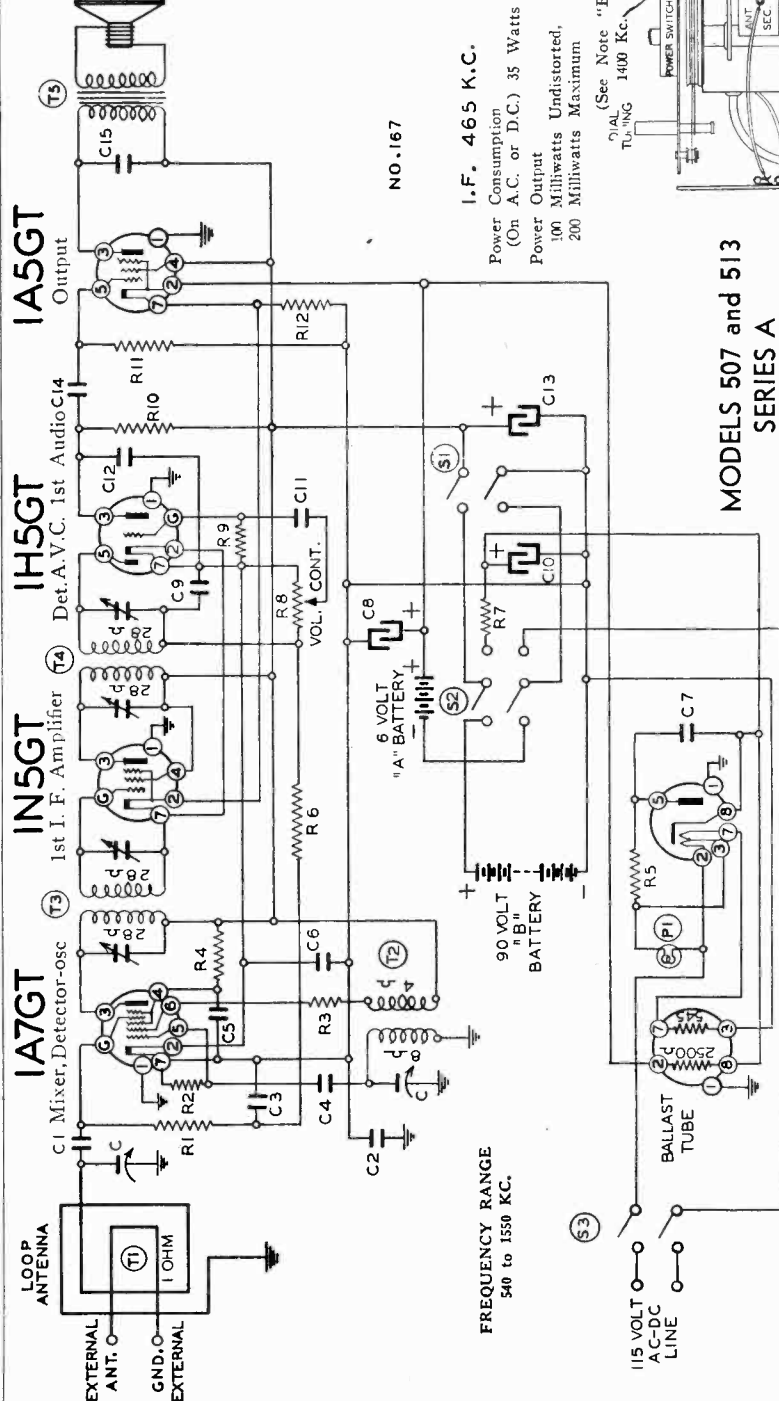
BELMONT RADIO CORP.

MODELS 507, 513, Series A  
Serial 211,300 and up  
Schematic, Voltage, Trimmers  
Socket, Alignment

Circuit Diagram Ref. No.	Part No.	RESISTORS
R1	13038	2 megohm— $\frac{1}{2}$ w.
R2	130266	200M ohm— $\frac{1}{2}$ w.
R3	13018	4M ohm— $\frac{1}{2}$ w.
R4	130208	40M ohm— $\frac{1}{2}$ w.
R5	130215	25 ohm— $\frac{1}{2}$ w.
R6	130170	3 megohm— $\frac{1}{2}$ w.
R7	130129	2500 ohm— $\frac{1}{2}$ w.
R8	100210	1 megohm volume control
R9	100210	1 megohm— $\frac{1}{2}$ w.
R10	130357	500M ohm— $\frac{1}{2}$ w.
R11	13038	2 megohm— $\frac{1}{2}$ w.
R12	13092	1M ohm— $\frac{1}{2}$ w.

Circuit Diagram Ref. No.	Part No.	CONDENSERS
C1	102125	2 gang variable condenser
C2	12912	.00025
C3	10010	.2 mid. x 400 v.
C4	1009	.05 x 200 v.
C5	12912	.00025
C6	10020	.05 x 200 v.
C7	10011	.1 x 200 v.
C8	119104	Lytic 200 mid. x 6 w. v.
C9	1295	.0001 mid.
C10	119104	Lytic 40 mfd. x 150 w. v.
C11	10025	.002 x 600 v.
C12	1292	.005 mfd.
C13	119104	Lytic 20 mid. x 150 w. v.
C14	10011	.01 x 400 v.
C15	10025	.002 x 600 v.

C8, C10 and C13 in same unit



MODELS 507 and 513  
SERIES A  
(SERIAL No. 211,300 and UP)

tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt. All voltages are indicated on the voltage chart.

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.

The approximate current consumption is as follows:  
"A"—50 ma., "B"—8 ma.

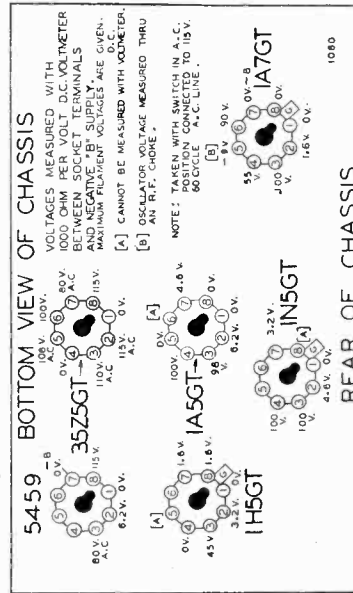
ALIGNMENT NOTES

**NOTE "A"**—The loop antenna need not be connected to the radio when making these adjustments. The ground of the signal generator is connected to the negative "B" wire of the 1A7GT tube, the other lead from the signal generator in series with .1 MFD. dummy to the grid of the 1A7GT tube.

**NOTE "B"**—This adjustment should be made with the ground lead of the signal generator connected to the ground terminal of the loop assembly. The other lead of the signal generator is connected in series with a 200 Mmf. dummy to the antenna terminal of the loop assembly.

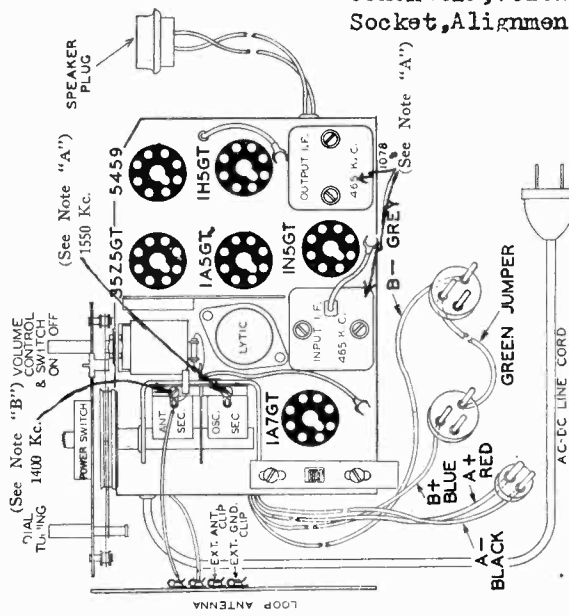
It is important when making this adjustment that the same distance between the loop antenna and the chassis be maintained as when the chassis and loop are installed in the cabinet.

Ballast 5459 35Z5GT Rectifier



SERVICE NOTES

Voltages taken from different points of circuit to chassis are measured with volume control full on, all



- Loop Antenna
- Oscillator Coil
- Input I. F. Coil—465 kc.
- Output I. F. Coil—465 kc.
- Speaker with output transform
- Switch on volume control
- Power Switch
- Cut-off switch in line cord
- Pilot light T4

MODEL 510, Series A  
Schematic, Voltage  
Socket, Trimmers

BELMONT RADIO CORP.

RESISTORS

R1	130176	20M ohm—1/2 w.
R2	130100	150M ohm—1/2 w.
R3	130279	1M ohm—1 watt
R4	1304	3 megohm—1/2 w.
R5	101196	500M ohm volume control
R6	130293	30 ohm—1 watt
R7	130257	5 megohm—1/2 w.
R8	130288	50 ohm—1.5 watt
R9	1302	75M ohm—1/2 w.
R10	13011	250M ohm—1/2 w.
R11	130166	150 ohm—1/2 w.

CONDENSERS

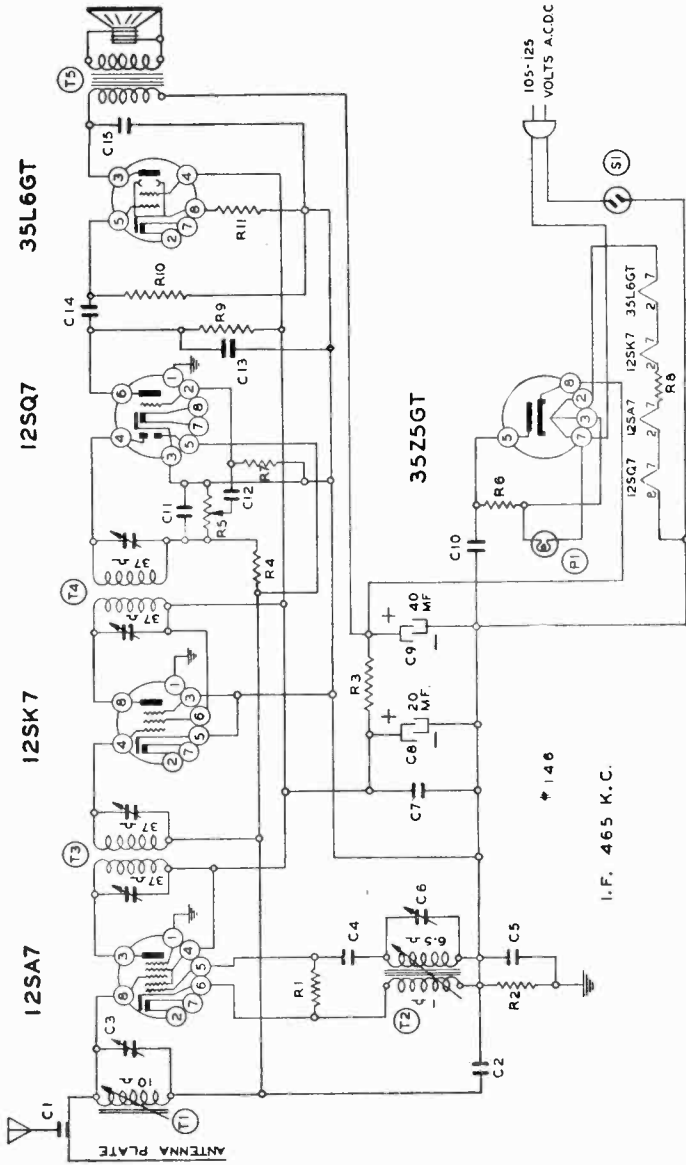
C1	131262	.00001 washer condenser (on Antenna plate)
C2	10022	.05 x 200 v.
C3	124100	Antenna Trimmer
C4	12930	.00005 Mica
C5	10091	.15 x 400 v.
C6	124100	Oscillator Trimmer
C7	10022	.05 x 200 v.
C8	11992	20 mid. x 150 v. lytic
C9	11992	40 mid. x 150 v. lytic
C10	10013	.05 x 400 v.
C11	12912	.00025 mica
C12	10025	.002 x 600 v.
C13	1292	.0005 mica
C14	10011	.01 x 400 v.
C15	10011	.01 x 400 v.

C3 and C6 in one unit  
C8 and C9 in one unit  
C5 and C15 in one unit

FOR ALIGNMENT, SEE INDEX

PARTS

T1	111136B	Antenna Coil Complete
T2	110126B	Oscillator Coil
T3	108157C	Input I. F. Coil—465 kc.
T4	108157C	Output I. F. Coil—465 kc.
T5	114170	4" P. M. Speaker and Transformer
SI	101196	Off-on switch on volume control
P1	107249	6-8 v. pilot light T-47



BOTTOM VIEW OF CHASSIS  
VOLTAGES MEASURED WITH 1000 OHM PER  
VOLT VOLTMETER BETWEEN SOCKET TERMINALS  
AND B—

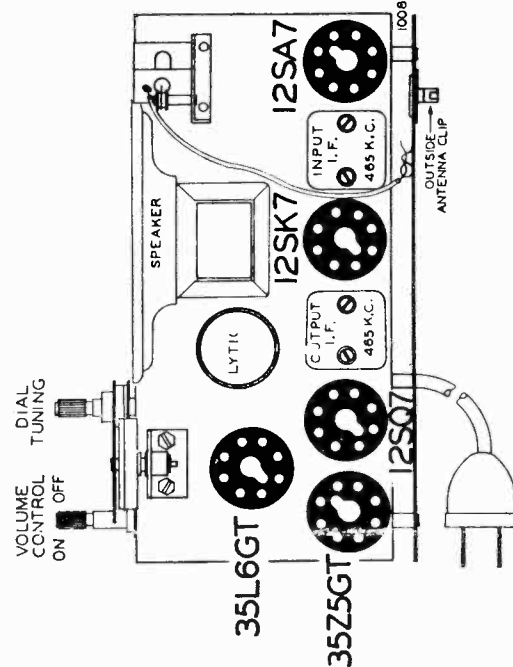
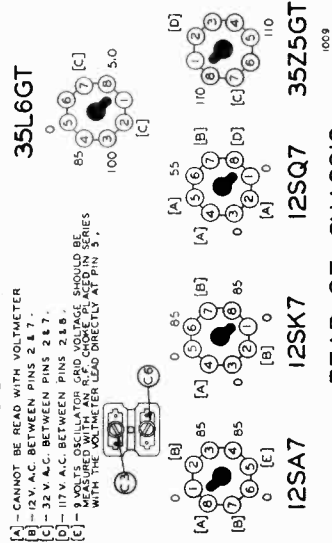
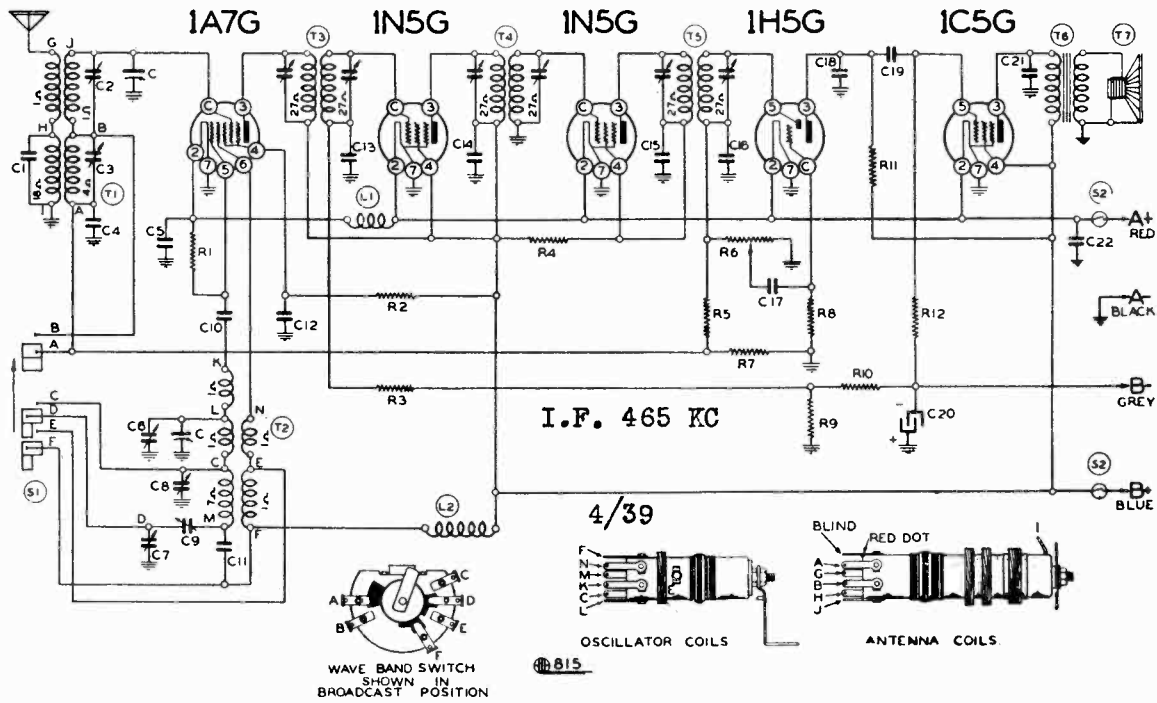


FIG. 3.—BOTTOM VIEW  
REAR OF CHASSIS

FIG. 1.—TOP VIEW

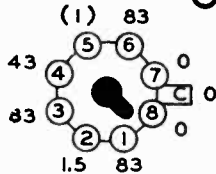
BELMONT RADIO CORP.

MODEL 511, Series A  
Schematic, Voltage  
Socket, Alignment

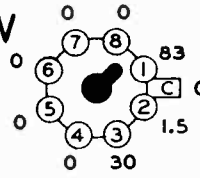


(Conv.)

1A7G BOTTOM VIEW OF CHASSIS

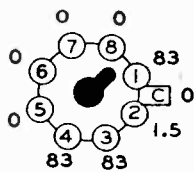
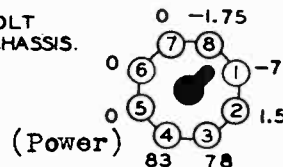


(2nd Det.) 1H5G  
(AVC-AF)

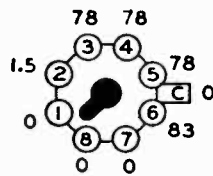


VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS & CHASSIS.

(1) CANNOT BE READ WITH VOLTMETER.



1N5G (I.F.)



1N5G (I.F.)

REAR OF CHASSIS

RESISTORS

- R1 200M ohm—1/2 w.
- R2 50M ohm—1/2 w.
- R3 1 megohm—1/2 w.
- R4 3M ohm—1/2 w.
- R5 2 megohm—1/2 w.
- R6 250M ohm—volume control
- R7 4 megohm—1/2 w.
- R8 1 megohm—1/2 w.
- R9 180 ohm—1/2 w.
- R10 450 ohm—1/2 w.
- R11 500M ohm—1/2 w.
- R12 1 megohm—1/2 w.

CONDENSERS

- C 2 gang variable condenser
- C1 .0001 mica
- C2 S.W. Antenna Adj. Trimmer
- C3 B.C. Antenna Adj. Trimmer
- C4 .05 x 200 v.
- C5 .25 x 200 v.
- C6 S.W. Osc. Adj. Trimmer on gang
- C7 S.W. Adj. Series pad .003 w. c.
- C8 B.C. Osc. Adj. Trimmer
- C9 B.C. Adj. Series Pad 580 mmf. w. c.
- C10 .00005 mica
- C11 .05 x 200 v.
- C12 .1 x 200 v.
- C13 .05 x 200 v.
- C14 .25 x 200 v.
- C15 .1 x 200 v.
- C16 .00025 mica
- C17 .006 x 600 v.
- C18 .0002 mica
- C19 .01 x 400 v.
- C20 20 mfd. lytic w. v. 25 v.
- C21 .004 x 600 v.
- C22 .25 x 200 v.

PARTS

- T1 111117 Antenna Coil Complete
- T2 110106 Oscillator Coil Complete
- T3 108133 Input I. F. 465 kc. complete
- T4 108135 Interstage I. F.—465 kc. complete
- T5 108134 Output I.F.—465 kc. complete
- T6 114115 6" P. M. Speaker
- L1 10568 "A" Choke
- L2 1233 R. F. "B" Choke
- S1 12573 Wave Band Switch
- S2 D.P. S.T. Switch on Volume Control
- T7 10569 Output Transformer

ALIGNMENT

I.F. alignment conventional  
SW- Trim 17 MC; pad 6MC  
BB- Trim osc at 1750 kc  
Trim ant. at 1400 kc  
Pad at 600 kc

MODEL 551B, Series A  
Issue B  
Schematic, Voltage, Socket  
Trimmers, Alignment

RESISTORS

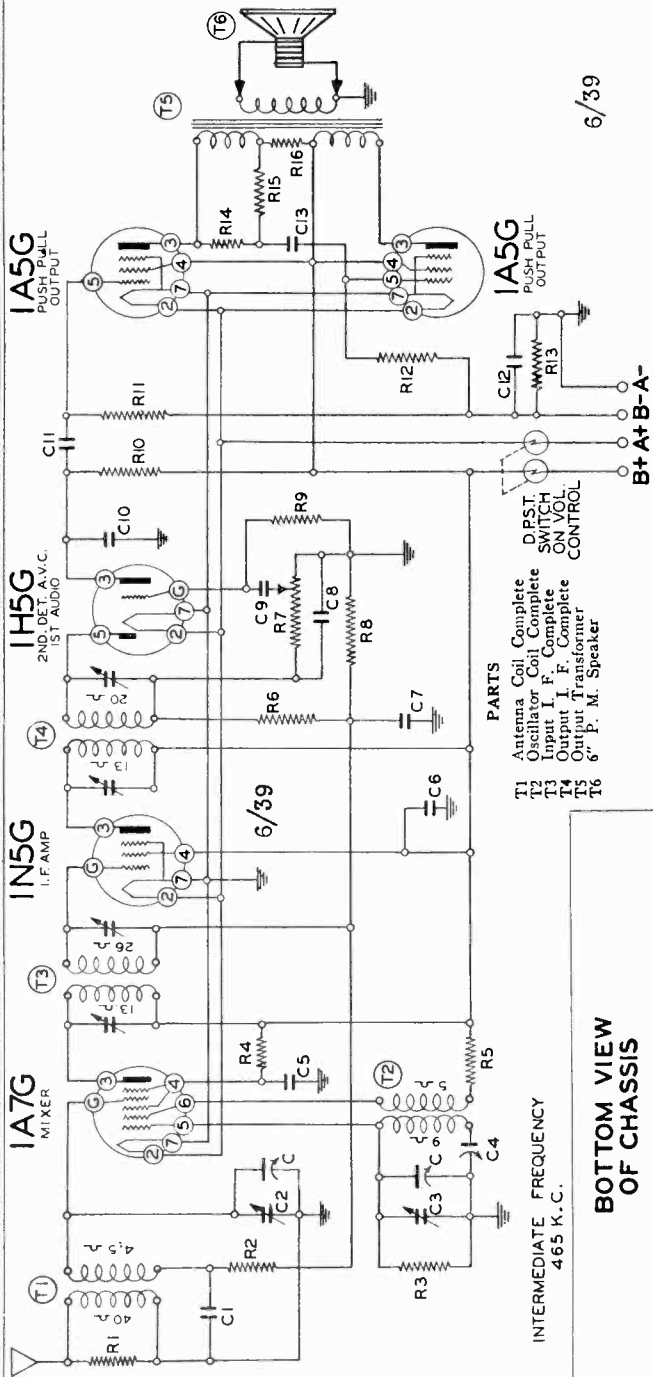
R1	13021	20M ohm—1/2 w.
R2	13020	100K ohm—1/2 w.
R3	13009	200K ohm—1/2 w.
R4	130208	40M ohm—1/2 w.
R5	13071	4M ohm—1/2 w.
R6	13038	1 megohm—1/2 w.
R7	101140	2 megohm—volume cont.
R8	13038	1 megohm—1/2 w.
R9	13019	1 megohm—1/2 w.
R10	13037	750M ohm—1/2 w.
R11	13019	1 megohm—1/2 w.
R12	13022	350 ohm—1/2 w.
R13	13019	1 megohm—1/2 w.
R14	13019	1 megohm—1/2 w.
R15	130232	25M ohm—1/2 w.
R16	130264	1000 ohm—1/2 w.

CONDENSERS

C1	10289	2-gang Variable Condens.
C2	1009	.05 x 200 v.—25%
C3		Antenna Section Trimmer
C4		Oscillator Section Trimmer
C5	12464	Series Pad
C6	10070	.5 x 120 v.—20%
C7	10048	.5 x 200 v.
C8	1009	.05 x 200 v.
C9	1295	.001 Mica
C10	10011	.01 x 400 v.
C11	10078	.01 x 100 v.
C12	10078	.01 x 100 v.
C13	10078	.01 x 200 v.

ALIGNMENT

I.F.—conventional  
Trim osc at 1735 kc  
pad osc at 600 kc  
Trim ant. at 1400 kc



PARTS

- T1 Antenna Coil, Complete
- T2 Oscillator Coil, Complete
- T3 Input I. F. Complete
- T4 Output I. F. Complete
- T5 Output Transformer
- T6 6" P. M. Speaker

BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLT-METER BETWEEN SOCKET TERMINALS AND CHASSIS.

IA7G

IN5G

IA5G

IA5G

REAR OF CHASSIS

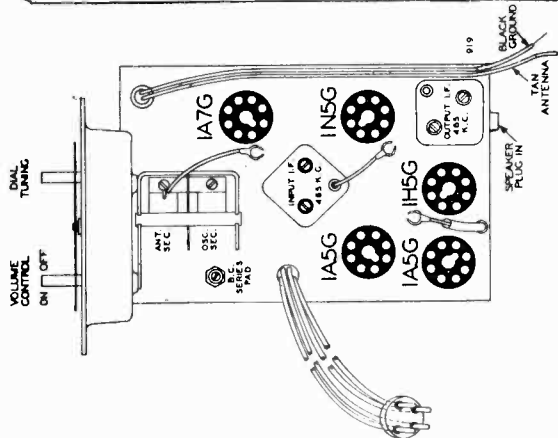
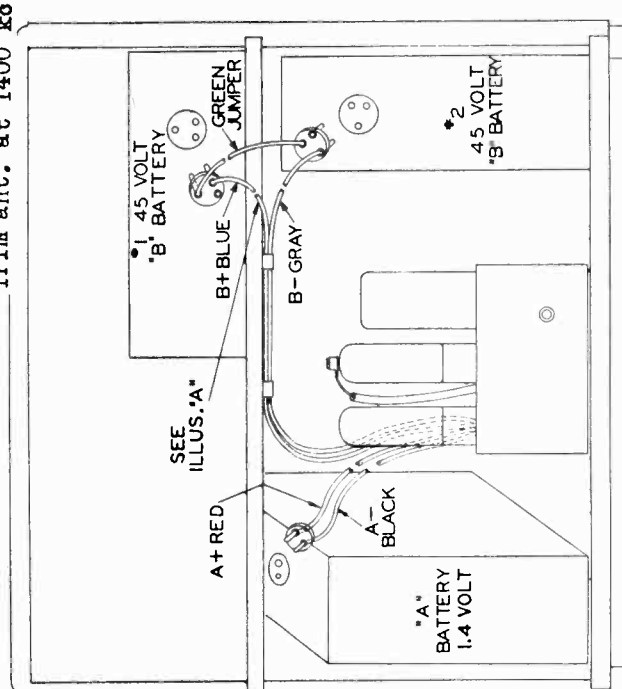


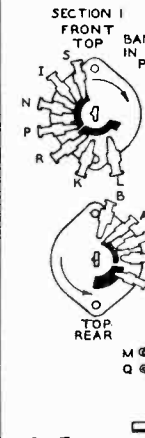
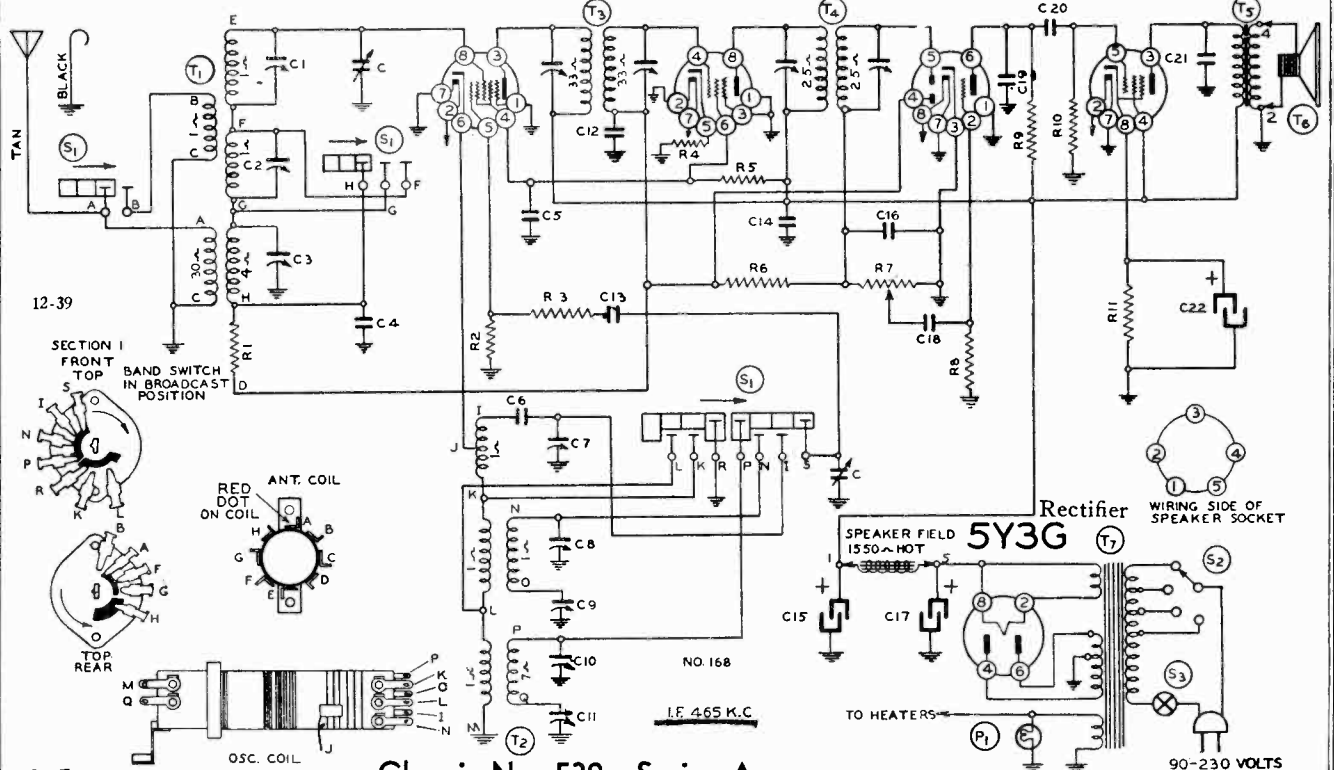
FIG. 1—TOP VIEW



Serial 9M259100 and up  
Schematic, Voltage, Socket  
Trimmers

BELMONT RADIO CORP. MODELS 539-415, etc. (Export)  
Chassis 539, Series A

First Detector-Oscillator. I. F. Amplifier. Second Detector, A.V.C.  
First Audio. Output Amplifier  
**6SA7 6SK7 6SQ7 6K6G**



**RESISTORS**

Ref. No.	Part No.	Description
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.

**Chassis No. 539—Series A**  
(Serial No. 9M259100 and up)  
**For Models 539-415, Etc.**

**CONDENSERS**

Ref. No.	Part No.	Description
C1	124124	S. W. Antenna Trimmer
C2	124124	M. W. Antenna Trimmer
C3	124124	B. C. Antenna Trimmer
C4	1009	.05 x 200 v.
C5	1001	.1 x 400 v.
C6	129153	.006—S. W. Padder (Set at Factory)
C7	124123	S. W. Oscillator Trimmer
C8	124123	M. W. Oscillator Trimmer
C9	129154	.0025 M. W. Padder
C10	124123	B. C. Oscillator Trimmer
C11	129155	B. C. Padder
C12	10026	.02 x 400 v.
C13	1295	.0001 Mica
C14	1001	.1 x 400 v.

**PARTS**

Ref. No.	Part No.	Description
T1	111169	Antenna Coil
T2	110143	Oscillator Coil
T3	108169B	Input I. F.
T4	108170	Output I. F.
T5	10575	Output Transformer
T6	114176	6" Dynamic Speaker (1550 ohm field)
T7	104193	Power Transformer 40-60 cycles 90-230 volts
S1	125105	Band Switch
S2		Voltage Switch on Power Transformer
S3		Volume Control—On-Off switch
P1	10794	Pilot Light Bulb T-44

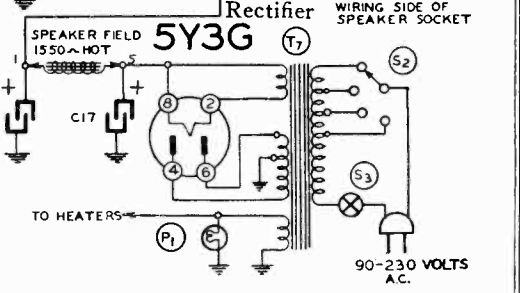


FIG. 3—FRONT OF CHASSIS

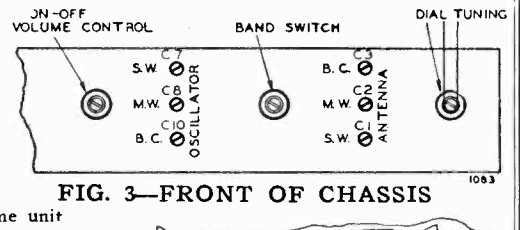


FIG. 4—REAR OF CHASSIS

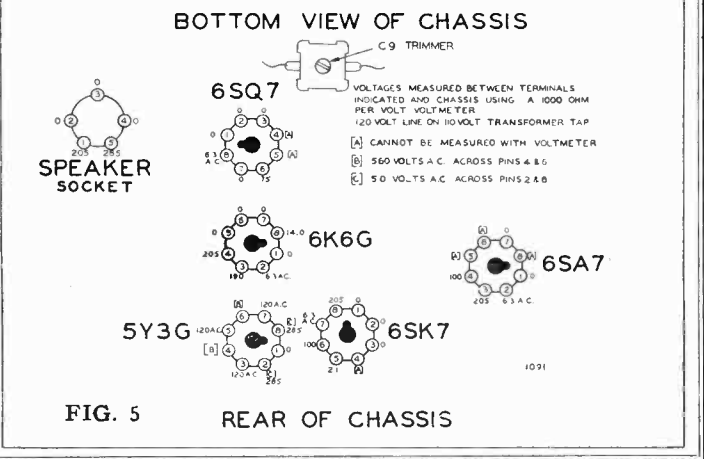
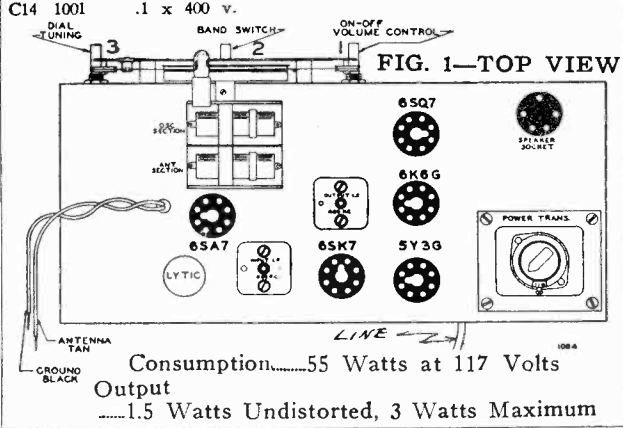


FIG. 5 REAR OF CHASSIS

MODELS 539-415, etc. (Export)  
 Chassis 539, Series A  
 Alignment  
 MODEL 577D  
 Tuner Data

BELMONT RADIO CORP.

**ALIGNMENT PROCEDURE CHASSIS 539.** No aligning adjustments should be attempted with the chassis in the cabinet.

- 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.
- 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.

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.	465 Kc.	1 MFD.	Grid of 6SK7 I. F. Tube	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Grid of 6SA7	Broadcast (Extreme Left Rotation)	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	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 Fig. 3)	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 Fig. 3)	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 Fig. 3)	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 Fig. 5)	Medium wave osc. series pad	Adjust to maximum rock 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 Fig. 3)	Broadcast oscillator	Adjust to maximum output
	1500 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1500 Kc.	Trimmer (C3) (See Fig. 3)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 600 Kc.	Trimmer (C11) (See Fig. 4)	Broadcast oscillator series pad	Adjust to maximum rock dial. (See note "B")

**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.

**PROCEDURE FOR SETTING THE AUTOMATIC LEVERS** MODEL 577D

There are five levers on the dial by means of which five stations may be selected, (See "B" Fig. 2). Make a list of local stations you tune in regularly; any number up to and including five. Punch out from the set of station call letter tabs supplied, the call letters of the stations you have selected.

On the front of each automatic tuner lever an opening is provided for inserting the call letter tabs, (See "A" Fig. 2). Insert the call letter tabs in the rectangular openings of each of the automatic tuner levers. One of the small celluloid tabs supplied should be snapped into place over each of the station call letter tabs.

Press DOWN ALL THE WAY any one of the automatic tuner levers. Holding it down FIRMLY, tune in by means of the tuning knob (No. 1) the station you have assigned to this lever. Turn the tuning knob very slowly back and forth (while still holding lever in downward position) until the signal is clearest. The station will then be accurately tuned in. Release the lever.

Press down another automatic tuner lever. Holding it down FIRMLY, carefully tune in the station assigned to this lever. Release this lever.

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

Now rotate the tuning knob (No. 1) to the right (clockwise) as far as it will turn, and tighten the special locking screw ("C") located on left side of tuner dial assembly (See Fig. 2).

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 levers. (Note: Locking screw "C" is loose when radio is shipped from factory).

If you should desire to change any station you selected to another, loosen the locking screw "C" one or two turns, select the new station as explained. Be sure to retighten the locking screw, otherwise the stations you have selected will not stay adjusted to the levers.

The automatic dial is now set up for quick tuning. Press down on the lever and your favorite station is selected.

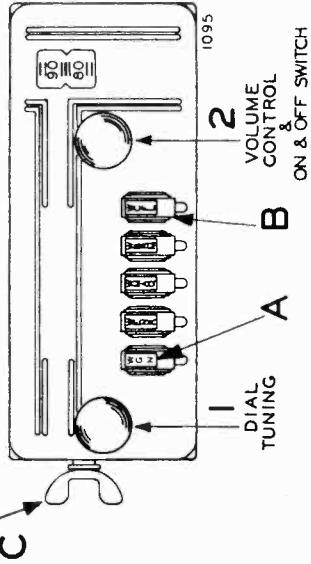
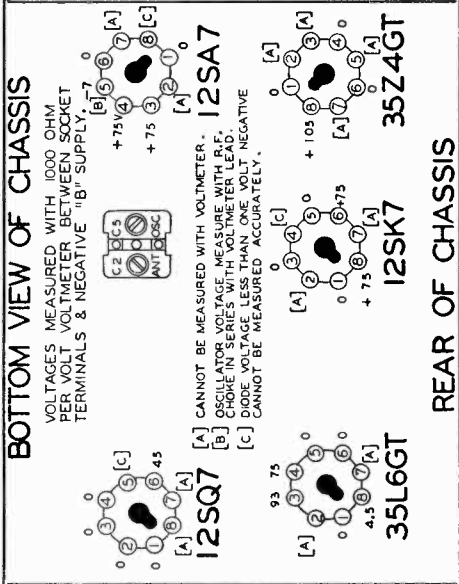


FIG. 2—FRONT VIEW

BELMONT RADIO CORP.

MODEL 571, Series A  
Serial 189300 and up  
Schematic, Voltage, Socket  
Trimmers, Notes

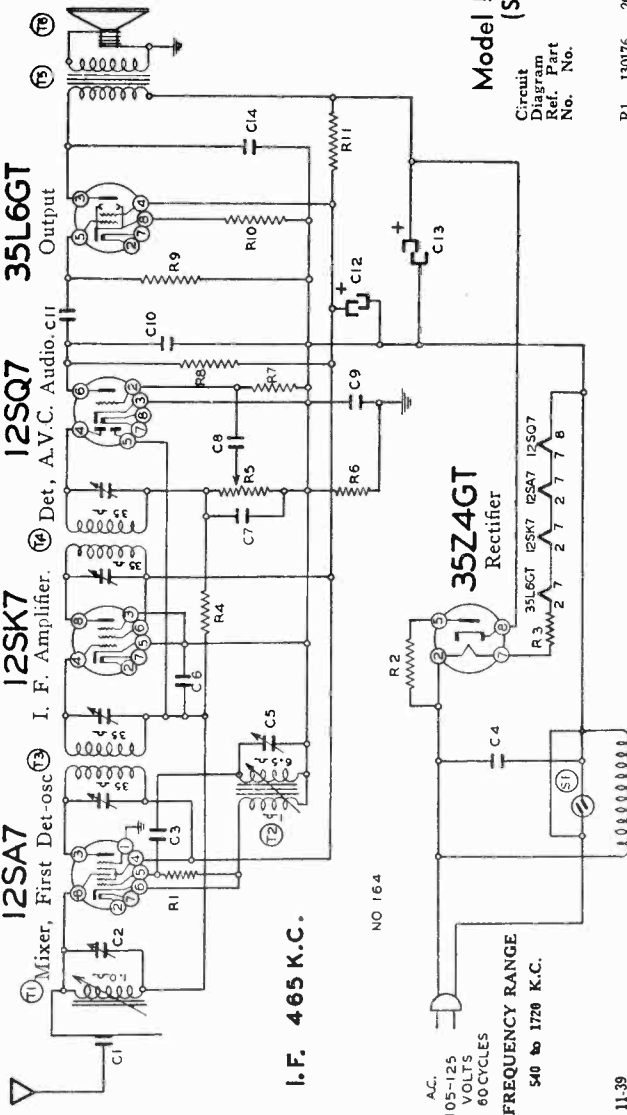


REAR OF CHASSIS

Model 571 Series A  
(Serial No. 189300 and up)

Circuit Diagram Ref. Part No.	Description
C6	10013 05 x 400 v.
C7	1295 .002 Mica
C8	10025 .002 x 500 v.
C9	10091 .15 x 400 v.
C10	1292 .0005 Mica
C11	10071 .004 x 600 v.
C12	11992 20 Mfd. Lytic
C13	11992 40 Mfd. Lytic
C14	10011 .01 x 400 v.
C2 and C5 in one unit. C12 and C13 in one unit.	
RESISTORS	
R1	13076 20M ohm-1/2 w.
R2	130215 25 ohm-1/2 w.
R3	130388 30 ohm-1/2 w.
R4	1304 50 Megohm-1/2 w.
R5	10209 Volume Control-1/2 Meg.
R6	130100 150M ohm-1/2 w.
R7	130257 5 Megohm-1/2 w.
R8	130100 150M ohm-1/2 w.
R9	13011 250M ohm-1/2 w.
R10	130166 150 ohm-1/2 w.
R11	130199 1500 ohm-1 w.
CONDENSERS	
C1	131262 .002 Washer Condenser (Ant. Clip on Ant. Plate)
C2	124100 Ant. Section Dual Trimmer
C3	12939 .00005 Mica
C4	1001 1 x 400 v.
C5	124100 Osc. Section Dual Trimmer
PARTS	
T1	111136 Antenna Coil Complete
T2	110126 Oscillator Coil
T3	108157D Input F. Coil-65 Kc.
T4	108157E Output F. Coil-465 Kc.
T5	105106 Output Transformer
T6	114187 4" Speaker-PM
T7	104188 Electric Clock Complete
S1	On-Off Switch on Volume Control

Power Consumption 35 Watts  
Power Output 800 Milliwatts Undistorted,  
1.2 Watts Maximum



Slight adjustments to the oscillator and antenna circuits can be made without removing the chassis from the cabinet through a hole which is provided on the bottom of the cabinet. (Remove snap-in button.)  
The two adjustments on the trimmer assembly can be reached with a long insulated type screwdriver through this hole.

**SERVICE NOTES:**

- Voltages taken from different points of circuit to —B are measured with 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 117 volt A.C. line.
- 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.

FIG. 1—TOP VIEW

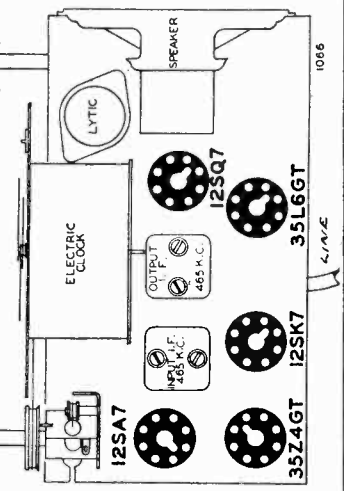


FIG. 4

MODEL 571, Series A  
MODEL 629, Series A  
Alignment

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.

**Model 571 Series A (Serial No. 189300 and up)**

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.	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.	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.	Terminal "B" (See Fig. 4)	Iron Cores All the way out	Trimmer (C5) (See bottom of Radio, Fig. 3)	Oscillator	Adjust to maximum output
	1720 Kc.	200 MMF.	Terminal "A" (See Fig. 4)	Iron Cores All the way out	Trimmer (C2) (See bottom of Radio, Fig. 3)	Antenna	Adjust to maximum output
	1400 Kc.	200 MMF.	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 (See Note "A")
	1720 Kc.	200 MMF.	Terminal "A" (See Fig. 4)	Turn Dial to 1720 Kc.	Adjust trimmer (C2) (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"—After the antenna coil has been tracked at 1400 Kc. it is necessary to check the antenna trimmer (C2) 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 again to adjust the position of the antenna coil at 1400 Kc. These adjustments should be tried several times until no change of trimmer adjustment is required at 1720 Kc.

**MODEL 629 SERIES A (Serial No. 9L225000 and up)**

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.	465 Kc.	.1 MFD.	Grid of 6SK7	Broadcast (Extreme left rotation)	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Grid of 6SA7	Broadcast (Extreme left rotation)	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Input I. F.	Adjust to maximum output
SHORT WAVE BAND	18.3 Mc.	400 ohms	Antenna lead	Short Wave (Extreme right rotation)	Rotor full open (Plates out of mesh)	Trimmer (C4) (See Fig. 4)	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 ohms	Antenna lead	Short Wave (Extreme right rotation)	Dial Set at 17 MC.	Trimmer (C5)	Short Wave antenna	Adjust to maximum output
BROAD-CAST BAND	1720 Kc.	200 mmf.	Antenna lead	Broadcast (Extreme left rotation)	Rotor full open (Plates out of mesh)	Trimmer (C8) (See Fig. 4)	Broadcast oscillator	Adjust to maximum output
	1400 Kc.	200 mmf.	Antenna lead	Broadcast (Extreme left rotation)	Set Dial at 1400 Kc.	Trimmer (C6)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	Antenna lead	Broadcast (Extreme left rotation)	Set Dial at 600 Kc.	Trimmer (C7) (See Fig. 5)	Broadcast oscillator series pad (Bottom of chassis)	Adjust to maximum rock dial. (See note "A")

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.

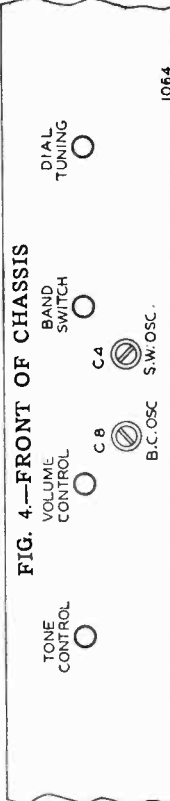
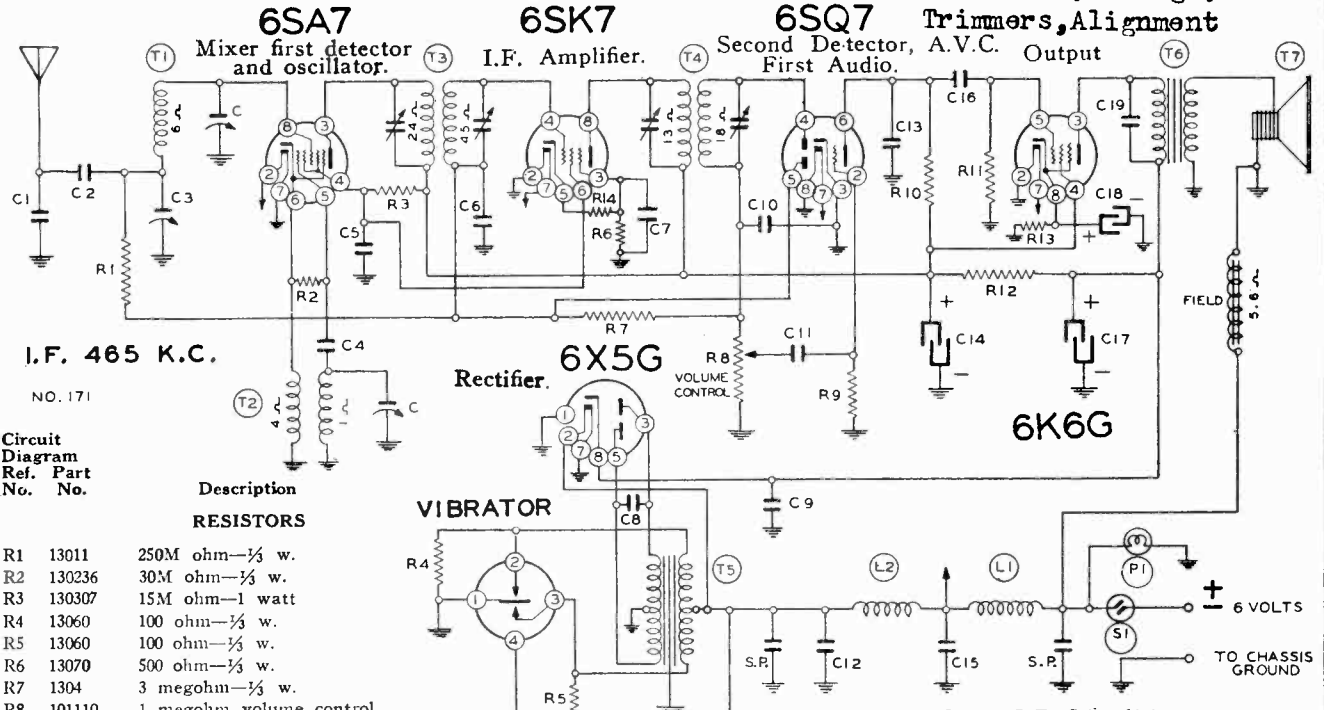


FIG. 4.—FRONT OF CHASSIS



BELMONT RADIO CORP.

MODEL 577D  
Serial 214845 up  
Schematic, Voltage, Socket  
Trimmers, Alignment



Circuit Diagram Ref. Part No. No.

Ref. Part No.	Description
R1 13011	250M ohm— $\frac{1}{2}$ w.
R2 130236	30M ohm— $\frac{1}{2}$ w.
R3 130307	15M ohm—1 watt
R4 13060	100 ohm— $\frac{1}{2}$ w.
R5 13060	100 ohm— $\frac{1}{2}$ w.
R6 13070	500 ohm— $\frac{1}{2}$ w.
R7 1304	3 megohm— $\frac{1}{2}$ w.
R8 101110	1 megohm volume control
R9 130257	5 megohm— $\frac{1}{2}$ w.
R10 13011	250M ohm— $\frac{1}{2}$ w.
R11 1303	500M ohm— $\frac{1}{2}$ w.
R12 130199	1500 ohm—1 watt
R13 130308	750 ohm—1 watt
R14 130174	50 ohm— $\frac{1}{2}$ w.

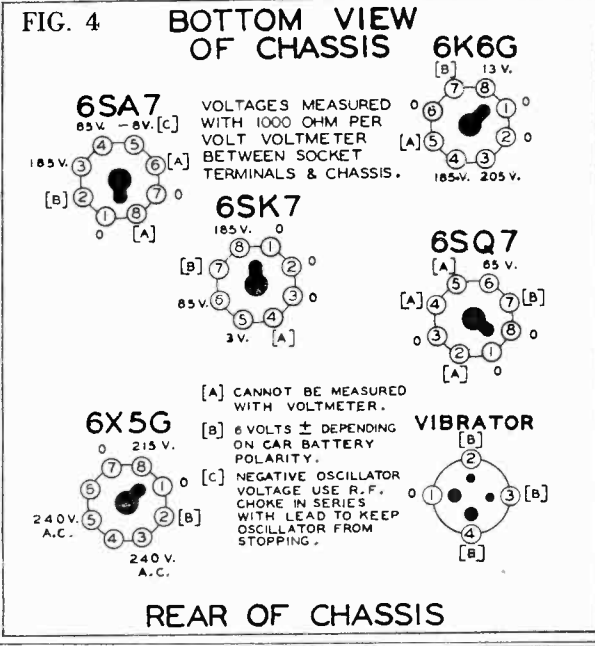
CONDENSERS

C 10269	2 gang variable condenser
C1 1293	.00002 mica
C2 10055	.01 x 400 volts
C3 12434	Adj. Antenna Trimmer
C4 12921	.0002 mica
C5 100115	.05 x 400 v.
C6 1009	.05 x 200 v.
C7 10020	.1 x 200 v.
C8 10034	.005 x 1200 v.
C9 12912	.00025 mica
C10 1295	.0001 mica
C11 10025	.002 x 600 v.

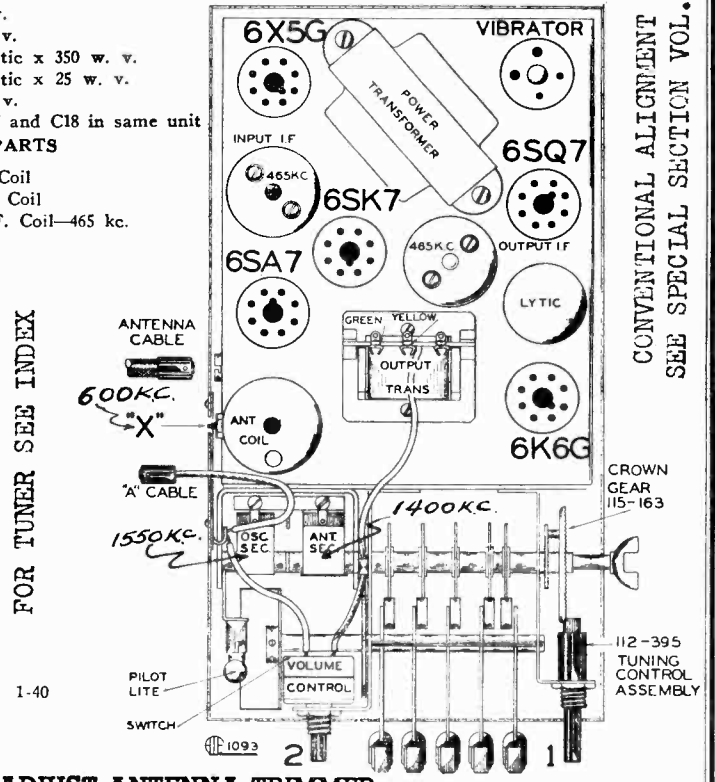
C12 10031	.5 x 120 v.
C13 1292	.0005 mica
C14 119105	15 ufd. lytic x 350 w. v.
C15 10031	.5 x 120 v.
C16 10078	.01 x 200 v.
C17 119105	15 ufd. lytic x 350 w. v.
C18 119105	20 ufd. lytic x 25 w. v.
C19 10087	.01 x 600 v.
T1 11195B	Antenna Coil
T2 110146	Oscillator Coil
T3 108139	Input I. F. Coil—465 kc.

577 ISSUE D  
January 1940  
Serial No. 214845 Up

T4 108121B	Output I. F. Coil—465 kc.
T5 104131	Power Transformer
T6 10567	Output Transformer
T7 114114-R	5" Dynamic Speaker (5.6 ohm field)
L1 10568	"A" Choke
L2 10566	"A" Choke
S1	Switch on volume control
P1 10797	Pilot light (T51) 6-8 volts
S.P. 11749	(2) Spark Plates



FOR TUNER SEE INDEX

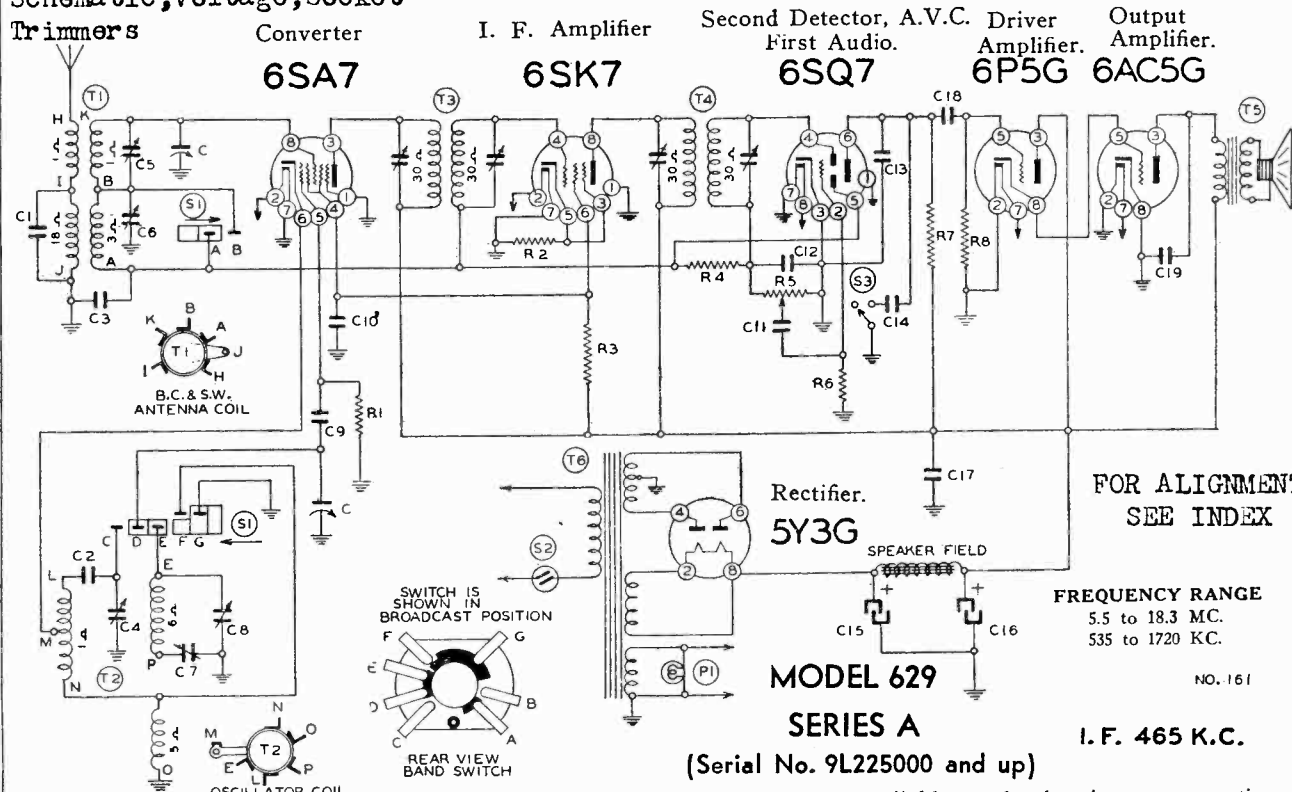


ADJUST ANTENNA TRIMMER  
Tune in a weak signal at approximately 600 K.C. with volume control about three-fourths on. Adjust trimmer screw "X" until maximum output is obtained.

CONVENTIONAL ALIGNMENT  
SEE SPECIAL SECTION VOL. VIII.

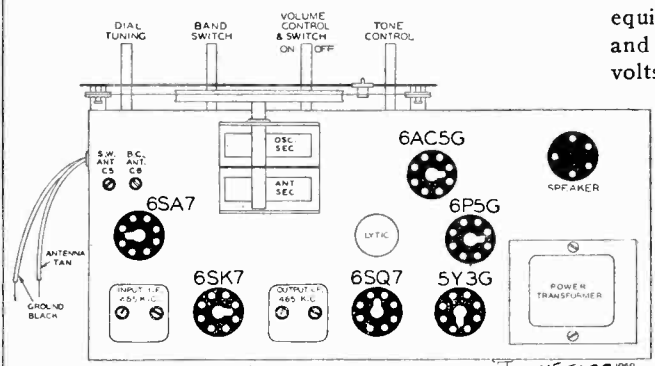
MODEL 629, Series A  
Serial 9L225000 up  
Schematic, Voltage, Socket  
Trimmers

BELMONT RADIO CORP.



MODEL 629  
SERIES A  
(Serial No. 9L225000 and up)  
I. F. 465 K.C.

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 25, 40 and 60 cycles and with primary taps for 110, 130, and 230 volts.  
Power Consumption.....50 Watts (At 115 volts 50-60 cycles)  
Power Output.....1.5 Watts Undistorted, 2.4 Watts Maximum



Ref. No.	Part No.	Description
C	102124	2 gang variable condenser
C1	1295	.0001 mica
C2	12964	.00275 mica
C3	10022	.05 x 200 v.
C4	124121	Dual Adjustable Condenser (S.W. Osc.)
C5	124122	Dual Adjustable Condenser (S.W. Ant.)
C6	123122	Dual Adjustable Condenser (Bc. Ant.)
C7	129151	.000468 comp. condenser (Bc. Osc. Pad)
C8	124121	Dual Adjustable Condenser (Bc. Osc.)
C9	12939	.00005 mica
C10	10013	.05 x 400 v.
C11	10071	.004 x 600 v.
C12	1295	.0001 mica
C13	1292	.0005 mica
C14	10012	.003 x 600 v.
C15	119102	10 mfd. lytic condenser
C16	119102	30 mfd. lytic condenser
C17	1001	.1 x 400 v.
C18	10026	.02 x 400 v.
C19	10012	.003 x 600 v.

Ref. No.	Part No.	Description
R1	130208	40M ohm—1/2 w.
R2	130168	100 ohm—1/2 w.
R3	130306	7500 ohm—1 watt
R4	1304	3 megohm—1/2 w.
R5	101208	Volume Control and Switch
R6	130257	5 megohm—1/2 w.
R7	13011	250M ohm—1/2 w.
R8	13019	1 megohm—1/2 w.

Ref. No.	Part No.	Description
T1	111168	B.C. S.W. Antenna Coil
T2	110142	B.C. S.W. Oscillator Coil
T3	108169	Input I.F. Coil—465 kc.
T4	108106S	Output I.F. Coil—465 kc.
T5	114188	6" Dynamic Speaker (1500 Ohm Field)
T6	104189	Power Transformer
S1	125103	Band Switch
S2	125104	On-Off switch on volume control
S3	125104	Tone Control Switch
P1	10794	Pilot light T44

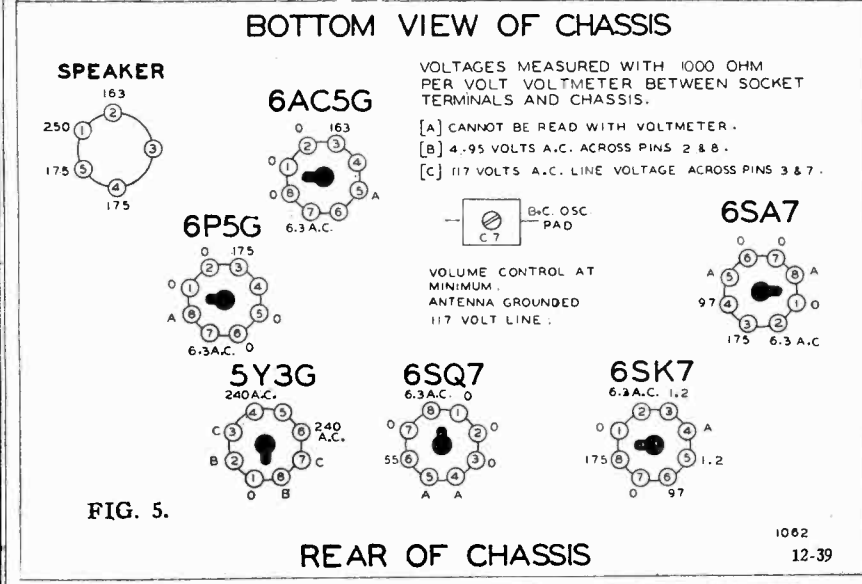


FIG. 5.

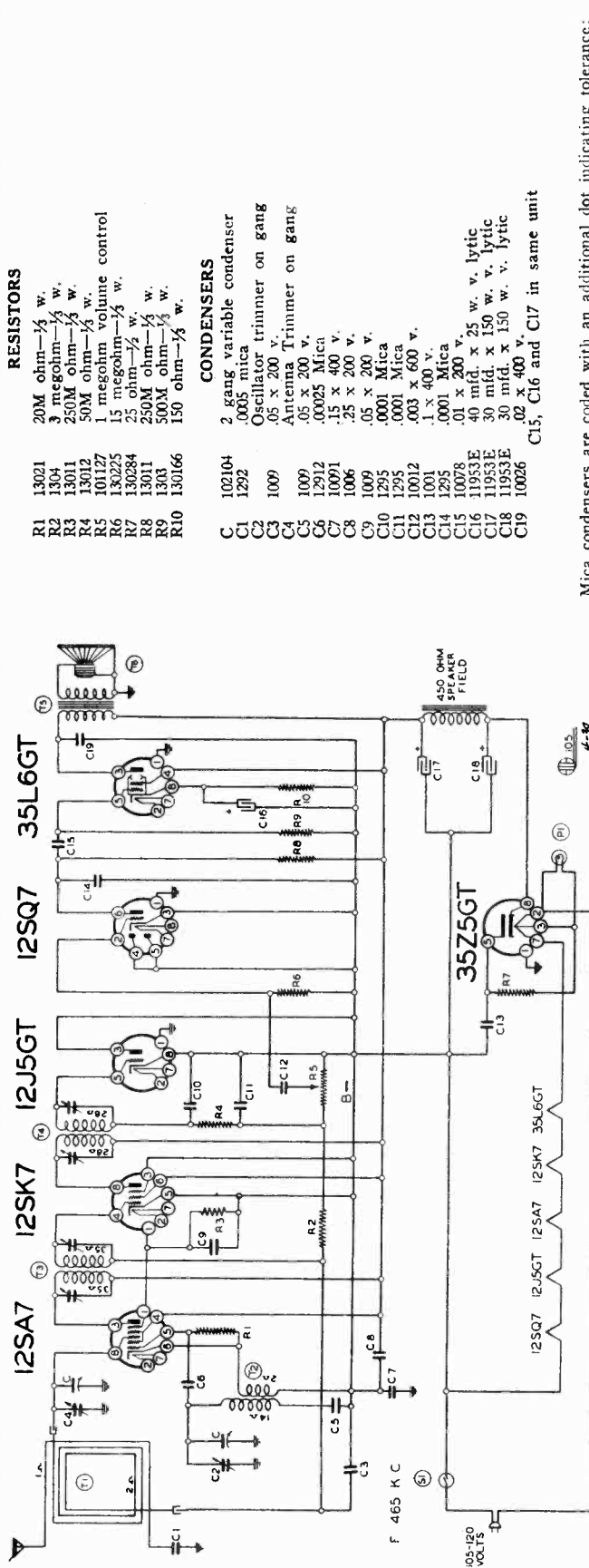
REAR OF CHASSIS

1062  
12-39

Socket, Trimmers  
Alignment

BELMONT RADIO CORP.

MODEL 635, Series A  
Schematic, Voltage



RESISTORS

R1	13021	20M ohm—1/4 w.
R2	1304	3 megohm—1/4 w.
R3	13011	250M ohm—1/4 w.
R4	13012	50M ohm—1/4 w.
R5	101127	1 megohm volume control
R6	130225	15 megohm—1/4 w.
R7	130284	25 ohm—1/4 w.
R8	130111	250M ohm—1/4 w.
R9	13011	500M ohm—1/4 w.
R10	130166	150 ohm—1/4 w.

CONDENSERS

C1	102104	2 gang variable condenser
C2	1292	.0005 mica
C3	1009	Oscillator trimmer on gang
C4	1009	.05 x 200 v.
C5	1009	Antenna Trimmer on gang
C6	12912	.05 x 200 v.
C7	10091	.00025 Mica
C8	1006	.15 x 400 v.
C9	1009	.05 x 200 v.
C10	1295	.0001 Mica
C11	1295	.0001 Mica
C12	10012	.003 x 600 v.
C13	1001	1 x 400 v.
C14	1295	.0001 Mica
C15	10073	.01 x 200 v. 25 w. v. lytic
C16	11953E	40 mid. x 150 w. v. lytic
C17	11953E	30 mid. x 150 w. v. lytic
C18	11953E	.02 x 400 v.
C19	10026	.02 x 400 v.

C15, C16 and C17 in same unit

Mica condensers are coded with an additional dot indicating tolerance:

Tolerance percent	Color of Dot
2 1/2 %	White
5 %	Green
10 %	Blue
15 %	Yellow
20 %	Red
More Than 20 %	None

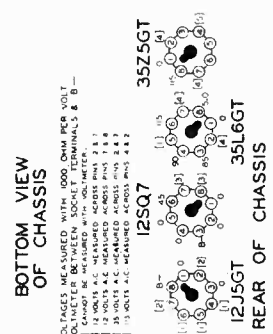
ALIGNMENT

Connect B- of radio chassis to ground post of signal generator through .1 mf condenser.

I.F. peak 465 kc. I.F. alignment conventional. See Vol. VIII.

Trim oscillator at 1650 kc.  
Trim antenna at 1400 kc. (Lay signal generator lead near, but not on, loop when adjusting trimmer.

- 1—Type 12SA7 Mixer, First Detector-oscillator.
- 1—Type 12SK7 I. F. Amplifier.
- 1—Type 12J5GT Second Detector, A.V.C.
- 1—Type 12SQ7 First Audio Amplifier.
- 1—Type 35L6GT Beam Output Amplifier.
- 1—Type 35Z5GT High Vacuum Rectifier.



BOTTOM VIEW OF CHASSIS

PARTS

- T1 120270 Loop Antenna
- T2 110114 Oscillator Coil
- T3 108140D Input I. F.
- T4 108145B Output I. F.
- T5 105883B Output Transformer
- T6 114116G 5 in. Dynamic Speaker (450 ohm field)
- P1 107249 6-8 v. pilot light T47
- S1 Off-on switch on volume control

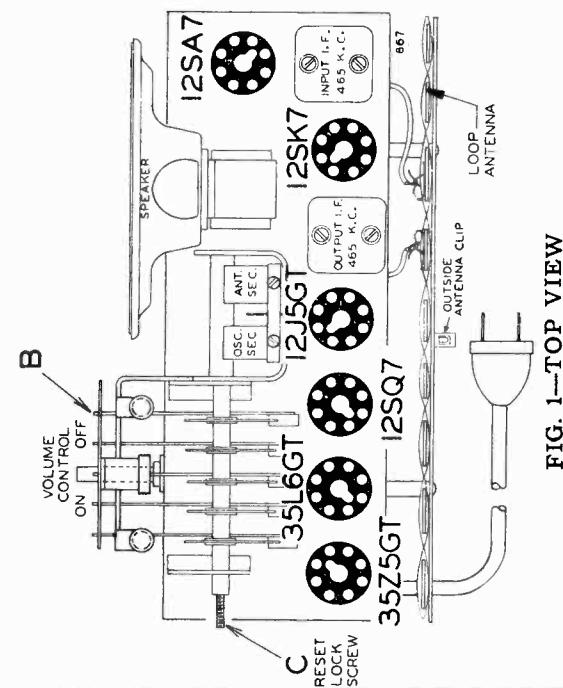


FIG. 1—TOP VIEW

MODEL 636, Series A  
Schematic, Voltage  
Socket, Trimmers, Alignment

BELMONT RADIO CORP.

RESISTORS

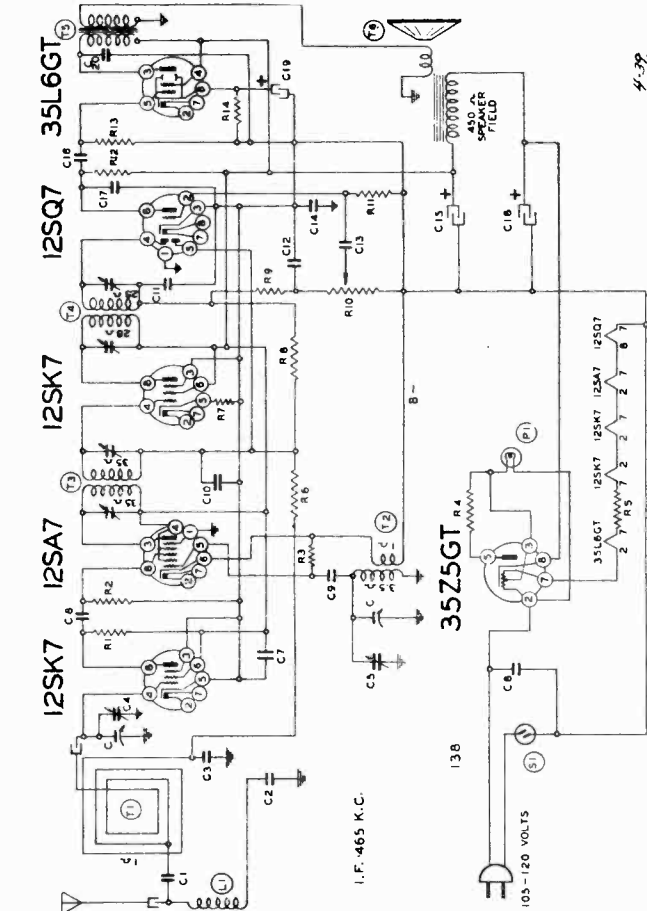
- 130218 5M ohm-1/4 w.
- 13020 100M ohm-1/4 w.
- 130176 20M ohm-1/4 w.
- 130295 25 ohm-1 watt
- 130295 150M ohm-1/4 w.
- 130100 40 ohm-1/4 w.
- 13012 3 megohm-1/4 w.
- 1304 50M ohm-1/4 w.
- 101127 1 megohm volume control
- 130257 5 megohm-1/4 w.
- 13011 250M ohm-1/4 w.
- 1303 500M ohm-1/4 w.
- 130166 150 ohm-1/4 w.

CONDENSERS

- C 2 gang variable condenser
- C1 .000125 Mica
- C2 12912 .02 x 400 V.
- C3 10026 Antenna Trimmer on gang
- C4 Oscillator trimmer on gang
- C5 .1 x 400 V.
- C6 .25 x 200 V.
- C7 1001 0001 Mica
- C8 1295 0001 Mica
- C9 1295 .05 x 200 V.
- C10 1009 .0001 Mica
- C11 1295 .0001 Mica
- C12 1295 .003 x 600 V.
- C13 10012 2 x 400 V.
- C14 10010 30 mfd. lytic-150 w. v.
- C15 11953E 30 mfd. lytic-150 w. v.
- C16 11953E .0001 Mica
- C17 1295 .01 x 200 V.
- C18 10078 40 mfd.-25 w. v. lytic
- C19 11953L .02 x 400 V.

C15, C16, and C19 in same unit

I.F. 465 KC



- 1-Type 12SK7 R. F. Amplifier.
- 1-Type 12SA7 Mixer, First Detector-oscillator.
- 1-Type 12SK7 I. F. Amplifier.
- 1-Type 12SQ7 Second Detector, A.V.C. and First Audio.
- 1-Type 35L6GT Beam Output Amplifier.
- 1-Type 35Z5GT High Vacuum Rectifier.

BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 500 OHM PER VOLT VOLTMETER ON GRID. SO. I. F. TUNING SLUG ADJ. (1) CANNOT BE MEASURED WITH VOLTMETER. (2) DISSIPATOR VOLTAGE SHOULD BE MEASURED WITH 57 OHM IN SERIES.

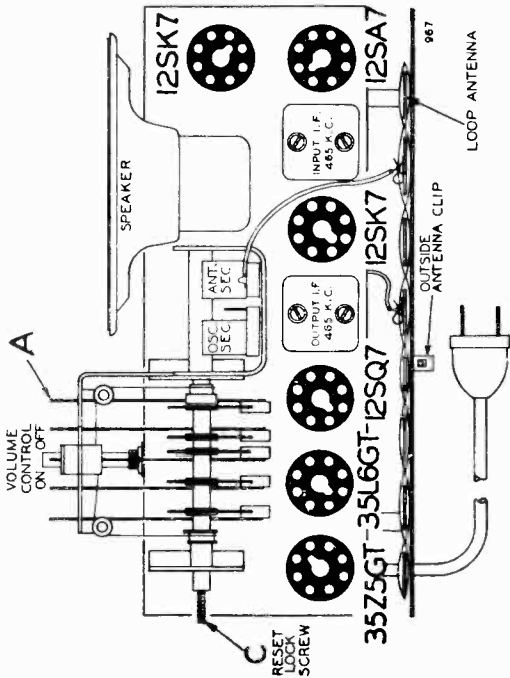
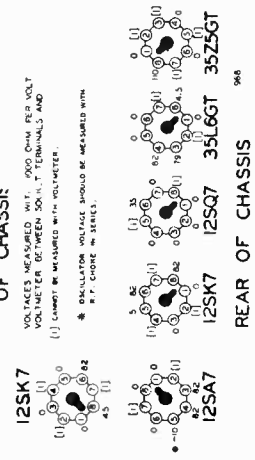


FIG. 1-TOP VIEW

PARTS

- 111139 Loop Antenna
- 110128 Oscillator Coil
- 108140F Input I. F. Coil
- 108145B Output I. F. Coil
- 10888B Output Transformer
- 114116G 5" Dynamic Speaker (450 ohm field)
- 1237 Antenna Loading Coil
- 107249 6-8 volt Pilot light - T-47
- Off-on Switch on Volume Control

For alignment procedure, see instructions for Belmont Model 635, Series A.

Chassis 706, Series A  
Schematic, Socket, Trimmers  
MODEL 709 AC S.P.U.

BELMONT RADIO CORP.

MODELS 706-391, 706-398  
706-378, etc.

Power Consumption.....  
3.8 Amps. at 6.3 Volts  
  
Power Output.....  
2 Watts Undistorted,  
3 Watts Maximum  
  
I.F. 465 K.C.

Models  
706-391, 706-398 and 706-378,  
Etc. Chassis No. 706 Series A  
(Serial No. 9K166700 and up)

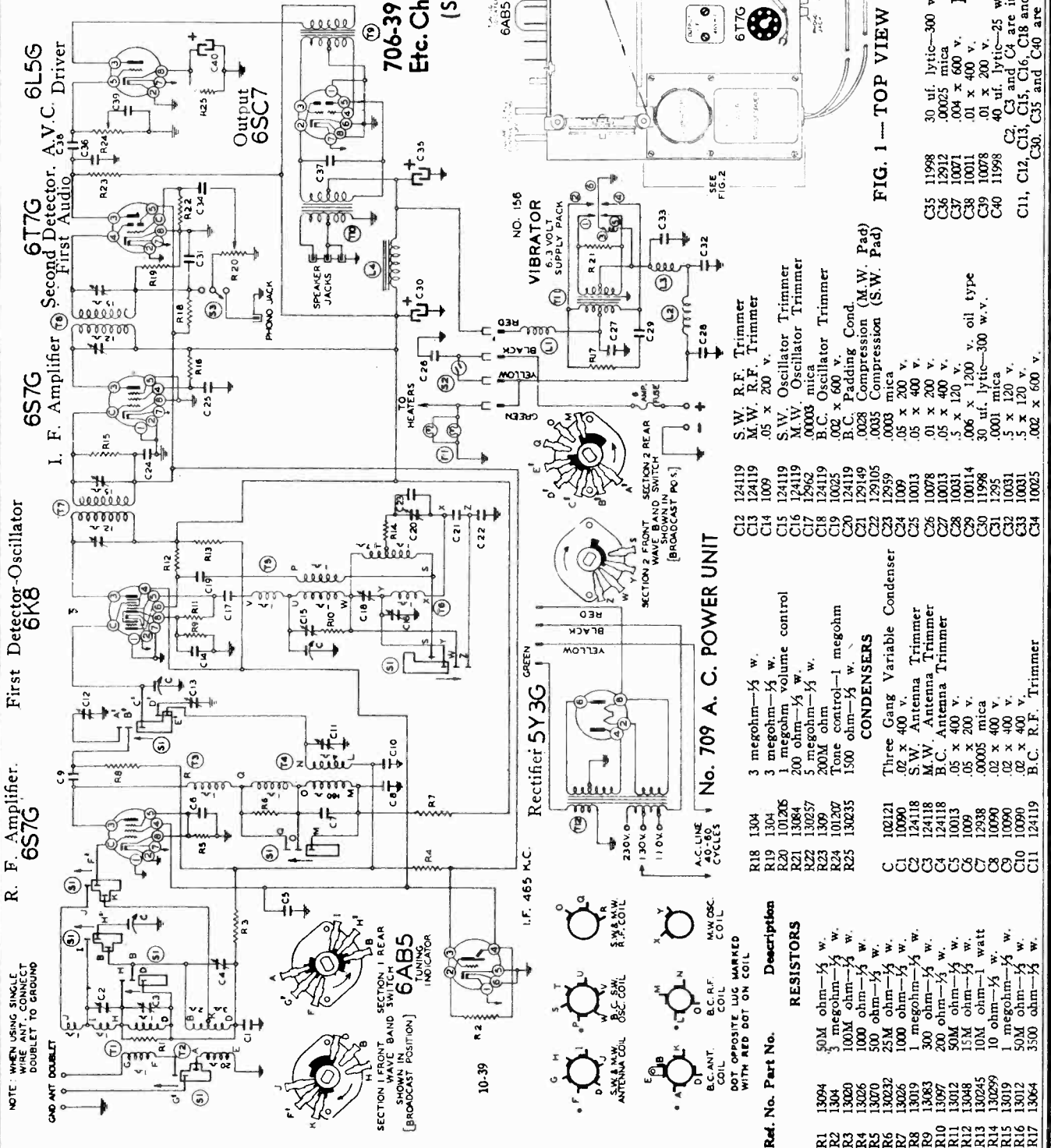


FIG. 1 - TOP VIEW

- C35 11998 30 uf. lytic-300 w.v.
  - C36 12912 .00025 mica
  - C37 10071 .004 x 600 v.
  - C38 10011 .01 x 400 v.
  - C39 10078 .40 uf. lytic-25 w.v.
  - C40 11998 40 uf. lytic-25 w.v.
- C<sub>3</sub> and C<sub>4</sub> are in same unit  
C<sub>11</sub>, C<sub>12</sub>, C<sub>13</sub>, C<sub>15</sub>, C<sub>16</sub>, C<sub>18</sub> and C<sub>20</sub> are in same unit.  
C<sub>23</sub>, C<sub>25</sub> and C<sub>40</sub> are in same unit.

BELMONT RADIO CORP.

CHASSIS 706  
 CHASSIS 707  
 CHASSIS 708

Alignment, Trimmers

SERVICE NOTES:

Volts 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.

- Tone control—in treble position.
- 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.

CHASSIS 706, 707, and 708  
 ALIGNMENT PROCEDURE

IN ORDER TO PREVENT SIGNAL FROM ACTING UPON AVC AND AFFECTING ACCURACY OF VOLTAGE MEASUREMENTS, AERIAL AND GROUND LEADS SHOULD BE SHORT CIRCUITED WHILE MAKING MEASUREMENTS.

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.

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.	465 Kc.	.1 MFD.	Grid of 6K7* I. F. Tube	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Grid of 6K8	Broadcast (Extreme Left Rotation)	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Input I. F.	Adjust to maximum output
SHORT WAVE BAND	23 Mc.	400 ohms	Antenna lead	Short Wave (Extreme Right Rotation)	Set Dial at 23 MC	Trimmer (C15) (See Fig. 3)	Short wave oscillator	See Note "A" Adjust to maximum output
	23 Mc.	400 ohms	Antenna lead	Short Wave (Extreme Right Rotation)	Dial Set at 23 MC	Trimmer (C2, C12) (See Fig. 3)	Short wave antenna and R. F.	See Note "B" Adjust to maximum output
MEDIUM WAVE BAND	6.5 Mc.	400 ohms	Antenna lead	Medium Wave	Set Dial at 6.5 MC	Trimmer (C16) (See Fig. 3)	Medium wave oscillator	Adjust to maximum output
	6.5 Mc.	400 ohms	Antenna lead	Medium Wave	Set Dial at 6.5 MC	Trimmer (C3, C13) (See Fig. 3)	Medium wave antenna and R. F.	Adjust to maximum output
BROAD-CAST BAND	2000 Kc.	200 mmf.	Antenna lead	Broadcast (Extreme Left Rotation)	Rotor full open (Plates out of mesh)	Trimmer (C18) (See Fig. 3)	Broadcast oscillator	Adjust to maximum output
	1800 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1800 Kc.	Trimmer (C4, C11) (See Fig. 3)	Broadcast antenna and R. F.	Adjust to maximum output
	550 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 550 Kc.	Trimmer (C20) (See Fig. 3)	Broadcast oscillator series pad	Adjust to maximum rock dial. (See note "C")

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. As an example of this a fundamental 23 megacycle signal can be tuned in not only at 23 on the dial, but also at approximately 22 megacycles.

NOTE "B"—When adjusting the antenna and R.F. trimmers be sure and "follow" the signal to exact resonance by slight readjustment of the gang condenser as trimmer reaction on oscillator frequency is quite noticeable at high frequencies.

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 range is completed, repeat the procedure as a final check.

Chassis No. 707—Series A  
 (Serial No. 9K167300 and up)  
 BALLAST RESISTOR TUBES:

Use one of the following:

Type No. 5465 for 100 to 125 volt line voltage.

Type No. 5463 for 125 to 145 volt line voltage.

Type No. 5464 for 210 to 250 volt line voltage.

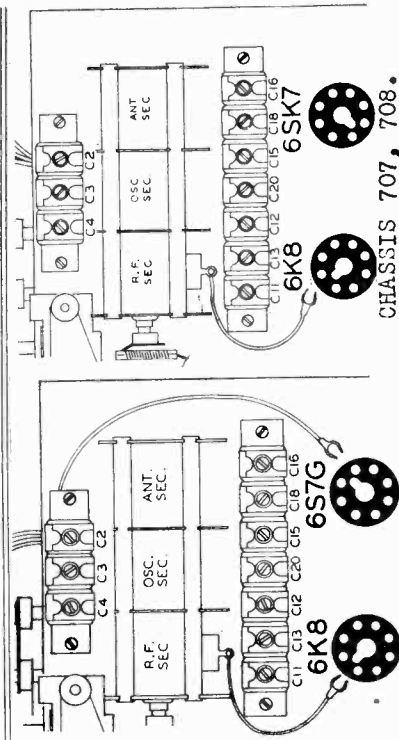


FIG. 3—TOP OF CHASSIS

CHASSIS 707  
 CHASSIS 708  
 CHASSIS 792  
 CHASSIS 793B  
 Tuner Data

BELMONT RADIO CORP.

MODEL 709 S.P.U.  
 Installation Notes  
 CHASSIS 706  
 Voltage, Tuner

**INSTALLING THE MODEL 709 POWER UNIT**  
 (For 100-250 Volt 40/60 Cycle A. C. Operation)

In Chassis 706.

1. Remove the chassis from the cabinet, by removing the four chassis mounting bolts from the bottom of the cabinet.
2. Referring to Fig. 1, note that the 6-volt power unit is fastened to the top of the radio chassis with eight copper head screws, (six on top of chassis, and two on rear flange of chassis).
3. Remove the eight copper head screws.
4. Disconnect the four flexible leads of the power unit from the chassis connector strip. These leads clip into pin jacks. Note that the color of each flexible lead matches the color dot on the chassis pin jack connector strip.
5. Place the model 709 A.C. power unit (see Fig. 2) on the top of the radio chassis and plug the four flexible leads into the pin jacks on the chassis connector strip.

- (a) The red lead should be plugged into the pin jack which is marked with a red dot.
  - (b) The green lead connects to the pin jack which is marked with a green dot.
  - (c) The yellow lead connects to the pin jack which is marked with a yellow dot.
  - (d) The black lead connects to the pin jack which is marked with a black dot.
6. Mount the power unit to the chassis using the eight copper head screws.

**IMPORTANT:**

After the A.C. power unit has been installed check the connections again to make sure you have followed the instructions correctly. Set the switch on the top of the power transformer to the proper voltage.

**VOLTAGE DATA CHASSIS 706.**

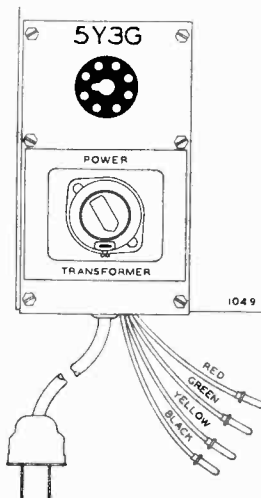


FIG. 2 — MODEL 709 A. C. POWER UNIT

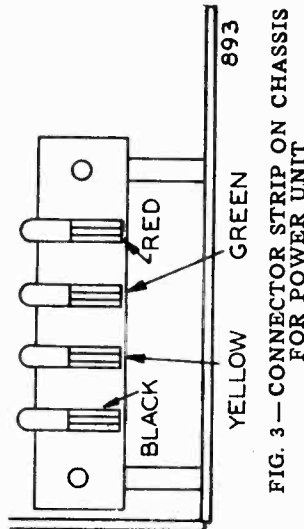
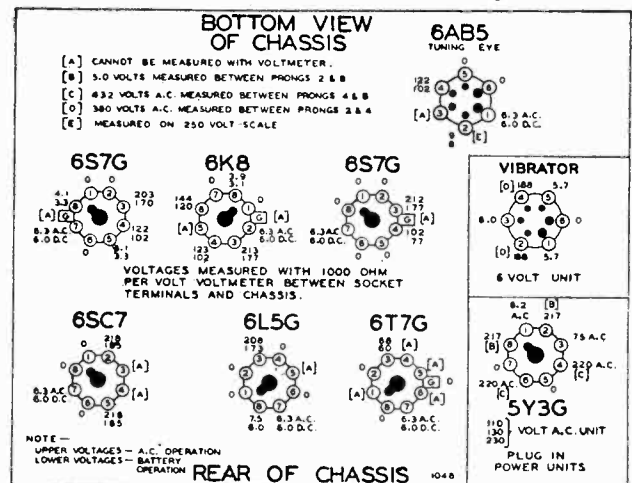


FIG. 3 — CONNECTOR STRIP ON CHASSIS FOR POWER UNIT



All voltages as indicated on the voltage chart are measured with a fully charged 6 volt storage battery or from 117 volt A. C. line if the Model 709 A. C. power unit is installed in place of the 6 volt power unit.

**PROCEDURE FOR SETTING THE AUTOMATIC PUSH BUTTONS**

For Chassis 706, 707, 708, 792, and 793B.

1. Pull the "Reset" button all the way out (see control No. 6, ), and rotate the button to the left (counter-clockwise) until it cannot be turned any further.

You will note that as the button 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 button will turn quite easily again until the tuner mechanism is completely unlocked. At this point do not force the button any further. The tuner mechanism is now unlocked.

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

2. Push in all the way any one of the push buttons and at the same time push in firmly on the dial tuning knob. Both the dial tuning knob and the push button should be pushed hard enough to make them stay latched in.

You may find it necessary to rotate the dial tuning knob slightly when pushing it in to make certain that the gears mesh properly.

For Chassis 792 and 793B only.

3. Both the pushbutton and the dial tuning knob are now latched in. Do not hold the pushbutton in by hand while tuning in a station. Tune in by means of the dial tuning knob the station indicated on the station call letter tab on the pushbutton which is latched in. Turn the dial tuning knob very slowly back and forth until the station is clearest. The station will then be accurately tuned in.

For Chassis 706, 707, and 708 only.

3. Press in on the push button 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 push button. Turn the dial tuning knob very slowly back and forth (while still pressing in firmly on the push button).

For all Models

4. Push in all the way another push button, at the same time push the dial tuning knob in so that both the push button and the dial tuning knob are latched in together. Holding the push button in firmly, tune in the station indicated on the call letter tab on this push button.

5. Follow this procedure until you have tuned in all of your favorite stations.

6. Pull the "Reset" button all the way out and rotate the button to the right (clockwise) until it cannot be turned any further. This will lock the automatic tuner mechanism and the stations you have set up for automatic tuning will be locked in place.

**CHANGING STATIONS:**

If you should desire to change any station you selected to another, pull the "Reset" button all the way out and rotate the button to the left (counter-clockwise) and unlock the tuner mechanism. Select the new station as explained. (NOTE:—If the dial mechanism works hard when setting up a new station for one of the automatic tuner push buttons, it is due to the tuner mechanism not being unlocked all the way. Pull the "Reset" button out all the way and rotate the button to the left (counter-clockwise) until it will turn no further. The dial mechanism should work freely with the tuner push button pressed in.)

After you have selected the new station, pull the "Reset" button all the way out and rotate the button to the right (clockwise) to lock the tuner mechanism. Be sure the button is turned until it will turn no further.

MODEL 636, Series B  
Schematic, Voltage  
Socket, Trimmers  
Alignment

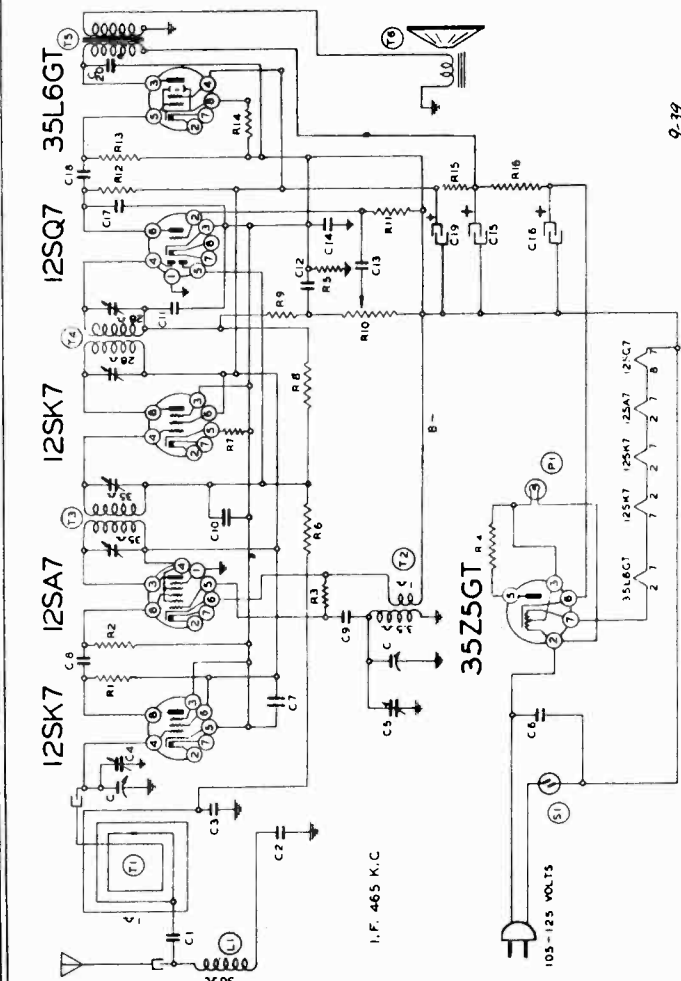
BELMONT RADIO CORP.

**RESISTORS**

R1	130218	5M ohm-1/2 w.
R2	13020	100M ohm-1/2 w.
R3	13094	50M ohm-1/2 w.
R4	130295	25 ohm-1 watt
R5	130100	150M ohm-1/2 w.
R6	130100	150M ohm-1/2 w.
R7	130203	40 ohm-1/2 w.
R8	1304	3 megohm-1/2 w.
R9	13012	50M ohm-1/2 w.
R10	101127	1 megohm volume control
R11	130257	5 megohm-1/2 w.
R12	13011	250M ohm-1/2 w.
R13	1303	500M ohm-1/2 w.
R14	130166	150 ohm-1/2 w.
R15	130287	1200 Ohm-1 Watt
R16	130296	200 Ohm-1 Watt

**CONDENSERS**

C	102104B	2 gang variable condenser
C1	12931	.000125 Mica
C2	129146	.0006 Mica
C3	10026	.02 x 400 v.
C4		Antenna Trimmer on gang
C5		Oscillator trimmer on gang
C6	1001	.1 x 400 v.
C7	1006	25 x 200 v.
C8	1295	.0001 Mica
C9	1295	.0001 Mica
C10	1295	.05 x 200 v.
C11	1295	.0001 Mica
C12	1295	.0001 Mica
C13	10012	.003 x 600 v.
C14	100110	.2 x 400 v.
C15	11994	20 mid. lytic-150 w. v.
C16	11994	40 mid. lytic-150 w. v.
C17	1295	.0001 Mica
C18	10078	.01 x 200 v.
C19	11994	20 mid.-150 v. lytic
C20	10026	.02 x 400 v.



- I.F. 465 KC
- 1—Type 12SK7 R. F. Amplifier.
  - 1—Type 12SA7 Mixer, First Detector-oscillator.
  - 1—Type 12SK7 I. F. Amplifier.
  - 1—Type 12SQ7 Second Detector, A.V.C. and First Audio.
  - 1—Type 35L6GT Beam Output Amplifier.
  - 1—Type 35Z5GT High Vacuum Rectifier.

**PARTS**

T1	111139	Loop Antenna
T2	110128	Oscillator Coil
T3	108148F	Input I. F. Coil
T4	108143B	Output I. F. Coil
T5	105104	Output Transformer
T6	114180	5" P.M. Dynamic Speaker
L1	1237	Antenna Loading Coil
S1	107249	6.8 volt. Pilot light - T-47 Off-on Switch on Volume Control

For alignment procedure, see instructions for Belmont Model 635, Series A.

**BOTTOM VIEW OF CHASSIS**

VOLTAGES MEASURED WITH 455 OHM RES. VOLT METER BETWEEN SOCKET TERMINALS AND B-  
(1) CHASSIS MEASURED IN - INCHES  
\* OSCILLATOR VOLTAGE SHOULD BE MEASURED IN "M"  
\* CHOPED IN SERIES

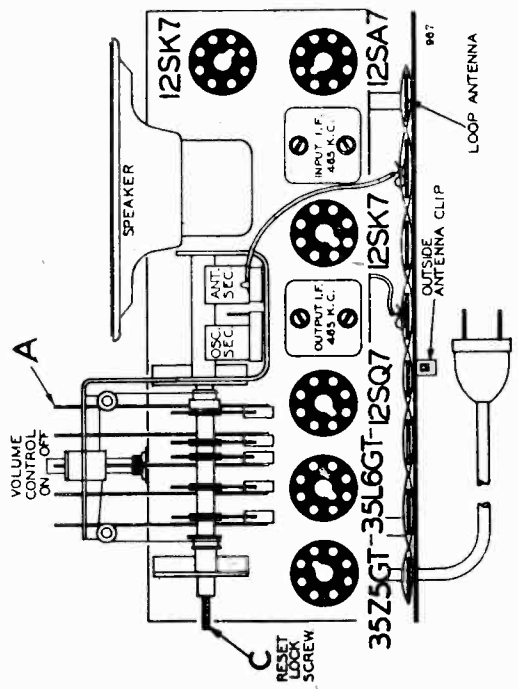
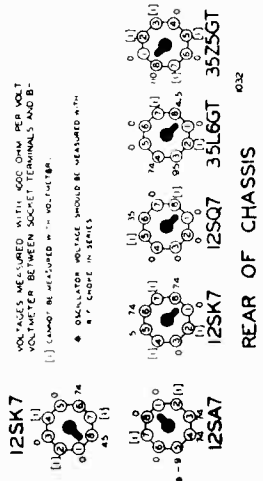


FIG. 1—TOP VIEW



BELMONT RADIO CORP.

MODEL 637  
Schematic, Voltage  
Socket, Trimmers

RESISTORS

- 1 megohm—1/4 w.
- 50 ohm—1/4 w.
- 13019
- 13027
- 130248
- R2
- R3
- R4
- 130218
- 5M ohm—1/4 w.
- 13020
- 100M ohm—1/4 w.
- R5
- R6
- 13012
- 50M ohm—1/4 w.
- R7
- 1309
- 200M ohm—1/4 w.
- R8
- 130248
- 40 ohm—1/4 w.
- R9
- 1304
- 3 megohm—1/4 w.
- R10
- 130215
- 25M ohm—1/4 w.
- R11
- 1301
- 1 meg. volume control
- R12
- 101195
- 5 megohm—1/4 w.
- R13
- 130257
- 500M ohm—1/4 w.
- R14
- 1303
- 500M ohm—1/4 w.
- R15
- 1303
- 200 ohm—1 watt
- R16
- 130296
- 200 ohm—1/4 w.
- R17
- 130166
- 150 ohm—1/4 w.
- R18
- 130287
- 1200 ohm—1 watt
- R19
- 101194
- 200M ohm tone control

CONDENSERS

- 2 gang variable condenser
- .05 x 40 v.
- 102118
- .003 Mica
- C1
- 10013
- Police Band Antenna Trimmer
- C2
- 12954
- B. C. Antenna Trimmer
- C3
- 124105
- .25 x 400 v.
- C4
- 10024
- .0005 Mica
- C5
- 1292
- Police Band Oscillator Trimmer
- C6
- 124107
- B. C. Oscillator Trimmer
- C7
- 124107
- B. C. Oscillator Pad
- C8
- 124104
- Police Band Oscillator Pad
- C9
- 124104
- .0001 Mica
- C10
- 1295
- .00025 Mica
- C11
- 12912
- .1 x 400 v.
- C12
- 1009
- .05 x 200 v.
- C13
- 1001
- .05 x 200 v.
- C14
- 1009
- .05 x 200 v.
- C15
- 1295
- .0001 Mica
- C16
- 1295
- .004 x 60 v.
- C17
- 12938
- .00025 Mica
- C18
- 10071
- .01 x 200 v.
- C19
- 12912
- 40 mid.—150 w. v.
- C20
- 10078
- 20 mid.—150 w. v.
- C21
- 11994
- 20 mid.—150 w. v.
- C22
- 11994
- .05 x 200 v.
- C23
- 11994
- .02 x 400 v.
- C24
- 1009
- C3 and C4 in one unit
- C25
- 10026
- C7 and C8 in one unit
- C9 and C10 in one unit
- C21, C22 and C23 in same unit

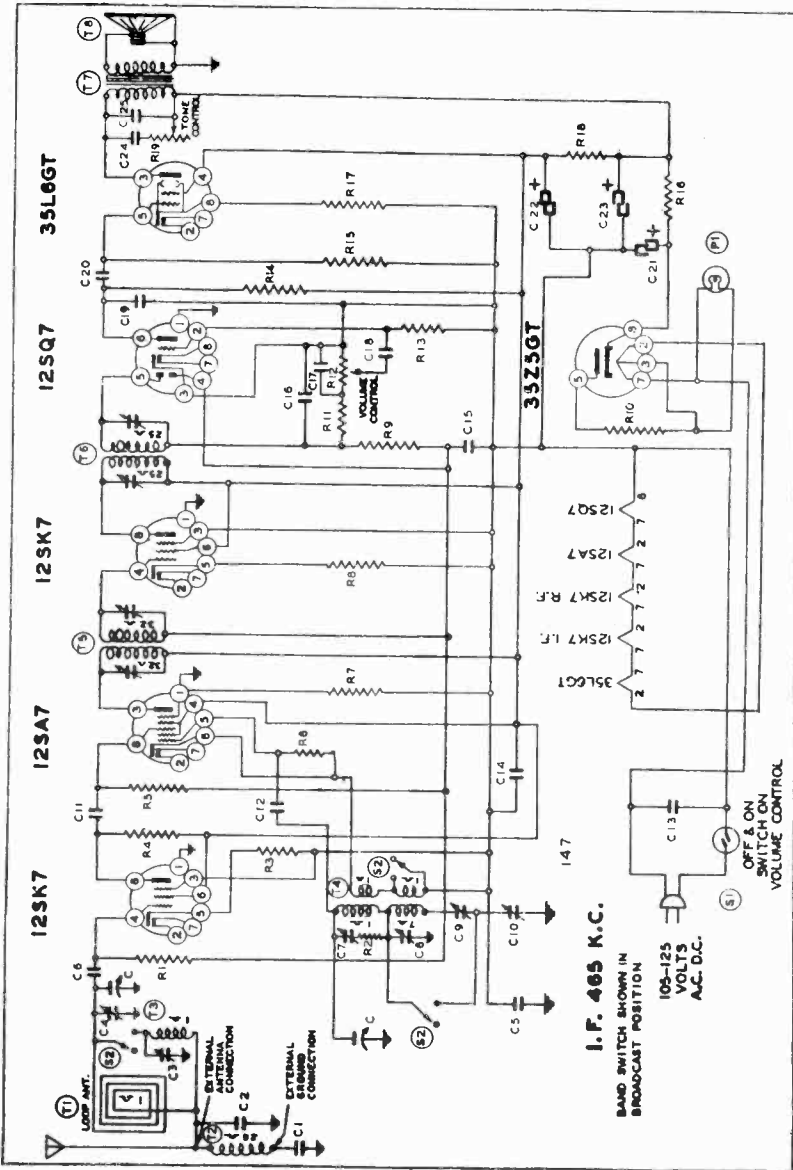


FIG. 1

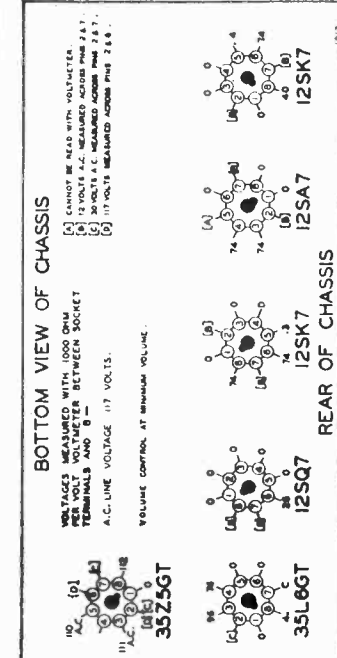
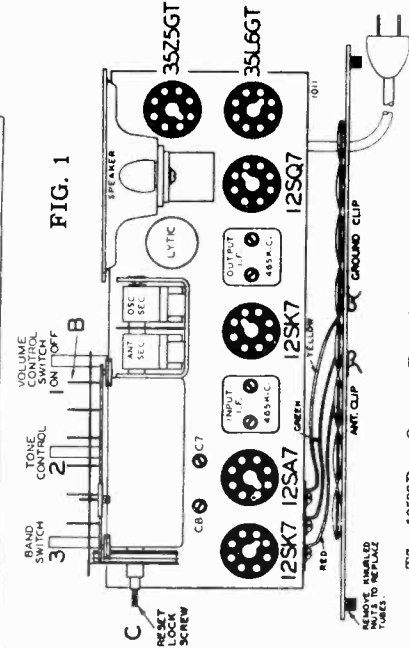


FIG. 4—BOTTOM VIEW

- T1 11114 Loop Antenna Assembly
- T2 10535 R. F. Choke
- T3 111143 Antenna Coil
- T4 110132 B. C. S.W. Oscillator Coil
- T5 108140G Input I.F. Coil—465 kc.
- T6 108145 Output I.F. Coil—465 kc.



- T7 10589B Output Transformer
- T8 114177 5" P.M. Speaker
- S1 101195 Volume Control and Switch
- S2 12590 Wave Band Change Switch
- P1 107249 6.3 volt 147 pilot light

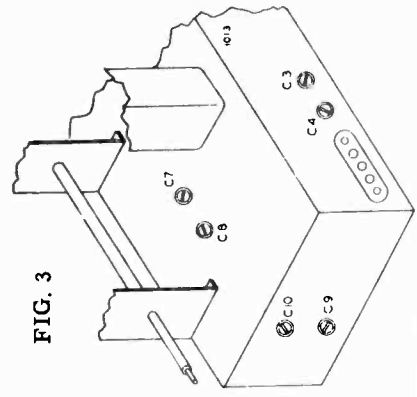


FIG. 3

MODEL 637

Alignment, Notes

BELMONT RADIO CORP.

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

SERVICE NOTES:

Voltages taken from different points of circuit to chassis are measured with volume control at minimum, 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 117 volt A.C. or D.C. line.  
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 reduc-

**TUBES:**  
The tube complement of this chassis consists of the following octal base glass and metal tubes.

The type and function of each tube is as follows.

- 1—Type 12SK7 R. F. Amplifier.
- 1—Type 12SA7 Mixer, First Detector-oscillator.
- 1—Type 12SK7 I. F. Amplifier.
- 1—Type 12SQ7 Second Detector, A.V.C. and First Audio.
- 1—Type 35L6GT Beam Output Amplifier.
- 1—Type 35Z5GT High Vacuum Rectifier.

IMPORTANT: SEE ALIGNING INSTRUCTIONS.

- Loop antenna connected to radio.
- Volume control—Maximum all adjustments.
- Connect radio ground 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.

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 mi., 200 mmi.

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.	465 Kc.	.1 MFD.	Grid of 12SK7 I. F.	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Grid of 12SA7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Input I. F.	Adjust to maximum output
SHORT WAVE BAND	4050 Kc.	200 mmi.	Antenna Clip	Short Wave	Rotor full open (Plates out of mesh)	Trimmer C7 (See Fig. 3)	Short Wave oscillator	Adjust to maximum output
	3500 Kc.	200 mmi.	Antenna Clip	Short Wave	Set Dial at 3.5 Mc.	Trimmer C3 (See Fig. 3)	Short Wave antenna	Adjust to maximum output
	1650 Kc.	200 mmi.	Antenna Clip	Short Wave	Set Dial at 1.65 Mc.	Trimmer C10 (See Fig. 3)	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "A")
BROADCAST BAND	1550 Kc.	200 mmi.	Antenna Clip	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C8 (See Fig. 3)	Broadcast oscillator	Adjust to maximum output
	1400 Kc.	200 mmi.	Antenna Clip	Broadcast	Set Dial at 1400 Kc.	Trimmer C4 (See Fig. 3)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmi.	Antenna Clip	Broadcast	Set Dial at 600 Kc.	Trimmer C9 (See Fig. 3)	Broadcast oscillator series pad	Adjust to maximum rock dial. (See note "B")

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

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

BAND SWITCH

Extreme Right Rotation

Extreme Left Rotation

Power Consumption.....35 Watts

Power Output.....1.25 Watts Undistorted, 1.8 Watts Maximum

Intermediate Frequency.....465 KC.

FREQUENCY RANGE

1.5 to 4.0 MC.

540 to 1550 KC.

Serial 9K188300 up  
Schematic, Voltage, Socket  
Trimmers

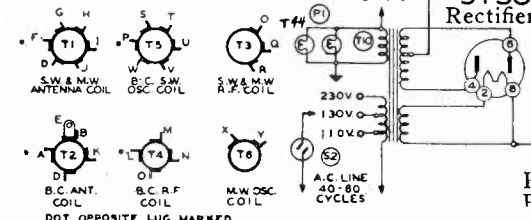
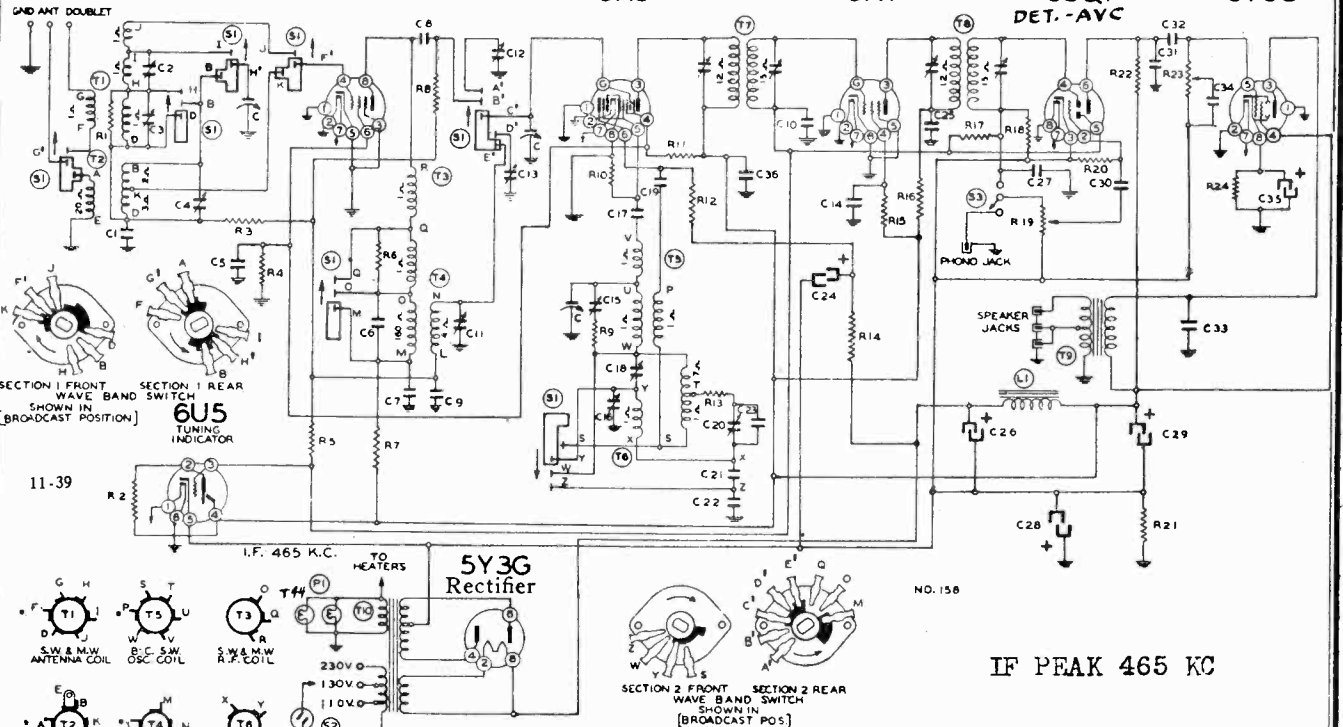
BELMONT RADIO CORP.

MODELS 708-391, 708-398  
708-378, etc.

Chassis 708, Series A  
First Audio Output  
6SQ7 6V6G

R. F. Amplifier 6SK7  
First Detector-Oscillator I. F. Amplifier 6K8 6K7

NOTE: WHEN USING SINGLE WIRE ANT. CONNECT DOUBLET TO GROUND.



Power Consumption.....65 Watts at 117 Volts  
Power Output...4 Watts Undistorted, 6.5 Watt Maximum

Ref. Part No. Description

**RESISTORS**

R1	13094	50M ohm—1/2 w.—10%
R2	1303	500M ohm—1/2 w.
R3	13020	100M ohm
R4	13012	50M ohm—1/2 w.
R5	13026	1000 ohm—1/2 w.
R6	130232	25M ohm—1/2 w.
R7	13026	1000 ohm—1/2 w.
R8	13019	1 megohm—1/2 w.
R9	13097	200 ohm—1/2 w.
R10	13012	50M ohm—1/2 w.
R11	130304	12M ohm—2 watt
R12	13017	10M ohm—1/2 w.
R13	130299	10 ohm—1/2 w.
R14	13017	10M ohm—1/2 w.
R15	13020	100M ohm—1/2 w.
R16	13023	2M ohm—1/2 w.
R17	1304	3 megohm—1/2 w.
R18	1304	3 megohm—1/2 w.
R19	101205	1 megohm volume control
R20	130225	15 megohm—1/2 w.
R21	130303	35 ohm—1/2 w.
R22	1309	200M ohm—1/2 w.
R23	101206	150M ohm tone control
R24	130227	250 ohm—1 watt

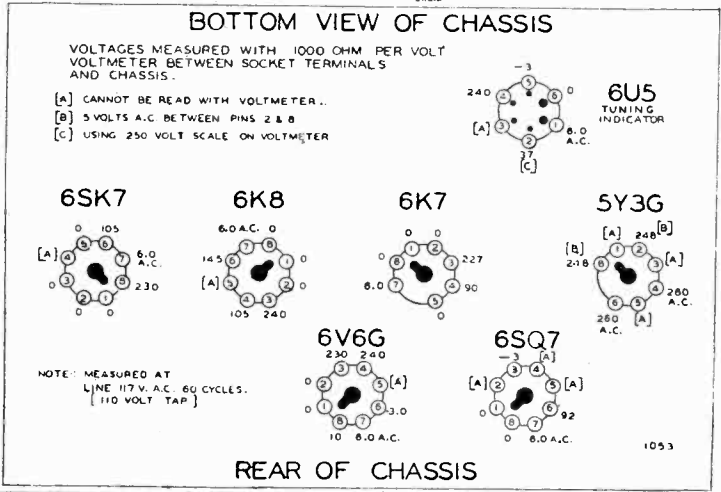
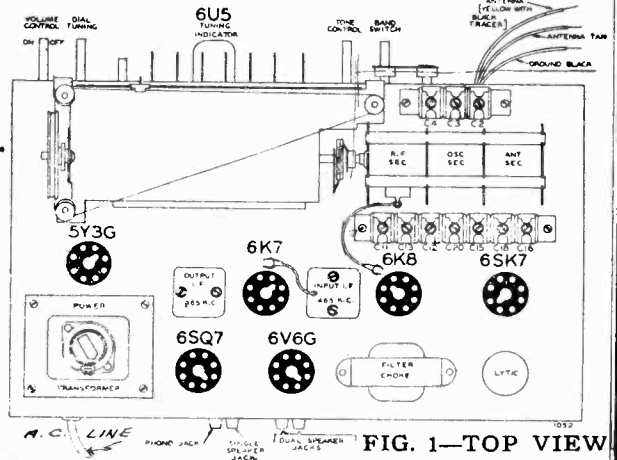
**CONDENSERS**

C1	102121	3 gang variable condenser
C2	10090	.02 x 400 v.
C3	124118	S.W. Antenna Trimmer
C4	124118	M.W. Antenna Trimmer
C5	124118	B.C. Antenna Trimmer
C6	12938	.00005 mica
C7	10090	.02 x 400 v.
C8	10090	.02 x 400 v.
C9	10090	.02 x 400 v.
C10	1009	.05 x 200 v.
C11	124119	B.C. R.F. Trimmer
C12	124119	S.W. R.F. Trimmer
C13	124119	M.W. R.F. Trimmer
C14	10013	.05 x 400 v.
C15	124119	S.W. Oscillator Trimmer
C16	124119	M.W. Oscillator Trimmer
C17	12962	.00003 Mica
C18	124119	B.C. Oscillator Trimmer
C19	10025	.002 x 600 v.
C20	124119	B.C. Padding Condenser
C21	129149	.0028 Compression M.W. Pad
C22	129105	.0035 Compression S.W. Pad
C23	12959	.0003 mica
C24	11981	16 uf. lytic x 400 w. v.
C25	1001	.1 x 400 v.

Chassis No. 708—Series A  
(Serial No. 9K188300 and up)  
For Models 708-391,  
708-398 and 708-378, Etc.

C26	119100	30 uf. lytic x 450 w. v.
C27	1295	.0001 mica
C28	11991	40 uf. lytic x 25 w. v.
C29	119100	30 uf. lytic x 450 w. v.
C30	10025	.002 x 600 v.
C31	12912	.00025 mica
C32	10013	.05 x 400 v.
C33	10097	.02 x 600 v.
C34	10078	.01 x 200 v.
C35	119100	40 uf. lytic—25 w. v.
C36	10013	.05 x 400 v.

C26, C29, and C35 in same unit.



MODEL 791

Schematic, Voltage, Socket

BELMONT RADIO CORP.

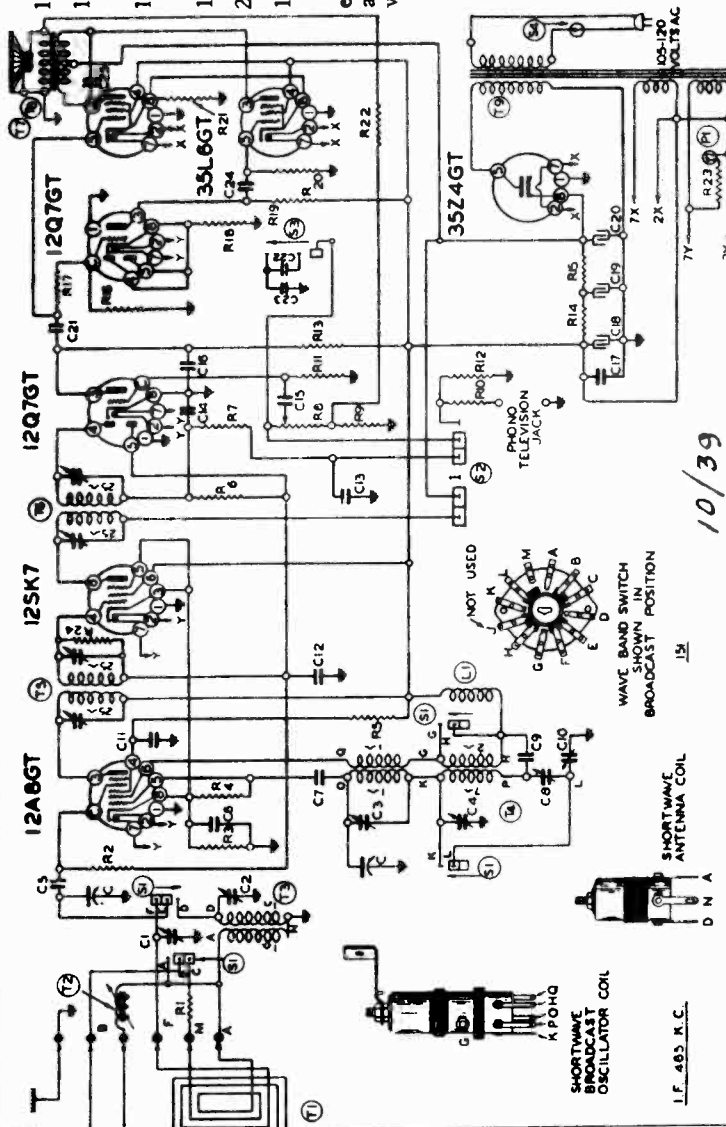
Oct. '39

FOR ALIGNMENT SEE INDEX

The type and function of each tube is as follows:

- 1—Type 12A8GT First Detector-oscillator.
- 1—Type 12SK7 Remote Cut-Off Pentode, I. F. Amplifier (465 K. C.).
- 1—Type 12Q7GT Duplex Diode Triode Second Detector, A.V.C. and First Audio.
- 1—Type 12Q7GT Phase Inverter.
- 2—Type 35L6GT Push-Pull Output Amplifier.
- 1—Type 35Z4GT High Vacuum Rectifier.

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 25, 40 and 60 cycles and with primary taps for 110, 130, and 230 volts, (see parts list).



Power Consumption.....55 Watts

Power Output 3 Watts Undistorted, 3.6 Watts Maximum

Diagram Ref. No. Part No. Description

RESISTORS

R1	13079	400 ohm— $\frac{1}{4}$ w.
R2	13019	1 megohm— $\frac{1}{4}$ w.
R3	130168	100 ohm— $\frac{1}{4}$ w.
R4	13012	50M ohm— $\frac{1}{4}$ w.
R5	130149	50M ohm— $\frac{1}{4}$ w.
R6	130170	15M ohm— $\frac{1}{4}$ w.
R7	13012	30M ohm— $\frac{1}{4}$ w.
R8	101195	1 megohm— $\frac{1}{4}$ w.
R9	130215	25 ohm— $\frac{1}{4}$ w.
R10	13038	2 megohm— $\frac{1}{4}$ w.
R11	130225	1 megohm— $\frac{1}{4}$ w.
R12	13019	1 megohm— $\frac{1}{4}$ w.
R13	1909	200M ohm— $\frac{1}{4}$ w.
R14	130294	1200 ohm— $\frac{1}{4}$ w.
R15	130294	1200 ohm— $\frac{1}{4}$ w.
R16	130236	30M ohm— $\frac{1}{4}$ w.
R17	130102	500M ohm— $\frac{1}{4}$ w.
R18	13022	5M ohm— $\frac{1}{4}$ w.
R19	1309	200M ohm— $\frac{1}{4}$ w.
R20	130102	200 ohm— $\frac{1}{4}$ w.
R21	13097	100 ohm— $\frac{1}{4}$ w.
R22	130168	100 ohm— $\frac{1}{4}$ w.
R23	133001	25 ohm— $\frac{1}{4}$ w.
R24	13019	1 megohm— $\frac{1}{4}$ w.

FREQUENCY RANGE

5.7 to 18.3 MC.  
540 to 1550 KC.

CONDENSERS

C	102123	2 gang variable condenser
C1	124117	B.C. Adj. Trimmer (Antenna)
C2	124116	S.W. Adj. Trimmer (Antenna)
C3	124112	S.W. Adj. Trimmer (Oscillator)
C4	124112	B.C. Adj. Trimmer (Oscillator)
C5	1293	.0005 mica
C6	100104	.5 x 100 v.
C7	12939	.0005 mica
C8	124113	B.C. Series Pad
C9	1009	.05 x 200 v.
C10	124113	S.W. Series Pad
C11	10020	.1 x 200 v.
C12	1009	.05 x 200 v.
C13	1295	.0001 mica
C14	1295	.0001 mica
C15	10025	.002 x 600 v.
C16	1292	.0005 mica
C17	10020	.1 x 200 v.
C18	119101	20 mid. lyric
C19	119101	20 mid. lyric
C20	119101	40 mid. lyric
C21	10026	.02 x 400 v.
C22	1298	.0006 mica
C23	100112	.001 x 200 v.
C24	10026	.02 x 400 v.
C25	10067	.01 x 600 v.

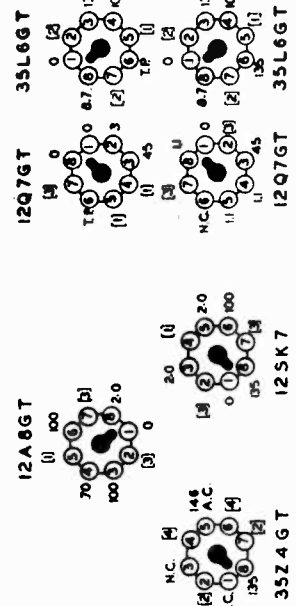
PARTS

T1	111157	Loop Antenna (Complete)
T2	111162	Loop Adjusting Coil
T3	111168	S.W. Adjusting Coil
T4	10135	E.C. S.W. Oscillator Coil
T5	10163C	Input I.F.—465 kc.
T6	10163D	Output I.F.—465 kc.
T7	114182	6" P.M. Speaker
T8	10596	Output Transformer
T9	104175B	Power Transformer
S1	125100	Band Switch
S2	12570	Phono Radio Switch
S3	12599	Tone Switch
S4		Off-on switch on volume control
L1	1233	R.F. Choke
P1	10794	6-8 v. pilot light

BOTTOM VIEW OF CHASSIS

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

- [1] CANNOT BE MEASURED WITH VOLTMETER
- [2] 20 VOLTS A.C. READ ACROSS PMS 2 & 7
- [3] 115 VOLTS A.C. READ ACROSS PMS 2 & 7
- [4] 115 VOLTS A.C. LINE VOLTAGE READ BETWEEN PMS 3 & 6
- T.P. — TIE POINT



REAR OF CHASSIS

1026

10/39

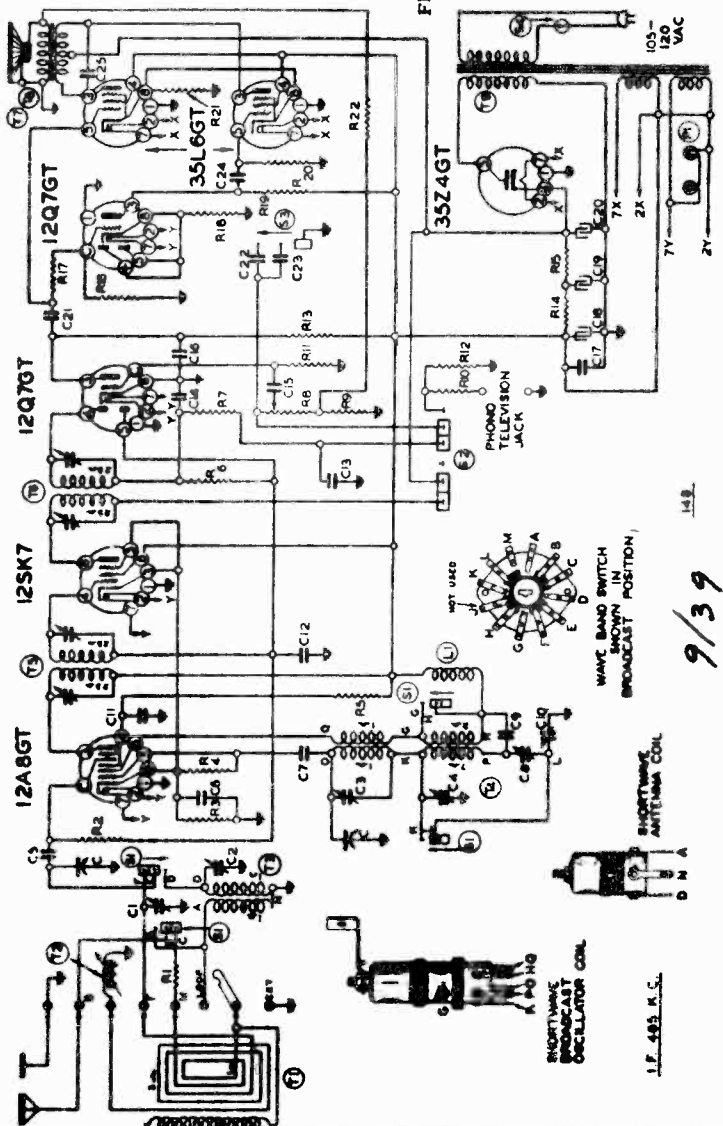
BELMONT RADIO CORP.

MODEL 792, Series A  
Schematic, Voltage  
Socket

The tube complement of this chassis consists of the following octal base glass and metal tubes:

The type and function of each tube is as follows:

- 1—Type 12A8GT First Detector-oscillator.
- 1—Type 12SK7 Remote Cut-Off Pentode, I. F. Amplifier (465 K. C.).
- 1—Type 12Q7GT Duplex Diode Triode Second Detector, A.V.C. and First Audio.
- 1—Type 12Q7GT Phase Inverter.
- 2—Type 35L6GT Push-Pull Output Amplifier.
- 1—Type 35Z4GT High Vacuum Rectifier.



- CONDENSERS**
- 2 gang variable condenser
  - B. C. Adj. Trimmer (Antenna)
  - S. W. Adj. Trimmer (Antenna)
  - S. W. Adj. Trimmer (Oscillator)
  - B. C. Adj. Trimmer (Oscillator)
  - 1000 mica
  - .1 x 100 v.
  - .0005 mica
  - 12039
  - B. C. Series Pad
  - 124113
  - 1009
  - S. W. Series Pad
  - .1 x 200 v.
  - .05 x 200 v.
  - .0001 mica
  - .0001 mica
  - .002 x 600 v.
  - .0005 mica
  - .1 x 200 v.
  - 20 mid. lytic
  - C19 119101 20 mid. lytic
  - 40 mid. lytic
  - C21 10026 .02 x 400 v.
  - .0006 mica
  - .001 x 200 v.
  - .02 x 400 v.
  - C24 10206 .03 x 400 v.
  - C1 and C2 in same unit
  - C8 and C10 in same unit
  - C18, C19 and C20 in same unit
  - C3 and C4 in same unit.

**FREQUENCY RANGE**

5.7 to 18.3 MC. C  
540 to 1550 KC. C2

Power Consumption.....55 Watts

Power Output 3 Watts Undistorted, 3.6 Watts Maximum

Chassis Diagram Ref. No. Part No. Description

**RESISTORS**

- 13079 400 ohm—1/4 w.
- R1 13019 1 megohm—1/4 w.
- R2 13016 100 ohm—1/4 w.
- R3 13017 50M ohm—1/4 w.
- R4 13014 15M ohm—1/4 w.
- R5 13017 50M ohm—1/4 w.
- R6 13012 2 megohm—1/4 w.
- R7 10159 1 megohm—volume control
- R8 130215 25 ohm—1/4 w.
- R9 13028 2 megohm—1/4 w.
- R10 130225 15 megohm—1/4 w.
- R11 13019 1 megohm—1/4 w.
- R12 13019 200M ohm—1/4 w.
- R13 13019 1200 ohm—1/4 w.
- R14 130294 1200 ohm—1/4 w.
- R15 130294 300M ohm—1/4 w.
- R16 130236 300M ohm—1/4 w.
- R17 130102 500M ohm—1/4 w.
- R18 13022 5M ohm—1/4 w.
- R19 1309 200M ohm—1/4 w.
- R20 130102 500M ohm—1/4 w.
- R21 13097 200 ohm—1/4 w.
- R22 130168 100 ohm—1/4 w.

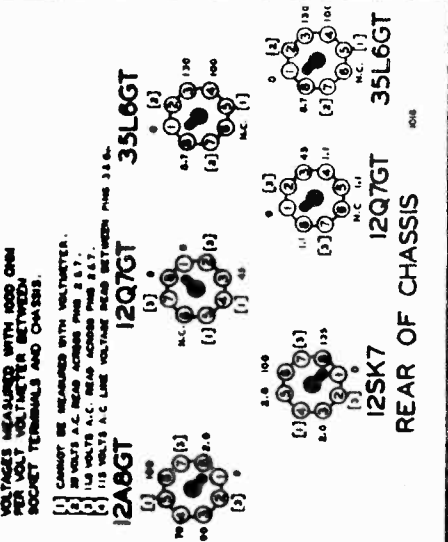
**PARTS**

- 111154 Loop Antenna
- T1 111153 Loop Adjusting Coil
- T2 111151 S. W. Antenna Coil
- T3 110135 B. C. S. W. Oscillator Coil
- T4 108163 Input I. F.—465 kc.
- T5 108163B Output I. F.—465 kc.
- T6 114178 10" P. M. Speaker
- T7 108163B Output Transformer
- T8 10896 Power Transformer
- T9 104175 Band Switch
- S1 12594 Phono Radio Switch
- S2 12570 Tone Control Switch
- S3 12598 Off-on switch
- S4 1233 R. F. "B" Choice
- L1 1233 2 6-8 v. pilot lights
- P1 10794

**BOTTOM VIEW OF CHASSIS**

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND CHASSIS.

- (1) CHASSIS
- (2) 115 VOLTS A.C. REAR ACROSS PHOS 257.
- (3) 115 VOLTS A.C. REAR ACROSS PHOS 257.
- (4) 115 VOLTS A.C. LINE VOLTAGE BETWEEN PHOS 257.



9/39

MODEL 791  
MODEL 792, Series A  
Alignment, Trimmers

BELMONT RADIO CORP.

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.	465 Kc.	.1 MFD.	Grid of 12SK7	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. 2)	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. 2)	Broadcast oscillator	Adjust to maximum output
	540 Kc.	200 mmf.	Grid of 12A8GT	Broadcast	Set Dial at 540 Kc.	Trimmer C3 (See Fig. 4)	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 C1 (See Fig. 2)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer T2 (See Fig. 2)	Iron Core Tracking Coil	Adjust to maximum output

(See Fig. 2) FOR MODEL 792, SEE A.

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 and 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

NOTE:— FIGURES TO LEFT REFER TO MODEL 791;  
FIGURES TO RIGHT REFER TO MODEL 792 Series A.

loop antenna connected to the terminal board. The signal generator is connected to the "ANT." and "GND." terminals. (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.

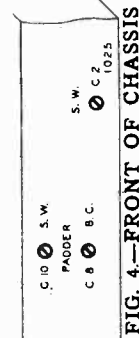


FIG. 1.— REAR VIEW OF CHASSIS

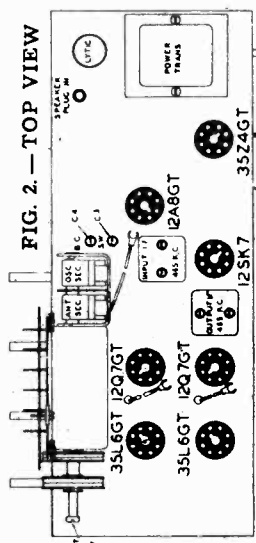


FIG. 2.—TOP VIEW

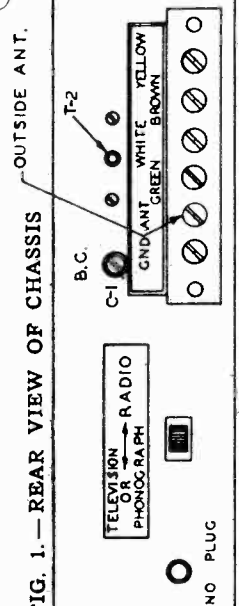


FIG. 1.—REAR VIEW OF CHASSIS

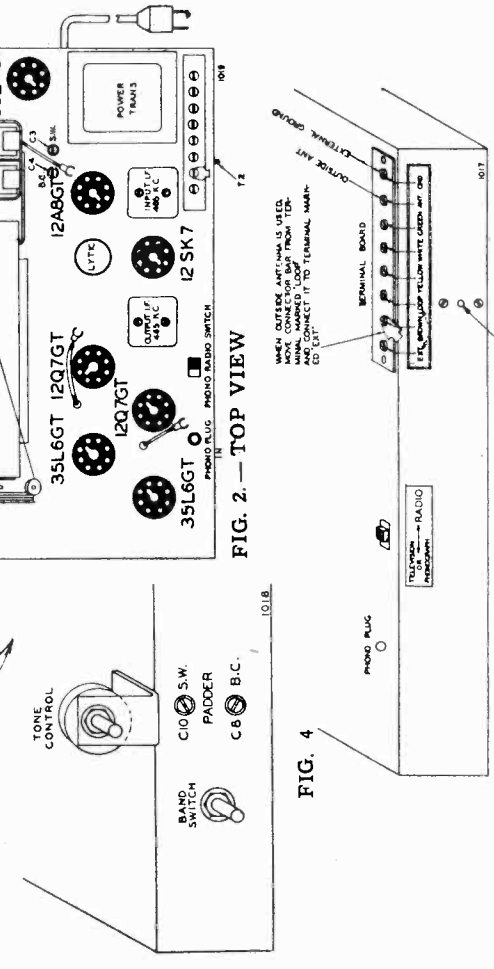
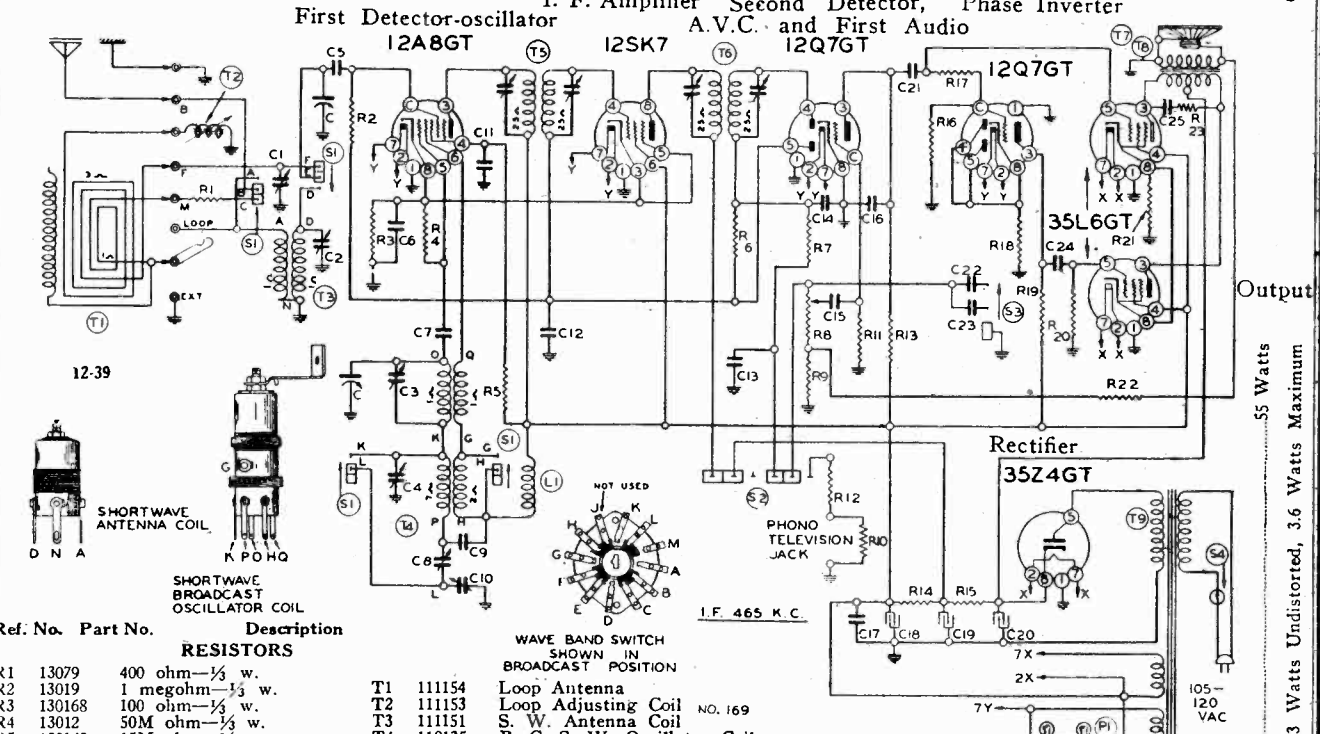


FIG. 2.—TOP VIEW

FIG. 1.—REAR VIEW OF CHASSIS

Schematic, Voltage, Socket **BELMONT RADIO CORP.**  
**Trimmers**

MODEL 792, Series B  
 Serial 9L200500 up



**Ref. No. Part No. Description**

**RESISTORS**

R1	13079	400 ohm—1/2 w.
R2	13019	1 megohm—1/2 w.
R3	130168	100 ohm—1/2 w.
R4	13012	50M ohm—1/2 w.
R5	130149	15M ohm—1/2 w.
R6	130170	3 megohm—1/2 w.
R7	13012	50M ohm—1/2 w.
R8	101159	1 megohm—volume control
R9	130276	10 ohm—1/2 w.
R10	1305	300M ohm—1/2 w.
R11	130257	5 megohm—1/2 w.
R12	1304	3 megohm—1/2 w.
R13	1309	200M ohm—1/2 w.
R14	130294	1200 ohm—1/2 w.
R15	130294	1200 ohm—1/2 w.
R16	130236	30M ohm—1/2 w.
R17	130102	500M ohm—1/2 w.
R18	13022	5M ohm—1/2 w.
R19	1309	200M ohm—1/2 w.
R20	130102	500M ohm—1/2 w.
R21	130296	200 ohm—1 w.
R22	130168	100 ohm—1/2 w.
R23	13094	50M ohm—1/2 w.

**CONDENSERS**

C	102119	2 gang variable condenser
C1	124111	B. C. Adj. Trimmer (Antenna)
C2	124111	S. W. Adj. Trimmer (Antenna)
C3	124112	S. W. Adj. Trimmer (Oscillator)
C4	124112	B. C. Adj. Trimmer (Oscillator)
C5	1292	.0005 mica
C6	100104	.5 x 100 v.
C7	12939	.00005 mica
C8	124113	B. C. Series Pad
C9	1009	.05 x 200 v.
C10	124113	S. W. Series Pad
C11	10020	.1 x 200 v.
C12	1009	.05 x 200 v.
C13	1295	.0001 mica
C14	1295	.0001 mica
C15	10025	.002 x 600 v.
C16	1292	.0005 mica
C17	10020	.1 x 200 v.
C18	119101	20 mid. lytic
C19	119101	20 mid. lytic
C20	119101	40 mid. lytic
C21	10026	.02 x 400 v.
C22	1298	.0006 mica
C23	100112	.001 x 200 v.
C24	10026	.02 x 400 v.
C25	1001	.1 x 400 v.

C1 and C2 in same unit  
 C8 and C10 in same unit  
 C18, C19 and C20 in same unit  
 C3 and C4 in same unit

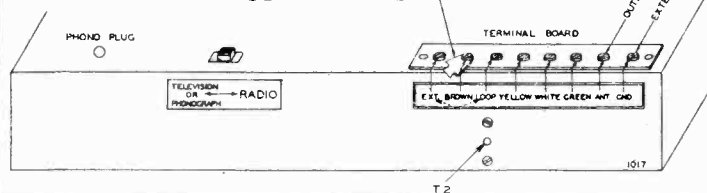
**WAVE BAND SWITCH SHOWN IN BROADCAST POSITION**

T1	111154	Loop Antenna
T2	111153	Loop Adjusting Coil
T3	111151	S. W. Antenna Coil
T4	110135	B. C. S. W. Oscillator Coil
T5	108163	Input I. F.—465 kc.
T6	108173	Output I. F.—465 kc.
T7	114178	10" P. M. Speaker
T8	10596	Output Transformer
T9	104175	Power Transformer
S1	12594	Band Switch
S2	12570	Phono Radio Switch
S3	12598	Tone Control Switch
S4		Off-on switch
L1	1233	R. F. "B" Choke
P1	10794	2 6-8 v. pilot lights

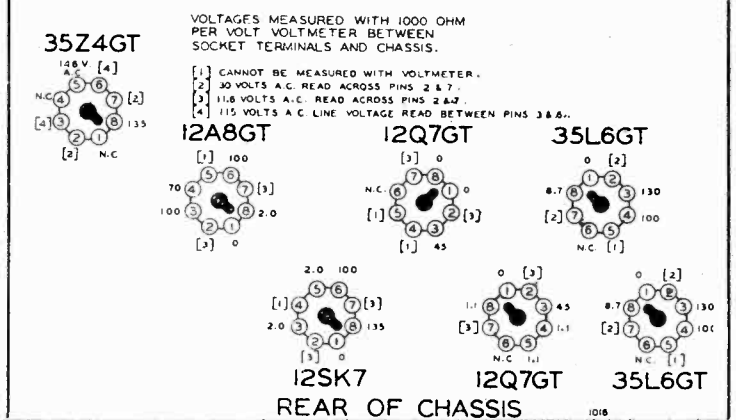
**Model 792**  
**Series B**  
 (Serial No. 9L200500 and up)

Output.....55 Watts  
 Power Consumption.....3 Watts Undistorted, 3.6 Watts Maximum

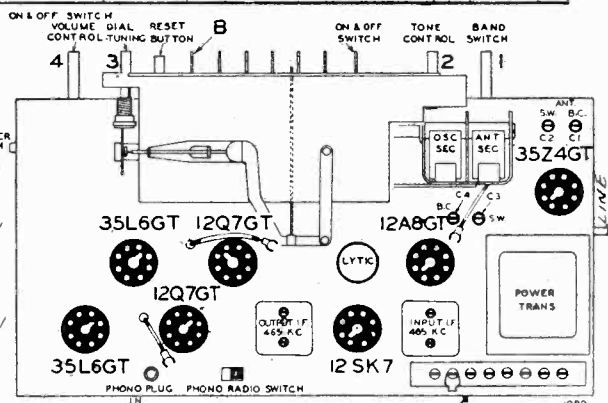
**FIG. 1. — REAR VIEW OF CHASSIS**



**BOTTOM VIEW OF CHASSIS**



**REAR OF CHASSIS**



**FIG. 2. — TOP VIEW**

MODEL 792, Series B  
MODEL 793, Series B  
Alignment, Trimmers

BELMONT RADIO CORP.

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 mf., 200 mmf., 400 ohms.

- 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.

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 on (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. 5)	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 dial. (See note "C")	Adjust to maximum output
BROADCAST 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 ALIGNMENT (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

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.

**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.

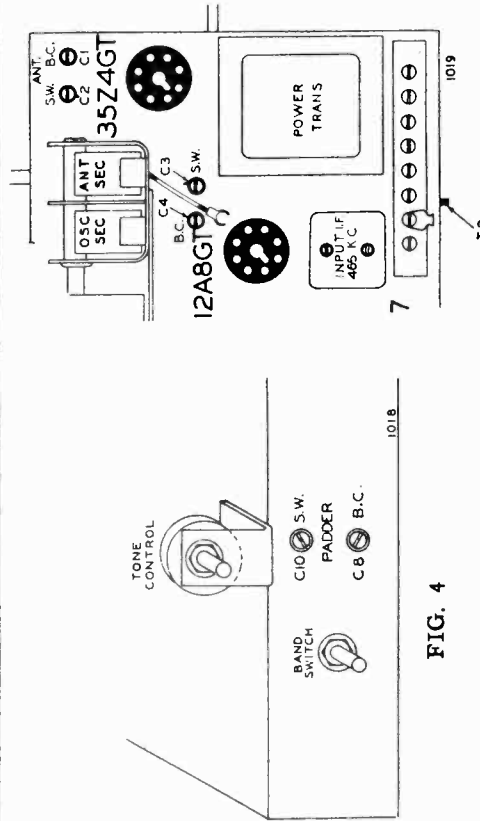


FIG. 4

FIG. 5—TOP VIEW

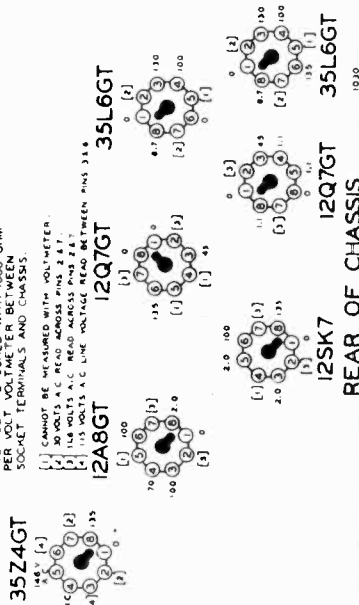


BELMONT RADIO CORP.

MODEL 793, Series A  
Schematic, Voltage  
Socket

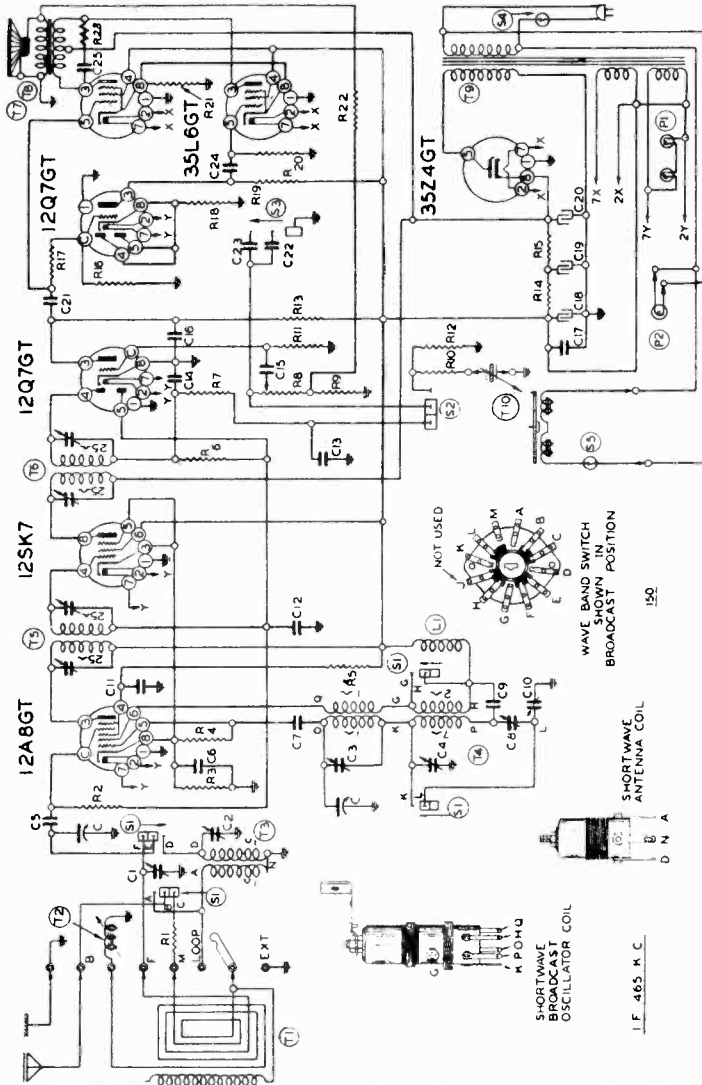
BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM RESISTOR BETWEEN SOCKET TERMINALS AND CHASSIS.



TUBES:

The tube complement of this chassis consists of the following octal base glass and metal tubes:  
The type and function of each tube is as follows:  
1—Type 12A8GT First Detector-Oscillator.  
1—Type 12SK7 Remote Cut-Off Pentode, I. F. Amplifier (465 K. C.).  
1—Type 12Q7GT Duplex Diode Triode Second Detector, A.V.C. and First Audio.  
1—Type 12Q7GT Phase Inverter.  
2—Type 35L6GT Push-Pull Output Amplifier.  
1—Type 35Z4GT High Vacuum Rectifier.



CONDENSERS

Ref. No.	Description
102119	2 gang variable condenser
C1	B. C. Adj. Trimmer (Antenna)
C2	S. W. Adj. Trimmer (Antenna)
C3	S. W. Adj. Trimmer (Oscillator)
C4	B. C. Adj. Trimmer (Oscillator)
C5	.0005 Mica
C6	.5 x 100 v.
C7	.00005 Mica
C8	B. C. Series Pad
C9	.05 x 200 v.
C10	S. W. Series Pad
C11	.1 x 200 v.
C12	.05 x 200 v.
C13	.0001 mica
C14	.002 x 600 v.
C15	.0005 mica
C16	.1 x 200 v.
C17	20 mfd. lyric
C18	20 mfd. lyric
C19	19101
C20	40 mfd. lyric
C21	.02 x 400 v.
C22	.0006 mica
C23	.001 x 200 v.
C24	.02 x 400 v.
C25	1 x 400 v.

RESISTORS

Ref. No.	Description
R1	400 ohm—1/2 w.
R2	1 megohm—1/2 w.
R3	100 ohm—1/2 w.
R4	50M ohm—1/2 w.
R5	15M ohm—1/2 w.
R6	3 megohm—1/2 w.
R7	50M ohm—1/2 w.
R8	1 megohm—volume control
R9	10 ohm—1/2 w.
R10	2 megohm—1/2 w.
R11	5 megohm—1/2 w.
R12	1 megohm—1/2 w.
R13	200M ohm—1/2 w.
R14	1200 ohm—1/2 w.
R15	130294
R16	30M ohm—1/2 w.
R17	500M ohm—1/2 w.
R18	5M ohm—1/2 w.
R19	1309
R20	200M ohm—1/2 w.
R21	130296
R22	200 ohm—1/2 w.
R23	50M ohm—1/2 w.

10/39

MODEL 793, Series A  
Alignment, Trimmers  
Phono Data

BELMONT RADIO CORP.

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

Align 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.

**BAND SWITCH**  
Extremes Right Rotation  
Extremes Left Rotation  
Power Consumption (Radio Chassis only, less Phono Motor).....55 Watts  
Power Output.....3.6 Watts Undistorted, 3.6 Watts Maximum  
Intermediate Frequency.....465 K. C.

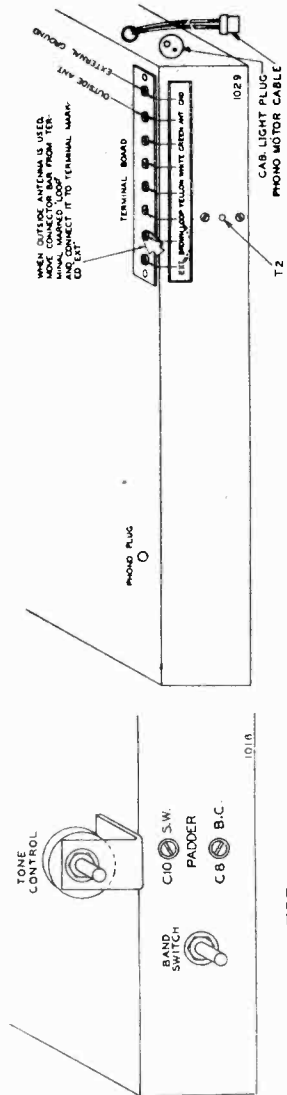


FIG. 1.—REAR VIEW OF CHASSIS

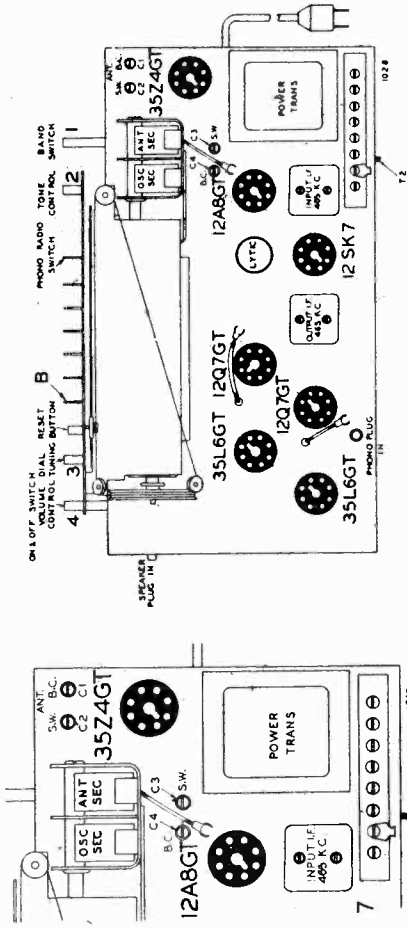


FIG. 2.—TOP VIEW

**PHONOGRAPH OPERATION:**  
The Phono-Radio switch is of the push button type, (See button 5, fig. 3).

For Phono operation push Phono push button all the way in. This will disconnect the radio and connect the phonograph pick-up. The volume and tone controls on the front panel of the radio are used for either radio or for phonograph.

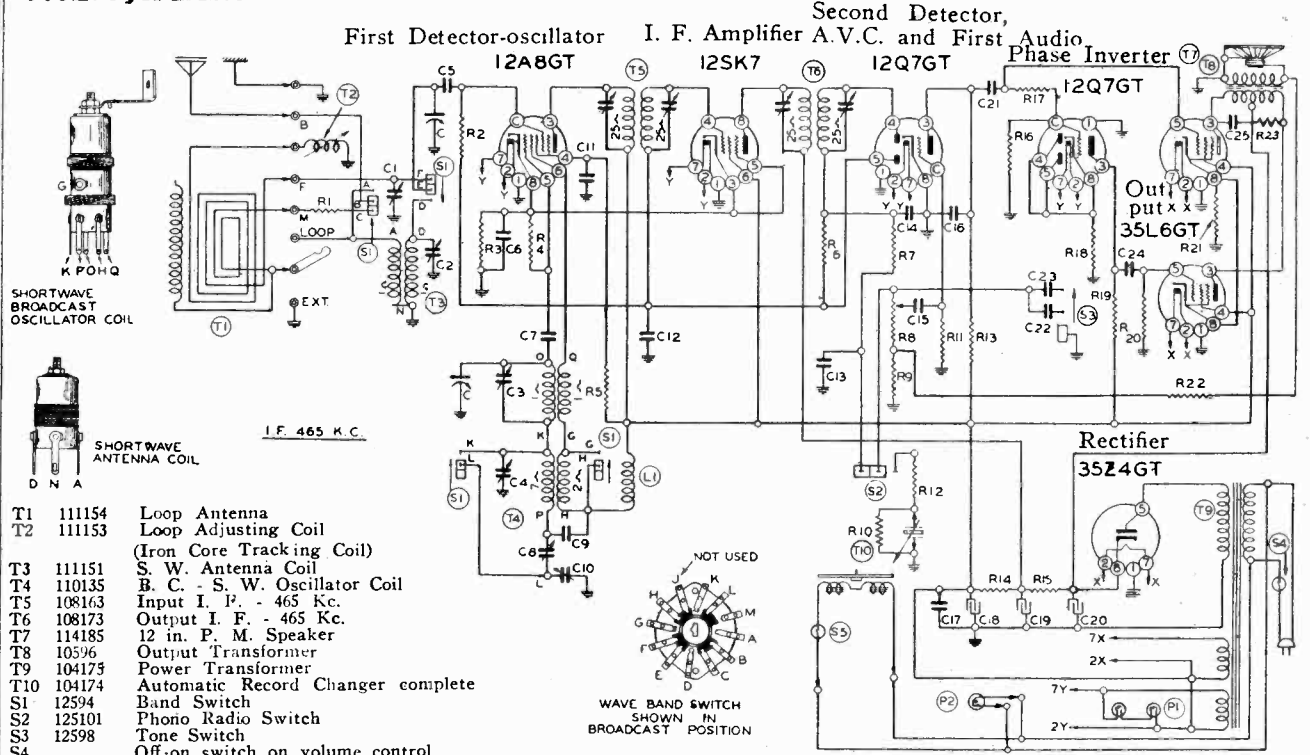
To switch back to radio playing position push in on any one of the automatic tuning push buttons or the manual dial tuning control knob.

Included with this manual is a separate instruction manual for the Automatic Record Changer. Before operating the Record Changer familiarize yourself with the controls and the operation of the mechanism.

Schematic, Voltage Socket, Trimmers

BELMONT RADIO CORP.

MODEL 793, Series B  
Serial 9L199900 up



- T1 111154 Loop Antenna
- T2 111153 Loop Adjusting Coil (Iron Core Tracking Coil)
- T3 111151 S. W. Antenna Coil
- T4 110135 B. C. - S. W. Oscillator Coil
- T5 108163 Input I. F. - 465 Kc.
- T6 108173 Output I. F. - 465 Kc.
- T7 114185 12 in. P. M. Speaker
- T8 10596 Output Transformer
- T9 104175 Power Transformer
- T10 104174 Automatic Record Changer complete
- S1 12594 Band Switch
- S2 125101 Phono Radio Switch
- S3 12598 Tone Switch
- S4 Off-on switch on volume control
- S5 Off-on switch on record changer
- L1 1233 R. F. "B" Choke
- P1 10794 2 6-8 v. pilot lights
- P2 107290 Indicator Light

Ref. No. Part No. Description

- RESISTORS**
- R1 13079 400 ohm—1/4 w.
  - R2 13019 1 megohm—1/4 w.
  - R3 130168 100 ohm—1/4 w.
  - R4 13012 50M ohm—1/4 w.
  - R5 130149 15M ohm—1/4 w.
  - R6 130170 3 megohm—1/4 w.
  - R7 13012 50M ohm—1/4 w.
  - R8 101202 1 megohm—volume control
  - R9 130276 10 ohm—1/4 w.
  - R10 1305 300M ohm—1/4 w.
  - R11 130257 5 megohm—1/4 w.
  - R12 1304 3 megohm—1/4 w.
  - R13 1309 200M ohm—1/4 w.
  - R14 130294 1200 ohm—1/4 w.
  - R15 130294 1200 ohm—1/4 w.
  - R16 130236 30M ohm—1/4 w.
  - R17 130102 500M ohm—1/4 w.
  - R18 13022 5M ohm—1/4 w.
  - R19 1309 200M ohm—1/4 w.
  - R20 130102 500M ohm—1/4 w.
  - R21 130296 200 ohm—1/4 w.
  - R22 130168 100 ohm—1/4 w.
  - R23 13094 50M ohm—1/4 w.

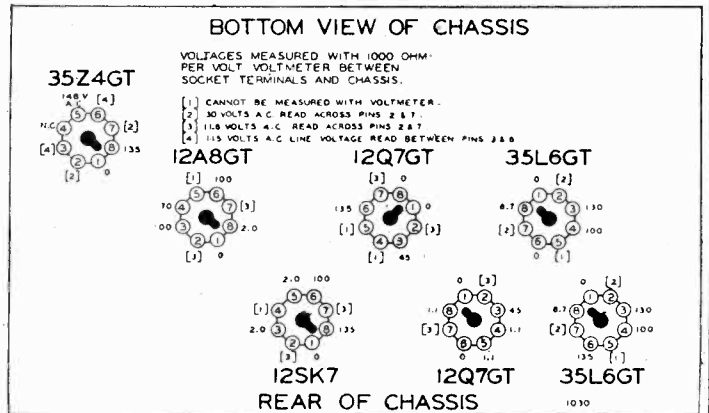
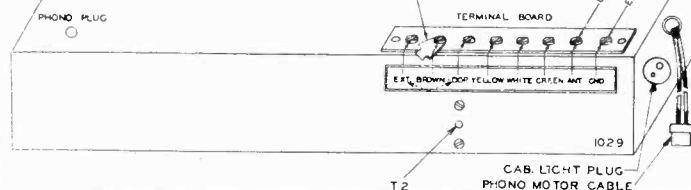
- CONDENSERS**
- C 102119 2 gang variable condenser
  - C1 124111 B. C. Adj. Trimmer (Antenna)
  - C2 124111 S. W. Adj. Trimmer (Antenna)
  - C3 124112 S. W. Adj. Trimmer (Oscillator)
  - C4 124112 B. C. Adj. Trimmer (Oscillator)
  - C5 1292 .0005 Mica
  - C6 100104 .5 x 100 v.
  - C7 12939 .00005 Mica
  - C8 124113 B. C. Series Pad
  - C9 1009 .05 x 200 v.
  - C10 124113 S. W. Series Pad
  - C11 10020 .1 x 200 v.
  - C12 1009 .05 x 200 v.
  - C13 1295 .0001 mica
  - C14 1295 .0001 mica
  - C15 10025 .002 x 600 v.
  - C16 1292 .0005 mica
  - C17 10020 .1 x 200 v.
  - C18 119101 20 mfd. lytic
  - C19 119101 20 mfd. lytic
  - C20 119101 40 mfd. lytic
  - C21 10026 .02 x 400 v.
  - C22 1298 .0006 mica
  - C23 100112 .001 x 200 v.
  - C24 10026 .02 x 400 v.
  - C25 1001 .1 x 400 v.
- C1 and C2 in same unit  
C8 and C10 in same unit  
C18, C19 and C20 in same  
C3 and C4 in same unit

SERVICE NOTES:

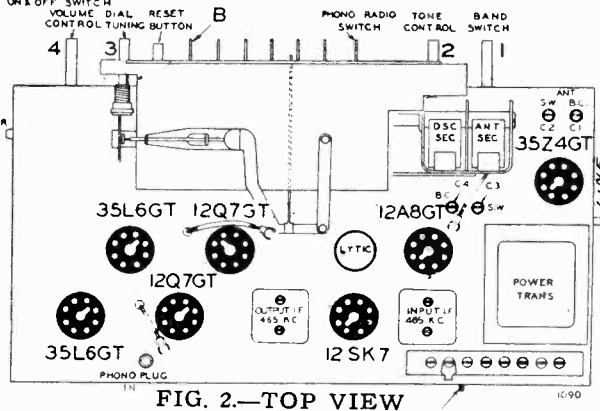
Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt.

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

FIG. 1.—REAR VIEW OF CHASSIS

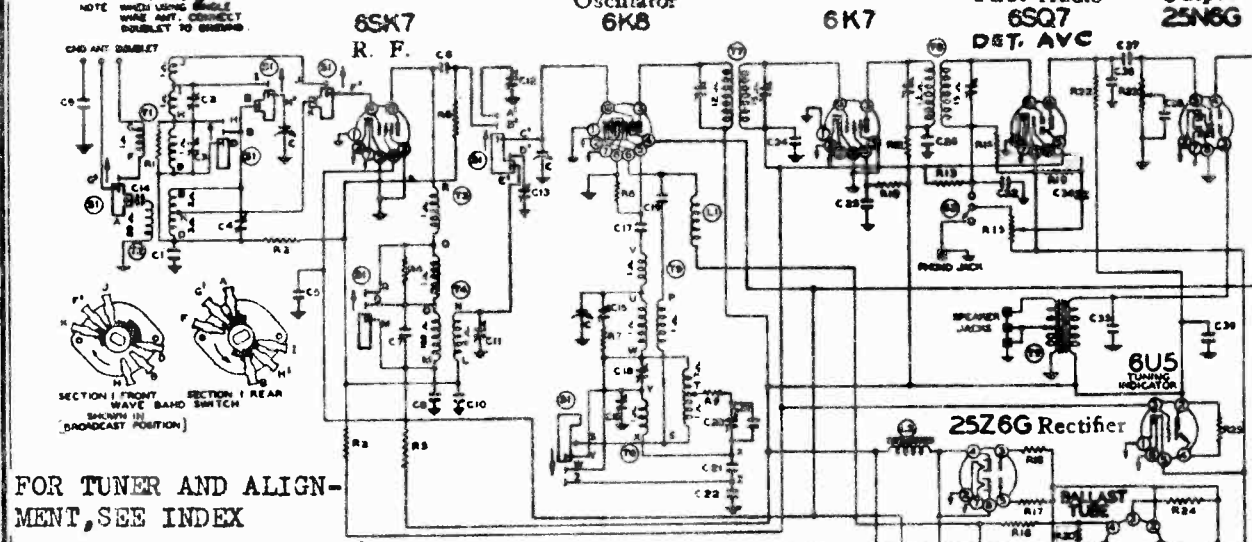


Consumption (Radio Chassis only, less Phono Motor).....55 Watts  
Power Output.....3 Watts Undistorted, 3.6 Watts Maximum



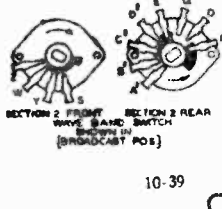
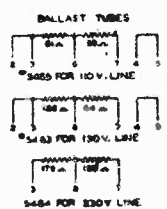
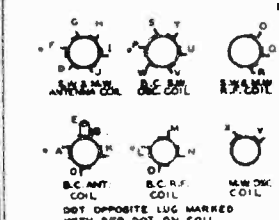
BELMONT RADIO CORP. Serial 9K167300 up  
Schematic, Voltage, Trimmers

MODELS 707-391, 707-398  
707-378, etc.  
Chassis 707, Series A



Power Consumption.....110 Watts at 230 Volts  
Power Output.....4 Watts Undistorted, 5 Watt Maximum  
(Measured with 230 Volt Line Voltage)

FOR TUNER AND ALIGNMENT, SEE INDEX



Ref. No.	Part No.	Description
<b>RESISTORS</b>		
R1	13094	50M ohm-1/2 w.
R2	13020	100M ohm-1/2 w.
R3	13026	1000 ohm-1/2 w.
R4	130232	25M ohm-1/2 w.-10%
R5	13026	1000 ohm-1/2 w.
R6	13019	1 megohm-1/2 w.
R7	13097	200 ohm-1/2 w.-10%
R8	13012	50M ohm-1/2 w.
R9	130299	10 ohm-1/2 w. 10%
R10	13020	100M ohm-1/2 w.
R11	130197	20 ohm-1/2 w. 10%
R12	13023	2000 ohm-1/2 w.
R13	1304	3 megohm-1/2 w.
R14	1304	3 megohm-1/2 w.
R15	101205	1 megohm volume control
R16	13022	5000 ohm-1/2 w.
R17	130168	100 ohm-1/2 w.
R18	130168	100 ohm-1/2 w.-10%
R19	130225	15 megohm-1/2 w.
R20	130176	20M ohm-1/2 w. 10%
R21	130302	9M ohm-1.5 watt-10%
R22	1309	200M ohm-1/2 w.
R23	101207	1 megohm tone control
R24	10658	300 ohm-10%-50 watt
R25	13019	1 megohm-1/2 w.
<b>CONDENSERS</b>		
C	10212	Three gang variable condenser
C1	10090-B	.02 x 400 v.
C2	124118	S. W. Antenna Trimmer
C3	124118	M. W. Antenna Trimmer
C4	124118	B. C. Antenna Trimmer
C5	10013	.05 x 400 v.
C6	10090	.02 x 400 v.
C7	12938	.00005 mica
C8	10090	.02 x 400 v.
C9	10026	.02 x 400 v.
C10	10090	.02 x 400 v.
C11	124119	B. C. R.F. Trimmer
C12	124119	S. W. R.F. Trimmer
C13	124119	M. W. R.F. Trimmer
C14	10026	.02 x 400 v.
C15	124119	S. W. Oscillator Trimmer
C16	124119	M. W. Oscillator Trimmer
C17	12962	.0003 mica
C18	124119	B. C. Oscillator Trimmer
C19	10025	.002 x 600 v.
C20	124119	B. C. Padding condenser
C21	129149	.0028 compression M.W. Pad
C22	129105	.0035 Compression S.W. Pad
C23	12959	.0003 mica
C24	1009	.05 x 200 v.
C25	10013	.05 x 400 v.
C26	1001	.1 x 400 v.
C27	11998	30 uf. lytic-300 w.v.
C28	11998	30 uf. lytic-300 w.v.
C29	11998	40 uf. lytic-25 w.v.

C30	11964	15 uf. lytic-400 w.v.
C31	11964	10 uf. lytic-350 w.v.
C32	1295	.0001 mica
C33	10013	.05 x 400 v.
C34	10025	.002 x 600 v.
C35	10026	.02 x 400 v.
C36	12912	.00025 mica
C37	10013	.05 x 400 v.
C38	10078	.01 x 200 v.
C39	10013	.05 x 400 v.
C2, C3 and C4 are in same unit.		
C11, C12, C13, C15, C16, C18 and C20 in same unit.		
C27, C28 and C29 in same unit.		
C30 and C31 in same unit.		
T1	111156	S. W. M.W. Antenna Coil
T2	111158	B. C. Antenna Coil
T3	10955	S. W. M.W. R.F. Coil
T4	10956	B. C. R.F. Coil
T5	110140	B. C. S.W. Oscillator Coil
T6	110138	M.W. Oscillator Coil
T7	108165	1st I.F. Input Coil
T8	108119	2nd I.F. Output Coil
T9	10598	Output Transformer
	114179	or "P.M. Speaker
	114186	12" P.M. Speaker
L1	1234	R.F. Choke
L2	10597B	"B" Filter Choke
S1	12595	Wave Band Switch
S2		On and Off Switch on volume control
S3	125101	Radio-Phono Switch
P1	10794	(2) Pilot Lights T-4

Chassis No. 707—Series A  
(Serial No. 9K167300 and up) For  
Models 707-391, 707-398 and 707-378, Etc.

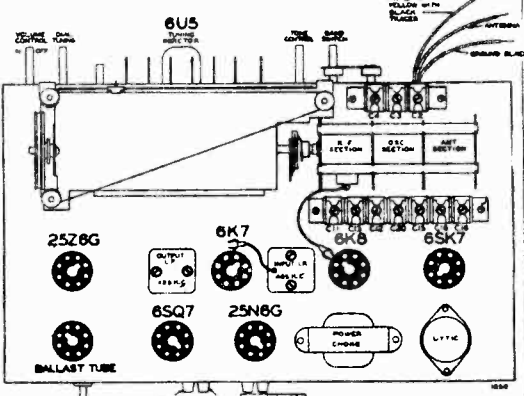
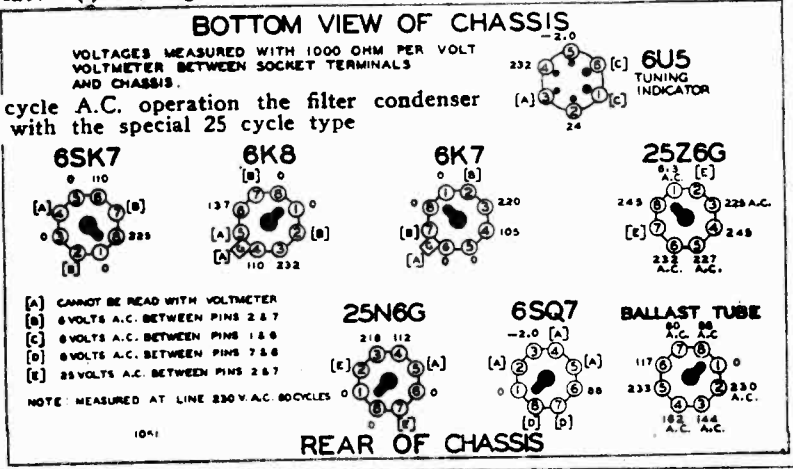


FIG. 1—TOP VIEW

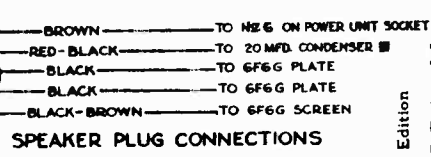
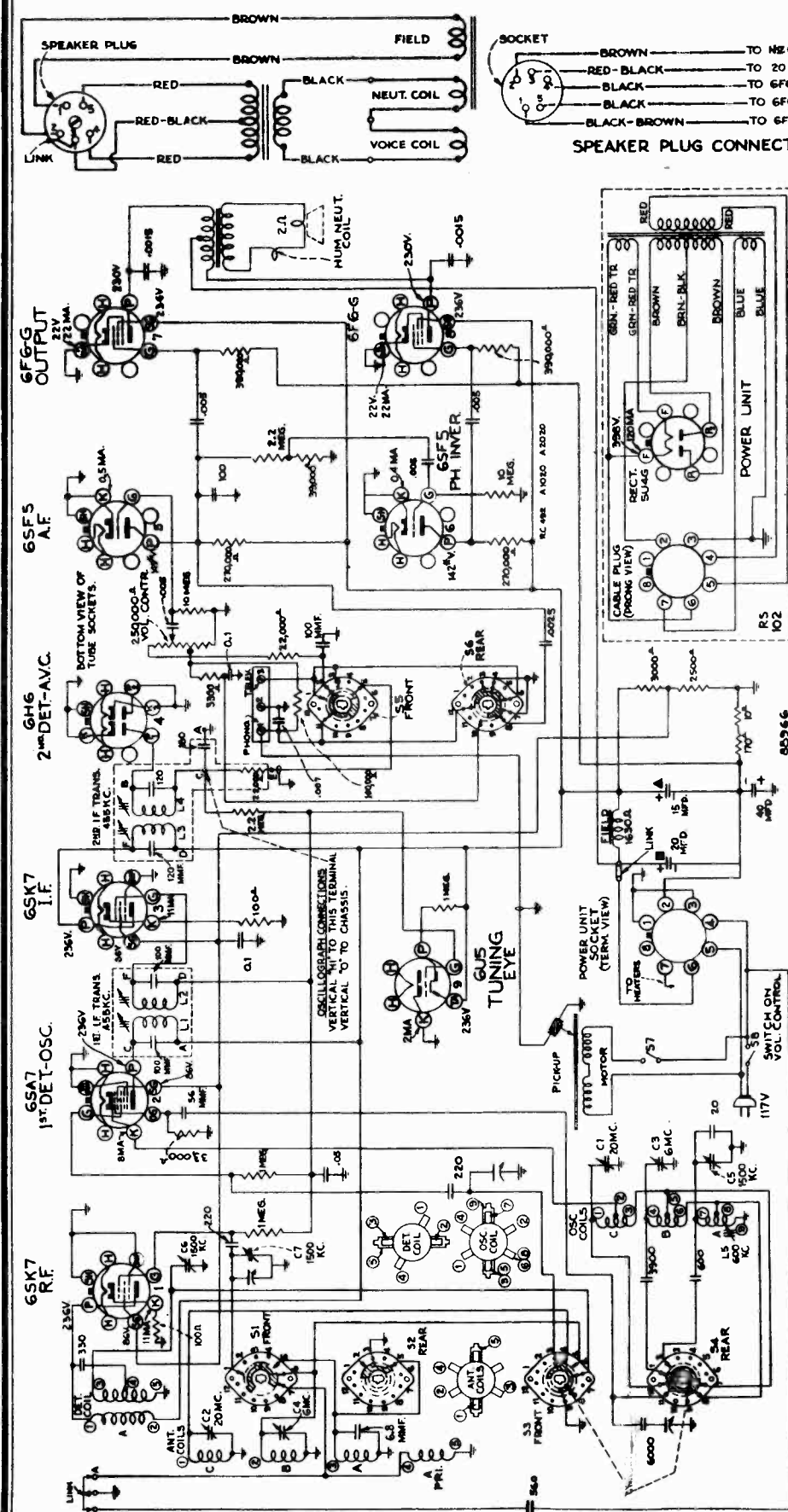


BRUNSWICK DIV.-MERSMAN BROS.

MODELS A1020, A2020

Schematic, Voltage

Notes



Intermediate Frequency  
455 kc

First Edition

Tube Complement	Notes
(1) RCA-6SK7	R-F Amplifier
(2) RCA-6SA7	1st Detector-Oscillator
(3) RCA-6SK7	I-F Amplifier
(4) RCA-6H6	2nd Detector and A.V.C.
(5) RCA-6SF5	A-F Amplifier
(6) RCA-6SF5	Phase Inverter
(7) RCA-6F6G	Power Output
(8) RCA-6F6G	Power Output
(9) RCA-6U5	Tuning Eye
(10) RCA-5U4-G	Full-Wave Rectifier

Dial Lamp ..... Mazda 44, 6.3 volts, 0.25 amp.

hole is located in the motor casing, adjacent to the spindle bearing, and is covered with a screw plug.

Television Attachment.—A terminal board is provided on the rear of the chassis for connecting a Television attachment into the audio-amplifying circuit. The cable from the attachment should be connected to terminals 2 and 3, the shielded or ground lead going to terminal 2.

A Radio-Phono-Television switch is built into the chassis, allowing switching to be accomplished through the "Tone-Radio-Phono-Television" control on the control panel.

Loudspeaker.—To center the loudspeaker voice coil, first remove the front dust cover, then loosen the screws holding the spider assembly. Insert three narrow feelers into the air gap, and tighten the spider screws. Remove the feelers and fasten a dust cover in place with loudspeaker cement.

The crystal pickup is sealed in a metal case as protection against extreme changes of climate. If failure occurs, do not attempt to repair the unit, but install a new crystal unit.

• Voltages should hold within  $\pm 20\%$  with 117 V. A.C. supply.

• Starred Voltages are operating voltages in circuits with high series resistance; the actual measured voltages will be lower, depending on the voltmeter loading.

Models A-1020 and A-2020 Brunswick Panatropes are combination ten-tube, three-band superheterodyne receivers and automatic phonographs.

Power Supply Rating ..... 105-125 volts, 50-60 cycles, 130 watts

Power Output ..... 10 watts

Undistorted ..... 12 watts

Maximum ..... 12 watts

Loudspeaker (RL-70K2) Type ..... 12-inch electrodynamic

V.-C Impedance ..... 2.2 ohms at 400 cycles

Motor Lubrication.—Apply a few drops of light machine oil to the spindle bearing and oil hole every six months. The oil

**MODELS A1020,A2020**  
**MODELS 1680,2660,2689, BRUNSWICK DIV.-MERSMAN BROS.**  
**A2600,3689**

**Alignment, Trimmers, Socket, Dial Drive Data**

**A-1020 & A-2020 Alignment Procedure**

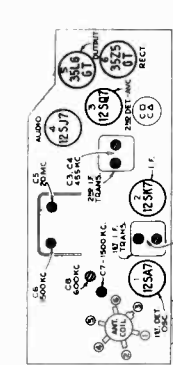
**Cathode-Ray Alignment** is the preferable method. Connections for the oscillograph are shown in the schematic drawing.  
**Output Meter Alignment**—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

**Test-Oscillator**—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid AVC action.

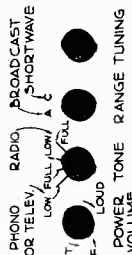
**Calibration Scale on Indicator-Drive-Cord Drum**—The tuning dial is fastened in the cabinet and cannot be used for reference during alignment; therefore, a calibration scale is attached to the drum. This scale, which is graduated in degrees, is read on this scale, which is calibrated in degrees. The frequency is given in the alignment table.

As the first step in alignment, check the position of the drum. The 120° mark on the drum scale must be vertical and the plates are fully meshed. The drum is held in the mesh by means of two set screws, which must be tightened accurately when the drum is in the correct position.

On the inner side of the tuning drum are two projections which serve as stops to prevent extreme rotation of the gang. Limiting clockwise movement of the drum takes effect when the gang condenser plates are becoming fully meshed, thus preventing stress on the gang due to extreme rotation.



*Tube and Trimmer Locations*



*Controls*

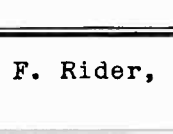
**1680, 2660, 2689 & A-2600 Alignment Procedure**

**Cathode-Ray Alignment** is the preferable method. Connections for the oscillograph are shown in the schematic drawing.  
**Output Meter Alignment**—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

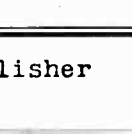
**Test-Oscillator**—For all alignment operations, connect the low side of the test-oscillator to the receiver ground binding post, and keep the output as low as possible to avoid AVC action.

**Calibration Marks**—The tuning dial is fastened in the cabinet and can not be used for reference during alignment. Therefore calibration marks corresponding to dial readings of 60 kc, 1,500 kc, 6.1 mc, and 20 mc have been stamped in the plate on the front of the chassis as shown in the accompanying diagram. These marks are used as a check on the position of the drum when the set screws are fully meshed; the indicator should point 1/16 inch to the left of the maximum capacity mark on the calibration plate.

**Dial Indicator Adjustment**—When the chassis is placed in the cabinet and with the gang condenser in full mesh, the indicator should point to the mark at the extreme left (low frequency) end of the glass dial scale.



*Tube and Trimmer Locations*



*Controls*

Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for maximum peak output
1	Antenna terminal	455 kc	"A" Band Quiet point 550-750 kc	C3 and C4 (2nd I.F. trans.)
2	Antenna terminal in series with 300 ohms	20 mc	"C" Band 20 mc calibration mark	C1 and C2 (1st I.F. trans.)
3	Antenna terminal in series with 300 ohms	1,500 kc	"A" Band 1,500 kc calibration mark	C5 (osc.)*
4	Antenna terminal in series with 200 mmfd.	600 kc	"A" Band 600 kc calibration mark	C7 (osc.) C6 (ant.)
5	Repeat step 4			C8 (osc.) Rock gang

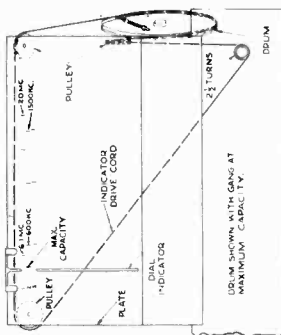
\* Use minimum peak if two can be obtained. Check to determine that C3 has been adjusted properly by tuning receiver to approximately 19.09 mc where a weaker signal should be received.  
 Note: Oscillator tracks above signal on both bands.

**Adjustments for Push-Button Tuning**

1680, 2660, 2689 & A-2600 A-1020 & A-2020

The push-buttons should be adjusted for six favorite stations after the chassis has been operating for a brief warm-up period. Each button should be adjusted by the following steps in the order of frequency, from low to high. Proceed as follows:

1. Loosen the push-buttons by turning counter-clockwise about one turn from their right position so they turn freely.
2. Check to be sure the Phono-Radio switch is in "Radio" position.
3. Press in push-button No. 1 (left) as far as it will go without undue pressure, hold in, retune station with manual control if necessary for best reception, and then carefully release the push-button. Do not tighten more than 1/4 turn after the screws begin to grip or damage to the mechanism may result.
4. Proceed in a similar manner for the remainder of the push-buttons.
5. Insert the station marker tabs in the recesses above the push-buttons.



*Dial Indicator and Drive Mechanism*  
 Refer to "Alignment Procedure" for explanation of the calibration marks shown in this drawing

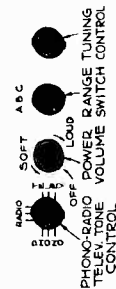
Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for maximum peak output
1	6SK7 grid in series with .01 mfd.	455 kc	"A" Band Quiet point 550-750 kc	L3 and L4 (2nd I.F. trans.)
2	6SA7 grid in series with .01 mfd.	20 mc	L1 and L2 (1st I.F. trans.)	C1 (osc.) C2 (ant.)
3	Ant. terminal in series with 300 ohms	6 mc	6 mc (194° "B" band)	C3 (osc.) C4 (ant.)
4	Ant. terminal in series with 200 mmfd.	1,500 kc	1,500 kc (198.5° "A" band)	C5 (osc.) C6 (det.) C7 (ant.)
5	Repeat step 5.	600 kc	600 kc (38° "A" band)	L5 (osc.) Rock gang

\* Use minimum capacity peak if two can be obtained. Check to determine that C1 has been adjusted to correct peak by tuning receiver to approximately 19.09 mc where a weaker signal should be received.  
 \*\* Use minimum capacity peak if two can be obtained. Check to determine that C3 has been adjusted to correct peak by tuning receiver to approximately 5.09 mc where a weaker signal should be received.

Note—Oscillator tracks above signal on all bands.

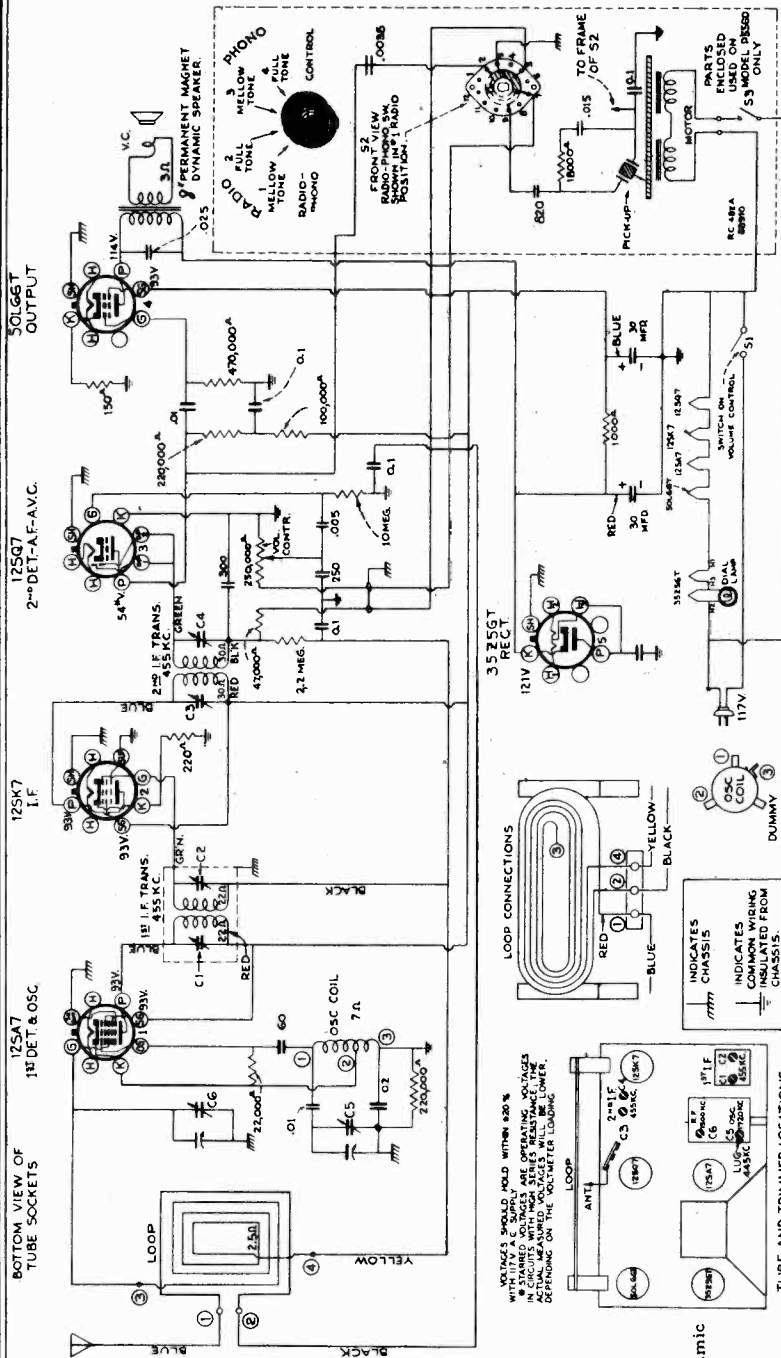
**Pointer for Calibration Scale**—Improve a pointer for the calibration scale by fastening a piece of wire to the chassis, and bend the wire so that it points to the 0° mark on the calibration scale when the plates are fully meshed.

**Dial Indicator Adjustment**—After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with the indicator at the 330 kc mark, and gang condenser fully meshed. The indicator has a spring clip for attachment to the cable.



*Tube and Trimmer Locations*

BRUNSWICK DIV.-MERSMAN BROS. MODELS T1580, T2580, 3580  
 P5580, Chassis RC-482  
 Schematic, Voltage  
 Alignment, Notes



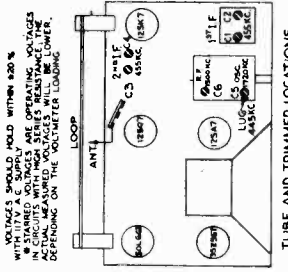
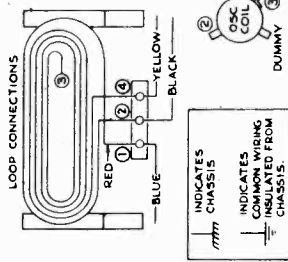
**Power Output (125 volts, 60 cycle supply)**  
 Undistorted ..... 0.75 watts  
 Maximum ..... 1.5 watts  
**Dial Lamp** ..... Mazda 51, 7.5 volts, 0.2 amp.

**Power Supply Rating (Models 3580, 4580, T-1580 and T-2580)**  
 A-C Rating ..... 105-125 volts, 50-60 cycles, 30 watts  
 D-C Rating ..... 105-125 volts, direct current, 30 watts

**Model P-5580**—Although this model employs an ac-dc chassis it is not suitable for use on dc, as this would damage the motor.  
 The phonograph motor on Model P5580 is a self-starting, constant-speed induction type. It should be lubricated every six months by applying a few drops of light machine oil to the top and bottom motor spindle bearings, to the turntable spindle and to the turntable drive wheel bearing.

**CAUTION:** Keep oil away from drive bushing on top of motor spindle and from rubber driving tire on turntable drive wheel.  
**Power-Supply Polarity**—For operation on d-c (except Model P5580) the power plug must be inserted in the outlet for correct polarity. If the set does not function, reverse the plug. On a-c, reversal of the plug may reduce hum.

**Antenna**—The set is equipped with a built-in loop antenna. If an outdoor antenna is used it may be connected to the "ANT" lead on rear of cabinet. It should not be longer than 100 feet, including lead-in. If it is longer, connect a 100 to 200 mmf. capacitor in series with the lead-in.



**Frequency Range** ..... 540-1,720 kc  
**Intermediate Frequency** ..... 455 kc

**Loudspeaker**  
 Type . . . 8-inch permanent magnet dynamic

**Alignment Procedure**

**Output Meter Alignment**—Connect the meter across the voice coil, and turn the receiver volume control to maximum.  
**Test-Oscillator**—Connect the low side of the test-oscillator to the receiver chassis, through a .01 mfd. capacitor, and keep the output as low as possible.  
**Pre-setting Dial**—With gang condenser in full mesh, the pointer should be horizontal.

Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1	Tuning condenser stator (osc.) in series with .01 mfd.	455 kc	Quiet point at 1,600 kc end of dial	C1, C2, C3, C4 (1st and 2nd I-F transformers)
2	Antenna term. of ant. loop in series with 100 mmfd.	1,720 kc	Full clockwise (out of mesh)	C5 (oscillator)
3		1,500 kc	Resonance on 1,500 kc signal	C6 (antenna)

MODELS A1020, A2020

MODEL A2600

BRUNSWICK DIV.-MERSMAN BROS. Automatic Record Changer

MODELS 1700, A2700, A3720

Notes

## Automatic Record Changer

Before servicing the automatic record changer, inspect the assembly to see that all levers, parts, gears, springs, etc. are in good order and are correctly assembled.

A bind or jam in the mechanism can usually be relieved by rotating the turntable in the reverse direction.

The changer can be conveniently rotated through its change cycle by pushing the index lever to "Reject" and revolving the turntable

## ADJUSTMENTS

**A. Main Lever.**—This lever is basically important in that it interlinks the various individual mechanisms which control needle landing, tripping, record separation, etc. One adjustment is provided for the main lever. Rotate the turntable until the changer is out-of-cycle; and adjust rubber bumper bracket (A) so that the roller clears the nose of the cam plate by 1/16 inch.

**B. Friction Clutch.**—The motion of the tone arm toward the center of the record is transmitted to the trip pawl "22" by the trip lever "7" through a friction clutch "5." If the motion of the pickup is abruptly accelerated or becomes irregular due to swinging in the eccentric groove, the trip finger "17" moves the trip pawl "22" into engagement with the pawl on the main gear, and the change cycle is started. Proper adjustment of the friction clutch "5" occurs when movement of the tone arm causes positive movement of the trip pawl "22" without tendency of the clutch to slip. The friction should be just enough to prevent slippage, and is adjustable by means of screw "B." If adjustment is too tight, the needle will repeat grooves; if too loose, tripping will not occur at the end of the record.

**C. Pickup Lift Cable Screw.**—During the record change cycle, lever "16" is actuated by the main lever "15" so as to raise the tone arm clear of the record by means of the pickup lift cable. To adjust pickup for proper elevation, stop the changer "in-cycle" at the point where pickup is raised to the maximum height above turntable plate, and has not moved outward; at this point adjust locknuts "C" to obtain 1 inch spacing between needle point and turntable top surface.

**D. & E. Needle Landing on Record.**—The relation of coupling between the tone arm vertical shaft and lever "20" determines the landing position of the needle on a 10 inch record. Position of eccentric stud "E" governs the landing of the needle on a 12 inch record; this, however, is dependent on the proper 10 inch adjustment.

To adjust for needle landing, place 10 inch record on turntable; push index lever to reject position and return to the 10 inch position; see that pickup locating lever "17" is tilted fully toward turntable; rotate mechanism through cycle until needle is just ready to land on the record; then see that pin "V" on lever "14" is in contact with "Step T" on lever "17." The correct point of landing is 4-11/16 inches from the nearest side of the turntable spindle; loosen the two screws "D" and adjust horizontal position of tone arm to proper dimension, being careful not to disturb levers "14" and "17." Leave approximately 1/32 inch end play between hub of lever "20" and pickup base bearing, and tighten the blunt nose screw "D"; run mechanism through several cycles as a check, then tighten cone pointed screw "D."

After adjusting for needle landing on a 10 inch record, place 12 inch record on turntable; push index lever to reject and return to 12 inch position; rotate mechanism through cycle until needle is just ready to land on the record; the correct point of landing is 5-11/16 inches from nearest side of spindle. If the landing is incorrect, turn stud "E" until the eccentric end adjusts lever "14" to give correct needle landing. The eccentric end of the stud must always be toward the rear of the motor board, otherwise incorrect landing may occur with 10 inch records.

## MISCELLANEOUS SERVICE HINTS

Incorrect adjustment of a particular mechanism of the changer is generally exhibited in a specific mode of improper operation. The following relations between effects on operation and the usual misadjustments will enable ready adjustment in most cases.

1. For any irregularity of operation, the adjustment of the main lever "15" should be checked first as in "A."
2. Needle does not land properly on both 10 and 12 inch records—Make complete adjustments "D" and "E."
3. Needle does not land properly on 12 inch record but correct on 10 inch—Effect adjustment "E."
4. Failure to trip at end of record—Increase clutch "5" friction by means of screw "B." Also, see that levers "7" and "12" are free to move without touching each other.
5. Pickup strikes lower record of stack or drags across top record on turntable—Adjust lift cable per adjustment "C."
6. Needle does not track after landing—Friction clutch "5" ad-

by hand. Six turntable revolutions are required for one change cycle.

If the record changer or cabinet is not perfectly level, normal operation is likely to be affected.

The 10 and 12 inch records must be absolutely flat for smooth operation when using a mixture of the two sizes.

A shorting switch, located in the pickup head, operates due to pressure when the pickup is placed on the pickup rest.

**F. & G. Record Separating Knife.**—The upper plate (knife) "25" on each of the record posts serves to separate the lower record from the stack and to support the remaining records during the change cycle. It is essential that the spacing between the knife and the rotating record shelf "27" be accurately maintained. The spacing for the 10 inch record is nominally .058 inch, and for the 12 inch record is .075 inch.

To adjust, rotate the knife to the point of minimum vertical separation from the record shelf and turn screw and locknut "F" to give .055—.061 inch separation. Screw "G" must not be depressed during this adjustment. After setting screw "F" adjust screw "G" so that when its tip is depressed flush with top of record shelf, the vertical spacing between the knife, in its lowest rotational position, and the shelf, is .072—.078 inch.

**H. Record Support Shelf.**—The record shelf revolves during the change cycle to allow the lower record to drop onto the turntable. Both posts are rotated simultaneously by a gear and rack coupled to the main lever "15," and it is necessary that adjustment be such that the record is released from both shelves at the same instant. To adjust, place a 12 inch record on the

turntable, rotate mechanism into cycle to the point where tone arm is at maximum distance outward from turntable; lift record upward until it is in contact with both separating knives, then loosen screws "H" and shift record shelves so that the curved inner edges of the shelves are uniformly spaced at least 1/16 inch from record edge. Tighten the blunt nose screw "H," run mechanism through cycle several times to check action, then tighten cone pointed screw "H."

If record shelves or knives are bent, or not perfectly horizontal, improper operation and jamming of mechanism will occur.

**J. Tone Arm Rest Support (not shown).**—When the changer is out-of-cycle, the front lower edge of the pickup head should be 5/16 inch above surface of motor board. This may be adjusted by bending the tone arm support bracket, which is associated with the tone arm mounting base, in the required direction.

**K. Trip Pawl Stop Pin.**—The position of the trip pawl stop pin "K" in relation to the main lever "15" governs the point at which the roller enters the cam. By bending the pin support either toward or away from trip pawl bearing stud, the roller can be made to enter the cam later or earlier, respectively. This adjustment should be made so that the roller definitely clears the cam outer guide as well as the nose of the cam plate.

Lubrication.—Petrolatum or petroleum jelly should be applied to cam, main gear, spindle pinion gear, and gears of record posts.

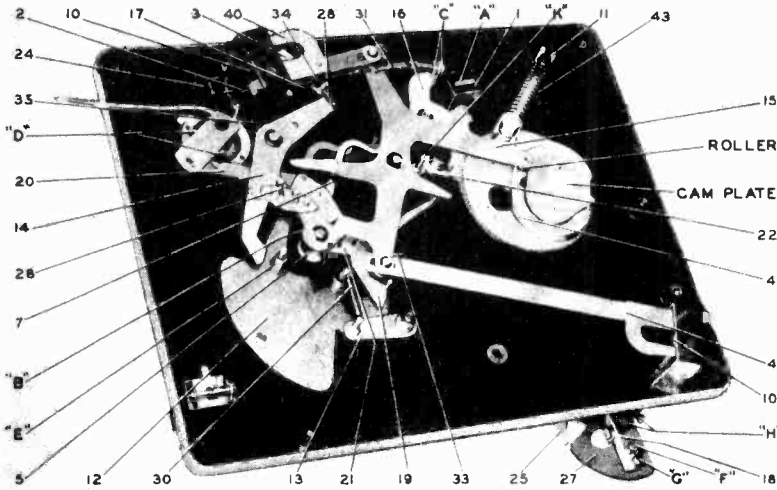
Light machine oil should be used in the tone arm vertical bearing, record post bearings, and all other bearings of various levers on underside of motor board.

Apply a few drops of light machine oil to the motor spindle bearing and oil hole adjacent to the spindle bearing. The oil hole has a screw plug.

Do not allow oil or grease to come in contact with, rubber mounting of tone arm base, rubber bumper, or rubber spindle cap.

justment "B" may be too tight; bind in tone arm vertical bearing; levers "7" and "12" fouled; or pickup output cable twisted.

7. Cycle commences before record is complete—Record is defective, or adjustment "B" of friction clutch "5" is too tight.
8. Wow in record reproduction—Record is defective; or instrument is not being operated at normal room temperature (65° F).
9. Record knives strike edge of records—Records warped; record edges are rough; or knife adjustments "F" and "G" are incorrect.
10. Record not released properly—Adjust record shelf assemblies in respect to shaft by means of adjustment "H."
11. Needle lands in 10 inch position on 12 inch record or misses record when playing both types mixed—Increase tension of pickup locating lever spring "34."



NOTE: Numbers refer to parts—letters refer to adjustments

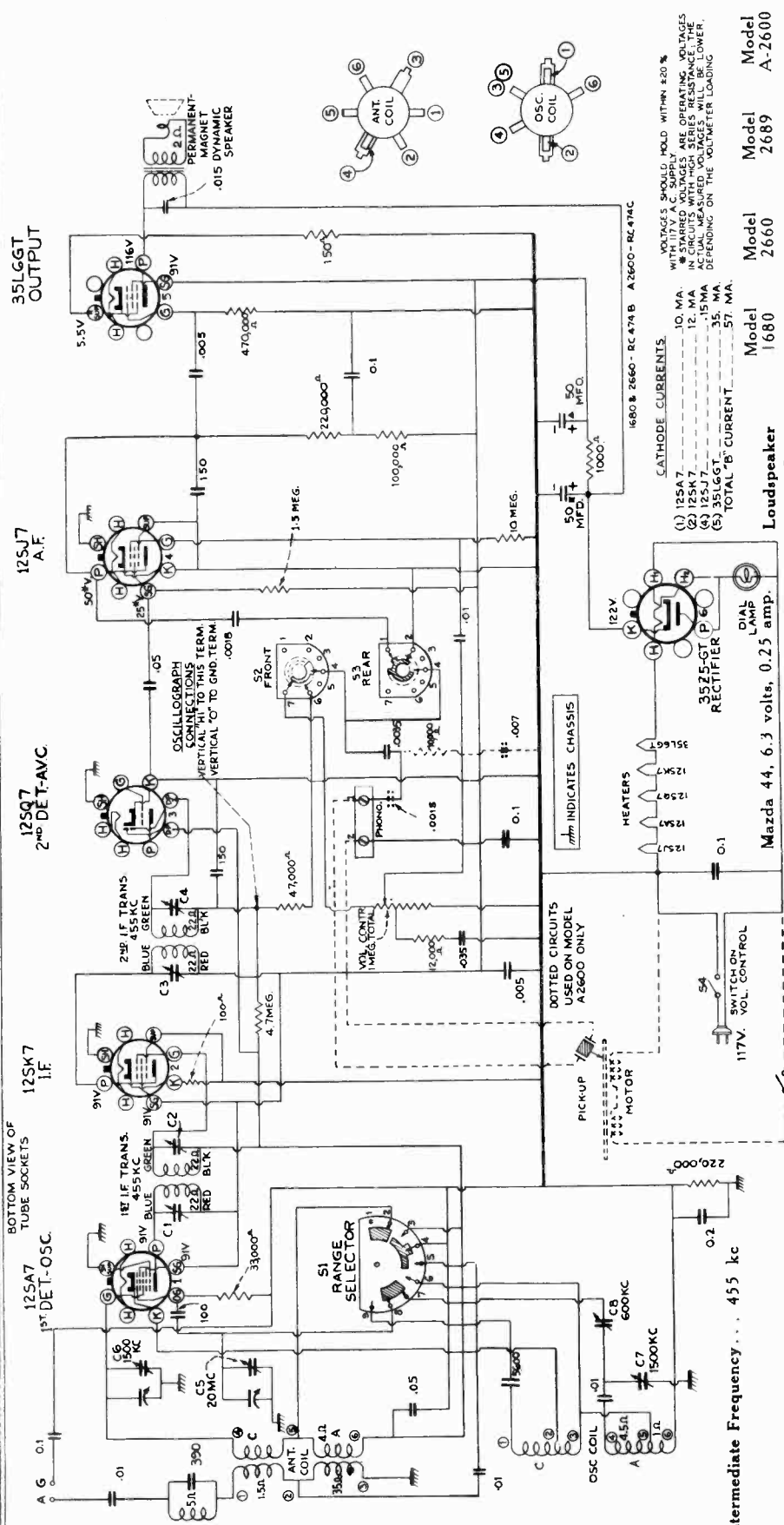


BRUNSWICK DIV.-MERSMAN BROS.

MODELS 1680,2660,2689  
A2600,3689

Schematic Notes

Volts



VOLTAGE SHOULD HOLD WITHIN ±20%  
\* STARRED VOLTAGES ARE OPERATING VOLTAGES  
IN CIRCUITS WITH HIGH SERIES RESISTANCE, THE  
CURRENT SHOULD BE LIMITED TO 15 MA.  
DEPENDING ON THE VOLTMETER LOADING.

CATHODE CURRENTS

(1) 12SA7	10. MA.
(2) 12SK7	12. MA.
(4) 12SQ7	15 MA.
(5) 35L6GT	35. MA.
TOTAL "B" CURRENT	57. MA.

Model	1680
Model	2660
Model	2689
Model	A-2600

Loudspeaker

Type (Permanent Magnet)	84477-4 .. 8.4 inch .. 6-inch .. 10-inch
Size	84477-4 .. 8.4 inch .. 10-inch
Voice Coil Impedance at 400 cycles	2.2 ohms .. 2.0 ohms .. 2.2 ohms .. 2.2 ohms

The crystal pickup is sealed in a metal case as protection against extreme changes of climate. If failure occurs, do not attempt to repair the unit, but install a new crystal unit.

**Loudspeaker**  
To center the loudspeaker voice coil, first remove the front dust cover, then loosen the screws holding the spider assembly. Insert three narrow feelers into the air gap, and tighten the spider screws. Remove the feelers and fasten a dust cover in place with loudspeaker cement.

**Motor Lubrication**—Apply a few drops of light machine oil to the spindle bearing and oil hole every six months. The oil hole is located in the motor casting, adjacent to the spindle bearing, and is covered with a screw plug.

Models 1680, 2660, 2689 and A-2600 are six-tube, two-band superheterodyne receivers with push-button tuning. Model A-2600 is a Panatropie combination with an automatic record player which permits the playing of seven 12-inch or eight 10-inch records, in succession. It has a crystal pickup and constant-speed self-starting motor.

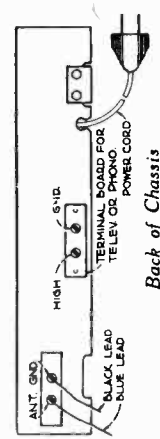
Power Output (125 volts, 60 cycle supply)  
Undistorted..... 0.8 watts  
Maximum..... 1.4 watts

Power Supply Ratings (Models 1680, 2689 and 2660)  
A-C Rating..... 105-125 volts, 50-60 cycles, 35 watts  
D-C Rating..... 105-125 volts, direct current, 35 watts

MODEL A-2600—Although this model employs an a-c dc chassis it is not suitable for use on dc, as this would damage the motor.

Tube Complement

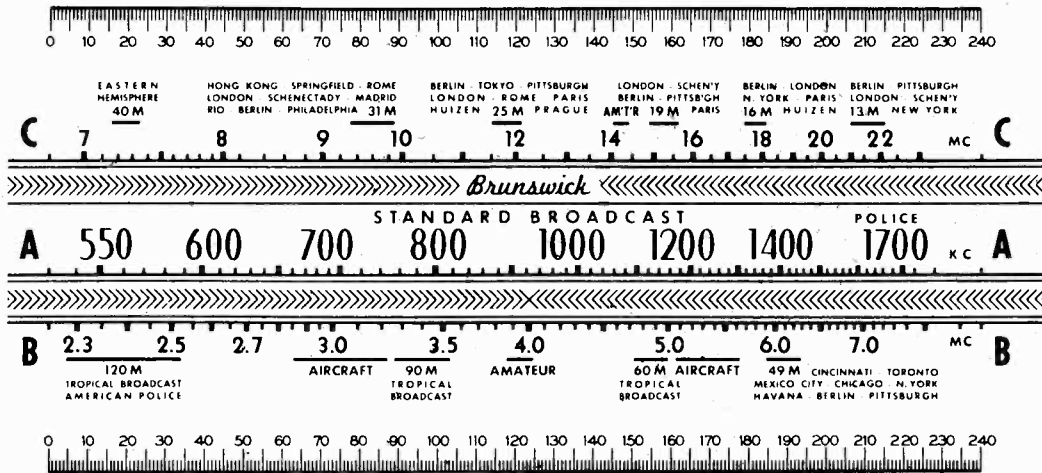
(1) RCA-12SA7	1st Detector—Oscillator
(2) RCA-12SK7	I-F Amplifier
(3) RCA-12SQ7	2nd Detector, A.V.C.
(4) RCA-12SJ7	A-F Amplifier
(5) RCA-35L6GT	Power Output
(6) RCA-3525GT	Half-Wave Rectifier



MODELS 1700, A2700, A3720

Dial Data. Phono Data

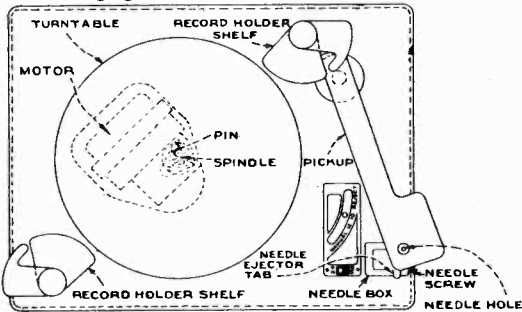
BRUNSWICK DIV.-MERSMAN BROS.



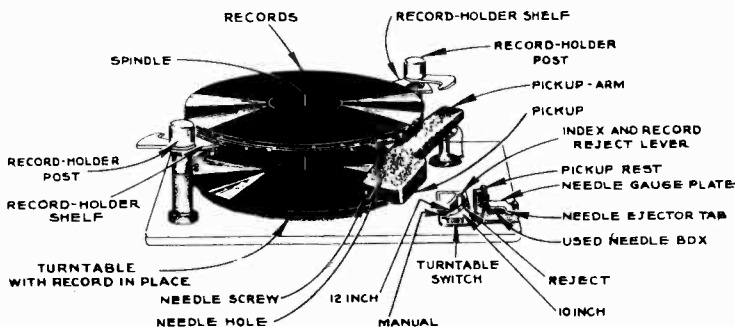
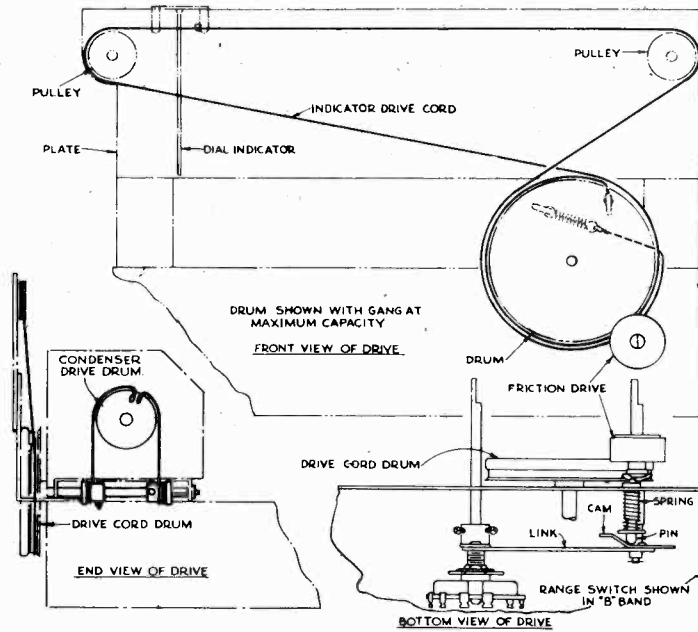
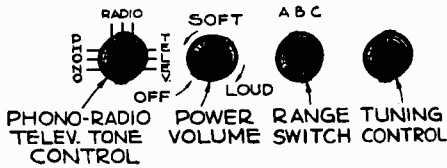
Receiver Dial Scales, and Corresponding 0-240° Calibration Scales

The corresponding position of the dial indicator for any setting of the calibration scale can be determined by drawing a line from this point on the bottom calibration scale to the same point on the top calibration scale. For example, 40° on the calibration scale corresponds to 600 kc on "A" band. Read instructions under "Alignment Procedure."

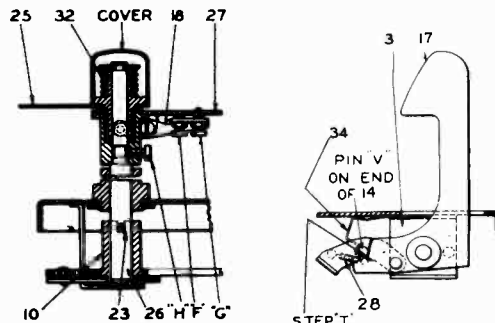
Note: In the Dial Indicator Drive Cord Assembly drawing at the right the mechanism is shown with the range switch in the "B" band position. In the "A" band position the trip arm on the range shaft must be adjusted so that when the push-buttons are operated, the drive cord drum will turn freely without rubbing or binding against the drive roller.



Motorboard and Controls



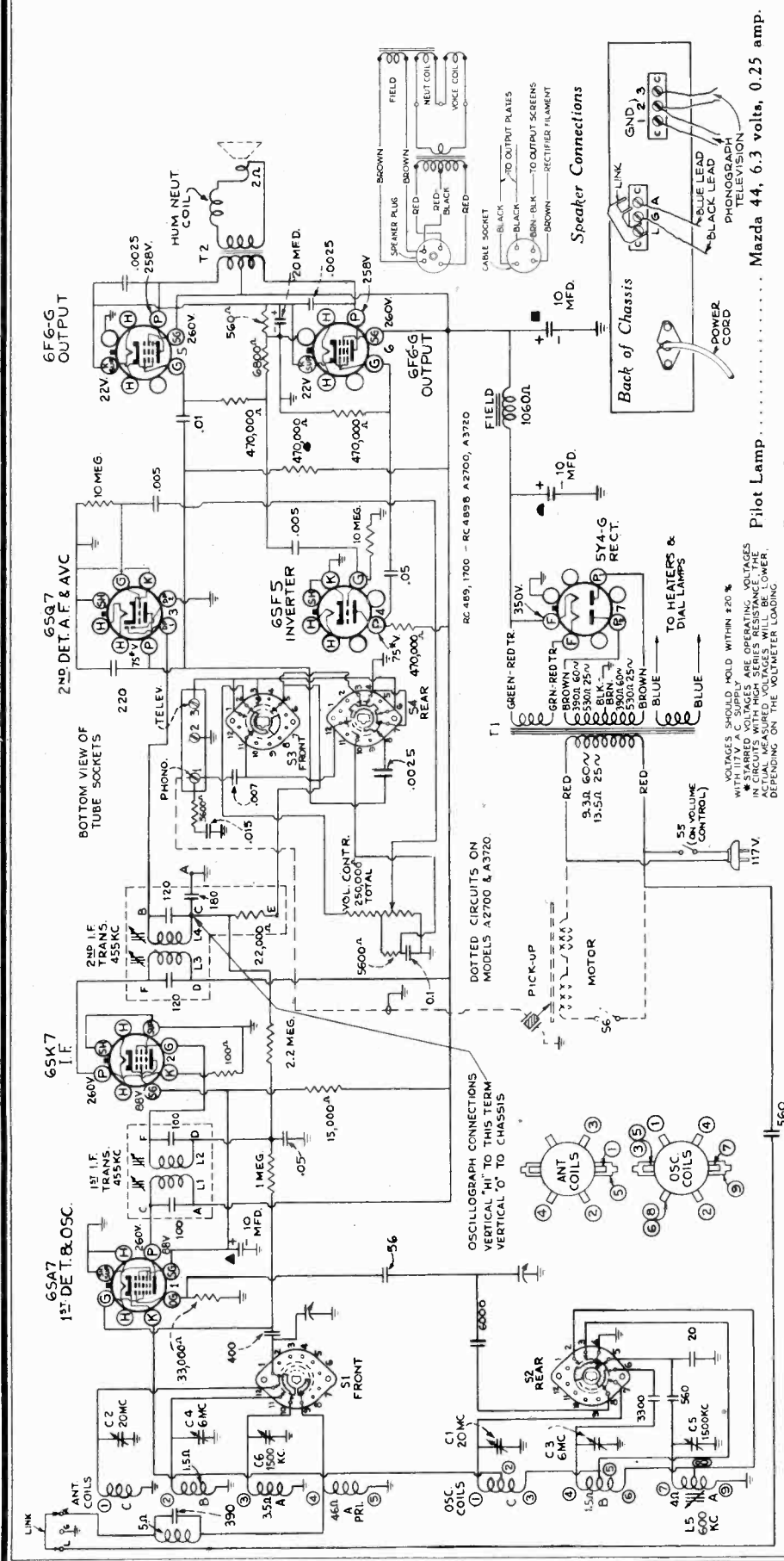
Top View of Automatic Record Changer



Details of Record Shelf Posts and Locating Lever Assemblies

BRUNSWICK DIV.-MERSMAN BROS. Schematic, Voltage, Notes

MODELS 1700, A2700, A3720

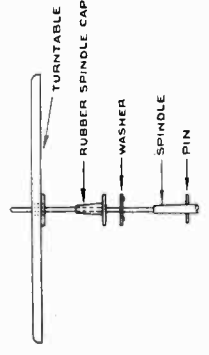


<b>Power Output</b>	Undistorted .....	5.0 watts
	Maximum .....	5.5 watts
<b>Frequency Range</b>	Standard Broadcast (A) .....	540-1,720 kc
	Medium Wave (B) .....	2.3-7.0 mc
	Short Wave (C) .....	7.0-22.0 mc
<b>Intermediate Frequency</b>	.....	455 kc
<b>Power Supply Rating</b>	Rating A .....	105-125 volts, 50-60 cycles, 85 watts
	Models A-2700 and A-3720 with phono motor .....	110 watts
<b>Loudspeaker</b>	Model .....	Model
	1700 .....	A-2700
	A-3720 .....	A-3720
<b>Type (Electrodynamic)</b>	.....	88938-1
<b>Size</b>	.....	RL-70J-1
<b>Voice Coil Impedance</b>	.....	10-inch
	.....	2.0 ohms
	.....	12-inch
	.....	2.2 ohms
	(At 400 cycles)	

IF PEAK  
455 KC

CATHODE CURRENTS

(1) 65A7	11 MA.
(2) 65K7	11.5 MA.
(3) 65K7	5 MA.
(4) 6SF5	21.0 MA.
(5) 6F6G	21.0 MA.
TOTAL 'B' CURRENT	65 MA.



**Motor Lubrication.**—Apply a few drops of light machine oil to the spindle bearing and oil hole every six months. The oil hole is located in the motor casting, adjacent to the spindle bearing, and is covered with a screw plug.

**Television Attachment.**—A terminal board is provided on the rear of the chassis for connecting a Television attachment into the audio-amplifying circuit. The cable from the attachment should be connected to terminals 2 and 3, the shielded or ground lead going to terminal 2.

**A Radio-Phono-Television switch** is built into the chassis, allowing switching to be accomplished through the 'Tone-Radio-Phono-Television' control on the control panel.

**Loudspeaker.**—To center the loudspeaker voice coil, first remove the front dust cover, then loosen the screws holding the spider assembly. Insert three narrow feelers into the air gap, and tighten the spider screws. Remove the feelers and fasten a dust cover in place with loudspeaker cement.

MODELS 1700, A2700, A3720

Alignment, Trimmers,  
Socket, Tuner Data

BRUNSWICK DIV.-MERSMAN BROS.

### Alignment Procedure

**Cathode-Ray Alignment** is the preferable method. Connections for the oscillograph are shown in the schematic drawing.

**Output Meter Alignment.**—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

**Test-Oscillator.**—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid a-v-c action.

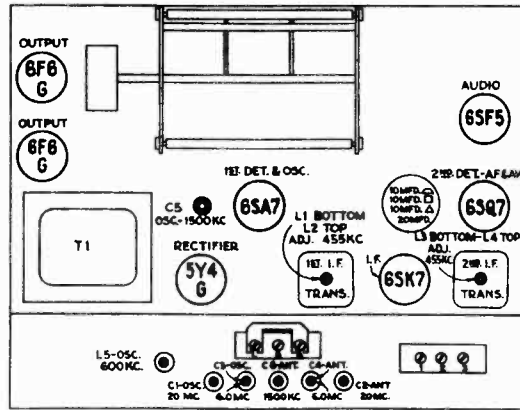
**Calibration Scale on Indicator-Drive-Cord Drum.**—The tuning dial is fastened in the cabinet and cannot be used for reference during alignment; therefore, a calibration scale is attached to the tuning drum. The setting of the gang condenser is read on this scale, which is calibrated in degrees. The correct setting of the gang in degrees, for each alignment frequency, is given in the alignment table.

As the first step in r-f alignment, check the position of the drum. The 120° mark on the drum scale must be vertical and directly under the center of the shaft of the tuning drum when the plates are fully meshed. The drum is held to the shaft by means of two set-screws, which must be tightened securely when the drum is in the correct position.

On the inner side of the tuning drum are two projections which serve as stops to prevent extreme rotation of the gang condenser. The tuning drum should be set so that the stop limiting clockwise movement of the drum takes effect just as the gang condenser plates are becoming fully meshed, thus preventing stress on the gang due to extreme rotation.

**Pointer for Calibration Scale.**—Improvise a pointer for the calibration scale by fastening a piece of wire to the chassis, and bend the wire so that it points to the 0° mark on the calibration scale when the plates are fully meshed.

**Dial-Indicator Adjustment.**—After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with indicator at the 530 kc mark, and gang condenser fully meshed. The indicator has a spring clip for attachment to the cable.



Tube and Trimmer Locations

Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for maximum peak output
1	6SK7 grid in series with .01 mfd.	455 kc	"A" band Quiet point between 550-750 kc	L3 and L4 (2nd I-F trans.)
2	6SA7 grid in series with .01 mfd.			L1 and L2 (1st I-F trans.)
3	Ant. terminal in series with 300 ohms	20 mc	20 mc (199°) "C" band	C1 (osc.)* C2 (ant.)
4		6 mc	6 mc (187.2°) "B" band	C3 (osc.)** C4 (ant.)
5	Ant. terminal in series with 200 mmfd.	1,500 kc	1,500 kc (198.2°) "A" band	C5 (osc.) C6 (ant.)
6		600 kc	600 kc (40°) "A" band	L5 (osc.) Rock gang
7	Repeat step 5.			

\* Use minimum capacity peak if two can be obtained. Check to determine that C1 has been adjusted to correct peak by tuning receiver to approximately 19.09 mc where a weaker signal should be received.

\*\* Use minimum capacity peak if two can be obtained. Check to determine that C3 has been adjusted to correct peak by tuning receiver to approximately 5.09 mc where a weaker signal should be received.

Note.—Oscillator tracks above signal on all bands.

### Adjustments for Push-Button Tuning

The push-buttons should be adjusted for six favorite stations after the receiver has been operating for a brief warm-up period. Each button may be set up to any standard broadcast station. The preferable arrangement is to adjust for stations in the order of frequency, from low to high. Proceed as follows:

- Loosen the push-buttons by turning counter-clockwise about one turn from their tight position so they turn freely.
- Check to be sure the Phono-Radio switch is in "Radio" position.
- Press in push-button No. 1 (left) as far as it will go without undue pressure, hold in, retune station with manual control if necessary for best reception, and then carefully

tighten up the button. Do not tighten more than 1/4 turn after the screw begins to grip or damage to the mechanism may result.

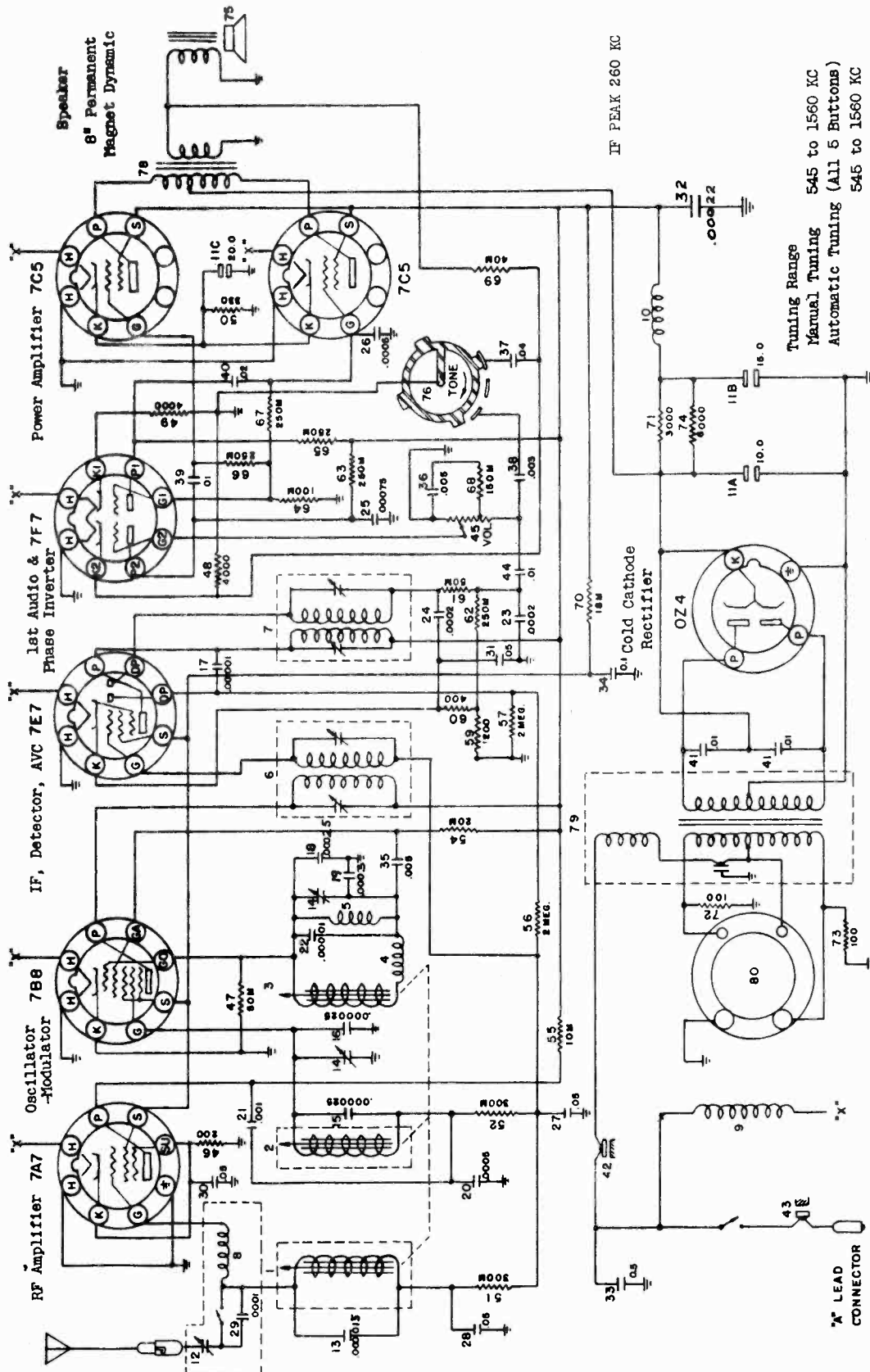
- Proceed in a similar manner for the remainder of the push-buttons.

- Insert the station marker tabs in the recesses above the push-buttons.

The crystal pickup is sealed in a metal case as protection against extreme changes of climate. If failure occurs, do not attempt to repair the unit, but install a new crystal unit.

CADILLAC DIV.—GEN. MOTORS

MODEL 77  
Schematic



IF PEAK 260 KC

Tuning Range  
Manual Tuning 545 to 1560 KC  
Automatic Tuning (All 5 Buttons) 545 to 1560 KC

Antenna Range Switch - Set at Factory for 50 mmf. vacuum antenna.  
for under car antenna turn range switch clockwise until it hits  
definite stop. (Approx. 180°).  
Antenna Trimmer Range 25 mmf. of antenna capacities selected by  
antenna range switch.

6 Watts Undistorted  
6.6 Amperes at 6.0 Volts  
2 Microvolts at 1 Watt Output  
35 KC

Power Output  
Power Consumption  
Sensitivity  
Selectivity at 1000 times signal

MODEL 77  
Voltage, Alignment  
Socket, Trimmers, Chassis

CADILLAC DIV.—GEN. MOTORS

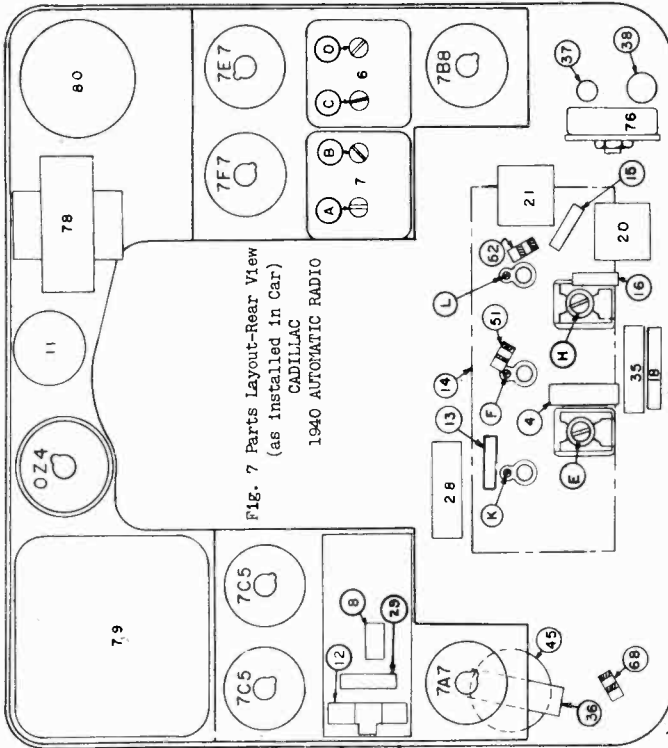


Fig. 7 Parts Layout-Rear View  
(as installed in Car)  
CADILLAC  
1940 AUTOMATIC RADIO

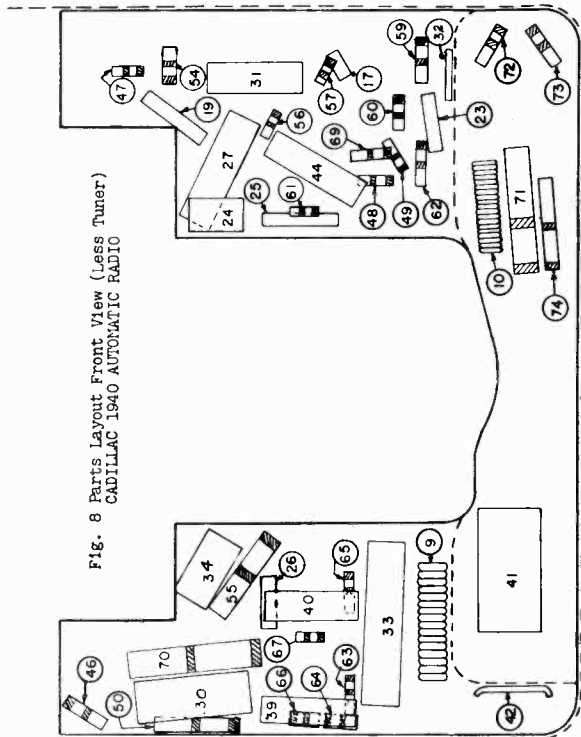


Fig. 8 Parts Layout Front View (Less Tuner)  
CADILLAC 1940 AUTOMATIC RADIO

ALIGNMENT CHART

Set Volume Control fully on. Connect output meter across voice coil, leaving speaker connected.

Signal Generator Frequency Setting	Connect Output Lead of Signal Generator to	Dummy Antenna	Receiver Dial Setting	Adjust Trimmers to Maximum Output	Remarks
260	Through 7239926 IF Alignment Dummy to junction of condensers 15 and 16 at R.F. Trimmer. H FIG. 1	.1 mf.	1560	IF Trimmers A & B, C & D FIG. 7	Attenuate signal and recheck
1560	Antenna terminal of set thru 7239925 Dummy	50 mmf.	High freq. end	Back out osc. coil adj. screw J/16° F in FIG. 7	Rotate dial indicator to the high freq. end of dial as far as it will go
1560	"	"	"	Oscillator Trimmer E in FIG. 7	Attenuate signal and Repeat
1560	"	"	1560	Screw in oscillator coil adj. screw E in FIG. 7	Adjust screw for maximum output
600	"	"	"	RF and Antenna Trimmers H & J FIG. 7	"
1400	"	"	"	RF and Antenna Coil Adj. screws K & L FIG. 7	"
600	"	"	"	Check F & J FIG. 7	"
Set installed in car, connected to car antenna.	Tune to weak station	Car Antenna	Between 600 to 700 KC	Adjust Antenna Trimmer for Maximum Volume.	Vacuum Section of Antenna fully extended, tune to a weak signal.

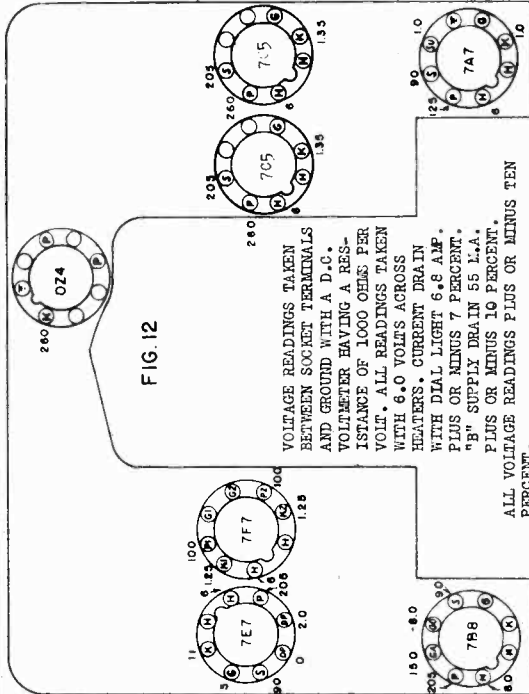


FIG. 12

VOLTAGE READINGS TAKEN BETWEEN SOCKET TERMINALS AND GROUND WITH A D.C. VOLTMETER HAVING A RESISTANCE OF 1000 OHMS PER VOLT. ALL READINGS TAKEN WITH 6.0 VOLTS ACROSS HEATERS. CURRENT DRAIN WITH DIAL LIGHT 6.48 AMF. PLUS OR MINUS 7 PERCENT. "B" SUPPLY DRAIN 55 I.A. PLUS OR MINUS 10 PERCENT. ALL VOLTAGE READINGS PLUS OR MINUS TEN PERCENT.

CADILLAC DIV.—GEN. MOTORS

MODEL 77  
Dial Drive and Tuner  
Assembly

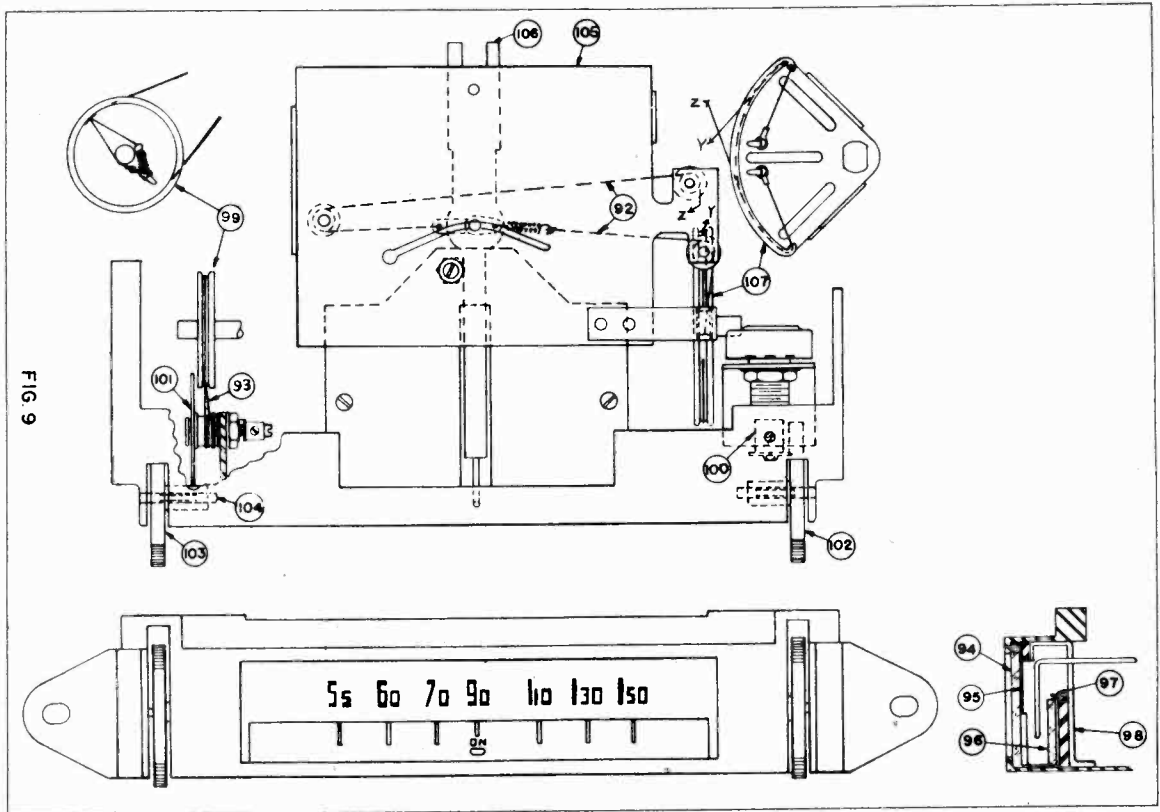


Fig. 9 General Arrangement - Dial & Drive Assembly

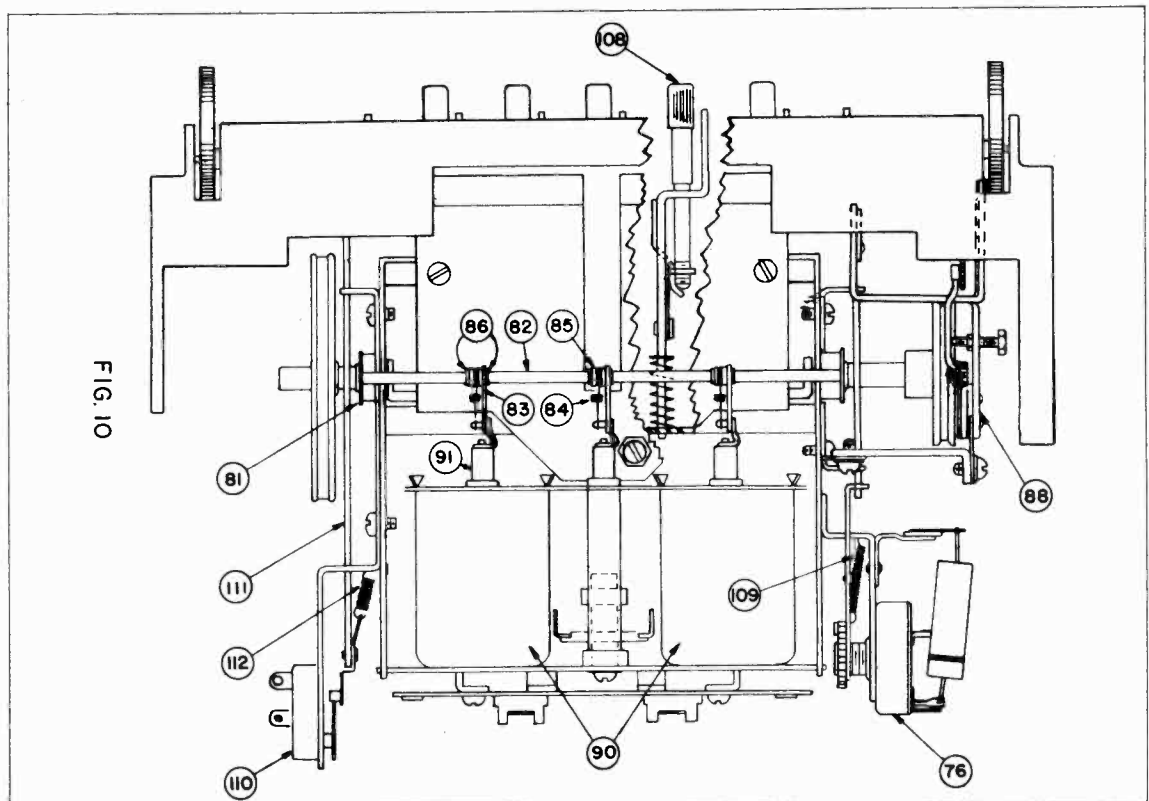


Fig. 10 Parts Layout - Tuner Unit - Bottom View

MODEL 77  
Dial Drive Data

## CADILLAC DIV.—GEN. MOTORS

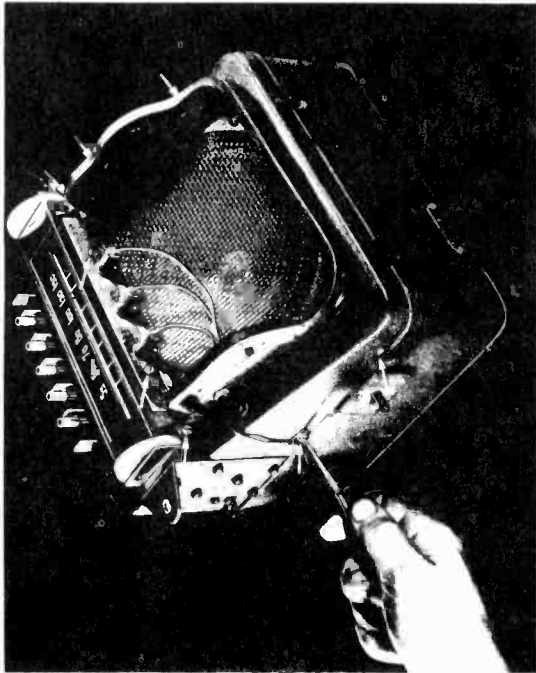


Fig. 1 Remove these 8 screws to disassemble

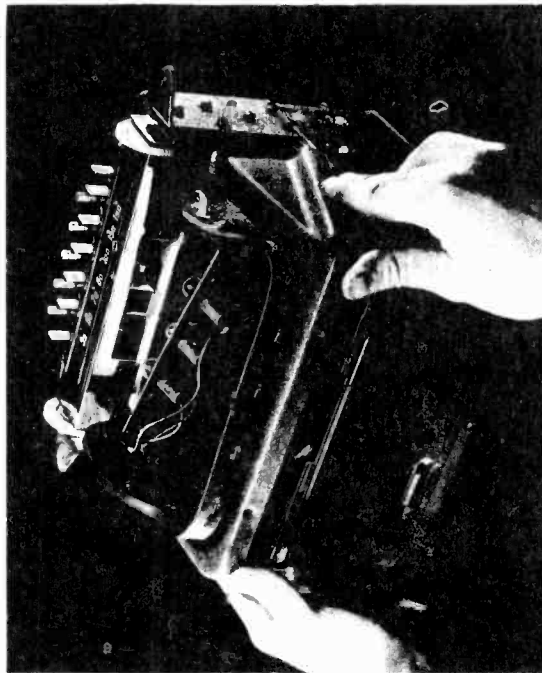


Fig. 2 Removing speaker cover

SERVICE HINTSDisassembling For Parts Replacements

To replace condensers, resistors, coils, etc., remove eight screws as shown in Fig. 1. Raise the bottom edge of the speaker cover, keeping it pushed forward so that the speaker field will clear the power supply shield, as shown in Figs. 2 and 3.

Unsolder voice coil lead "A" in Fig. 3 and set the speaker to the left of the set, as shown in Fig. 4. This exposes all of the wiring side of the chassis and component parts.

To replace tubes, vibrator or to realign when required, it is only necessary to remove the back cover.

To replace dial drive cord, remove the speaker and back cover as outlined above and remove eight screws holding the tuner cover, as shown in Fig. 5. Lay the cover back, as shown in Fig. 6, exposing the tuner unit and component parts.

Dial Cord or Pointer Replacement

1. Unhook the cord eyelets from drive pulley. Illustration 99 in Fig. 10.
2. Move pointer by hand toward the 1500 KC end of the dial until the pointer pivot pin drops through the enlarged end of the pointer Guide slot.
3. Lift the pointer and pointer cord out of the tuner from the dial side.
4. File off the lower tip of the pointer guide pin, releasing the retaining washer and the cord pivot arms. Fig. 10.
5. With the pointer upside down and pointing away from the operator, put the long cord pivot arm on the left. Cord side up.
6. Place the short pivot arm (spring assembly) on the right. Cord side up.
7. Replace the retaining washer and solder it to the guide pin.
8. Replace the pointer. Place pivot pin in the enlarged end of the guide slot and then slide the rear end of the pointer into the rear support bearing.
9. Place the long cord behind the pointer and over pulleys. (Illustration 92 in Fig. 9 Page 130) Hook the cord eyelet over the drive pulley hook nearest the front of the tuner and push the cord into position around the pulley rim.
10. Put the spring loaded cord over pulleys in between the longer string and the tuner frame before hooking the cord eyelet to the drive pulley.



CADILLAC DIV.—GEN. MOTORS

MODEL 77  
Assembly Views

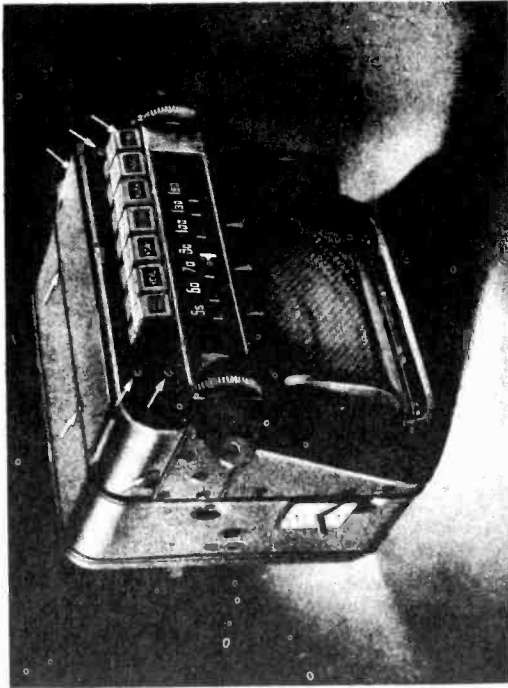


Fig. 5 Remove these 8 Screws to Disassemble tuner cover

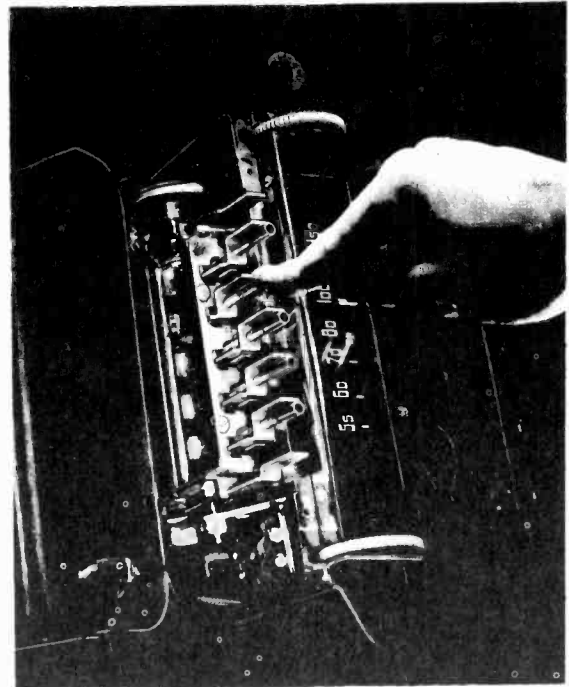


Fig. 6 Tuner accessible for service

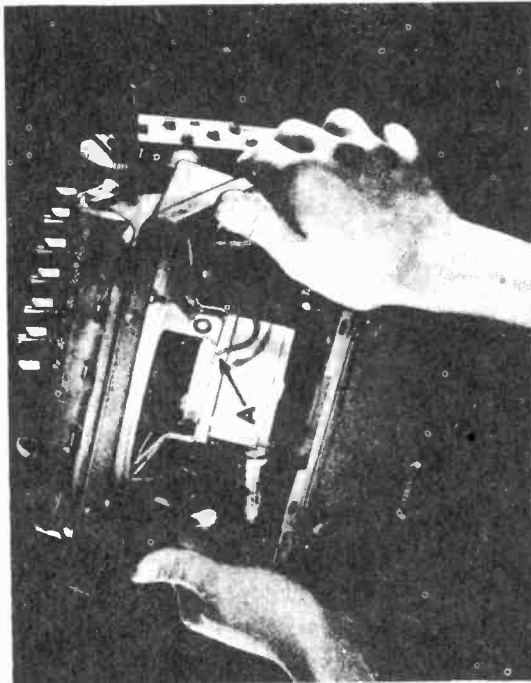


Fig. 3 Disconnect Voice Coil Lead before completing removal of cover

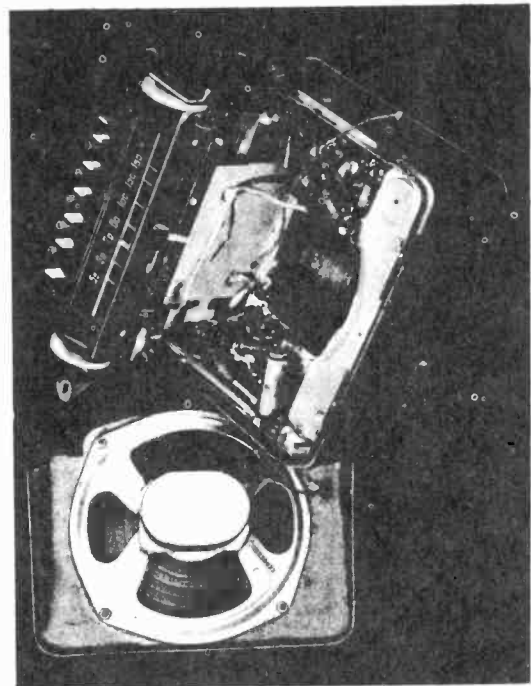


Fig. 4 Disassembled for service

MODEL 7238399  
Voltage, Chassis  
Socket

CADILLAC DIV.—GEN. MOTORS

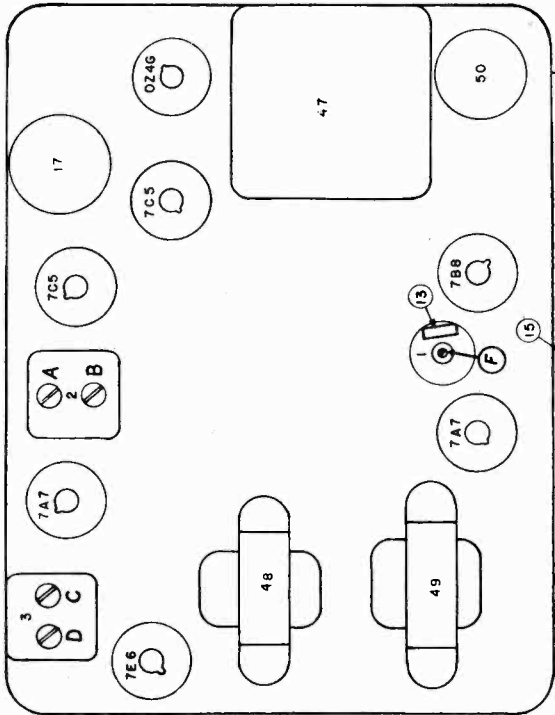


Fig. 5-Parts Layout-Top View-Cadillac 1940 Rear Compartment Radio

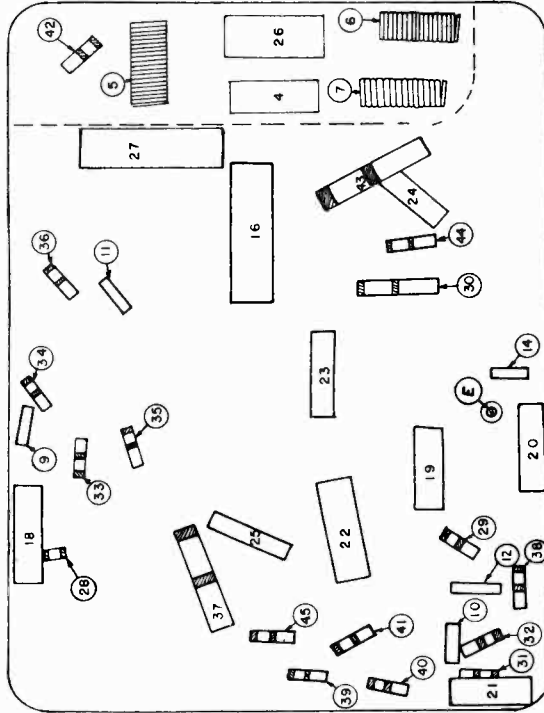


Fig. 6-Parts Layout-Bottom View-Cadillac 1940 Rear Compartment Radio

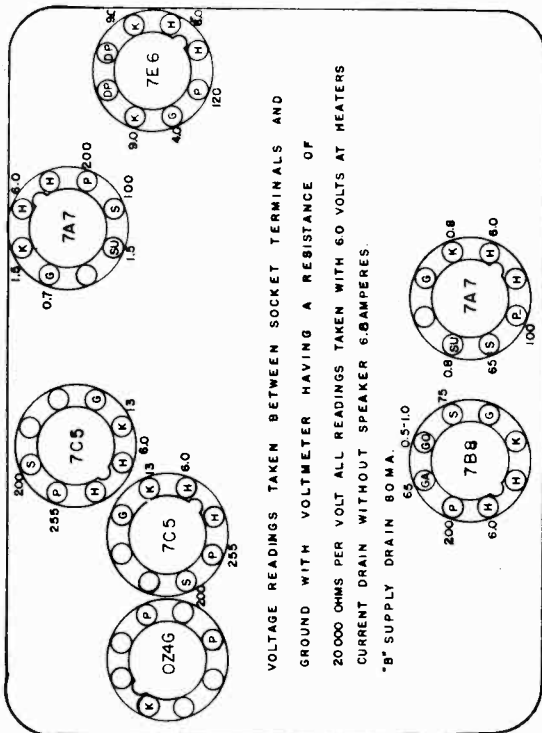


Fig. 9-Voltage Chart-Cadillac 1940 Rear Compartment Radio

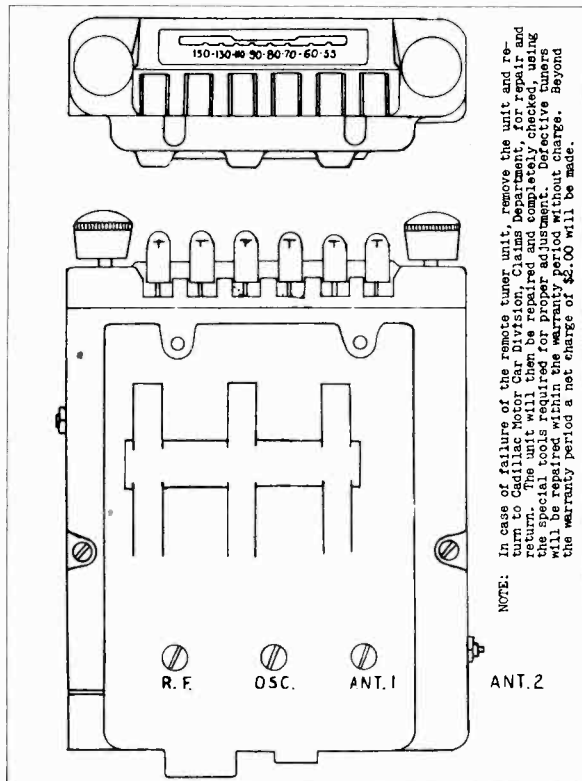
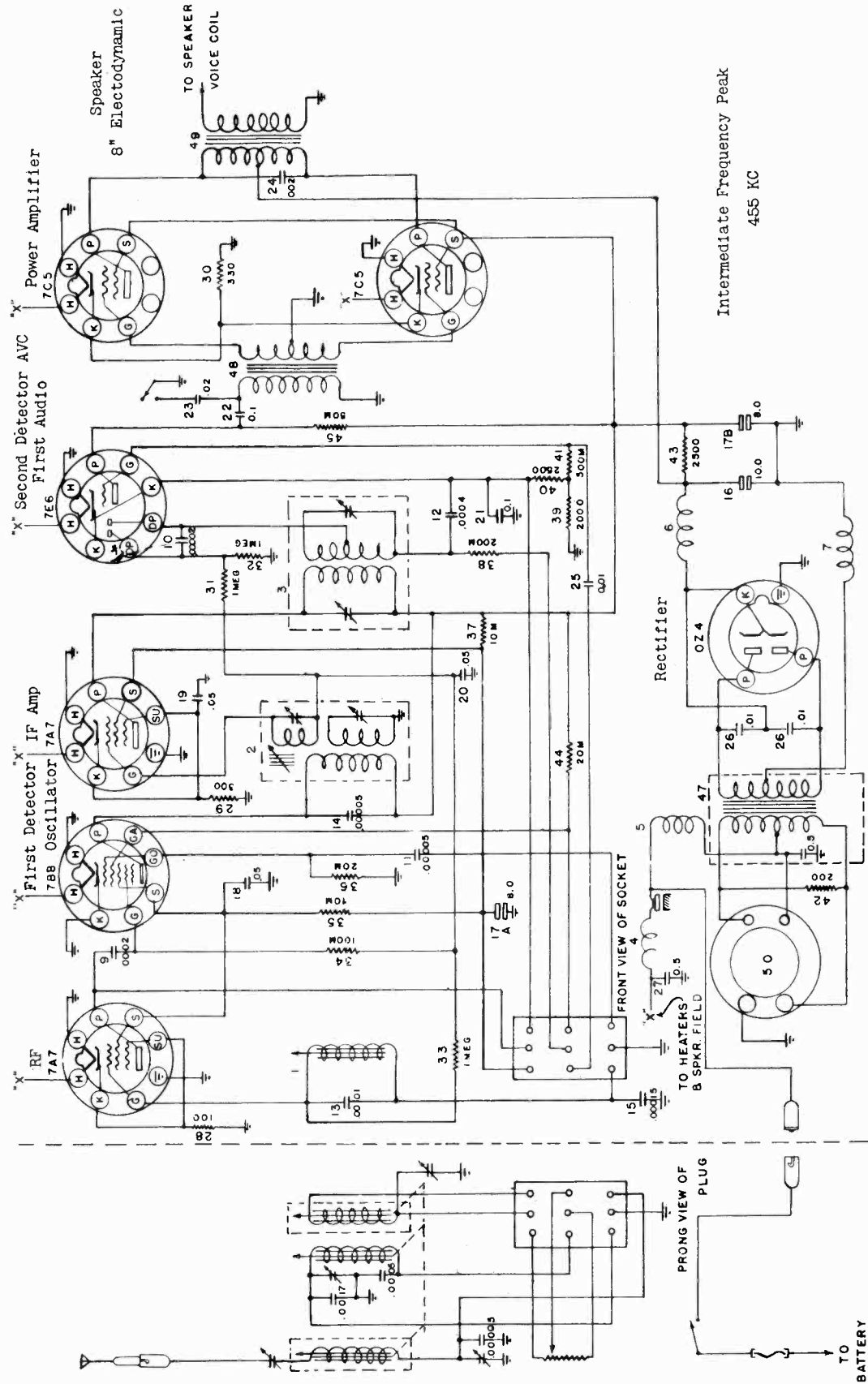


Fig. 7-Automatic Tuner Outline-Cadillac 1940 Rear Compartment Radio

CADILLAC DIV.—GEN. MOTORS

MODEL 7238399  
Schematic



**AMPLIFIER UNIT**  
 6 Watts-Undistorted  
 7.5 Amperes at 6 Volts  
 2 Microvolts at 1 watt output  
 35 KC

**TUNING UNIT**  
 Power Output  
 Power Consumption  
 Sensitivity  
 Selectivity at 1000 times signal

Tuning Range  
 Manual Tuning  
 Automatic Tuning (all 6 buttons)  
 Antenna Trimmer - Set at Factory for 200 mmf. under car antenna

545 to 1560 KC  
 545 to 1560 KC  
 545 to 1560 KC

MODEL 7238399  
Antenna Data

CADILLAC DIV.—GEN. MOTORS

ANTENNA INSTALLATION INSTRUCTIONS

Three Vacuum Antenna packages released for use on 1940 Cadillac and LaSalle cars are:

Part Number	Series
1436388	40-50
1436389	40-52, 60S, 62, 72
1436390	40-75, 90

These packages are identical except for the insulators and attaching parts, but it is extremely important that the proper assembly be used for the particular car on which the installation is being made, else the bakelite insulators will not properly fit the hood contours.

TO INSTALL VACUUM ANTENNA

- Place the template supplied in the antenna package on the cowl and punch the center of the 1-1/32" hole with a center punch, using the 1/4" pilot drill of Hinkley-Myers J-1272-C tool to drill through the cowl at the angle shown in the top view of FIG. 1. After this hole is drilled raise the drill to a vertical position as shown in the lower view of FIG. 1 and drill through with the 1-1/32" cutter.

If a Hinkley-Myers J-1272-C tool is not available this hole may be cut by drilling around the edge of the outline of the hole on the template with a 5/32" drill and filing off the rough edges. Care should be exercised so that the finished hole will not be too large.

Hinkley-Myers tool J-1272-C may be purchased direct from Hinkley-Myers Co., Jackson, Michigan.

- Remove side panel kick pad.
- Assemble the hoses supplied with the antenna to the control valve as shown in Fig. 2 and install in the far left hole provided in the left end of the lower flange of the instrument panel.

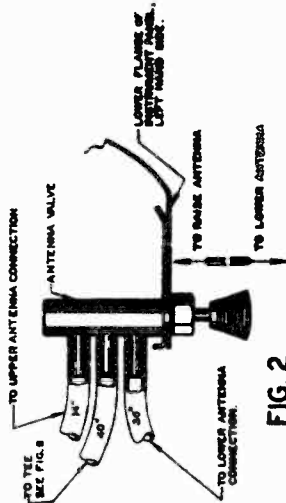


FIG. 2

- Attach the bottom antenna support bracket (L) to the front end body brace on Series 40-50, 52, 62 and 72 with self tapping screw, as shown in Fig. 3. The hole is provided in Series 40-50 but must be drilled in Series 40-52, 62 and 72. On Series 40-60S, 75 and 90 this support is built into the body brace and it is only necessary to insert the rubber grommet through the hole.

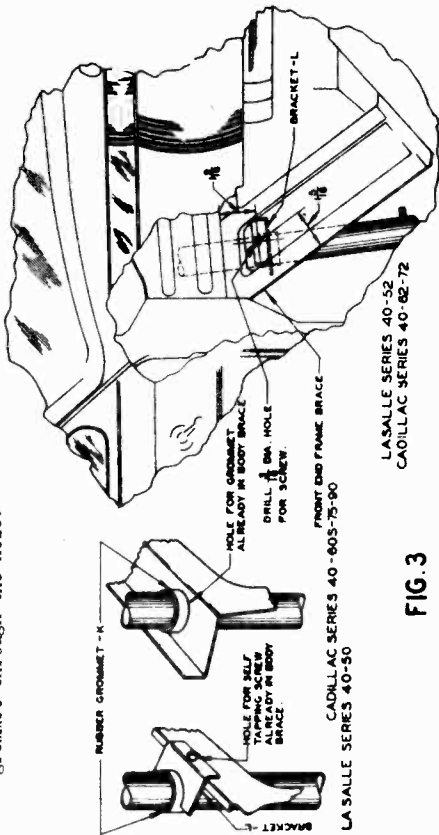


FIG. 3

- Lower the antenna assembly through the hole in the cowl and put on Rubber Grommet (K) in Fig. 3 and washer (J) and rubber spacer (H) in Fig. 4.
- Assemble lower hose connection to the bottom of the antenna, as shown in Fig. 5.

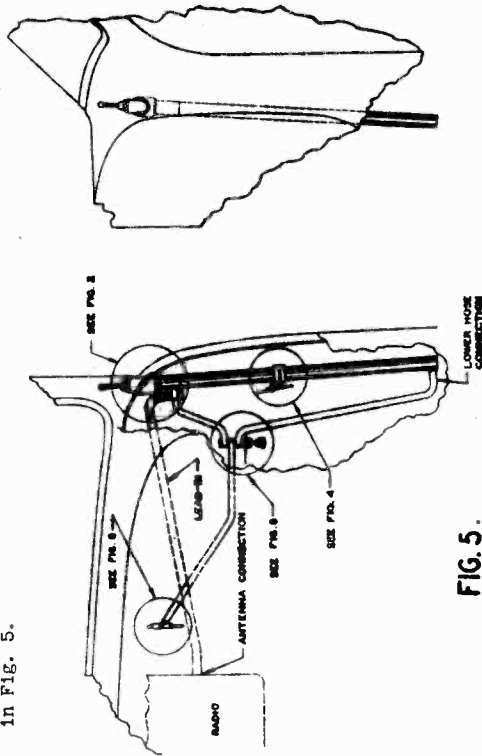


FIG. 5

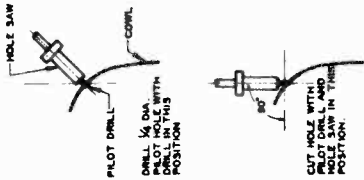


FIG. 1

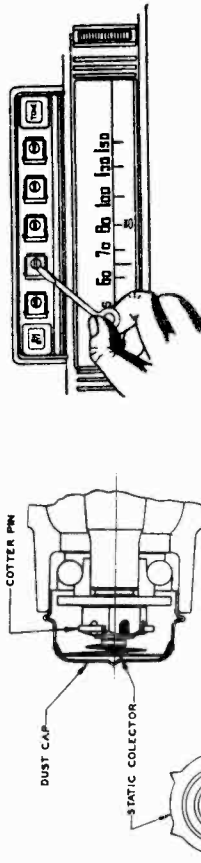
**Antenna and Noise Suppression Notes**

**CADILLAC DIV.—GEN. MOTORS**

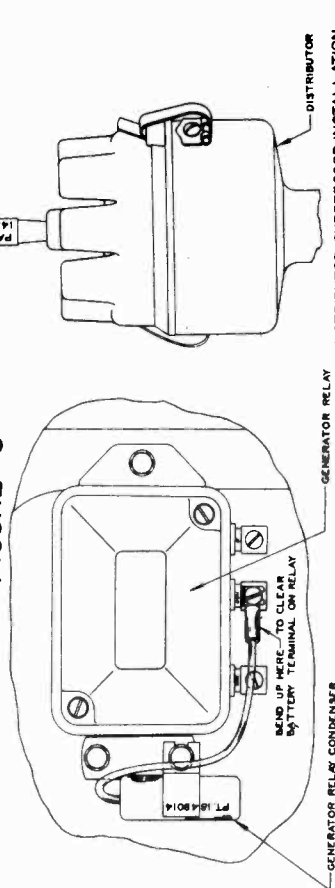
**MODEL 7238399  
Tuner Data**

**TO SET UP PUSH BUTTONS**

It is important that the buttons be set accurately. This may be accomplished by lowering the vacuum aerial to a point where the signal is just being heard. Setting the stations selected by the push buttons has been made easy. Pulling off a button reveals a screwdriver slot recessed in a brass tube next to the button plunger arm. This screw, when rotated clockwise by means of a screwdriver furnished with the set in the call letter envelope, unlocks the tuner setting for that particular button. The plunger arm is then held in a fully depressed position while the station is tuned in by means of the manual tuning wheels. The plunger arm is then released and the lock-up screw is tightened by rotating in a clockwise direction with the screwdriver provided. Check for accuracy of setting by tuning in from each end of the dial with the button.

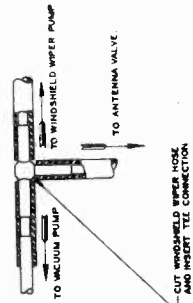


**FIGURE - 8**  
FRONT WHEEL STATIC COLLECTOR INSTALLATION  
SERIES 40-50, 52, 60S, 62, 72

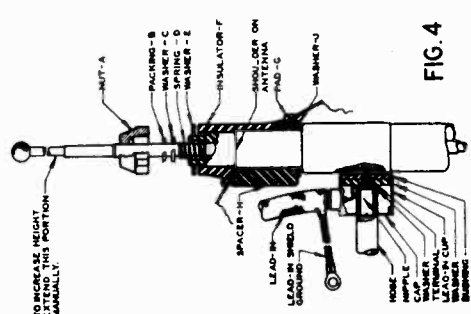


**FIGURE - 7**  
DISTRIBUTOR SUPPRESSOR INSTALLATION

7. Assemble antenna lead and upper hose connection with parts in order as shown in Fig. 4.
8. Ground antenna lead shield to upper body brace with self tapping screw. The hole for this screw is provided on Series 40-50, 60S, 75 and 90. On Series 40-52, 62 and 72 it will be necessary to drill a 9/64" hole for this screw.
9. Attach the 14" length of hose securely to the upper antenna connection through cap, as shown in Fig. 4.
10. Attach the 36" length of hose to the lower hose connection on the antenna, as shown in Fig. 5.
11. Raise the antenna through the hole in the cowl and install the rubber pad (g) Bakelite insulator (F) Washer (E) Spring (D) Brass Washer (C) Packing gland (B) and nut (A). Tighten nut (A) until the shoulder and the antenna insulator seats against the top of antenna shield, as shown in Fig. 4. IMPORTANT - When tightening nut (A) do not get it too tight. Turn it down carefully until the stop is reached, then back off slightly.
12. Push grommet (K) into place in bracket (L) or the hole in the support brace, as shown in Fig. 3.
13. Cut windshield wiper hose and insert the tee connection. Attach the 40-inch length of hose to the tee connection, as shown in Fig. 6.
14. Plug the antenna lead into the radio set and check adjustment of the antenna trimmer for proper setting. Radios shipped from the factory are set for use with the vacuum aerial.
15. Start the motor and check the operation of the antenna. Push the control valve up to raise the antenna and pull down and lower the antenna. For best operation occasionally wipe the antenna rod free of dust and other accumulation.



**FIG 6**



**FIG. 4**

**COIL CONDENSER INSTALLATION**  
Install coil condenser, Part #1879526, in the top of the ignition coil, using Tool #726, to remove the cover. Make sure the coil is well grounded to the dash by scraping off the paint on the dash and coil bracket.

Install generator condenser, Part #1849014, on the generator terminal of the relay box.

Install suppressor, Part #1435482, in the center terminal of the static collector in the front wheels on Series 40-50, 52, 62, 60S, and 72. See Fig. 8. Bend cotter key over the nut as shown, so that it does not interfere with static collector.

On some cars it may be necessary to bend the oil and throttle line Bond or to the frame at the two front motor supports, using the bond straps supplied in the antenna package.

Bond exhaust system to the frame, using bond straps supplied with the antenna.

Bond transmission mainshaft housing to center of crossmember.

Bond transmission housing to the floorboard, making the bond as short as possible.

Bond both engine blocks to the dash.

**IGNITION SUPPRESSION**

AND

**WHEEL STATIC SUPPRESSION**

MODEL 7238399

Tuner Data, Alignment

CADILLAC DIV.—GEN. MOTORS

CADILLAC 1940 AUTOMATIC RADIO FOR REAR COMPARTMENT INSTALLATION

SETTING UP STATIONS ON PUSH BUTTONS

There are six push buttons on the remote tuner unit by means of which six stations may be set up for automatic tuning (see B, Fig. 1).

Select the six stations desired and punch out from the set of station call letter tabs supplied the call letters of the stations selected. On the top of each push button a slot is provided for inserting the call letter tabs (See A, Fig. 1). Insert the tabs, then proceed as follows:

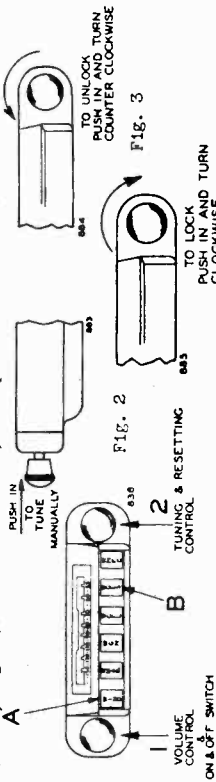


Fig. 1—Front View of Remote Tuner Unit

TO UNLOCK

1. Push on the dial tuning knob hard enough to make it latch in. (See Fig. 2.)
2. Rotate the dial tuning knob to the left (counter-clockwise), until the knob cannot be turned any further without forcing. (See Fig. 3.)

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.)

SETTING PUSH BUTTONS

1. Push in all the way any one of the push buttons and at the same time hold in firmly the dial tuning knob. Both the dial tuning knob and the push button should be pushed hard enough to make them stay latched in. The reason for holding the dial tuning knob in firmly when the push button is pressed in is due to the latching mechanism in the remote tuner unit which is so constructed as to release the dial tuning knob entirely when a push button is pressed in. When setting up stations for automatic tuning, however, it is necessary that both the dial tuning knob and the push button be latched in together.
2. Press in on the push button which is latched in. Holding it in firmly, tune in by means of the manual tuning knob the station indicated on the station call letter tab on this push button. Turn the dial tuning knob very slowly back and forth (while still pressing in firmly on the push button), until the station is accurately tuned in.
3. Push in all the way another push button, at the same time holding the dial tuning knob in so that both the push button and the dial tuning knob are latched in together. Holding the push button in firmly, tune in the station indicated on the call letter tab on this push button.
4. Follow this procedure until you have tuned in all six selected stations.
5. When the last push button 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 push button, slightly depress any other push button, this will trip the latching mechanism and all the push buttons will be released to out position.

TO LOCK

(NOTE: All the push buttons must be in out position when locking the tuner mechanism.)

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 with forcing it. (See Fig. 4) This will lock the tuner mechanism and all the stations that have been set up on the buttons will be locked in place for automatic tuning.

ANTENNA

An under car antenna must be used with the rear compartment radio. Instructions for installation are supplied with each antenna.

ALIGNMENT PROCEDURE

Two separate alignment procedures are included in these instructions. The first is to be considered the usual alignment procedure and the second to be used only when a tuning coil has been replaced or when some major change has been made in the tuning apparatus.

CAPACITY ALIGNMENT

I. F. Alignment at 455 KC

- (a) Connect an output meter across the voice coil of the speaker leaving speaker connected or connecting a 1.7 ohm load instead of the speaker.
- (b) Connect the ground lead of the signal generator to the set chassis and the signal lead to the "G" prong of the 788 tube through a .1 mfd. condenser.
- (c) With signal generator frequency set at 455 kilocycles adjust the I. F. trimmers A, B, D & E and I. F. core adjustment E in the sequence named until maximum output is obtained. Fig. 5 & 6.
- (d) Connect the signal lead of the signal generator to the antenna connection of the set through a .150 mfd. condenser. Adjust the I. F. trap adjustment F for MINIMUM response. (Generator frequency 455 KC) Fig. 5.

Alignment at 1530 KC

- (a) Set frequency of the signal generator to 1530 KC.
- (b) By means of the manual tuning control adjust the tuning control of the set to its highest frequency position against the high frequency stop.
- (c) Adjust the oscillator trimmer ("osc" on tuning unit) for maximum output. See Fig. 7.

Alignment at 600 KC

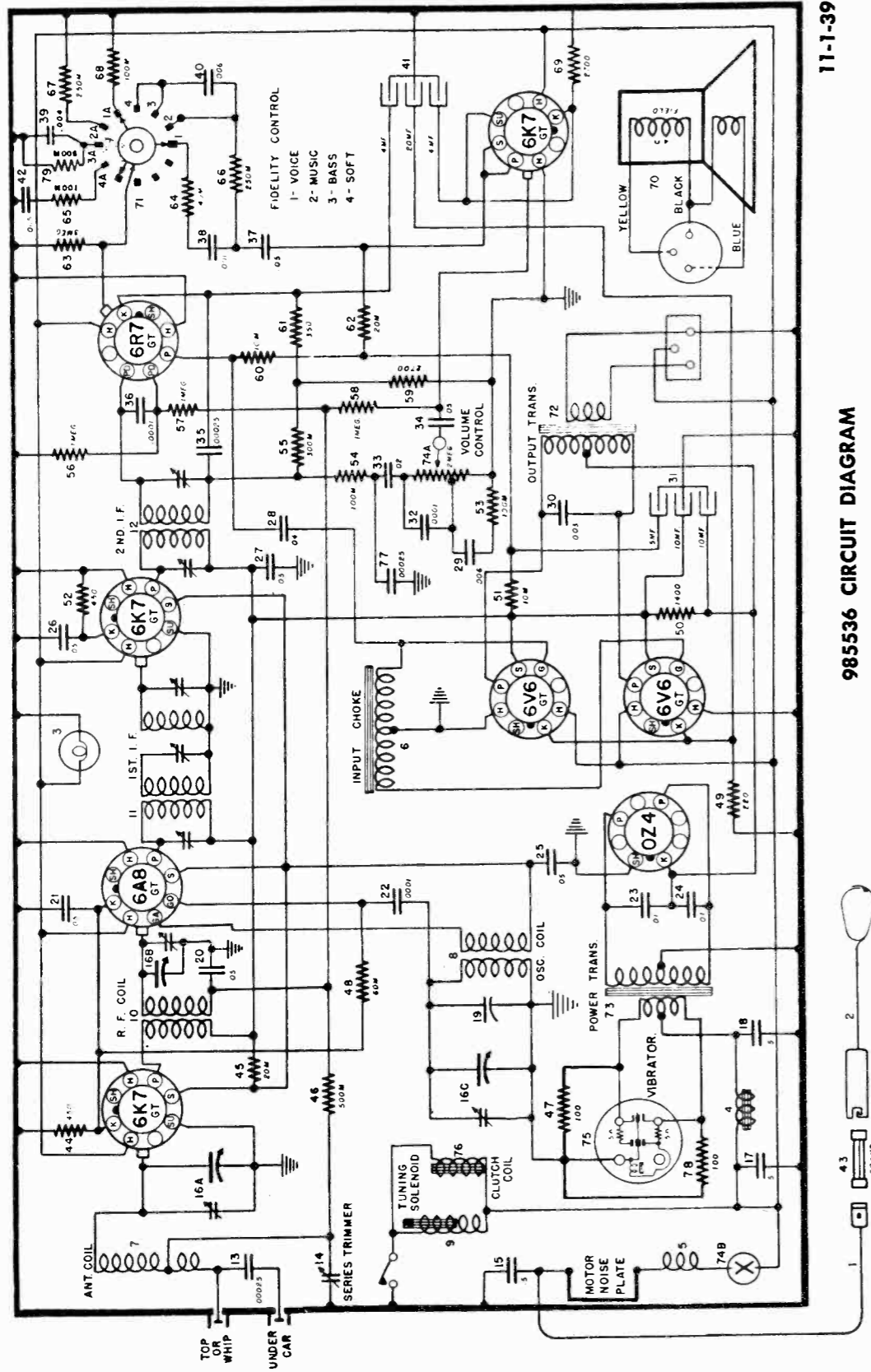
- (a) Set the signal generator frequency to 600 KC.
- (b) Tune set to this signal and adjust the RF trimmer ("R.F." on tuning unit) for maximum output, while rocking tuning control back and forth through the signal. See Fig. 7.
- (c) Adjust the antenna trimmers ("Ant 1" and "Ant 2") on the tuning unit for maximum output. Fig. 7.

Alignment at 1400 KC

- (a) Set signal generator frequency to 1400 kilocycles and tune set to this signal.
- (b) Using an insulated three cornered prong tool adjust the core positions for maximum output reading.

CHEVROLET DIV.—GEN. MOTORS

MODEL 985536  
Schematic



11-1-39

985536 CIRCUIT DIAGRAM

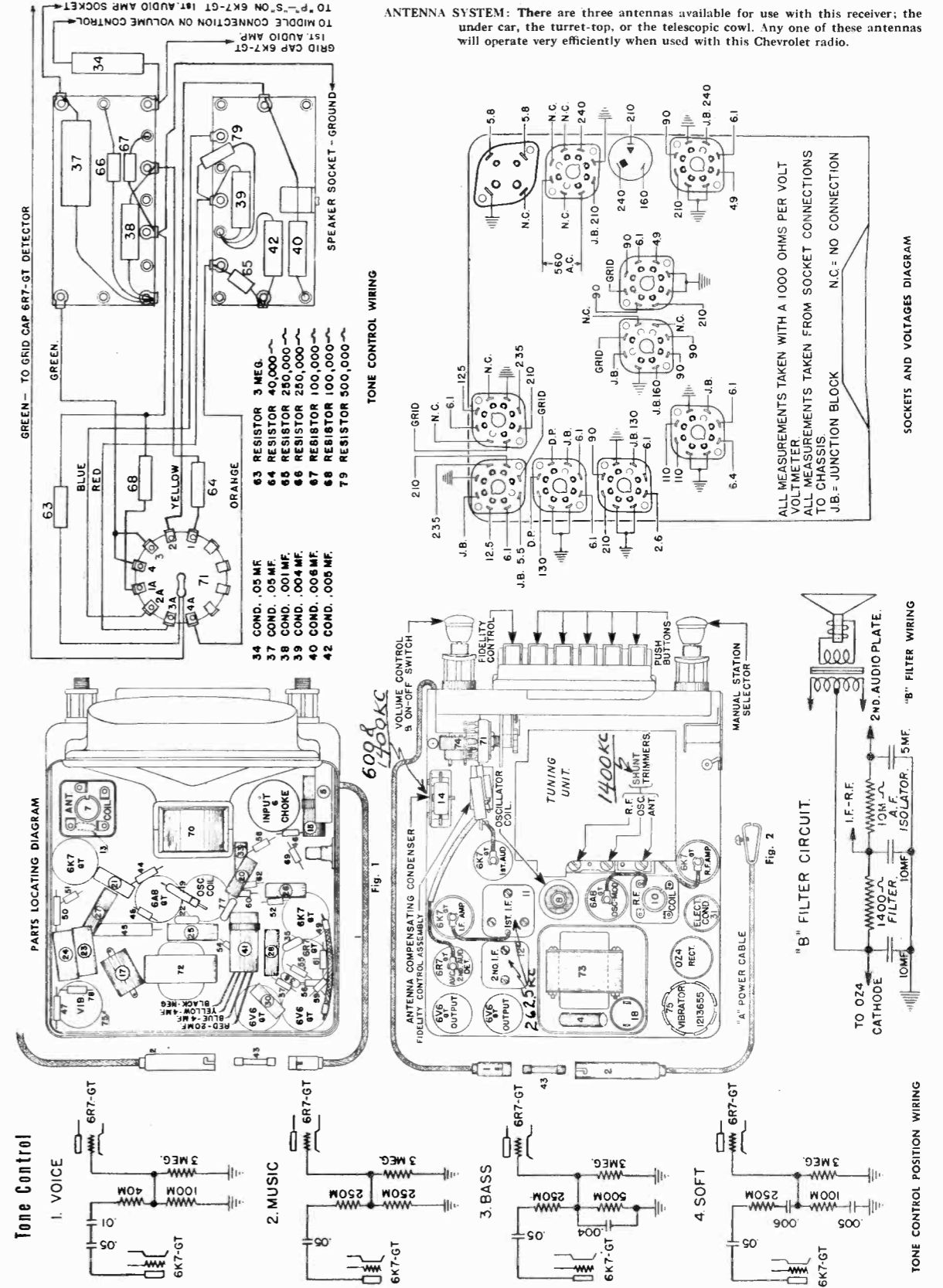
IF PEAK 262.5 KC

Type	Function
6K7GT	R.F. Amplifier
6A8GT	Oscillator-Modulator
6K7GT	I.F. Amplifier
6R7GT	2nd Detector A.V.C. Rectifier
6K7GT	1st Audio (A.V.C. Controlled) Output
6V6GT	Rectifier
OZ4	Rectifier

Tube Complement

MODEL 985536  
Voltage, Alignment  
Chassis, Trimmers  
Socket, Data

CHEVROLET DIV.—GEN. MOTORS



ANTENNA SYSTEM: There are three antennas available for use with this receiver: the under car, the turret-top, or the telescopic cowl. Any one of these antennas will operate very efficiently when used with this Chevrolet radio.

Fig. 1

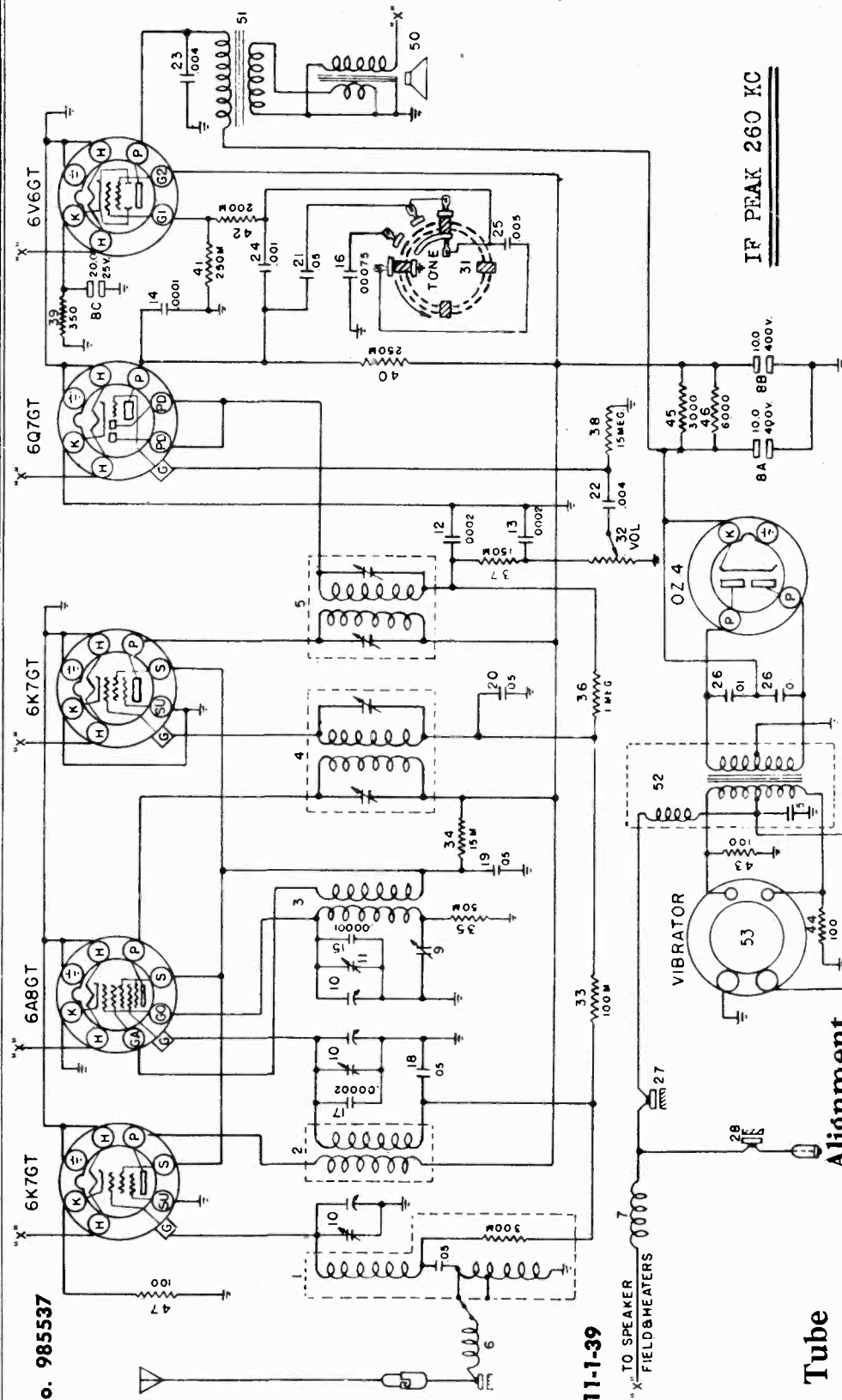
Fig. 2





CHEVROLET DIV.—GEN. MOTORS

MODEL 985537  
Schematic, Alignment



Part No. 985537

11-1-39

**Alignment**

At 260 KC:- Use a .1 mfd. condenser as dummy. Signal to 6A8GT grid (LEAVE GRID CAP IN PLACE). Adjust second and then first IF trimmers.  
 At 1560 KC:- Use a .00007 mfd. condenser as dummy. Signal to antenna post. Adjust oscillator parallel trimmer (e) for maximum output.  
 At 1400 KC:- Use a .00007 mfd. condenser as dummy. Connections as for 1560 KC. Adjust antenna RF (f) and (g) trimmers for maximum output.  
 At 600 KC :- With same connections adjust oscillator pad (h) at 600 KC while rocking condenser, for maximum output. Readjust at 1400 KC. With station selector, tune in 1400 KC signal for maximum output. Readjust trimmer on antenna section of gang condenser for maximum output.

**Tube Complement**

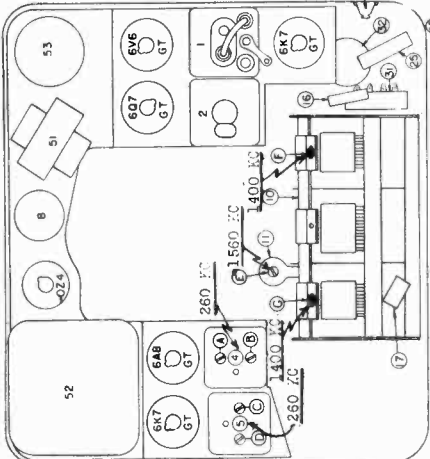
Type	Function
6K7GT	R.F. Amplifier
6A8GT	Oscillator-Modulator
6K7GT	I.F. Amplifier
6Q7GT	2nd Detector and A.V.C.
6V6GT	Power Output
OZ4	Rectifier

MODEL 985537  
Voltage, Chassis  
Tuner, Parts

CHEVROLET DIV.—GEN. MOTORS

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 with no distortion.  
**POWER SUPPLY:** The power supply uses an OZ4 rectifier tube in conjunction with a full wave primary type vibrator.

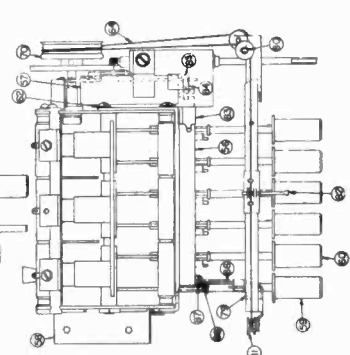
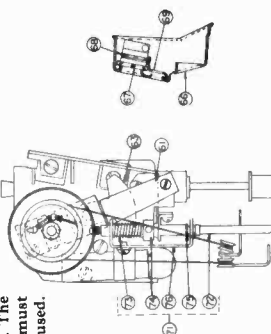
Production Part No.	Service Part No.	Part Name	Description—Function	Illus. No.
7239170		Coil	Antenna Coil Assembly	1
7238665		Coil	R.F. Coil Assembly	2
7238676		Coil	Oscillator Coil Assembly	3
7239165		Coil	1st I.F. Assembly	4
7239164		Coil	2nd I.F. Assembly	5
7238560		Coil	Antenna Series Choke—Spark Noise Filter	6
7239678		Coil	Filament Choke—Motor Noise Filter	7
7239053		Condenser	Electrolytic	8
		Condenser	Section A—10.0 mfd. 400V.—"B" Input Filter	9
		Condenser	Section B—15.0 mfd. 400V.—"B" Output Filter	10
		Condenser	Section C—20.0 mfd. 25V.—Output Tube Cathode By-Pass	11
7238678		Condenser	Oscillator Trimmer—Oscillator Padding	9
7238550		Condenser	Variable Gang Tuning Plus Plungers	10
7239191		Condenser	Air Trimmer—Oscillator Shunt Trimmer	11
7231178		Condenser	Molded Mica .0002 mfd.—Diode Load By-Pass	12
7231178		Condenser	Molded Mica .0002 mfd.—Diode Load By-Pass	13
7239184	1210273	Condenser	Molded Mica .0001 mfd.—Audio Plate By-Pass	14
7239335		Condenser	Ceramic .00010 mfd.—Temp. Compensating	15
7238678		Condenser	Molded Mica .0007 mfd.—Tone Control (Music)	16
7238880		Condenser	Molded Mica .00020 mfd.—R.F. Stage Padding	17
7238842	7230592	Condenser	Tubular .05 mfd. 200V.—A.V.C. By-Pass	18
7238842	7230592	Condenser	Tubular .05 mfd. 200V.—Screen By-Pass	19
7238641	7230592	Condenser	Tubular .05 mfd. 400V.—A.V.C. By-Pass	20
7239185	7230592	Condenser	Tubular .06 mfd. 400V.—Tone Control (Voice)	21
7239186	7232243	Condenser	Tubular .04 mfd. 200V.—Audio Coupling	22
7233243		Condenser	Tubular .04 mfd. 800V.—Output Pad	23
7239188	1212097	Condenser	Tubular .001 mfd. 400 V.—Audio Coupling	24
7232956	7230912	Condenser	Tubular .005 mfd. 200V.—Tone Control (Bass)	25
7238669		Condenser	Dual .01 x .01 1200 V.—Buffer	26
7238841		Condenser	Spark Plate on Power Supply Shield—Motor Noise Filter	27
7237181	7238884	Condenser	Spark Plate—Motor Noise Filter	28
7239020		Control	Tone Control Switch—3 Point Tone Control	31
7239120		Control	Volume Control—With Switch	32
1211118	1209883	Resistor, Ins.	100,000 ohms ½ Watt—A.V.C. Isolator	33
7233633		Resistor, Ins.	15,000 ohm 2 Watt—Screen Dropping	34
1211110	1210116	Resistor, Ins.	50,000 ohm ½ Watt—Oscillator Padder	35
1211139	1209885	Resistor, Ins.	1 megohm ½ Watt—A.V.C. Isolator	36
1211120	1211163	Resistor, Ins.	150,000 ohm ½ Watt—Diode Filter	37
1213343	7235887	Resistor, Ins.	15 megohm ½ Watt—607GT—Grid	38
7234563		Resistor, Ins.	350 ohm 1 Watt—Output Tube Bias	39
1211124	1210117	Resistor, Ins.	250,000 ohm ½ Watt—Plate Dropping	40
1211124	1210117	Resistor, Ins.	250,000 ohm ½ Watt—6V6GT—Grid	41
1211122	1210119	Resistor, Ins.	250,000 ohm ½ Watt—Audio Coupling	42
1211000		Resistor, Ins.	100 ohm ½ Watt—Power Trans. Primary Load	43
1211000		Resistor, Ins.	100 ohm ½ Watt—Power Trans. Primary Load	44
7239306		Resistor, Ins.	3000 ohm ½ Watt—"B" Filter	45
1211071		Resistor, Ins.	8000 ohm 1 Watt—"B" Filter	46
1211000		Resistor, Ins.	100 ohm ½ Watt—"B" Filter	47
7239162		Speaker	Audio Output	51
7239160		Transformer	Vibrator Power	52
7238894		Transformer	Vibrator	53
1213881	1212966	Bulb	Dial Light	
125588		Bulb		



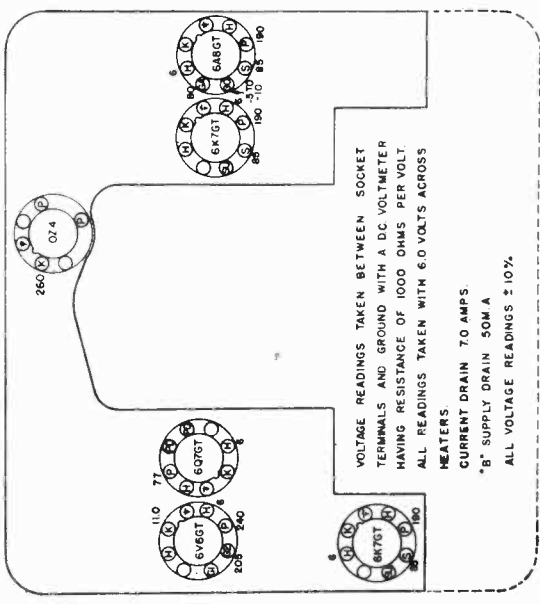
PARTS LOCATING DIAGRAM

**ANTENNA SYSTEM:** There are three antenna systems available for use with this receiver: the under car, the turret top, or the telescopic cowl antenna. Any one of these antennas will operate very efficiently when used with this Chevrolet radio.

**ANTENNA CIRCUIT:** The antenna circuit is directly coupled to the antenna. Two plug-in terminals are provided on the antenna coil; one for use with the under car antenna, and the other for use with the turret top or the cowl antenna. The antenna coil is connected at the factory for cowl antenna operation and must be changed to the under car antenna connection if an under car antenna is used.



TUNER PARTS LAYOUT

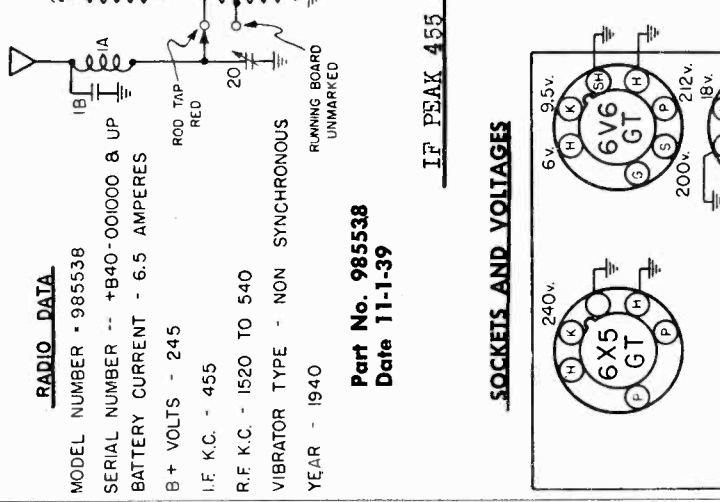
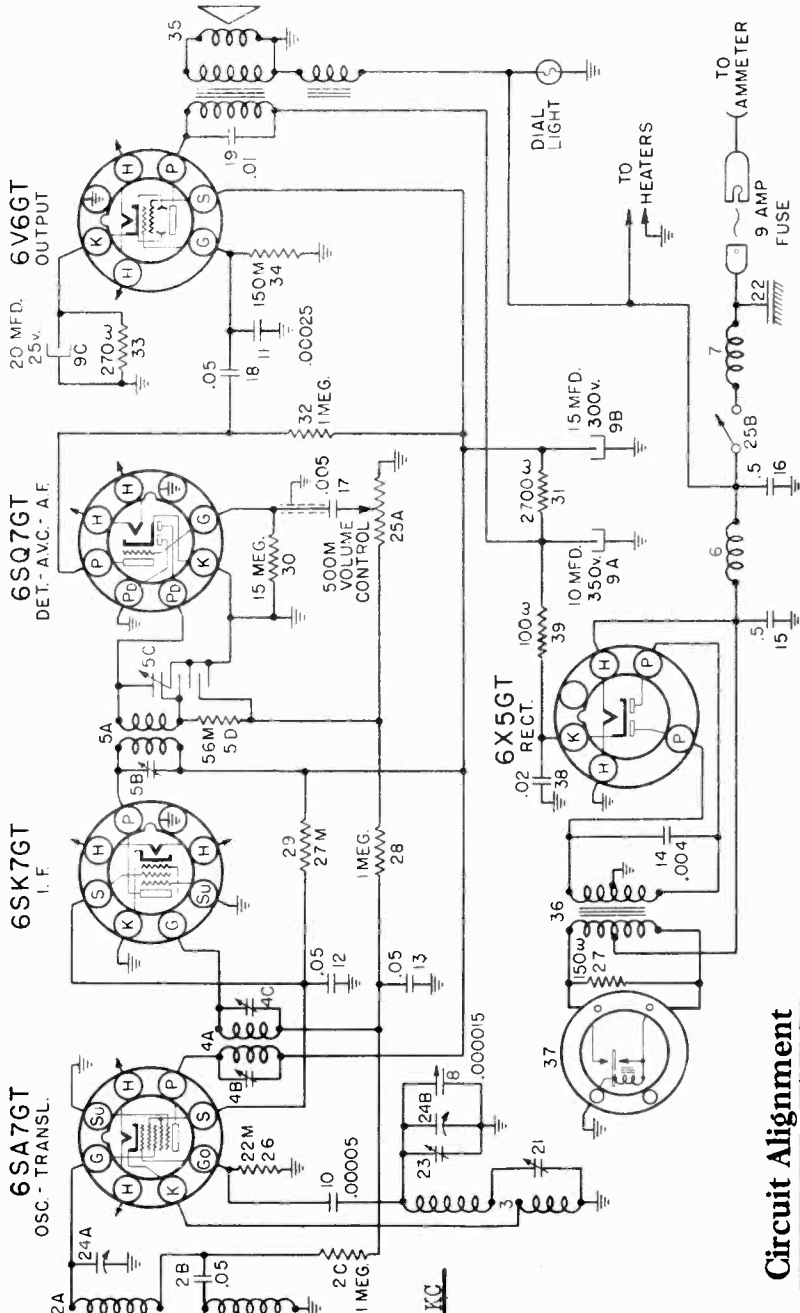


VOLTAGE READINGS TAKEN BETWEEN SOCKET TERMINALS AND GROUND WITH A DC VOLT-METER HAVING RESISTANCE OF 1000 OHMS PER VOLT. ALL READINGS TAKEN WITH 6.0 VOLTS ACROSS HEATERS.  
CURRENT DRAIN 70 AMPS.  
"B" SUPPLY DRAIN 50M A.  
ALL VOLTAGE READINGS ± 10%.

SOCKETS AND VOLTAGES

CHEVROLET DIV.—GEN. MOTORS

MODEL 985538  
Schematic, Voltage  
Alignment



**SOCKETS AND VOLTAGES**

**BOTTOM VIEW OF TUBE SOCKETS**

READINGS TAKEN FROM TUBE SOCKET CONTACTS TO GROUND WITH A D.C. VOLTMETER HAVING A RESISTANCE OF 1000 OHMS PER VOLT; "A" BATTERY 6.0 VOLTS. CURRENT DRAIN 6.5 AMPERES. "B" SUPPLY DRAIN APPROXIMATELY 50 M.A.

**RADIO DATA**

MODEL NUMBER - 985538  
SERIAL NUMBER -- +B40-001000 & UP  
BATTERY CURRENT - 6.5 AMPERES  
B + VOLTS - 245  
I.F. K.C. - 455  
R.F. K.C. - 1520 TO 540  
VIBRATOR TYPE - NON SYNCHRONOUS  
YEAR - 1940

**Part No. 985538**  
**Date 11-1-39**

IF PEAK 455 KC

**Circuit Alignment**

- At 455 KC:- Connect signal generator lead to "X" (see fig.1) which is the grid lead of the 6SA7GT tube through a .1 mfd. condenser. Adjust trimmers (a) (b) (c) and (d) for maximum output.
- At 1520 KC:- Connections as for 455 KC. Condenser at minimum capacity. Adjust (e) for maximum output.
- At 540 KC:- With connections as above, condenser at maximum capacity, adjust oscillator pad (f) for maximum output.
- At 1400 KC:- Use a .0002 mfd. condenser (ONLY) as dummy. Connect signal lead to antenna post (Place tap on antenna coil assembly to running board antenna position). Adjust antenna trimmer (g) to maximum output.
- At 600 KC:- Readjust oscillator pad (f) at this frequency while rocking condenser.

FOR CONVENTIONAL ALIGNMENT PROCEDURE SEE SPECIAL SECTION VOL. VIII.  
**ANTENNA SYSTEM:** There are three antenna systems available for use with this receiver; the under car, the turret top, or the telescopic cowl antenna. Any one of these antennas will operate very efficiently when used with this Chevrolet radio.

MODEL 985538  
Chassis, Trimmers, CHEVROLET DIV.—GEN. MOTORS  
Dial Data, Parts

1213881 1212966 Vibrator ..... 37  
 1207799 Condenser ..... 38  
 1911012 Resistor ..... 39

**GENERAL:** This auto radio is a five tube single unit universal receiver with automatic push button tuning. Tuning is accomplished by a mechanical unit of rugged construction assuring accuracy. A special compensating condenser is employed in the oscillator circuit to minimize all receiver drift due to normal variation in car voltages and temperature ranges. The power supply consists of a 6X5GT power rectifier tube used in conjunction with a full wave plug in vibrator. The receiver is designed to mount in 1940 Chevrolet cars, and also in all other cars and trucks.

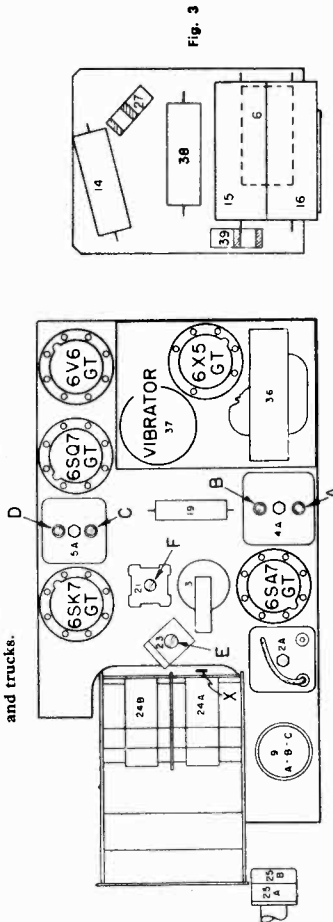


Fig. 1

**ALIGNMENT FREQUENCIES**

TRIMMER	FREQUENCY
A, B, C, D, E	455 KC
F	1520 KC
G	540 and 600 KC
	1400 KC

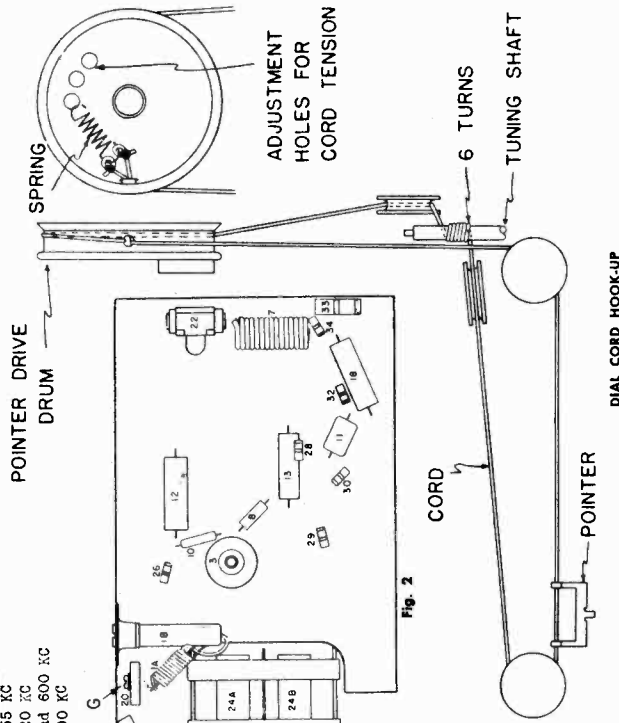


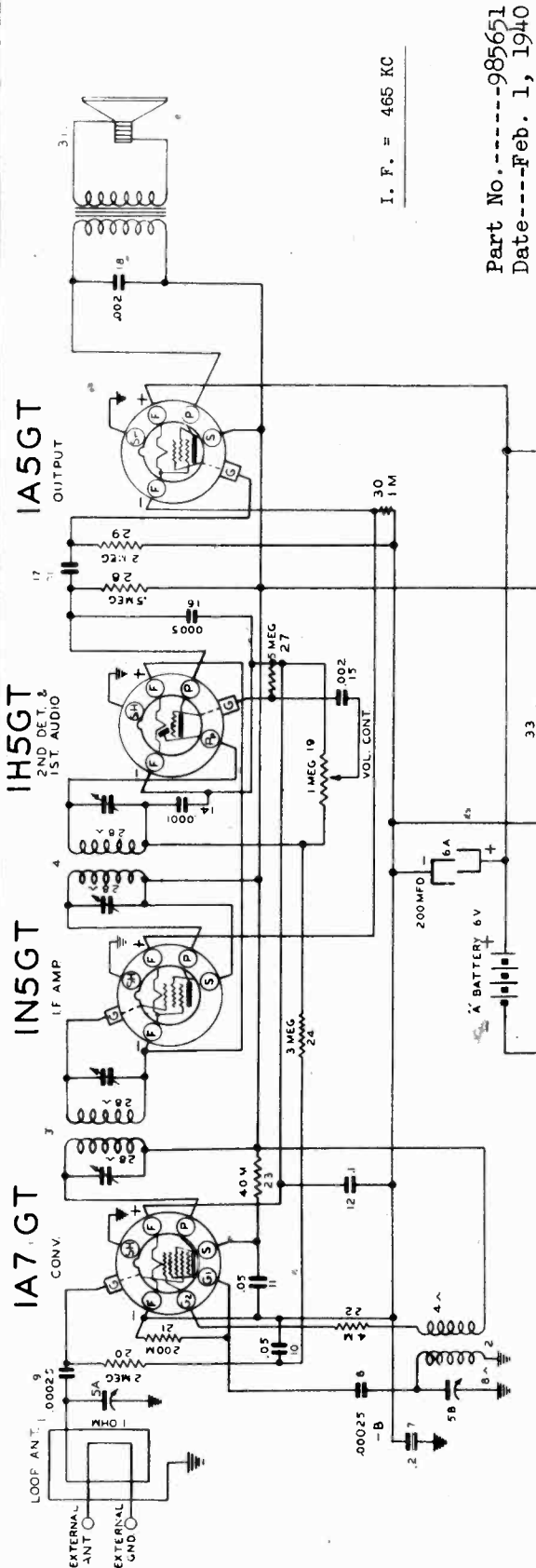
Fig. 2

Part No. 985538  
Date 11-1-39

Production Part No.	Service Part No.	Part Name	Description—Function	Illus. No.
1213858		Coil	Antenna Filter Assy.	1
	Sec. A			
	Sec. B			
1213859		Coil	Antenna Coil Assy.	2
	Sec. A			
	Sec. B		Cond., .05 mfd., 100V A.V.C. Blocking	
	Sec. C		Resistor, 1 megohm—Grid Filter	
1213860		Coil	Oscillator	3
1213861		Coil	1st I.F. Assembly	4
	Sec. A		I.F. Transformer	
	Sec. B		Primary Trimmer	
	Sec. C		Secondary Trimmer	
1213862		Coil	2nd I.F. Assembly	5
	Sec. A		I.F. Transformer	
	Sec. B		Primary Trimmer	
	Sec. C		Secondary Trimmer and Filter	
	Sec. D		Resistor, 56,000 ohm Diode Filter	
1213663		Choke	Vibrator Hash	6
1213452		Choke	"A" Lead Spark Filter	7
7238937		Condenser	Compensating .000015 mfd.	8
1213868		Condenser	Electrolytic Filter	9
	Sec. A		10 mfd., 350 Volt—"B" Filter	
	Sec. B		15 mfd., 300 Volt—"B" Filter	
	Sec. C		20 mfd., 25 Volt—6V8GT Cathode By-Pass	
1207025		Condenser	Molded .00065 mfd.—Osc. Coupling	10
1209055		Condenser	Molded .00025 mfd.—Filter	11
1210295	7230592	Condenser	.05 mfd., 200 Volt—Screen By-Pass	12
1210295	7230592	Condenser	.05 mfd., 200 Volt—A.V.C. Filter	13
1213854		Condenser	.004 mfd., 1500 Volt—Buffer	14
7237076	1212100	Condenser	.5 mfd., 100 Volt—Hash Filter	15
7237076	1212100	Condenser	.5 mfd., 100 Volt—Hash Filter	16
7232956	7230912	Condenser	.005 mfd., 200 Volt—Audio Coupling	17
1206308	7230592	Condenser	.05 mfd., 400 Volt—Audio Coupling	18
1206600		Condenser	.01 mfd., 600 Volt—Plate By-Pass	19
1213865		Condenser	Antenna Compensating	20
1213865		Condenser	Oscillator Padder	21
1212278		Condenser	Spark Plate—175-275 mmfd. Filter	22
1213880		Condenser	Oscillator Trimmer	23
1213867		Condenser	Variable and Tuner Unit	24
	Sec. A		Antenna Coil Tuning	
	Sec. B		Oscillator Tuning	
1213863		Control	Volume—On-Off Switch	25
	Sec. A		Vol. Control 500,000 ohms	
	Sec. B		On-Off Switch	
1211095	1210882	Resistor	22,000 ohm, ½ watt Osc. Grid Lead	26
1211005		Resistor	150 ohm 1 watt Vib. Filter	27
1209865		Resistor	1 megohm ½ watt A.V.C. Filter	28
1213342		Resistor	27,000 ohm 1 Watt Screen Voltage	29
1213343	7235837	Resistor	15 megohm ½ Watt—Grid Leak	30
1211051		Resistor	2700 ohm 1 Watt, "B" Voltage Filter	31
1209865		Resistor	1 megohm ½ Watt, Plate Load	32
1213846		Resistor	270 ohm 1 Watt, Grid Bias	33
1211163		Resistor	150,000 ohm ½ Watt, Grid Leak	34
1213864		Speaker and Transformer	Electro Dynamic with Output Transformer	35
1213670		Transformer	Power	36
1213655	1212966	Vibrator		37

CHEVROLET DIV.—GEN. MOTORS

MODEL 985651  
Schematic, Voltage



I. F. = 465 KC

Part No.-----985651  
Date---Feb. 1, 1940

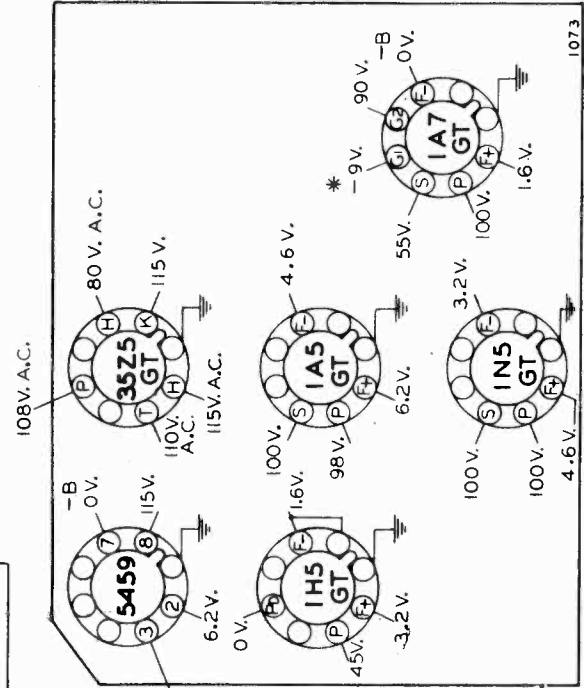


FIG. 4 TUBE VOLTAGE CHART

NOTES FOR VOLTAGE CHART

Voltages measured with 1000 ohm per volt D.C. voltmeter between socket terminals and negative "B" supply.  
\* -Oscillator voltage measured with R. F. choke in series with voltmeter lead.

NOTE: Voltages as indicated are measured with power switch in AC-DC position and radio connected to 115 volt 60 cycle AC line.

MODEL 985651  
Alignment, Chassis  
Trimmers, Socket

CHEVROLET DIV.—GEN. MOTORS

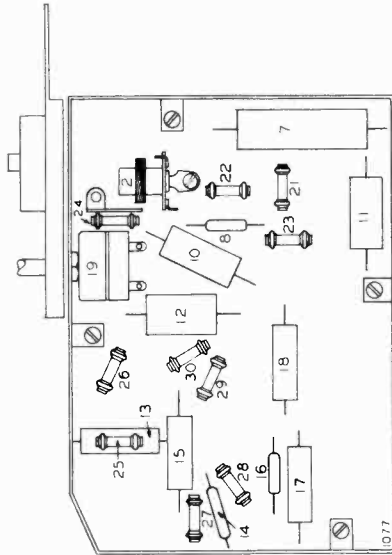


FIG. 3 PARTS LOCATING DIAGRAM PORTABLE RADIO #985651

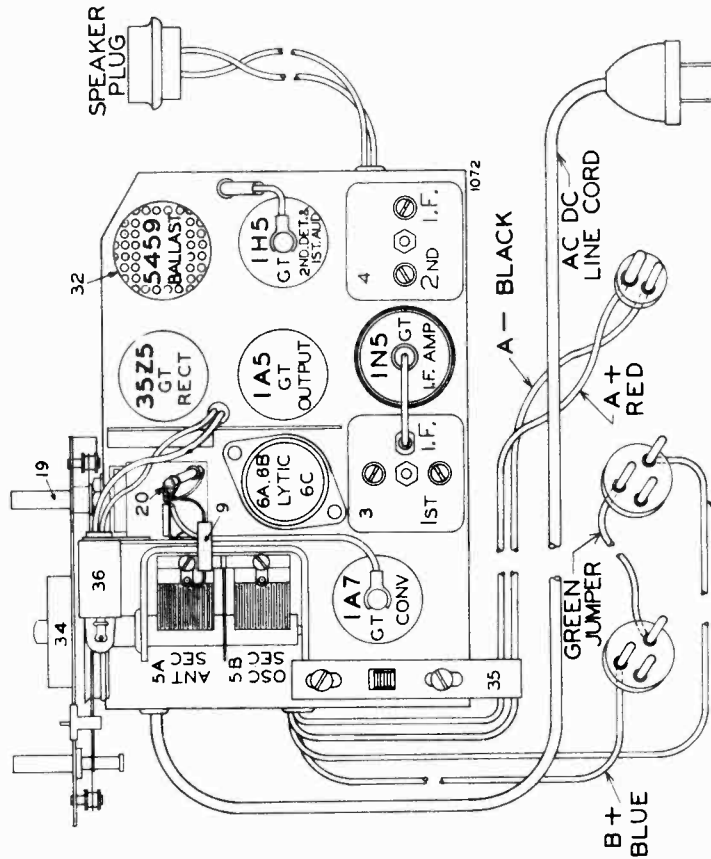


FIG. 1 TUBE LAYOUT PORTABLE RADIO #985651

**CIRCUIT ALIGNMENT**

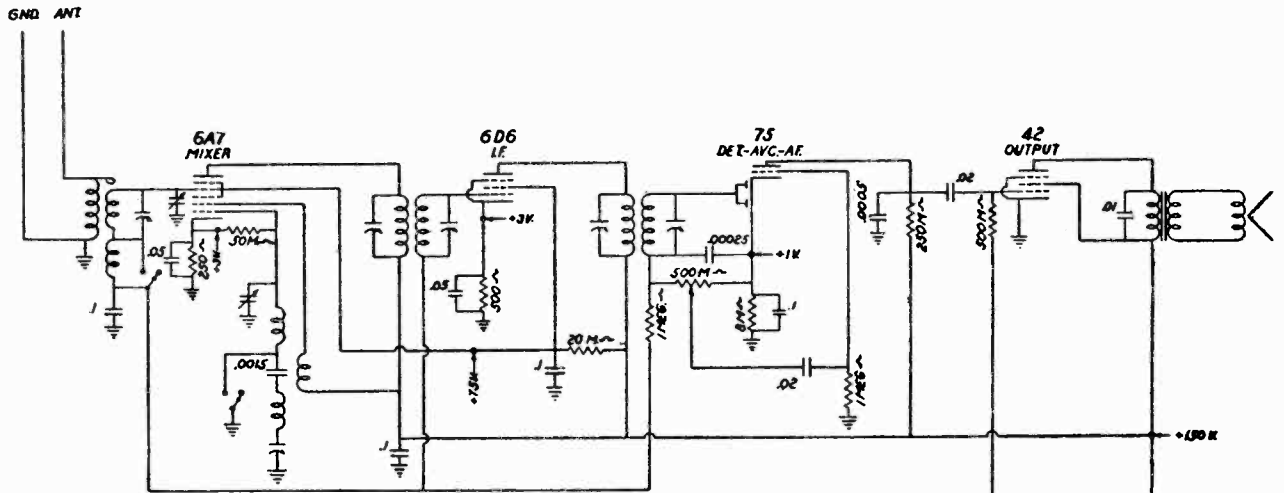
**IMPORTANT:** If maximum sensitivity is to be obtained from this receiver, after re-alignment, it is very important that the following procedure be closely observed:

1. Aligning I.F. stages at 465 kilocycles.
  - a. Connect the signal lead of the test oscillator to the grid of the 1A7GT tube, through a .1 mfd. condenser.
  - b. Connect the ground lead of the test oscillator to the negative "B" lead of the radio (grey wire of the "B" battery lead assembly).
  - c. Connect the output meter across primary winding of the output transformer.
  - d. Set the test oscillator to exactly 465 kilocycles.
  - e. Adjust the trimmers on the 1st and 2nd I.F. transformers (Illus. No. 3 and No. 4, Fig. 1) carefully for maximum output.

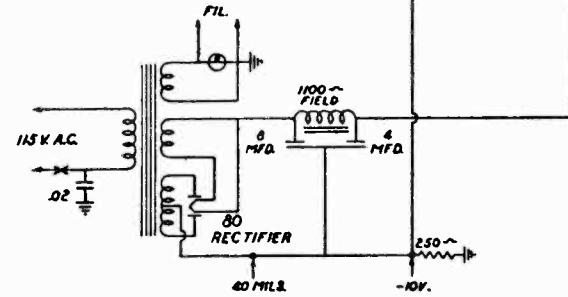
These adjustments should be repeated several times and during the alignment the test oscillator output should be kept to as low a value as is consistent with obtaining readable indication on the output meter.

2. Aligning at 1550 kilocycles.
  - a. Leave the test oscillator leads connected the same as for aligning the I.F. circuits.
  - b. Turn the rotor plates of the gang condenser all the way out and against the high frequency stop.
  - c. Set the test oscillator to 1550 kilocycles.
  - d. Adjust the trimmer for the oscillator section of the condenser gang (Illus. No. 5B, Fig. 1) for maximum output. It is very important that this frequency be set accurately as a slight mis-setting will cause the receiver to be out of track over the entire high frequency end of the dial.
3. Aligning at 1400 kilocycles.
  - a. This adjustment should be made with the loop antenna placed alongside the chassis. It is important that the same distance between the loop antenna and the chassis be maintained as when the chassis and loop are installed in the cabinet.
  - b. Connect the signal lead of the test oscillator to the external antenna terminal on the loop antenna through a 200 mmfd. dummy.
  - c. Connect the ground lead of the test oscillator to the external ground terminal on the loop antenna.
  - d. Set the test oscillator to exactly 1400 K.C.
  - e. Turn the condenser rotor plates until this frequency is tuned in with maximum output.
  - f. Adjust the trimmer on the condenser gang (Illus. No. 5A, Fig. 1) for maximum output.

MODEL B1  
 CONTINENTAL RADIO & TELEVISION CORP Schematic, Socket Alignment, Trimmers

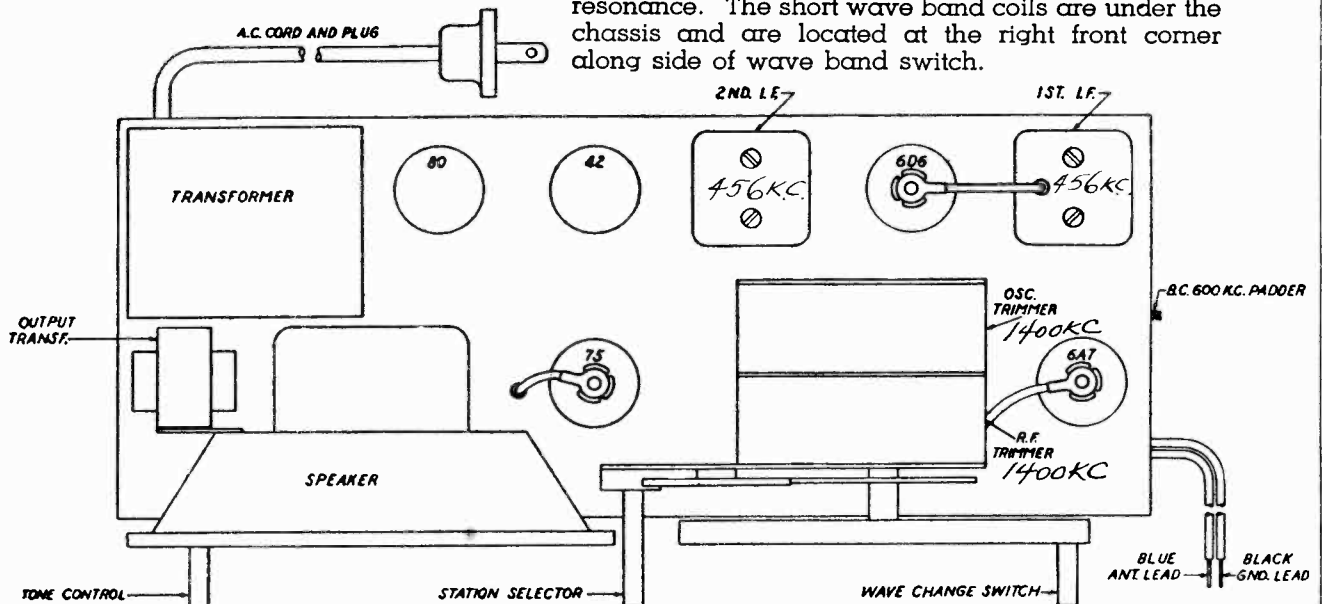


SCHEMATIC DIAGRAM  
 B1 CHASSIS  
 S TUBE A.C. 2 BAND BC-540 TO 1720 K.C.  
 S.W.-2000 TO 7000 K.C.  
 I.F. = 456 K.C.  
 SWITCH SHOWN IN B.C. POSITION  
 ALL VOLTAGES SHOWN TO GROUND

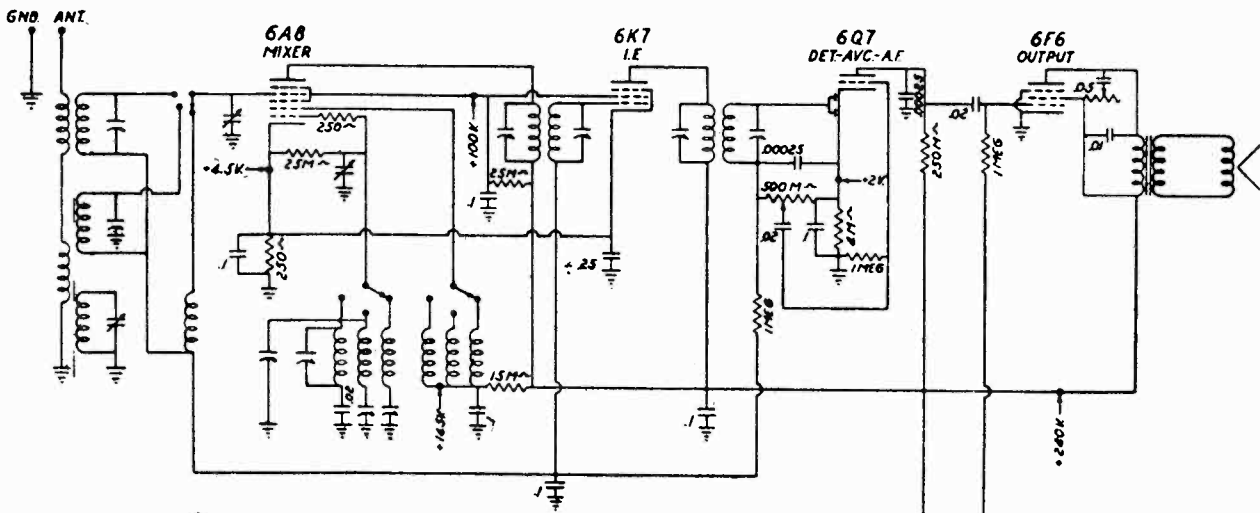


CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOLUME VIII.

**S.W. ALIGNMENT:** Set the dial pointer to 6000KC (also the test oscillator) and adjust the antenna and antenna trimmer to resonance. The short wave band coils are under the chassis and are located at the right front corner along side of wave band switch.

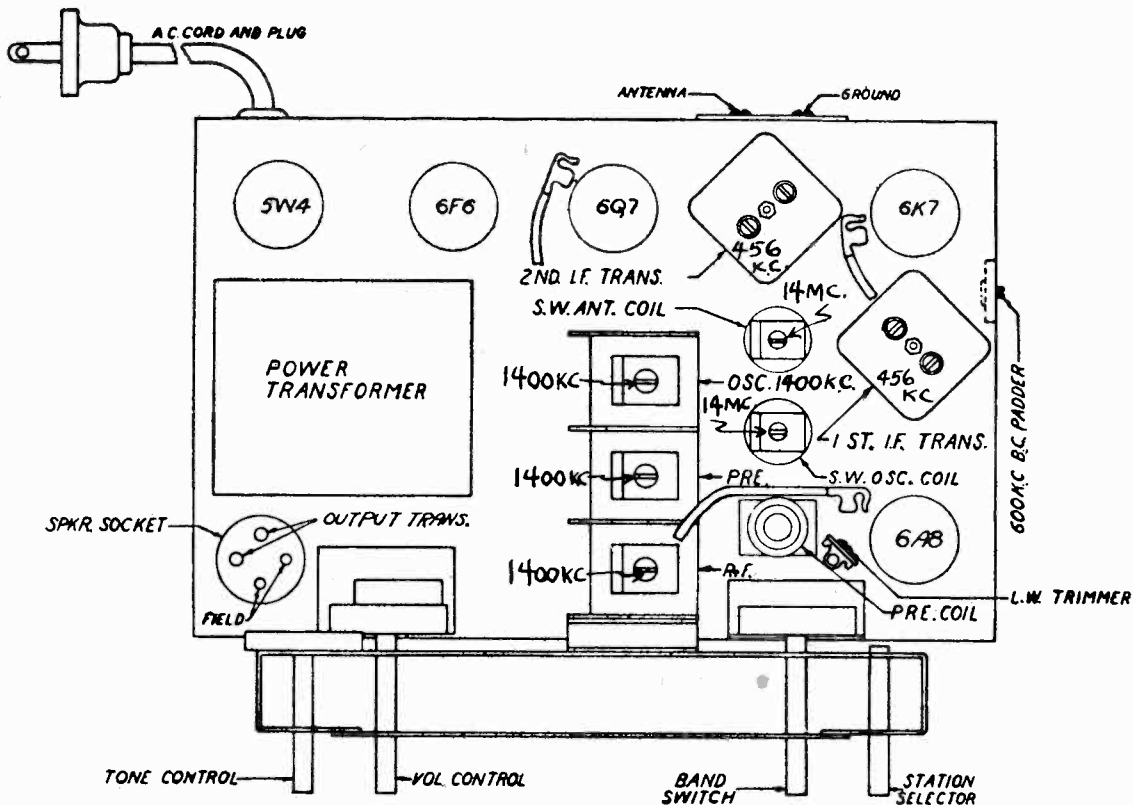


MODEL A2  
Schematic, Socket CONTINENTAL RADIO & TELEV. CORP.  
Alignment, Trimmers



SCHEMATIC DIAGRAM  
A2 CHASSIS  
I.F. - 456 K.C.  
SWITCH SHOWN IN B.C. POSITION  
ALL VOLTAGES SHOWN TO GROUND

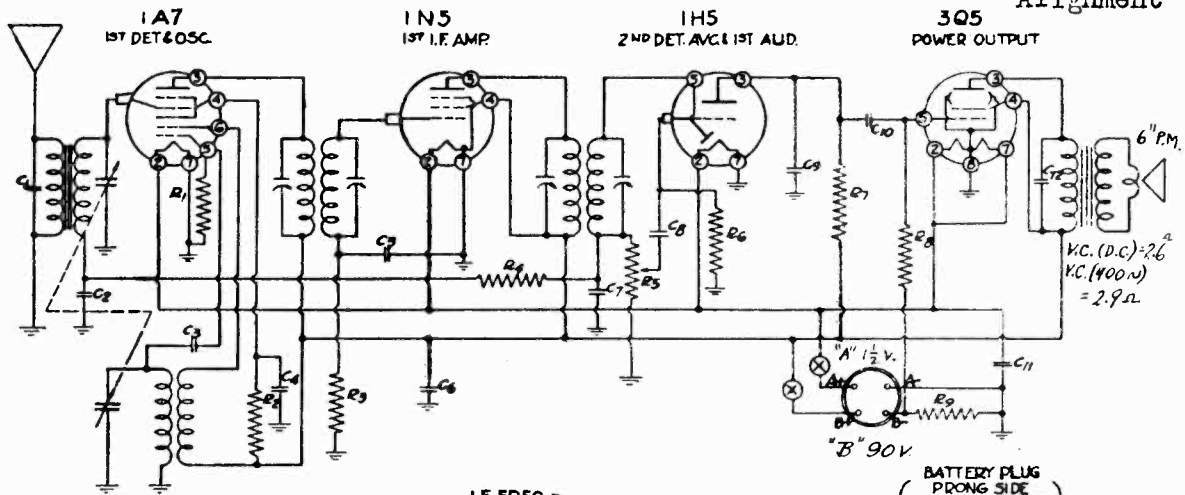
CONVENTIONAL ALIGNMENT  
SEE SPECIAL SECTION  
VOLUME VIII





CONTINENTAL RADIO & TELEV. CORP.

MODELS A4, B4  
MODELS C5, XC5  
Schematics,  
Alignment



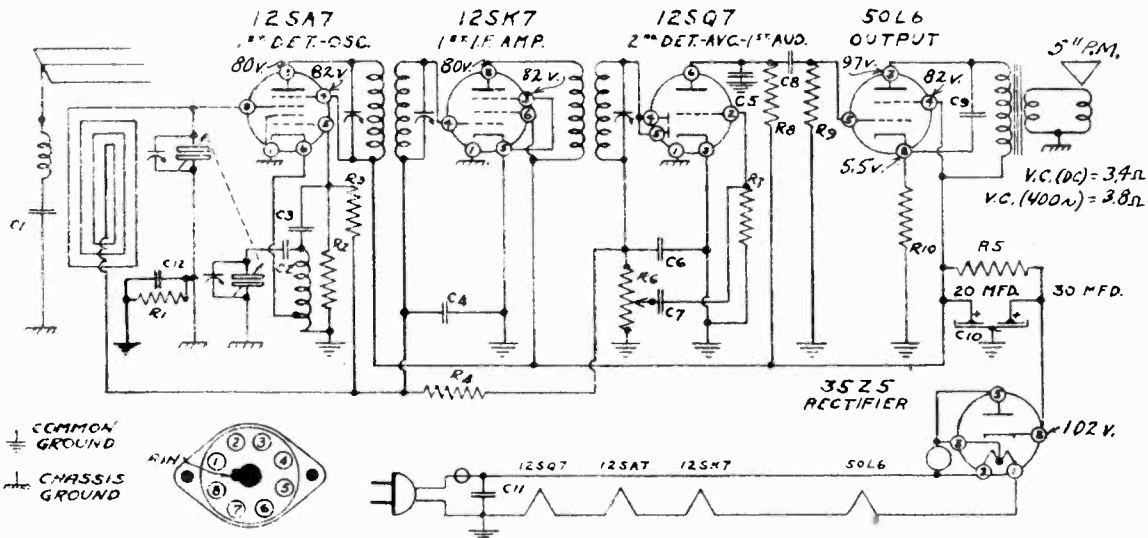
RESISTORS				CONDENSERS							
No.	Ohms	Watts	No.	Ohms	Watts	No.	Capacity (Mfd.)	Volts	No.	Capacity (Mfd.)	Volts
R1	200,000	1/2	R6	5 Meg.	1/4	C1	.00005	Mica	C7	.00025	Mica
R2	70,000	1/4	R7	250,000	1/4	C2	.05	200	C8	.01	400
R3	5 Meg.	1/4	R8	500,000	1/4	C3	.00005	Mica	C9	.00025	Mica
R4	1 Meg.	1/4	R9	440 10%	1/4	C4	.1	200	C10	.01	400
R5	500,000	V.C.				C5	.002	400	C11	20 (Elect.)	25
						C6	.001	200	C12	.005	400

I.F. PEAK - 455 KC  
TRIM OSC. - 1730 KC  
TRIM ANT. - 1400 KC

ISSUE A  
MARCH 1940

**A4, B4**

For SOCKET LAYOUT  
See INDEX



CONDENSERS				RESISTORS				
No.	Capacity	Volts	No.	Ohms	Watts	No.	Ohms	Watts
C1	.001	600	R2	20,000	1/2	R2	20,000	1/2
C2	.02	400	R3	15,000,000	1/2	R3	15,000,000	1/2
C3	.00005	Mica	R4	2,000,000	1/2	R4	2,000,000	1/2
C4	.05	200	R5	1,000	1	R5	1,000	1
C5	.0005	Mica	R6	500,000	Vol. Cont.	R6	500,000	Vol. Cont.
C6	.00025	Mica	R7	5,000,000	1/2	R7	5,000,000	1/2
C7	.01	400	R8	250,000	1/2	R8	250,000	1/2
			R9	500,000	1/2	R9	500,000	1/2
			R10	150	10%	R10	150	10%

**C5 & XC5**

ISSUE A  
MARCH 1940

C2, C12 and R1 are used in Model XC5 only. In C5 Model only, all common grounds are connected to chassis ground.

I.F. PEAK - 455 KC  
TRIM OSC. - 1730 KC  
TRIM ANT. - 1400 KC

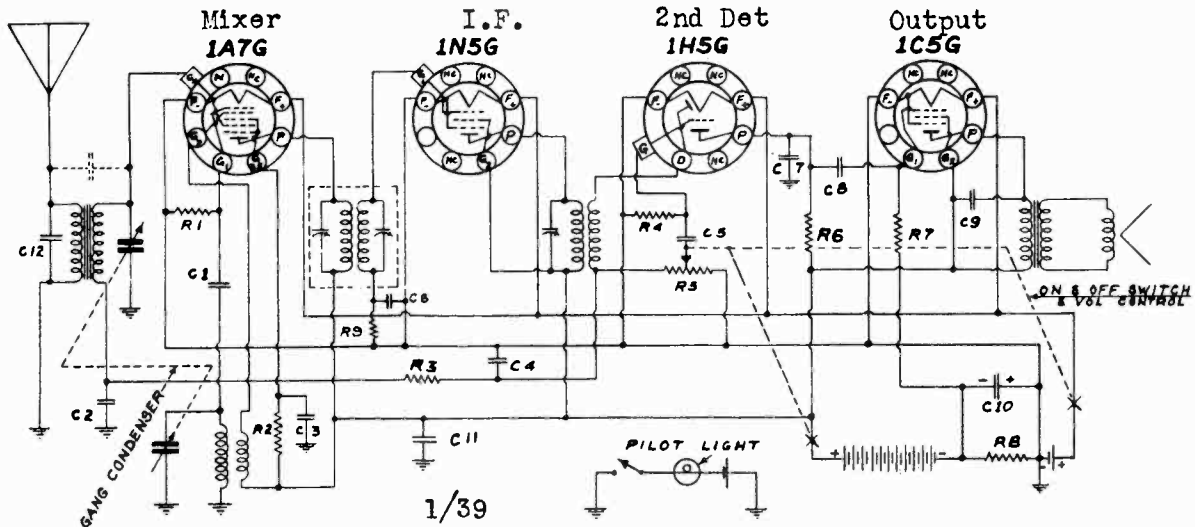
VOLTAGES: Line 115 v. AC. Power consumption, 30 watts.  
Volume control maximum. Meter 1000 ohms per volt. Read from point indicated to common ground.

For SOCKET LAYOUT  
See INDEX

MODEL 4C  
MODEL 4J

CONTINENTAL RADIO & TELEV. CORP.

Schematics, Alignment



1/39

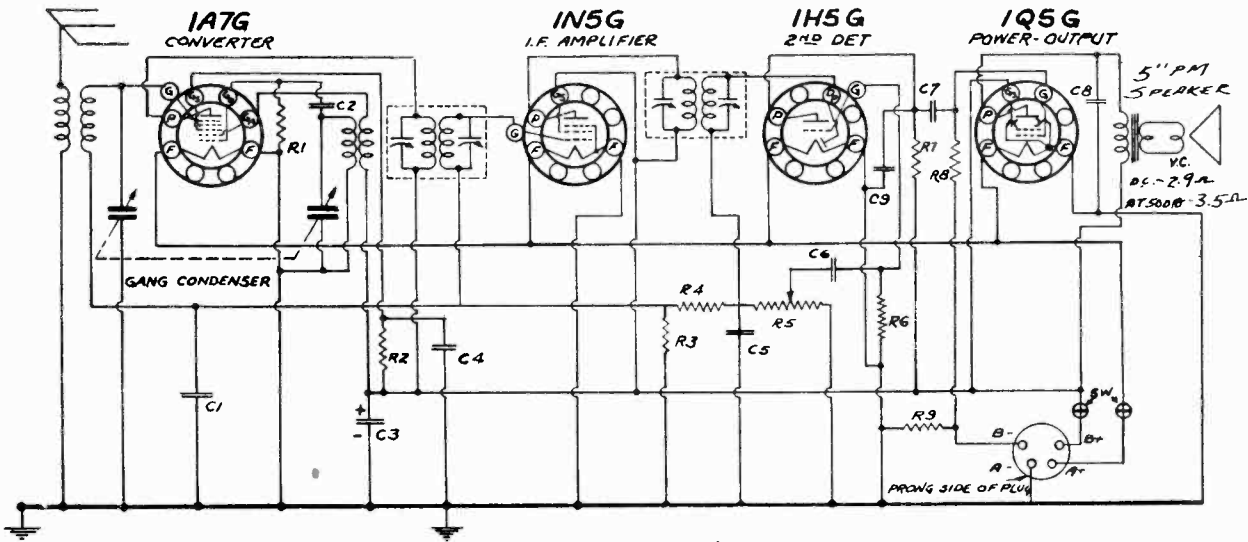
CAPACITORS			
NO.	CAP.-MEDS	TYPE	VOLTS
C1	.00025	MICA	400V.
C2	.05	200V.	
C3	.1	200V.	
C4	.00025	MICA	400V.
C5	.01	400V.	
C6	.002	400V.	
CAPACITORS			
NO.	CAP.-MEDS	TYPE	VOLTS
C7	.00025	MICA	400V.
C8	.01	400V.	
C9	.005	400V.	
C10	20 (ELECT.)		25V.
C11	.1		200V.
C12	.00088	MICA	

RESISTORS					
NO.	OHMS	WATTS	NO.	OHMS	WATTS
R1	200,000	1/2	R6	250,000	1/2
R2	70,000	1/2	R7	500,000	1/2
R3	1 MEG.	1/2	R8	600	1/2
R4	2 MEG.	1/2	R9	2 MEG.	1/2
R5	500,000				

I.F. 456 KC  
TRIM OSC- 1730 KC  
TRIM ANT- 1400 KC

FOR SOCKET LAYOUT SEE INDEX

MODEL 4C



8/39

CAPACITORS					
NO.	MFDS	VOLTS	NO.	MFDS	VOLTS
C1	.05	200	C6	.01	400
C2	.00008	MICA	C7	.01	400
C3	4.0 (ELECT.)	150	C8	.002	400
C4	.05	200	C9	.00025	MICA
C5	.00025	MICA			

RESISTORS					
NO.	OHMS	WATTS	NO.	OHMS	WATTS
R1	200,000	1/2	R6	2,000,000	1/2
R2	70,000	1/2	R7	800,000	1/2
R3	2,000,000	1/2	R8	1,000,000	1/2
R4	2,000,000	1/2	R9	440	1/2
R5	500,000	V.C.			

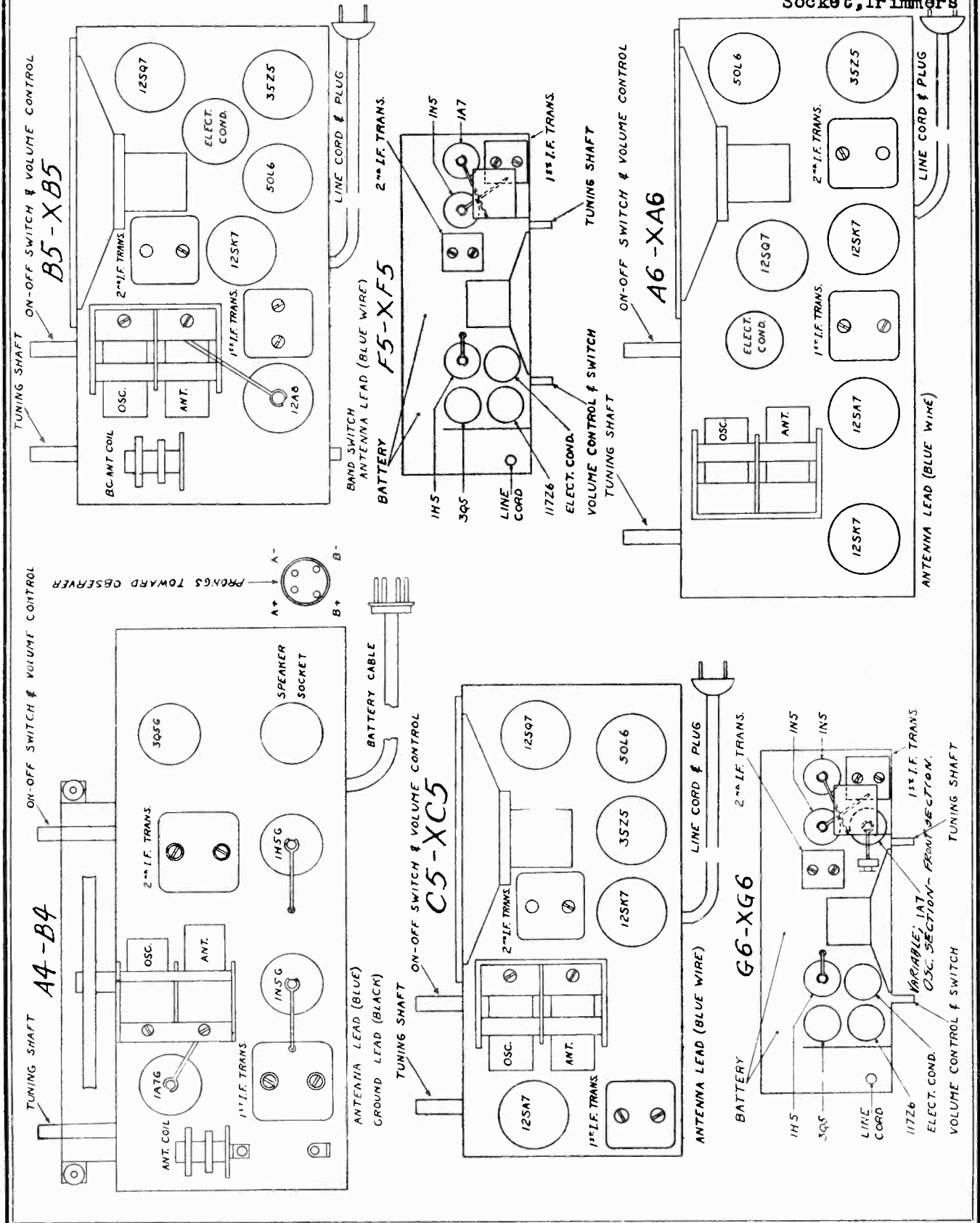
I.F. 455 KC  
TRIM OSC-1730 KC  
TRIM ANT-1400 KC

FOR SOCKET LAYOUT SEE INDEX

MODEL 4J

CONTINENTAL RADIO & TELEV. CORP.

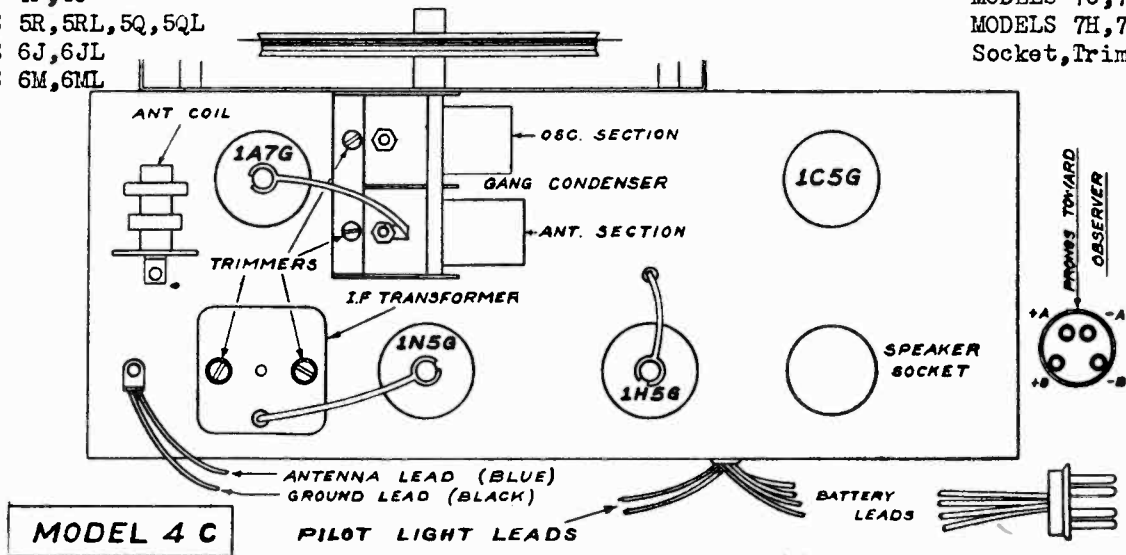
MODELS A4, B4  
 MODELS B5, XB5  
 MODELS C5, XC5  
 MODELS F5, XF5  
 MODELS G6, XG6  
 MODELS A6, XA6  
 Socket, Trimmers



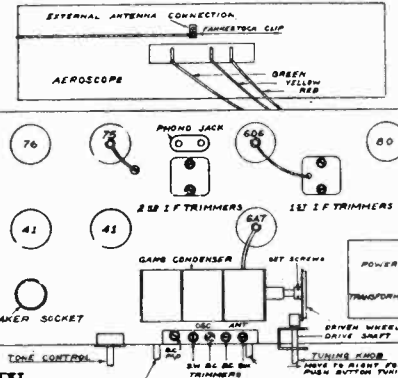
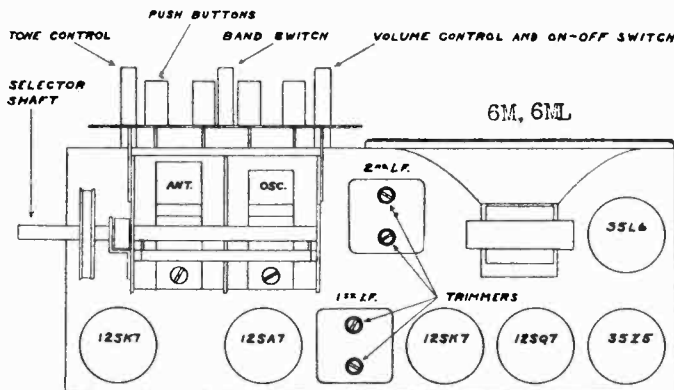
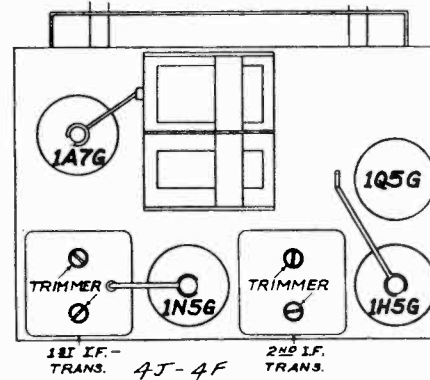
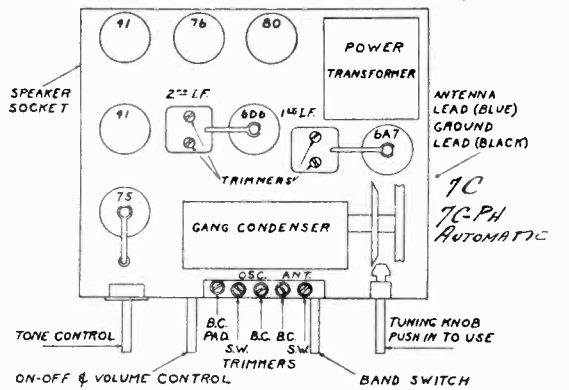
CONTINENTAL RADIO & TELEV. CORP.

MODEL 4C  
 MODELS 4F, 4J  
 MODELS 5R, 5RL, 5Q, 5QL  
 MODELS 6J, 6JL  
 MODELS 6M, 6ML

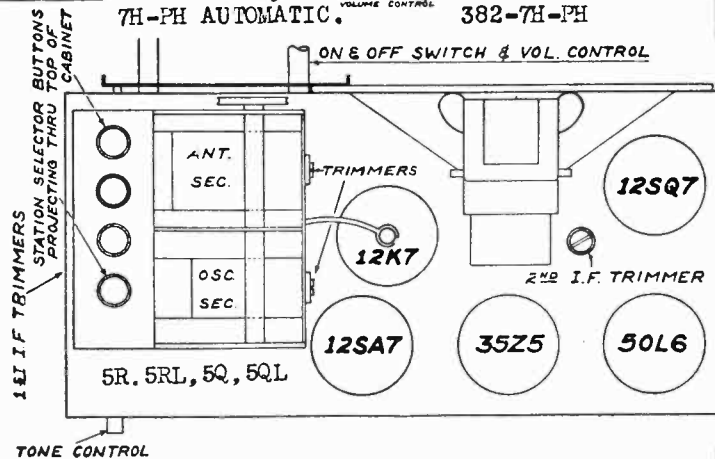
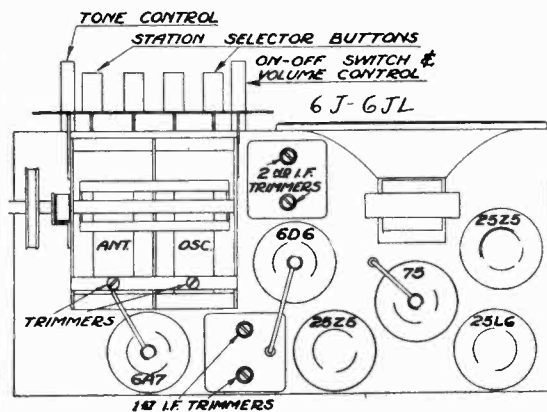
MODEL 382-7H-PH  
 MODELS 7C, 7C-PH  
 MODELS 7H, 7H-PH  
 Socket, Trimmers



MODEL 4 C

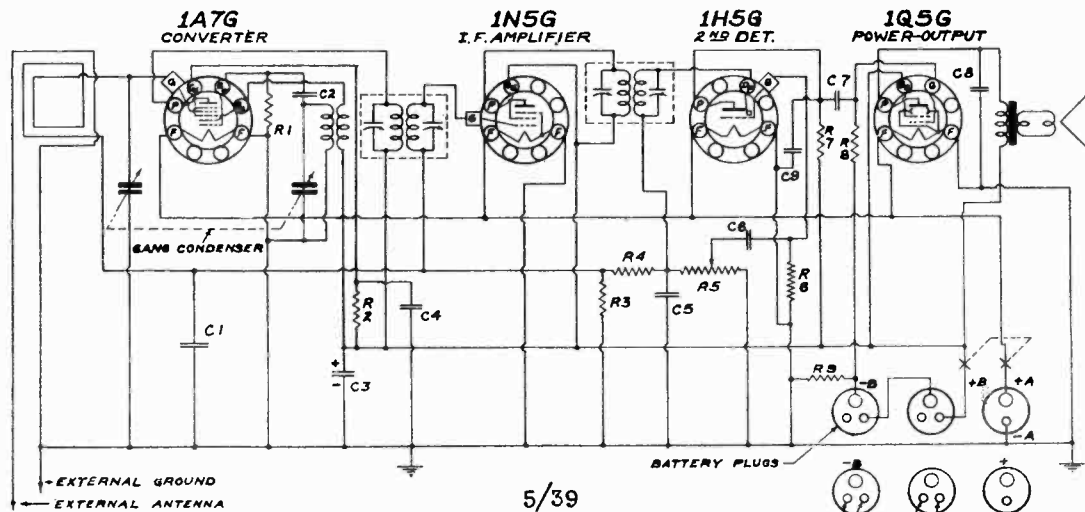


7H, 7H-PH, 7H-PH AUTOMATIC, 382-7H-PH



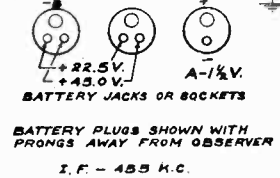
CONTINENTAL RADIO & TELEV. CORP.

MODEL 4F  
 MODELS 5Q, 5QL  
 Schematics, Alignment



CAPACITORS					
NO	MFD'S	VOLTS	NO	MFD'S	VOLTS
C1	.05	200	C6	.01	400
C2	.00005	MICA	C7	.01	400
C3	4.0 (ELECT)	150	C8	.002	400
C4	.05	200	C9	.00025	MICA
C5	.00025	MICA			

RESISTORS					
NO	OHMS	WATTS	NO	OHMS	WATTS
R1	200,000	1/2	R6	2,000,000	1/2
R2	70,000	1/2	R7	500,000	1/2
R3	2,000,000	1/2	R8	1,000,000	1/2
R4	2,000,000	1/2	R9	440	1/2
R5	500,000	V.C.			



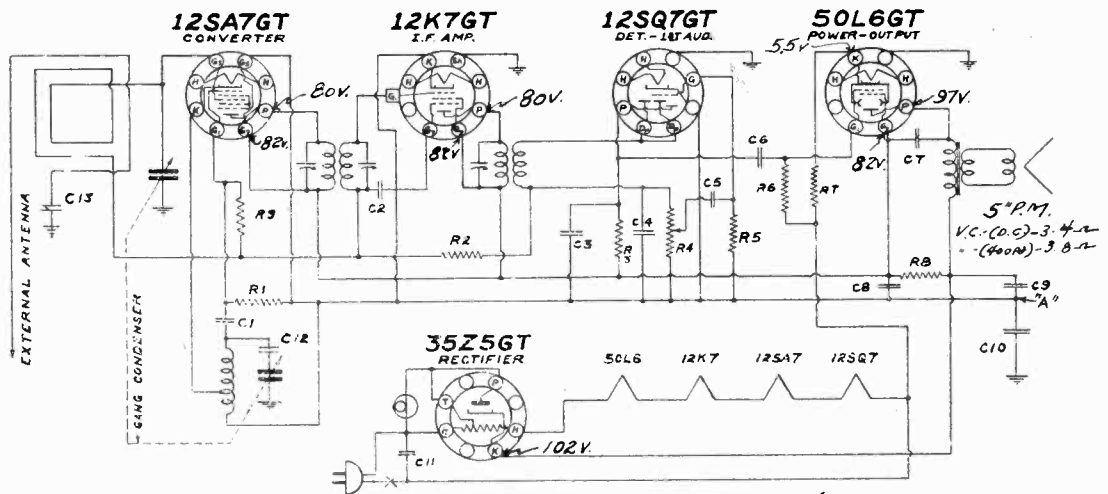
5/39

TRIM OSC- 1610 KC  
 TRIM ANT- 1400 KC

MODEL 4F

I.F. ALIGNMENT CONVENTIONAL  
 FOR SOCKET LAYOUT SEE INDEX

I.F. 455 KC



RESISTORS					
NO	OHMS	WATTS	NO	OHMS	WATTS
R1	20,000	1/2	R6	500,000	1/2
R2	2 MEG	1/2	R7	150 ± 10%	1/2
R3	250,000	1/2	R8	1,000	1
R4	500,000	V.C.	R9	15 MEG.	1/2
R5	5 MEG.	1/2			

CAPACITORS					
NO	MFD.	VOLTS	NO	MFD.	VOLTS
C1	.0001	MICA	C7	.01	400
C2	.02	400	C8	20.0	150
C3	.0005	MICA	C9	30.0	150
C4	.00025	MICA	C10	.25	200
C5	.01	400	C11	.05	400
C6	.002	600	C12	.02	400
			C13	.001	600

10/39

I.F. 455 K.C.  
 TUBES SHOW BOTTOM VIEW

C10 and C12 used in model 5QL only. On model 5Q point "A" is connected to chassis.  
 VOLTAGES:- LINE 115V A.C.- POWER CONSUMPTION 30WATTS;- VOL. CONTR-MAX;-  
 ANTENNA SHORTED TO GROUND;- METER 1000-Ω PER VOLT, 150VOLT SCALE;-  
 TAKEN FROM POINT INDICATED TO POINT "A".

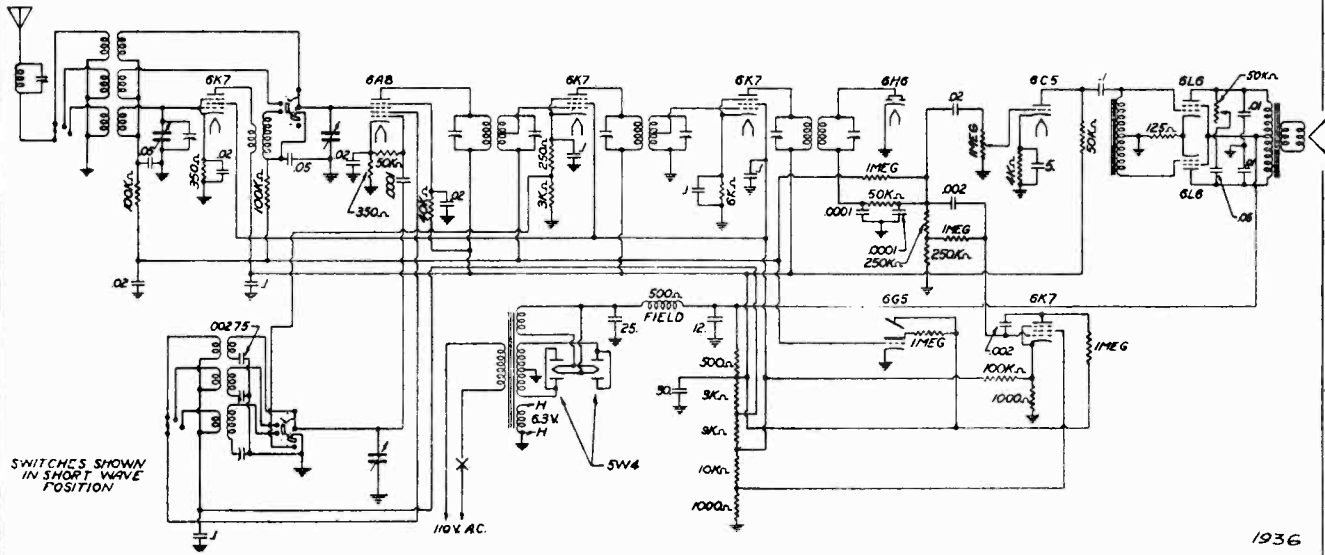
TRIM OSC-1730 KC  
 TRIM ANT-1400 KC

MODELS 5Q, 5QL

I.F. 455 KC  
 I.F. ALIGNMENT CONVENTIONAL  
 FOR SOCKET LAYOUT SEE INDEX

MODEL AM4

Schematic, Socket CONTINENTAL RADIO & TELEV. CORP.  
Alignment, Trimmers

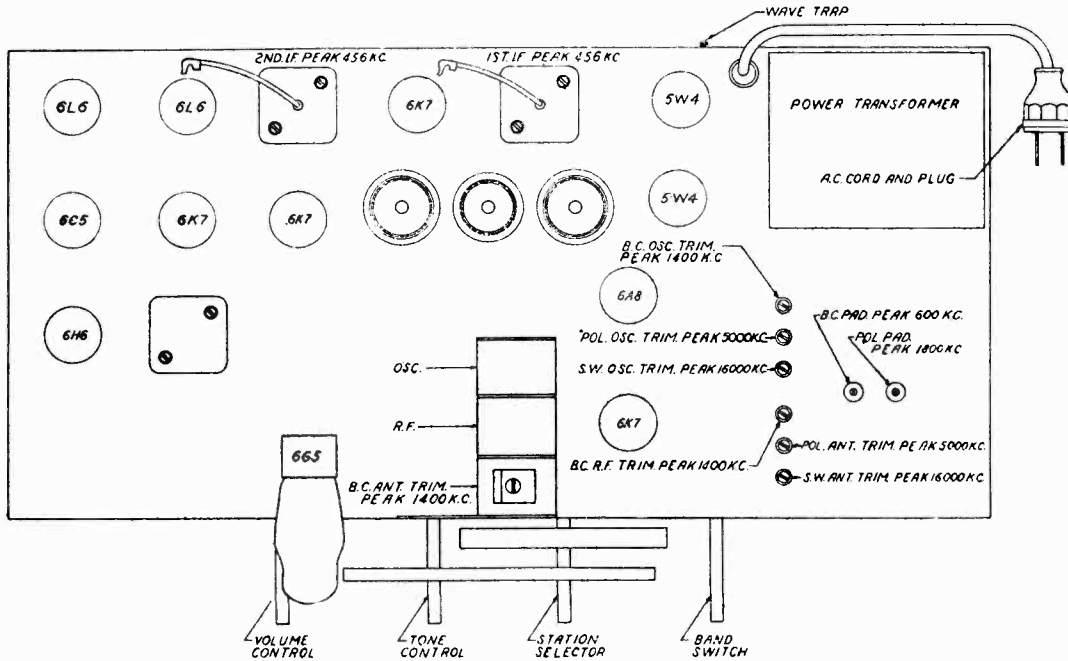


CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOLUME VIII.

**WAVE TRAP ADJUSTMENT**

posts is an adjustment screw connected to a trap circuit for elimination of code interference when operating on the broadcast band. If code interfer-

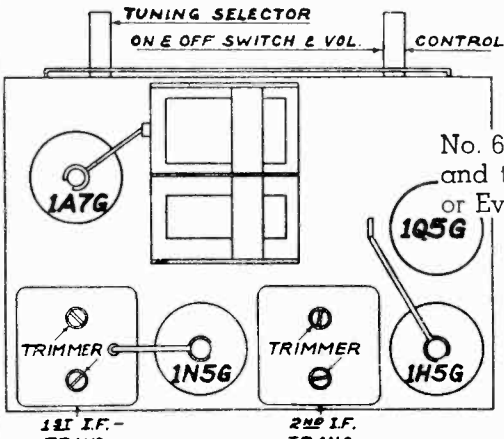
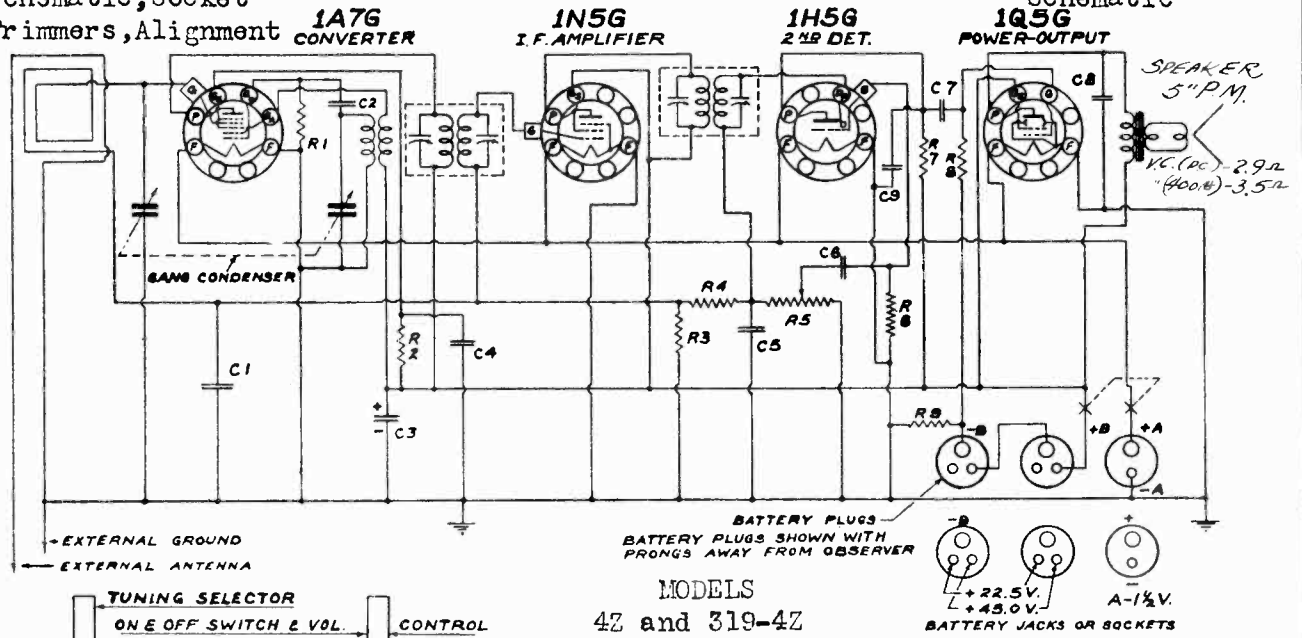
ence is encountered adjustment of this screw will filter it out. It is to be used only if such interference is experienced in broadcast reception. It's use prevents code transmitters operating on a frequency around 456 K. C. from being received by the I. F. amplifier which is tuned to 456 K. C.



**SERVICE DATA FOR ALL BANDS**

If it is suspected that the oscillator has stopped but components should be accomplished by grounding is doubtful due to the presence of the usual amount the stator mounting nut to the frame of the con- of noise level, it is suggested that the oscillator plate denser with a screw-driver or any metallic con- voltage be checked. To ascertain whether the tube ductor. is oscillating, ground the oscillator grid of the 6A8 (short stator and rotor plates of oscillator section on Do not wedge a screw-driver between the plates for gang condenser). If oscillating properly, grounding this is liable to permanently warp the plates and the grid will cause an appreciable drop in oscillator thus prevent the oscillator section of the gang con- voltage. Grounding or shorting the stator and grid denser from tracking probably.

MODELS 4Z, 319-4Z Schematic, Socket Trimmers, Alignment CONTINENTAL RADIO & TELEV. CORP. MODEL CW13 Phono. Schematic



**POWER SUPPLY**

The power supply of this portable radio uses one Ray-O-Vac No. P96A, General No. 6-F-1, Burgess No. 6FP1 or Eveready No. 743. Portable "A" battery or Eveready No. 762 Portable "B" batteries.

**ALIGNMENT**

**BROADCAST BAND**

- Trim Ant.- 1400 kc
- " Osc.- 1610 kc
- I.F.- 455 kc

**I.F. ALIGNMENT**

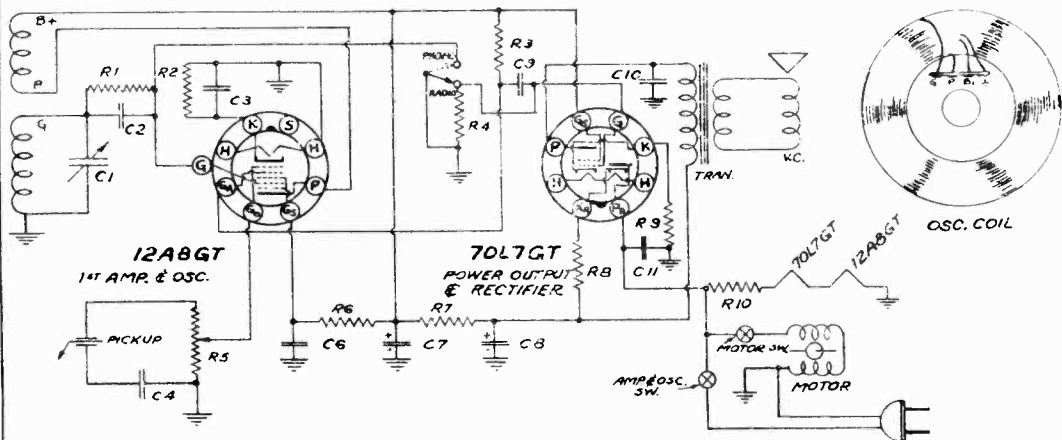
Remove the chassis from the cabinet and connect one end of a 100,000 ohm resistor to the grid of the 1A7 tube and the other end to the A.V.C. fahnestock clip (See "antenna and ground" for location of this clip). Adjust the signal generator to 455 KC and connect the output to the grid of the first detector tube (1A7) thru a .05 or .1 mfd. condenser. The ground of the signal generator should be connected to the chassis ground. Align all I.F. trimmers to peak or maximum reading on the output meter.

**CAPACITORS**

NO	MFD'S.	VOLTS	NO	MFD'S.	VOLTS
C1	.05	200	C8	.01	400
C2	.00005	MICA	C7	.01	400
C3	4 (ELECT)	150	C8	.002	400
C4	.05	200	C9	00025	MICA
C5	00025	MICA			

**RESISTORS**

NO	OHMS	WATTS	NO	OHMS	WATTS
R1	200,000	1/2	R6	2,000,000	1/2
R2	70,000	1/2	R7	500,000	1/2
R3	2,000,000	1/2	R8	1,000,000	1/2
R4	2,000,000	1/2	R9	440	1/2
R5	500,000	V C			



**RESISTORS**

R1	50,000.0	1/2w
R2	1,000.0	1/2w
R3	50,000.0	1/2w
R4	500,000.0	1/2w
R5	1,000,000.0	VOL.
R6	1,000.0	1/2w
R7	3,000.0	1/2w
R8	30.0	1/2w
R9	250.0	10% 1/2w
R10	233.0	5w

**CONDENSERS**

C1	400-600uf	PAD
C2	100uf	MICA
C3	20uf	25V.
C4	.05uf	200V.
C6	.05uf	200V.
C7	20uf	150V.
C8	40uf	150V.
C9	.01uf	400V.
C10	.02uf	400V.
C11	.05uf	400V.

PHONO AMPLIFIER & OSCILLATOR SCHEMATIC DIAGRAM MODEL CW-13

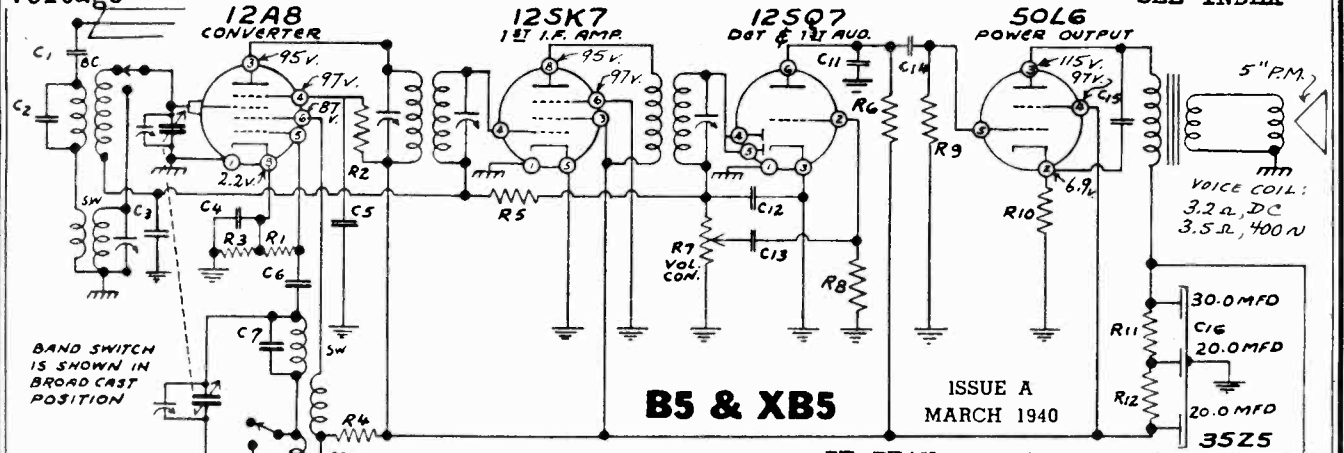
SET AT 1575 KC 8/39

MODELS B5, XB5  
MODELS F5, XF5

CONTINENTAL RADIO & TELEV. CORP.

Schematics, Alignment  
Voltage

FOR LAYOUT  
SEE INDEX



**B5 & XB5**

ISSUE A  
MARCH 1940

IF PEAK = 455 KC

BAND SWITCH IS SHOWN IN BROADCAST POSITION

Note -

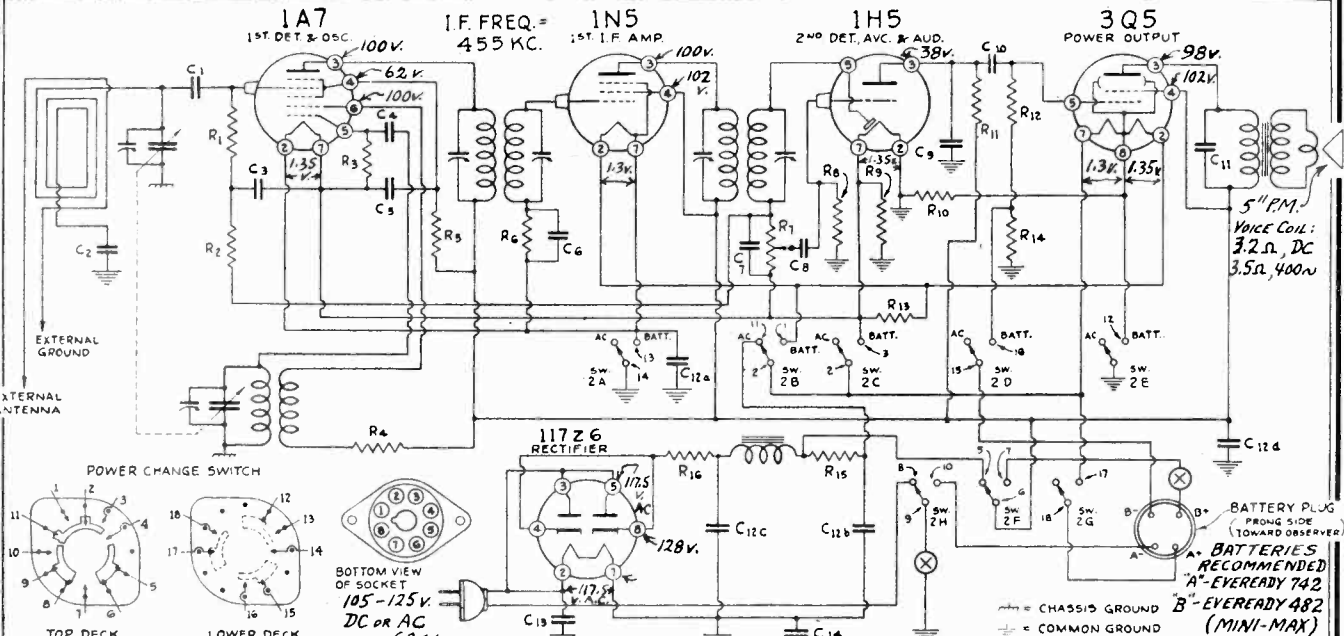
C17 & R13 USED ON XB5 MODEL ONLY. ON B5 MODEL ONLY ALL COMMON GROUNDS ARE CONNECTED TO CHASSIS GROUND



105-125  
AC-DC  
60A

No.	Ohms	Watts	No.	Ohms	Watts	No.	Capacity	Volts
R1	50,000	1/2	R12	500	1/2	C9	.003-5% Mica	600
R2	20,000	1/2	R13	150,000	1/2	C10	.005	400
R3	440	1/2				C11	.0005	Mica
R4	3,000	1/2				C12	.00025	Mica
R5	2,000,000	1/2				C13	.01	400
R6	250,000	1/2				C14	.002	400
R7	500,000	Vol. Cont.				C15	.01	400
R8	5,000,000	1/2				C16	30.0	150
R9	500,000	1/2				C16	20.0	150
R10	200	1/2				C16	20.0	150
R11	500	1/2				C17	.25	200

VOLTAGES: Line=117v. AC; Power=30W. Volume Cont'l=Max. Meter=1000 ohms/volt (150 v. scale). Measure with respect to common gnd  
ALIGNMENT PROCEDURE (See 7C-PH Automatic):  
Trim OSC. at 1730 KC (Broadcast)  
Pad OSC. at 600 KC (Broadcast)  
Trim ANT. at 1400 KC (Broadcast)  
Trim ANT at 15000 KC (Short Wave)



No.	Ohms	Watts	No.	Ohms	Watts	No.	Capacity	Volts
R1	1,000,000	1/2	R9	110	1/2	C1	.00025	Mica
R2	1,000,000	1/2	R10	750-10%	1/2	C2	.1	200
R3	200,000	1/2	R11	250,000	1/2	C3	.01	200
R4	500	1/2	R12	1,000,000	1/2	C4	.0005	Mica
R5	30,000	1/2	R13	400	1/2	C5	.05	200
R6	5,000,000	1/2	R14	400-10%	1/2	C6	.01	200
R7	1,000,000	V.C.	R15	2,100	1/2	C7	.00025	Mica
R8	5,000,000	1/2	R16	30	1/2	C8	.01	400
						C9	.00025	Mica

VOLTAGES: Line=117.5v. AC; Power=25 W. Vol. Cont'l=Max. Meter=1000 ohms/volt Measure with respect to common gnd.  
ALIGNMENT (use common gnd): IF=455KC  
Trim Osc. at 1550 KC, Ant. at 1400KC  
\*TRIM USING EXTERNAL GND.

In Model F5 switch points 4, 15, 16, 17 and 18 are not used. Switch points 4 is also not used on Model XF5. Power change switch 2A thru 2H and the pictorial view shown in the "AC-DC" position.

**F5 & XF5**  
ISSUE A  
FEB. 1940



CONTINENTAL RADIO & TELEV. CORP.

MODEL 5LS  
Schematic, Socket  
Alignment, Trimmers

**CONDENSERS**

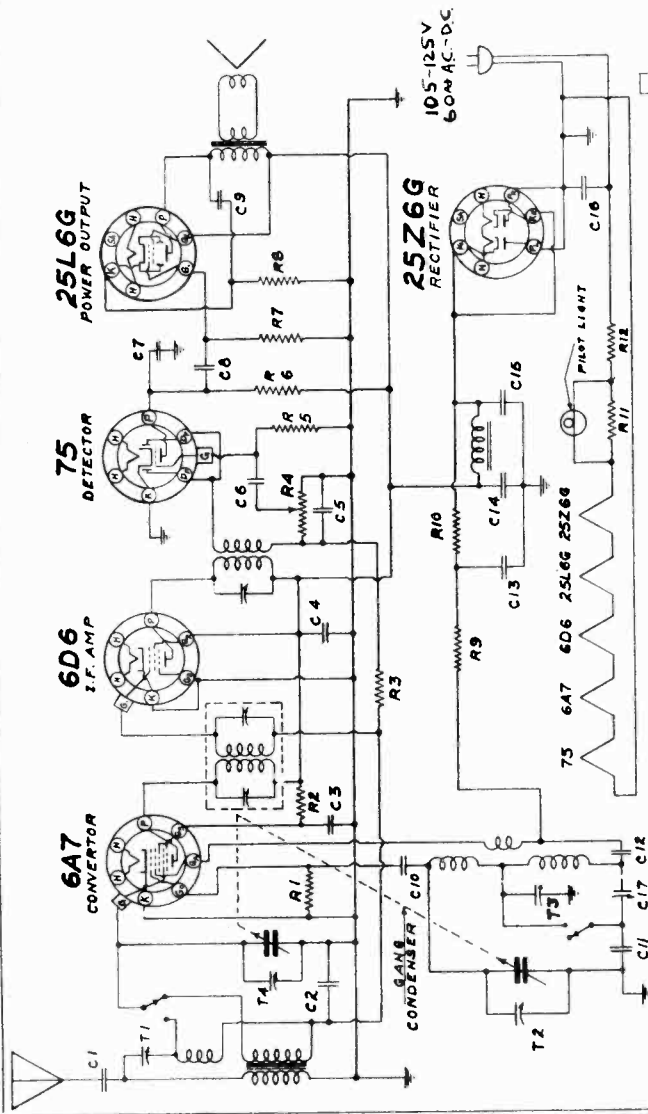
NO.	MEG.	VOLTS	NO.	MFD.	VOLTS
C1	0.015	MICA	C10	0.001	MICA
C2	0.5	200	C11	0.017 ± 5%	600
C3	0.5	200	C12	0.005	600
C4	0.5	200	C13	5.0	150
C5	0.0025	MICA	C14	25.0	150
C6	0.1	400	C15	25.0	400
C7	0.0035	MICA	C16	0.05	400
C8	0.1	400	C17	0.0069	600
C9	0.05	600			

**RESISTORS**

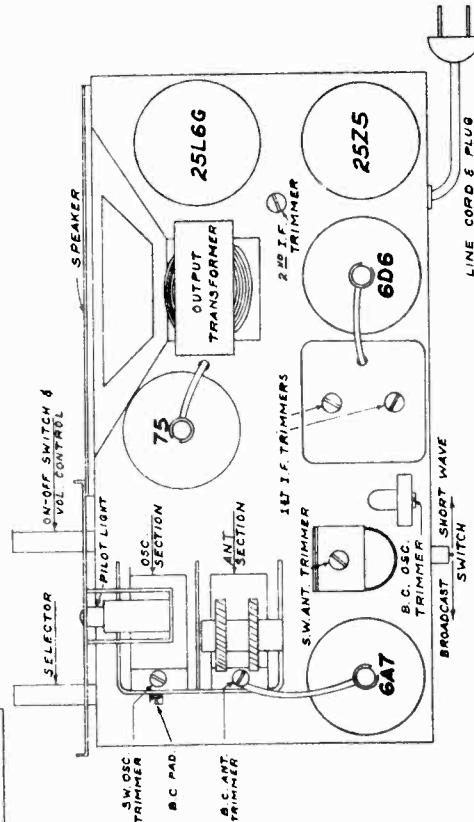
NO.	OHMS	WATTS	NO.	OHMS	WATTS
R1	50,000	1/2	R6	5,000,000	1/2
R2	30,000	1/2	R7	1,000,000	1/2
R3	1,000,000	1/2	R8	150	1/2
R4	1/2 MEG.	1/2	R9	150	1/2
R5	1/2 MEG. VOL. CONT.	1/2	R10	10,000	1/2
R6	5,000,000	1/2			
R7	1,000,000	1/2			
R8	150	1/2			
R9	150	1/2			
R10	10,000	1/2			

**TRIMMERS**

NO.	USE	RANGE
T1	OSC. ADJ.	1.0 TO 2.0
T2	SW. OSC.	
T3	B.C. OSC.	1.0 TO 1.0
T4	B.C. ANT.	



**SCHEMATIC DIAGRAM  
MODEL 5LS**



**BROADCAST BAND ALIGNMENT**

The broadcast band may now be aligned. Using a .0002 dummy antenna, set the generator to 1730 kilocycles. With the gang condenser at minimum capacity, adjust the broadcast oscillator trimmer to receive this signal. Then set the generator to 1400 kilocycles and adjust the broadcast antenna trimmer to peak. The generator is now set to 600 kilocycles and the broadcast padding condenser adjusted.

**I.F. ALIGNMENT**

Adjust the test oscillator to 456 KC and with the band switch in B.C. position connect the output to the grid of test oscillator to chassis ground through a .1 mfd. condenser. Align all three I.F. trimmers to peak or maximum reading on the output meter.

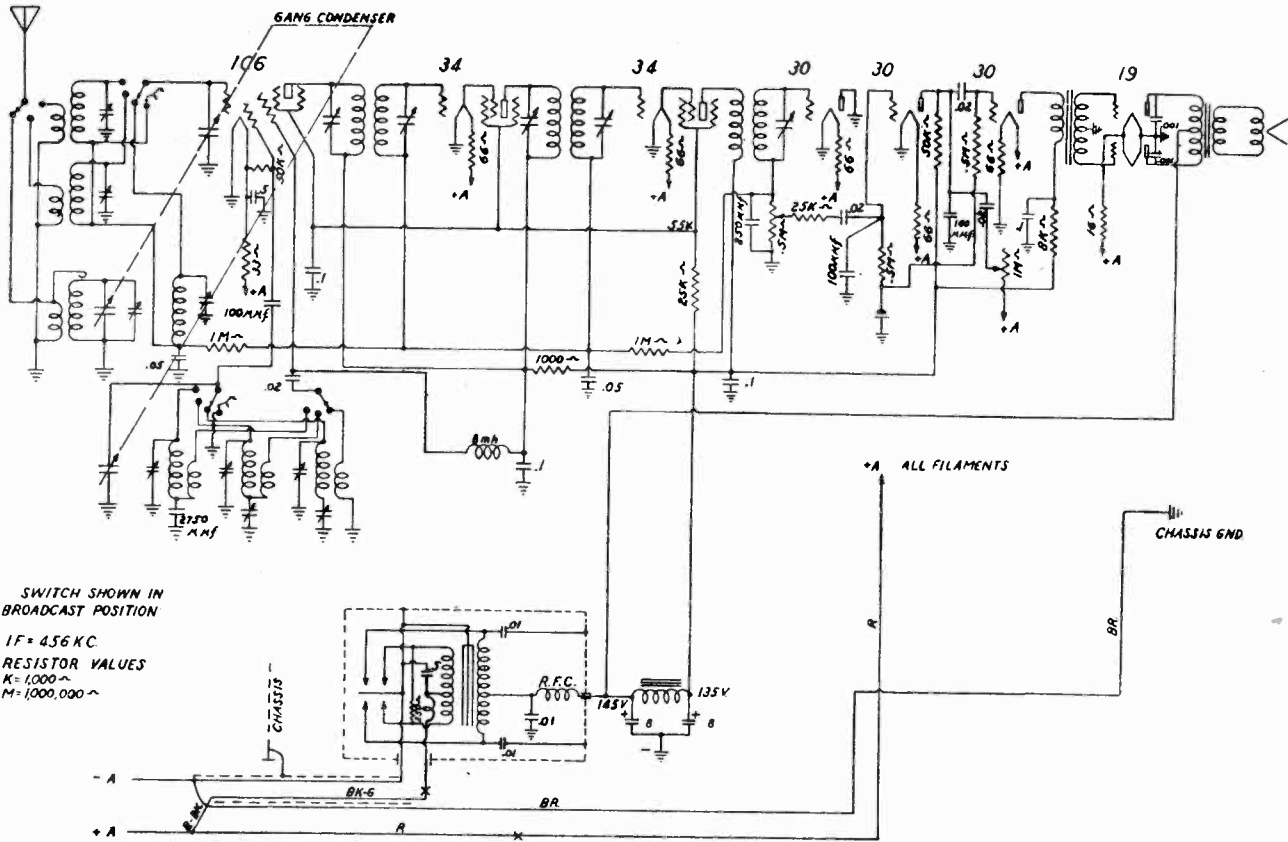
**SHORTWAVE ALIGNMENT**

Adjust the oscillator to 18,100 KC and connect the output to the antenna lead, through a 400 ohm resistance. Set the gang condenser to minimum capacity and adjust the gang condenser trimmer (short wave oscillator) to receive this signal. After this has been carefully done, the next step is to set the generator to 16,000 K.C. and after tuning in the signal adjust the shortwave antenna trimmer to peak.

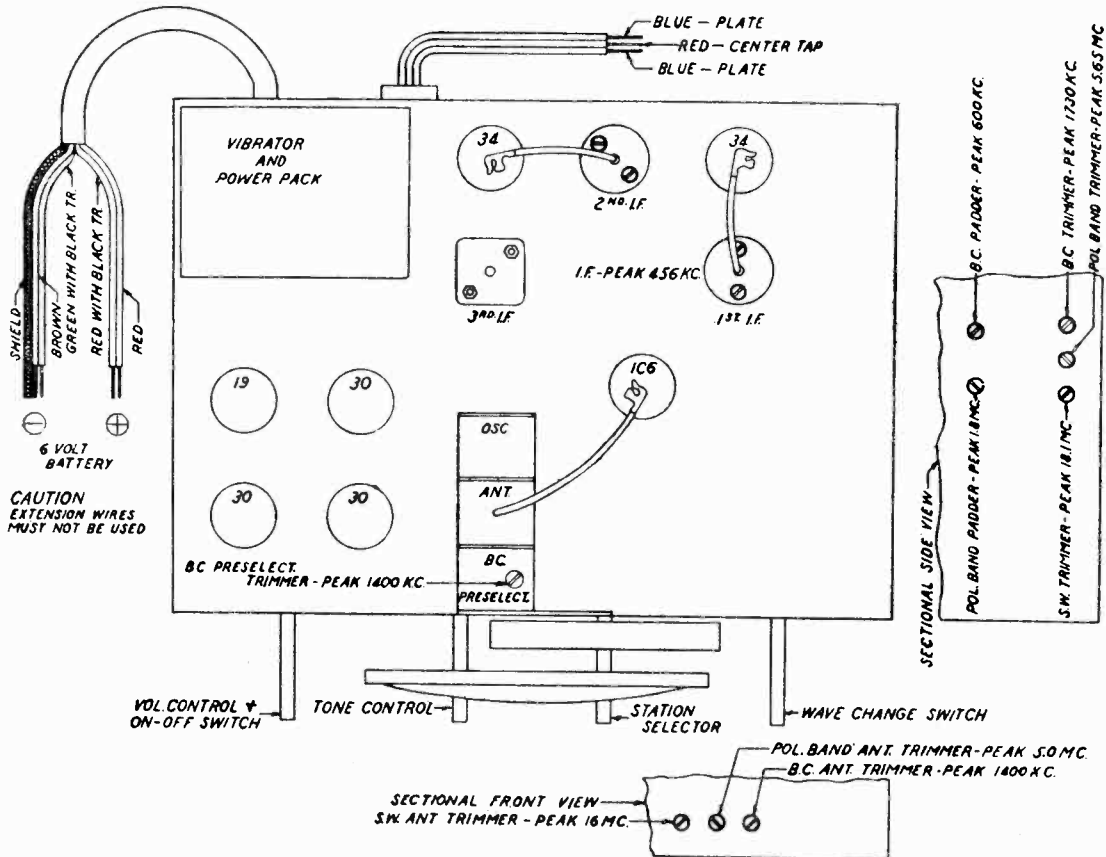
The receiver should now be tuned to the 6 megacycle signal from the generator and the sensitivity checked. No adjustment is required at this point.

MODEL M5  
Schematic, Socket  
Trimmers, Alignment

CONTINENTAL RADIO & TELEV. CORP.



CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOLUME VIII.

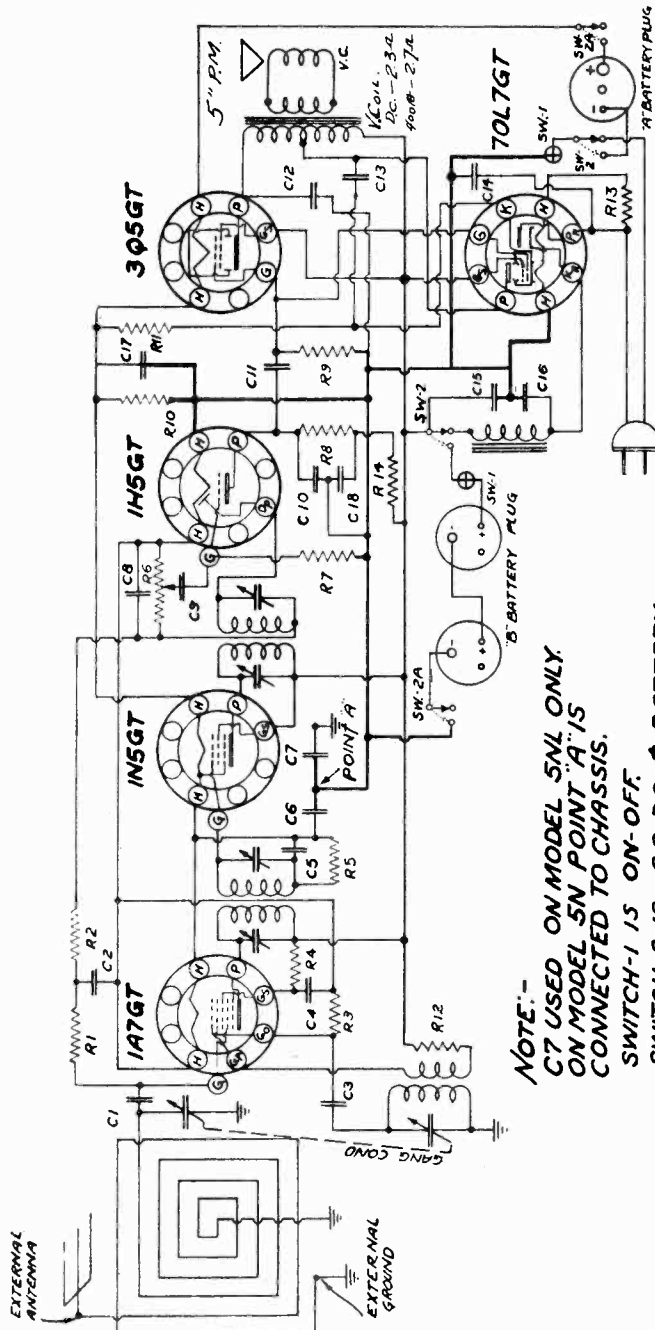


CONTINENTAL RADIO & TELEV. CORP. MODELS 5N, 5NL

Schematic, Socket Alignment, Trimmers

- CONDENSERS**
- C1 - .002 mfd. 600 volt
  - C2 - .05 mfd. 400 volt
  - C3 - .00005 mfd. mica
  - C4 - .05 mfd. 400 volt
  - C5 - .002 mfd. 600 volt
  - C6 & C17 - 40-40 mfd. 25 volt elect.
  - C7 - .25 mfd. 200 volt (used in 5NL only)
  - C8 - .00025 mfd. mica
  - C9 - .01 mfd. 400 volt
  - C10 - .00025 mica
  - C11 - .01 mfd. 400 volt
  - C12 - .002 mfd. 600 volt
  - C13 - .01 mfd. 400 volt
  - C14 - .05 mfd. 400 volt
  - C15 - 20-30 mfd. 150 volt elect.
  - C18 - .1 mfd. 200 volt

- RESISTORS**
- R1 - 2,000,000 ohm 1/2 watt
  - R2 - 2,000,000 ohm 1/2 watt
  - R3 - 200,000 ohm 1/2 watt
  - R4 - 25,000 ohm 1/2 watt
  - R5 - 5,000,000 ohm 1/2 watt
  - R6 - 1,000,000 ohm Volume Control & Switch
  - R7 - 5,000,000 ohm 1/2 watt
  - R8 - 250,000 ohm 1/2 watt
  - R9 - 500,000 ohm 1/2 watt
  - R10 - 1,000 ohm 1/2 watt 10%
  - R11 - 30 ohm 1/2 watt 10%
  - R12 - 750 ohm 1/2 watt
  - R13 - 335 ohm 10 watt
  - R14 - 100,000 ohm 1/2 watt



I. F. 455 KC

**NOTE:-**  
 C7 USED ON MODEL 5NL ONLY.  
 ON MODEL 5N POINT "A" IS  
 CONNECTED TO CHASSIS.  
 SWITCH-1 IS ON-OFF.  
 SWITCH-2 IS A.C.-D.C. & BATTERY.  
 SWITCH-2 SHOWN FOR A.C.-D.C.  
 I.F. 455 K.C.  
 ON MODEL 5N SWITCH, SWITCH 2A NOT USED.

**SCHEMATIC DIAGRAM MODEL 5N & 5NL**

**TUBE FUNCTIONS**

- 1A7GT - MIXER-OSCILLATOR
- 1N5GT - I.F. AMPLIFIER
- 1H5GT - 2ND DET-AVC-1ST A.F.
- 3Q5GT - OUTPUT
- 70L7GT - RECTIFIER

FOR CONVENTIONAL ALIGNMENT  
 SEE SPECIAL SECTION VOL. VIII.  
 TRIM OSC- 1550 KC, TRIM ANT- 1400 KC  
 PAD- 600 KC

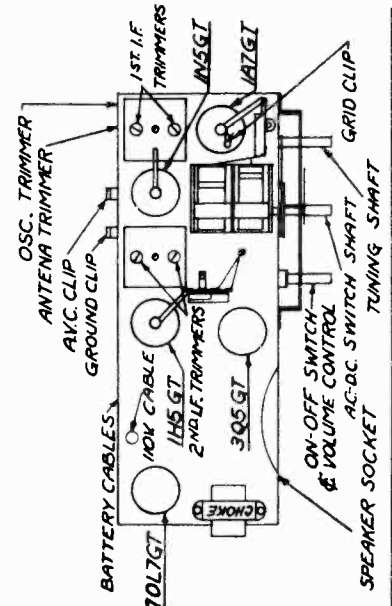
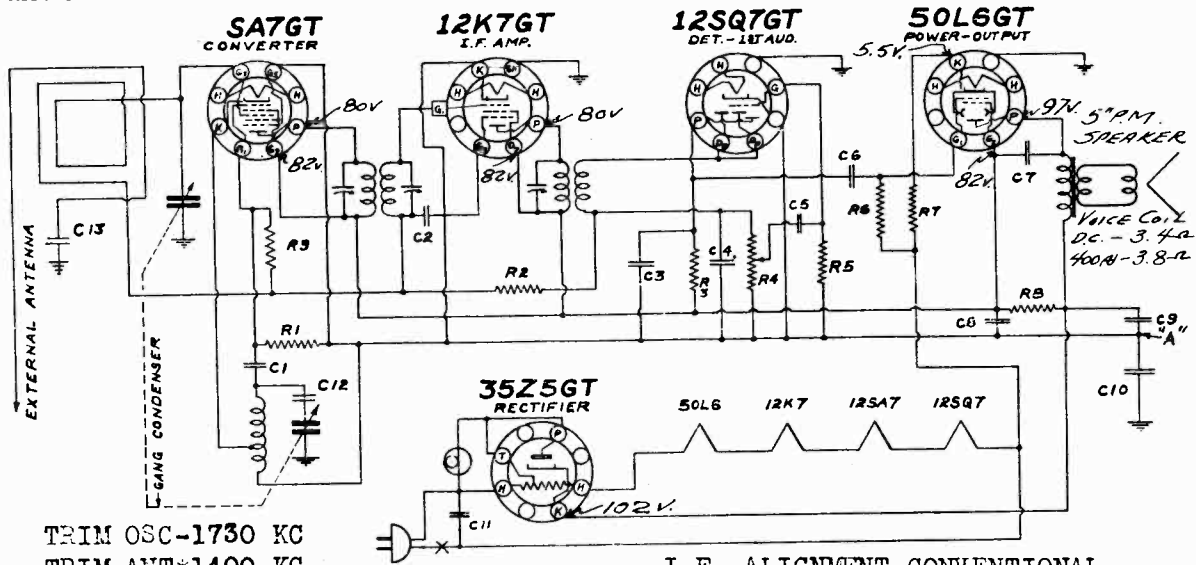


Fig. 1—Top View

MODELS 5R, 5RL  
MODELS 5S, 5SL  
Schematics, Voltage  
Alignment  
CONTINENTAL RADIO & TELEV. CORP.



TRIM OSC-1730 KC  
TRIM ANT-1400 KC

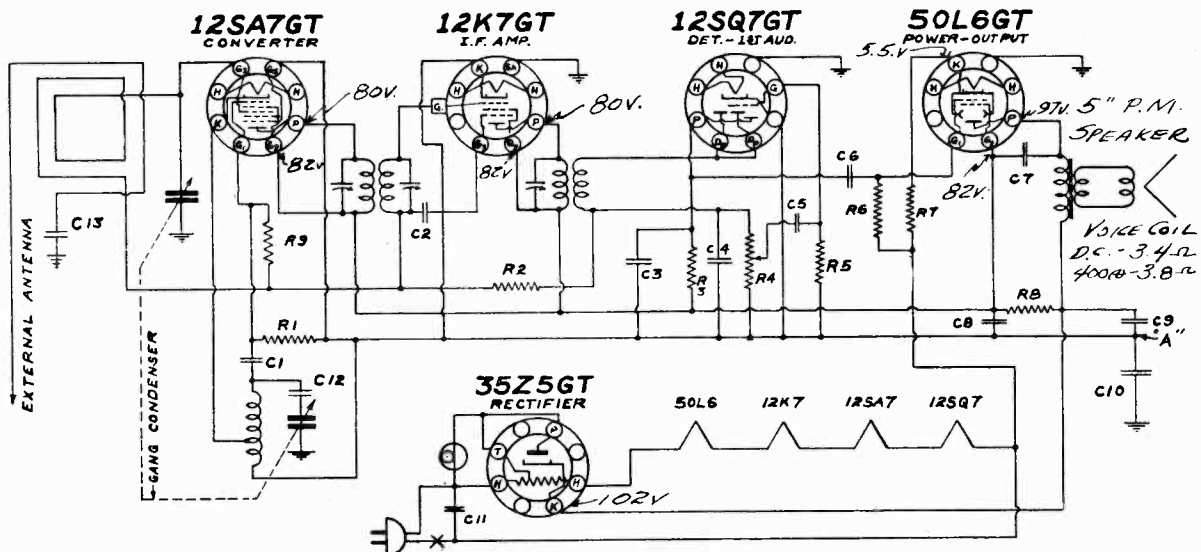
I.F. ALIGNMENT CONVENTIONAL

RESISTORS					
N <sub>1</sub>	OHMS	WATTS	N <sub>2</sub>	OHMS	WATTS
R1	20,000	1/2	R6	500,000	1/2
R2	2 MEG.	1/2	R7	150 ± 10%	1/2
R3	250,000	1/2	R8	1,000	1
R4	500,000	V.C.	R9	15 MEG.	1/2
R5	5 MEG.	1/2			

CAPACITORS					
N <sub>3</sub>	MFD.	VOLTS	N <sub>4</sub>	MFD.	VOLTS
C1	.0001	MICA	C7	.01	400
C2	.02	400	C8	20.0	150
C3	.0005	MICA	C9	30.0	150
C4	.00025	MICA	C10	.25	200
C5	.01	400	C11	.05	400
C6	.002	600	C12	.02	400
			C13	.001	600

I.F. 455KC  
MODELS 5R, 5RL

C10 and C14 used in model 5RL only. On model 5R point "A" is connected to ground.  
Voltages:-From point indicated to "A", Line 115 V. A.C. Power consumption 30 watts, Meter 1000 ohms per volt. 150 volt scale.  
FOR SOCKET LAYOUT SEE INDEX



ALIGNMENT SAME AS MODEL 5R ABOVE

RESISTORS					
N <sub>1</sub>	OHMS	WATTS	N <sub>2</sub>	OHMS	WATTS
R1	20,000	1/2	R6	500,000	1/2
R2	2 MEG.	1/2	R7	150 ± 10%	1/2
R3	250,000	1/2	R8	1,000	1
R4	500,000	V.C.	R9	15 MEG.	1/2
R5	5 MEG.	1/2			

CAPACITORS					
N <sub>3</sub>	MFD.	VOLTS	N <sub>4</sub>	MFD.	VOLTS
C1	.0001	MICA	C7	.01	400
C2	.02	400	C8	20.0	150
C3	.0005	MICA	C9	30.0	150
C4	.00025	MICA	C10	.25	200
C5	.01	400	C11	.05	400
C6	.002	600	C12	.02	400
			C13	.001	600

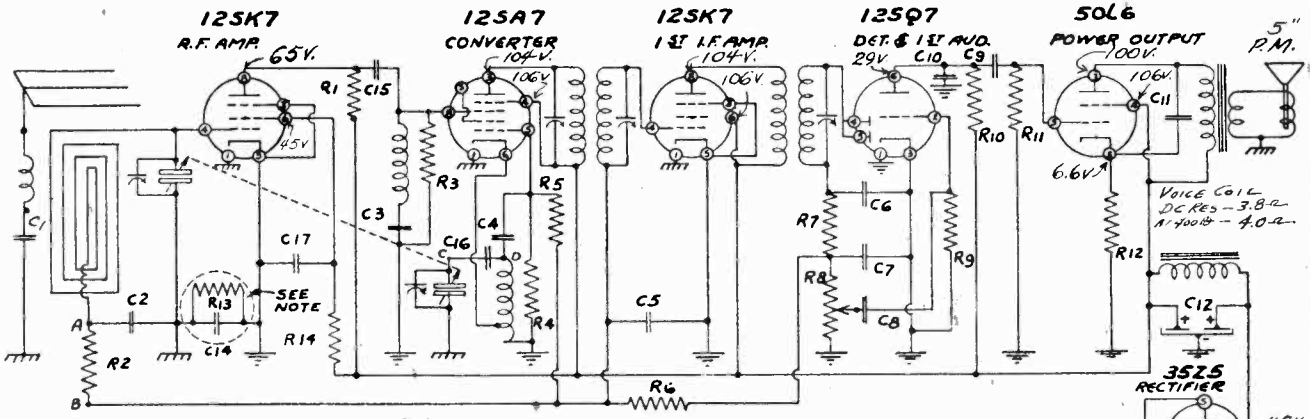
I.F. 455KC  
MODELS 5S, 5SL

C10 and C12 used in model 5SL only. On model 5S point "A" is connected to chassis.  
Voltages:- (See note Model 5R above).

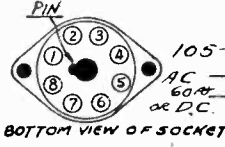
Schematics, Voltage Alignment

CONTINENTAL RADIO & TELEV. CORP.

MODELS A6, XA6  
MODELS G6, XG6



COMMON GROUND  
CHASSIS GROUND



No.	Ohms	Watts
R1	8,000	
R2	250,000	
R3	250,000	
R4	20,000	
R5	15,000,000	
R6	2,000,000	
R7	50,000	
R8	500,000	V.C.
R9	5,000,000	
R10	250,000	
R11	500,000	
R12	200—10%	
R13	150,000	
R14	40,000	

No.	Capacity	Voltage
C1	.001	600
C2	.05	200
C3	.000060—5%	Mica
C4	.00005	Mica
C5	.05	200
C6	.0001	Mica
C7	.00025	Mica
C8	.005	400
C9	.005	400
C10	.00025	Mica
C11	.01	400

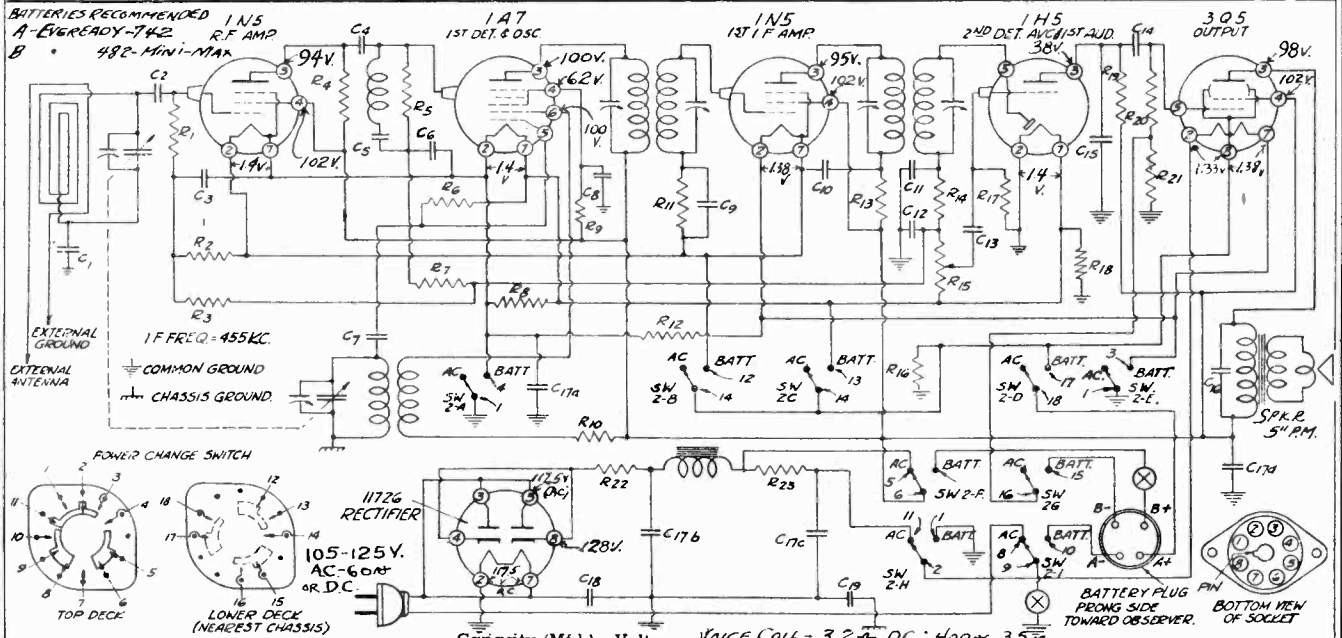
**A6 & XA6**

ISSUE A  
JAN. 1940

VOLTAGES: TAKEN ON POINT INDICATED TO GROUND; LINE-115V. A.C.—VOL. CONTROL AT MAX.—METER-1000-Ω PER VOLT; PWR. CONSUMPTION 35 W.

**ALIGNMENT FREQ.:**  
I.F. — 455 KC  
B.C. — 1730 KC—OSCILLATOR  
1400 KC—ANTENNA  
(A6—CHASSIS END—XA6 COMMON GND USE I.M.F.D. COND.)

In model A6 all common grounds become chassis grounds; C2, C14, C16, R2 and R13 are omitted and point A is connected to point B and point C is connected to point D.



No.	Ohms	Watts
R1	1,000,000	
R2	5,000,000	1/2
R3	5,000,000	1/2
R4	10,000	1/2
R5	250,000	1/2
R6	200,000	1/2
R7	1,000,000	1/2
R8	300	1/2
R9	30,000	1/2
R10	500	1/2
R11	5,000,000	1/2
R12	700	1/2

No.	Capacity (Mfd.)	Volts
C1	.1	200
C2	.00025	Mica
C3	.01	200
C4	.00005	Mica
C5	.00006	Mica
C6	.01	200
C7	.00005	Mica
C8	.01	400
C9	.01	200
C10	.05	200
C11	.00005	Mica

No.	Capacity	Volts
C12	.00005	Mica
C13	.01	400
C14	.01	400
C15	.00025	Mica
C16	.002	400
C17a	40.	25
C17b	30.	150
C17c	40.	25
C17d	30.	150
C18	.05	400
C19	.25	200

VOLTAGES: LINE AT 117.5V. (A.C.), VOL. CONTR.—MAX., METER 1000-Ω PER VOLT. P.C.—25 WATTS; FROM END TO POINT IND.  
**ALIGNMENT FREQ.:** (USE COMMON GROUND)  
I.F. — 455 KC  
B.C. — 1550 KC—OSCILLATOR  
1400 KC—ANTENNA

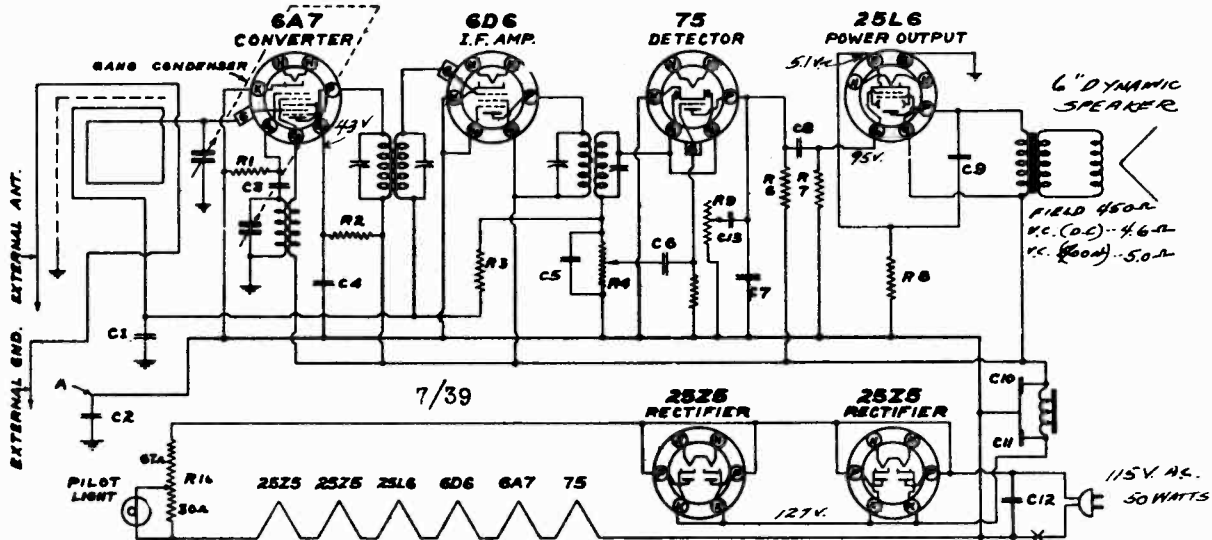
**G6 & XG6**

ISSUE A  
FEB. 1940

In Model G6 switch points 15, 16, 17 and 18 are not used. Power change switch 2A thru 2I and the pictorial view shown in the "AC-DC" position.

MODELS 6J,6JL  
MODELS 6M,6ML  
Schematics,Alignment

CONTINENTAL RADIO & TELEV. CORP.



**RESISTORS**

N <sup>o</sup>	OHMS	WATTS
R1	50,000	1/2
R2	30,000	1/2
R3	1,000,000	1/2
R4	500,000	VOL. CONT.
R5	5,000,000	1/2
R6	250,000	1/2
R7	500,000	1/2
R8	150 ± 10%	1/2
R9	500,000	TUNE CONT.
R10	675	30

**CONDENSERS**

N <sup>o</sup>	MEGA	VOLTS
C1	.01	200
C2	.25	200
C3	.00005	MICA
C4	.05	200
C5	.00025	MICA
C6	.01	400
C7	.00025	MICA
C8	.01	400
C9	.02	400

**RESISTORS**

N <sup>o</sup>	MEGA	VOLTS
C10	20	150
C11	20	150
C12	0.05	400
C13	0.005	600

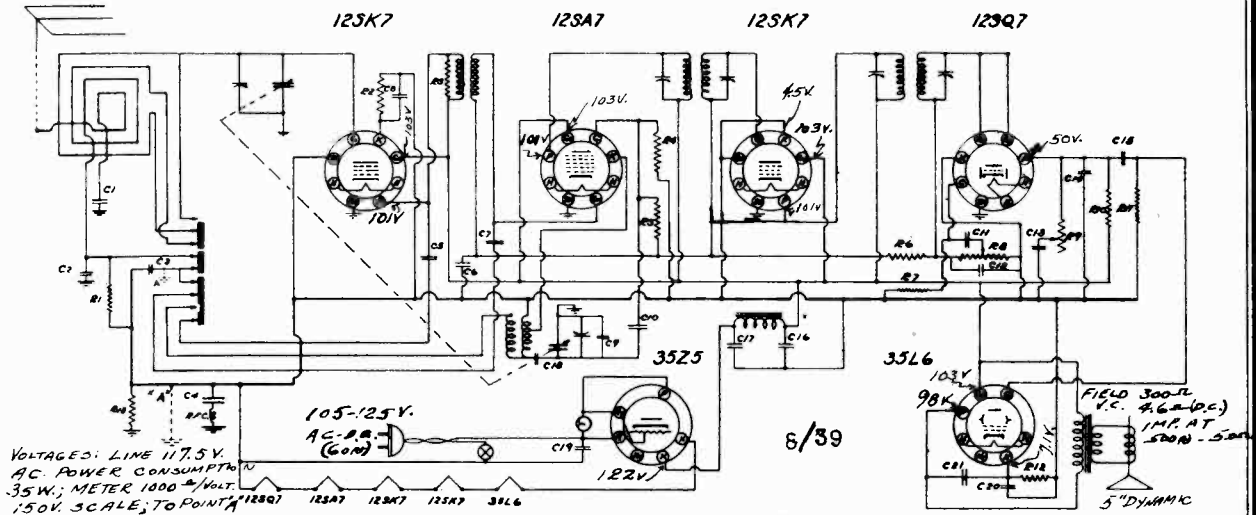
**NOTE:** - C2 USED ON MODEL 6JL ONLY ON MODEL 6J POINT "A" IS CONNECTED TO CHASSIS.

I. F. 455 K.C.  
↑ INDICATES CHASSIS GROUND  
VOLTAGES: WITH METER, 1000-Ω/VOLT TO GROUND; ANT. SHARDED TO GROUND.

**SCHEMATIC DIAGRAM  
MODEL 6JL  
MODEL 6J**

I. F. ALIGNMENT CONVENTIONAL (SEE VOL. VIII).  
BROADCAST BAND  
TRIM OSC 1630 KC  
TRIM ANT 1400 KC

(See Index for tube layout)



VOLTAGES: LINE 117.5V.  
AC POWER CONSUMPTION  
35W.; METER 1000-Ω/VOLT  
150V. SCALE; TO POINT "A"

**RESISTORS**

N <sup>o</sup>	OHMS	WATTS
R1	150K±10%	1/2
R2	600±10%	1/2
R3	5K±10%	1/2
R4	15Meg	1/2
R5	25K	1/2
R6	2Meg	1/2
R7	57K	1/2

**CONDENSERS**

N <sup>o</sup>	OHMS	WATTS
R8	300KVC	1/2
R9	500KTC	1/2
R10	150K	1/2
R11	250K	1/2
R12	200±10%	1/2
R13	150K	1/2

**CONDENSERS**

N <sup>o</sup>	MFD.	VOLTS
C1	.001	600
C2	.00127±5%	Mica
C3	.05	400
C4	.25	200
C5	.00006±5%	Mica
C6	.05	200
C7	.00006±5%	Mica

**CONDENSERS**

N <sup>o</sup>	MFD.	VOLTS
C8	.05	200
C9	.000010	Mica
C10	.00005	Mica
C11	.01	400
C12	.00025	Mica
C13	.005	600
C14	.0005	Mica
C15	.01	400
C16	20	150
C17	20	150
C18	.02	400
C19	.05	400
C20	20	25
C21	.02	400

I.F. 455K.C.

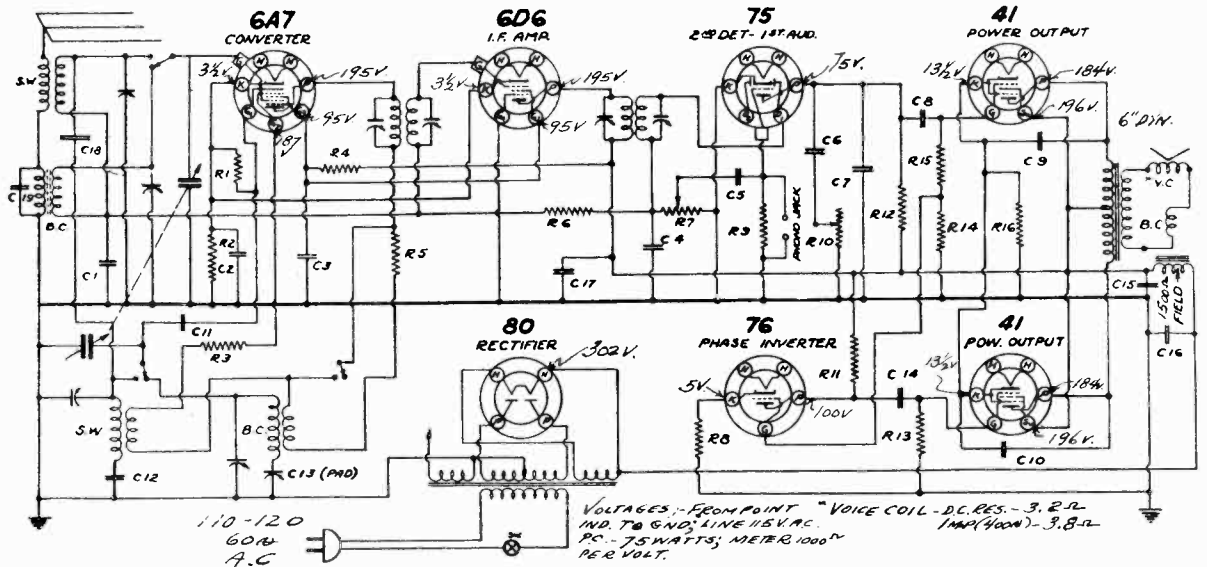
In model 6M only C3, C4, C18, R13 and the R.F. choke (RFC) are not used and points "A" are connected to chassis.

I. F. ALIGNMENT CONVENTIONAL (SEE VOL. VIII).  
BROADCAST BAND  
TRIM OSC 1630 KC  
TRIM ANT 1400 KC

MODELS 6M, 6ML  
(See Index for tube layout)

CONTINENTAL RADIO & TELEV. CORP.

MODEL 7C  
MODEL 7H  
Schematics, Alignment



CAPACITORS						RESISTORS					
No.	MFD'S	VOLTS	No.	MFD'S	VOLTS	No.	OHMS	WATTS	No.	OHMS	WATTS
C1	.05	200	C12	.0001	MICA	R1	50,000	1/2	R11	50,000	1/2
C2	.25	200	C13	.0045%	MICA	R2	200	1/2	R12	250,000	1/2
C3	.05	400	C14	300-600	MFD	R3	250	1/2	R13	500,000	1/2
C4	.00025	MICA	C15	.01	400	R4	20,000	1/2	R14	100,000	1/2
C5	.01	400	C16	10.0	350	R5	1,000	1/2	R15	400,000	1/2
C6	.005	600	C17	10.0	350	R6	2 MEG	1/2	R16	300	1/2
C7	.00025	MICA	C18	.05	400	R7	500,000	1/2			
C8	.01	400	C19	.0001	MICA	R8	3,000	1/2			
C9	.005	600				R9	5 MEG	1/2			
C10	.008	600				R10	400,000	1/2			

I.F. 455 KC

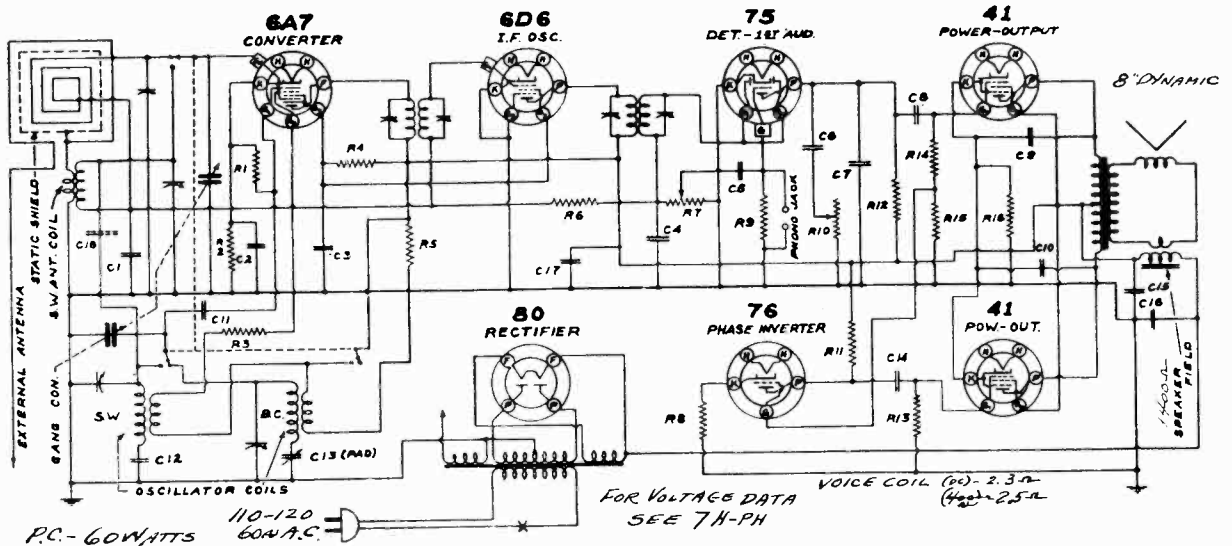
BAND SWITCHES SHOWN IN BROADCAST POSITION  
BOTTOM VIEW OF TUBE SOCKETS SHOWN  
GANG CONDENSER CAPACITY 443 μMFD.

TRIM OSC- 1730 KC (BB)  
TRIM OSC- 18100 KC (SW)  
PAD OSC- 600 KC (BB)  
TRIM ANT- 1400 KC (BB)  
TRIM ANT- 16000 (SW)

MODEL 7C

FOR ALIGNMENT PROCEDURE  
SEE MODEL 7C-PH AUTOMATIC

FOR SOCKET LAYOUT SEE INDEX



CAPACITORS						RESISTORS					
No.	MFD'S	VOLTS	No.	MFD'S	VOLTS	No.	OHMS	WATTS	No.	OHMS	WATTS
C1	.05	200	C10	.008	600	R1	50,000	1/2	R10	50,000	1/2
C2	.25	200	C11	.0081	MICA	R2	300	1/2	R11	50,000	1/2
C3	.05	400	C12	.0045%	MICA	R3	250	1/2	R12	250,000	1/2
C4	.00025	MICA	C13	300-600	μMFD	R4	20,000	1/2	R13	500,000	1/2
C5	.01	400	C14	.01	400	R5	1,000	1/2	R14	400,000	1/2
C6	.005	600	C15	10.0	350	R6	2 MEG	1/2	R15	100,000	1/2
C7	.00025	MICA	C16	10.0	350	R7	500,000	1/2	R16	300	1/2
C8	.01	400	C17	.05	400	R8	3,000	1/2			
C9	.005	600	C18	GIMMICK		R9	5 MEG	1/2			

I.F. 455 KC

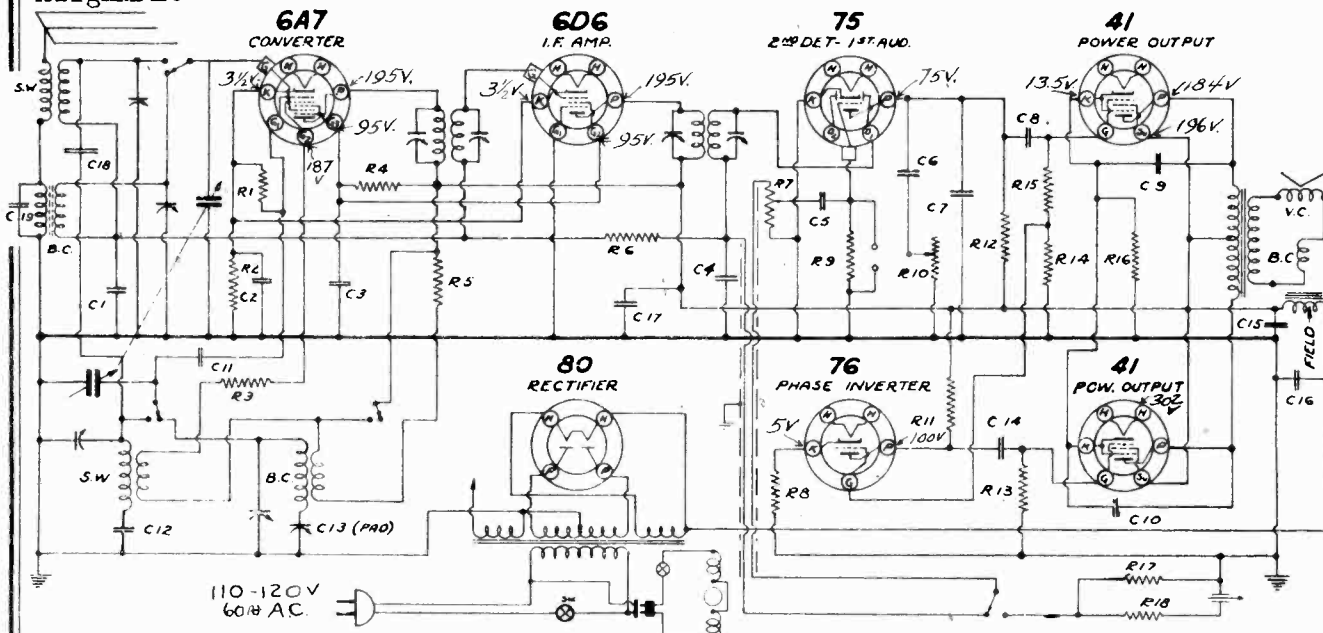
SWITCHES SHOWN IN BROADCAST POSITION  
BOTTOM VIEW OF SOCKETS SHOWN.  
GANG CONDENSER CAPACITY 443 μMFD.

TRIM OSC-1550 KC (BB)  
OTHER ALIGNMENT DATA SAME AS MODEL 7C

MODEL 7H

FOR SOCKET LAYOUT SEE INDEX

MODEL 7C-PH Automatic  
Schematic, Voltage Alignment  
CONTINENTAL RADIO & TELEV. CORP.



CAPACITORS				RESISTORS							
No.	MFD.	VOLTS	No.	MFD.	VOLTS	No.	OHMS	WATTS	No.	OHMS	WATTS
C1	.05	200	C11	.0001	MICA	R1	50,000	1/2	R11	50,000	1/2
C2	.25	200	C12	.0045%	MICA	R2	200	1/2	R12	250,000	1/2
C3	.05	400	C13	300-600mfd.	PADDER	R3	250	1/2	R13	500,000	1/2
C4	.00025	MICA	C14	.01	400	R4	20,000	1/2	R14	100,000	1/2
C5	.01	400	C15	10.0	350	R5	1,000	1/2	R15	400,000	1/2
C6	.005	600	C16	10.0	350	R6	2 MEG.	1/2	R16	300	1/2
C7	.00025	MICA	C17	.05	400	R7	500,000	VOL. CON.	R17	250,000	1/2
C8	.01	400	C18	GIMMICK		R8	3,000	1/2	R18	500,000	1/2
C9	.005	600	C19	.0001	MICA	R9	5 MEG.	1/2			
C10	.005	600				R10	500,000	1/2			

I.F. 455 K.C.  
BAND SWITCHES SHOWN IN BROADCAST POSITION  
BOTTOM VIEW OF TUBE SOCKETS SHOWN  
GANG CONDENSER CAPACITY 443mfd.

**SCHEMATIC DIAGRAM MODEL 7C-PH**

**I.F. ALIGNMENT**

Adjust the signal generator to 455 KC and connect the output to the grid of the first detector tube (6A7) 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 1730 KC and connect the output to the antenna lead (blue) through a .0002 mfd. mica condenser. Set the gang condenser to minimum capacity and adjust the oscillator trimmer to receive this signal. The oscillator and antenna trimmers may be reached by removing the dial escutcheon. (See Fig. 3 for trimmer locations.) The next step is to set the signal generator to 1400 KC and after tuning in the signal adjust the antenna trimmer to peak. Next, re-set the dial pointer on the receiver and the signal generator to 600 KC. Slowly increase or decrease the oscillator 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.

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. P3390) 12" Dynamic**

- Field resistance ..... 1500 ohms
- D.C. voice coil resistance..... 1.9 ohms
- Voice coil impedance at 400 cycles.... 2.2 ohms

Voltages—Line 115 volts A.C. Power consumption 90 watts. Volume control maximum. Meter 1000 ohms per volt. (VOLTAGES ARE FROM POINT INDICATED TO GROUND).

FOR TUNER SEE INDEX

**SHORT WAVE BAND ALIGNMENT**

The short wave band is adjusted by setting the signal generator to 18100 KC and connecting the output to the antenna lead through a 400 ohm resistor. Set the gang at minimum and 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 mica padding condenser, should be tested.

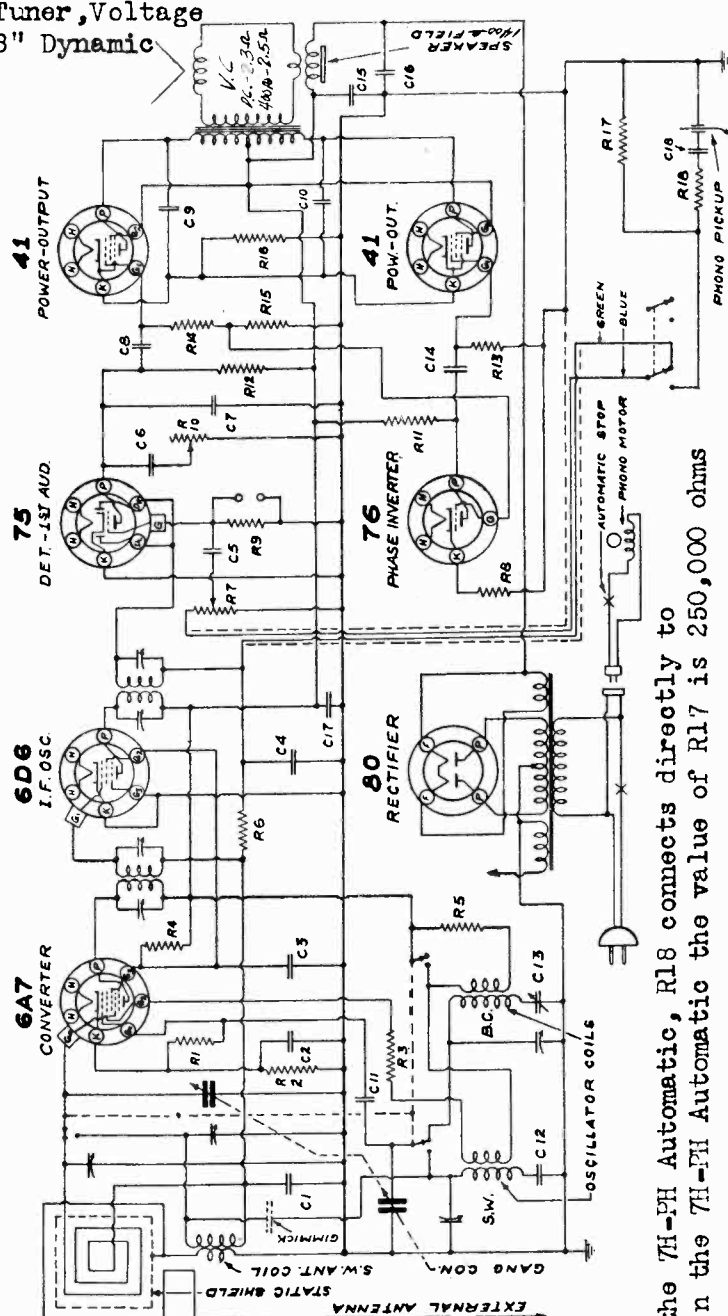


MODEL 7C-PH  
Tuner Data  
MODEL 7H  
Tuner, Voltage  
8" Dynamic

CONTINENTAL RADIO & TELEV. CORP. 382-7H-PH

MODELS 7H-PH, 7H-PH Automatic,

Schematic, Voltage, Tuner  
Alignment



FOR 12" DYN. 5PKR. FIELD RES.  
15 1400-2 K.C. PC-3.5-2, 400-40.

IF PEAK 455 KC

NOTE: C18 is not used on the 7H-PH Automatic, R18 connects directly to the Phono Pickup. In the 7H-PH Automatic the value of R17 is 250,000 ohms 1/2 watt.

VOLTAGE DATA

<b>6A7 tube</b>	Plate (P) to ground	190 volts
	Screen grid (G3) to ground	94 volts
	Anode grid (G2) to ground	183 volts
	Cathode (K) to ground	3 volts
<b>6D6 tube</b>	Plate (P) to ground	190 volts
	Screen grid (G2) to ground	94 volts
<b>75 tube</b>	Plate (P) to ground	85 volts
<b>76 tube</b>	Plate (P) to ground	103 volts
	Cathode (K) to ground	5 volts
<b>41 tube</b>	Plate (P) to ground	181 volts
	Screen grid (G2) to ground	190 volts
<b>80 tube</b>	Cathode (K) to ground	12 volts
	Filament (F) to ground	260 volts

PROCEDURE FOR SETTING UP PUSH BUTTONS

Loosen one of the push buttons by turning the push button knob counter clockwise a turn or less and push it in; while holding the button in, tune in a desired station by means of the station selector knob. Turn the selector very slowly back and forth until the signal is clearest. Now while holding the push button in, tighten it by turning clockwise. Release the push button and turn the station selector to one end of the dial; push the tuning knob to the right and then check the button by pushing it in 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 loosen another push button and repeat the above procedure, doing this for the remaining buttons.

VOLTAGES:- TAKEN AT 115 VAC VOL. CONT. AT MAX. P.C. 60 WATTS; 4.75 WATTS PH-MODELS 382-7H-PH)

**CAPACITORS**

NO.	MFDS.	VOLTS	NO.	MFDS.	VOLTS
C1	.05	200	C10	.005	400
C2	.05	200	C11	.001	400
C3	.05	200	C12	.001	400
C4	.0025	400	C13	300-600	MICA
C5	.005	400	C14	.01	350
C6	.005	400	C15	10.0	400
C7	.0025	400	C16	10.0	350
C8	.01	400	C17	.05	350
C9	.005	600	C18	.0005	MICA

**RESISTORS**

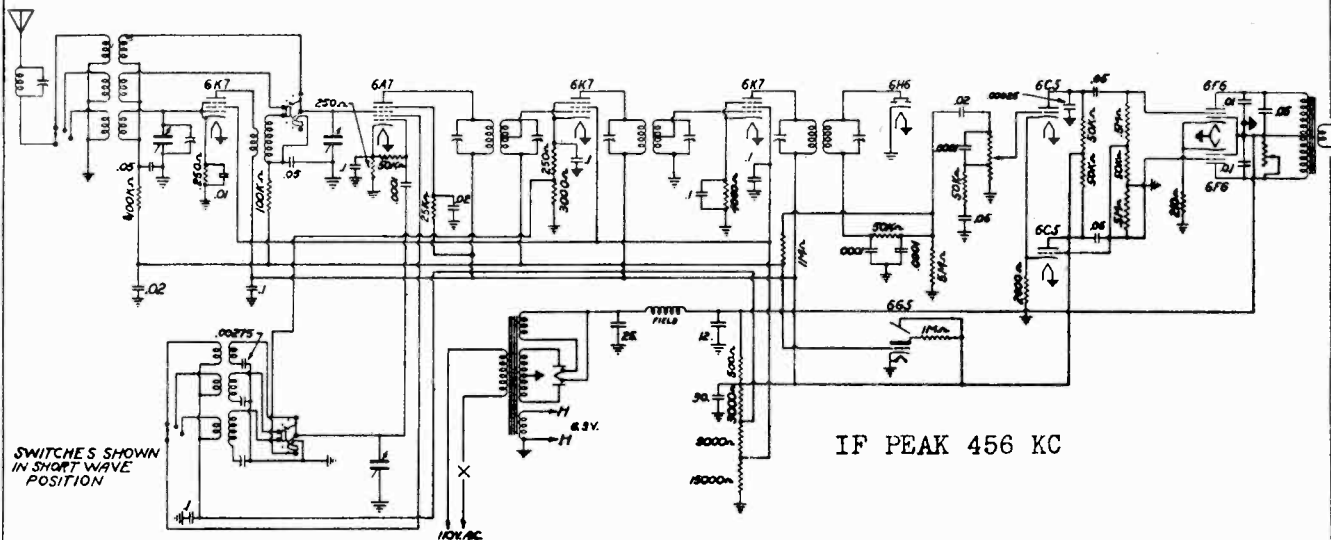
NO.	OHMS	WATTS	NO.	OHMS	WATTS
R1	50,000	1/2	R10	500,000	TONE CON.
R2	300	1/2	R11	50,000	1/2
R3	250	1/2	R12	250,000	1/2
R4	80,000	1/2	R13	500,000	1/2
R5	1,000	1/2	R14	400,000	1/2
R6	2,000	1/2	R15	100,300	1/2
R7	5,000	1/2	R16	100,000	1/2
R8	30,000	1/2	R17	100,000	1/2
R9	5 MEG.	1/2	R18	500,000	1/2

I.C. - 455 KC SWITCHES SHOWN IN BROADCAST POSITION BOTTOM VIEW OF SOCKETS SHOWN

MODEL AM7  
Schematic, Socket  
Trimmers, Alignment

CONTINENTAL RADIO & TELEV. CORP.

MODEL AM8  
Socket, Trimmers

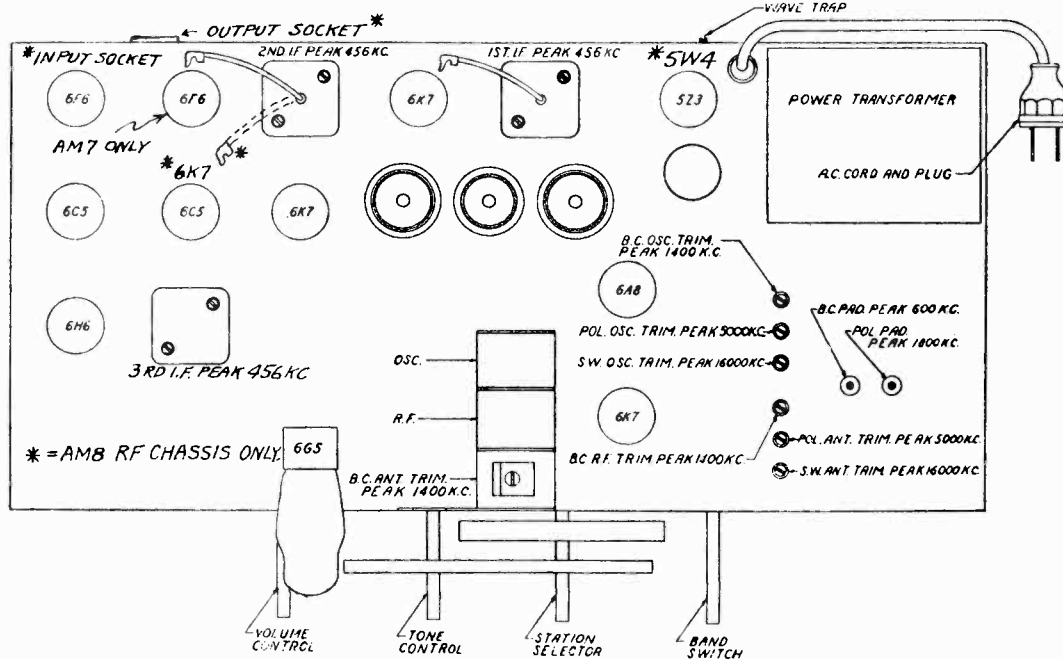


CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOLUME VIII.

**WAVE TRAP ADJUSTMENT**

At the rear of the chassis near the Antenna and Ground posts is an adjustment screw connected to a trap circuit for elimination of code interference when operating on the broadcast band. If code interfer-

ence is encountered adjustment of this screw will filter it out. It is to be used only if such interference is experienced in broadcast reception. It's use prevents code transmitters operating on a frequency around 456 K. C. from being received by the I. F. amplifier which is tuned to 456 K. C.



**SERVICE DATA FOR ALL BANDS**

If it is suspected that the oscillator has stopped but is doubtful due to the presence of the usual amount of noise level, it is suggested that the oscillator plate voltage be checked. To ascertain whether the tube is oscillating, ground the oscillator grid of the 6A8 (short stator and rotor plates of oscillator section on the grid will cause an appreciable drop in oscillator voltage. Grounding or shorting the stator and grid

components should be accomplished by grounding the stator mounting nut to the frame of the condenser with a screw-driver or any metallic conductor. Do not wedge a screw-driver between the plates for this is liable to permanently warp the plates and thus prevent the oscillator section of the gang condenser from tracking

## CONTINENTAL RADIO &amp; TELEV. CORP

MODEL 7C-PH

MODEL 7H-PH

MODEL 11B-PH

Record Changer Data

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 of 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 record 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**.)

4. Push the turntable switch to the left—"On"—"On" 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 record over the needle gauge plate. The record player is then ready for reloading, or for manual operation.

**CONTROLS AND MECHANISM****INDEX AND RECORD REJECT LEVER**

This lever is located near the right front corner of the motorboard with its index plate marked for four positions—"Manual", "12", "10", and "Reject". When it is desired to change record selections manually, this lever should be set in the "Manual" position. With the lever in the "12" position, the mechanism is set to play a series of 12" records automatically. To play either a series of 10" records or 10" and 12" records mixed, the lever should be set at the "10" position. To reject a record being played, or to start the record changing cycle in case the record just played does not have the standard eccentric or spiral stopping groove, simply push the lever to the "reject" position and let go. The pickup will rise and swing outwards and the next record will drop down. Upon releasing the lever, it will automatically return to the "10" position. If a series of 12" records is to be played, the lever should be returned to the "12" position after rejecting a record. Keep the lever in its "Manual" position when not actually playing records automatically.

**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.

**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.

**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,

**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 or 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 sequence. 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 selector, the pickup will come down in position for a 10" record and repeat the playing of the record on a 10" diameter 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 selectors 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 the 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.

8. **LUBRICATION**—A few drops of good quality light machine oil should be applied about once every six months at the base of the spindle below the metal washer under the turntable.

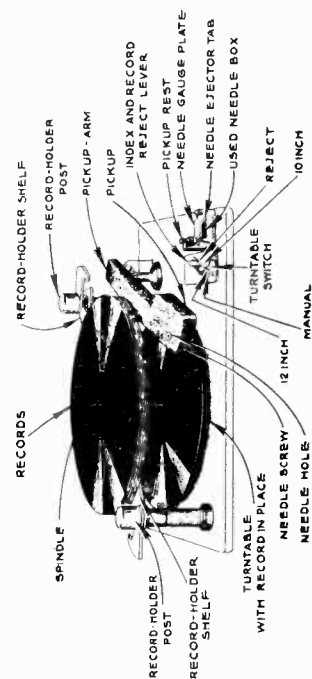
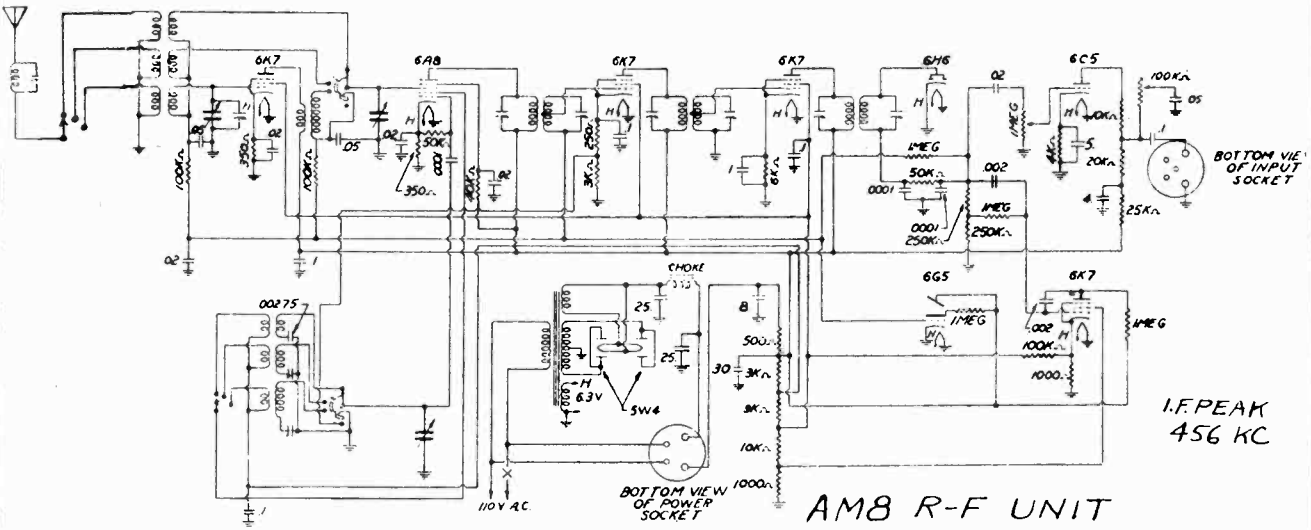


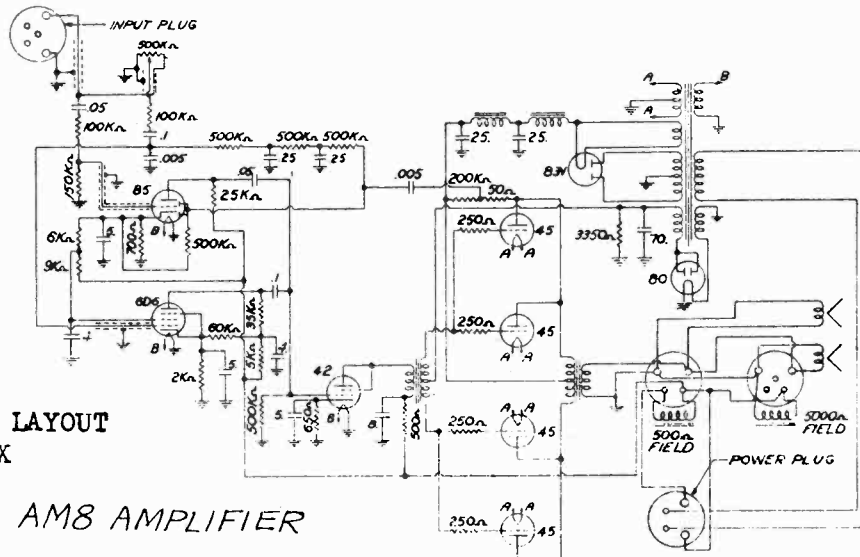
Fig. 2—Top View of Automatic Record Changer

MODEL AM8  
Schematic  
Amplifier Layout

CONTINENTAL RADIO & TELEV. CORP.



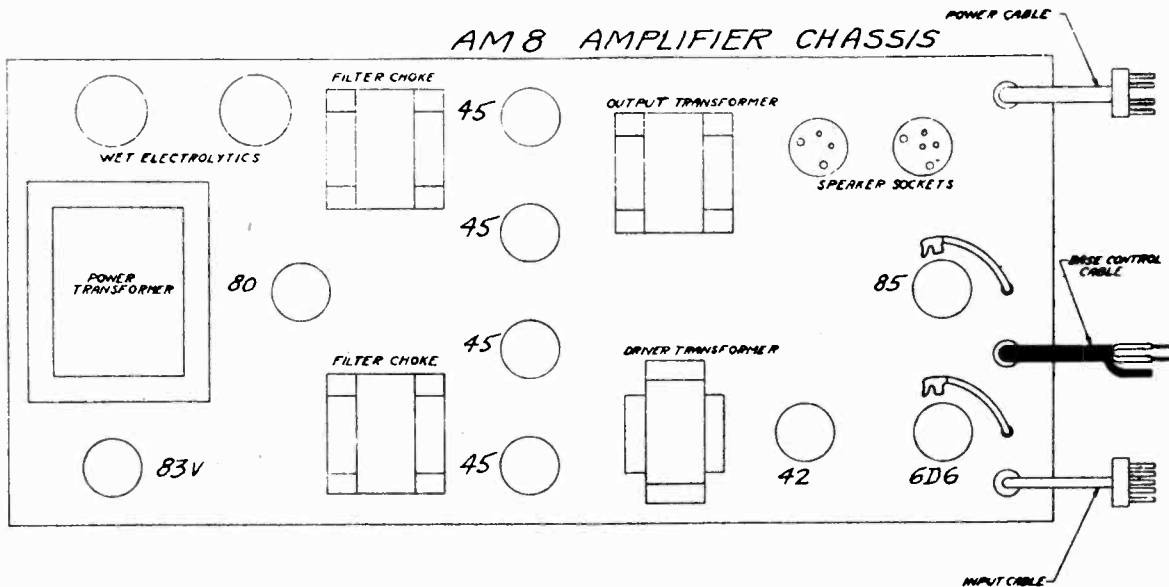
AM8 R-F UNIT



FOR R-F UNIT LAYOUT  
SEE INDEX

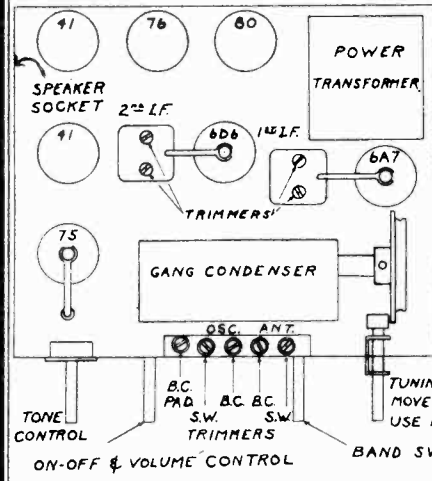
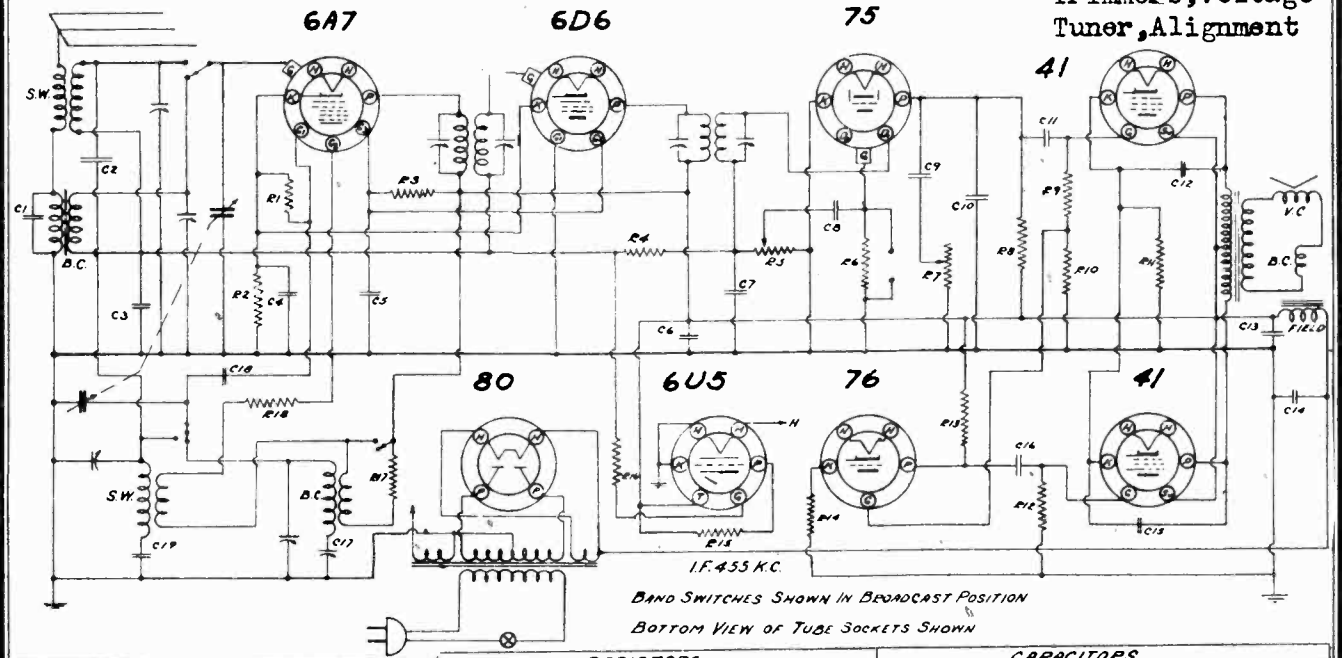
AM8 AMPLIFIER

AM8 AMPLIFIER CHASSIS



CONTINENTAL RADIO & TELEV. CORP.

MODEL 8C  
Schematic, Socket  
Trimmers, Voltage  
Tuner, Alignment



RESISTORS						CAPACITORS					
No.	OHMS	WATTS	No.	OHMS	WATTS	No.	MFDs	VOLTS	No.	MFDs	VOLTS
R1	50,000	1/2	R11	300	1/2	C1	.0001	MICA	C11	.01	400
R2	200	1/2	R12	1/2 MEG	1/2	C2	GIMMICK		C12	.005	600
R3	20,000	1/2	R13	50,000	1/2	C3	.05	200	C13	10.0	350
R4	2 MEG.	1/2	R14	3,000	1/2	C4	.25	200	C14	10.0	350
R5	1/2	1/2	R15	1 MEG	1/2	C5	.05	400	C15	.005	600
R6	5	1/2	R16	1	1/2	C6	.05	400	C16	.01	400
R7	1/2	1/2	R17	1000	1/2	C7	.00025	MICA	C17	.0003-0006	PHADER
R8	1/2	1/2	R18	250	1/2	C8	.01	400	C18	.0001	MICA
R9	400,000	1/2				C9	.005	400	C19	.004 ± 5%	
R10	100,000	1/2				C10	.00085	MICA			

IF PEAK 455 KC FOR CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION OF VOLUME VIII. ALIGNMENT

BROADCAST BAND

- TRIM B.C. OSC. AT 1730 KC
- TRIM B.C. ANT. AT 1400 KC
- PAD B.C. PAD AT 600 KC

SHORT WAVE BAND

- TRIM S.W. OSC. AT 18100 KC
- TRIM S.W. ANT. AT 16000 KC

**SPEAKER** (Part No. P3499) 6" Dynamic  
 Field resistance .....1500 ohms  
 D.C. voice coil resistance..... 3.2 ohms  
 Voice coil impedance at 400 cycles... 3.8 ohms  
 Voltages—Line 115 volts A.C. Power consumption  
 75 watts. Volume control maximum. Meter 1000  
 ohms per volt.

41 tube

- Plate (P) to ground.....184 volts
- Screen grid (G2) to ground.....196 volts
- Cathode (K) to ground..... 13.5 volts

80 tube

- Filament (F) to ground.....302 volts

**PROCEDURE FOR SETTING UP**

**PUSH BUTTONS**

**6A7 tube**  
 Plate (P) to ground.....195 volts  
 Screen grid (G3) to ground..... 95 volts  
 Anode grid (G2) to ground.....187 volts  
 Cathode (K) to ground..... 3 1/2 volts

**6D6 tube**  
 Plate (P) to ground.....195 volts  
 Screen grid (G2) to ground..... 95 volts  
 Cathode (K) to ground..... 3 1/2 volts

**75 tube**  
 Plate (P) to ground..... 75 volts

**76 tube**  
 Plate (P) to ground.....100 volts  
 Cathode (K) to ground..... 5 volts

Loosen one of the push buttons by turning the push button knob counter clockwise a turn or less and push it in; while holding the button in, tune in a desired station by means of the station selector knob. Turn the selector very slowly back and forth until the signal is clearest. Now while holding the push button in, tighten it by turning clockwise. Release the push button and turn the station selector to one end of the dial; push the tuning knob to the right and then check the button by pushing it in and if the station is tuned to the center of the area on the dial covered by the station the adjustment is correct.

MODELS 11B, 11B-PH  
Schematic, Socket CONTINENTAL RADIO & TELEV. CORP.  
Trimmers, Voltage Alignment

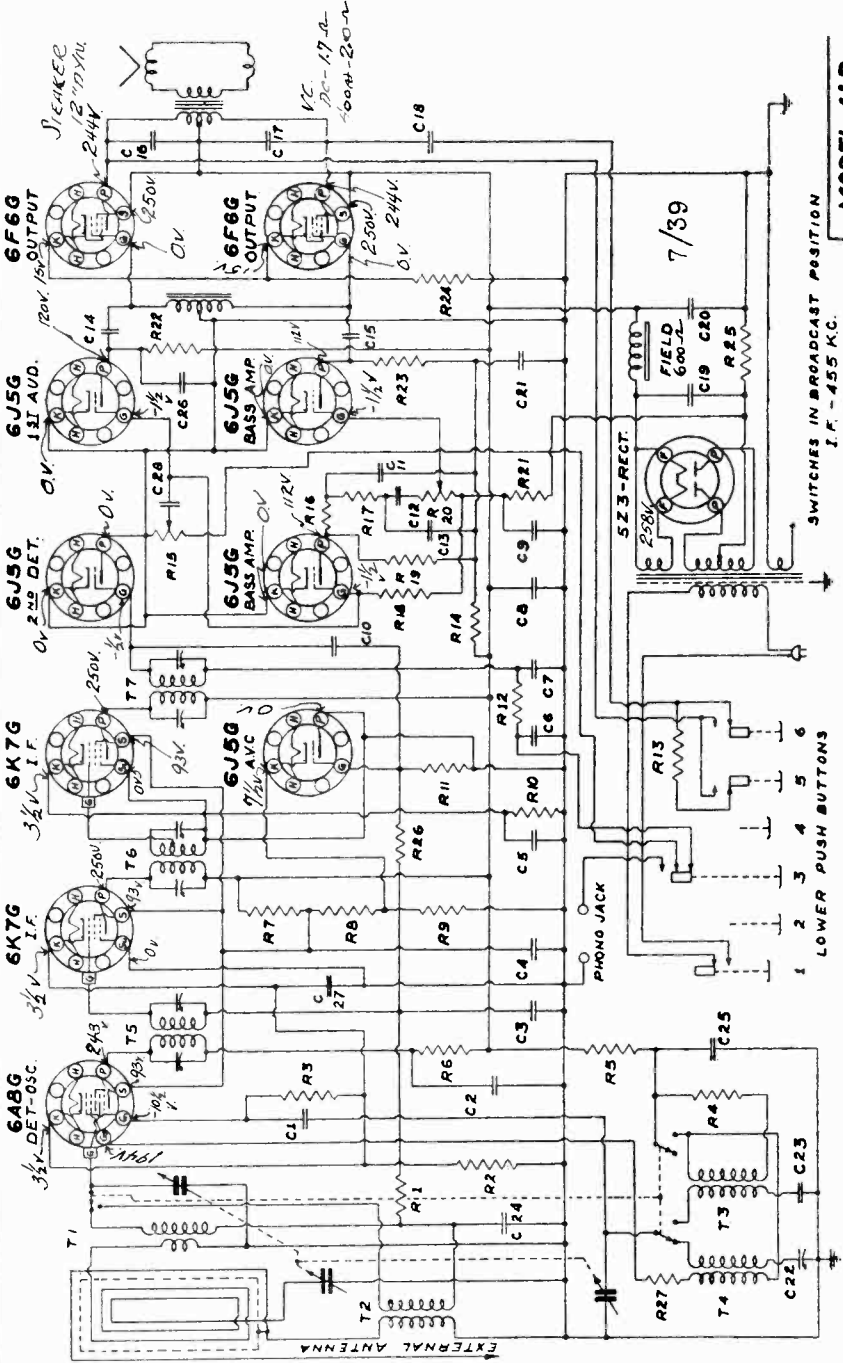
- CONDENSERS**
- C 1—.0001 mfd. mica
  - C 2—.05 mfd. 400 volt tubular
  - C 3—.05 mfd. 200 volt tubular
  - C 4—.25 mfd. 200 volt tubular
  - C 5—.05 mfd. 200 volt tubular
  - C 6—.0001 mfd. mica
  - C 7—.0001 mfd. mica
  - C 8—.05 mfd. 400 volt tubular
  - C 9—.25 mfd. 200 volt tubular
  - C 10—.00005 mfd. mica
  - C 11—.05 mfd. 400 volt tubular
  - C 12—.1 mfd. 400 volt tubular
  - C 13—.1 mfd. 400 volt tubular
  - C 14—.15 mfd. 400 volt tubular
  - C 15—.15 mfd. 400 volt tubular
  - C 16—.002 mfd. 600 volt tubular
  - C 17—.002 mfd. 600 volt tubular
  - C 18—.02 mfd. 400 volt tubular
  - C 19—.25 mfd. 475 volt wet electrolytic
  - C 20—.20 mfd. 450 volt dry electrolytic
  - C 21—.15 mfd. 450 volt dry electrolytic
  - C 22—300—600 mmfd., B. C. pad
  - C 23—.004 mfd. mica, 5% S.W. pad
  - C 24—.05 mfd. 200 volt tubular
  - C 25—.05 mfd. 400 volt tubular
  - C 26—.00025 mfd. mica
  - C 27—.25 mfd. 200 volt tubular
  - C 28—.01 mfd. 400 volt tubular

ALIGNMENT

BROADCAST BAND

- Pad-600 kc
  - Trim osc-1550 kc
  - " ant-1400 kc
- SHORTWAVE BAND
- Trim osc- 18,100 kc
  - " ant- 16,000 kc

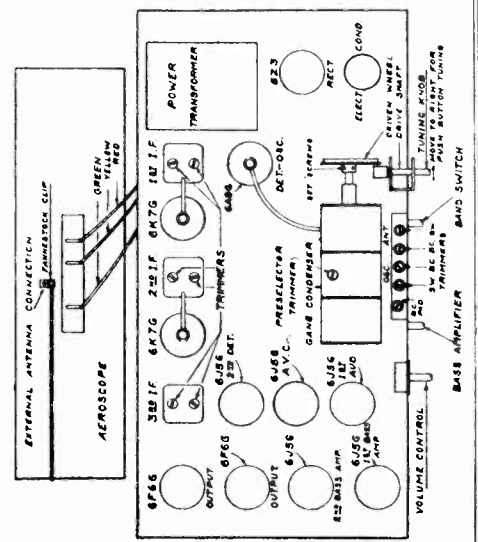
- R 17— 20,000 ohm ½ watt
- R 18— 1,000,000 ohm ½ watt
- R 19— 25,000 ohm ½ watt
- R 20— 500,000 ohm bass control
- R 21— 500,000 ohm ½ watt
- R 22— 30,000 ohm ½ watt
- R 23— 25,000 ohm ½ watt
- R 24— 220 ohm 2 watt 10%
- R 25— 30 ohm (wire wound) ½ watt
- R 26— 250,000 ohm ½ watt
- R 27— 150 ohm ½ watt



- RESISTORS**
- R 1— 250,000 ohm ½ watt
  - R 2— 170 ohm 1/3 watt 10%
  - R 3— 50,000 ohm ½ watt
  - R 4— 1,000 ohm ½ watt
  - R 5— 10,000 ohm ½ watt
  - R 6— 3,000 ohm ½ watt
  - R 7— 30,000 ohm 2 watt
  - R 8— 20,000 ohm ½ watt
  - R 9— 3,000 ohm ½ watt
  - R 10— 500 ohm ½ watt
  - R 11— 1,000,000 ohm ½ watt
  - R 12— 20,000 ohm ½ watt
  - R 13— 10,000 ohm 1 watt
  - R 14— 5,000 ohm ½ watt
  - R 15— 500,000 ohm vol. control
  - R 16— 10,000 ohm ½ watt

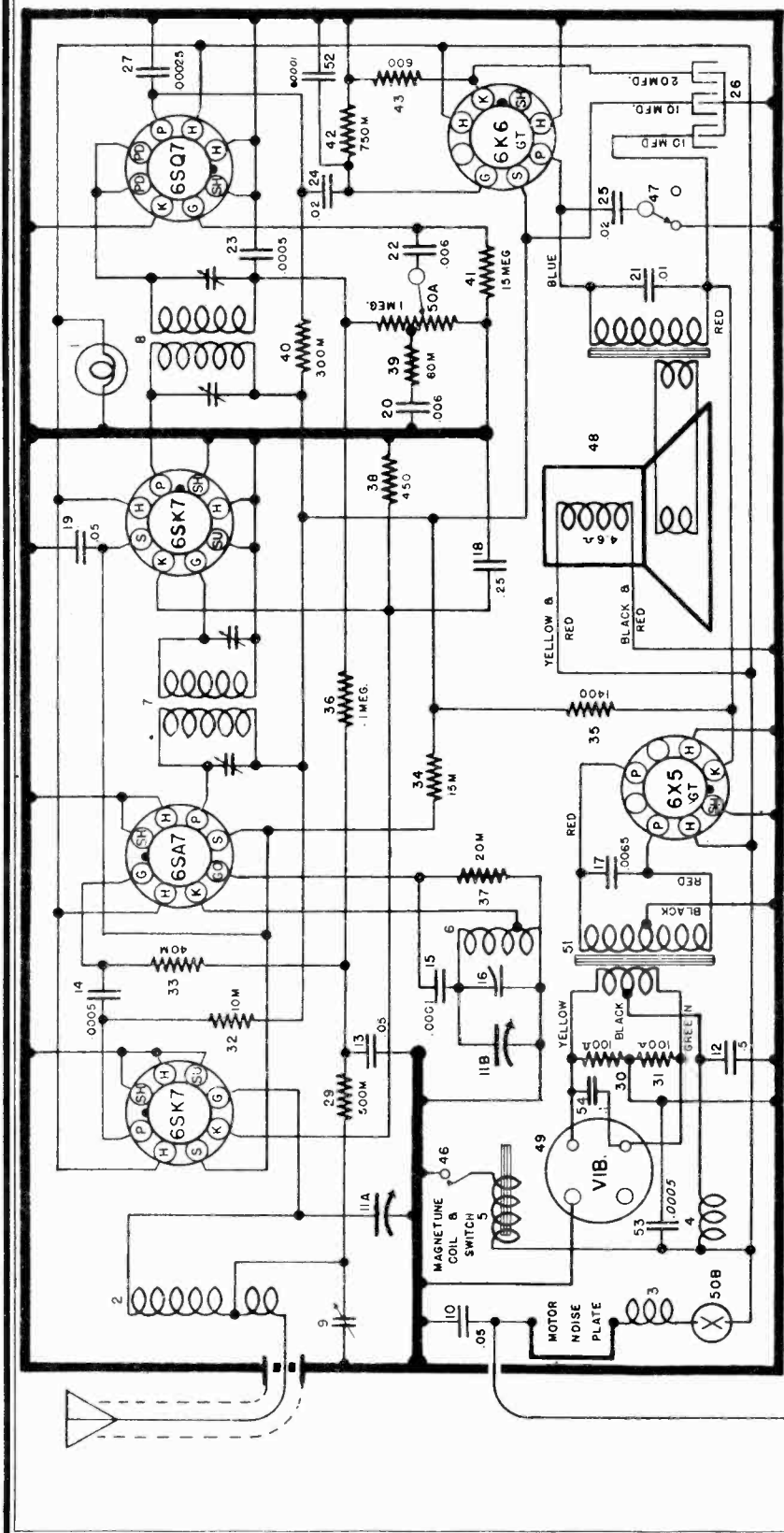
I.F. 455 KC  
FOR CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION OF VOL. VIII

AT LEFT  
TOP VIEW OF CHASSIS  
VOLTAGES; - FROM POINT INDICATED TO GROUND. LINE IS V.A.C. P.C. 125W.

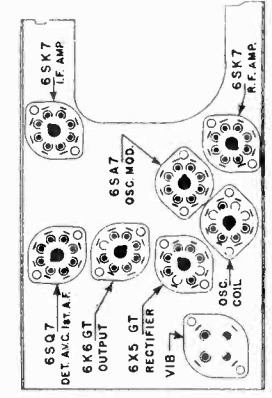


THE CROSLLEY CORP.

MODEL A169  
Schematic, Socket  
Voltage, Notes



IF PEAK 455 KC



TUBE FUNCTION	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
6SQ7 DET. AVC. 1st. A.F.	GRND	GRND	GRND	GRND	PLATE	90	5.8	GRND.
6SK7 I.F. AMP.	GRND	GRND	GRND	GRND	GRND	3.5	80	5.8
6K6 GT. OUTPUT	J.B.	5.8	235	215	GRND	J.B.	GRND	15.5
6X5 GT. RECTIFIER	GRND	GRND	205	J.B.	205	N.C.	0.8	200
6SQ7 OSC. MOD.	GRND	GRND	215	80	GRND	CATH.	5.8	GRND
6SK7 R.F. AMP.	GRND	GRND	GRND	GRND	GRND	3.5	80	5.8

Battery drain at 8 volts \* 7 amps  
VOLTAGES MEASURED WITH 1000Ω PER VOLT VOLTMETER FROM CHASSIS TO TUBE PRONG AND MAY VARY PLUS OR MINUS 10% OF VALUES GIVEN

N.C. -- NO CONNECTION

J.B. -- JUNCTION BLOCK

MODEL A-169 SPECIFICATIONS

This model Crosley is a six tube single unit automobile receiver. It incorporates an unusual electric push button tuning system of simple, rugged mechanical and electrical construction. The tubes used and their functions are as follows: one 6SK7 as resistance coupled R-F amplifier, one 6SA7 as oscillator-modulator, one 6SK7 as I-F amplifier, one 6SQ7 as detector, A.V.C. 1st audio, one 6K6GT as power output and one 6X5GT as rectifier. Improvements to be noted in the circuit are, the resistance coupled R-F stage and the method of connecting oscillator coil and variable level bass compensation. Bias voltage for the 6SK7 R-F amplifier and the 6SK7 I-F amplifier is developed across item 38, a 450 ohm resistor. Bias voltage for the 6K6GT is developed across item 43, a 600 ohm resistor. The 6SQ7 is operated at zero bias. A.V.C. is applied to 6SK7 (R-F) and the 6SA7. The volume control serves as the A.V.C. load and items 29 and 36, 1/2 and 1 megohms respectively, act as filters. Item 16 is a chemical condenser which automatically compensates for temperature differences, preventing station drift. The filter circuit is similar to that of Model A-259 using a resistive circuit.

FOR ALIGNMENT AND TUNER DATA, SEE INDEX

JANUARY, 1940

MODEL A169  
MODEL A259  
Alignment, Trimmers  
Tuner

THE CROSLLEY CORP.

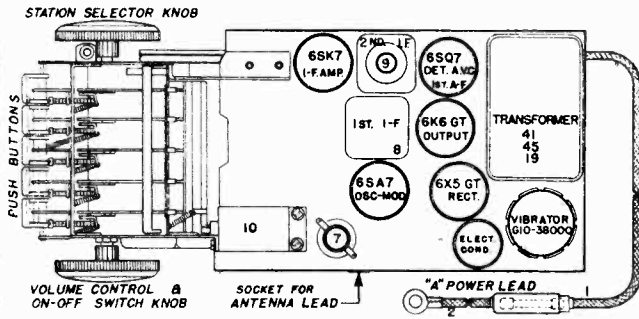


Fig. 2-A—Top View A-259

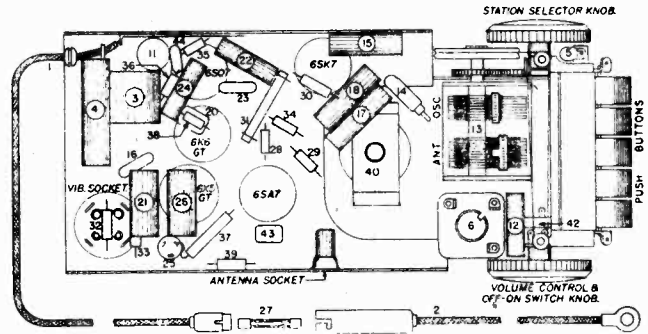


Fig. 3-A—Bottom View A-259

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, such as when an I-F assembly has been changed and etc., the circuit can best 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 6K6GT output tube. Be sure the meter is protected from D.C. by connecting a condenser (0.1 mf. or larger—*not* electrolytic) in series with one of the meter leads.

1. Aligning the I-F to 455 Kilocycles

- (a) Connect the ground lead from the signal generator to the chassis frame. Connect the high side of generator through an .02 mf. condenser to the grid (pin No. 8) of the 6SA7 oscillator-modulator. Care should be exercised to keep signal generator leads as far as possible from the other grid leads.
- (b) Open gang condenser all the way (minimum) turn volume control to maximum and then set signal generator to 455 kilocycles.
- (c) Adjust both 2nd I-F trimmers for maximum output. Trimmers are accessible from bottom of the chassis between the 6SQ7 and 6SK7 sockets.
- (d) Adjust both 1st I-F trimmers for maximum output. Trimmers accessible from bottom of the chassis.
- (e) Repeat (c) and (d) with as low an output as gives a reasonable indication on output meter for more accurate adjustment.

2. Aligning the R-F

- (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) 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.
- (g) Repeat operation (e) for more accurate adjustment.

3. Adjusting Antenna Compensating Condenser on Model A-169 only.

- (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 near 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.

4. Setting the Push Buttons

The push buttons are easily and accurately set from the front of the case without removing any panels, etc.

To set push buttons, lift up on push button and the setting screw is easily accessible. Loosen the screws of the buttons to be set, two or three turns to the left. It is not necessary that all the buttons be set at the same time.

Determine the five favorite stations whose call letters are to be placed in the call letter holder (holder enclosed in the instruction envelope). Place the call letters in the holder in the order of their frequency (kilocycles), that is, the station that is tuned-in nearest the 150 marking on the dial, should be placed in the right-hand opening, etc. After call letters have been placed in the holder, break off the celluloid strip five pieces to insert in front of the call letters to protect and hold them in place.

With the special screws provided (two, enclosed in the instruction envelope) mount the call letter holder in place above the push buttons.

By means of the manual tuning knob tune-in AS ACCURATELY AS POSSIBLE, the station whose call letter has been placed in the right-hand opening. REMEMBER: the accuracy of the push buttons depends upon how accurate YOU tune-in the station when setting them.

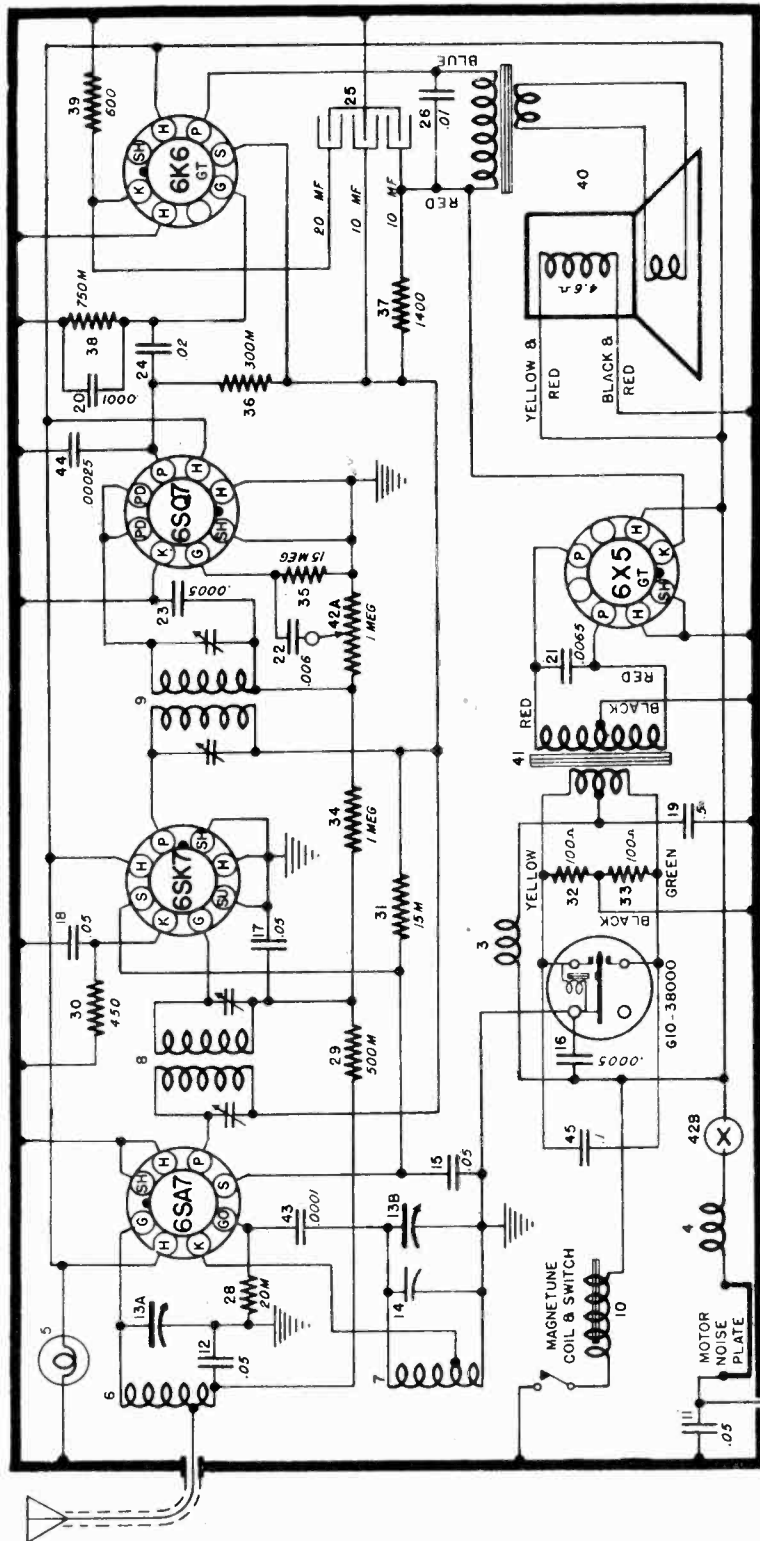
Lift up the right-hand push button and with a small screw driver push the key all the way down. While holding the key down, securely tighten the setting screw. It is essential that you apply pressure while tightening the setting screw, in order to keep mechanism lined up with station tuned-in.

Remove screw driver and the first button is set, follow through with the same procedure to set the rest of the push buttons.



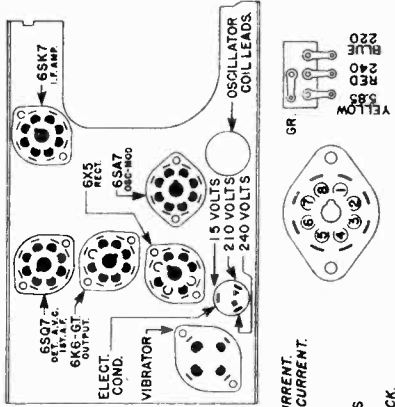
THE CROSLY CORP.

MODEL A259 Schematic, Voltage Socket, Notes



JANUARY, 1940

TUBE & FUNCTION	1	2	3	4	5	6	7	8
6SA7 OSC.-MOD.	GR.	GR.	210	100	50%	CATH.	5.85	GRID
6SK7 I.F. AMP.	GR.	585	GR.	210	100	GR.	210	
6SK7 DET.-AUX. I.F. AMP.	GR.	585	GR.	210	100	GR.	210	
6K6-GT OUTPUT	GR.	585	220	210	210	J.B.	GR.	15
6X5 RECT.	GR.	GR.	256	OPEN	256	J.B.	5.9	5.9



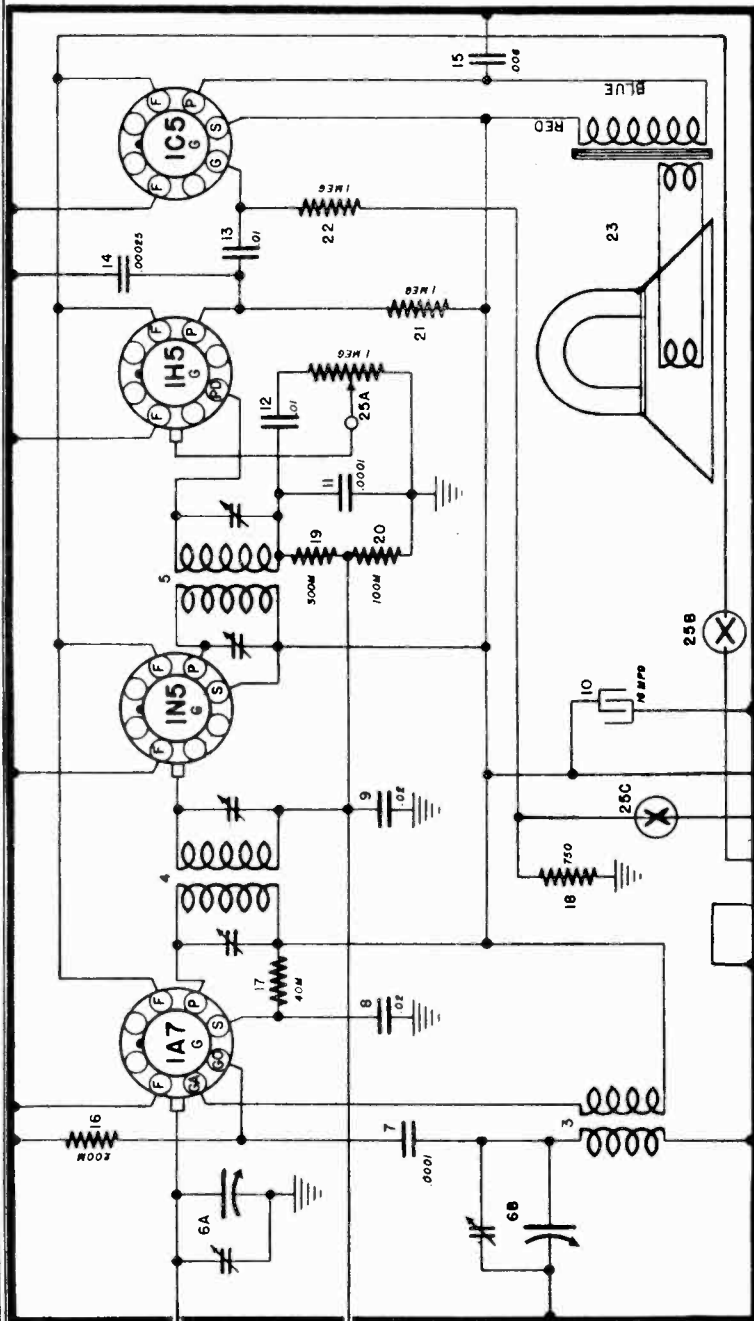
MODEL A-259 SPECIFICATIONS

This model Crosley Roamio is a single unit five tube super-heterodyne receiver. It incorporates an unusual electric push button tuning system of simple, rugged mechanical and electrical construction. The tubes used and their functions are as follows: one 6SA7 as oscillator-modulator, one 6SK7 I-F. amplifier, one 6SK7 as diode detector, A.V.C., and 1st audio, one 6K6GT as pentode output and one 6X5GT as rectifier. The 6SA7 oscillator circuit is unusual in that the cathode is tied to a tap on the oscillator coil which is several turns above ground. Bias for the 6SK7 is obtained from the drop across item 30, a 450 ohm resistor and bias for the 6K6GT is obtained from the drop across item 39, a 600 ohm resistor. The 6SK7 is operated at zero bias A.V.C. is supplied to the 6SA7 and 6SK7 through item 29, a 500,000 ohm filter and item 34, a 1 megohm filter respectively. The B circuit is filtered by means of item 37, a 1,400 ohm resistor, and the two 10 mf. sections of item 25, a three section electrolytic condenser. Item 14 is a chemical temperature compensating condenser used in the oscillator circuit to prevent station drift.

\* 50 VOLT SCALE, 1000 OHMS PER VOLT.  
 @ A.C. TO GROUND  
 6.5 AMPERES AT 6 VOLTS, NORMAL OPERATING CURRENT.  
 7.0 AMPERES AT 5 VOLTS, SOLENOID OPERATING CURRENT.  
 VOLTAGES MEASURED WITH 1000 Ω PER VOLT  
 VOLT METER FROM TUBE PRONG TO CHASSIS  
 AND MAY VARY PLUS OR MINUS 10% OF VALUES  
 GIVEN.  
 GR.-GROUND. J.B.-JUNCTION BLOCK.  
 OPEN - NO CONNECTION.

MODEL 429  
Schematic, Socket, Voltage  
Trimmers, Alignment, Chassis

THE CROSLEY CORP.



CONVENTIONAL ALIGNMENT  
SEE SPECIAL SECTION  
VOLUME VIII

NOVEMBER, 1939

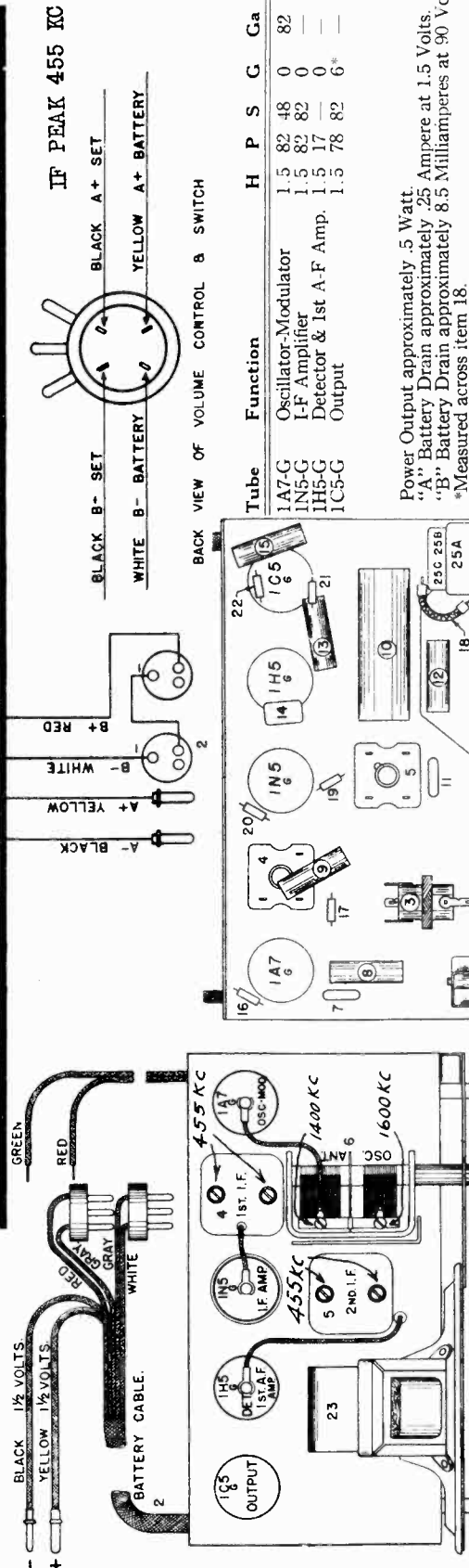
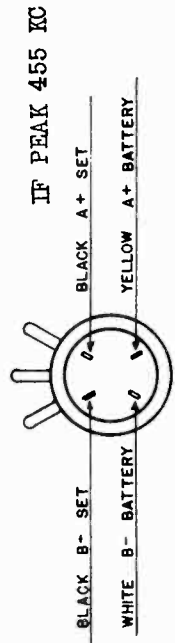


Fig. 2—Top View 429

Fig. 3—Bottom View 429



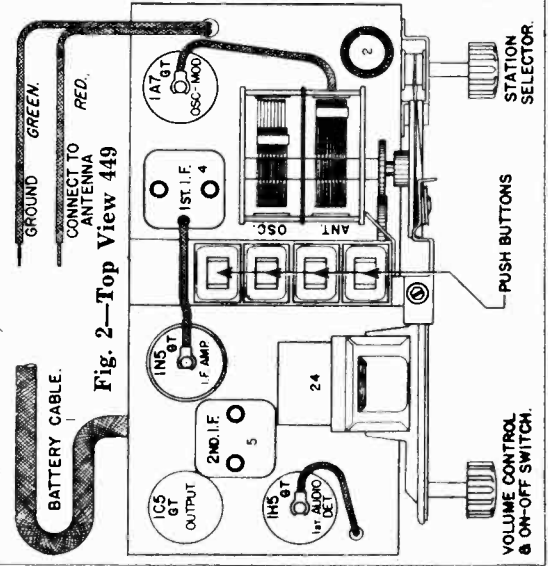
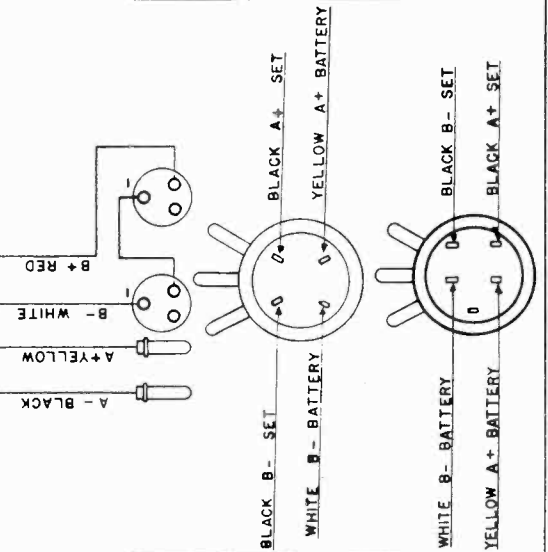
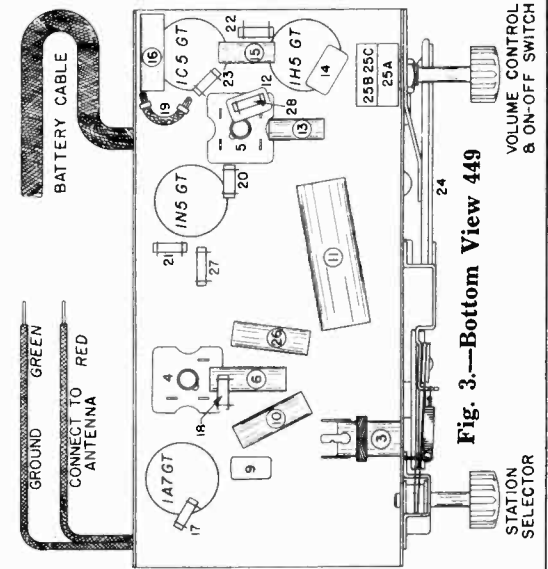
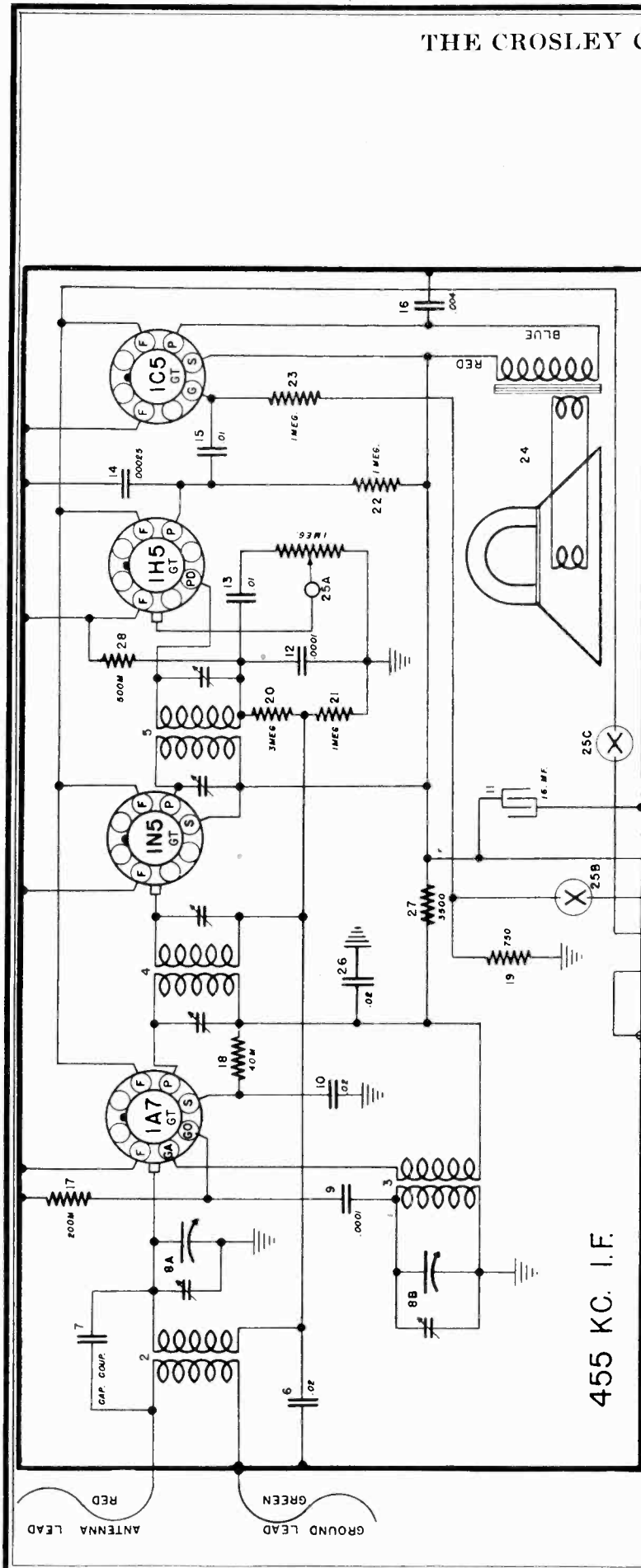
BACK VIEW OF VOLUME CONTROL & SWITCH

Tube	Function	H	P	S	G	Ga
1A7-G	Oscillator-Modulator	1.5	82	48	0	82
1N5-G	I-F Amplifier	1.5	82	82	0	—
1H5-C	Detector & 1st A-F Amp.	1.5	17	—	0	—
1C5-G	Output	1.5	78	82	6*	—

Power Output approximately .5 Watt  
"A" Battery Drain approximately .25 Ampere at 1.5 Volts.  
"B" Battery Drain approximately 8.5 Milliamperes at 90 Volts.  
\*Measured across item 18.

THE CROSLLEY CORP.

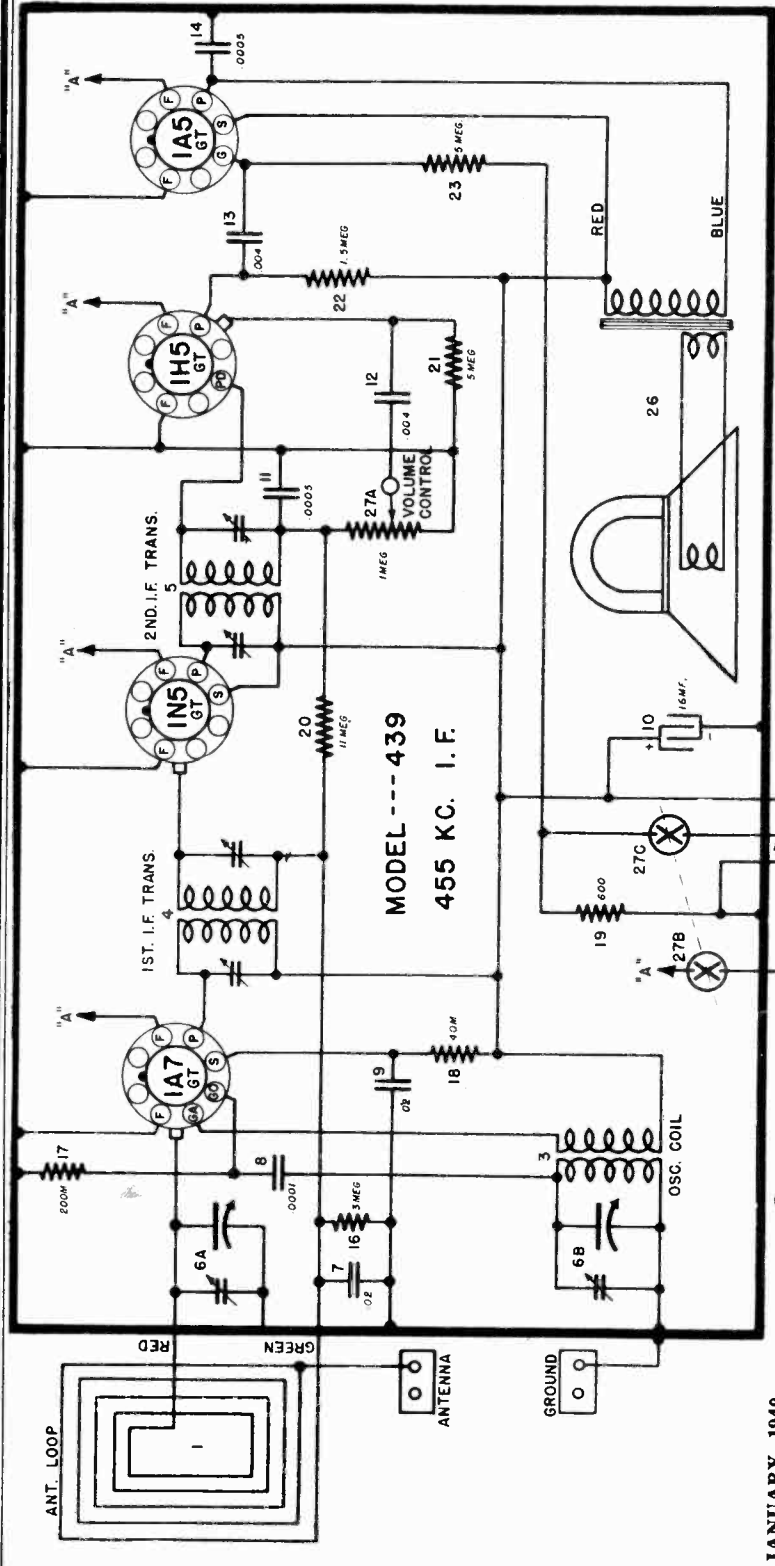
MODELS 449, 459  
Schematic, Socket, Trimmers  
Chassis





THE CROSLY CORP.

MODEL 439  
Schematic, Voltage  
Socket, Trimmers, Chassis  
Alignment



MODEL --- 439  
455 KC. I. F.

JANUARY, 1940

Tube	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7-GT	1.5	58	34	Neg.	58	—	—	—
1A5-GT	1.5	58	58	—	—	—	—	J.B.
1H5-GT	1.5	10	10	—	—	—	—	—
1A5-GT	1.5	58	59	3*	—	—	—	J.B.

Power Output approximately 100 milliwatts.  
\*A" Battery Drain approximately .20 Ampere at 1.5 Volts.  
\*B" Battery Drain approximately 5.2 Milliampere at 61.5 Volts.  
\*Measured across item 19.  
J.B. = Junction Block.

- When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" terminal (right-hand bracket used to fasten 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.

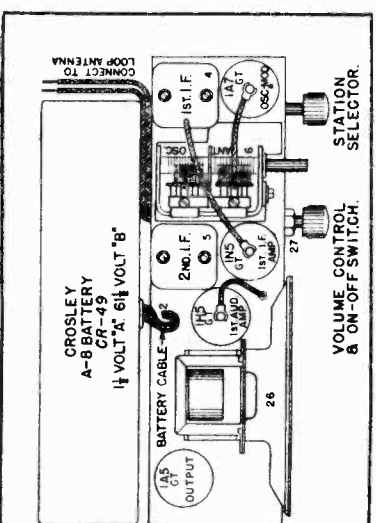
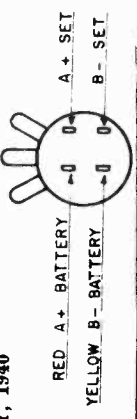


Fig. 2—Top View Model 439

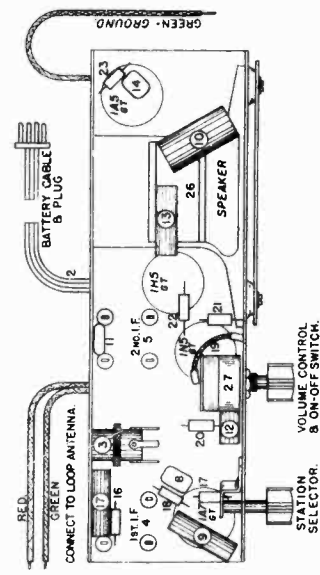
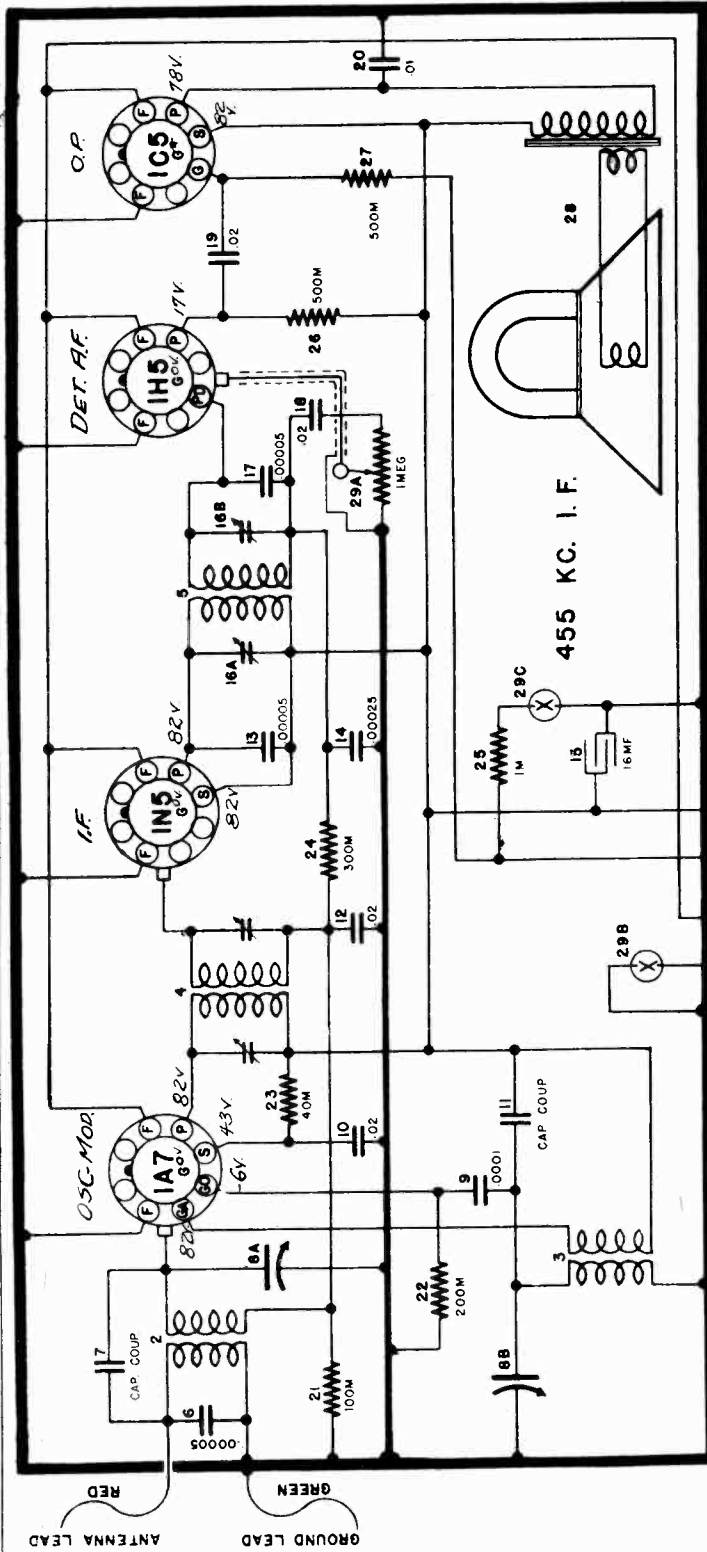


Fig. 3—Bottom View Model 439

MODEL 468  
Schematic, Socket  
Trimmers, Chassis  
Notes

THE CROSLLEY CORP.



The method of connecting the battery cable to the batteries is shown on the Wiring Diagram. The batteries required are: one 1.5 volt "A" (EVEREADY NO. 740 or equivalent) or 3 or 4 No. 6 DRY CELLS in parallel, and two plug-in type 45 Volt "B" batteries, (Eveready No. 485 or equivalent).

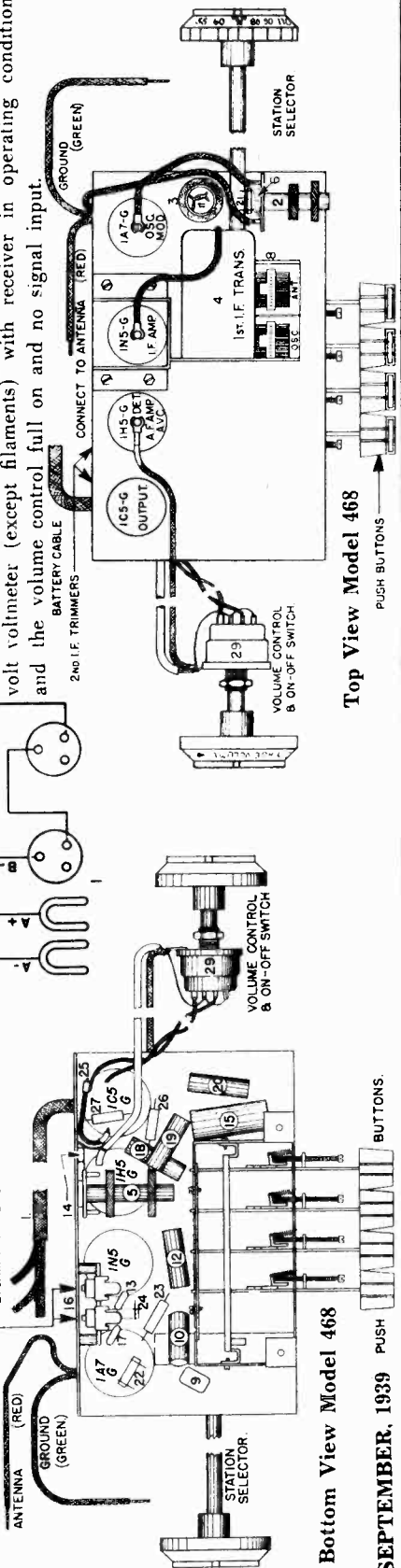
\* G 1/5 8 1/2 75 \*Measured at No. 8 Socket Lug and Chassis.

Power Output approximately .5 Watt.

"A" Battery Drain approximately .25 Amperes at 1.5 Volts.

"B" Battery Drain approximately 9 Milliampers at 90 Volts.

Voltage readings should be taken between the tube socket contacts and the negative side of the "A" battery circuit with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and the volume control full on and no signal input.



Bottom View Model 468

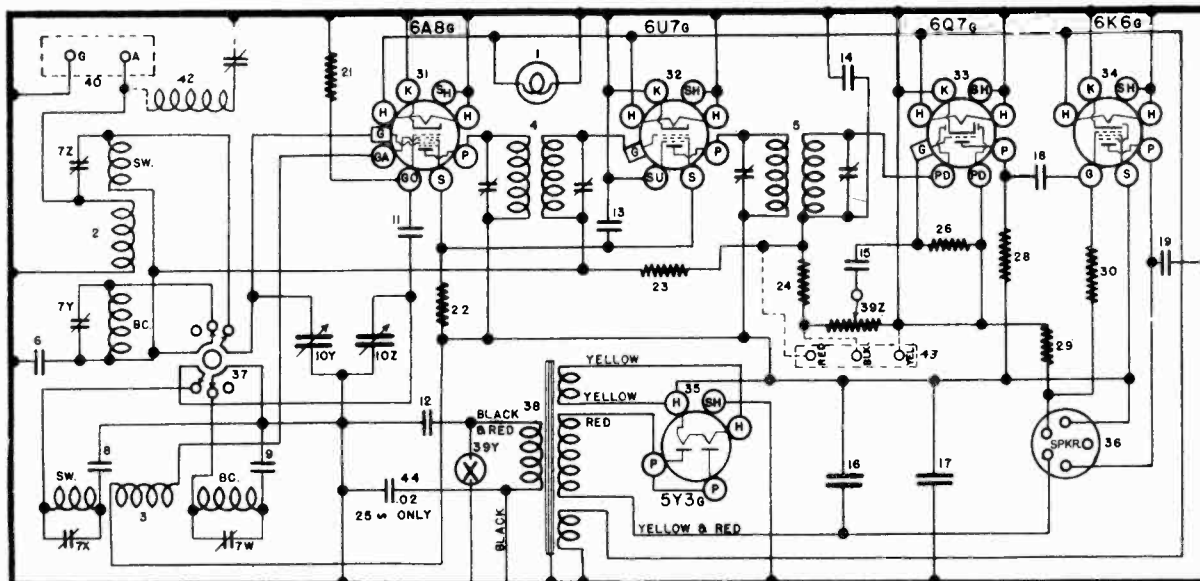
Top View Model 468

SEPTEMBER, 1939 PUSH BUTTONS.

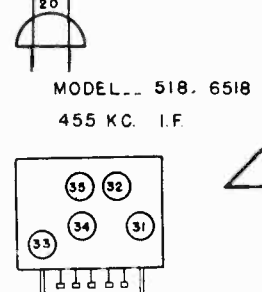


MODELS 518, 6518  
Schematic, Socket  
Trimmers, Chassis  
Parts

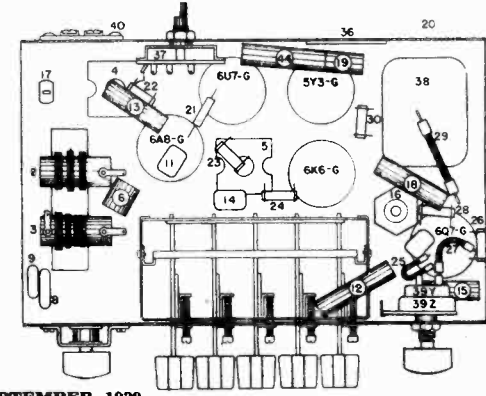
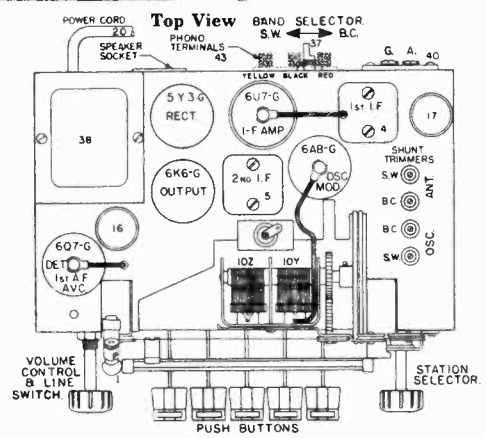
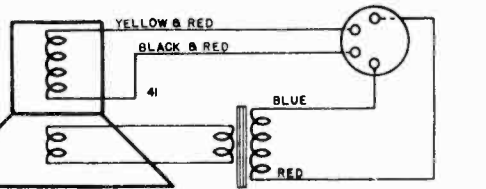
THE CROSLEY CORP.



- 1 Dial Light, 6-8 Volt
- 2 Dial Light Socket Assembly
- 3 Antenna Coil, B. C. and S. W.
- 4 Oscillator Coil, B. C. and S. W.
- 5 1st I. F. Transformer
- 6 2nd I. F. Transformer
- 7 Condenser, .02 Mf. 160 V.
- 7Z S. W. Antenna
- 7Y B. C. Antenna
- 7X S. W. Osc.
- 7W B. C. Osc.
- 8 Condenser, .0014 Mf. Molded
- 9 Condenser, .0004 Mf. Molded
- 10Y 2 Section Gang Condenser (Ant. Osc.)
- 10Z
- 11 Dial Glass
- 12 Dial Mask (Polished Metal)
- 13 Dial Glass Clip, L. H.
- 14 Dial Glass Clip, R. H.
- 15 Dial Glass Cushion
- 16 Dial Pointer (White Celluloid)
- 17 Dial Hand Guide
- 18 3/16" - No. 6 x 32 R. H. Screw for Dial Hand Guide
- 19 Felt Strip
- 20 3/16" - No. 8 P. K. Screw (Dial Glass Clips)
- 21 Riveted Dial Support, R. H.
- 22 Riveted Dial Support, L. H.
- 23 Drive Shaft (Manual)
- 24 Drive Shaft Bracket
- 25 3/16" - No. 8 P. K. Screws for Drive Shaft Bracket
- 26 Spring Cord Tension
- 27 Condenser, .00005 Mf. Molded
- 28 Condenser, .01 Mf. 400 V.
- 29 Condenser, .02 Mf. 200 V.
- 30 Condenser, .00025 Mf. Molded
- 31 Condenser, .006 Mf. 200 V.
- 32 Condenser, 16 Mf. 250 V. Elect. (60 Cycle)
- 33 Condenser, 30 Mf. 250 V. Elect. (25 Cycle only)
- 34 Condenser, 16 Mf. 250 V. Elect.
- 35 Condenser, .02 Mf. 200 V.
- 36 Condenser, .006 Mf. 400 V.
- 37 Power Cord
- 38 Resistor, 40,000 Ohms 1/4 W. Ins.
- 39 Resistor, 20,000 Ohms 1/4 W. Carb.
- 40 Resistor, 3 Megohms 1/4 W. Carb.
- 41 Resistor, 100,000 Ohms 1/4 W. Carb.
- 42 Resistor, 60 Ohms 1/2 W. Flex.
- 43 Resistor, 3 Megohms 1/4 W. Carb.
- 44 Resistor, 40 Ohms 3/4 W. Flex.
- 45 Resistor, 300,000 Ohms 1/4 W. Carb.
- 46 Resistor, 275 Ohms 1 W. Flex.
- 47 Resistor, 500,000 Ohms 1/4 W. Carb.
- 48 13
- 49 32
- 50 33
- 51 34
- 52 35
- 53 36
- 54 8 Prong Socket
- 55 5 Prong Socket (Speaker)
- 56 Tube Shield



- 37 Band Change Switch
- 38 Power Transformer, 110 V. 25 Cycle
- 39 Power Transformer, 220 V. 25 Cycle
- 39Z Power Transformer, Universal
- 39Y Volume Control, 6518
- 39Z On-Off Switch
- 39Y Volume Control, 1 Megohm, 518
- 39Z On-Off Switch
- 40 Terminal Strip, A-G
- 41 Speaker, Spec. S-5274-J-5
- 42 Speaker Cone Assy.
- 43 Cardboard Ring
- 44 Output Transformer
- 45 Push Button Assembly
- 46 Key Assembly (6518)
- 47 Key Assembly (518)
- 48 Key Clip
- 49 1 3/4" - No. 6 x 32 Screw (Clamp)
- 50 Spring (Key Return)
- 51 Adjusting Clip
- 52 3/16" - No. 8 P. K. Screw (Clip Mtg.)
- 53 Key Plate (Rear Guide)
- 54 Rocker Plate Assembly
- 55 1/8" - No. 6 x 40 Fil. Hed. Screw (Rocker Plate Bearing)
- 56 Push Button (Black)
- 57 Push Button (Brown)
- 58 Celluloid Cover
- 59 Call Letter Sheet (U. S. A. Stations)
- 60 Knob Tuning (Black)
- 61 Knob Tuning (Brown)
- 62 Knob, Vol. and Switch (Black)
- 63 Knob, Vol. and Switch (Brown)
- 64 8A Cabinet (Black)
- 65 8AA Cabinet (Brown)
- 66 Wave Trap
- 67 Phono Terminal
- 68 Condenser, .02 Mf. 400 V. (25 Cycle only)
- 69 Speaker Plug Clamp
- 70 Call Letter Sheet (European Escutcheon (6518 only))
- 71 Screw (Escutcheon Mtg.)
- 72 Cabinet (6518)
- 73 Knob (6518 only) (2 Req.)
- 74 Knob (6518) (Band Switch)



CIRCUIT CHANGES

Item 22 was a 30,000 ohm resistor. Item 25, a 60 ohm 1/4 watt flexible resistor added from 607 cathode to ground. Item 26 should be 3 megohm resistor not 11 megs. Item 27, a 40 ohm 1/4 watt resistor should connect from the junction of items 26 and 29 at one end to low side of volume control. Item 29, a 275 resistor was a 375 ohm resistor.

SEPTEMBER, 1939

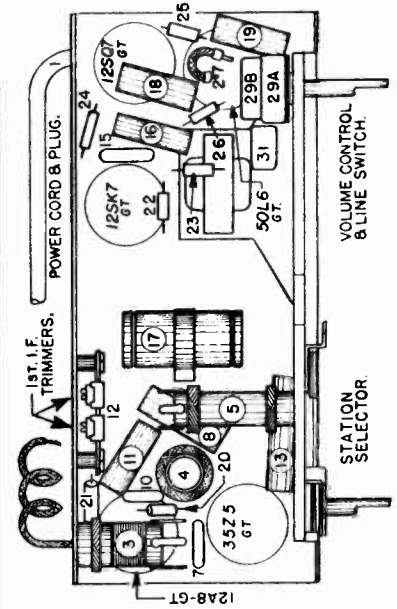
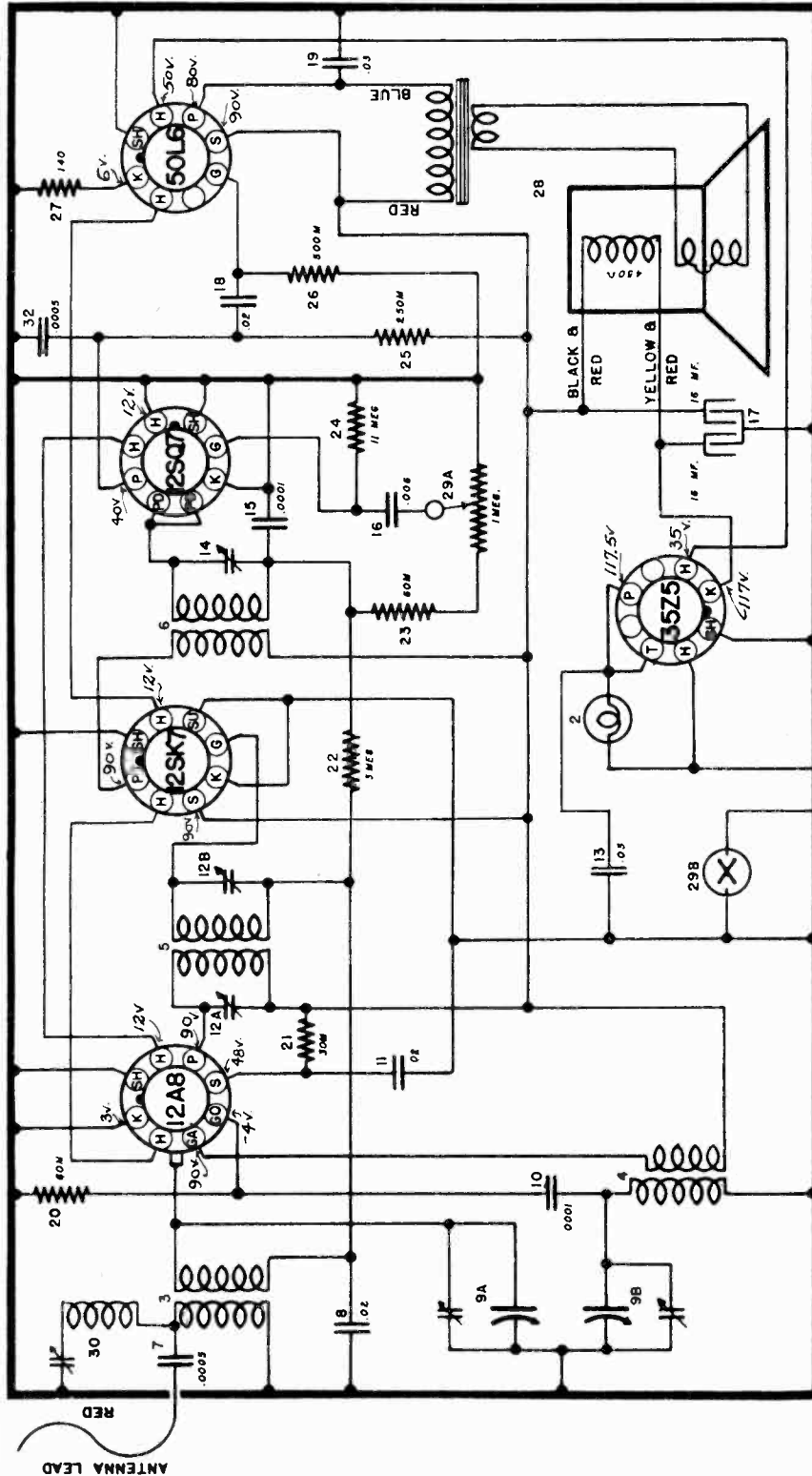
Bottom View



THE CROSLY CORP.

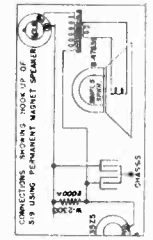
MODELS 519, 529  
Schematic, Socket  
Trimmers, Chassis

Power output approximately 2 watts.  
Power consumption approximately 27 watts.  
Voltage drop across speaker field 25 volts.  
All voltages except filaments will be approximately  
10% lower if measured on 117.5 volts DC power supply.  
Voltage readings between the tube socket contacts and chassis.

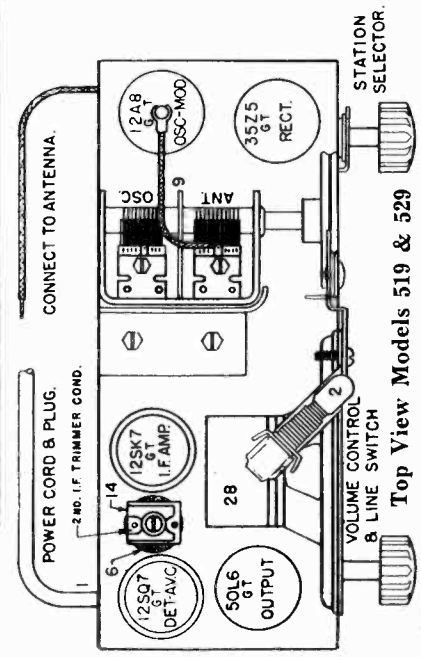


Bottom View Models 519 & 529

455 KC. I.F.



SEPTEMBER, 1939

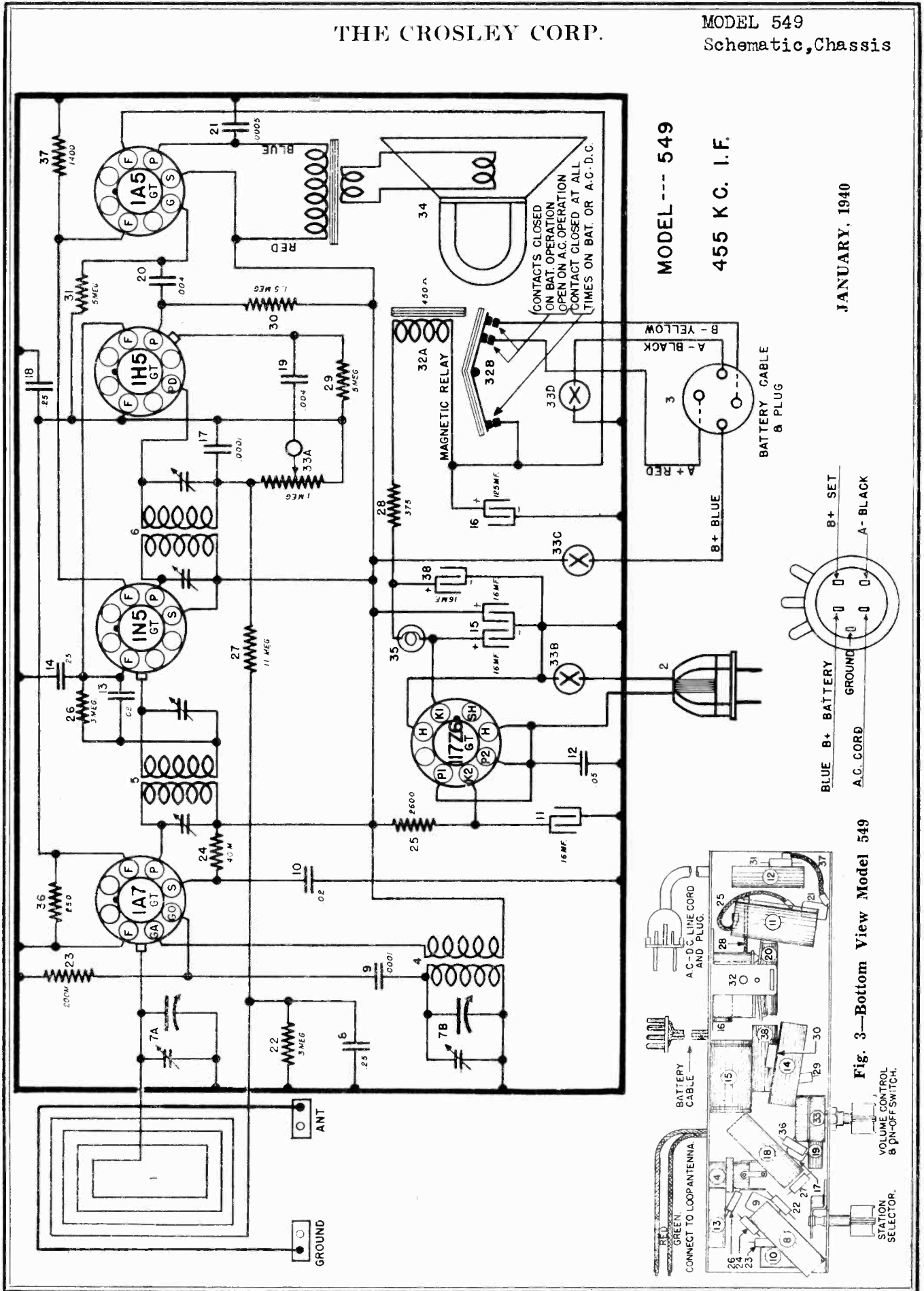


Top View Models 519 & 529



THE CROSLLEY CORP.

MODEL 549  
Schematic, Chassis



JANUARY, 1940

MODEL 549

Voltage, Socket  
Trimmers, Alignment

THE CROSLEY CORP.

The circuit is a conventional superheterodyne with a tuned loop antenna stage. Four 1.4 volt tubes and one 117Z6GT tube are employed as follows: one 1A7GT as oscillator-modulator, one 1N5GT as 455 kc. I-F amplifier, one 1H5GT as diode detector, A.V.C. and first audio, one 1A5GT as power output and the 117Z6GT as rectifier (used only when plugged into 110 volt power circuits).

The filaments of the 1.4 volt tubes are connected in series and have plate current compensating resistors one, item 36, a 250 ohm resistor across the 1A7GT filament and the other, item 37, a 1,400 ohm resistor from the negative leg of the 1A5GT to chassis.

When used on 110 volt power circuits one half the 117Z6GT supplies the filament voltage and the other half the B voltage. The rectified voltage for the filament string is well filtered by the following, item 35, which is a 7½ watt 110 volt miniature lamp

and does triple duty—1, regulates the voltage—2, acts as a filter—3, as an ON-OFF indicator; item 28 a 375 ohm resistor and item 32A, the relay coil which serves as a choke and their associated electrolytic condensers, i.e., item 15, 16 mf.—item 38, 16 mf. and item 16, 125 mf. The above mentioned miniature lamp (item 35) should always be replaced with an exact duplicate should replacement become necessary.

The "b" voltage is filtered by means of item 25, a 2,600 ohm resistor and item 11—a 16 mf. electrolytic and one section of item 15 (twin electrolytic) 16 mf. condenser.

The relay automatically disconnects the batteries from the circuit when the receiver is operated on 110 volt circuits.

VOLTAGE READINGS—WITH CR649 BATTERY PACK

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.5	70	40	Neg.	70	0	0
1N5GT	I-F Amplifier	0	4.5	70	70	1.5	—	3	0
1H5GT	Det. AVC, 1st Audio	0	3.0	11	11	—	0	1.5	6
1A5GT	Output	0	6.0	68	70	—	6	4.5	1.5
117Z6GT	Rectifier	0	0	0	68	0	0	0	6.0

Power Output approximately 100 M. W.

"A" Battery Drain 50 M. A.

"B" Battery Drain 5.2 M. A.

VOLTAGE READINGS—@ 117.5 VOLT LINE (A.C.)

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.4	102	56	-3	102	0	0
1N5GT	I-F Amplifier	0	4.5	102	102	1.5	—	3.0	0
1H5GT	Det. AVC, 1st Audio	0	3.0	17	17	—	0	1.5	45
1A5GT	Output	0	6.0	98	102	—	28	4.5	1.5
117Z6GT	Rectifier	58.5 A.C.	117.5 A.C.	117.5 A.C.	142	117.5 A.C.	0	0	126

Power Output approximately 200 M. W.

Watts @ 117.5 volts 20 watts.

Above readings will be approximately 10% less when checked on D.C. power circuit.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen 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.

Tuning the I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of the 1A7GT oscillator-modulator tube leaving the other tubes' grid cap in place. 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.

(b) 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).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I-F transformer for maximum output.

(f) 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.

Aligning the R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mf. condenser to "A" terminal and the ground lead to the "G" terminal on the back of the cabinet.

It is essential that the following alignment be made with the receiver in the cabinet and the battery and back in position. Trimmer adjustments may be made on the two luggage type carrying cases through the two holes in the top, beneath the carrying handle. On the walnut cabinet model the oscillator will have to be aligned before placing chassis in the cabinet and then adjust the antenna trimmer provided on the back.

Before aligning receiver check the position of the pointer by opening gang all the way, the pointer should then split the 1600 kilocycle calibration point.

(a) Set signal generator to 1400 kilocycles.

(b) Tune gang to 140 on the dial, then adjust oscillator trimmer (rear section of gang) for maximum output.

(c) Adjust antenna trimmer (front section of gang) for maximum output.

RELAY

The receiver, when plugged into 110 volt circuit, will operate on the batteries until rectifier warms up and trips the relay. When relay trips there should be no decrease or dead spot in output as rectifier should be warmed up sufficiently to carry load and give a slight increase in output due to higher plate voltage available.

The relay is insulated from the chassis and care should be exercised when probing so as not to short it.

In earlier models the relays have three sets of contacts and the single side must make contact at all times. The double side must make contact when batteries are used and both contacts (double contact side) must break when operated on 110 volt circuits. Later models the single contact side was omitted and a flexible braid connection used instead.

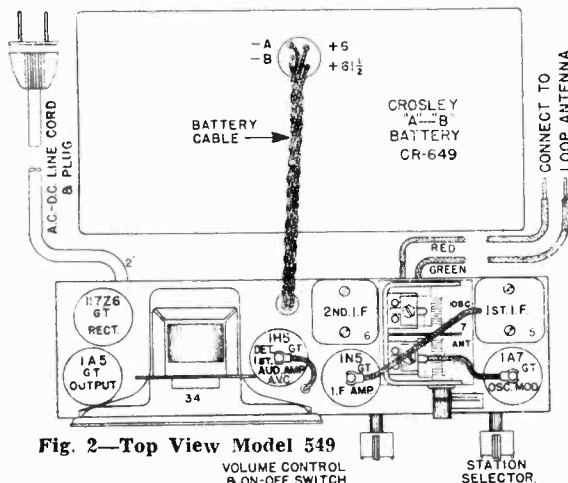
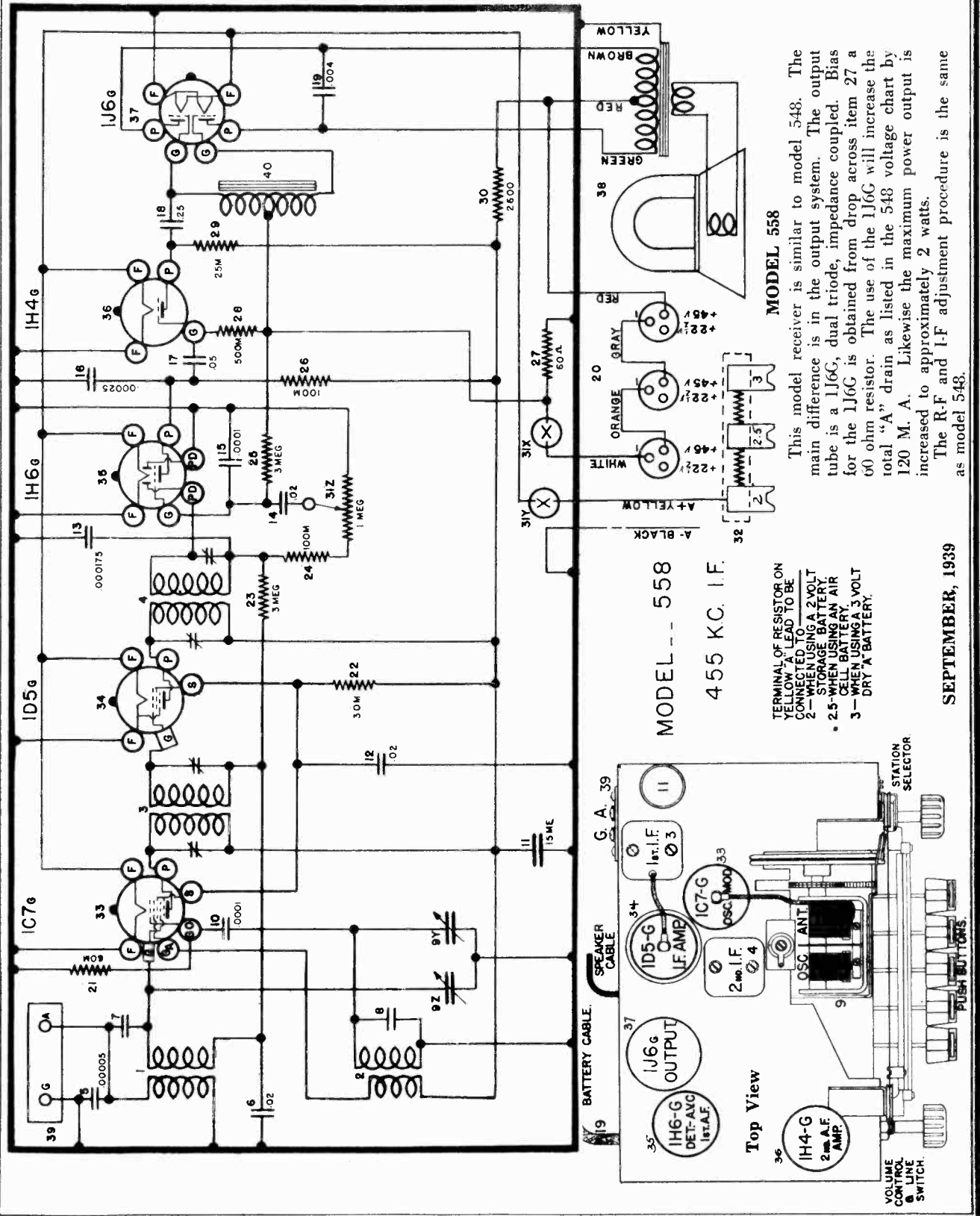


Fig. 2—Top View Model 549

THE CROSLLEY CORP

MODEL 558  
Schematic, Socket  
Trimmers, Notes

POP ALIGNMENT  
SEE INDEX



**MODEL 558**  
This model receiver is similar to model 548. The main difference is in the output system. The output tube is a 1J6G, dual triode, impedance coupled. Bias for the 1J6G is obtained from drop across item 27 a 60 ohm resistor. The use of the 1J6G will increase the total "A" drain as listed in the 548 voltage chart by 120 M. A. Likewise the maximum power output is increased to approximately 2 watts.  
The R-F and I-F adjustment procedure is the same as model 548.

MODEL -- 558  
455 KC. I.F.

- TERMINAL OF RESISTOR ON YELLOW "A" LEAD TO BE CONNECTED TO:
- 2 - WHEN USING A 2 VOLT STORAGE BATTERY.
  - 2.5 - WHEN USING AN AIR CELL BATTERY.
  - 3 - WHEN USING A 3 VOLT DRY A BATTERY.

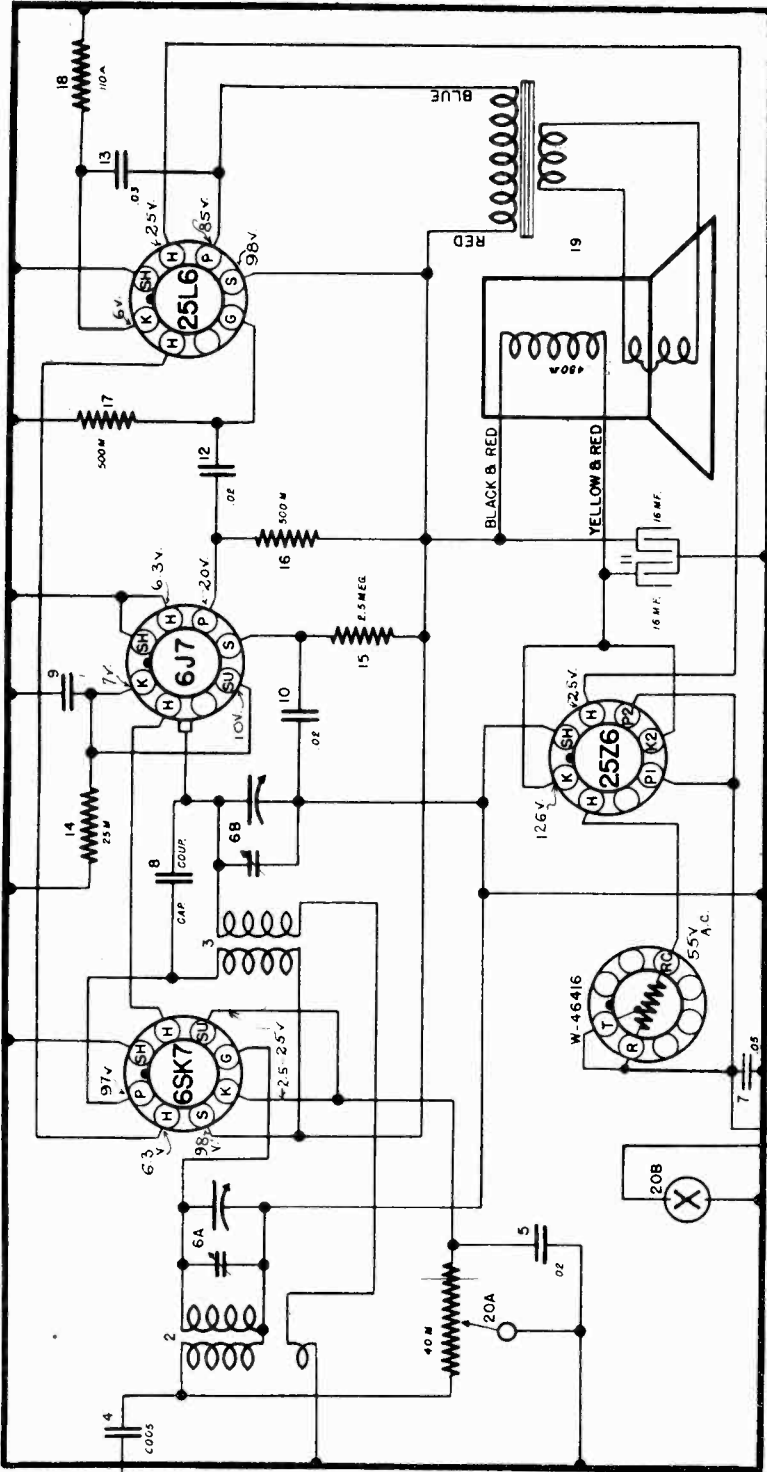
SEPTEMBER, 1939

MODEL 599  
Schematic, Socket

THE CROSLEY CORP.

Trimmers, Chassis  
Alignment, Voltage

Power output approximately 2 watts. Drop across field 28 volts.  
Power consumption at 117.5 volts line 45 watts (A.C.).  
All readings except filaments will be approximately 10% lower on 117.5 D. C.



MODEL 599  
SEPTEMBER, 1939

**ALIGNMENT PROCEDURE**

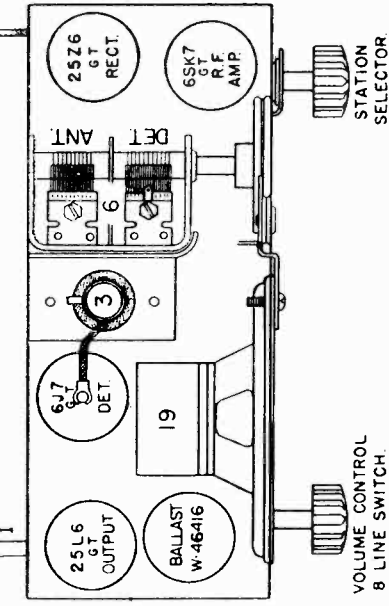
- (a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead on the receiver. The ground lead of the generator should be connected through a .001 mf. condenser to the chassis.
- (b) Open the gang condenser all the way.
- (c) Set the generator to 1725 kilocycles.
- (d) Adjust the trimmer condensers on the gang until the 1725 kc. signal is heard. The gang does not have to tune through this signal.
- (e) Set the generator to 1400 kc.
- (f) Tune the set to the 1400 kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

**NOTE:** Always use the lowest signal generator output that will give a reasonable indication on the output meter.  
Keep the two grid leads as far as possible from each other.

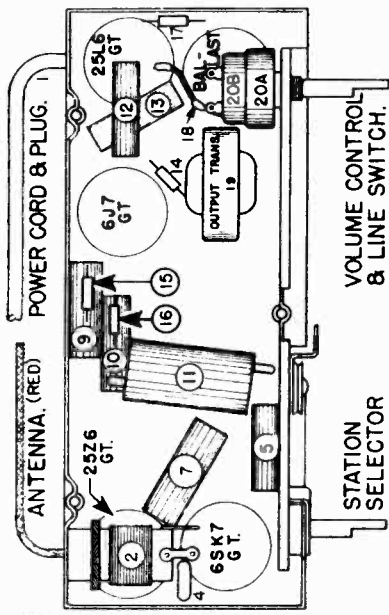
Voltage readings between the tube socket contacts and chassis.

**MODEL 599**

**Top View Model 599**



Top View Model 599



Bottom View Model 599

THE CROSLY CORP.

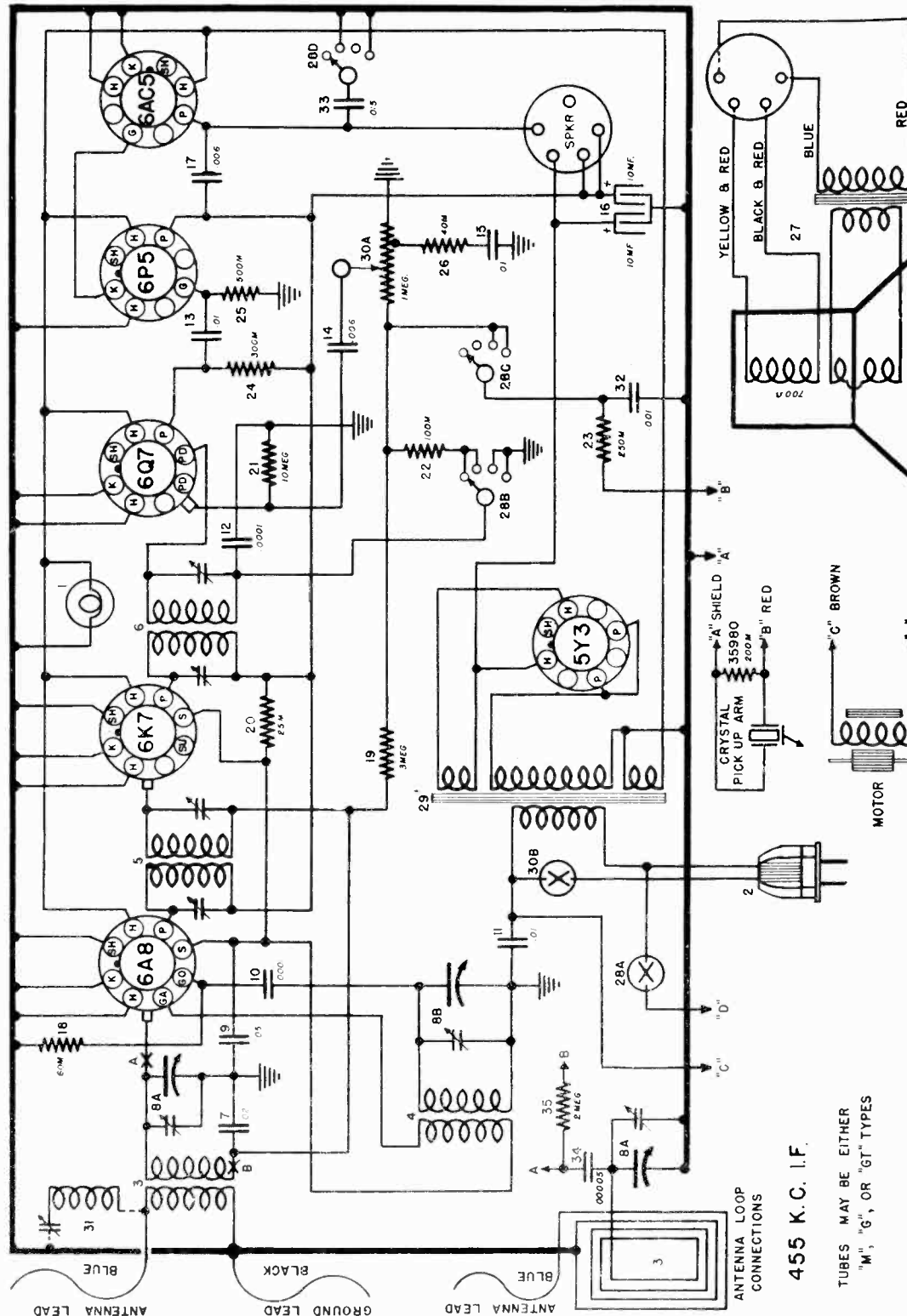
MODEL 639  
Schematic, Voltage

CIRCUIT DESCRIPTION

Six glass (octal) tubes are used and their functions are as follows: one 6A8G as oscillator-modulator, one 6K7G as I-F amplifier, one 6Q7G as diode detector and A. V. C., and 1st audio, one 6P5G as 2nd audio amplifier, one 6AC5G dynamic coupled power output and one 5Y3G as a half-wave rectifier.

This model is a six-tube superheterodyne, phono combination receiver with Automatic Record Changer. The tuning range is from 540 to 1725 kilocycles.

For adapting the phono-motor to 50 cycle operation it is only necessary to change the drive pulley on the motor shaft, using pulley No. 48536.



NOVEMBER, 1939

Tube	Function	H	P	S	K	G	Ga	Go
6A8G	Oscillator-Modulator	6.3	230	68	—	—	68	Neg.
6K7G	I-F Amplifier	6.3	230	68	—	—	—	—
6Q7G	Detector—A. V. C.—1st A-F	6.3	74	—	—	—	—	—
6P5G	Driver	6.3	230	—	+13	—	—	—
6AC5G	Power Output	6.3	225	—	—	+13	—	—
5Y3G	Rectifier	5.0	—	—	—	—	—	—

Voltage drop across speaker field 44 volts.  
Maximum power output approximately 5 watts.  
Power consumption at 117.5 volts approximately 85 watts with phono operating.

MODEL 639  
Socket, Trimmers  
Phono Assembly

THE CROSLEY CORP.

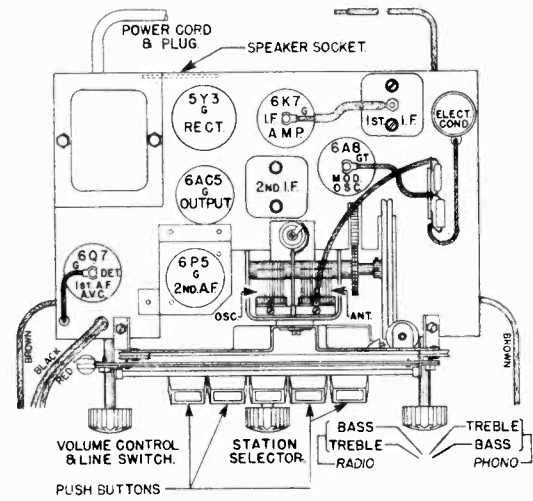
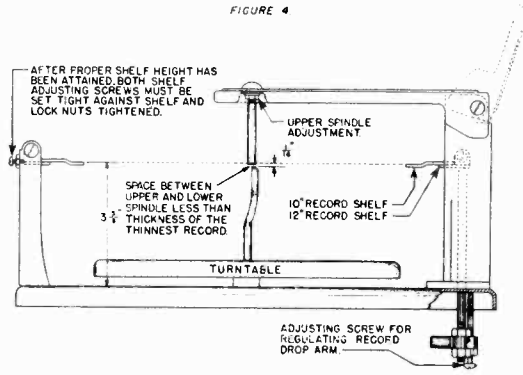
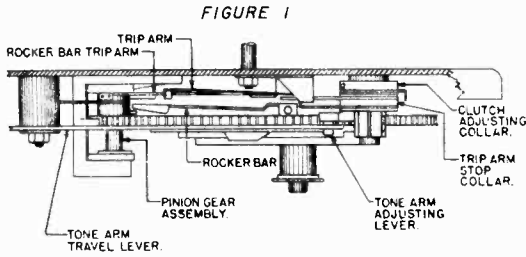


Fig. 2—Top View Model 639

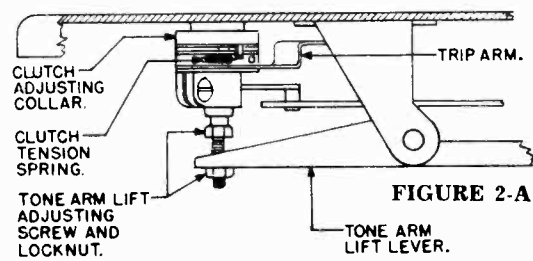
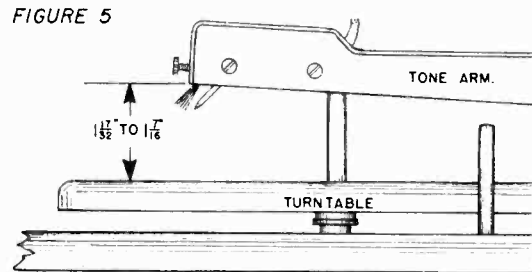


FIGURE 2-A

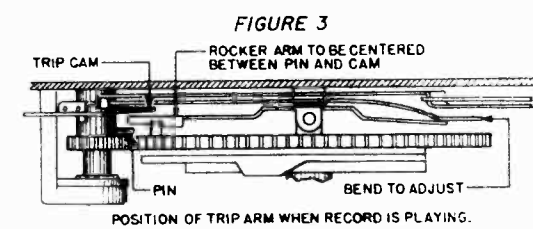


FIGURE 3

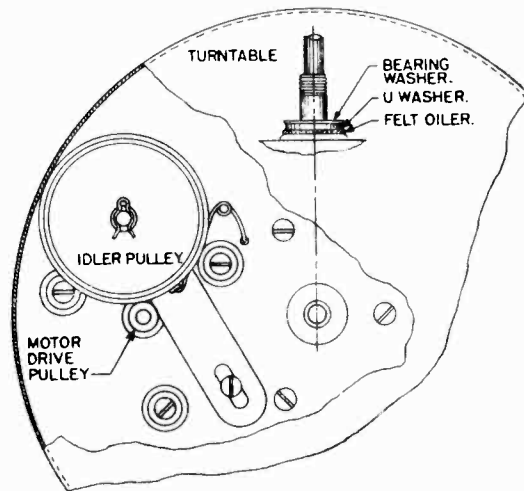
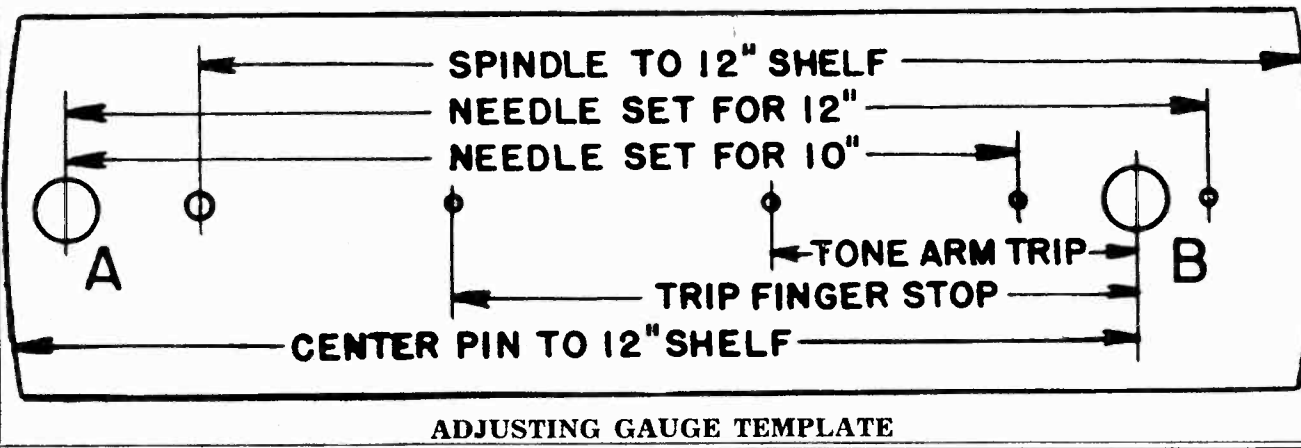


FIGURE 6



ADJUSTING GAUGE TEMPLATE

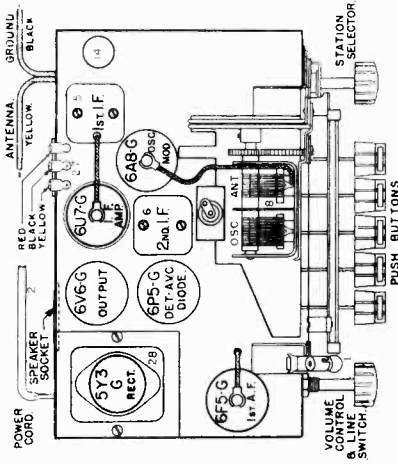




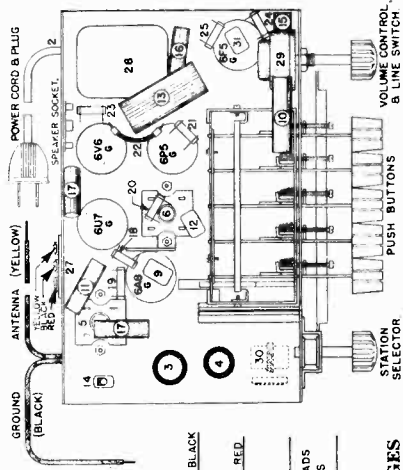
**MODEL 668**  
**Schematic, Voltage**  
**Socket, Trimmers**  
**Chassis**

**THE CROSLLEY CORP**

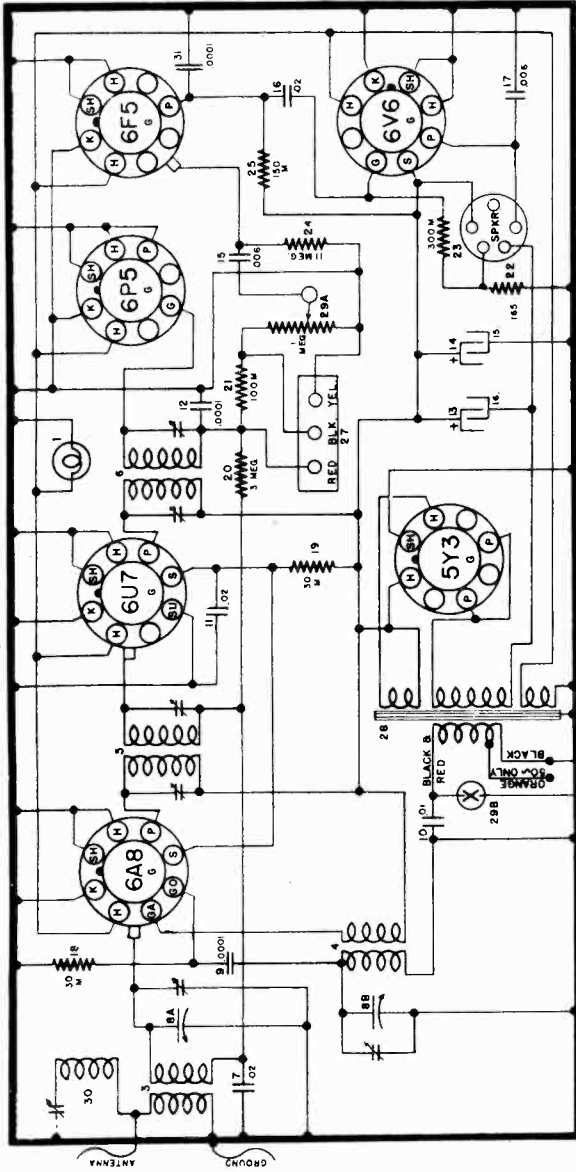
SEPTEMBER, 1939



Top View Model 668



Bottom View Model 668



MODEL -- 668  
 455 K.C. I.F.

**ALIGNMENT PROCEDURE**

**CONNECTING OUTPUT METER**

Connect the output meter to the plate and screen of the 6V6C 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 the I-F Amplifier To 455 Kilocycles.**

- Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8C tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **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 out of mesh. Turn the volume control knob to the right (ON).
- Set the signal generator to 455 kilocycles.
- Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 6, Fig. 2).
- Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 5, Fig. 2).
- Check operations (d) and (e) for more accurate adjustment.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**Aligning the R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna lead of the receiver, a 100 mfd. condenser should be connected in series with the output lead of the signal generator.

- With the station selector adjusted so that the tuning condenser plates are completely out of mesh adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C) is heard (it is not necessary that the receiver tune through this signal).
- Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**
- If any of the circuits have been re-adjusted it may be necessary to reset the push buttons.

**SOCKET VOLTAGES**

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500-volt D. C. voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A. C. voltmeter (approximately 0-10 volts). Readings may vary plus or minus 10% of values given.

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	C	Ga	Go
6A8C	Oscillator-Modulator	6.3	186	70			186	15
6U7C	I-F Amplifier	6.3	186					
6P5C	Detector A. V. C.	6.3						
6V6C	I-F Amplifier	6.3	93					
5Y3C	Power Output Rectifier	5	180	186			9.5	

Voltage drop across speaker field 50 volts, using 396-BP-12 speaker. Maximum power output approximately 3 watts. Power consumption at 117.3 volts approximately 63 watts with phono operating.



MODELS 649, 5648  
Voltage, Chassis  
Socket, Trimmers  
Alignment, Tuner

THE CROSLLEY CORP.

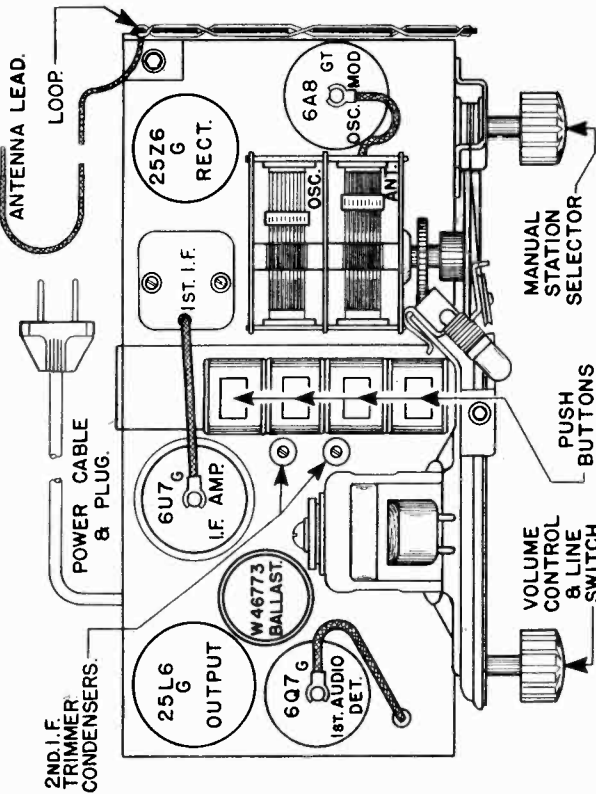


Fig. 2—Top View Model 649

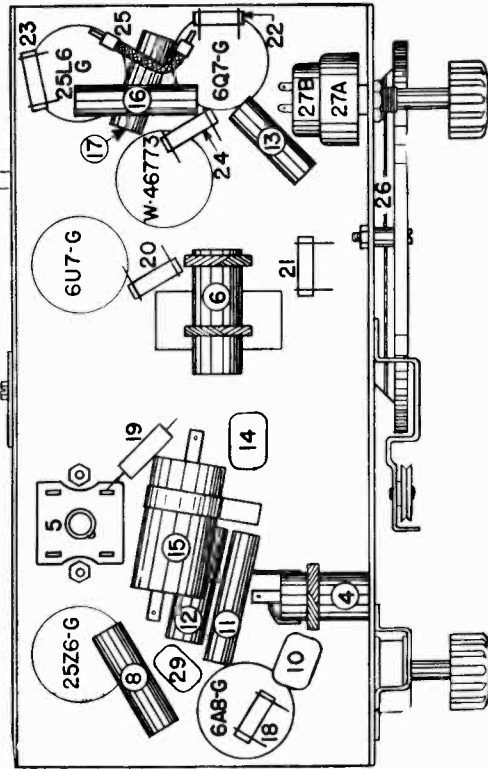


Fig. 3—Bottom View Model 5648—649

detector and 1st A-F amplifier and supplies A.V.C. voltage to the grid of the 6A8-G and 607-G tubes. The bias for the 25L6-G tube is obtained from item 25 a 140 ohm resistor. A ballast tube is used to provide the proper heater voltage to the filaments of the tubes are wired in series. A .005 microfarad condenser is connected in parallel with the power supply leads to reduce electrical interference from that source.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1,000 ohm per volt, 250 volt voltmeter (except filaments) with the volume control full "ON" and no signal input. The filament voltages should be measured with an accurate low range voltmeter. When measured on a 117.5 volt A.C. line voltage limits may vary plus or minus 10% of the values given.

Tube	Function	H	S	Su	K	Co	Ca
6A8GT	Oscillator-Modulator	6.3	105	70	—	-10	105
6U7G	I-F Amplifier	6.3	105	70	—	—	—
607G	Det. AVC. A-F Amplifier	6.3	35	—	—	—	—
25L6G	Output	25.1	105	—	6	—	—
25Z6G	Rectifier	25.1	117.5 A.C.	—	—	—	—
W-46773	Ballast Tube	—	—	—	132	—	—

Approx. .38.1 A.C. Drop

Power output approximately 2 watts.  
Power consumption approximately 48 watts.  
Voltage drop across speaker field 27 volts.  
All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.

**ALIGNMENT PROCEDURE**

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25L6G output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mid. or larger—not electrolytic) in series with one of the leads.

**Tuning the I-F Amplifier to 455 Kilocycles**

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8GT, leaving grid cap in place. 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 .01 mid.) should be connected in series with the ground return. (b) The output meter should be connected in series with the ground return. (c) Repeat operations (a) and (b) until the output meter shows a reasonable reading. (d) Repeat operations (d) and (e) for more accurate adjustments. (e) Adjust the 2nd I-F trimmer condensers, Fig. 2, located on chassis between Push Button Assembly and speaker field, for maximum reading on the output meter. (f) Repeat operations (d) and (e) for more accurate adjustments. (g) Repeat operations (d) and (e) for more accurate adjustments. (h) Repeat operations (d) and (e) for more accurate adjustments. (i) Repeat operations (d) and (e) for more accurate adjustments. (j) Repeat operations (d) and (e) for more accurate adjustments. (k) Repeat operations (d) and (e) for more accurate adjustments. (l) Repeat operations (d) and (e) for more accurate adjustments. (m) Repeat operations (d) and (e) for more accurate adjustments. (n) Repeat operations (d) and (e) for more accurate adjustments. (o) Repeat operations (d) and (e) for more accurate adjustments. (p) Repeat operations (d) and (e) for more accurate adjustments. (q) Repeat operations (d) and (e) for more accurate adjustments. (r) Repeat operations (d) and (e) for more accurate adjustments. (s) Repeat operations (d) and (e) for more accurate adjustments. (t) Repeat operations (d) and (e) for more accurate adjustments. (u) Repeat operations (d) and (e) for more accurate adjustments. (v) Repeat operations (d) and (e) for more accurate adjustments. (w) Repeat operations (d) and (e) for more accurate adjustments. (x) Repeat operations (d) and (e) for more accurate adjustments. (y) Repeat operations (d) and (e) for more accurate adjustments. (z) 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.

**Aligning the R-F Amplifier Model 5648**

Connect output lead of signal generator through a .0001 mf. condenser to the antenna lead of the receiver. (a) Set the signal generator to 1550 kilocycles. (b) With the condenser gang open all the way, adjust the "OSC." section of the gang for maximum signal. (c) Set the signal generator to 1400 kilocycles. (d) Tune in the 1400 kc. signal with the manual tuning knob.

(e) Adjust the trimmer condenser on the "ANT." section of the gang for maximum signal.

NOTE: Do not readjust the "OSC." section at this time. Repeat (b) and (c) for more accurate adjustments.

**Aligning the R-F Amplifier Model 649**

Connect output of signal generator through a .0001 mf. condenser to the antenna lead of receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC." section of the gang so that the receiver is 1400 kilocycles.

(c) Tune in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(d) Adjust the trimmer condenser located on the "ANT." section of the gang for maximum output.

NOTE: Do not readjust the "OSC." trimmer.

(e) Repeat operations (d) and (e) for more accurate adjustments.

If any of the circuits have been re-aligned, check push buttons to see if they need resetting.

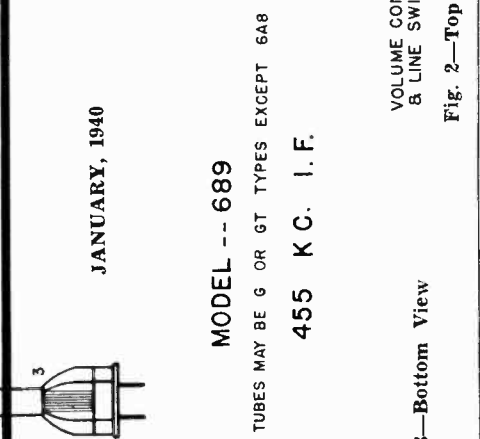
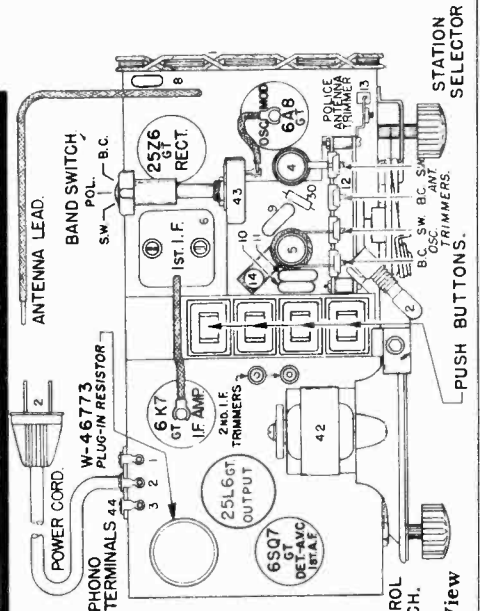
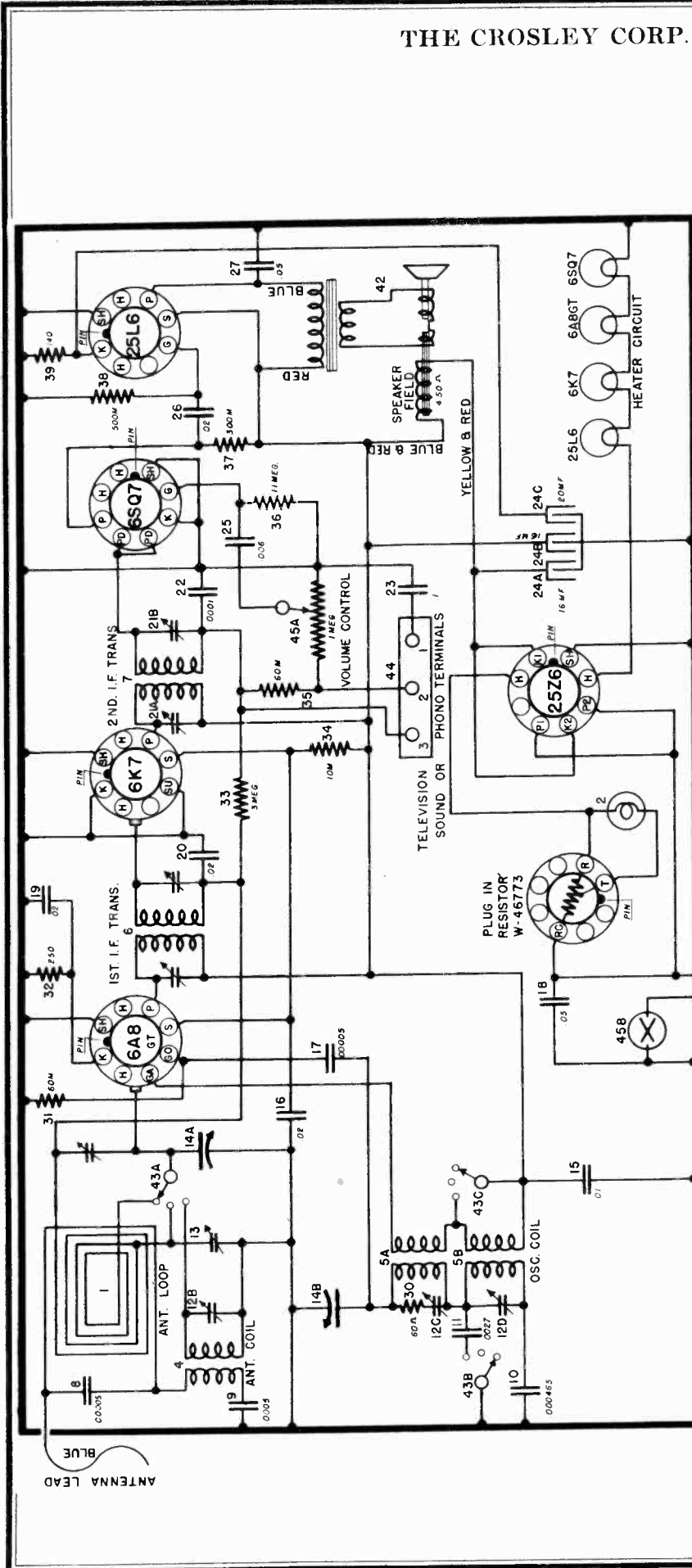
**SETTING THE PUSH BUTTONS**

The push buttons are easily and accurately set from the top of the receiver. It is not necessary that all the buttons be set at the same time. Remove the push buttons to be set by grasping the button between the forefinger and thumb and pulling straight up. Loosen the set screws on the keys but do not remove them. (a) Tune in the favorite broadcasting stations whose call letters are to be placed in the buttons. By means of the manual tuning knob, tune in AS ACCURATELY AS POSSIBLE the station having the highest frequency—that is the station that is tuned in nearest the 1500 kc. end of the dial. Then push the front key all the way down, and while you hold it in that position SECURELY TIGHTEN THE SET SCREW. Replace push button on key.

The push button tuning system is now correctly set for the first broadcast station. (b) Repeat operations (a) and (b) for the other stations in the order of their frequency (kilocycles). Detach the call letters of the favorite stations from the list supplied with your receiver and press them into the openings in the front of the push buttons. Then pieces of clear celluloid are supplied in a small envelope and should be snapped in place over the call letters to protect and hold them in place.

THE CROSLY CORP.

MODEL 689  
Schematic, Chassis  
Socket, Trimmers



JANUARY, 1940

MODEL -- 689  
TUBES MAY BE G OR GT TYPES EXCEPT 6A8  
455 KC. I. F.

Fig. 3—Bottom View

Fig. 2—Top View

MODEL 689  
Voltage, Tuner  
Alignment

## THE CROSLEY CORP.

## MODEL 689

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8GT	Oscillator-Modulator	6.3	105	70	—	—	-10	105
6K7GT	I-F Amplifier	6.3	105	70	—	—	—	—
6SQ7GT	Det. AVC. A-F Amplifier	6.3	35	—	—	—	—	—
25L6GT	Output	25.1	100	105	—	6	—	—
25Z6GT	Rectifier	25.1	117.5 A.C.	—	—	132	—	—
W-46773	Ballast Tube	Approx. 48.4 A.C. Drop						

Power output approximately 2 watts.

Power consumption approximately 48 watts.

Voltage drop across speaker field 27 volts.

All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.

## ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

## CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT 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 The I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8GT, leaving grid cap in place. 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.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the volume control to the right (ON), and turn the band switch to the right (B.C.).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, Fig. 2, located between Push Button Assembly and speaker field, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

(f) 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.**

## Aligning the R-F Amplifier

When aligning the R-F amplifier the output lead of the signal generator should be connected, through a dummy antenna, to the BLUE lead extending from the rear of the chassis. For the standard Broadcast Band and special police band use a .0001 mf. condenser and for the short wave band a 250 ohm carbon resistor instead of the condenser.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position and band switch turned to B.C. position, adjust the B.C. "OSC" trimmer condenser of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser B.C. "ANT" for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

(g) Set signal generator to 2.5 megacycles and turn band switch to special police band (middle position).

(h) Tune in 2.5 signal on receiver and then adjust POL. "ANT" trimmer condenser (Fig. 2) for maximum output. There is no "OSC" adjustment for this band.

(i) Set signal generator to 18.3 megacycles, turn band switch to S.W. position (left) and open gang all the way.

(j) Adjust S.W. "OSC" trimmer condenser for maximum

output.

(k) Set signal generator to 18 megacycles.

(l) Tune in 18 mc. signal on receiver, then adjust the S.W. "ANT" trimmer condenser for maximum output.

(m) Repeat (i) to (l) for more accurate adjustments.

NOTE: When shunt aligning the short wave band care should be exercised so that the circuits will be aligned on the correct frequency (fundamental) rather than on the image frequency which is approximately 910 kilocycles more than the fundamental. To check on this, increase the signal generator output approximately 10 times or more, and try to tune in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. (18.0 mc. fundamental 17.09 mc. image). If circuits have been properly aligned the signal can be tuned in at both positions but with a much stronger signal on the fundamental.

A few of the earlier releases of this model used a 6Q7GT in place of the 6SQ7GT. This change was made to improve performance especially on the short wave band.

If any of the circuits have been re-aligned, check push buttons to see if they need resetting.

## SETTING THE PUSH BUTTONS

The push buttons are easily and accurately set from the top of the receiver. It is not necessary that all the buttons be set at the same time. Remove the push buttons to be set by grasping the button between the forefinger and thumb and pulling straight up. Loosen the set screws on the keys but do not remove them.

Determine the favorite broadcasting stations whose call letters are to be placed in the buttons. By means of the manual tuning knob, tune-in AS ACCURATELY AS POSSIBLE the station having the highest frequency—that is the station that is tuned-in nearest the 1500 Kc. end of the dial. Then push the front key all the way down, and while you hold it in that position SECURELY TIGHTEN THE SET SCREW. Replace push button on key.

The push button tuning system is now correctly set for the first station. Follow through with this same procedure, setting the other stations in the order of their frequency (kilocycles). Detach the call letters of the favorite stations from the list supplied with your receiver and press them into the openings in the front of the push buttons. Thin pieces of clear celluloid are supplied in a small envelope and should be snapped in place over the call letters to protect and hold them in place.

## TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1,000 ohm per volt, 250 volt volt-meter (except filaments) with the volume control full "ON" and no signal input. The filament voltages should be measured with an accurate low range volt-meter. When measured on a 117.5 volt A.C. line voltage limits may vary plus or minus 10% of the values given.

## SPECIFICATIONS

This model Crosley receiver is a three band superheterodyne receiver designed for operation on 110 volt A.C. (50-60 cycles) or D.C. power circuits.

The receiver incorporates an improved mechanical push button tuning system, built in loop antenna, A.V.C., terminals for phono or television sound and many improved circuit developments.

THE CROSLY CORP.

MODEL 719 (3 Types) Schematics

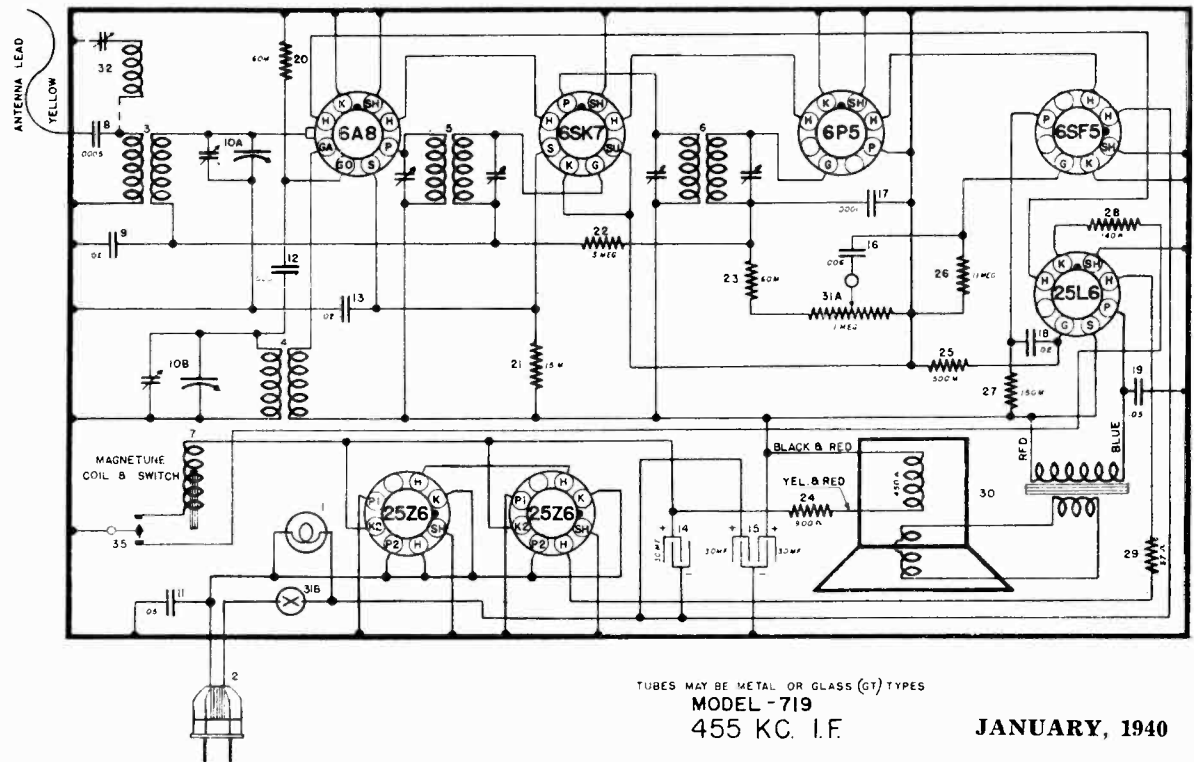


FIG. 1-A—WIRING DIAGRAM—MODEL 719

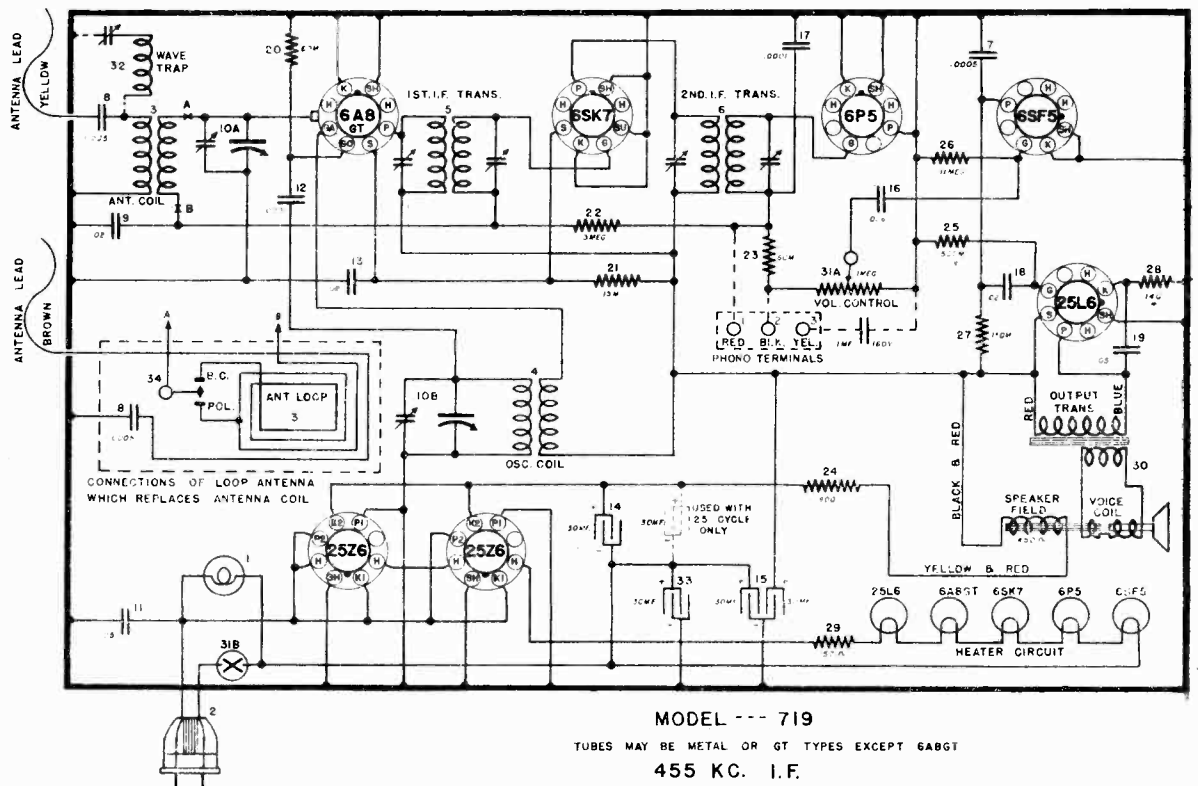


FIG. 1-B—WIRING DIAGRAM—MODEL 719

## MODEL 719

Voltage, Circuit Data

Socket, Trimmers, Alignment

## THE CROSLLEY CORP.

## SPECIFICATIONS

This model Crosley is a seven tube superheterodyne receiver designed for operation on 110 volt—50 or 60 cycle power circuits. It may be adapted for 25 cycle operation by the addition of another filter condenser as indicated in wiring diagram.

## CIRCUIT DESCRIPTION

There are three versions of this model in the field namely: one version with an improved mechanical push button tuning system; one version with mechanical push button tuning and loop antenna, and one version has the Magnetune electric push button tuning system.

The circuit is a conventional super with no regeneration. Item 23, a 60,000 ohm resistor in series with the volume control form the A.V.C. load. Item 22, a 3 megohm resistor acts as a filter for the A.V.C. voltage applied to the 6A8GT and the 6SK7. Bias for the 25L6GT is obtained from the voltage drop

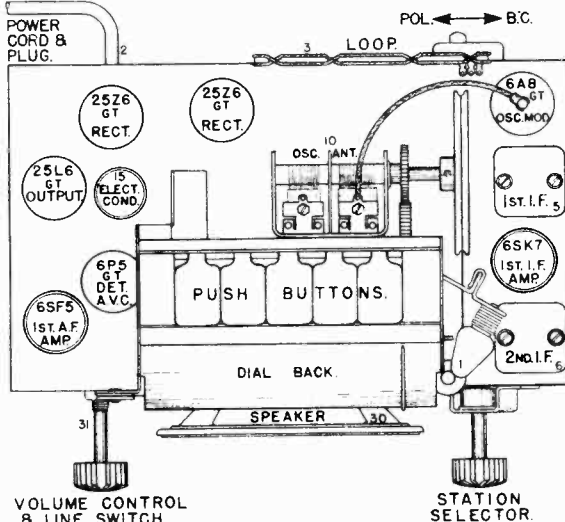


Fig. 2—Top View Model 719

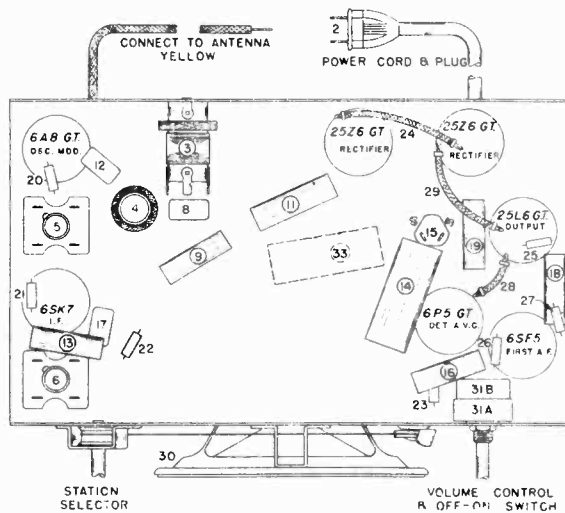


Fig. 3—Bottom View Model 719

## TUBE SOCKET VOLTAGE READING

Tube	Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8GT	Oscillator-Modulator	—	H	130	70	-17	130	H	—
6SK7	I-F Amplifier	—	H	—	J.B.	—	70	H	130
6P5	Det. AVC Diode	—	H	—	—	—	J.B.	H	—
6SF5	1st Audio	—	—	—	—	68	—	H	H
25L6	Output	—	H	121	128	—	J.B.	H	6
2-25Z6	Rectifier	—	H	A.C.	232	—	—	H	130

Maximum power output 2.5 watts.

Drop across speaker field 40 volts.

Power consumption @ 117.5 volt line = 65 watts. Those with "Magnetune" coil 40 watts additional.

## ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

## CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT 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 The I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna lead 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.**

(b) 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).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, item 6, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, item 5, for

maximum output.

(f) 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.**

## TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1,000 ohm per volt, 250 volt voltmeter (except filaments) with the volume control full "ON" and no signal input. The filament voltages should be measured with an accurate low range voltmeter. When measured on a 117.5 volt A.C. line voltage limits may vary plus or minus 10% of the values given.

maximum output.

(f) 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.**

## Aligning the R-F Amplifier

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

The special police band has no provisions for alignment.

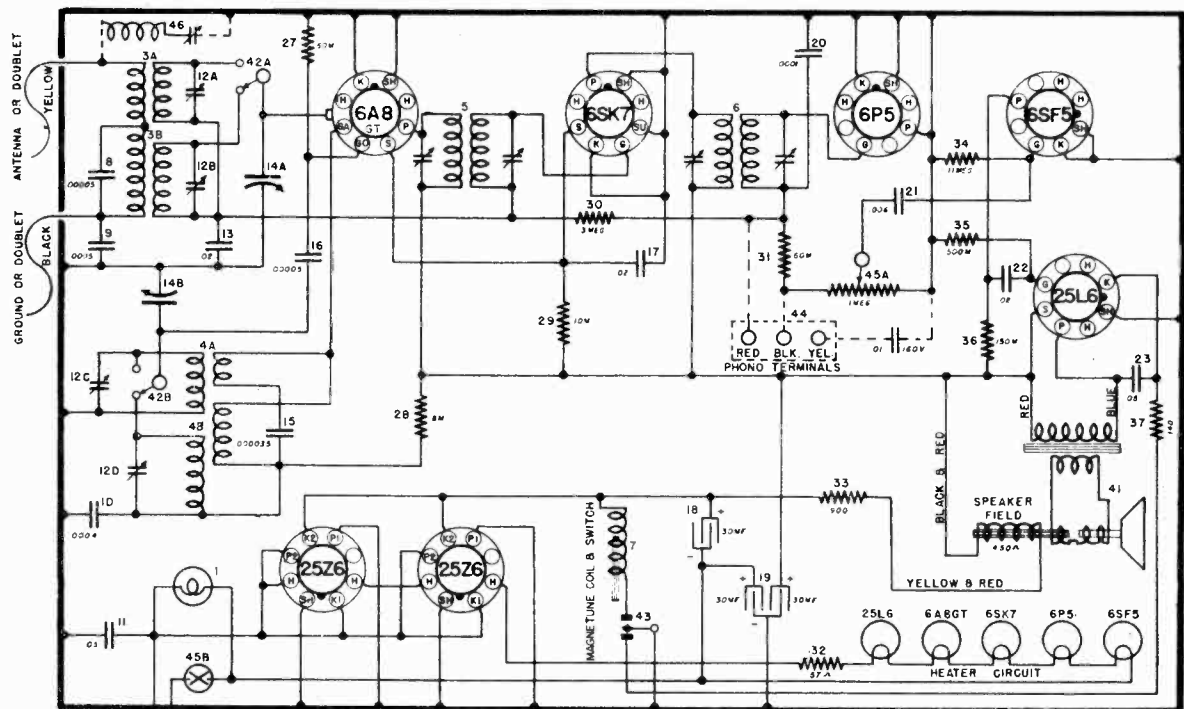
## WAVE TRAP

Some chassis of this model may be 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 top side of the chassis and consists of a coil and a condenser as illustrated by dotted lines in the Wiring Diagram, Fig. 1A.



THE CROSLLEY CORP.

MODEL 729 (Types 1 and 2)  
Schematics

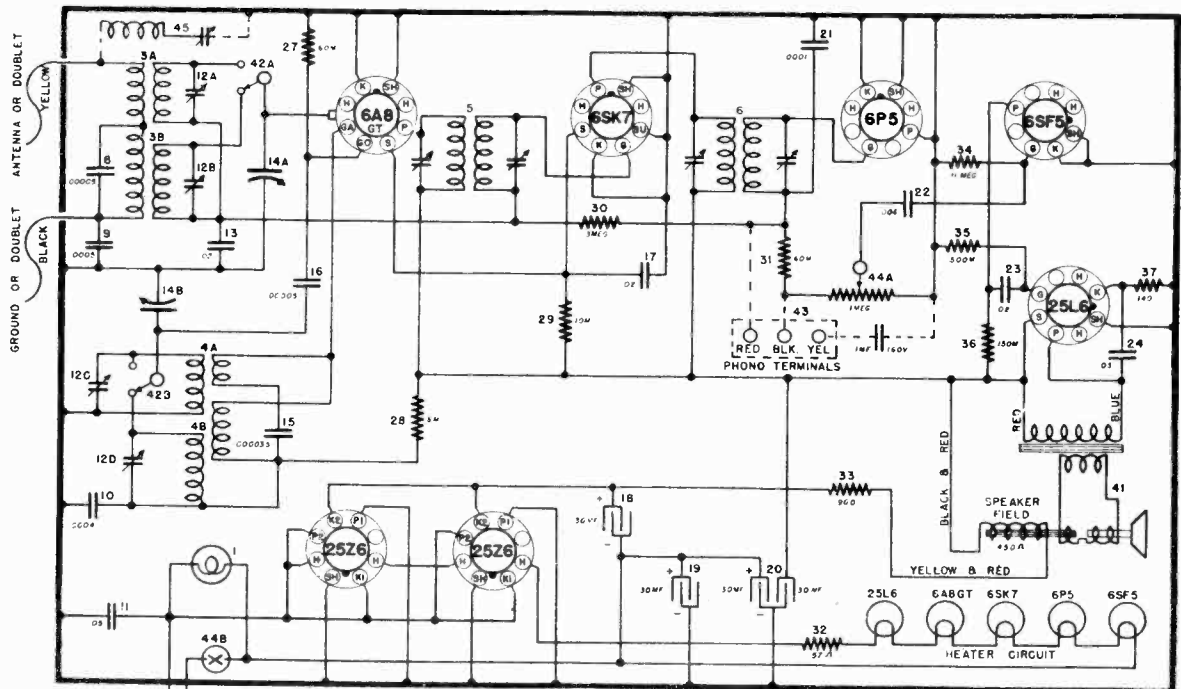


MODEL -- 729

TUBES MAY BE METAL OR GT TYPES EXCEPT 6A8GT

455 KC. I. F.

FIG. 1-A—WIRING DIAGRAM—MODEL 729 (MAGNETUNE)



MODEL - - 729

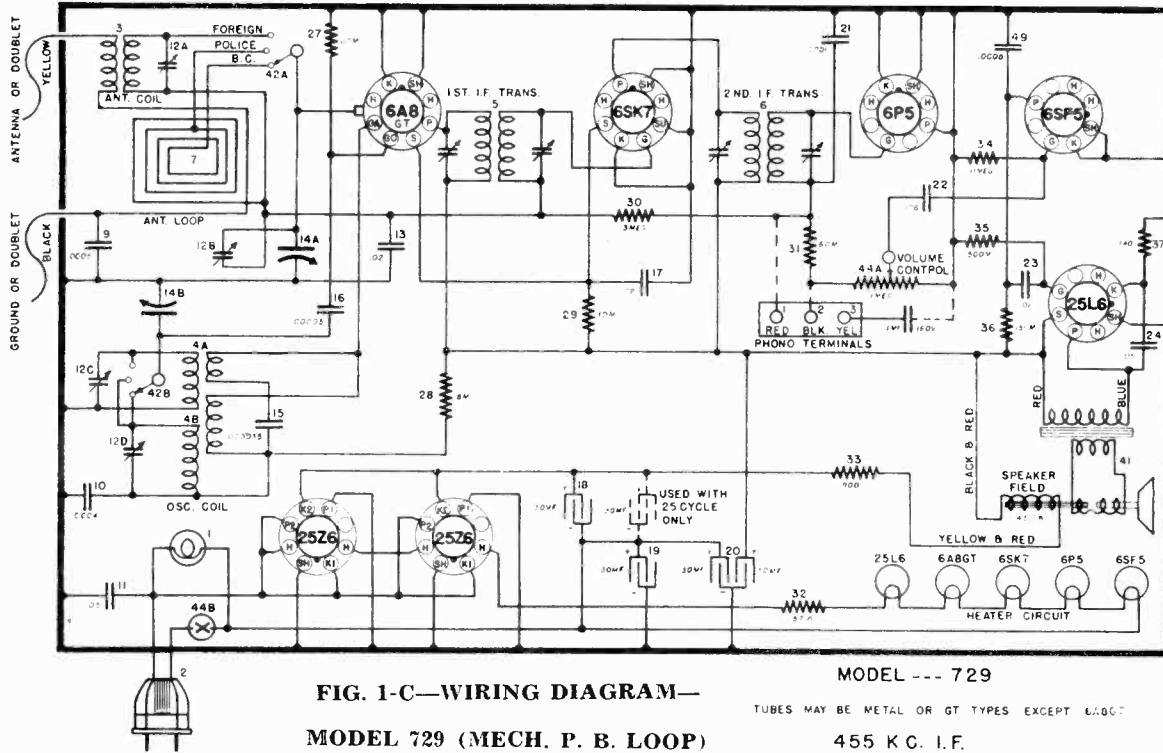
TUBES MAY BE METAL OR GT TYPES EXCEPT 6A8GT

455 KC. I. F.

FIG. 1-B—WIRING DIAGRAM—MODEL 729 (MECH. P. B.—TWO BAND)

MODEL 729 (Type 3)  
Schematic, Voltage  
Socket, Trimmers, Chassis

THE CROSLEY CORP.



Tube	Purpose	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8GT	Oscillator-Modulator	—	H	125	74	Osc. Grid	130	H	—
6SK7	I-F Amplifier	—	H	—	Grid	—	71	H	125
6P5	Diode	—	H	—	—	Grid	—	H	—
6SF5	1st Audio	—	—	Grid	—	65	—	H	H
25L6	Output	—	H	120	125	Grid	—	H	8
2-25Z6	Rectifier	—	H	117.5 A.C.	232	—	—	H	122

Drop across speaker field 35 volts.  
Drop across Item 33 72 volts.  
Maximum power output 4.3 watts @ 125 volts line.  
Power consumption @ 117.5 volts line—60 watts.  
J.B. = junction block

H = heater.

JANUARY, 1940

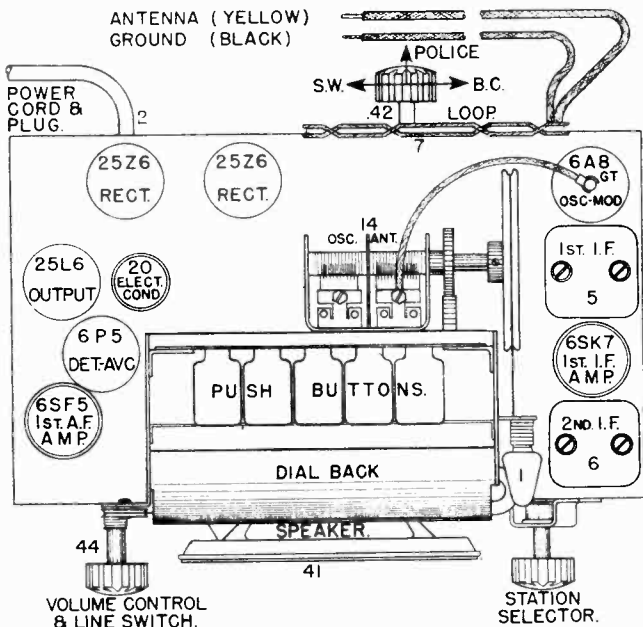


Fig. 1—Top View Model 729

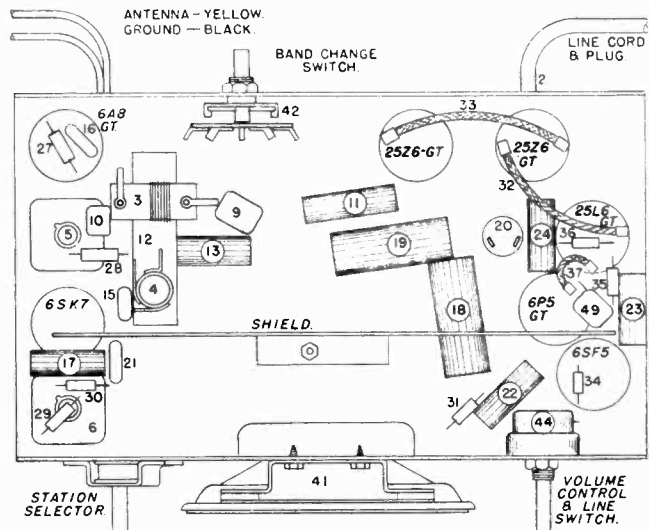


Fig. 3—Bottom View Model 729

THE CROSLY CORP.

MODEL 729  
Alignment, Parts  
Circuit Notes

MODEL NO. 729

This model Crosley receiver is designed for operation on 110 volt, 50 or 60 cycle electric circuits. There are three versions of this model in the field which include; one version which is a two band super with a mechanical push button tuning system; one version which is a two band super with the "Magnetune" electric push button tuning system; one version which is a three band super with a loop antenna and a mechanical push button tuning system.

The circuit is a conventional superheterodyne with the exception of the three band series which is novel in the method in which the special police band is covered. This special band

makes use of the image frequency (2 x I-F frequency more than fundamental) and the tap on the loop which is resonated at 2.4 megacycles.

The 6A8GT, 6SK7, and 6SF5 are operated at zero bias and the 25L6 bias is obtained from voltage drop across item 37, a 140 ohm 1/2 watt resistor. A.V.C. voltage is applied to the 6A8GT and the 6SK7 through filter resistor item 30 (3 megohms). Item 31, a 60,000 ohm resistor and item 45A, a 1 megohm volume control, serve as the A.V.C. load. The two 25Z6 rectifiers are hooked in parallel and connected voltage doubling. The speaker field (450 ohms) and item 33, a 900 ohm 7 watt resistor with condensers items 18 and 19 filter the B supply.

ALIGNMENT PROCEDURE

All circuits have been 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.

NOTE: The circuit of this receiver is such that if the signal generator has one side of the line connected to the case or ground side and the generator and receiver are plugged into the same line, serious damage may result to either or both instruments. ALWAYS ISOLATE SIGNAL GENERATOR GROUND LEAD BY INSERTING A .01 mf. OR SMALLER CONDENSER IN SERIES WITH THE LEAD BEFORE CONNECTING TO THE CHASSIS.

CONNECTING OUTPUT METER

One terminal of the output meter should be connected to the plate (No. 3 pin) and the other terminal to the screen (No. 4 pin) of the 25L6GT output tube. Be sure the meter is protected from D.C. by connecting a .25 mf. condenser in series with one of the leads.

(1) I-F Amplifier Alignment

- (a) Connect the output lead of the signal generator through a .02 mf. condenser to the top (GRID) cap of the 6A8GT tube (leaving the tubes grid connector in place).
- (b) Connect the ground lead of the signal generator through a .01 mf. (or smaller .001 mf.) condenser to the chassis.
- (c) Adjust station selector so that the rotor plates of the gang are completely disengaged, turn band to B.C. position and turn the volume control to maximum.
- (d) Set the signal generator to 455 kc.
- (e) Adjust the trimmer condensers on the 2nd I-F transformer for maximum output.
- (f) Adjust the trimmer condensers on the 1st I-F transformer for maximum output.
- (g) Repeat (e) and (f) for more accurate adjustments. IN ORDER TO PREVENT A.V.C. ACTION, ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT

WILL GIVE A REASONABLE OUTPUT METER READING.

(2) Aligning R-F Amplifier

- (a) Connect the signal generator output lead through a .0001 mf. condenser to the antenna lead (YELLOW) and the generator ground lead to the Black lead of the receiver. Turn band switch to B.C. band, open gang all the way and turn volume control on full.
- (b) Set signal generator to 1725 kilocycles.
- (c) Adjust B.C. oscillator trimmer for maximum output (receiver does not have to tune through this signal).
- (d) Set signal generator to 1400 kilocycles.
- (e) Tune in generator signal on receiver by means of manual tuning knob.
- (f) Adjust B.C. antenna trimmer for maximum output. DO NOT readjust oscillator trimmer.
- (g) Repeat above procedure for more accurate adjustments.
- (h) Connect the signal generator output lead through a 250 ohm carbon resistor to the antenna lead of the receiver. Turn band switch to S.W. position, open gang condenser all the way, and turn volume on full.
- (i) Set signal generator to 18.3 megacycles.
- (j) Adjust S.W. oscillator trimmer for maximum output.
- (k) Set signal generator to 18 megacycles.
- (l) Tune in 18 mc. signal with manual control, then adjust the S.W. antenna trimmer condenser for maximum output.

Check to see that receiver is aligned on the fundamental and not the image frequency. Increase signal generator output approximately 10 times and tune in image frequency (2 x 455 kc. + fundamental) which will be approximately 910 kilocycles less than 18 mc. as indicated by the dial calibrations (17.1 mc.). If correctly aligned, the image will come in as stated but will be much weaker than the fundamental.

The special police band in some models covering 2.3 to 2.5 mc. has no adjustments but can be checked by using a .0001 mf. condenser in series with the signal generator output lead, turning band switch to POL. position, set signal generator to 2.5 mc. and then tune in generator signal, which should come in with the dial pointer near the end of that band.

PARTS LIST—MODEL 729

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	W -47977	Dial Light Bulb, 110 Volt	20	W -47892	Condenser, 30-30 Ohms 135 Volts Elect.	
	W -47946	Dial Light Bracket Assembly	20	G2 -34002	Condenser, .0001 Mf. Molded (Magnetune only)	
	W -48169	Dial Light Cover	21	G2 -34002	Condenser, .0001 Mf. Molded	
2	B -45769A	Power Cord and Plug	21	W -45810B	Condenser, .006 Mf. 160 Volts Paper (Magnetune only)	
3	G214 -32000	Antenna Coil, Foreign	22	W -45810B	Condenser, .006 Mf. 160 Volts Paper	
4A	G206 -32002	Oscillator Coil } Foreign	22	W -45780B	Condenser, .02 Mf. 160 Volts Paper (Magnetune only)	
4B			} Broadcast	23	W -45780B	Condenser, .02 Mf. 160 Volts Paper
5	G221 -32004	1st I-F Transformer Assembly		23	W -45817B	Condenser, .05 Mf. 160 Volts Paper (Magnetune only)
6	G188 -32004	2nd I-F Transformer Assembly	24	W -15817B	Condenser, .05 Mf. 160 Volts Paper	
7	G6 -47673	Loop Antenna	27	W -37905	Resistor, 60,000 Ohms 1/2 Watt Carb.	
7	G2 -47909	Solenoid Coil Assembly	28	W -37905	Resistor, 8,000 Ohms 1/4 Watt Ins.	
9	G3 -34002	Condenser, .0005 Mf. Molded	29	W -36317	Resistor, 10,000 Ohms 1/4 Watt Ins.	
10	G18 -34002	Condenser, .0004 Mf. Molded	30	W -26577	Resistor, 3 Megohms 1/2 Watt Carb.	
11	W -45782B	Condenser, .05 Mf. 120 Volts Paper	31	W -21237A	Resistor, 60,000 Ohms 1/2 Watt Carb.	
12A	W -41247A	Trimmer Condenser } Antenna, Foreign	32	W -47857	Resistor, 57 Ohms 7 Watt Flex.	
12B			} Oscillator, Foreign	33	W -47873	Resistor, 900 Ohms 7 Watt Flex.
12C				} Oscillator, B. C.	34	W -46497
12D			Spacers, (2 Req.) (4 Sect. Trimmer)		35	W -23785
13	W -47574	Condenser, .02 Mf. 160 Volts Paper	36	W -23403	Resistor, 150,000 Ohms 1/2 Watt Carb.	
14A	W -45780	2 Sect. Var. Cond. } Antenna Section	37	W -47512	Resistor, 110 Ohms 1/4 Watt Flex.	
14B	G80 -33001	} Oscillator Section	41	281-B1-7 "B"	Speaker, Spec. 55-WA-43	
	MG18 -47860	Riveted Mtg. Bracket, R. H.		W -47290	V. C. and Cone Assembly	
	MG18 -47860	Riveted Mtg. Bracket, L. H.		W -46686	Field Coil, 450 Ohms 60 M. A.	
	MG20 -47860	Idle Support Bracket		W -46687	Output Transformer	
	W -47875	Dial Back Face	MG36 -47861	Push Button and Hinge Assembly (9GA, 9GC)		
	G8 -48762	Push Button Unit Assembly	MG37 -47861	Push Button and Hinge Assembly (9GB, 9GE, 9GF, 9GG)		
	G12 -43564	Pulley and Hub Assembly	MG21 -47860	Riveted Hinge Assembly		
15	G13 -34002	Condenser, .0003 Mf. Molded	W -48730B	Insert (5 Req.) (P. B. and Hinge Assembly)		
16	G5 -34002	Condenser, .0005 Mf. Molded	W -47917A	Push Button Hinge		
17	W -45780	Condenser, .02 Mf. 160 Volts Paper	W -48017C	Push Button Hinge Spring		
18	W -47702A	Condenser, 30 Mf. 150 Volts Elect.				
19	W -47702A	Condenser, 30 Mf. 150 Volts Elect.				
19	W -47892	Condenser, 30-30 Ohms 135 Volts Elect. (Magnetune only)				

MODEL 739(Loop Type)  
Schematic

THE CROSLEY CORP.

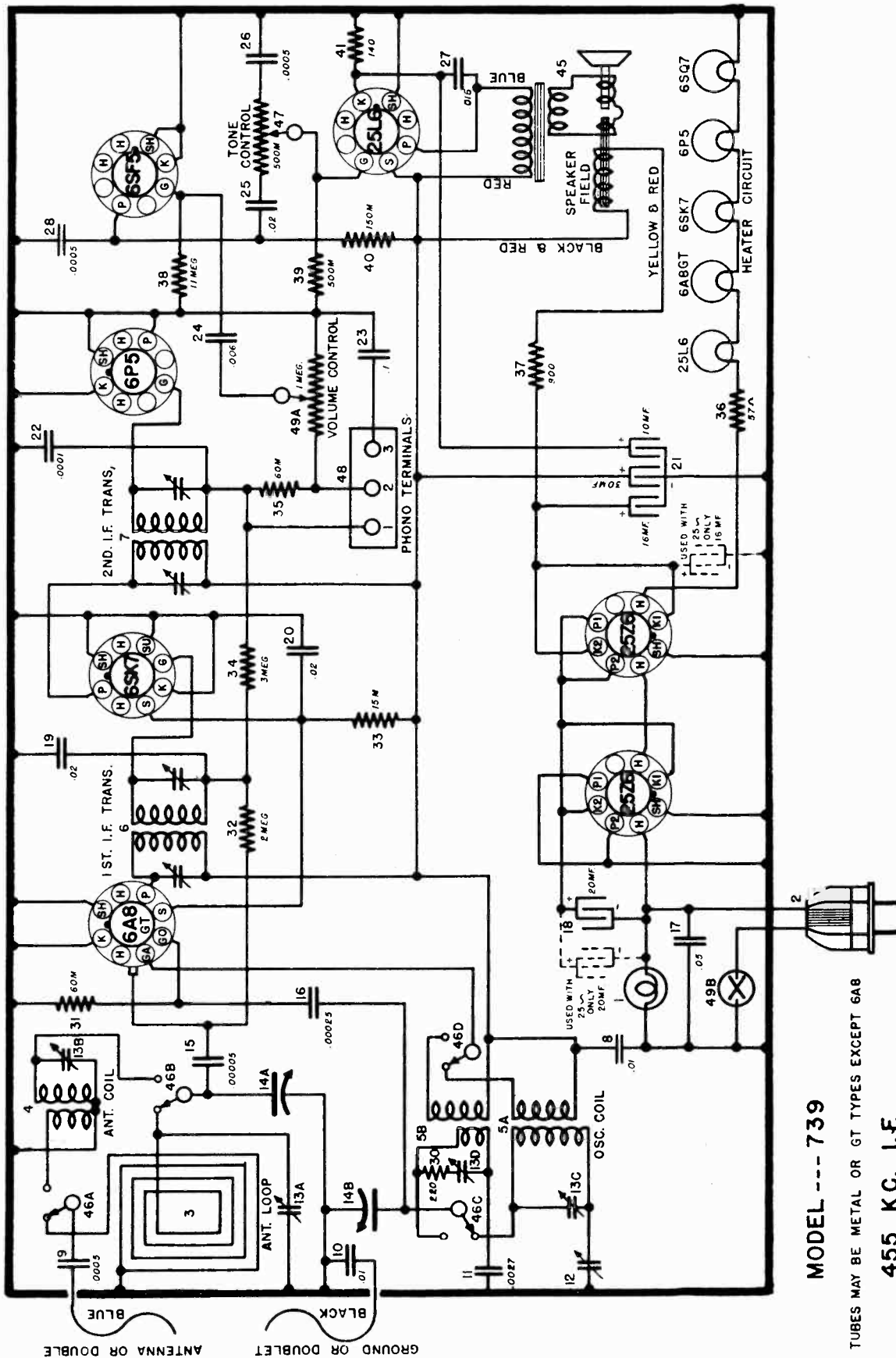
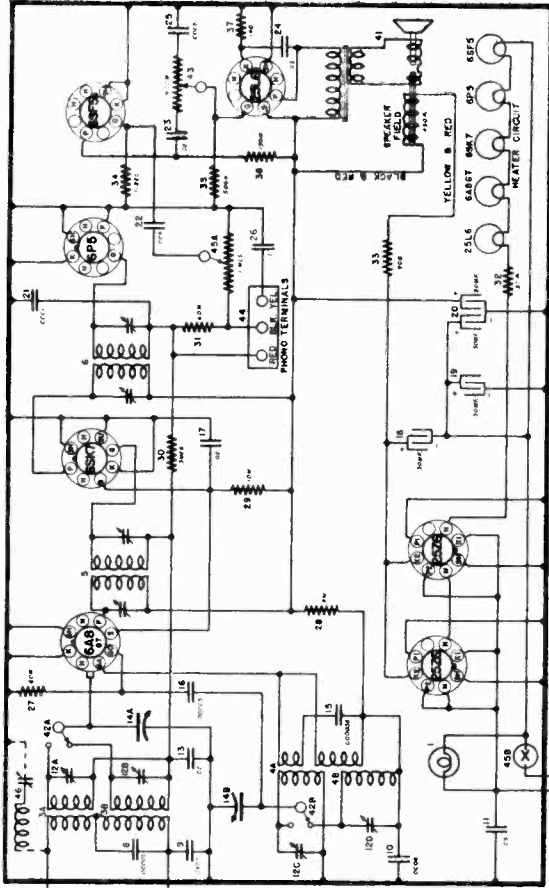


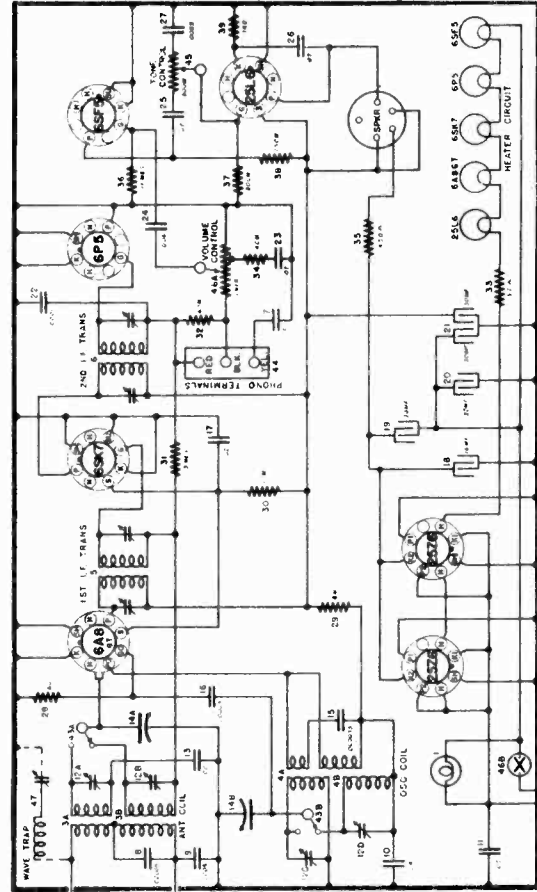
FIG. 1-A—MODEL 739 (MECHANICAL P. B. & LOOP)

THE CROSLY CORP.

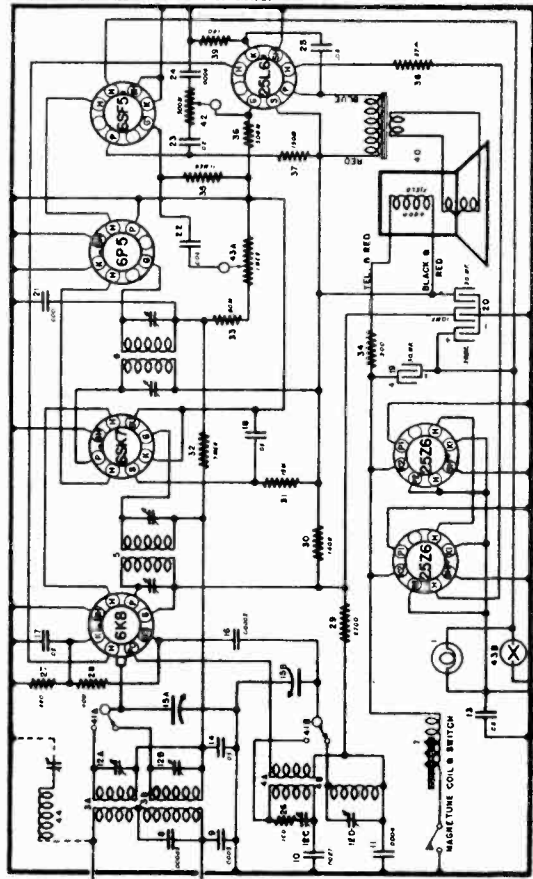
MODELS 739(2 Types),  
7739 (2 Types)  
Schematics



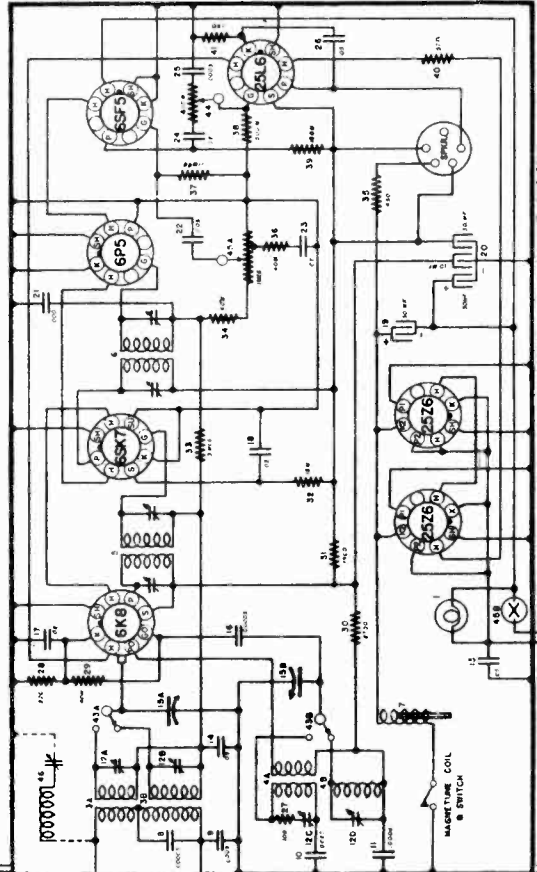
MECHANICAL PUSH BUTTON (NO LOOP)—MODEL 739  
TUBES MAY BE METAL OR G TYPES EXCEPT 6A8T  
455 KC. I. F.



MECHANICAL PUSH BUTTON (NO LOOP)—MODEL 7739  
TUBES MAY BE METAL OR G TYPES EXCEPT 6A8T  
455 KC. I. F.



MODEL 739  
"MAGNETUNE" TUBES MAY BE METAL OR GLASS OF TYPES  
455 KC. I. F.



"MAGNETUNE"—MODEL 7739—  
TUBES MAY BE METAL OR GLASS OF TYPES  
455 KC. I. F.

MODELS 739, 7739  
Voltage, Alignment

THE CROSLLEY CORP.

MODELS 739, 7739  
J739, J7739  
Voltage, Alignment

MODELS 739, 7739, J-739 AND J-7739

SOCKET VOLTAGE READINGS AT 117.5 VOLT LINE

Tube	Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8GT	Oscillator-Modulator	—	H	123	80	-11	123	H	—
6SK7	I-F. Amplifier	—	H	—	Grid	—	80	H	123
6P5	Diode	—	H	—	—	Grid	—	H	—
6SF5	1st Audio	—	—	Grid	V.C.	68	—	H	H
25L6	Output	—	H	115	123	Grid	—	H	+6
2-25Z6	Rectifier	—	H	117.5 A.C.	220	—	—	H	115

Drop across speaker field 35 volts, 739—65 volts on 7739.

Drop across Item 33—72 volts.

Maximum power output 4.3 watts @ 125 volts line.

Power consumption @ 117.5 volts line—63 watts.

H = heater.

**ALIGNMENT PROCEDURE**

All circuits have been 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.

NOTE: The circuit of this receiver is such that if the signal generator has one side of the line connected to the case or ground side and the generator and receiver are plugged into the same line, serious damage may result to either or both instruments. ALWAYS ISOLATE SIGNAL GENERATOR GROUND LEAD BY INSERTING A .01 mf. OR SMALLER CONDENSER IN SERIES WITH THE LEAD BEFORE CONNECTING TO THE CHASSIS.

**CONNECTING OUTPUT METER**

One terminal of the output meter should be connected to the plate (No. 3 pin) and the other terminal to the screen (No. 4 pin) of the 25L6GT output tube. Be sure the meter is protected from D. C. by connecting a .25 mf. condenser in series with one of the leads.

**1.—I-F Amplifier Alignment**

(a) Connect the output lead of the signal generator through a .02 mf. condenser to the top (GRID) cap of the 6A8GT tube (leaving the tubes grid connector in place) or to the antenna lead.

(b) Connect the ground lead of the signal generator through a .01 mf. (or smaller, .001 mf.) condenser to the chassis.

(c) Adjust station selector so that the rotor plates of the gang are completely disengaged, turn band to B. C. position and turn the volume control to maximum.

(d) Set the signal generator to 455 kc.

(e) Adjust the trimmer condensers on the 2nd I-F transformer for maximum output.

(f) Adjust the trimmer condensers on the 1st I-F transformer for maximum output.

(g) Repeat (e) and (f) for more accurate adjustments. IN ORDER TO PREVENT A. V. C. ACTION, ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

**2.—Aligning R-F Amplifier**

(a) Connect the signal generator output lead through a .0001 mf. condenser to the antenna lead (YELLOW OR BLUE) and the generator ground lead to the Black lead of the receiver. Turn band switch to B. C. band, open gang all the way and turn volume control on full and tone control to treble position.

(b) Set signal generator to 1725 kilocycles. (Generator should be set to 1620 kilocycles for Model 7739).

(c) Adjust B. C. oscillator trimmer for maximum output (receiver does not have to tune through this signal).

(d) Set signal generator to 1400 kilocycles.

(e) Tune in generator signal on receiver by means of manual tuning knob.

(f) Adjust B. C. antenna trimmer for maximum output. DO NOT readjust oscillator trimmer.

(g) Repeat above procedure for more accurate adjustments.

(h) Set signal generator to 600 kilocycles.

(i) Tune in 600 kilocycle signal on receiver. While rocking the gang back and forth adjust the B. C. oscillator series condenser for maximum output.

(j) Repeat operations (d), (e) and (f) to correct any change caused by series alignment.

(k) Connect the signal generator output lead through a 250 ohm carbon resistor to the antenna lead of the receiver. Turn band switch to S. W. position, open gang condenser all the way, and turn volume on full, etc.

(l) Set signal generator to 18.3 megacycles.

(m) Adjust S. W. oscillator trimmer for maximum output.

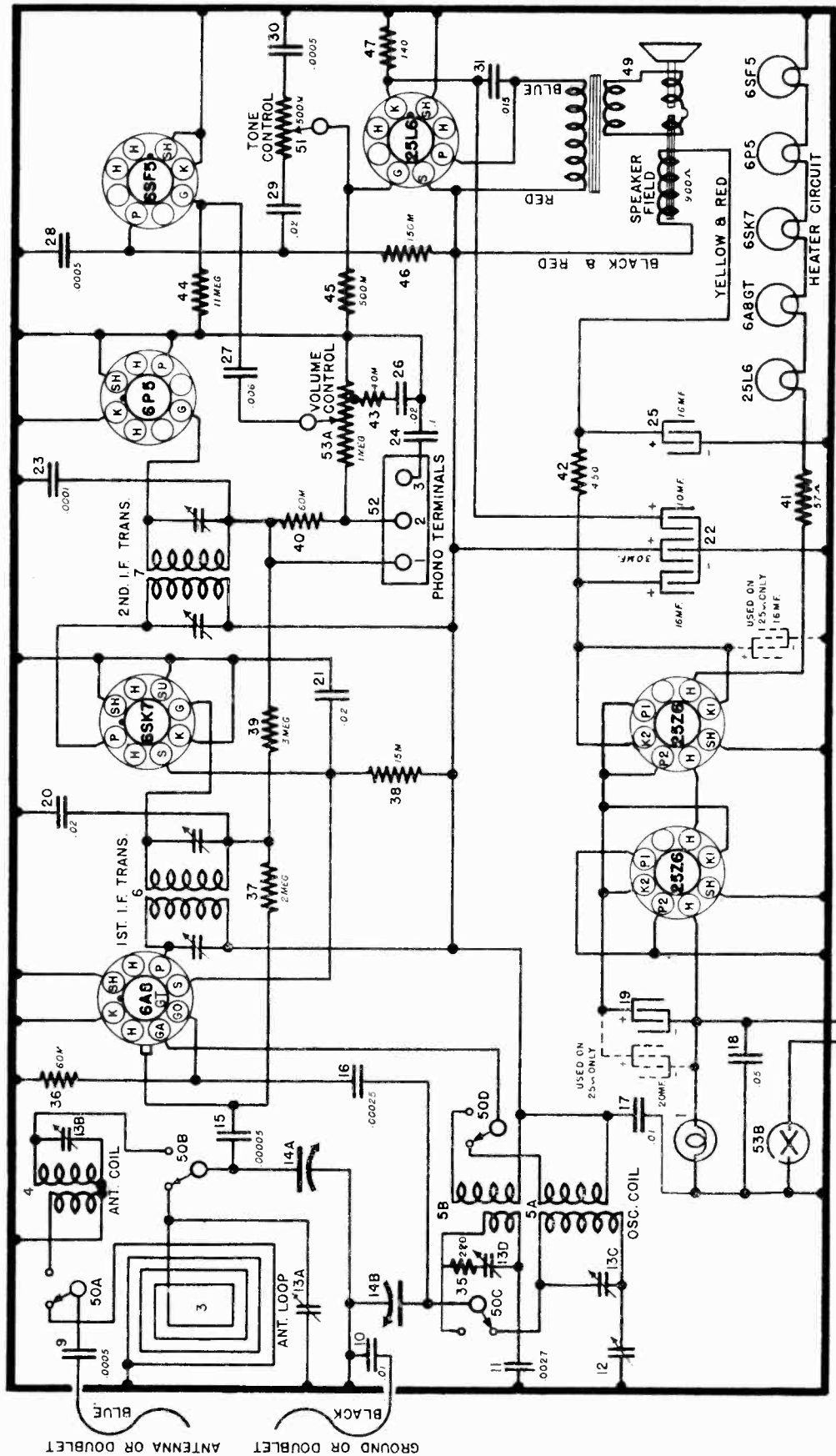
(n) Set signal generator to 18 megacycles.

(o) Tune in 18 mc. signal with manual control, then adjust the S. W. antenna trimmer condenser for maximum output.

Check to see that receiver is aligned on the fundamental and not the image frequency. Increase signal generator output approximately 10 times and tune in image frequency (2 x 455 kc. + fundamental) which will be approximately 910 kilocycles less than 18 mc. as indicated by the dial calibrations (17.1 mc.). If correctly aligned, the image will come in as stated but will be much weaker than the fundamental.

THE CROSLY CORP.

MODEL 7739 (Loop Type)  
Schematic



MODEL --- 7739  
 TUBES MAY BE METAL OR GT TYPES EXCEPT 6AB  
 455 KC. I.F.

FIG. 1-B—MODEL 7739 (MECHANICAL P. B. & LOOP)

**MODELS 739, 7739**  
**Socket, Trimmers**  
**Chassis, Notes**

**THE CROSLLEY CORP.**

**MODELS J739, J7739**  
**Socket, Trimmers**

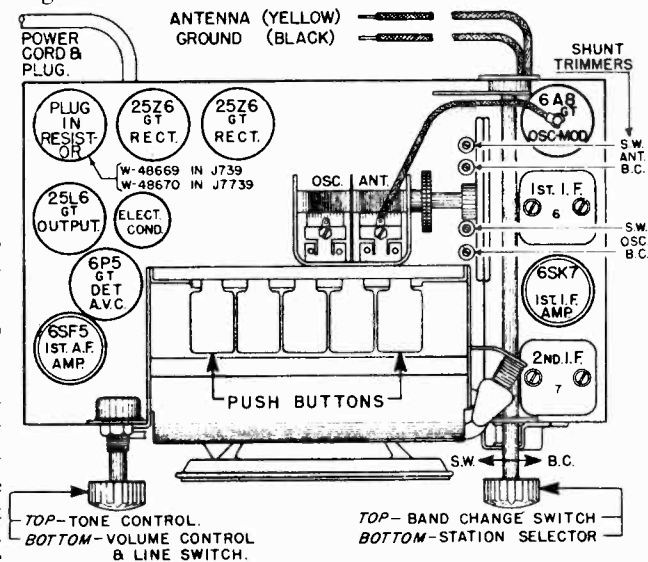
The circuit used is a conventional superheterodyne without regeneration using a 6A8GT as Oscillator-Modulator (biased 6K8GT in some of the earlier models), a 6SK7 as I-F amplifier, a 6P5GT as diode detector, A. V. C., a 6SF5 as first audio amplifier, a 25L6GT as beam power output and two 25Z6GT rectifiers (connected for voltage doubling). A. V. C. is applied to the oscillator-modulator and I-F tubes. All tubes are operated at zero bias except the 25L6GT which obtains its bias from the voltage drop across a 140 ohm resistor between cathode and chassis.

Model 7739 uses a tapped volume control for variable level bass compensation. Models of either chassis in the later series are equipped with terminals for connecting a phonograph attachment.

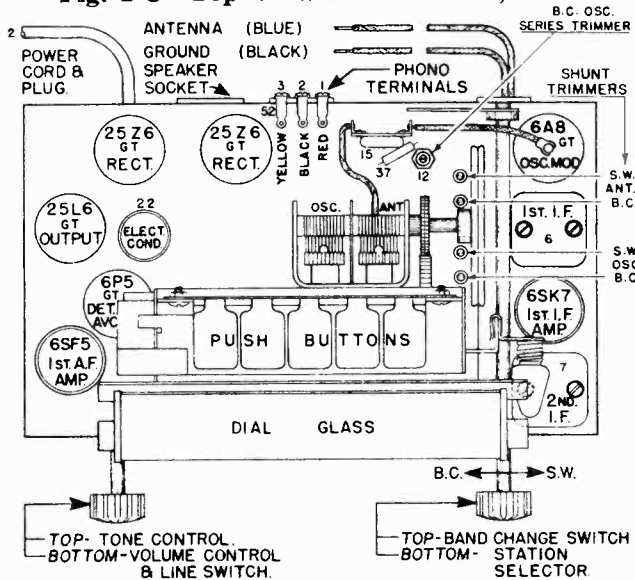
Models J-739 and J-7739 are the same as models 739 and 7739 except for the following:

Model J-739 differs from Model 739 in that the negative or ground return is isolated from the chassis by a .2 mf.—160 volt condenser. For alignment procedure use same as outlined for Model 739. The voltage readings are the same as given for Model 739 except the MEASUREMENTS SHOULD BE TAKEN BETWEEN SOCKET CONTACTS AND THE LOW SIDE OF THE VOLUME CONTROL.

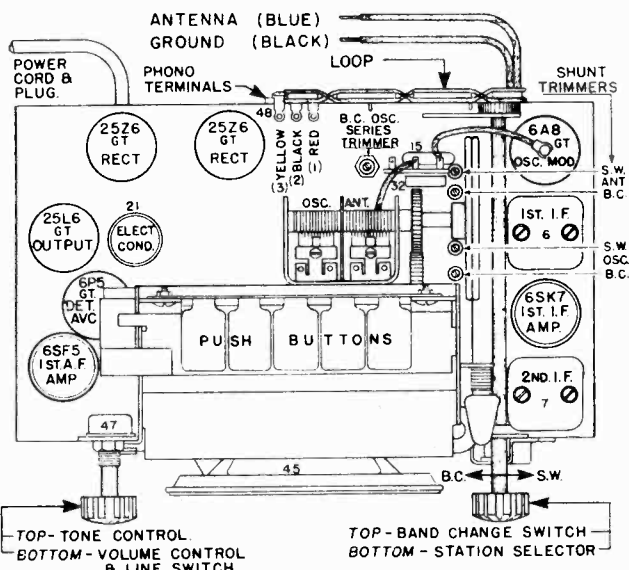
Model J-7739 is the same as Model 7739 except that Model J-7739 has a 1 to 1 isolating power transformer. For alignment procedure and socket voltages use same as given for the Model 739 etc.



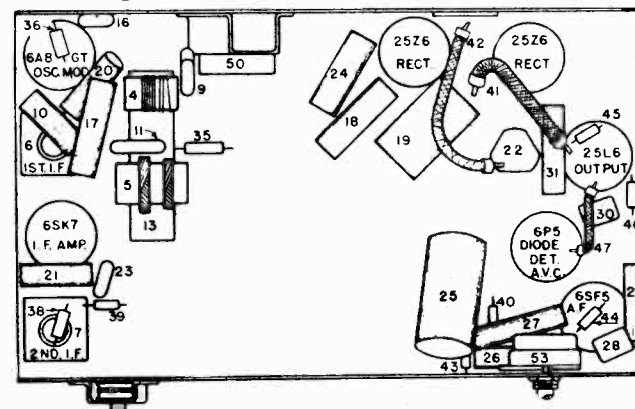
**Fig. 2-C—Top View Models J-739, J-7739**



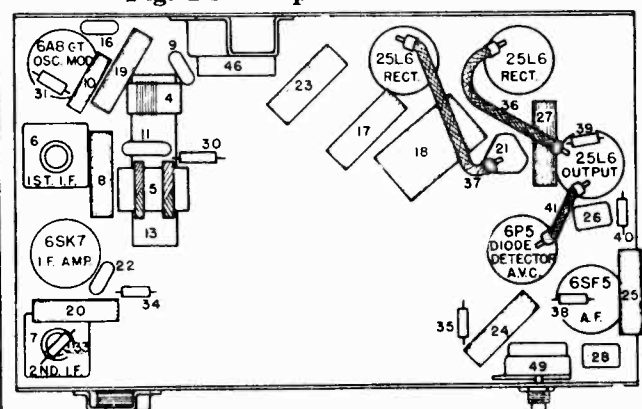
**Fig. 2-B—Top View Model 7739**



**Fig. 2-A—Top View Model 739**

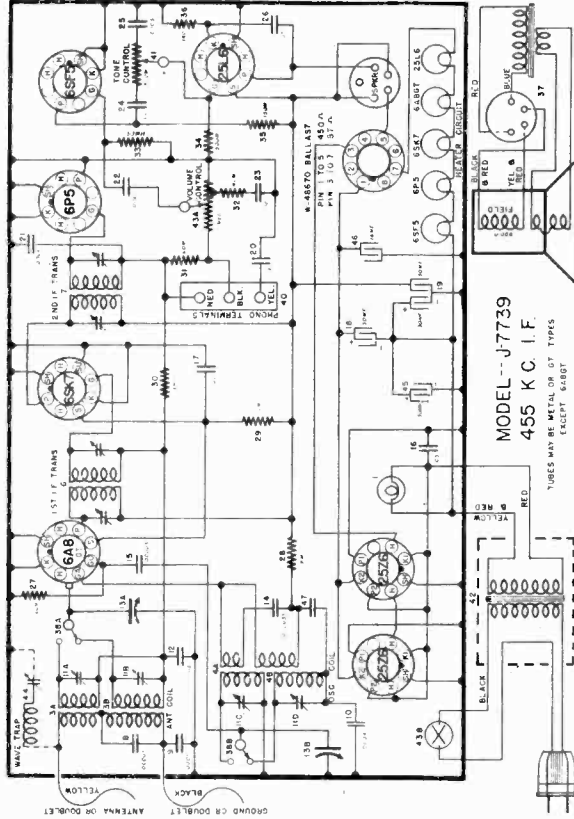


**Fig. 3-B—Bottom View Model 7739**



**Fig. 3-A—Bottom View Model 739**



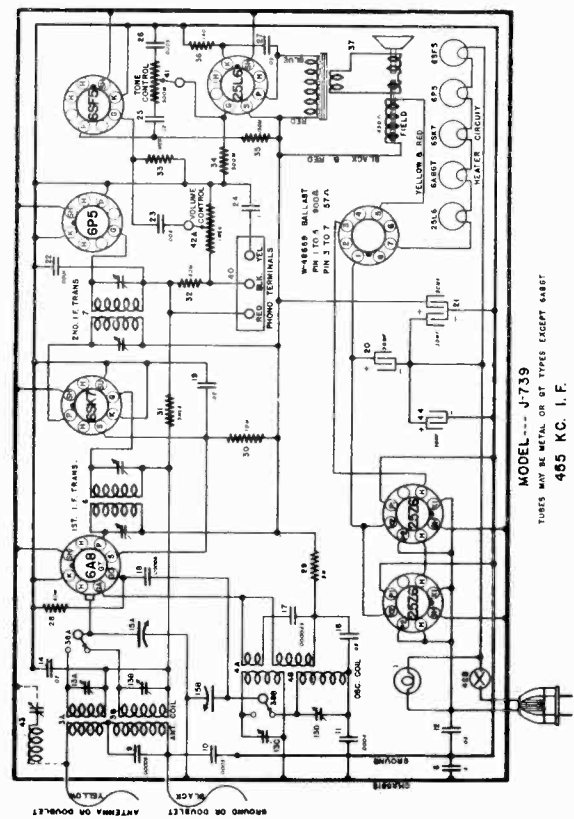


MODEL J-739  
455 K C. I. F.  
TUBES MAY BE METAL OR OF TYPES EXCEPT 6AB7

MODEL J-739—WIRING DIAGRAM  
PARTS LIST

1	-47977	Dial Lamp, 110 Volt	-47977	Dial Lamp, 110 Volt
2	-45769	Power Cord and Plug	-45769	Power Cord and Plug
3	G201-32000	Antenna Coils Assy.	G201-32000	Antenna Coils Assy.
4	G208-32002	A—Short Wave Antenna Coil B—Broadcast Antenna Coil	G208-32002	A—S. W. Antenna Coil B—B. C. Antenna Coil
5	None	Oscillator Coils Assy.	None	Oscillator Coils Assy.
6	G221-32004	A—Short Wave Oscillator Coil B—Broadcast Oscillator Coil	G221-32004	A—S. W. Oscillator Coil B—B. C. Oscillator Coil
7	G188-32004	1st I.F. Assy.	G221-32004	1st I.F. Assy.
8	-48686	2nd I.F. Assy.	G188-32004	2nd I.F. Assy.
9	G5-34002	Condenser, .00005 Mf. Mica	G5-34002	Condenser, .00005 Mf. Mica
10	G3-34002	Condenser, .0005 Mf. Mica	G3-34002	Condenser, .0005 Mf. Mica
11	G18-34002	Condenser, .0004 Mf. Mica	G18-34002	Condenser, .0004 Mf. Mica
12	-47582	Condenser, .05 Mf. 120 V.	-47582	Condenser, .05 Mf. 120 V.
13	-41247	4 Sect. Shunt Trimmer Cond. Assy.	-41247	4 Sect. Shunt Trimmer Cond. Assy.
14	G80-33001	2 Section Var. Tuning Gang Cond.	G80-33001	2 Section Var. Tuning Condenser
15	-45780	Condenser, .02 Mf. 160 V.	G13-34002	Condenser, .000035 Mf. Mica
16	-45780	Condenser, .02 Mf. 160 V.	G5-34002	Condenser, .00005 Mf. Mica
17	G13-34002	Condenser, .000035 Mf. Mica	-45780	Condenser, .02 Mf. 120 V.
18	G5-34002	Condenser, .00005 Mf. Mica	-47702	Condenser, 30 Mf. 125 V.
19	-47702	Condenser, .02 Mf. 160 V.	-48596	Condenser, 30-30 Mf. 135 V.
20	-47702	Condenser, 30 Mf. 125 V.	-50105	Condenser, 1 Mf. 160 V.
21	-48596	Condenser, 30-30 Mf. 135 V.	G2	Condenser, .0001 Mf. Mica
22	G2	Condenser, .0001 Mf. Mica	-45810	Condenser, .006 Mf. 160 V.
23	-48659	Ballast Resistor	-45780	Condenser, .02 Mf. 160 V.

For miscellaneous parts not listed use Model 739 Parts List.



MODEL J7739  
455 K C. I. F.  
TUBES MAY BE METAL OR OF TYPES EXCEPT 6AB7

MODEL J7739—WIRING DIAGRAM  
PARTS LIST

24	-47977	Dial Lamp, 110 Volt	24	-45780	Condenser, .02 Mf. 160 V.
25	-45769	Power Cord and Plug	25	-45780	Condenser, .02 Mf. 160 V.
26	G201-32000	Antenna Coils Assy.	26	-45810	Condenser, .05 Mf. 160 V.
27	A-S-W Antenna Coil		27	-21237	Resistor, 60,000 Ohms ½ W.
28	B-B-C Antenna Coil		28	-37905	Resistor, 8,000 Ohms ½ W.
29	Oscillator Coils Assy.		29	-36317	Resistor, 10,000 Ohms ½ W.
30	A-S-W Oscillator Coil		30	-26577	Resistor, 3 Megohms ½ W.
31	B-B-C Oscillator Coil		31	-21237	Resistor, 60,000 Ohms ½ W.
32	None		32	-21553	Resistor, 40,000 Ohms ½ W.
33	G221-32004	1st I.F. Assy.	33	-46497	Resistor, 11 Megohms ½ W.
34	G188-32004	2nd I.F. Assy.	34	-36322	Resistor, 500,000 Ohms ½ W.
35	G5-34002	Condenser, .00005 Mf. Mica	35	-23403	Resistor, 150,000 Ohms ½ W.
36	G3-34002	Condenser, .0005 Mf. Mica	36	-48753	Resistor, 140 Ohms 1 W.
37	G18-34002	Condenser, .0004 Mf. Mica	37	-495-BP-10	Speaker
38	-41247	4 Sect. Shunt Trimmer Cond. Assy.	38	-47983	Fand Switch (No Loop)
39	-45780	Condenser, .02 Mf. 160 V.	39	-49038	Band Switch (With Loop)
40	G80-33001	2 Section Var. Tuning Condenser	None	None	
41	G13-34002	Condenser, .000035 Mf. Mica	G41	-26719	Phono Terminals
42	G5-34002	Condenser, .00005 Mf. Mica	41	-48620	Tone Control, 500,000 Ohms
43	-45780	Condenser, .02 Mf. 120 V.	42	-48650	Power Transformer
44	-47702	Condenser, 30 Mf. 125 V.	43	-48019	Line Sw. and Vol. Control (1 Meg.)
45	-48596	Condenser, 30-30 Mf. 135 V.	44	G193-32004	Wave Trap
46	-50105	Condenser, 1 Mf. 160 V.	45	-47702	Condenser, 30 Mf. 125 V.
47	G2	Condenser, .0001 Mf. Mica	46	-48122	Condenser, .02 Mf. 160 V.
48	-45810	Condenser, .006 Mf. 160 V.	47	-48670	Ballast Resistor

For miscellaneous parts not listed use Model 7739 Parts List.

MODELS 819 (2 Types), J819, 1019

THE CROSLLEY CORP.

Parts Lists

PARTS LIST—MODEL 819 (Series Using 25Z6 Rectifiers)

Table with 5 columns: Item No., Part No., Description, Item No., Part No., Description. Lists various electronic components like lamps, coils, capacitors, and resistors.

Table with 5 columns: Item No., Part No., Description, Item No., Part No., Description. Lists various electronic components including transformers, tuning units, and mechanical parts.

THE CROSLY CORP. MODELS 819, 1019 (Loop Type) Schematic

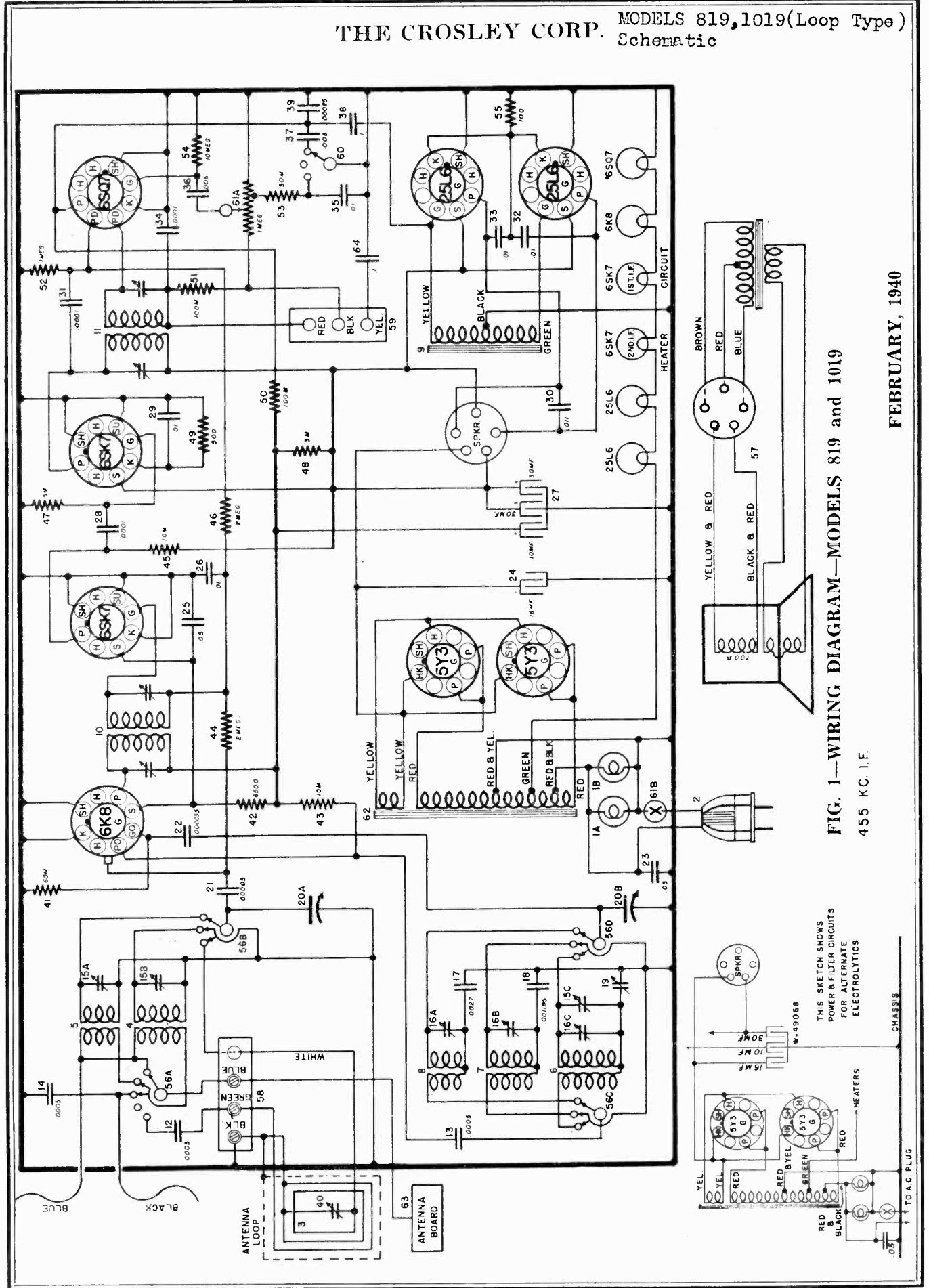


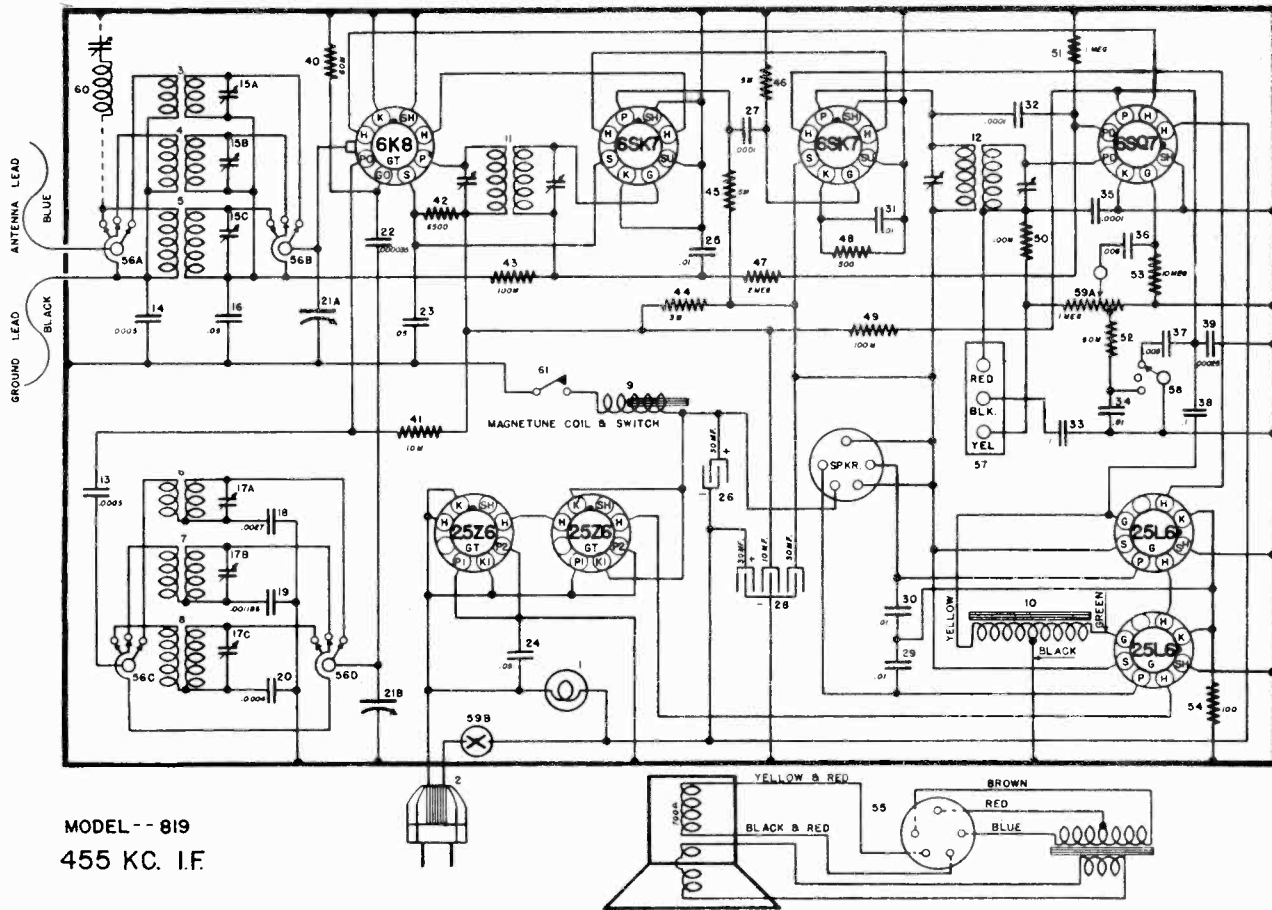
FIG. 1—WIRING DIAGRAM—MODELS 819 and 1019 455 KC. I.F.

THIS SKETCH SHOWS POWER & FILTER CIRCUITS FOR ALTERNATE ELECTROLYTICS

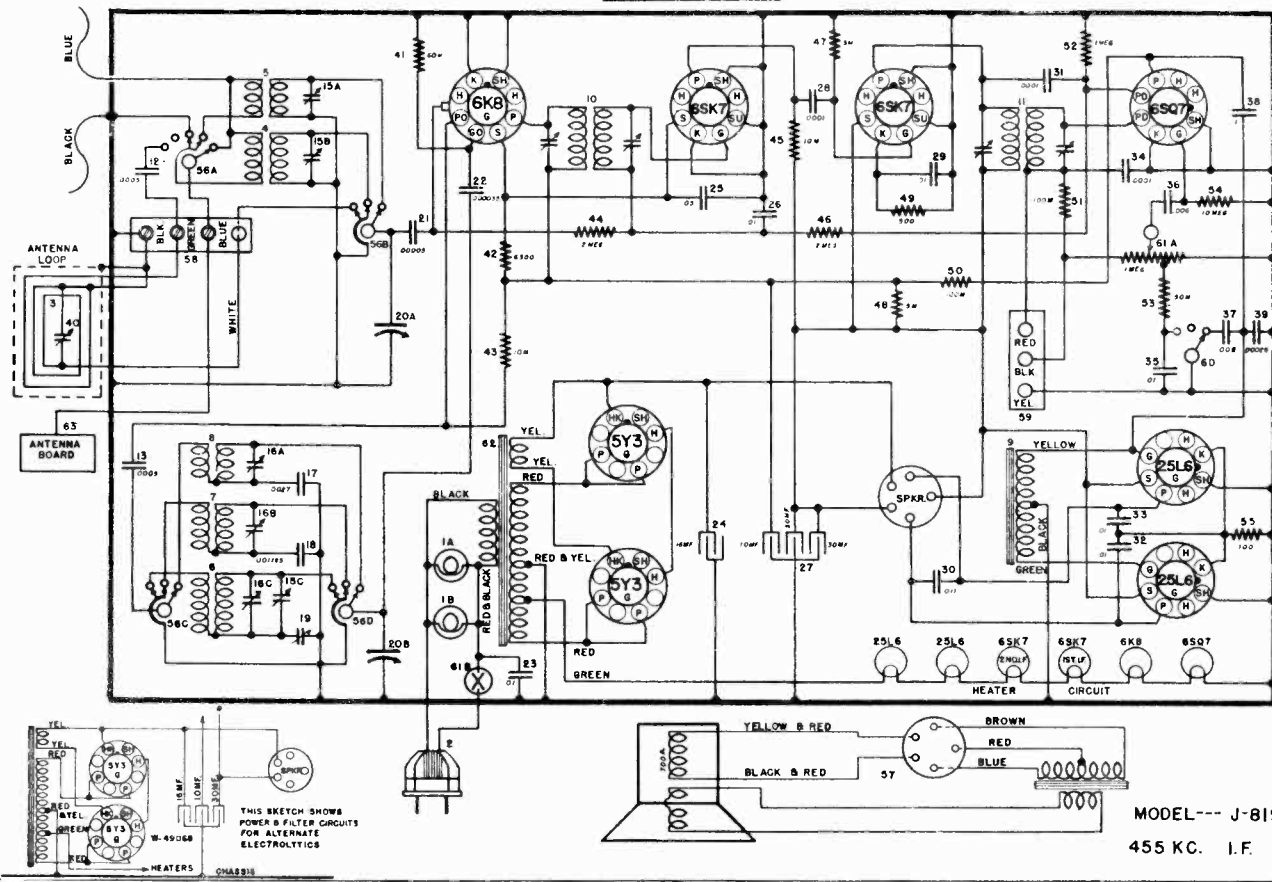
FEBRUARY, 1940

MODELS 819, J819  
Schematics

THE CROSLLEY CORP.



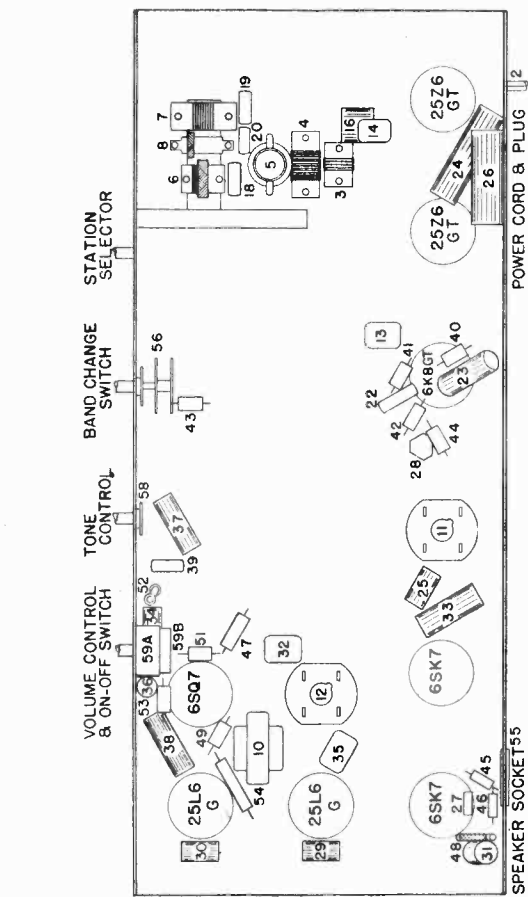
MODEL -- 819  
455 KC. I.F.



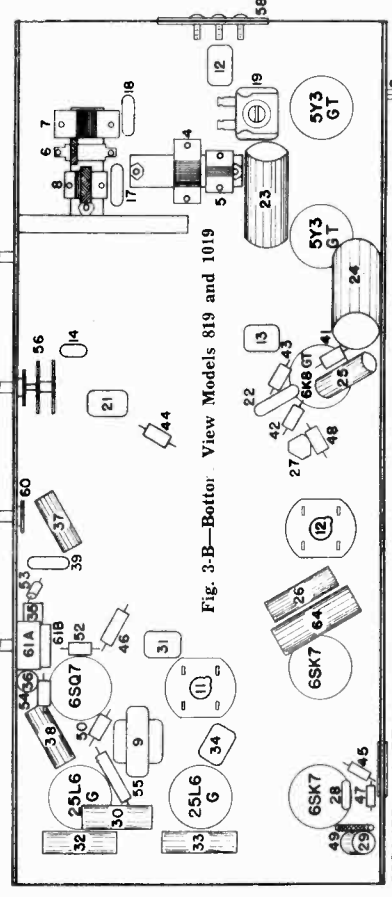
MODEL --- J-819  
455 KC. I.F.

THE CROSLY CORP.

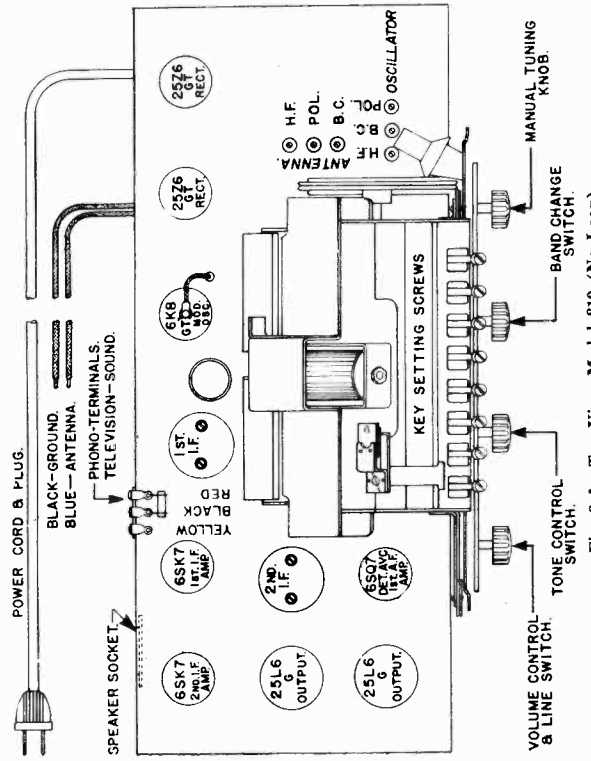
MODELS 819, J819, 1019  
Socket, Trimmers, Chassis



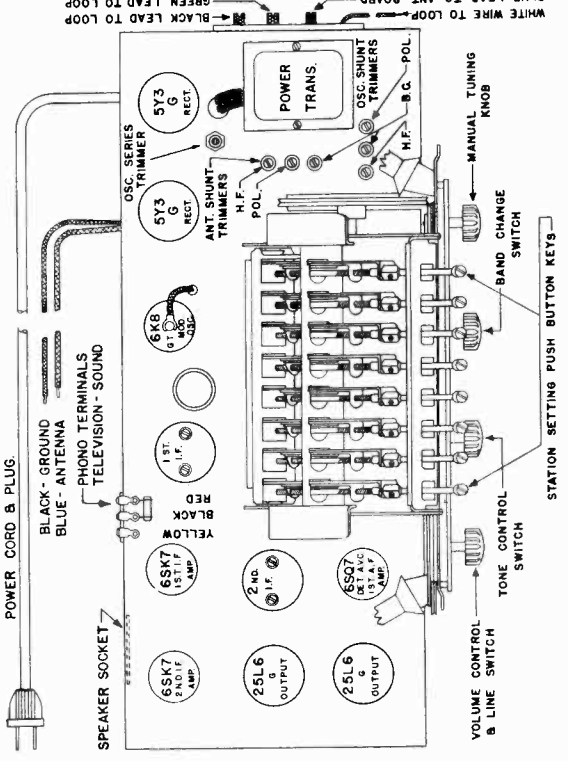
**Fig. 3-A—Bottom View Model 819 (No Loop)**  
The circuit is a conventional superheterodyne with no regeneration, having two stages of I-F amplification, the first of which is resistance coupled, variable level bass compensation, a three position tone control and impedance coupled push pull beam power output. No power transformers were used on those chassis which used two 25Z6GT Rectifiers. The power transformer used on the later versions having two 5Y3G Rectifiers is quite different from the regular type power transformer used in Model J-819, and care should be exercised when checking its voltages.



**Fig. 3-B—Bottom View Models 819 and 1019**  
Model 1019 is the same as model 819 except for the cabinet, dial, escutcheon and knobs used. There are two versions of the model 819 in the field. The first few releases had an electrical (magnetone) push button tuning system and two 25Z6GT Rectifier tubes. The later releases had a mechanical push button tuning system, loop antenna, two 5Y3G Rectifier tubes and a power transformer. Models J-819 and 1019 falls in this group.



**Fig. 3-A—Top View Model 819 (No Loop)**



**Fig. 3-B—Top View Models 819 and 1019**

MODELS 819, J819, 1019  
Voltage, Alignment  
Drive Cord Data

THE CROSLEY CORP.

mental and not the image frequency. When correctly aligned the image should be heard approximately 17.4 on the dial but will be comparatively weak compared to the fundamental signal.

- (n) Set signal generator to 18.0 megacycles.
- (o) Tune in the signal generator signal for maximum output; then adjust the H. F. antenna shunt trimmers for maximum output. When aligning the R-F circuits always use the lowest signal input, which will give a reasonable indication on the output meter, to prevent A.V.C. action.

**REPLACING DRIVE CORD**

- (1) Remove the broken drive cord, saving the small metal cord clamp, the tension spring and pointer.
- (2) Carefully remove the dial glass.
- (3) Cut a piece of drive cord about 85 inches long. Fasten the tension spring approximately one inch from one end.
- (4) Open the condenser gang all the way. The eyelet in the large drive pulley should be near the top with the gang in this position.
- (5) Hook the loose end of the tension spring on small ear formed in pulley rim and thread the drive cord through the eyelet in pulley rim from the inside.
- (6) Bring cord forward over pulley then down to small pulley on manual drive shaft, make one complete turn around small pulley in a clockwise direction.
- (7) Continue cord from the under side of drive shaft pulley over the lower left hand idler pulley, then making a half turn over left hand idler continue over to the top of pulley on drive shaft.
- (8) Continue around pulley in a clockwise direction over to lower left hand idler, over lower left hand idler and up to upper left hand idler pulley, continue cord over upper left hand idler to upper right hand idler pulley.
- (9) Bring cord over right hand idler pulley and down and under and around large drive pulley to eyelet.

- (10) Insert end through the eyelet. Tie securely to tension spring. The cord should be so tied that the tension spring when hooked on ear formed in pulley, will be stretched to approximately 1 1/4 inches in length.
- (11) Hook the pointer on drive cord, the solid end pointer to the drive cord between the upper left hand and right hand idler pulleys. The cutout end of pointer is fastened to the top cord between the lower left hand and the pulley on the drive shaft. Replace dial glass.
- Before clamping pointer or cementing it to the drive cord, open gang all the way. The pointer should then split the last graduation on the dial. Check travel from end to end then fasten pointer securely.
- (12) Replace the cord clamp on drive cord inside the large drive pulley. The position of clamp should be no more than 1/16" from inside end of eyelet.

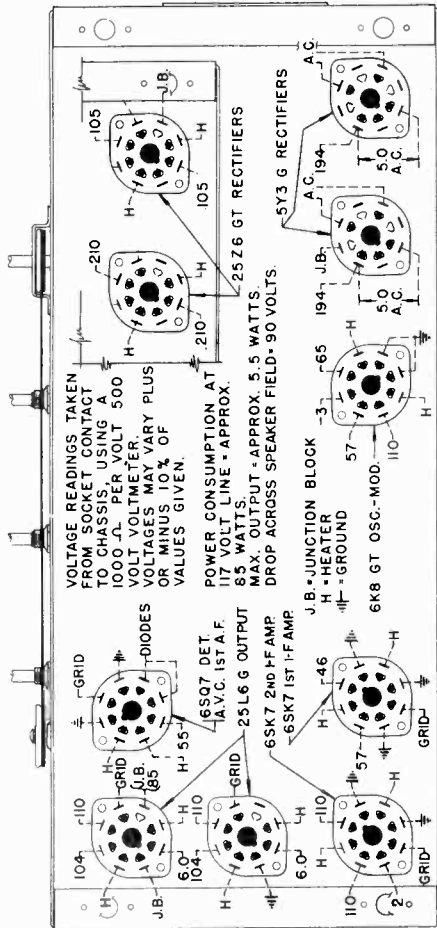


Fig. 4—Socket Voltages Models 819, J-819, 1019

**Aligning The I-F Amplifier To 455 Kilocycles.**

- (a) Connect the output lead of the signal generator through a .0002 mf. condenser to the receiver antenna lead (Blue). Connect the signal generator ground lead through a .01 mf. or smaller condenser to the receiver ground lead (Black).
- (b) Set the signal generator to 455 kilocycles. Turn the receiver band switch to the Broadcast band (left), the tone control switch to the speech position (left) open the gang condenser all the way then turn the volume control on full (all the way to the right).
- (c) Adjust the two trimmer condensers on the second I-F assembly for maximum output (Fig. 2).
- (d) Adjust the two trimmer condensers on the first I-F assembly for maximum output. (Fig. 2).
- (e) Repeat (c) and (d) for more accurate adjustments.

**Aligning The R-F Amplifier.**

- (a) For aligning the broadcast band the setup remains the same. Using a .0002 mf. condenser for a dummy antenna and etc.
- (b) For models without loop antenna set the signal generator to 1725 kilocycles. For models with a loop antenna set the signal generator to 1550 kilocycles. Open condenser gang all the way, turn band switch to left (B. C.), tone control to left (speech) and the volume control on full.
- (c) For models without the loop antenna adjust B. C. oscillator shunt trimmer condenser (Fig. 2) for maximum output (gang does not have to tune through this signal). For models with a loop antenna, there are two oscillator shunt trimmer condensers as will be noted in figure 2. Close the front oscillator shunt trimmer all the way, then open about 1/2 turn. Proceed to tune in with the other (rear) trimmer the 1550 kilocycle signal for maximum output.

(d) Set the signal generator to 1400 kilocycles.

- (e) Tune the receiver to generator signal for maximum output (approximately 140 on the dial).
  - (f) On models without the loop adjust the B. C. antenna shunt trimmer for maximum output, see (Fig. 2). On models with a loop a B. C. antenna shunt trimmer is located on top the loop antenna; adjust for maximum output.
- Models equipped with a loop antenna have provisions for series aligning the oscillator circuit:
- (1) Set signal generator to 600 kilocycles.
  - (2) Tune in generator signal on receiver.
  - (3) While rocking tuning condenser, back and forth adjust oscillator series trimmer (Fig. 2) for maximum output. Then repeat (d) and (f) for more accurate alignment.

- (g) Change dummy antenna from a .0002 mf. condenser to a 250 carbon resistor.

- (h) For models without loop antenna set the signal generator to 5.8 megacycles. Open gang condenser, turn band switch to center position, T. C. to left (speech) and volume on full. For models with a loop antenna set signal generator to 5.0 megacycles.

- (i) Adjust "Pol." oscillator shunt trimmer condenser (Fig. 2) for maximum output.

- (j) For models without loop antenna set signal generator to 5.5 megacycles. For models with a loop antenna set signal generator to 4.0 megacycles.

- (k) Tune in generator signal with manual control for maximum output (approximate 5.5 or 4.0 megacycles on the dial). Adjust the "Pol." antenna shunt trimmer condenser for maximum output.

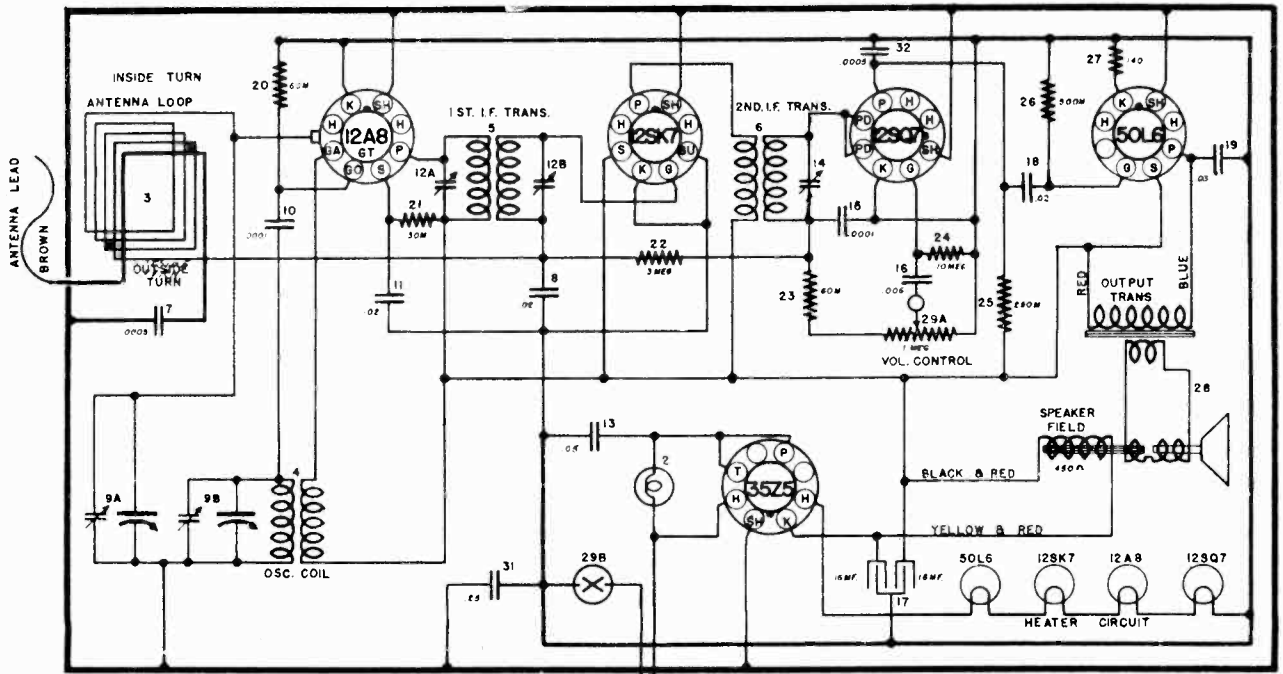
- (l) Set signal generator to 18.3 megacycles.
- (m) With gang open and band switch turned to the right (H. F.), adjust the H. F. (high frequency) oscillator trimmer (Fig. 2) for maximum output. Care should be taken to align the oscillator on the funda-

THE CROSLY CORP.

MODELS 5519, 5529, 6519

J5519, J5529

Schematics



TUBES MAY BE METAL OR GT TYPE EXCEPT 12A8

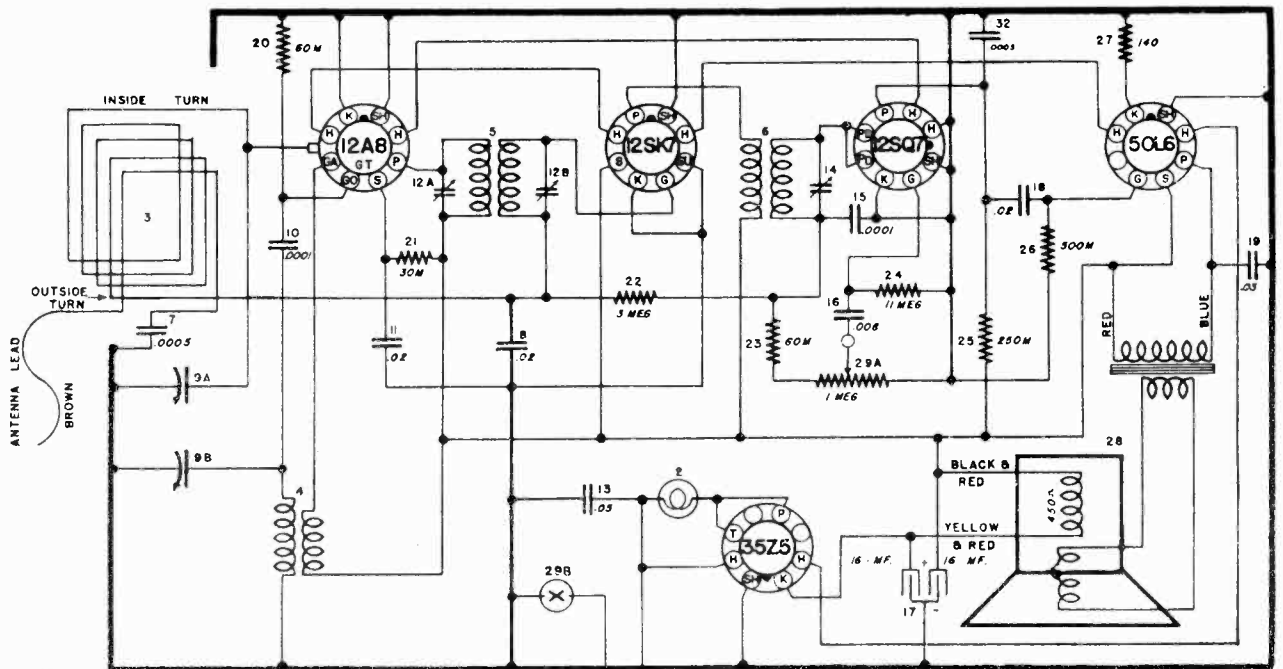
455 KC. I.F.

MOBEL -- J5519 & J5529

FEBRUARY, 1940

MODEL J-5519—Same as model 5519 except the negative "B" circuit or ground return (one side of the

line) is isolated from the chassis by a .25MF. condenser.



TUBES MAY BE METAL OR GT TYPE EXCEPT 12A8

MODELS --- 5519 & 5529 & 6519

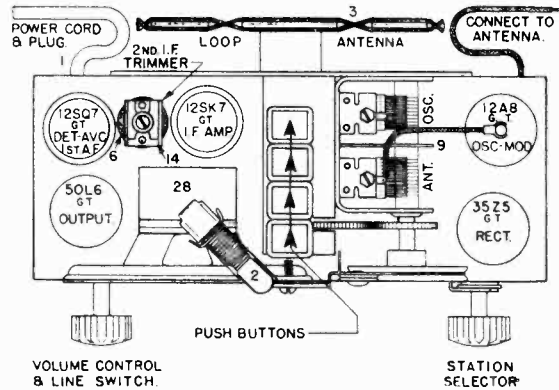
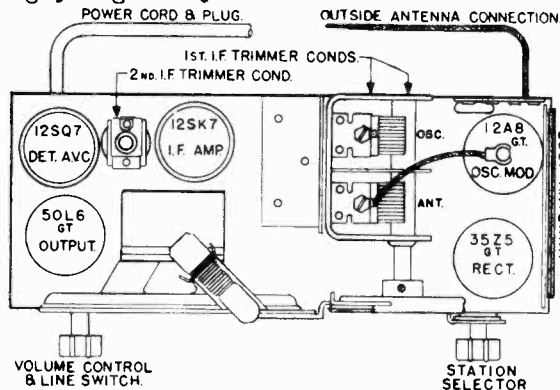
455 KC. I.F.

MODEL J-5529—Same as model 5529 except the negative "B" or ground return circuit (one side of the

line) is isolated from the chassis by a .25 mfd. condenser.

MODELS 5519, 5529, 6519  
J5519, J5529  
Socket, Trimmers, Chassis  
Voltage, Alignment, Notes

THE CROSLLEY CORP.



Models 5519, J-5519, 6519 Fig. 2—Top View Models 5529, J-5529

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
12A8GT	Oscillator-Modulator	12	90	48	—	3	-4	50
12SK7GT	I-F. Amplifier	12	90	90	—	—	—	—
12SQ7GT	Det. AVC, A-F Amplifier	12	40	—	—	—	—	—
50L6GT	Output	50	84	90	—	6	—	—
35Z5GT	Rectifier	35	117.5	—	—	117	—	—

Power output approximately 2 watts.  
Power consumption approximately 27 watts.  
Voltage drop across speaker field 25 volts.  
All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver. (J Models have a .25 mf. condenser isolating line from chassis).

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.

(a) Connect the output of the signal generator through a 50 mmf. condenser to the antenna connection 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.**

(b) 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).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Item 14, located on top of coil (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers located on the rear of chassis for maximum output.

(f) 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.

Aligning the R-F Amplifier.

(a) Set the signal generator to 1725 kilocycles.  
(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.  
(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

NOTE: Do not readjust the "OSC" trimmer.  
(f) Repeat operations (d) and (e) for more accurate adjustments.

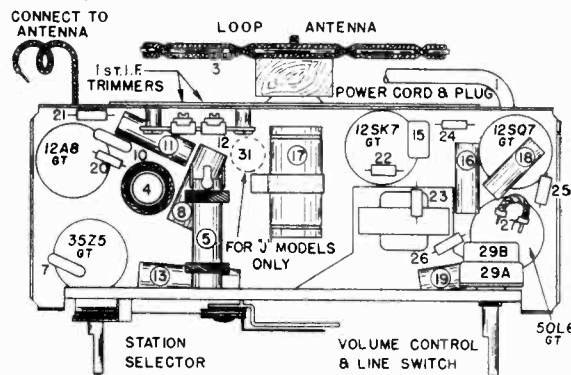


Fig. 3—Bottom View Models 5519, J-5519, 6519, 5529, J-5529

MODEL 6519—Same electrically as model 5519. Has special spider loop mounted to a bracket on right side of chassis and is housed in a wood cabinet.

MODEL 5529—Same electrically as model 5519. Has a four station mechanical push button tuning system. There are two series of this model in the field, one series has a spider form loop antenna mounted on the BACK of the receiver and the other series has the pancake type loop mounted in the cabinet between chassis and right end of the cabinet.

MODEL 5519—Five tube superheterodyne with a pancake type loop antenna mounted between chassis and right side of the cabinet. Has a handle on top for carrying.