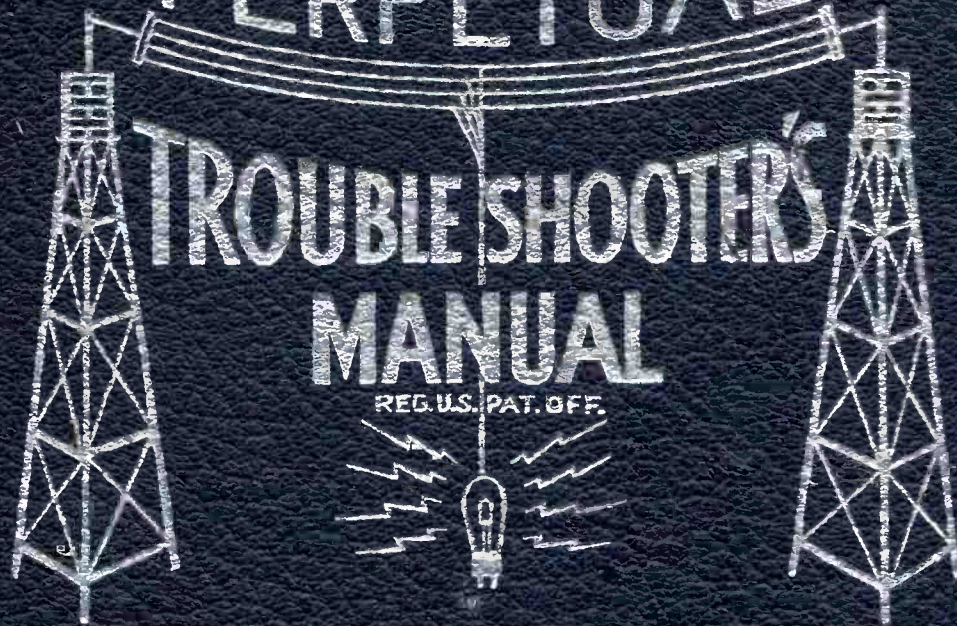


VOLUME XIII

PERPETUAL



JOHN F. RIDER

**PERPETUAL  
TROUBLE SHOOTER'S MANUAL**

Reg. U.S. Pat. Off.

**VOLUME XIII**

by

**JOHN F. RIDER**



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

**404 Fourth Avenue**

**New York City**

*Other books*  
by  
**JOHN F. RIDER**

---

CATHODE-RAY TUBE AT WORK  
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  
A-C. CALCULATION CHARTS BY R. LORENZEN

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

*Entire contents copyrighted 1942, by John F. Rider.*

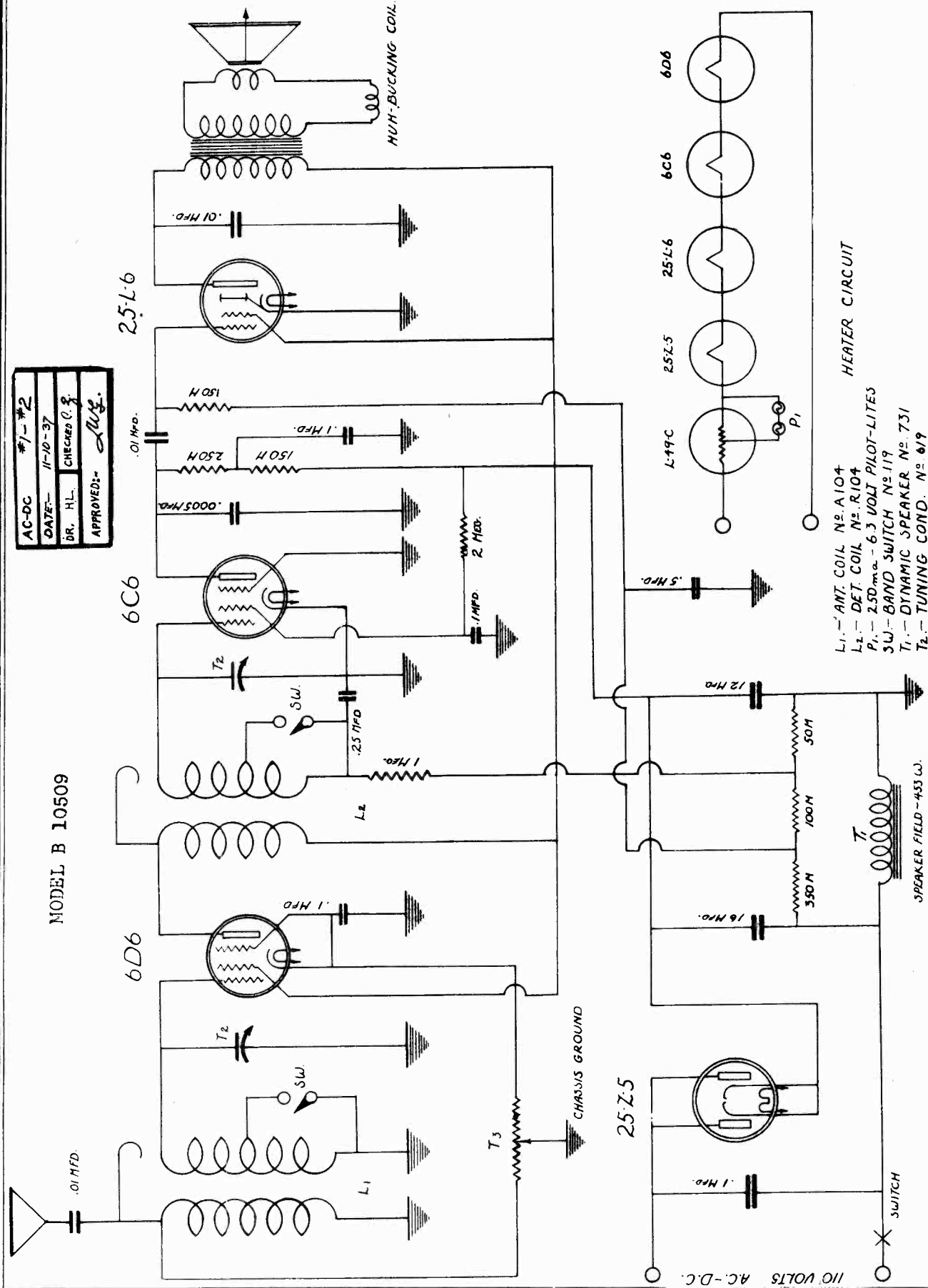
Printed in U. S. A.

ALLIED RADIO CORP.

MODEL B10509

AC-DC	#1-#2
DATE	11-10-37
DR. HL.	CHESTER O. S.
APPROVED	<i>W. J.</i>

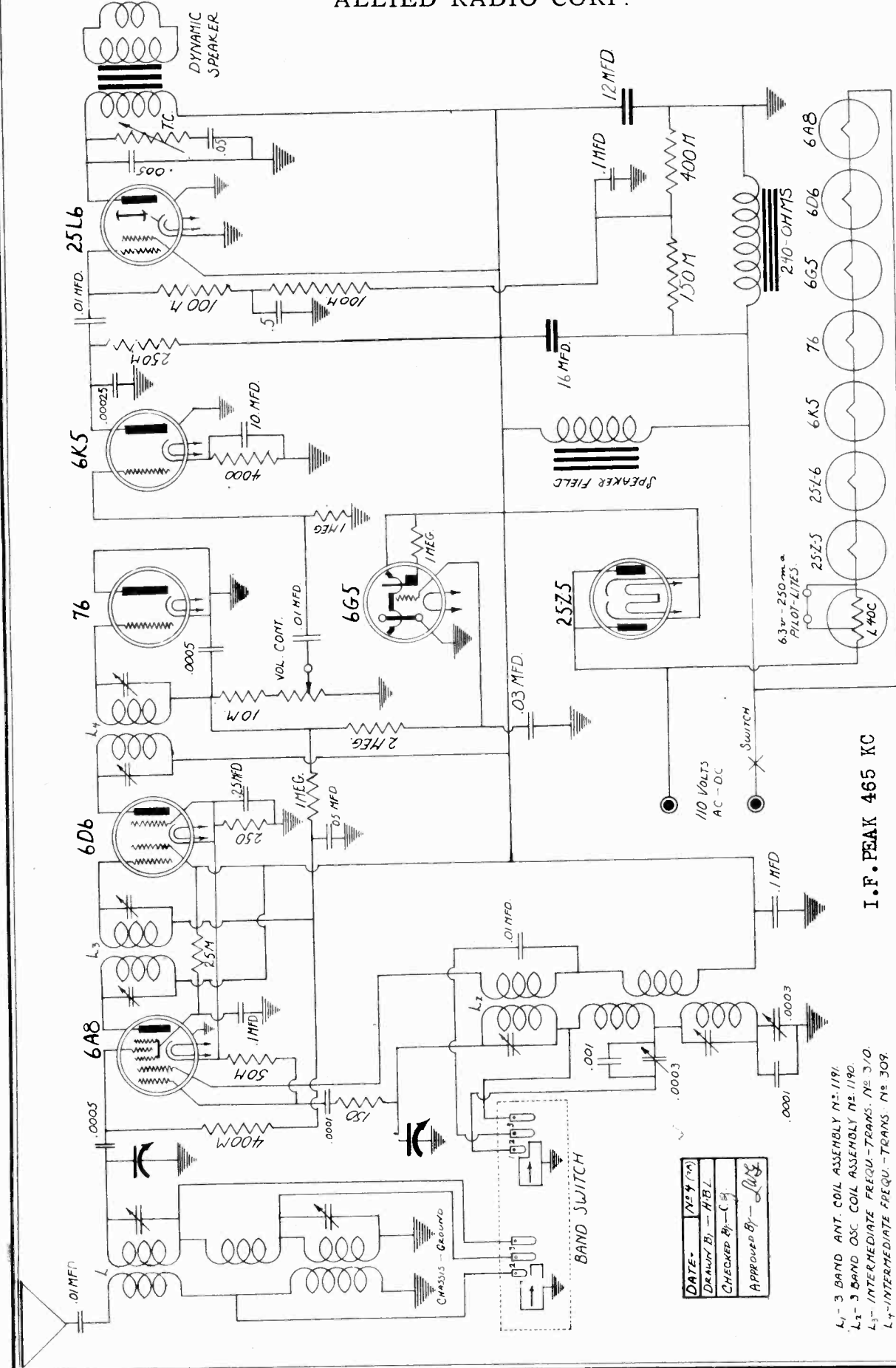
MODEL B 10509



- L1.- ANT. COIL N<sup>o</sup>. A104
- L2.- DET. COIL N<sup>o</sup>. R104
- P1.- 250ma. - 6.3 VOLT PILOT-LITES
- SW.- BAND SWITCH N<sup>o</sup>. 119
- T1.- DYNAMIC SPEAKER N<sup>o</sup>. 731
- T2.- TUNING COND. N<sup>o</sup>. 619
- T3.- VOL. CONT. & SWITCH N<sup>o</sup>. 217

MODEL B10510

ALLIED RADIO CORP.



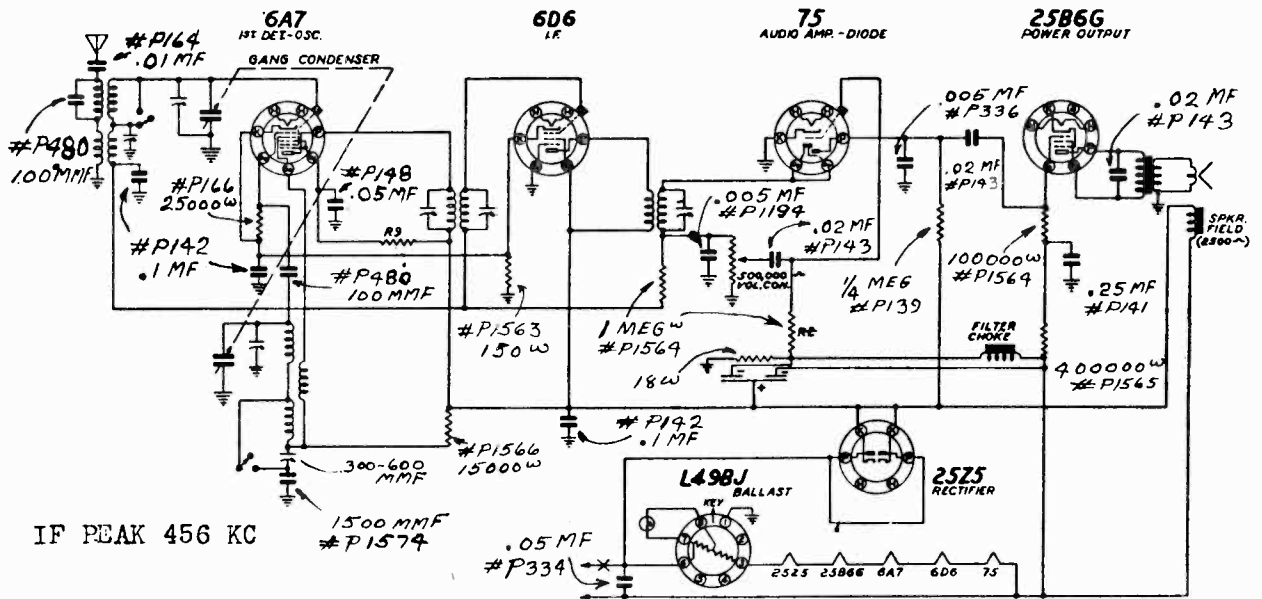
MODEL B 10510

I. F. PEAK 465 KC

DATE - N24 (M)  
 DRAWN BY - H.B.L.  
 CHECKED BY - C.B.  
 APPROVED BY - R.M.S.

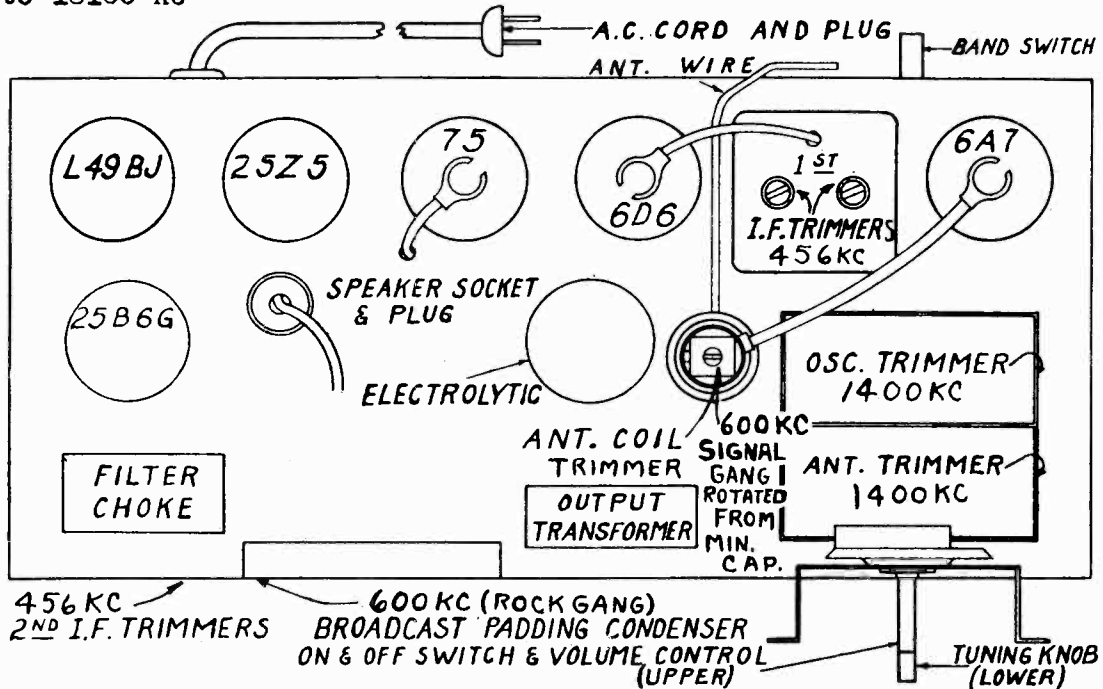
- L<sub>1</sub> - 3 BAND ANT. COIL ASSEMBLY N<sup>o</sup>. 1191
- L<sub>2</sub> - 3 BAND OSC. COIL ASSEMBLY N<sup>o</sup>. 1190
- L<sub>3</sub> - INTERMEDIATE FREQU. TRANS. N<sup>o</sup>. 310
- L<sub>4</sub> - INTERMEDIATE FREQU. TRANS. N<sup>o</sup>. 309
- VOL. CONTROL N 215
- TONE CONTROL N<sup>o</sup>. 304A
- 5 1/2" DYNAMIC SPKR. N<sup>o</sup>. 732 B. SPKR N<sup>o</sup>. 725
- BAND SWITCH N<sup>o</sup>. 121

ALLIED RADIO CORP.



IF PEAK 456 KC  
 FREQUENCY RANGE-  
 535 to 1750 KC  
 5600 to 18100 KC

CONVENTIONAL ALIGNMENT SEE VOL. VIII



Part No.	Description
P506	Socket, Type 6A7
P521	Socket, Type 75
P536	Socket, Type 6D6
P559	Socket, Type 25Z5
P1549	Socket, Type L49BJ
P1550	Socket, Type 25B6G
P530	Tube Shield
P1647	Trimmer
P816	1st L.F. Transformer
P929	AC Cord & Plug
P1489	Pointer
P1491	Dial Glass
P1498	Rubberized Belt
P1497	Takeup Spring
P1498	Drive Bushing
P1503	Pilot Light Socket
P1504	Pilot Light Bulb
P1508	Baffle Board

P1542	Gang Condenser
P1543	Dial Scale
P1551	Iron Core Filter Choke
P1552	Output Transformer
P1555	Volume Control & Switch
P1556	Antenna Coil
P1558	2nd L.F. Transformer
P1559	Oscillator Coil
P1560	Speaker
P1561	Electrolytic Condenser
P1562	Band Change Switch
P1568	Knob, (Specify Color)
P1658	20 Antenna Cord

CONDENSERS

P141	.25 Mhd. 200 V
P142	.1 Mhd. 200 V
P143	.02 Mhd. 200 V

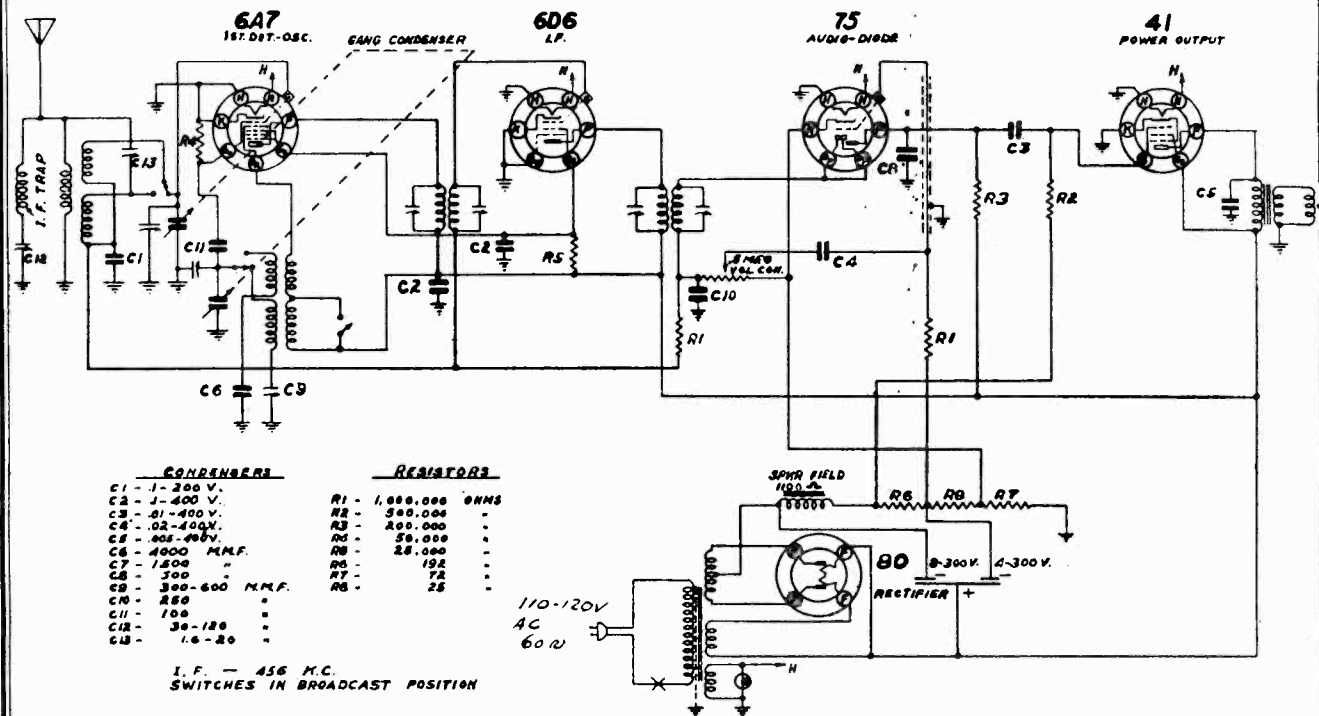
P148	.05 Mhd. 200 V
P184	.01 Mhd. 400 V
P334	.05 Mhd. 400 V
P336	.0005 Mica Condenser
P480	.0001 Mica Condenser
P1574	.0015 plus or 5% Mica
P1557	Riveted Mica Condenser

RESISTORS

P1567	Candohm Resistor
P166	25,000 1/4 Watt
P419	20,000 1/4 Watt
P1563	150 1/3 Watt
P139	250,000 1/4 Watt
P162B	1 Megohm 1/3 Watt
P1584	100,000 Ohm 1/3 Watt
P1585	400,000 Ohm 1/3 Watt
P1586	15,000 Ohm 1/3 Watt

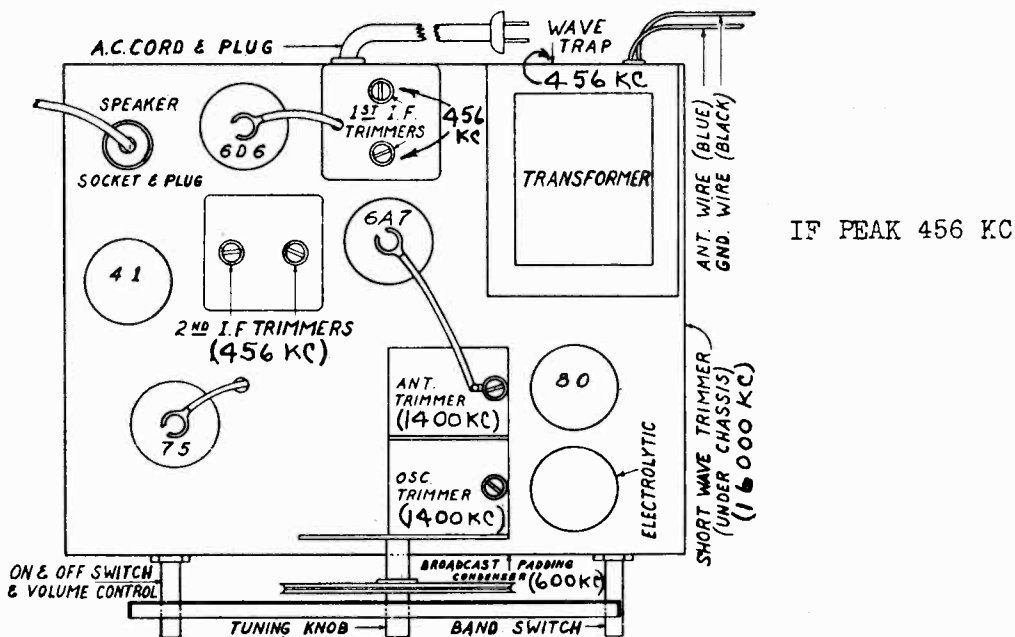
MODEL B10536

ALLIED RADIO CORP.



FREQUENCY RANGE -  
535 to 1750 - KC  
5600 to 18100 - KC

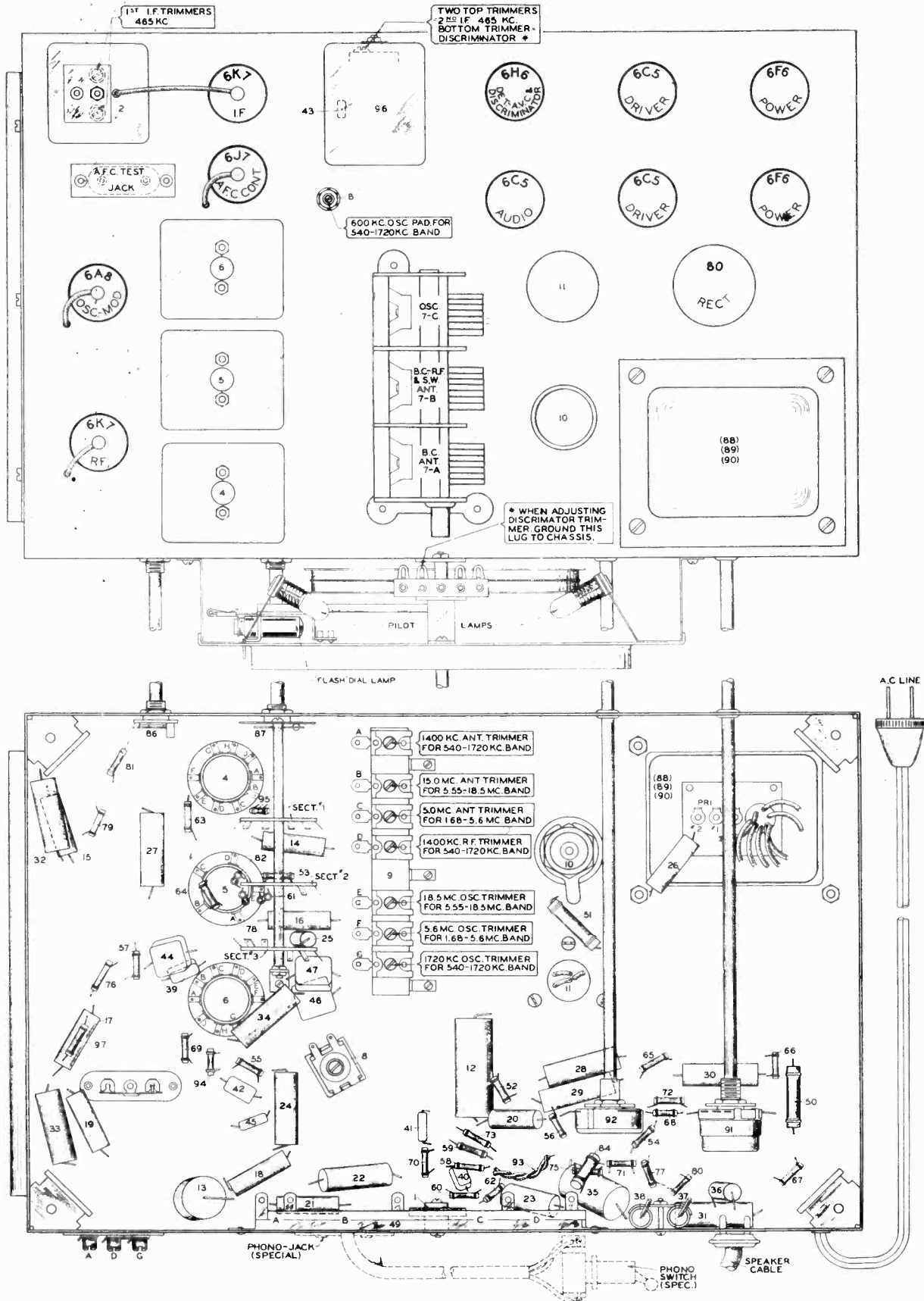
CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOL. VIII



ALLIED RADIO CORP.

MODELS B10580, B10581, E10582

FOR OTHER DATA, SEE INDEX

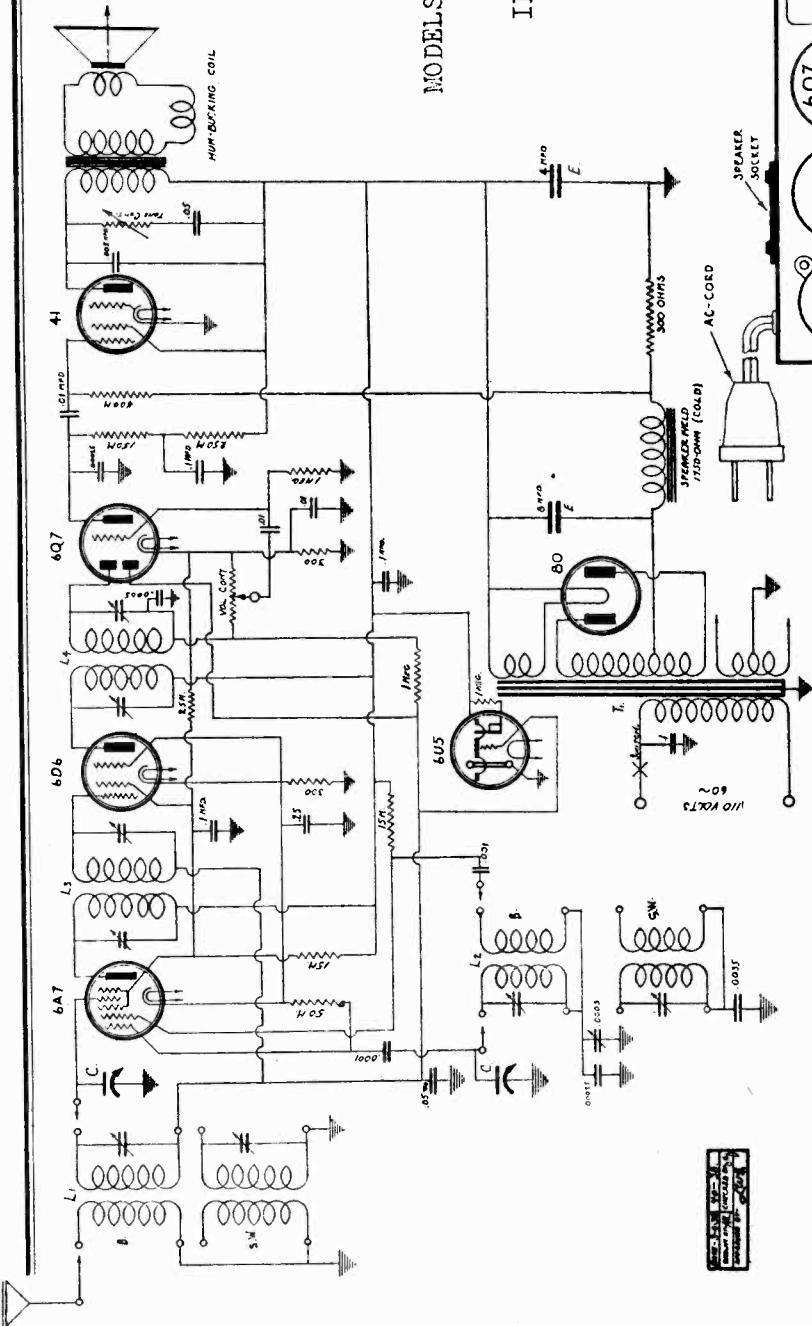




- L<sub>1</sub> - 2 BAND ANT. COIL NO. 430
- L<sub>2</sub> - 2 BAND OSC. COIL NO. 431
- L<sub>3</sub> - 1<sup>st</sup> IF TRFMS. NO. 300T
- L<sub>4</sub> - 2<sup>nd</sup> IF TRFMS. NO. 300B
- T<sub>1</sub> - POWER TRFMS. NO. 303
- VOL. CONTROL NO. 221
- TRIMMER CONTROL NO. 305
- 2 GANG TUNING COND. NO. 424
- 8 $\frac{1}{2}$ " DYNAMIC SPEAKER NO. 702A
- 6" DYNAMIC SPEAKER NO. 743
- BAND SWITCH NO. 124
- PADDER COND. NO. SP106
- F - ELECTROLYTIC FILTER COND. NO. 1703

MODELS B10711 and B10712

IF PEAK 465 KC.



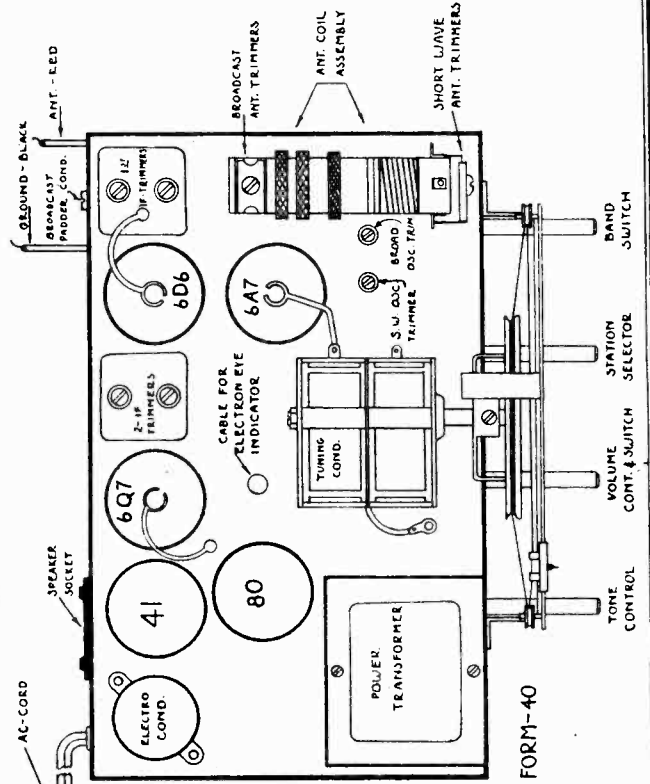
ALIGNMENT DATA

**INTERMEDIATE FREQUENCY:** Set oscillator to 465 KC. Feed this to the grid of the pentagrid (6A7) converter tube. Adjust trimmers on the intermediate frequency transformers for peak readings as indicated on the output meter which is to be placed across the output transformer.

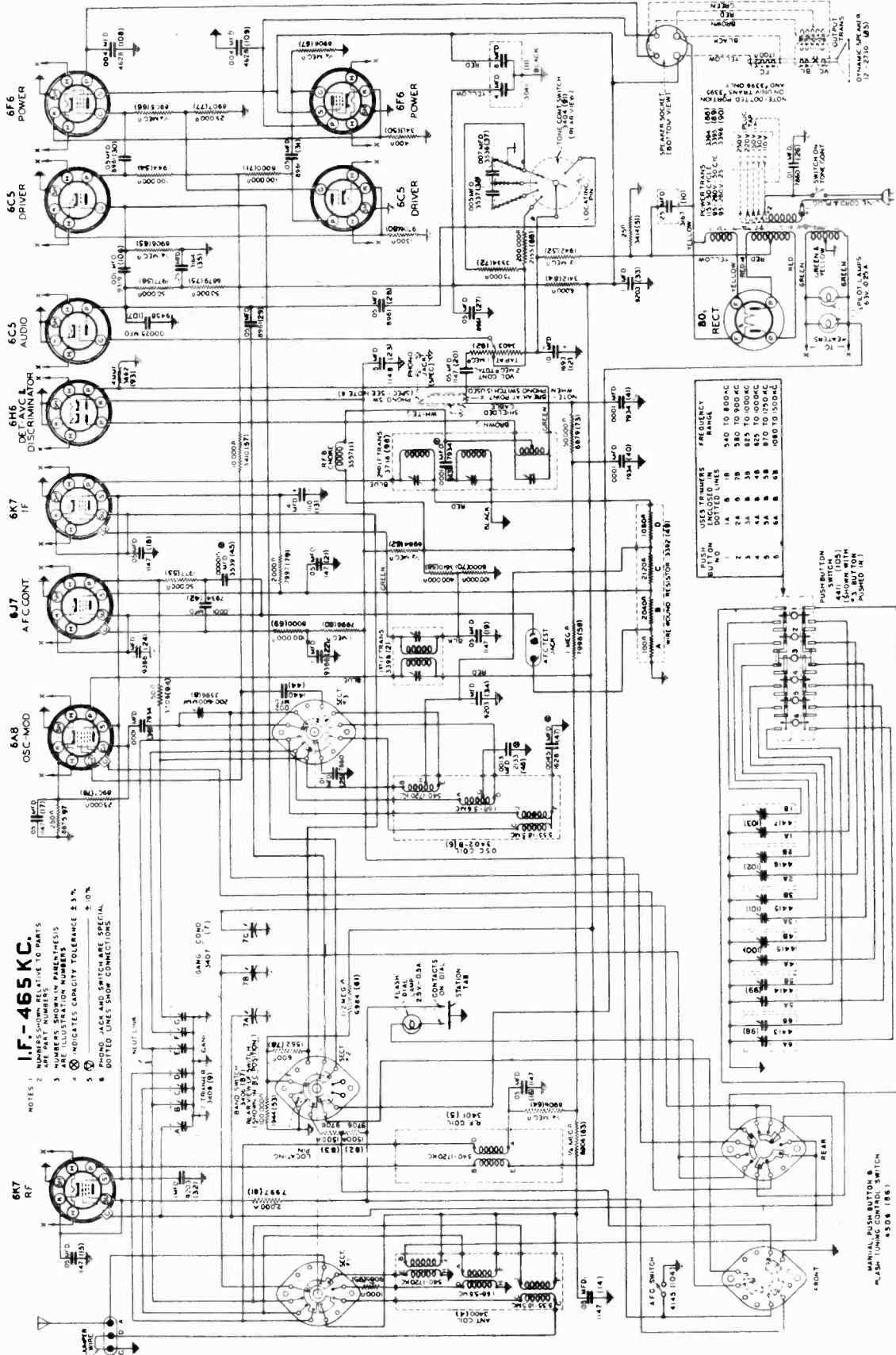
**BROADCAST BAND:** Set the band switch for broadcast reception. Adjust oscillator to 1400 KC and connect the output of the generator to the antenna connection at the rear of the chassis through a .0002 mfd. mica condenser. Set the pointer on the dial to 1400 KC making sure that the volume control is set at its maximum position. Adjust the broadcast antenna and broadcast oscillator trimmers for maximum signal (as indicated on the output meter). Re-set the dial pointer on the receiver and on the test oscillator to 600 KC. Slowly increase or decrease the broadcast padding condenser while tuning back and forth across the signal with the station selector knob until the maximum reading is obtained on the output meter. Re-check the 1400 KC alignment as the adjustment at 600 KC may have slightly disturbed the original 1400 KC setting.

**SHORT WAVE:** Set band switch on short wave position. Connect the antenna of the radio receiver to the output of the test oscillator through a 400 ohm carbon resistor. Set oscillator and receiver dial at 15 megacycles. Adjust the short wave antenna and short wave oscillator trimming condensers for maximum output as indicated by readings on the output meter. No other adjustments are necessary for aligning this band.

It is advisable to check the sensitivity at 6000 KC to determine whether the circuits are properly aligned. Should the receiver lack sensitivity at this frequency check the .0035 mica condenser for short circuit.



ALLIED RADIO CORP.



**IF - 465 KC.**

NOTES: 1. NUMBERS SHOWN RELATIVE TO PARTS ARE PART NUMBERS.  
 2. NUMBERS IN PARENTHESES ARE ALTERNATE PART NUMBERS.  
 3. \* INDICATES CAPACITY TOLERANCE ± 5%.  
 4. ⊗ INDICATES CAPACITY TOLERANCE ± 10%.  
 5. ⊙ INDICATES CAPACITY TOLERANCE ± 20%.  
 6. PHONO JACK AND SWITCH ARE SPECIAL.  
 7. DOTTED LINES SHOW CONNECTIONS.

MANUAL PUSH BUTTON B  
 4.5V (1.5) 100Ω SWITCH  
 4.5V (1.5) 100Ω SWITCH  
 (SHOWN IN PUSH-BUTTON POSITION)  
 REAR VIEW OF SWITCH

- (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 1.68-5.6 MEGACYCLE BAND:**

- (a) Replace .00025 Mfd. test oscillator antenna lead series condenser with a 400 ohm resistor.
- (b) Adjust band selector switch to 1.68-5.6 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 5.5-18.5 MEGACYCLE BAND:**

- (a) Leave 400 ohm resistor in series with test oscillator lead and place band selector switch for operation on 5.5-18.5 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 17.6 megacycles. Then vary the receiver dial slightly to the right and left of 17.6 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.
- 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.

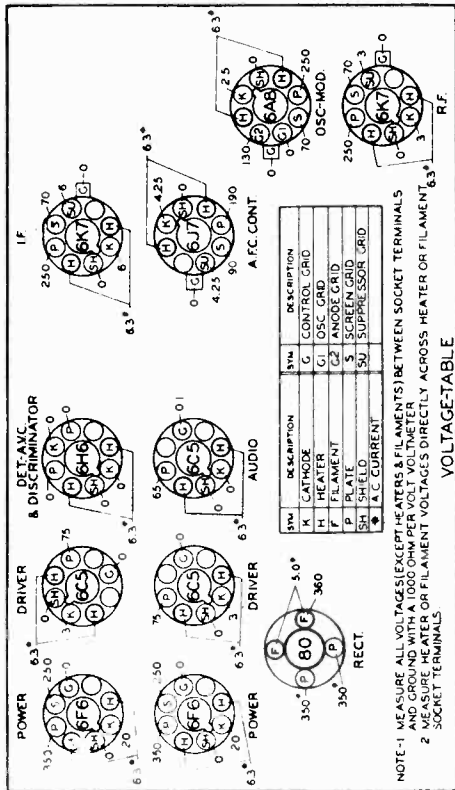
- (c) Turn receiver on, place A.F.C. switch knob in left position and if meter needle jumps off scale adjust output of test oscillator until an approximate 2 M.A. deflection is obtained on the 0 to 5 milliammeter scale.
- (d) Place band selector switch for operation on 1720-540 K.C. broadcast band—and set receiver dial somewhere near 1000 kilocycles at a point where no station is heard.
- (e) Rotate A.F.C. switch knob from maximum left hand to middle 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 middle position and note milliammeter reading, then place A.F.C. switch in maximum left hand position. With A.F.C. switch in maximum left hand position, CAREFULLY ADJUST DISCRIMINATOR TRIMMER UNTIL MILLIAMMETER READING IS EXACTLY THE SAME IN BOTH POSITIONS.

**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 INDICATE 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 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 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.



**BOTTOM VIEW OF CHASSIS VOLTAGE-TABLE**

- (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 (BOT. TOM) SCREW.
- (f) Peak each of the first I.F. transformer trimmers for maximum 465 kilocycle signal output.

**ALIGNING DISCRIMINATOR CIRCUIT:**

- (a) Place switch underneath push button plate assembly (above gang condenser) in A.F.C. "off" position. Leave test oscillator set to EXACTLY 465 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 6J7 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.

**ALIGNMENT PROCEDURE:**

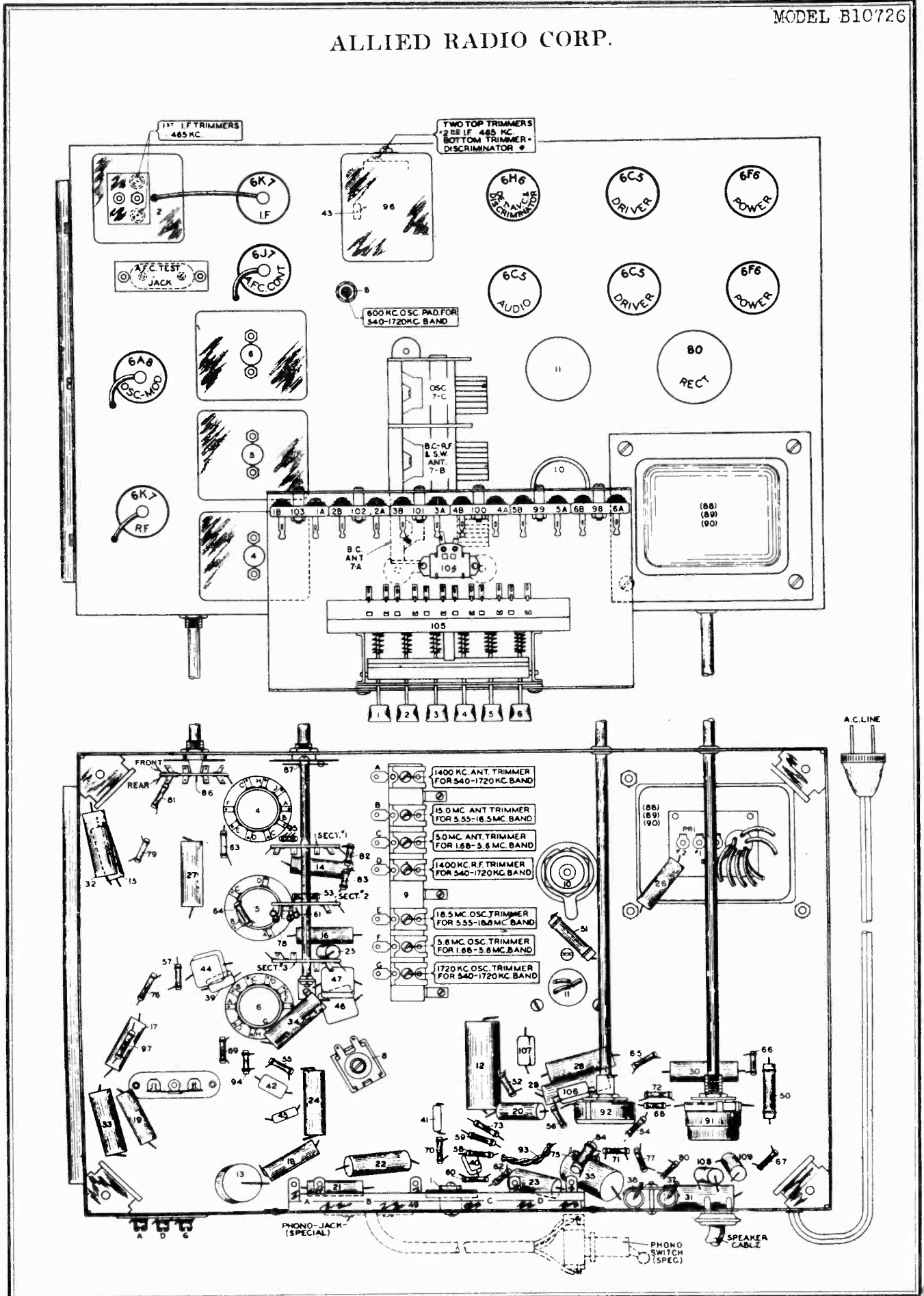
SHOULD REALIGNMENT BE NECESSARY, THERE ARE SEVERAL PRECAUTIONS THAT MUST BE CAREFULLY OBSERVED, THESE ARE:

1. Do not align set until it has reached normal operating temperature. Place the receiver in operation at least 15 minutes before attempting to realign the set.
2. The importance of using the proper type of test equipment and FOLLOWING THE ALIGNMENT PROCEDURE EXACTLY AS GIVEN CANNOT BE TOO STRONGLY EMPHASIZED—failure to do so will result in low sensitivity, poor selectivity, incorrect dial calibration, distortion and unsatisfactory operation of the automatic frequency control.
3. It is absolutely necessary that an accurately calibrated test oscillator with some type of output measuring device and a double scale milliammeter—0 to 1 M. A. and 0 to 5 M.A. be used.

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

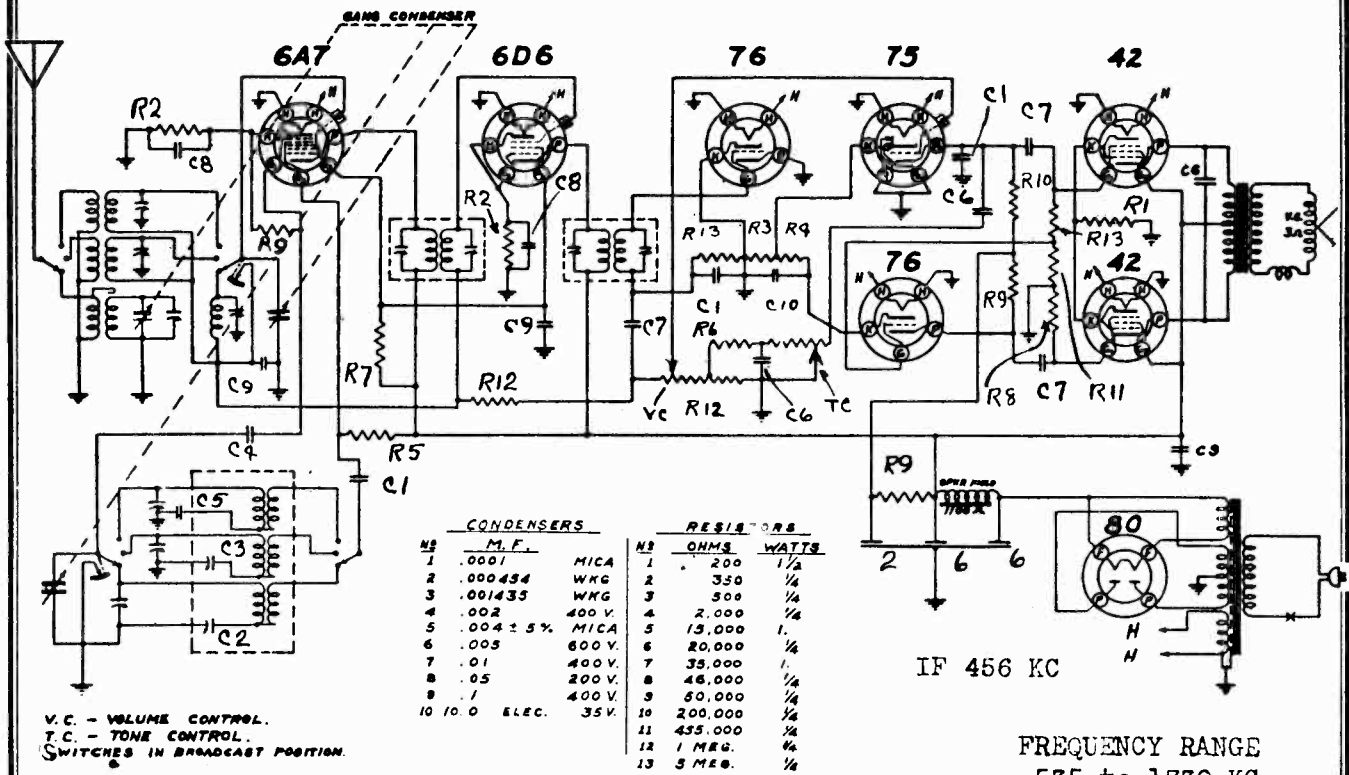
- (a) Place automatic frequency control knob in the middle A.F.C. "off" position.
- (b) Attach the ground lead of the test oscillator to the chassis. Connect the other lead to the grid cap of the 6A8 tube through a .02 Mfd. series condenser. DO NOT REMOVE GRID CLIP.
- (c) Set test oscillator to EXACTLY 465 kilocycles and turn volume control on full.

# ALLIED RADIO CORP.



MODEL B10773

ALLIED RADIO CORP.



FREQUENCY RANGE  
535 to 1730 KC  
1.7 to 5.6 MC  
5.6 to 18.1 MC

Eight Tube AC Superheterodyne

ALIGNMENT DATA AND SERVICING

GENERAL DATA

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 1730, 1800, 4000, 5600, 6000, 16,000 and 18,100 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible, to prevent the AVC from operating and giving false readings.

CORRECT ALIGNMENT PROCEDURE

The intermediate frequency (I.F.) stage should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast Band should always be the next procedure; after which, either or both of the Short Wave Bands may be aligned.

I.F. ALIGNMENT

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

BROADCAST BAND ALIGNMENT

Connect the output of the signal generator to the antenna lead (blue) through a .0002 mfd. mica condenser. Set the gang condenser to minimum and the oscillator to 1730 KC and adjust the "oscillator trimmer" to receive this signal. Make no other adjustments at this frequency. Then set the generator to 1400 KC and tune in this signal by rotating the gang to 1400 on the dial. Adjust the "preselector" and "antenna" trimmer to maximum signal. Set the signal generator to 600 KC and tune in the signal on the receiver. **Note:** approximately the same sensitivity should be noted at this point as was at 1400 KC. The

signal strength may sometimes be improved by padding the circuits. This is done by slowly increasing or decreasing the oscillator padding condenser and, at the same time, continuously tuning back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the preselector of the R.F. section. Return to 1400 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 KC.

POLICE BAND ALIGNMENT

The police band is adjusted by first replacing the .0002 dummy with a 400 ohm resistor and setting the generator to 5600 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 of this frequency as described in the instructions for padding the broadcast circuits.

SHORT WAVE BAND ALIGNMENT

The short wave band is adjusted by setting the generator to 18,100 KC and with the gang at minimum, adjust the "short wave oscillator trimmer" to receive the signal. Set the generator at 16,000 KC, tune in the signal and adjust the "short wave antenna" trimmer to give maximum output. As there is no variable low frequency padding condenser on this band, the sensitivity of the receiver should be checked at 6000 KC to determine whether the circuits are in line at this frequency. Should the receiver lack sensitivity at 6000 KC, the antenna and oscillator coils, as well as the .004 mica padding condenser, should be tested for defects as sometimes these components become subject to mechanical or electrical injuries, despite their rugged construction and liberal ratings.

ALLIED RADIO CORP.

**PROCEDURE FOR SETTING TELEPHONE DIAL STATIONS  
CHOOSING THE STATIONS TO BE USED**

The telephone dial has 10 buttons located in a ring within the dial scale. Make a list of 10 of your favorite stations, stations which are tuned in regularly. Shown in Fig. 1 is the approximate frequency

range that each button will cover. **Note:** If 2 stations happen to fall within the range of one button, one station will necessarily have to be tuned in with the selector knob.

**PROCEDURE FOR ADJUSTING THE TELEPHONE DIAL BUTTONS**

(1) Choose one of the stations out of the list of stations selected and by means of the station selector very carefully tune in this station, noting at the same time the exact pointer location on the dial.

(2) Now select the proper button for the first station chosen by referring to Fig. 1 and noting the button into whose range the station falls. For example, station WGN with a frequency of 720 KC comes under the button whose frequency ranges from 670 to 755 KC. Usually the button nearest the tuning point or the bottom of the dial will be the proper button.

(3) Loosen the button by unscrewing it (not the dial) 1/2 turn to the left. Now press the button in all the way and rock the dial back and forth a trifle until a click is heard. Do not release the button now but set the pointer to its former location and with the dial in this position, being careful not to move it, proceed to tighten the button by turning it in the opposite direction (to the right). Make sure the button is very securely tightened as it may get out of adjustment.

(4) From the station call sheet supplied remove the proper station disc and insert into the push button so that the wording is horizontal when the button is at the bottom, and then insert a clear celluloid insert. Follow this same procedure for the remaining buttons.

(5) If for any reason it is necessary to remove a station call letter disc, the use of a pen knife or any sharp pointed instrument will facilitate the removal.

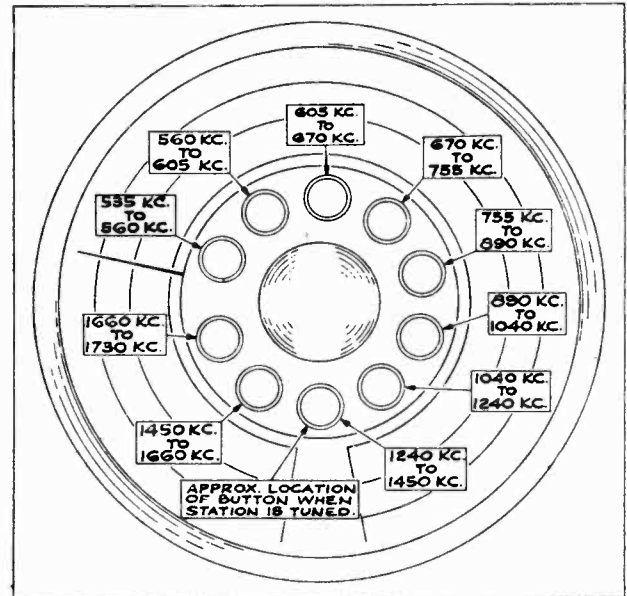
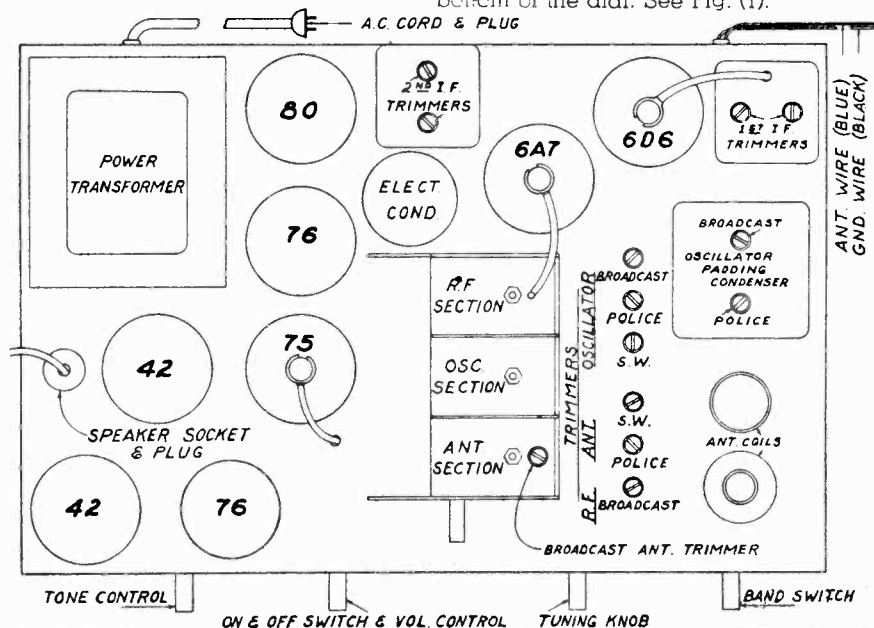
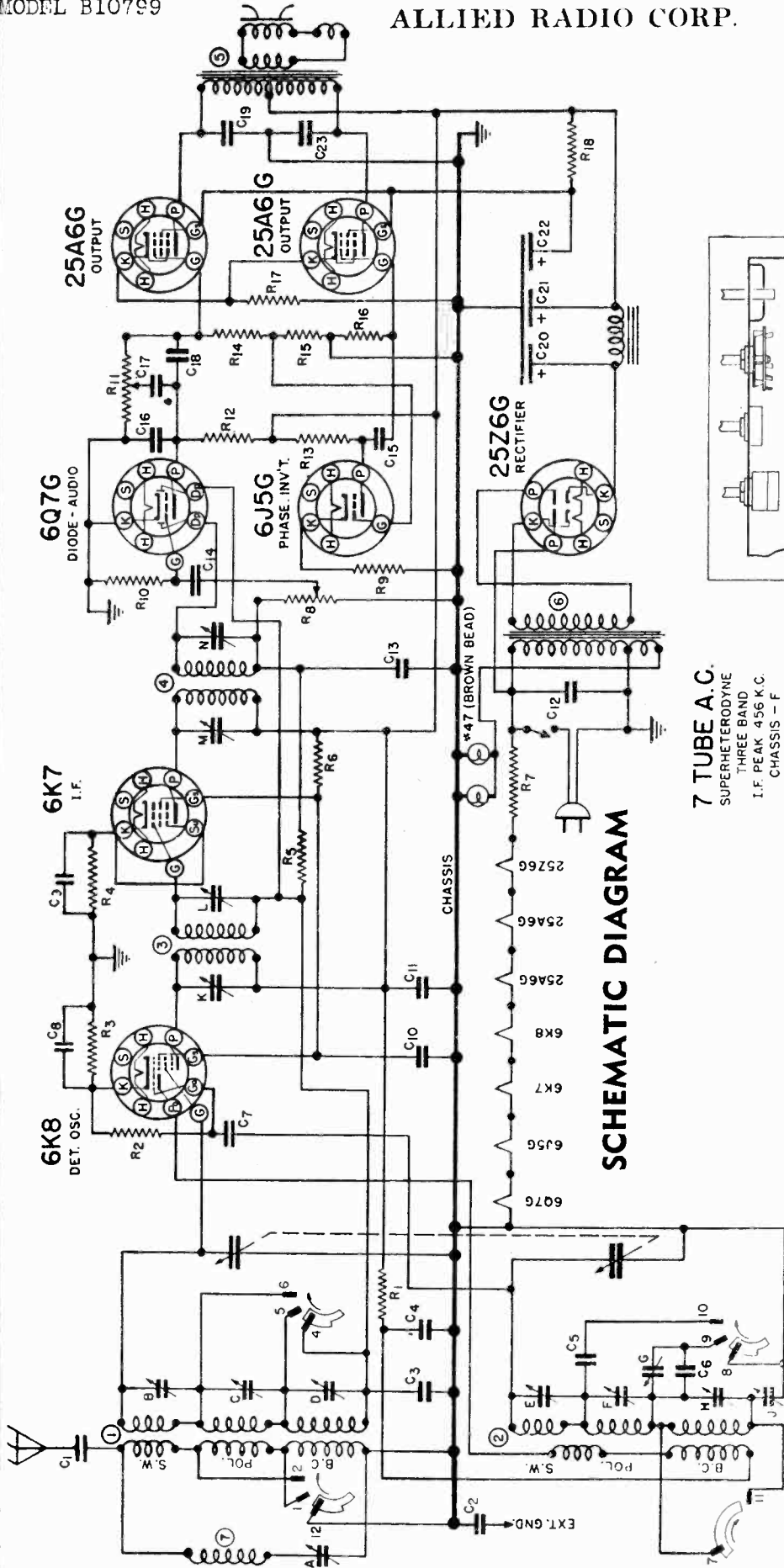


Figure 1

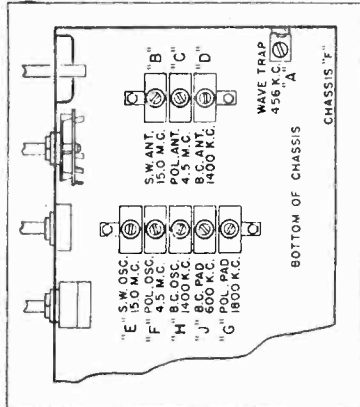
Press in the button of the station desired tuned and rotate the dial slowly until a click is heard and the dial will not turn in either direction until the button is released. The station is now tuned in and can be adjusted to the volume desired by means of the volume control. The proper direction of rotation of the dial can be determined by turning the dial in the direction which will not allow the wide space adjacent to the pointer to converge into the space at the bottom of the dial. See Fig. (1).





**SCHEMATIC DIAGRAM**

**7 TUBE A.C.**  
 SUPERHETERODYNE  
 THREE BAND  
 I.F. PEAK 456 K.C.  
 CHASSIS - F



TRIMMER LOCATION 7 TUBE A.C.

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	C-4	01 MFD.	R8	V-20	1 MEGOHM VOLUME CONT.	1	L-50	ANTENNA COIL
C2	C-4	400 V.	R9	R-18	3,000 OHM .25 W.	2	L-51	OSCILLATOR COIL
C3	C-13	400 V.	R10	R-46	6 MEGOHM	3	I-20	1ST I.F. TRANSFORMER
C4	C-14	200 V.	R11	V-15	.5 MEGOHM TONE CONT.	4	I-28	2ND I.F. TRANSFORMER
C5	C-109C	400 V.	R12	R-41	.25 MEGOHM .25 W.	5	S-613	SPKR. B
C6	C-109C	400 V.	R13	R-36	.1 MEGOHM	6	T-23	POWER
C7	C-15	5 MFD.	R14	R-51	.5 MEGOHM ±5%	7	L-52	WAVE TRAP
C8	C-15	5 MFD.	R15	R-50	45,000 OHM ±5%	A		3-35 MMFD.
C9	C-13	200 V.	R16	R-41	.25 MEGOHM	B		3-35 MMFD.
C10	C-2	1 MFD.	R17	R-10	475 OHM	C		3-35 "
C11	C-2	1 MFD.	R18	R-122	5,000 OHM	E		3-35 "
C12	C-14	400 V.				F		3-35 "
C13	C-10	100 MMFD.				G		200-600 MMFD.
C14	C-27	800 V.				H		3-35 MMFD.
C15	C-4	400 V.				I		200-600 MMFD.
C16	C-111	250 MMFD.				J		200-600 MMFD.
C17	C-27	800 V.						

ALLIED RADIO CORP.

# AUTOMATIC TUNING

**ADJUSTMENT.** All adjustments are simply made from the front of the cabinet without the use of tools since the push-button knobs serve this purpose.

To make adjustments, turn each knob to the left about 1 complete turn. The knob is knurled to provide a positive grip for this purpose. A groove is also provided across the knob for use of a small coin to lock each setting with ease and surety.

With the knob turned free, depress as far as possible and hold down, meanwhile tune to any desired station with the manual tuning control. At this point, the automatic push button knob should be turned to the right until securely tightened. Be sure the knob is being held down in position while it is being tightened. To assure accurate adjustment, the volume control should be set at a moderate level and the station tuned in slowly to a point of maximum volume and clarity.

It is not necessary to follow any particular sequence of stations since each button is adjustable to any station.

## ALIGNMENT DATA AND SERVICING

**GENERAL DATA.** The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 1800, 4500, 6000 and 15000 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible to prevent the AVC from operating and giving false readings.

**CORRECT ALIGNMENT PROCEDURE.** The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the wave trap and then the Short Wave, Police and Broadcast bands in the order given, should be the next procedure.

**I. F. AND WAVE TRAP 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 (6X8) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter. After aligning the I.F.'s, have the band switch in the broadcast band and the generator set at 456 KC. Connect the antenna lead to the generator through a 200 MMF condenser. Adjust the wave trap trimmer to give a minimum signal. It will be necessary to increase the output of the generator to secure an accurate minimum with the wave trap. (A)

**SHORT WAVE BAND ALIGNMENT.** Change the band switch to the S. W. position and connect the generator to the antenna with a 400 ohm dummy. Adjust the S. W. oscillator to give a maximum output with the dial at 1500 KC. Next adjust the S. W. antenna to give a maximum peak and check dial to prevent alignment on the image frequency. With a strong signal input turn the dial to approximately 1 M. C. lower in frequency and pick up the image frequency. If the image is not received, it will be necessary to return the dial to 15000 KC to reduce the capacity in the oscillator trimmer until a second signal is received. Proceed as before with the alignment of the antenna and recheck for image frequency. Check the sensitivity at 6000 KC to determine if the coils and mica pad are not defective.

**POLICE BAND ALIGNMENT.** Change the band switch to the police position and, with the same dummy antenna, line up the police oscillator trimmer and police antenna trimmer in the same way as for the short wave band, setting the dial at 4500 KC and the generator at the same frequency. Check for image frequency at approximately 1 MC lower on the dial as described for the short wave band. Next, set the generator at 1800 KC and tune in the signal with the dial. Adjust the police pad by rocking the gang back and forth while adjusting the pad until maximum output is attained. Recheck the adjustment at 4500 KC as the pad adjustment may have caused misalignment.

**BROADCAST BAND ALIGNMENT.** With the switch turned to the broadcast position, connect the antenna to the generator through a 200 MMF dummy and set the dial and generator at 1400 KC. Align the BC oscillator trimmer and BC antenna trimmer. Set the generator at 600 KC and adjust the BC pad as described for the police band. Return to 1400 KC and recheck alignment at this point.

**STANDARD BROADCAST BAND (BC). (174 to 560 Meters)**

**POLICE BAND (PB). (53 to 175 Meters)—**

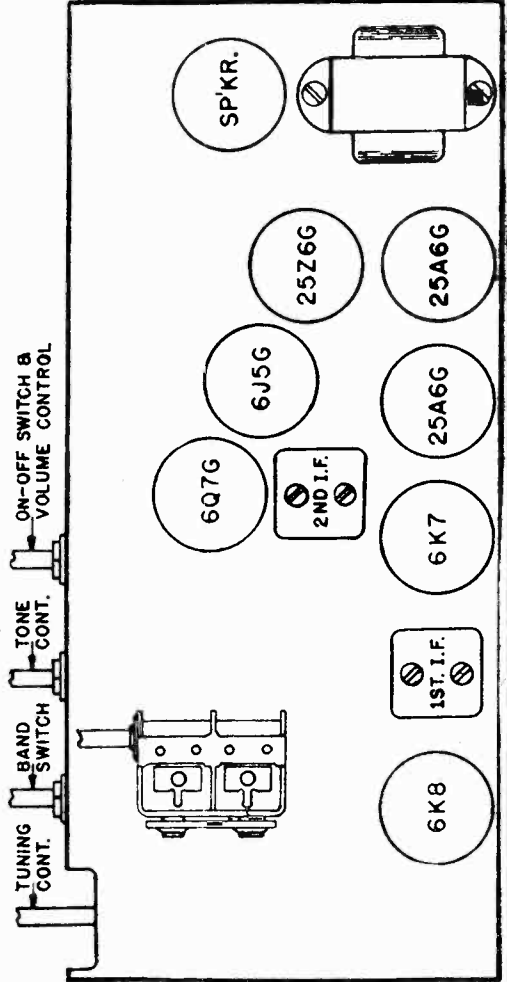
**FOREIGN AND AMERICAN SHORT WAVE BAND (SW). (15.8 to 53 Meters)—**

**49 METER BAND.**

**31 METER BAND.**

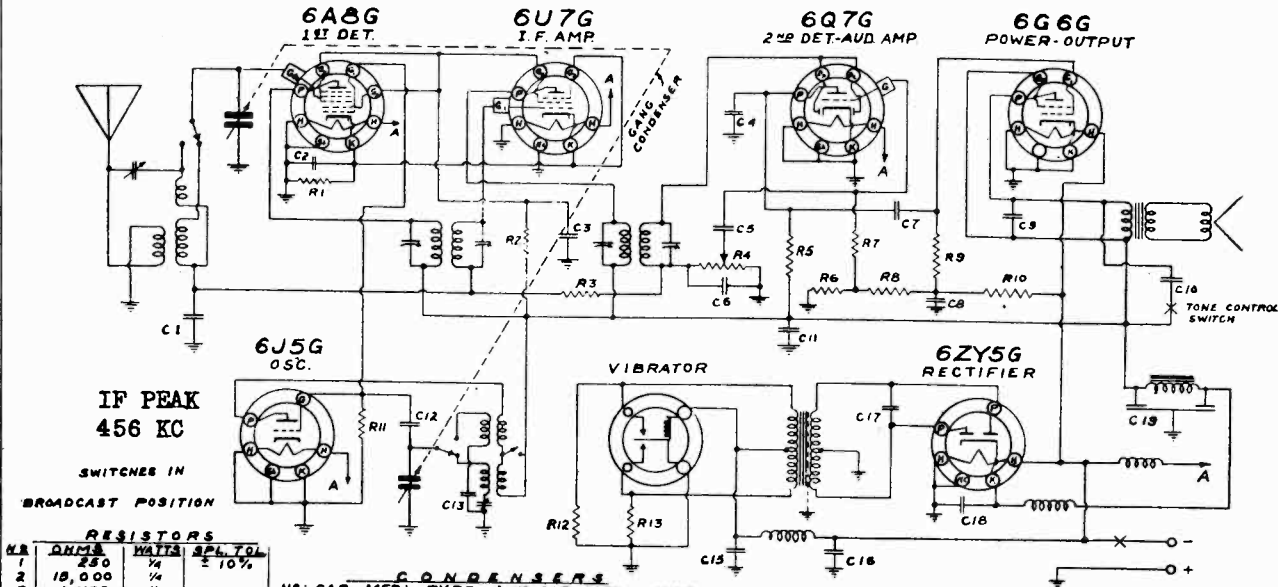
**25 METER BAND.**

**19 METER BAND.**





ALLIED RADIO CORP.



**CONDENSERS**

VAL.	CAP.-MFD.	VOL.	TYPE
1	.05	200V.	
2	.25	200V.	
3	.1	200V.	MICA
4	.00025	400V.	MICA
5	.01	400V.	
6	.00025	400V.	
7	.01	400V.	
8	.05	200V.	
9	.005	600V.	
10	.02	400V.	
11	.1	200V.	
12	.00005	200V.	MICA
13	.004	200V.	(.5%) MICA
14			
15	.5	50V.	
16	.5	50V.	
17	.015	1000V.	
18	.01	400V.	
19	8-8 CCCW	200 WV.	

on the receiver.  
 Note: Approximately the same sensitivity should be noted at this point as was at 1400 KC. The signal strength may sometimes be improved by padding the circuits. This is done by slowly increasing or decreasing the oscillator padding condenser and, at the same time, continuously tuning back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the 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.

**I.F. ALIGNMENT**

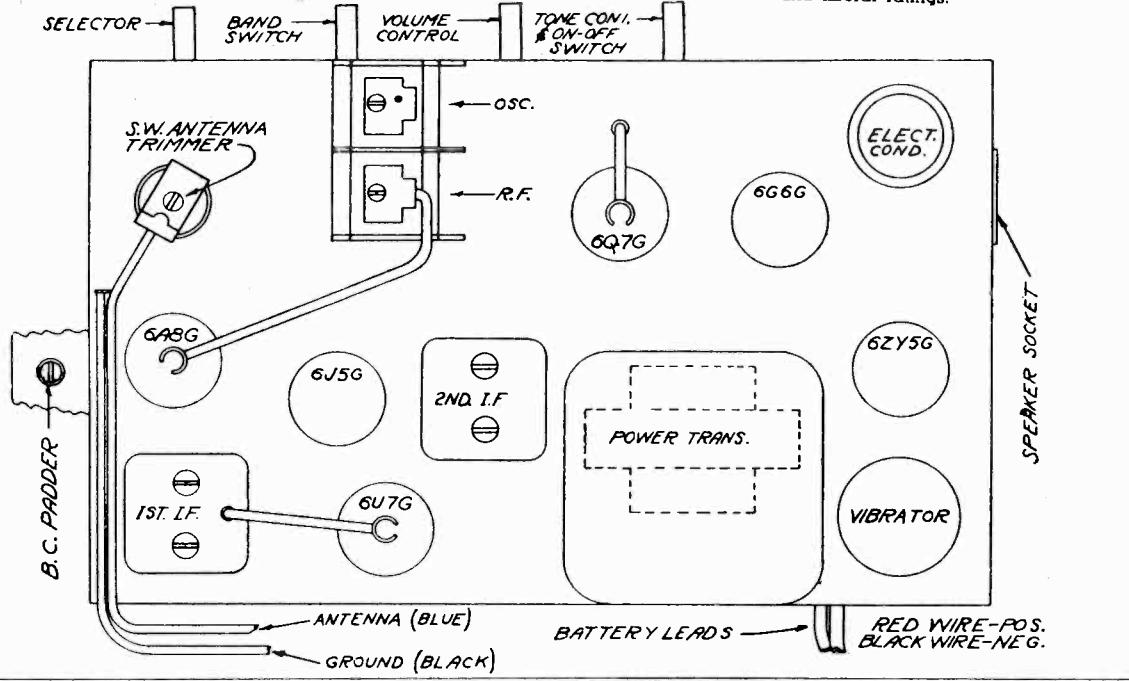
With the wave switch in the broadcast band and the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output of test oscillator or signal generator to the grid of the first detector tube (6A8G) through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter.

**BROADCAST BAND ALIGNMENT**

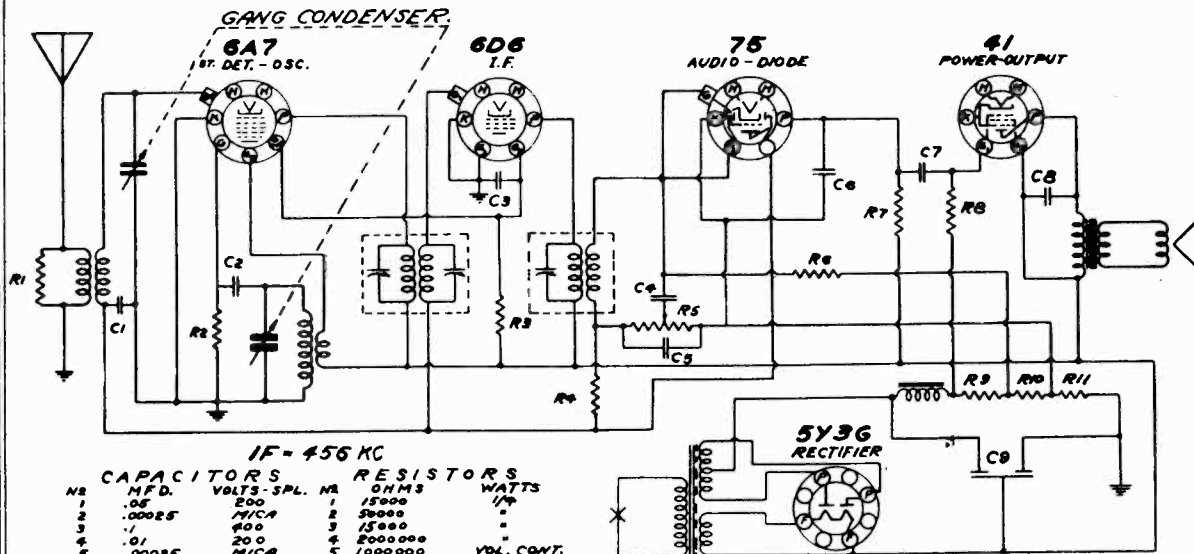
Connect the output of the signal generator to the antenna lead (blue) through a .0002 mfd. mica condenser. Set the gang condenser to minimum and the oscillator to 1730 KC and adjust the Broadcast "oscillator trimmer" to receive this signal. Make no other adjustments at this frequency. Then set the generator to 1400 KC and tune in this signal by rotating the gang to 1400 on the dial. Adjust the Broadcast "antenna" trimmer to a maximum signal. Set the signal generator to 600 KC and tune in the signal

**SHORT WAVE BAND ALIGNMENT**

The short wave band is adjusted by setting the generator to 16,000 KC and tuning in the signal. 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.



ALLIED RADIO CORP.



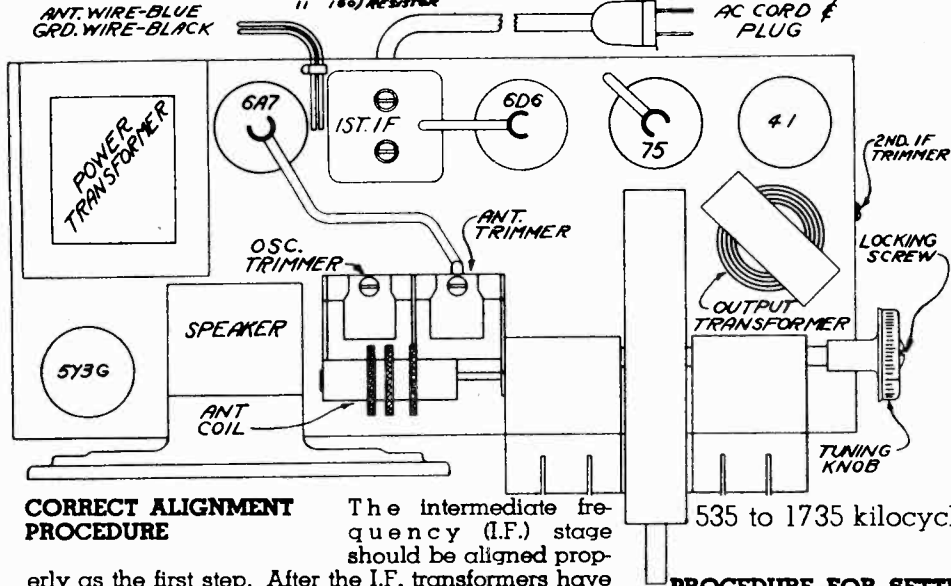
IF = 456 KC

CAPACITORS			RESISTORS		
NO.	M.F.D.	VOLTS - SPL.	OHMS	WATTS	
1	.05	MICA	15000	1/4	
2	.00025	MICA	50000	1/4	
3	.01	MICA	15000	"	
4	.01	20	8000000	"	
5	.00025	MICA	1000000	"	
6	.00025	MICA	3000000	1/4	
7	.01	400	200000	"	
8	.005	400	500000	"	
9	B-B	500	185 METAL	"	
			33 GLASS	"	
			150 RESISTOR	"	

PARTS LIST

- RESISTORS**
- P1220 200,000 Ohm 1/4 Watt
  - P417 50,000 Ohm 1/4 Watt
  - P258 15,000 Ohm 1/4 Watt
  - P137 500,000 Ohm 1/4 Watt
  - P1114 2,000,000 Ohm 1/4 Watt
  - P2438 Camdohm Resistor

- CONDENSERS**
- P164 .01 Mfd. 400 Volt
  - P1322 .005 Mfd. 600 Volt
  - P334 .05 Mfd. 400 Volt
  - P148 .05 Mfd. 200 Volt
- MICA CONDENSERS**
- P817 .00025
- ELECTROLYTIC CONDENSERS**
- P2397 Dual 8 Mfd. 300 W.V.
- ADJUSTABLE CONDENSERS**
- P2411 Gang Condenser
- TRANSFORMERS AND COILS**
- P2395 110 V. Power Transformer
  - P2396 125 V. Power Transformer
  - P2391 Output Transformer
  - P1506 1st I.F. Transformer
  - P2394 2nd I.F. Transformer
  - P2412 Oscillator Coil
  - P2393 Antenna Coil



CORRECT ALIGNMENT PROCEDURE

The intermediate frequency (I.F.) stage should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast Band alignment should be the next procedure.

I.F. ALIGNMENT

Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6A7) through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all three I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT

Adjust the oscillator 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 gang condenser trimmer (oscillator) to receive this signal. After this has been carefully done, the next step is to set the generator to 1400 KC and after tuning in the signal adjust the antenna trimmer to peak. This is all that is necessary for the alignment unless the plates of the gang condenser have been bent out of shape. In case of bent plates, set the test oscillator and the receiver to 600 KC and bend the plates into the position for maximum output.

PROCEDURE FOR SETTING UP AND OPERATING AUTOMATIC PUSH BUTTONS

Select four strong local stations tuned in regularly. Now loosen **Locking Screw** (see chassis layout) several turns with a coin or a screw driver and press in any one of the four push buttons. Holding the button down, tune in any one of four selected stations by rotating the tuning knob (side knob) slowly back and forth until the signal is cleared.

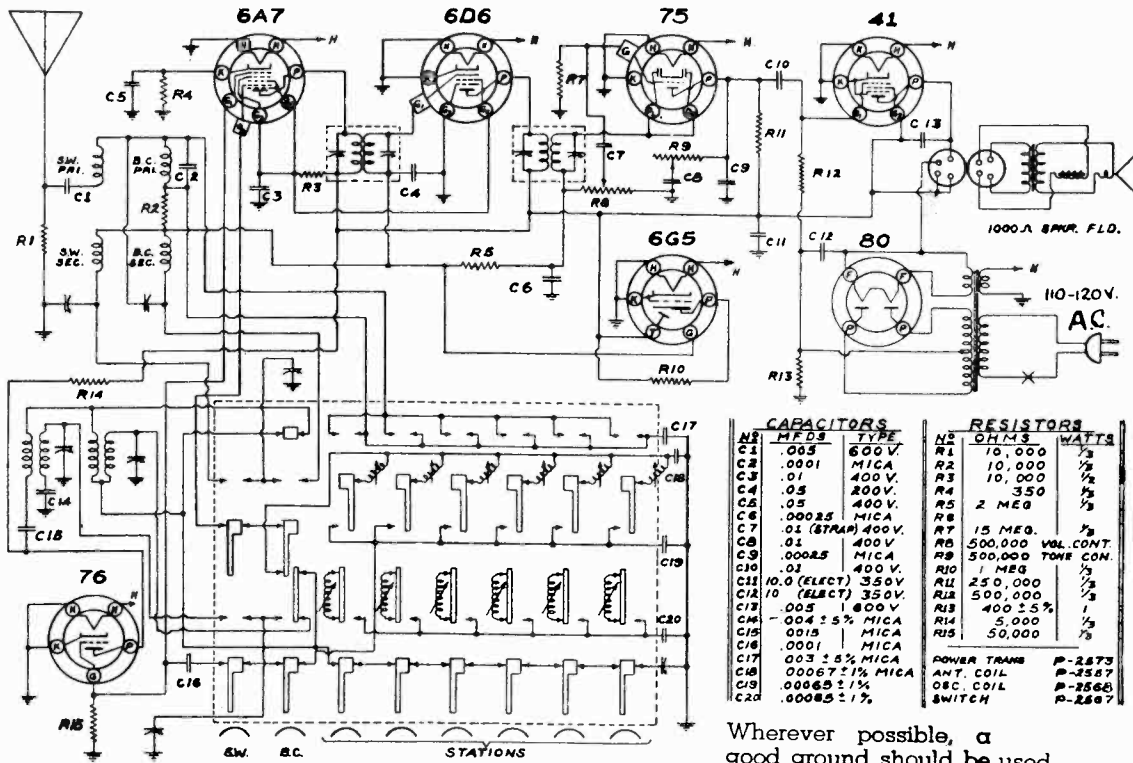
Release the push button and press in another button and hold down, tuning in another favorite station with tuning knob. Follow the same procedure for the remaining stations. Now hold tuning knob (side knob) securely and with coin or screw driver, tighten locking screw. This screw holds all stations in adjustment.

In order to change any station already set up, to another, hold tuning knob securely, loosen locking screw and select the new station as explained above. Tear the correct station call letter tabs from the set of sheets supplied and push them into rectangular windows above each push button.

The automatic push button dial is now set up for quick tuning.

MODEL E10870

ALLIED RADIO CORP.



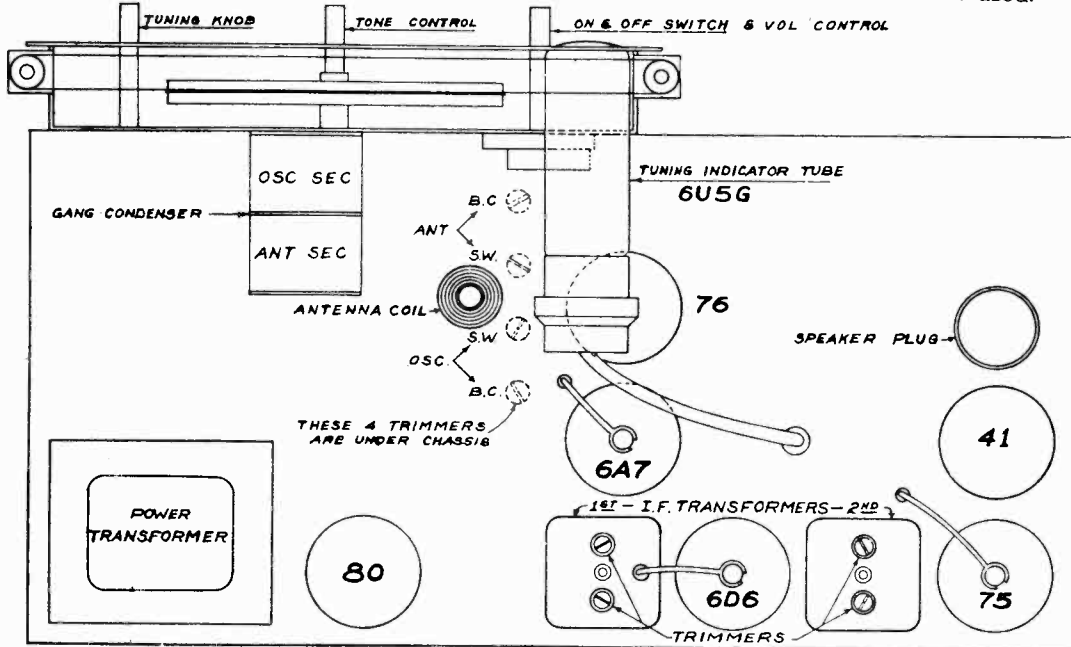
CAPACITORS			RESISTORS		
NO.	MFDS	TYPE	NO.	OHMS	WATTS
C1	.005	600V.	R1	10,000	1/2
C2	.0001	MICA	R2	10,000	1/2
C3	.01	400V.	R3	10,000	1/2
C4	.05	200V.	R4	350	1/2
C5	.05	400V.	R5	2 MEG	1/2
C6	.00025	MICA	R6		
C7	.01 (STRAP)	400V.	R7	15 MEG.	1/2
C8	.01	400V.	R8	500,000	VOL. CONT.
C9	.00025	MICA	R9	500,000	TONE CON.
C10	.01	400V.	R10	1 MEG.	1/2
C11	10.0 (ELECT)	350V.	R11	250,000	1/2
C12	10 (ELECT)	350V.	R12	500,000	1/2
C13	.005	1,000V.	R13	400 ± 5%	1
C14	.004 ± 5%	MICA	R14	5,000	1/2
C15	.0015	MICA	R15	50,000	1/2
C16	.0001	MICA			
C17	.003 ± 5%	MICA			
C18	.00067 ± 1%	MICA			
C19	.00065 ± 1%	MICA			
C20	.00085 ± 1%	MICA			

IF PEAK  
456 KC

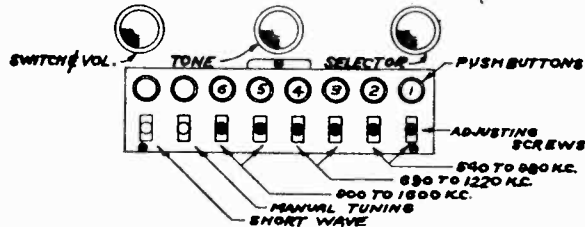
This receiver is designed to operate over two tuning ranges; the broadcast range which extends from 545 to 1720 kc (174.4 to 550.4 meters) and the international short wave band which extends from 5800 to 18,100 kc (16.5 to 51.7 meters). This latter range is the one which includes the 5 internationally assigned bands—the 16, 19, 25, 31 and 49 meter bands.

Wherever possible, a good ground should be used.

CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION, VOL. VIII.



PROCEDURE FOR SETTING UP AUTOMATIC PUSH BUTTONS

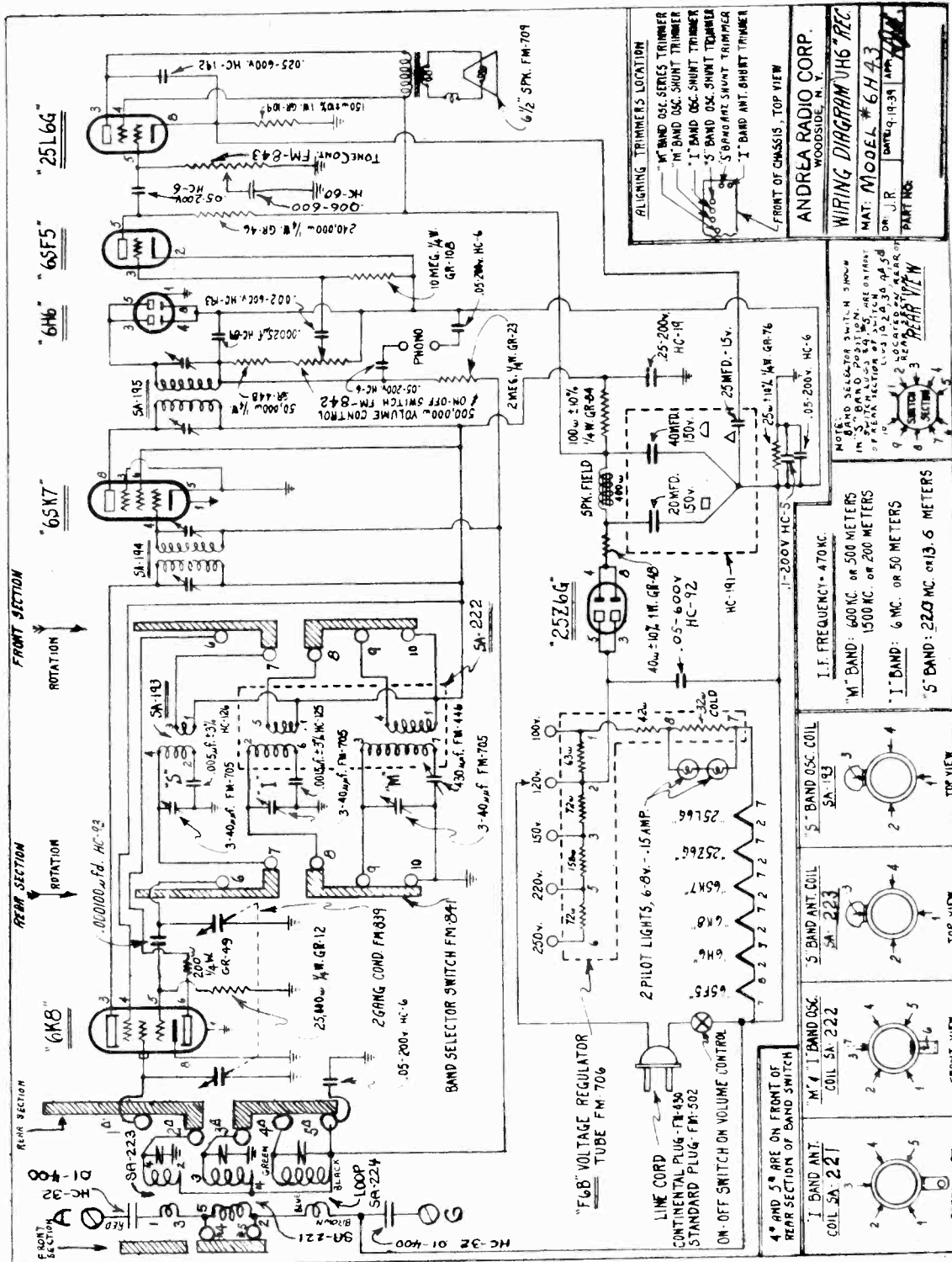


1. Choose a station having a frequency within the range of button No. 1 (540 to 980 kc).
2. Press "Manual Tuning" button and tune this sta-

- tion conventionally by using the selector knob.
3. Now press button No. 1 and turn adjusting screw in either direction until the previously selected station is heard. Adjust the screw until the dark area of the "electric eye" is smallest. This setting will give the best tonal response with maximum sensitivity.
4. Remove the call letters of the station from the call letter sheet furnished and insert in the window of the adjusting screw.
5. Repeat the above procedure for the remaining five (5) stations.

NOTE: It is advisable to retain the call letter sheet in case of station change later on.

ANDREA RADIO CORP.



**TUBES:** The following tubes are required for this receiver: 6K8 oscillator and modulator, 6SK7 I.F. amplifier, 6H6 2nd detector and AVC, 6F5 1st audio, 25L6G beam power output, 25Z6G rectifier, F6B ballast tube.

MODEL 6H43  
MODEL 6H44

## ANDREA RADIO CORP.

**I. F. REALIGNMENT GENERALLY SUFFICIENT:** As a rule, it is not necessary to readjust the short wave oscillator and antenna shunt and series trimmers unless they have been tampered with, or require replacing. Consequently, careful realignment of the I.F. system is all that requires attention, ordinarily. Before making any adjustments, tune in one particular station and note the quality of reception so that you can check the improvement after the I.F. system has been realigned.

**USE SIGNAL GENERATOR AND OUTPUT VOLTMETER:** For realigning, use a signal generator to supply a modulated carrier of 470, 600, 1,500, 6,000, and 22,000 kc., plus an output voltmeter. Alignment by any other means is not recommended. Your service test generator should be checked frequently for change in calibration by getting a zero beat between the generator and broadcast stations of known frequency.

**SPECIAL NOTES:** Always check the pointer setting with the alignment scale located on the top rear flopped plate before you start alignment adjustments. Otherwise, inaccuracies will be introduced.

When the variable plates are completely closed, the back extension of the pointer should be exactly in line with the end of the vertical marking at the left side of the alignment scale looking from the front of the chassis.

After installing the chassis in the cabinet, it is essential that you check the pointer alignment with the glass scale on the cabinet by turning the pointer fully to the left. Then clamp the chassis loosely in position so that the pointer lines up with the left end of the calibration line on the glass scale. Tighten the chassis firmly in the cabinet, making certain that the chassis does not move its position, and thereby cause the pointer position to shift with respect to the calibrated scale on the cabinet. Otherwise, poor calibration will result.

**NOTES ON REALIGNING THE BANDS:** During the aligning measurements, the output of the signal generator must be kept so low that it will not cause the AVC circuit in the set to function. In other words, when the volume control on the set is turned to maximum, the output should not show more than .5 volt across the voice coil, or 50 milliwatts in the plate circuit of the output tube. Generally, at frequencies above 7,000 kc., the signal generator frequency will change with each adjustment of the generator output attenuator control. Hence, the receiver must be retuned each time the attenuator is adjusted.

Some generators cause trouble by direct radiation to the set at frequencies above 8 mc. Experience indicates that more accurate alignment is possible when the generator is separated by several feet from the receiver under test, in order to eliminate this direct pickup.

**470 KC. I. F. ALIGNMENT:** Connect the high-potential lead of the signal generator in series with a .1 mfd. condenser to the grid of the 6K8 tube. Set the generator at 470 kc., and adjust the output until a small deflection is obtained in the output meter. Adjust the trimmer condensers on the top of the 1st and 2nd I.F. transformers (see circuit diagram) for maximum deflection on the output meter. After this adjustment has been made, disconnect the generator from the grid of the 6K8 tube. This completes the alignment of the I.F. system.

**"S" BAND ALIGNMENT:** Connect the high-potential lead from the generator in series with a 400-ohm resistor to the antenna (red) lead of the set, and the low side of the generator to the ground (black) lead of the set. Put the wave band switch at the S position, adjust the generator to 22,000 kc., and the receiver to 22.0 mc. Vary the S band oscillator shunt trimmer slowly from maximum to minimum. You will hear the signal at two settings of the trimmer, one nearer the minimum capacity (plates open) and one near the maximum capacity (plates closed). The setting near minimum capacity is correct, because the setting near maximum capacity is at the image frequency.

Now adjust the antenna shunt trimmer. During this adjustment, be sure to rock the gang condenser back and forth slowly each time you make an adjustment of the trimmer. As you continue to do this, you will reach a point where further turning of the trimmer screw, while rocking the gang condenser, will not increase the signal response. This is the correct adjustment.

A simple method of determining if the receiver and generator are tuned for correct alignment is as follows:

Set the signal generator at 22,000 kc. and tune the receiver slowly from 21,000 to 23,000 kc. Two signals should be heard, 940 kc. apart. One will be lower in frequency than 22,000 kc. and the other will be higher. The higher frequency, as indicated on the dial, is the correct aligning frequency, and the lower one is the image.

As a further check, leave the receiver tuned to the higher frequency. Very slowly, increase the generator frequency from 22,000 kc. to about 23,000 kc. A signal will be heard near 23,000 kc. if all the settings are correct for alignment. If there is no signal, the original settings were on the image frequency.

In that case, you must start again from the beginning, in order to be sure of accurate results.

After you have found the correct settings, the image, or lower, frequency response on the receiver will always sound weaker than the true signal.

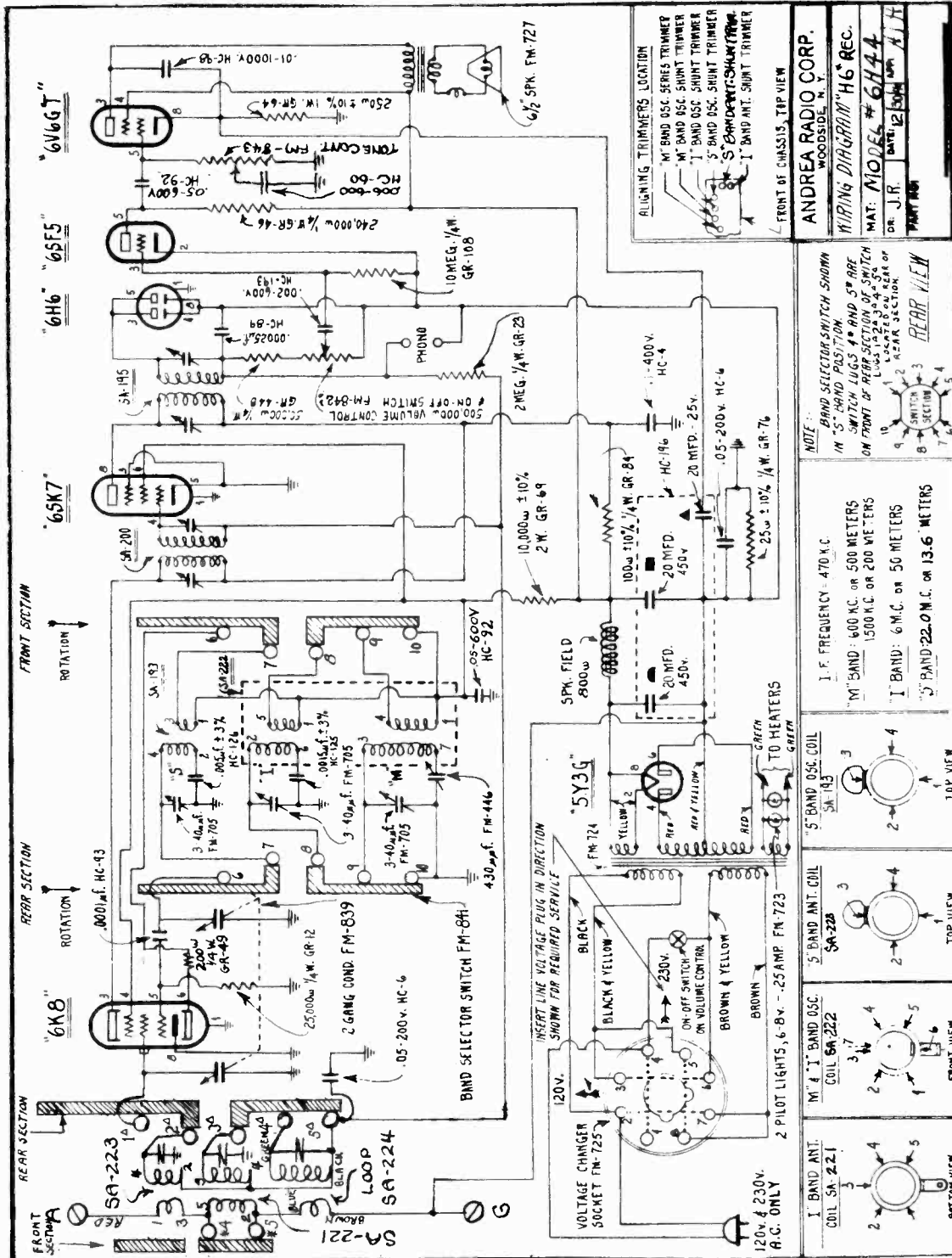
**"I" BAND ALIGNMENT:** With the signal generator connected in accordance with the preceding instructions, set the generator at 6,000 kc., turn the wave band switch to the I position, and adjust the dial to 6 mc. Following the procedure just described, adjust the I band oscillator shunt trimmer for maximum signal response. Next, adjust the I band antenna shunt trimmer. Rock the gang condenser back and forth slowly as you adjust the trimmer, in accordance with the instructions for the S band adjustment. This completes the adjustment for the I band.

**"M" BAND ALIGNMENT:** Replace the 400-ohm resistor in the generator lead by a .00025 mfd. condenser. Set the generator at 1,500 kc., turn the wave band switch to the M position, and set the dial of the receiver at 1,500 kc. Adjust the M band oscillator shunt trimmer for maximum signal response. Next adjust the antenna shunt trimmer for maximum response.

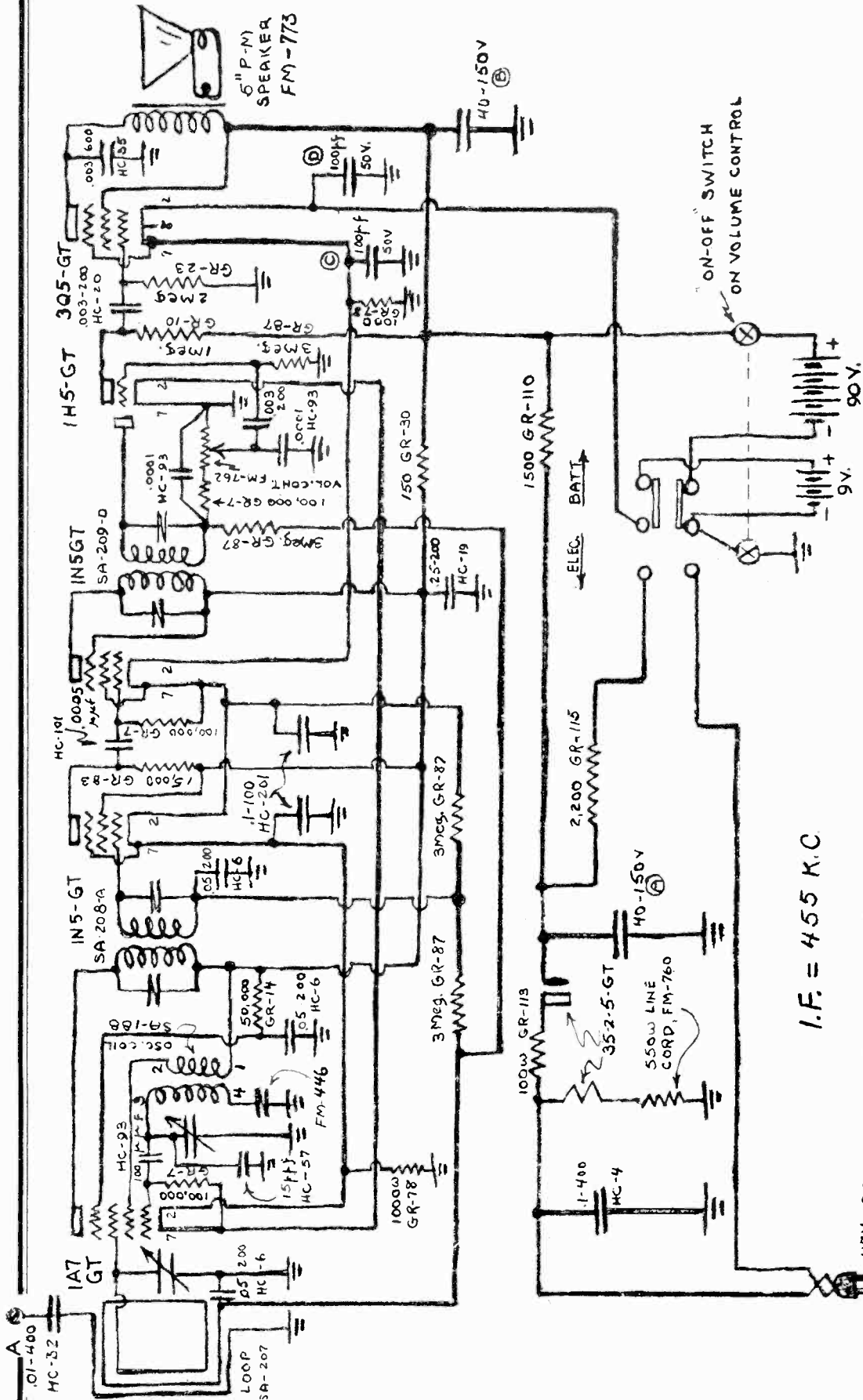
This band must be aligned at 600 kc. also. Set the generator accordingly, and tune the receiver to 600 kc. Adjust the M band oscillator series trimmer for maximum response. During this adjustment, be sure to rock the gang condenser for each small change of capacity of the series trimmer. When this adjustment has been completed, recheck the antenna adjustment at 1,500 kc. This completes the adjustment of the M band.

**WARNING:** Always remove the line plug from the electric outlet before removing the chassis from the cabinet. Also—connect the speaker plug to the receiver before switching on the power. Otherwise, damage will result.

ANDREA RADIO CORP.



**TUBES:** 6K8 Oscillator & Modulator  
 6V6GT Beam Power Output  
 6H6 2nd Detector & AVC  
 6SF5 1st Audio  
 5Y3G Rectifier  
 6SK7 I.F. Amplifier



ANDREA RADIO CORP.  
WOODSIDE, N. Y.

WIRING DIAGRAM G-61 REC.  
MAT:  
DR. R.L.W. DATE: 4/9/41 APP: HPH  
PART NO:

1. ELECTROLYTICS, (A), (B), (C), AND (D)  
IN SAME CAN, HC-202

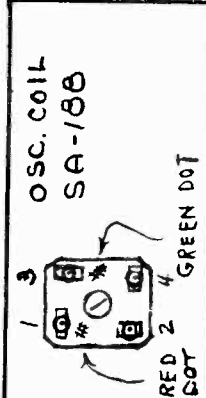
I.F. = 455 K.C.

117V. AC. OR D.C., OR BATTERY OPERATION WHEN  
INSERTED IN CHANGE-OVER PLATE

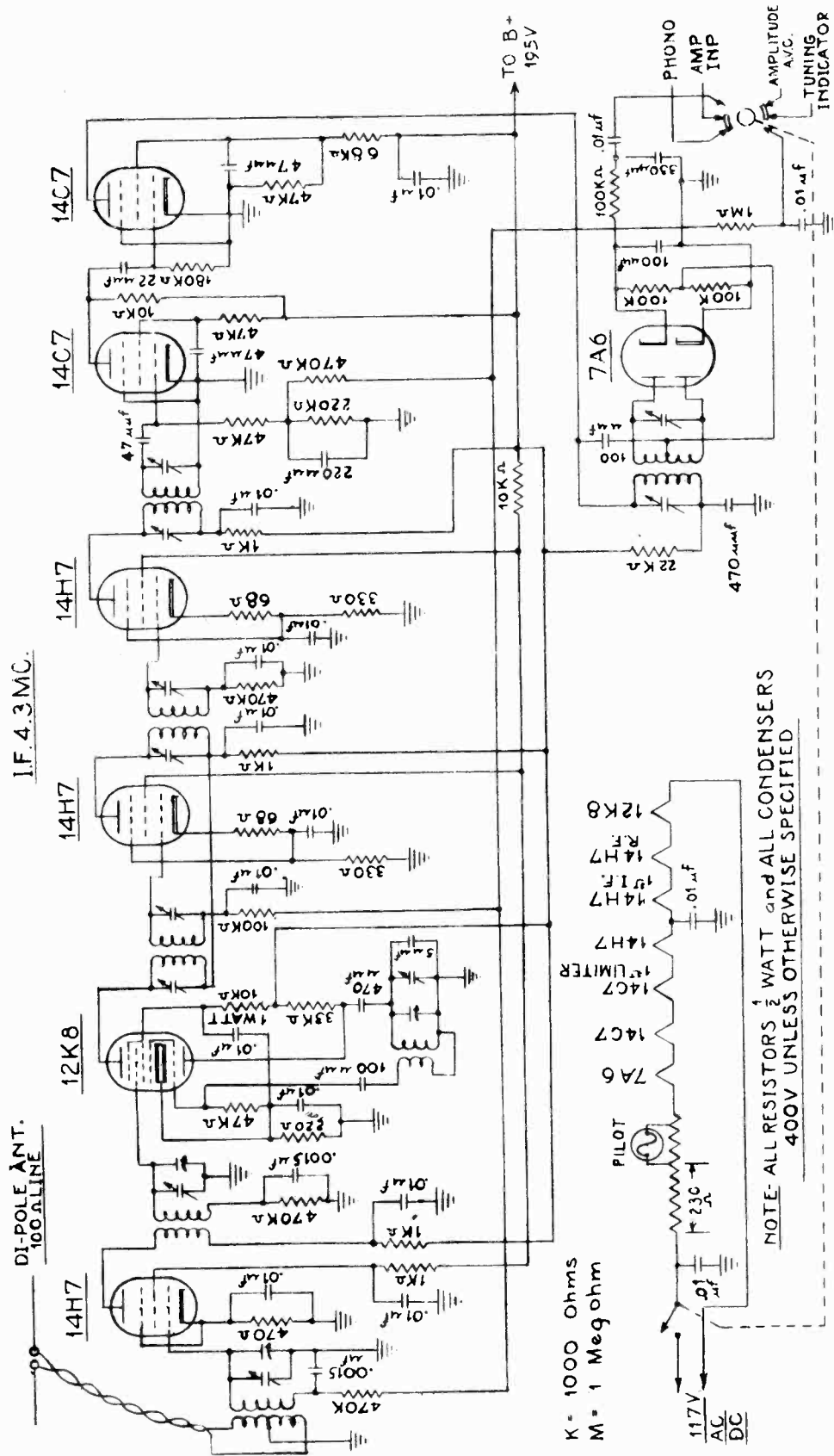
1500 K.C.  
LOOP SHUNT  
TRIMMER

600 K.C.  
OSC. SERIES  
TRIMMER

SA-207  
LOOP

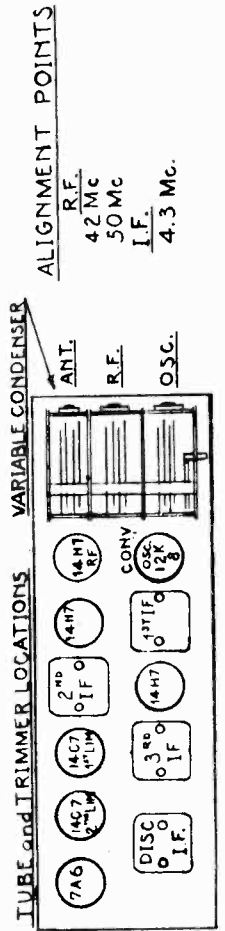


ANSLEY RADIO CORP.



K = 1000 Ohms  
M = 1 Megohm

NOTE: ALL RESISTORS 1/2 WATT and ALL CONDENSERS 400V UNLESS OTHERWISE SPECIFIED

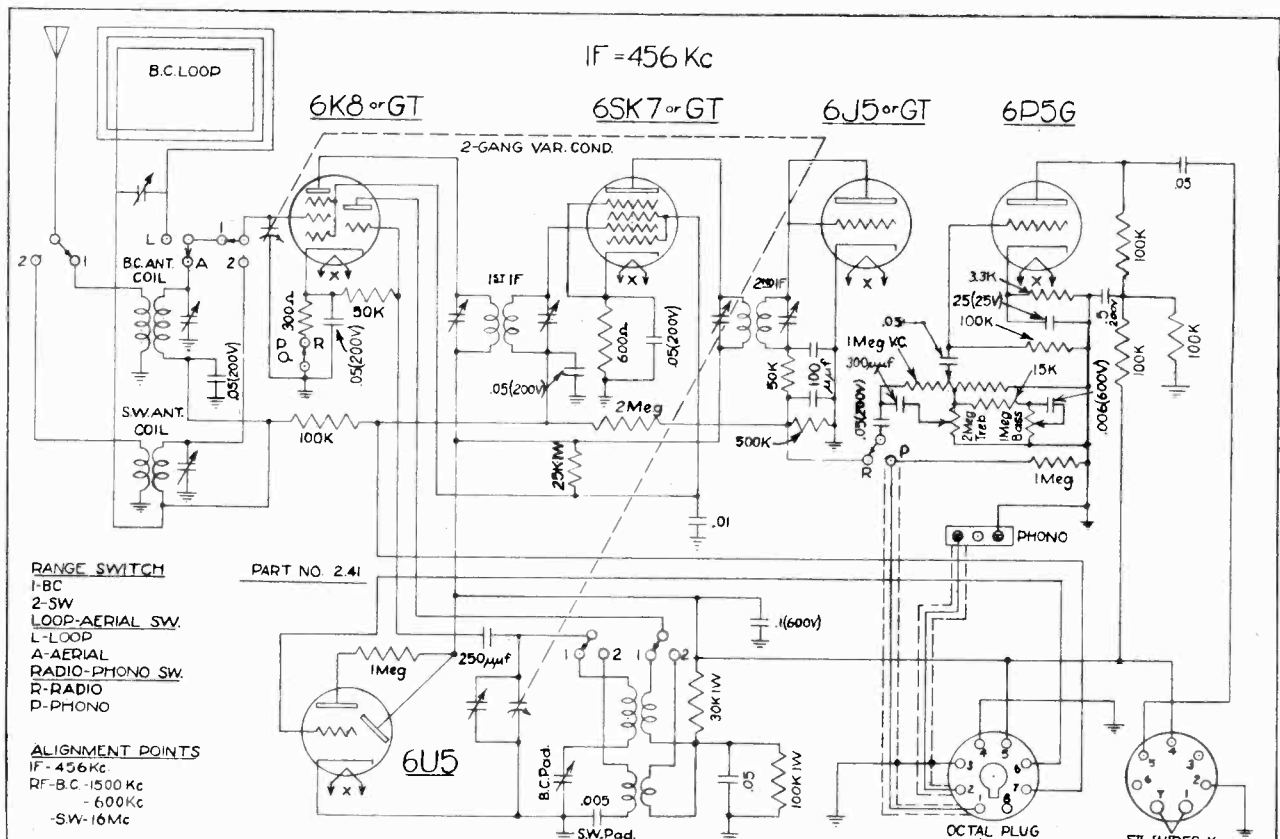


NOTE 105-125 VOLT AC

For 104-125 volt AC operation 7 volt tubes used connected in parallel to 6.3 volt supply to AM tuner.

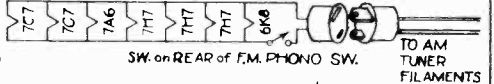
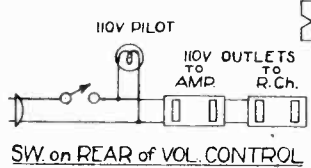
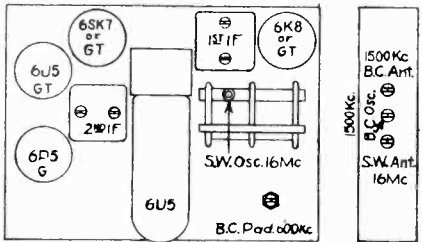


ANSLEY RADIO CORP.

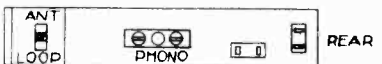


**RANGE SWITCH**  
 1-BC  
 2-SW  
 LOOP-AERIAL SW.  
 L-LOOP  
 A-AERIAL  
 RADIO-PHONO SW.  
 R-RADIO  
 P-PHONO

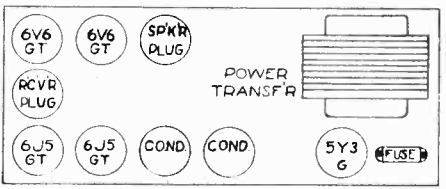
**ALIGNMENT POINTS**  
 IF - 456 Kc  
 RF-BC - 1500 Kc  
 - 600 Kc  
 SW - 16 Mc



ALL RESISTORS  $\frac{1}{2}$ W & ALL CONDENSERS 400V UNLESS OTHERWISE SPECIFIED

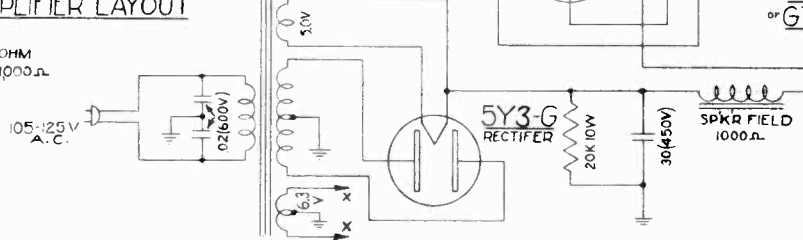


TUBE & TRIMMER LOCATIONS



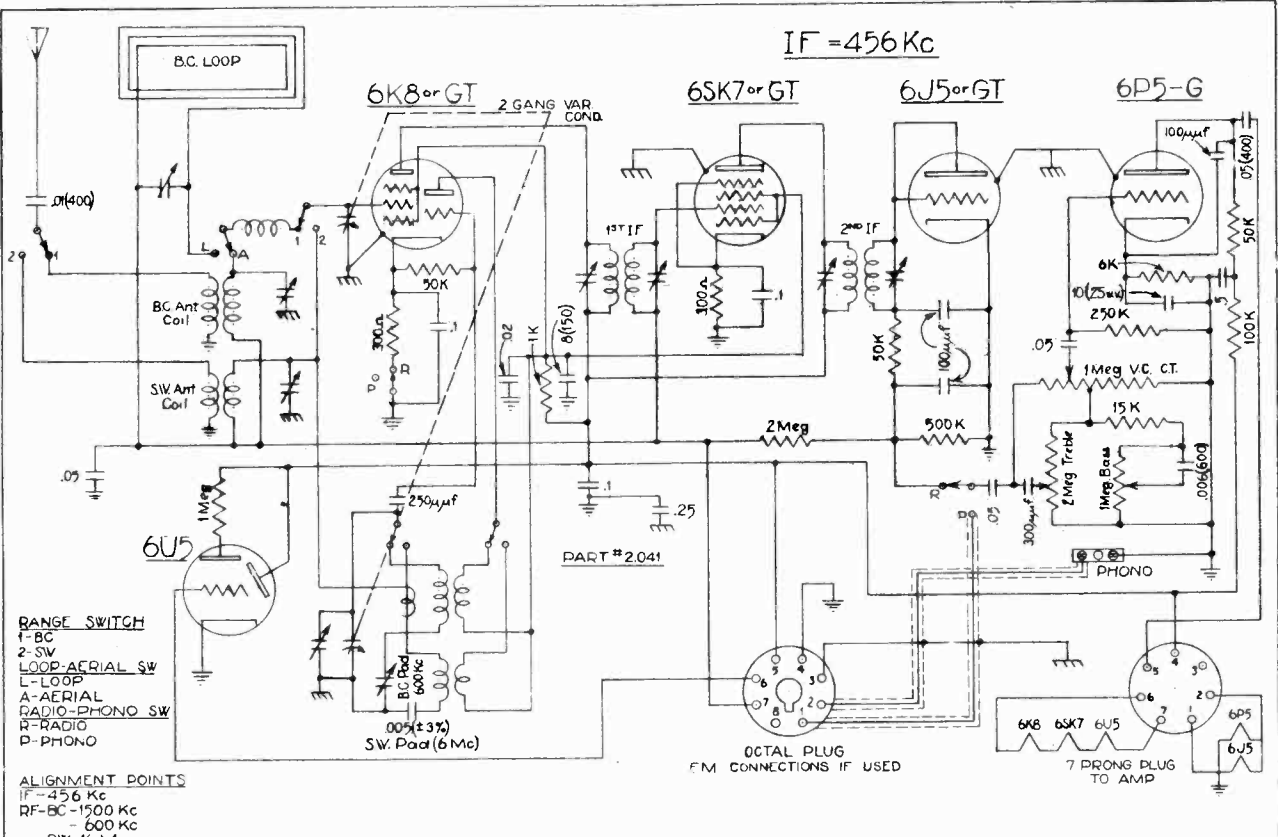
AMPLIFIER LAYOUT

$\Omega$  = 0HM  
 K = 1000 $\Omega$



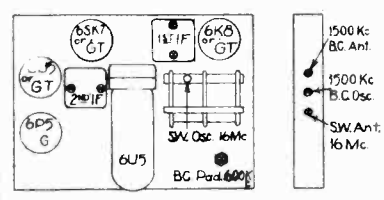
CIRCUIT DIAGRAM FOR MODEL #51			ANSLEY NUMBER
9-10-41	BY LL	CHECKED APP	
ANSLEY RADIO CORP. NY, U.S.A.			

ANSLEY RADIO CORP.

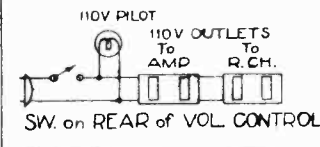
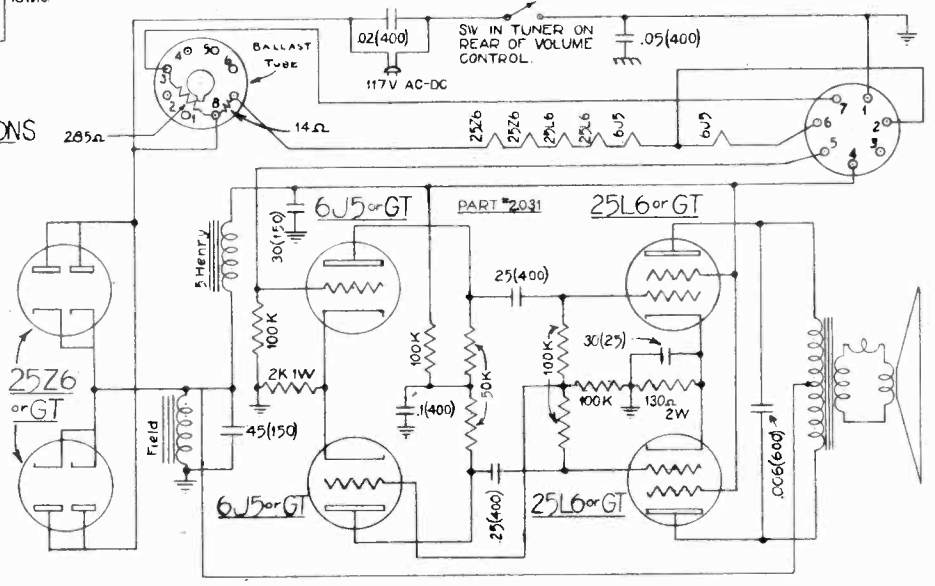
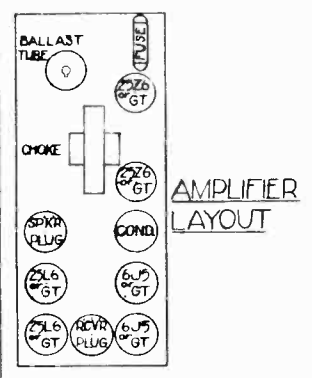


- RANGE SWITCH  
 1-BC  
 2-SW  
 LOOP-AERIAL SW  
 L-LOOP  
 A-AERIAL  
 RADIO-PHONO SW  
 R-RADIO  
 P-PHONO

- ALIGNMENT POINTS  
 IF-456 Kc  
 RF-BC-1500 Kc  
       600 Kc  
 -SW-16 Mc

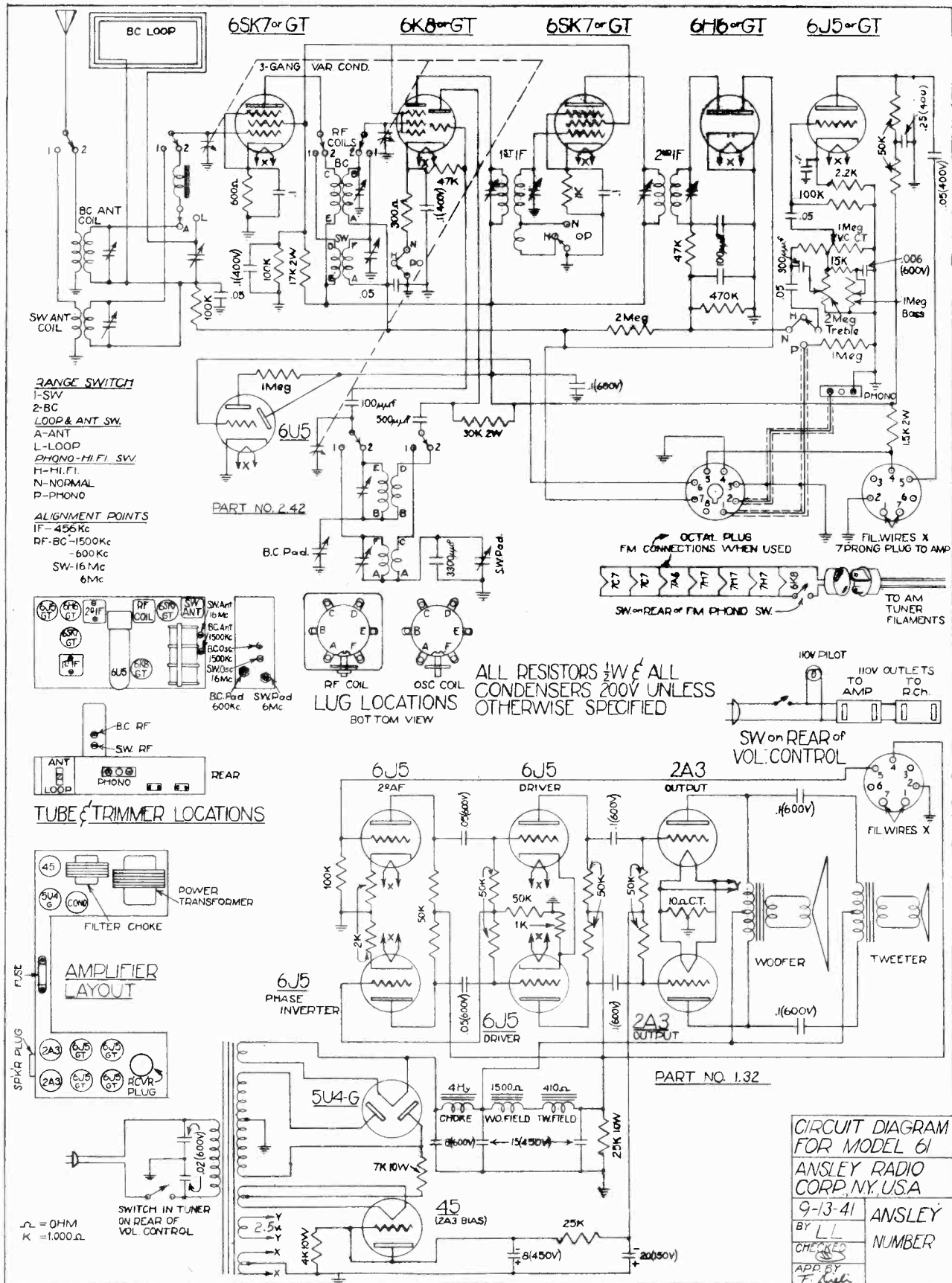


ALL RESISTORS 1/2W & ALL  
 CONDENSERS 200V UNLESS  
 OTHERWISE SPECIFIED



⊥ = B-  
 R = OHM  
 K = 1000 Ω  
 ≡ = CHASSIS

CIRCUIT DIAGRAM FOR MODEL 52  
 10-15-41 BY L/L CHECKED APPROVED  
 ANSLEY RADIO CORP. N.Y., USA

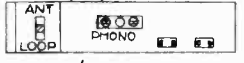
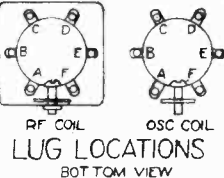
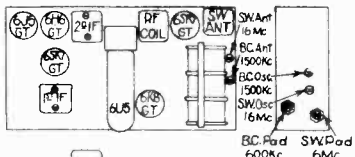


**RANGE SWITCH**  
 1-SW  
 2-BC  
 LOOP & ANT. SW.  
 A-ANT  
 L-LOOP  
 PHONO-HI-FI SW.  
 HI-HI-FI  
 N-NORMAL  
 P-PHONO

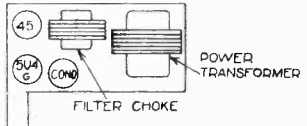
PART NO. 2.42

**ALIGNMENT POINTS**  
 IF - 456Kc  
 RF-BC - 1500Kc  
 - 600Kc  
 SW - 16.7Mc  
 6Mc

ALL RESISTORS 1/2W & ALL  
 CONDENSERS 200V UNLESS  
 OTHERWISE SPECIFIED



TUBE & TRIMMER LOCATIONS

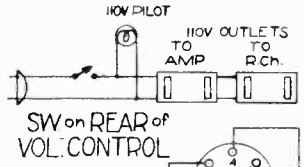


AMPLIFIER LAYOUT



SWITCH IN TUNER ON REAR OF VOL. CONTROL

R = 0 OHM  
 K = 1,000 OHM



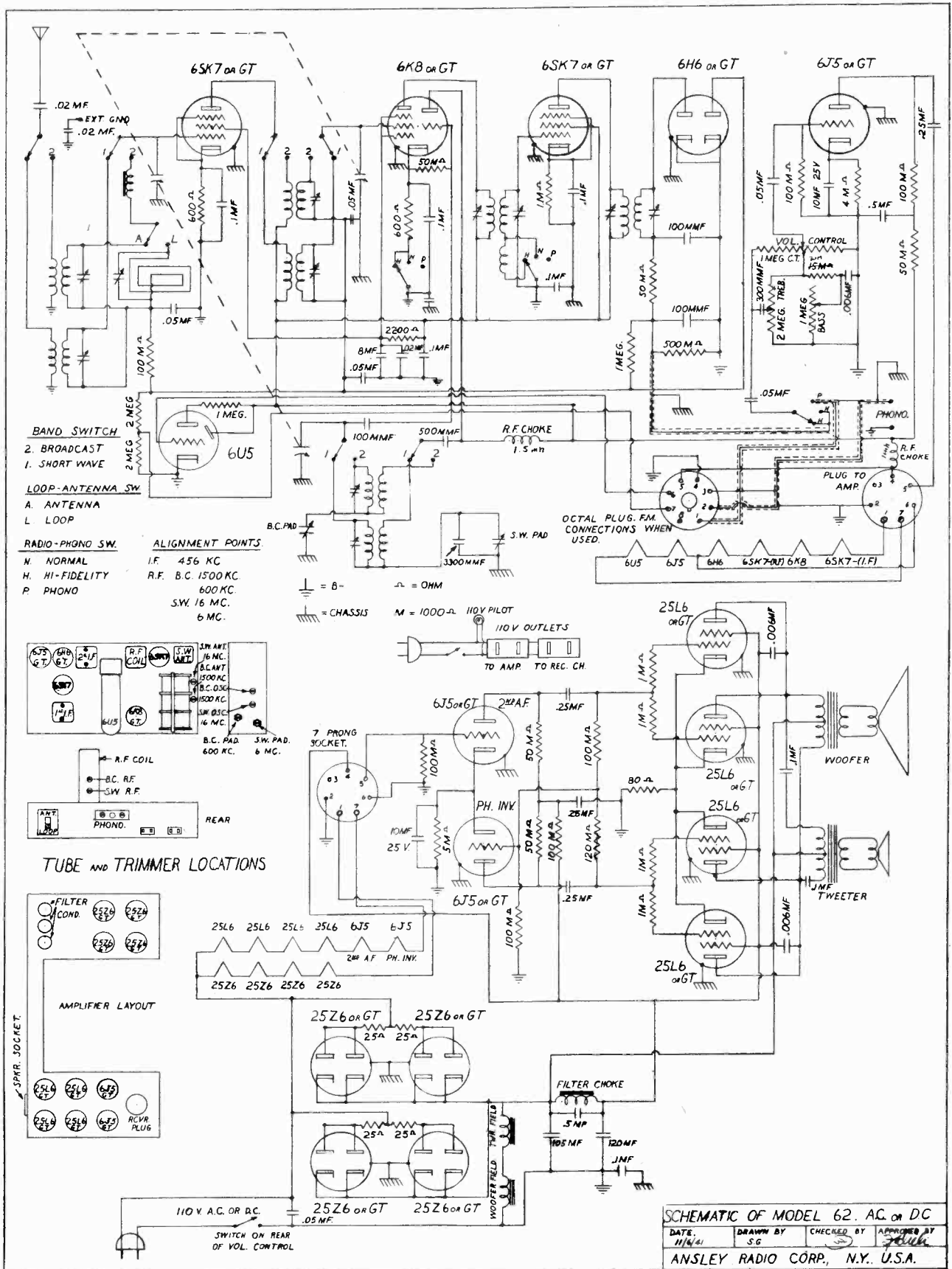
SW ON REAR OF VOL. CONTROL

PART NO. 1.32

CIRCUIT DIAGRAM FOR MODEL 61  
 ANSLEY RADIO CORP. N.Y. USA

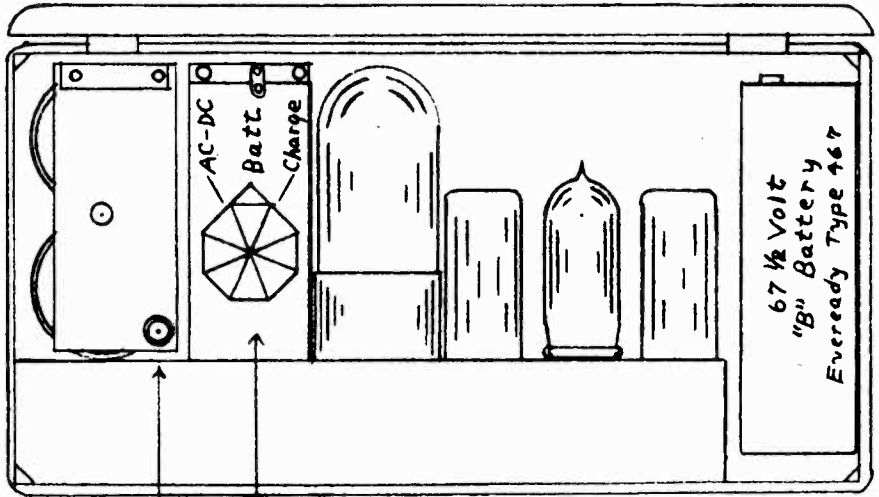
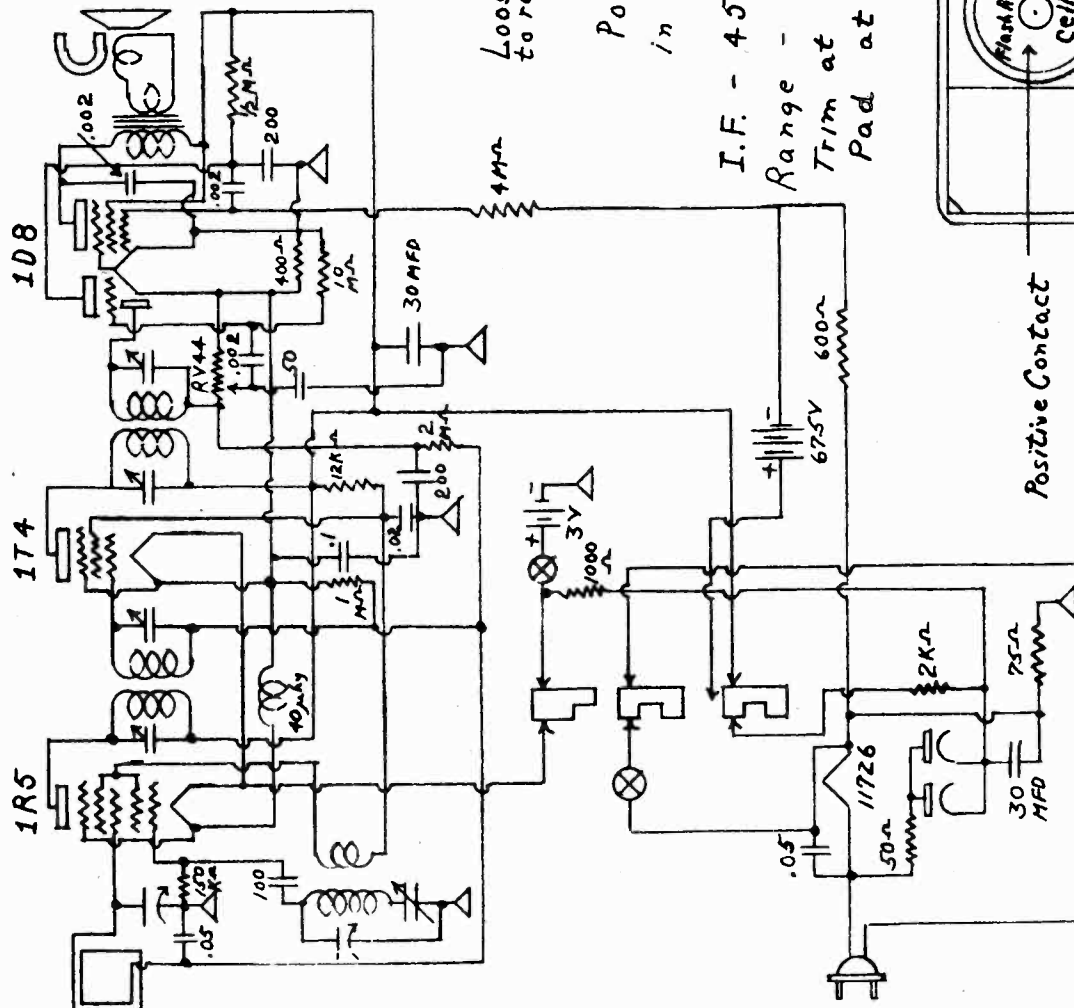
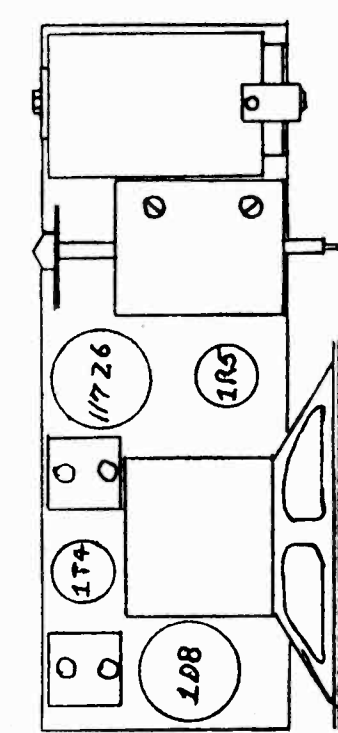
9-13-41	ANSLEY
BY L.L.	NUMBER
CHECKED	
APP BY	

ANSLEY RADIO CORP.





MODEL Tom Thumb 3 in 1  
 AUTOMATIC RADIO & TELEV. CORP. CO., INC. Personal



Loosen this nut to remove "A" Cells

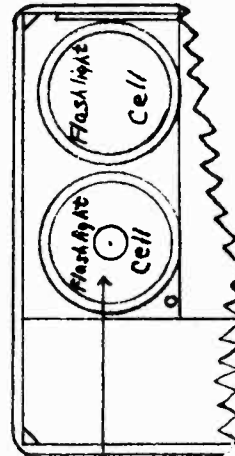
Power Selector in Batt. position

I.F. - 456 K.C.

Range - 1620 - 542 K.C.

Trim at 1400 K.C.

Pad at 600 K.C.



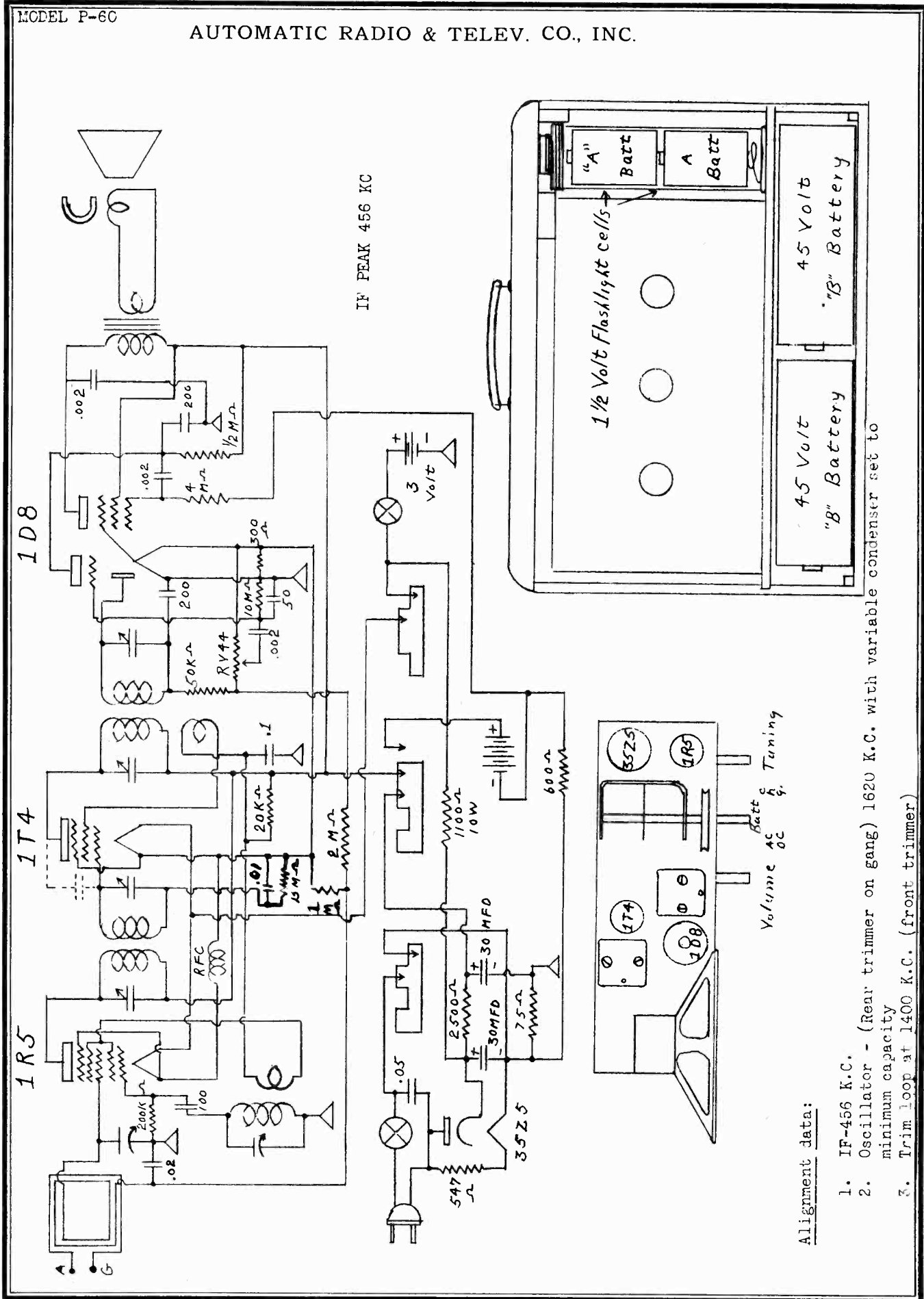
Positive Contact

When replacing "A" Cells be sure center contact of left hand cell only is facing out.

BATTERIES: 2 ordinary flashlight cells type D, size 1 1/4" diameter by 2 3/8" long; 1-67 1/2 volt "B" battery, Eveready type 467 or equivalent, size 1 1/4" by 2 5/8" by 3 5/8".

AUTOMATIC RADIO & TELEV. CO., INC.

MODEL P-6C



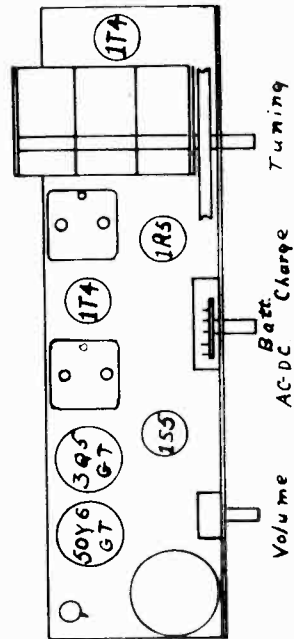
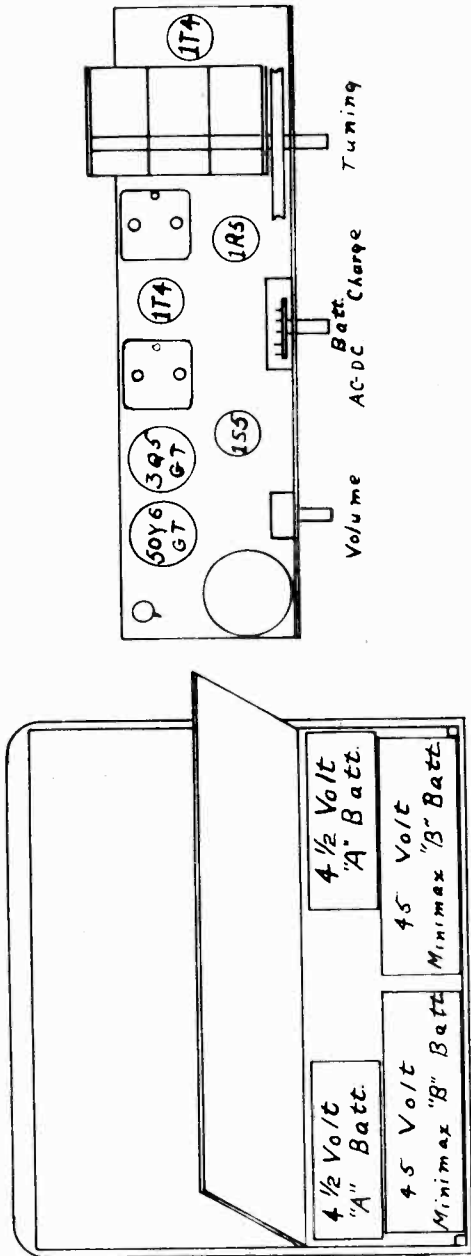
IF PEAK 456 KC

Alignment data:

- 1. IF-456 K.C.
- 2. Oscillator - (Rear trimmer on gang) 1620 K.C. with variable condenser set to minimum capacity
- 3. Trim loop at 1400 K.C. (front trimmer)

AUTOMATIC RADIO & TELEV. CO., INC.

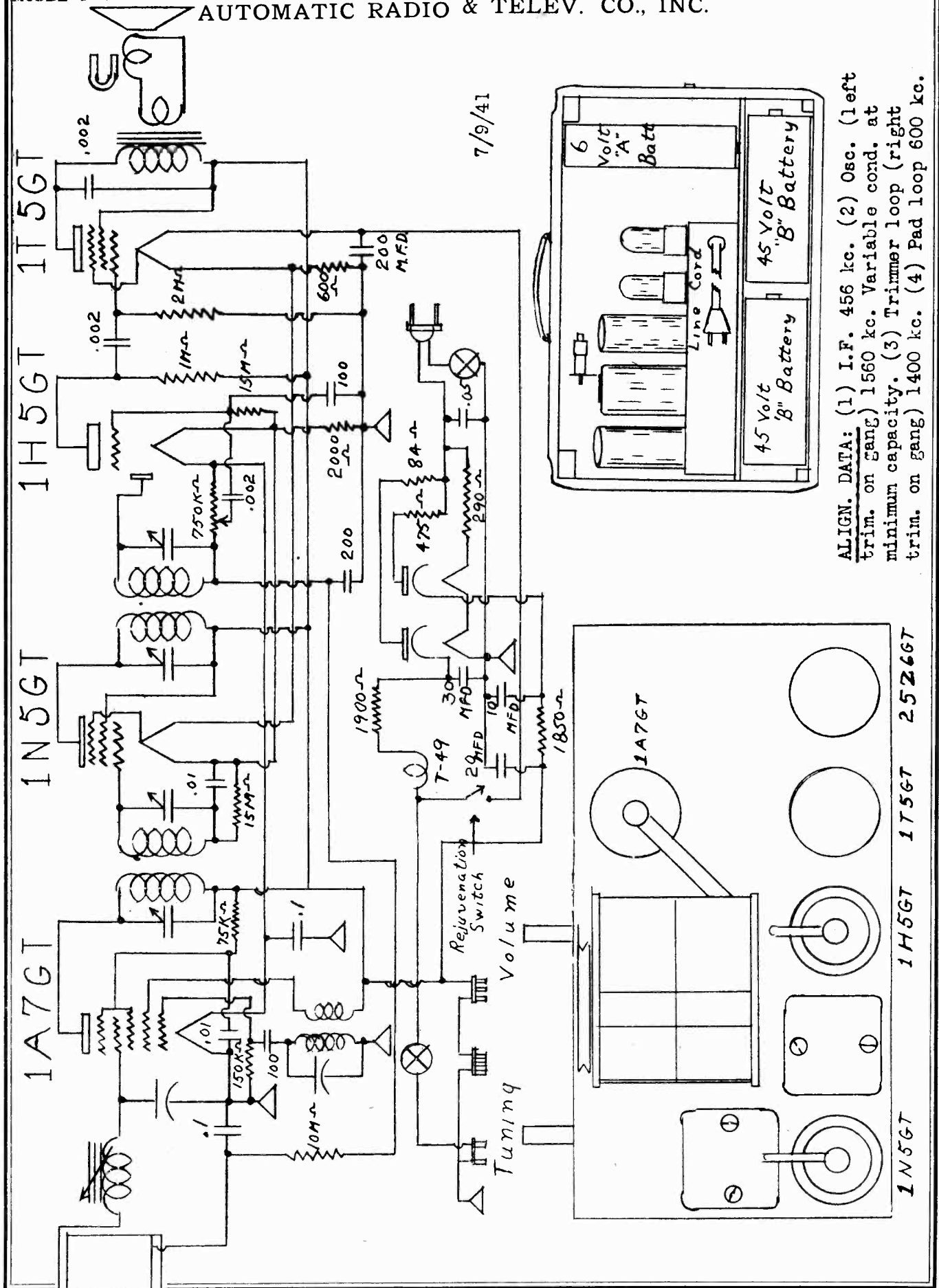
ALIGNMENT DATA: (1) I.F. 456 kc. (2) Osc. (middle trimmer on gang) set at 1620 kc. (3) Trim R.F. stage (front trim.) at 1400 kc. (4) Trim ant. stage (back trim.) at 1400 kc, adjust loop load coil at 600 kc.



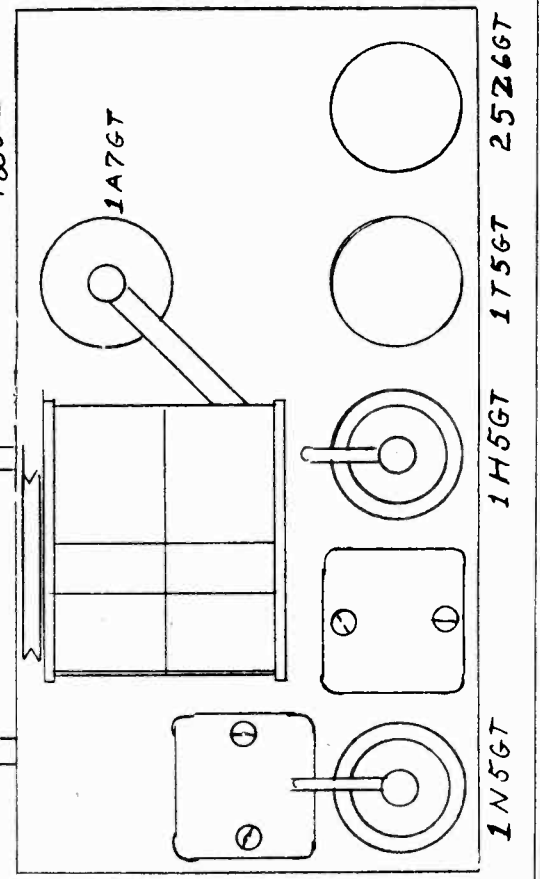
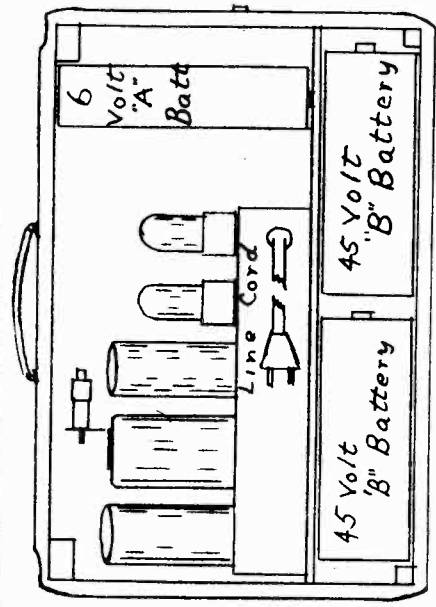


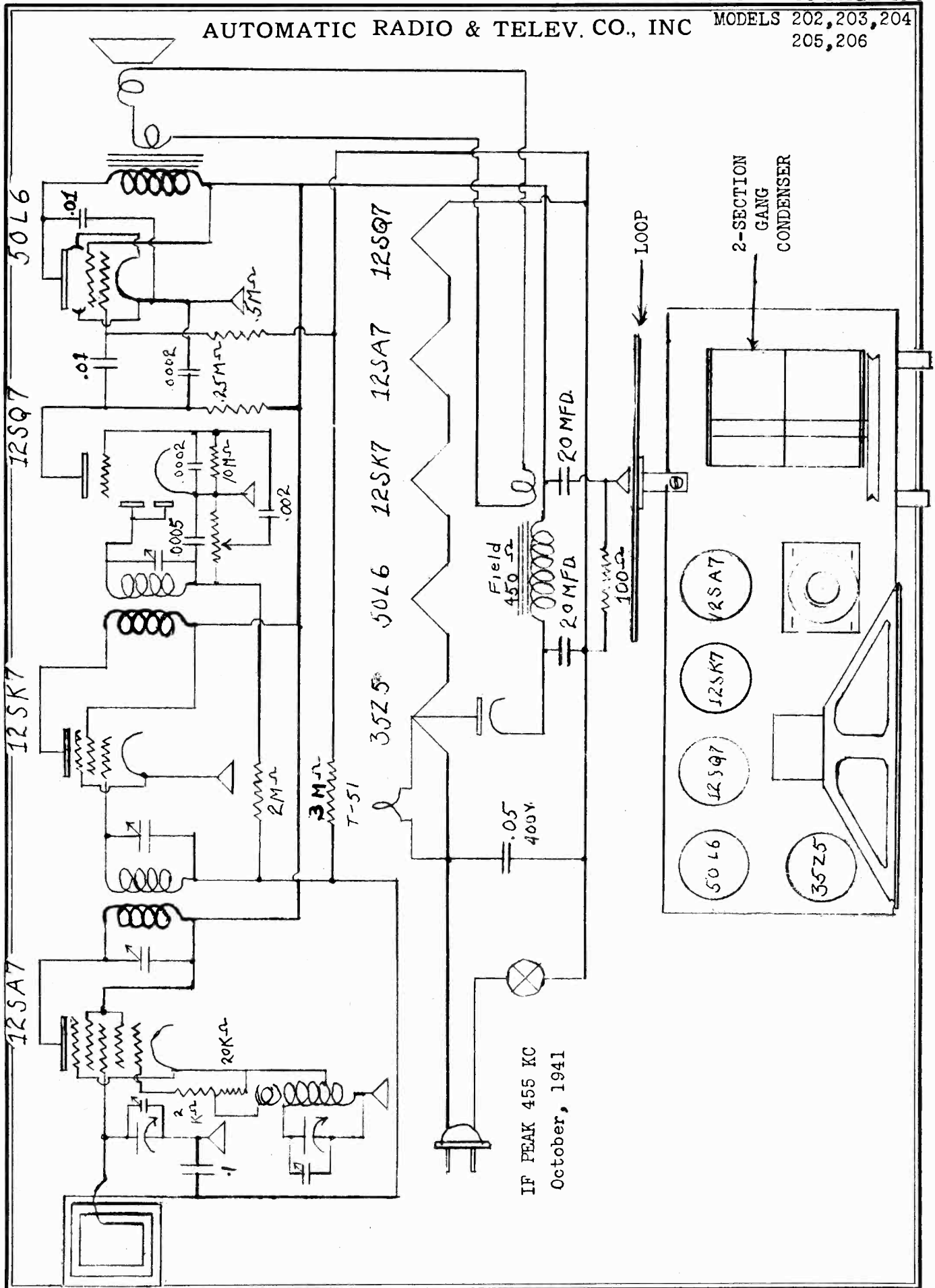
MODEL P-77

AUTOMATIC RADIO & TELEV. CO., INC.

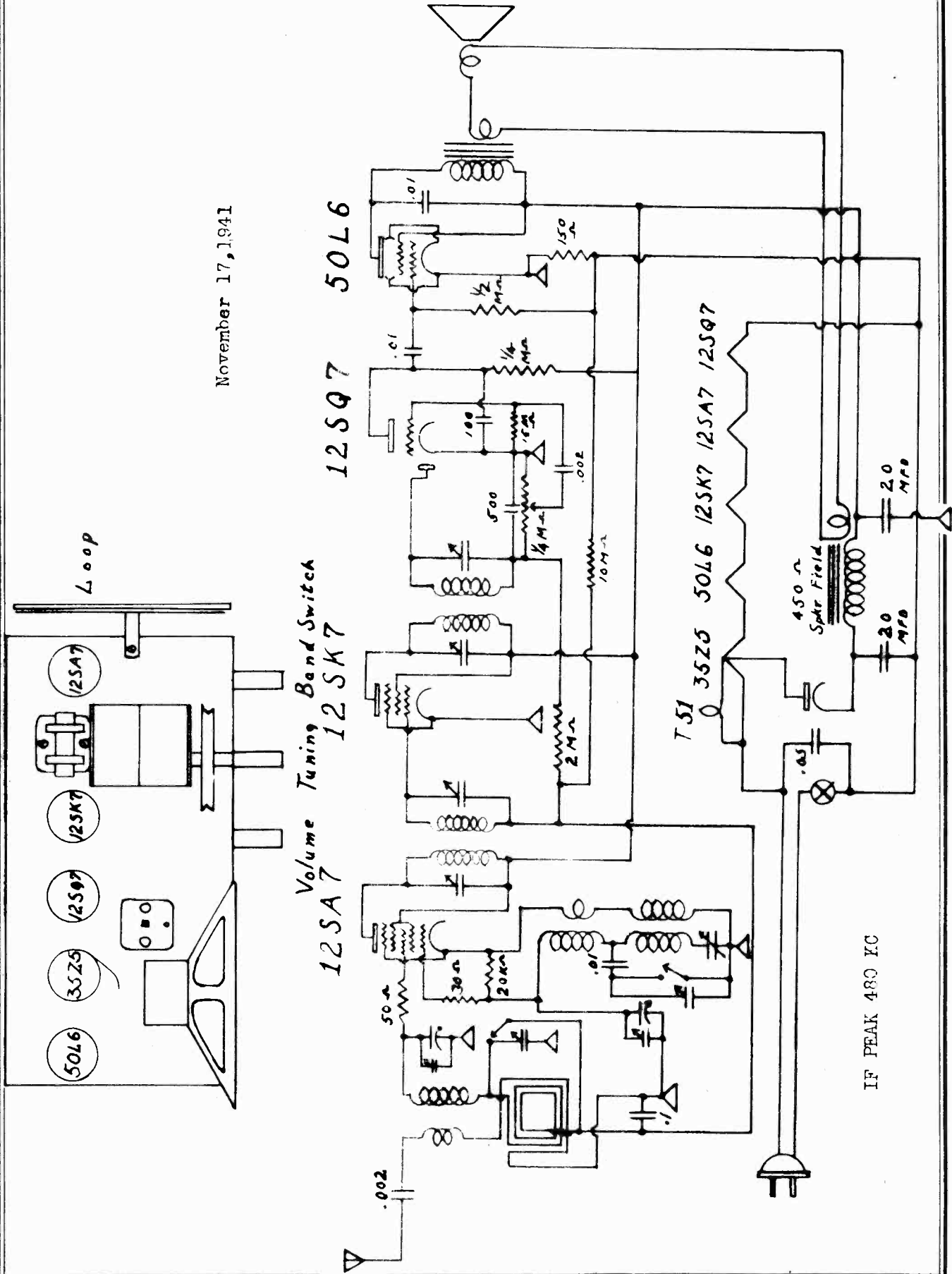


ALIGN. DATA: (1) I.F. 456 kc. (2) Osc. (left trim. on gang) 1560 kc. Variable cond. at minimum capacity. (3) Trimmer loop (right trim. on gang) 1400 kc. (4) Pad loop 600 kc.



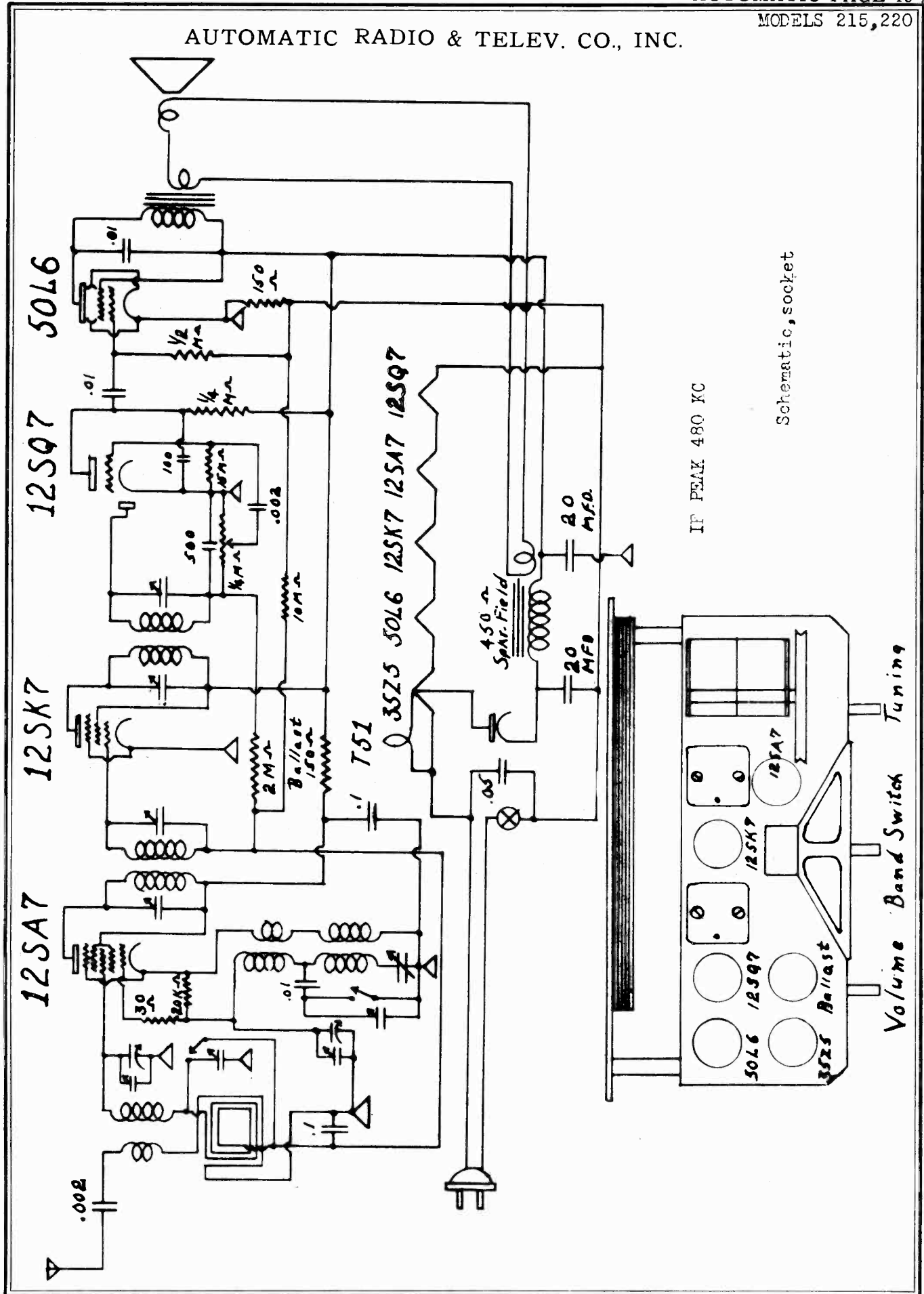


November 17, 1941



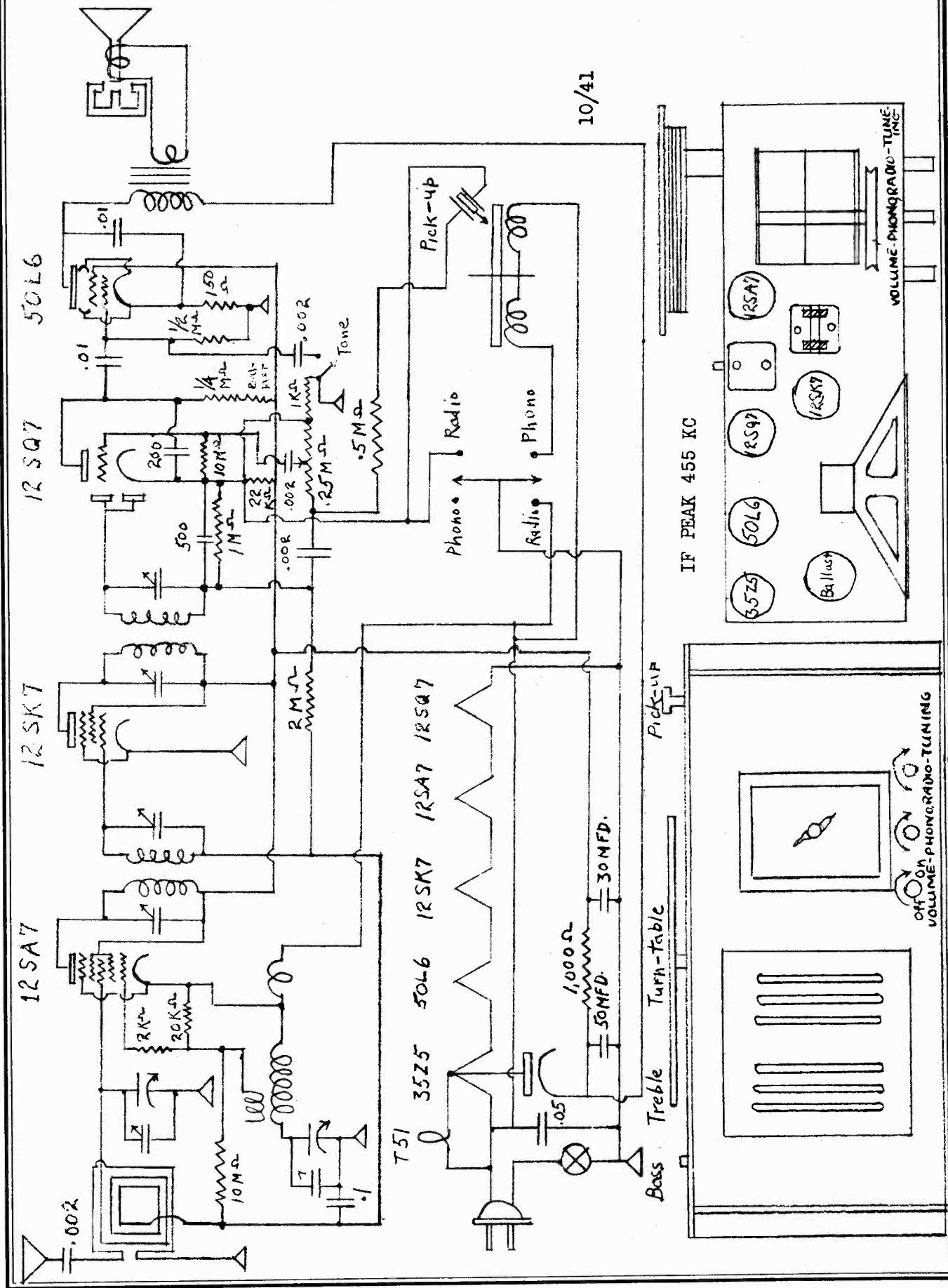
IF PEAK 480 KC

AUTOMATIC RADIO & TELEV. CO., INC.



IF PEAK 480 KC

Schematic, socket



10/41

IF PEAK 455 KC

VOLUME PHONO-RADIO-TUNING

OFF ON ON OFF  
VOLUME PHONO-RADIO-TUNING

BELMONT RADIO CORP.

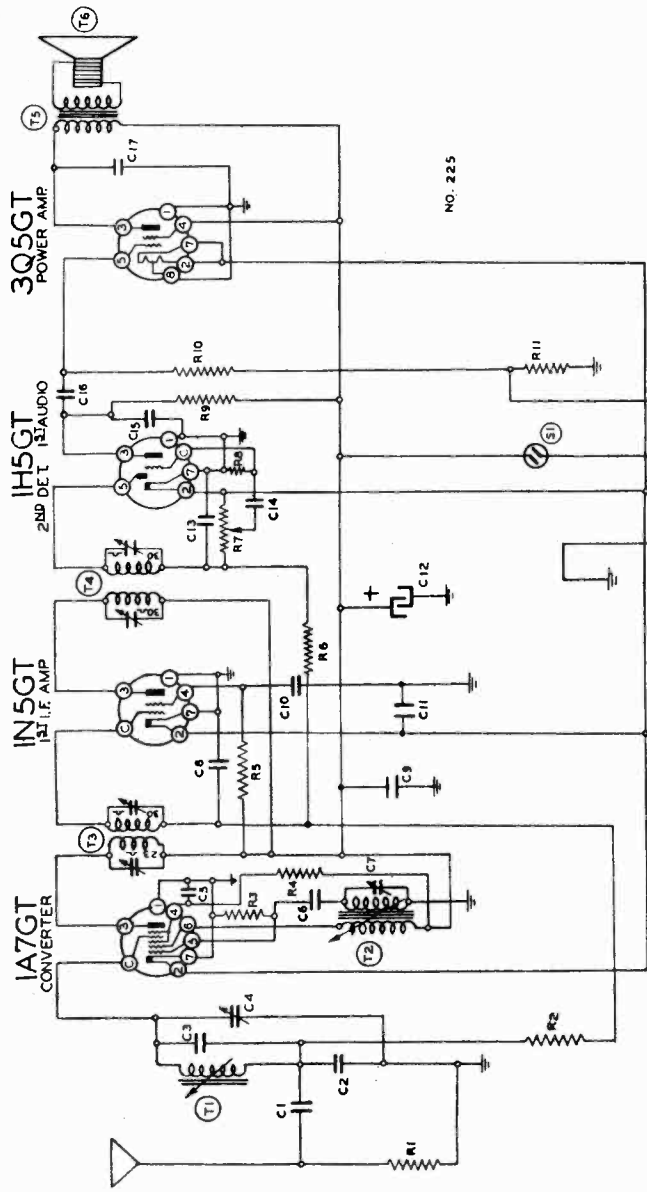
Code No. Part No. Description

**RESISTORS**

- R1 13017 10M ohm— $\frac{1}{2}$  w.
- R2 1304 3 megohm— $\frac{1}{2}$  w.
- R3 1309 200M ohm— $\frac{1}{2}$  w.
- R4 130194 35M ohm— $\frac{1}{2}$  w.
- R5 13094 50M ohm— $\frac{1}{2}$  w.
- R6 1304 3 megohm— $\frac{1}{2}$  w.
- R7 101250 1 megohm—Volume control and switch— $\frac{1}{2}$  w.
- R8 130257 5 megohm— $\frac{1}{2}$  w.
- R9 13019 1 megohm— $\frac{1}{2}$  w.
- R10 130146 2 megohm— $\frac{1}{2}$  w.
- R11 13079 400 ohm— $\frac{1}{2}$  w.

**CONDENSERS**

- C1 12936 .0003 mica
  - C2 100112 .001 x 200 v.
  - C3 129177 .000045—Ceramic
  - C4 124165 Antenna trimmer
  - C5 1009 .05 x 200 v.—Condenser
  - C6 12912 .00025 mica
  - C7 124165 Oscillator trimmer
  - C8 1009 .05 x 200 v. Condenser
  - C9 1006 .25 x 200 v. Condenser
  - C10 10020 .1 x 200 v.
  - C11 10017 .5 x 120 v.
  - C12 119117B 10 mid. x 150 v. Lytic
  - C13 1295 .0001 mica
  - C14 10012 .003 x 600 v. Condenser
  - C15 1295 .0001 mica
  - C16 10026 .02 x 400 v. Condenser
  - C17 1007 .005 x 600 v.
- C4 and C7 are in same unit.



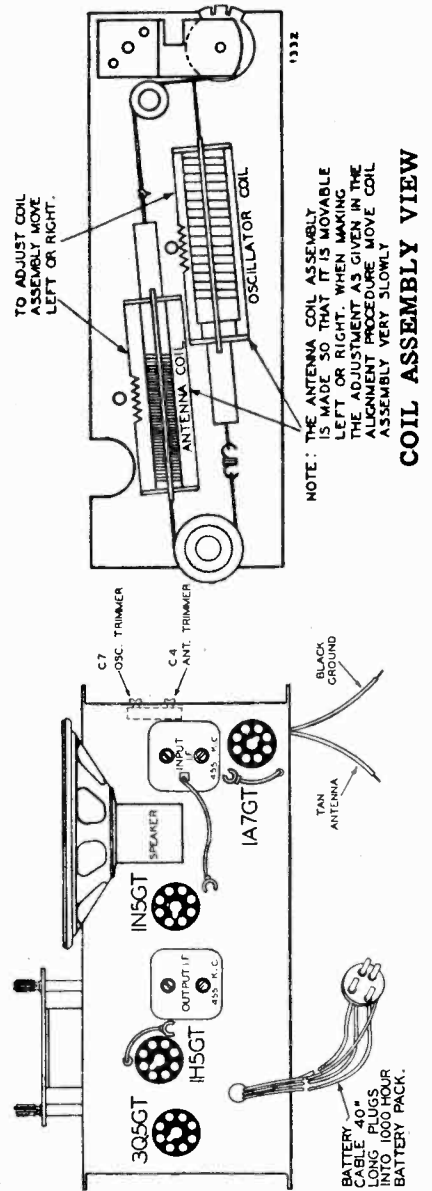
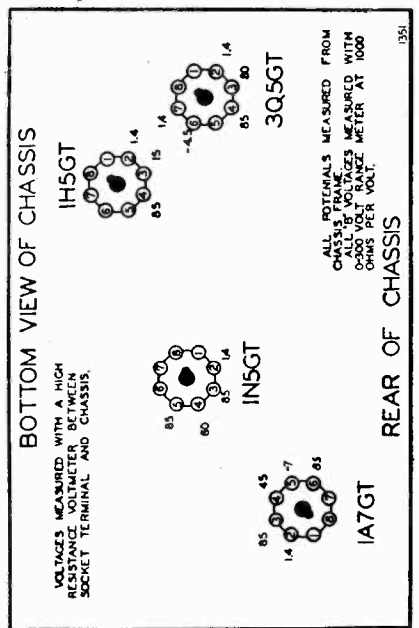
NO. 225

**PARTS**

- T1 1364 Antenna Coil (Permeability tuning assem.)
- T2 1364 Oscillator Coil (Complete)
- T3 108202 Input I. F. Coil 455 kc.
- T4 108153B Output I. F. Coil 455 kc.
- T5 10591B Output transformer
- T6 114238 5" P.M. speaker
- S1 Switch-on Volume control

INTERMEDIATE  
FREQUENCY  
455 K.C.

February 1941



MODEL 4BA1  
MODEL 5DA1

BELMONT RADIO CORP.

MODEL 4BA1

**ALIGNMENT  
PROCEDURE**

**Power Consumption** . . . . . A—.250 Amp. B .014 Amps.  
**Power Output** . . . . . 160 Milliwatts Undistorted

**Sensitivity for 50 Milliwatt Output: 45 Microvolts Average**  
**Selectivity** . . . . . 48 KC at 1000 Times Signal at 1000 KC  
**Tuning Frequency Range** . . . . . 540 to 1700 KC

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
455 Kc. I. F.	.1 MFD.		Connect to Grid of 1A7	Iron Cores All the way out	Two trimmers on top of output I. F. can	Output I. F.	maximum output
	.1 MFD.		Connect to Grid of 1A7	Iron Cores All the way out	Two trimmers on top of input I. F. can	Input I. F.	maximum output
BROAD-CAST BAND	1700 Kc.	.1 MFD.	Connect to Grid of 1A7	Iron Cores All the way out	Trimmer (C7) (See chassis view)	Oscillator	maximum output
	1700 Kc.	200 MMF.	Connect to Antenna Clip	Iron Cores All the way out	Trimmer (C4) (See chassis view)	Antenna	maximum output
	1400 Kc.	200 MMF.	Connect to Antenna Clip	Turn Dial to 1400 Kc.	Adjust position of antenna coil (See coil assembly view)	Antenna Coil Adjustment	maximum output (See Note "A")
	1700 Kc.	200 MMF.	Connect to Antenna Clip	Turn Dial to 1700 Kc.	Adjust trimmer (C4) (See chassis view)	Antenna	Check for tracking (See Note "B")

The following equipment is required for aligning:

Dummy antenna .1mfd. and 200 mmf.

Vol. control- Max.all adjs.BAND

Conn. grd. lead of radio chassis to grd. post of signal generator.

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

NOTE "B"—After the antenna coil has been tracked at 1400 Kc. it is necessary to check the antenna trimmer (C4) adjustment again at 1700 Kc. If no appreciable change in trimmer adjustment is made the coil is in track. If the trimmer requires considerable change it will be necessary to again adjust the position of the antenna coil at 1400 Kc. These two adjustments should be tried several times until no change of trimmer adjustment is required at 1700 Kc.

**TECHNICAL DATA**

MODEL 5DA1

**Power Consumption** . . . . . 35 Watts  
**Power Output** . . . . . 800 Milliwatts Undistorted  
**Sensitivity (for .05 Watts Output) - 30 Microvolts Average**  
**Selectivity - 59 KC Broad at 1000 Times Signal at 1000 KC**  
**Tuning Frequency Range** . . . . . 535 to 1720 KC  
**Intermediate Frequency** . . . . . 455 KC  
**Speaker** . . . . . 5 in. P. M. Dynamic

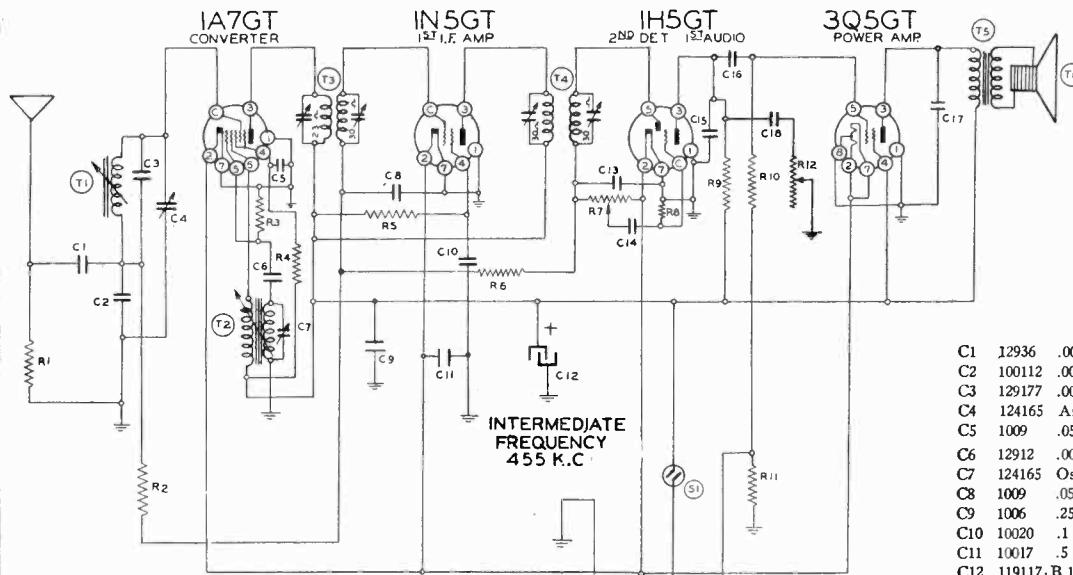
**ALIGNMENT PROCEDURE**

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Connect to Grid of 12SA7	Iron Cores All the way out	Two trimmers on top of output I. F. can	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Connect to Grid of 12SA7	Iron Cores All the way out	Two trimmers on top of input I. F. can	Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1720 Kc.	.1 MFD.	Connect to Grid of 12SA7	Iron Cores All the way out	Trimmer (C6) (See chassis view)	Oscillator	Adjust to maximum output
	1720 Kc.	200 MMF.	Connect to Outside Antenna Clip	Iron Cores All the way out	Trimmer (C3) (See chassis view)	Antenna	Adjust to maximum output
	1400 Kc.	200 MMF.	Connect to Outside Antenna Clip	Turn Dial to 1400 Kc.	Adjust position of antenna coil (See coil assembly view)	Antenna Coil Adjustment	Adjust to maximum output (See Note "A")
	1720 Kc.	200 MMF.	Connect to Outside Antenna Clip	Turn Dial to 1720 Kc.	Adjust trimmer (C3) (See chassis view)	Antenna	Check for tracking (See Note "B")

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

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

BELMONT RADIO CORP.



CONDENSERS

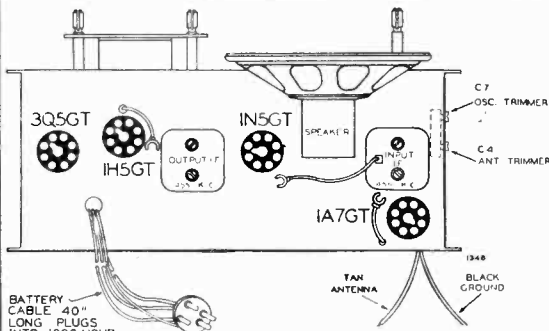
- C1 12936 .0003 mica
  - C2 100112 .001 x 200 v.
  - C3 129177 .0000045—Ceramicon
  - C4 124165 Antenna trimmer
  - C5 1009 .05 x 200 v.—Condenser
  - C6 12912 .00025 mica
  - C7 124165 Oscillator trimmer
  - C8 1009 .05 x 200 v. Condenser
  - C9 1006 .25 x 200 v. Condenser
  - C10 10020 .1 x 200 v.
  - C11 10017 .5 x 120 v.
  - C12 119117-B 10 mfd. x 150 v. Lytic
  - C13 1295 .0001 mica
  - C14 10012 .003 x 600 v. Condenser
  - C15 1295 .0001 mica
  - C16 10026 .02 x 400 v. Condenser
  - C17 1007 .005 x 600 v.
  - C18 100112 .001 x 200 v.
- C4 and C7 are in same unit

RESISTORS

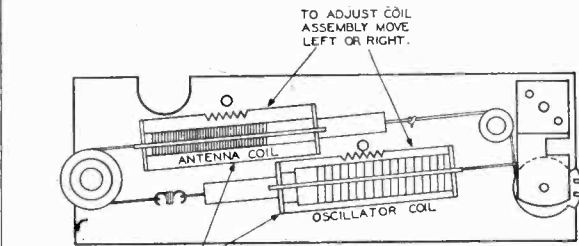
- R1 13017 10M ohm— $\frac{1}{2}$  w.
- R2 1304 3 megohm— $\frac{1}{2}$  w.
- R3 1309 200M ohm— $\frac{1}{2}$  w.
- R4 130194 35M ohm— $\frac{1}{2}$  w.
- R5 13094 50M ohm— $\frac{1}{2}$  w.
- R6 1304 3 megohm— $\frac{1}{2}$  w.
- R7 101250 1 megohm—Volume control and switch— $\frac{1}{2}$  w.
- R8 130257 5 megohm— $\frac{1}{2}$  w.
- R9 13019 1 megohm— $\frac{1}{2}$  w.
- R10 130146 2 megohm— $\frac{1}{2}$  w.
- R11 13079 400 ohm— $\frac{1}{2}$  w.
- R12 101231 1 megohm tone control

PARTS

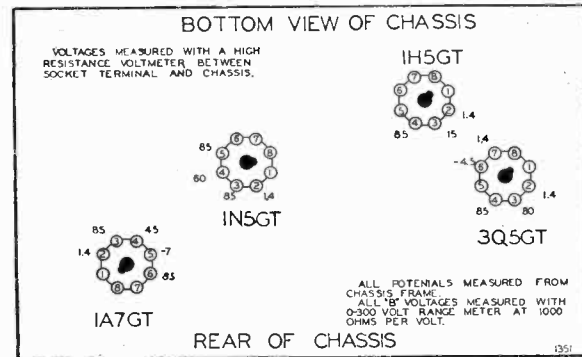
- T1 1364 Antenna Coil
- T2 1364 Oscillator Coil Permeability tuning' assem. Complete.
- T3 108202 Input I. F. Coil 455 kc.
- T4 108153B Output I. F. Coil 455 kc.
- T5 10591B Output transformer
- T6 114215R 6" P.M. Speaker
- S1 Switch-on volume control



CHASSIS VIEW



COIL ASSEMBLY VIEW



REAR OF CHASSIS

Power Consumption - A—250 Amp. B .014 Amps.  
Power Output - - - 160 Milliwatts Undistorted

Sensitivity for 50 Milliwatt Output: 45 Microvolts Average  
Selectivity - 48 KC at 1000 Times Signal at 1000 KC  
Tuning Frequency Range - - - - - 540 to 1700 KC

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
455 Kc.	455 Kc.	.1 MFD.	Connect to Grid of 1A7	Iron Cores All the way out	Two trimmers on top of output I. F. can	Output I. F.	maximum output
	I. F.	455 Kc.	Connect to Grid of 1A7	Iron Cores All the way out	Two trimmers on top of input I. F. can	Input I. F.	maximum output
BROAD-CAST BAND	1700 Kc.	.1 MFD.	Connect to Grid of 1A7	Iron Cores All the way out	Trimmer (C7) (See chassis view)	Oscillator	maximum output
	1700 Kc.	200 MMF.	Connect to Antenna Clip	Iron Cores All the way out	Trimmer (C4) (See chassis view)	Antenna	maximum output
	1400 Kc.	200 MMF.	Connect to Antenna Clip	Turn Dial to 1400 Kc.	Adjust position of antenna coil (See coil assembly view)	Antenna Coil Adjustment	maximum output (See Note "A")
	1700 Kc.	200 MMF.	Connect to Antenna Clip	Turn Dial to 1700 Kc.	Adjust trimmer (C4) (See chassis view)	Antenna	Check for tracking (See Note "B")

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

NOTE "B"—After the antenna coil has been tracked at 1400 Kc. it is necessary to check the antenna trimmer (C4) adjustment again at 1700 Kc. If no appreciable change in trimmer adjustment is made the coil is in track, if the trimmer requires considerable change it will be necessary to again adjust the position of the antenna coil at 1400 Kc. These two adjustments should be tried several times until no change of trimmer adjustment is required at 1700 Kc.

- Volume control—Maximum all adjustments.
- Dummy antenna .1 mfd. and 200 mmf.



MODEL 5DA1

BELMONT RADIO CORP.

Code No.	Description
T1	13611 Antenna Assembly (Permeability tuning Antenna Section)
T2	13611 Permeability tuning assembly (Oscillator Section)
T3	108140J Input I.F. coil 455 kc.
T4	108141E Output I.F. coil 455 kc.
T5	10595B Output transformer.
T6	114239-5" P.M. speaker
S1	On-off switch on volume control
P1	107249 Pilot lite bulb T47

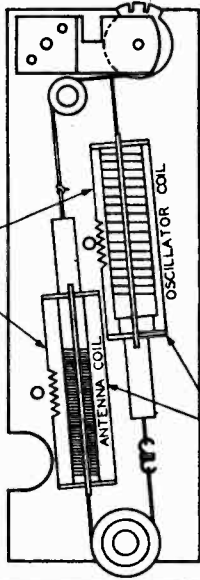
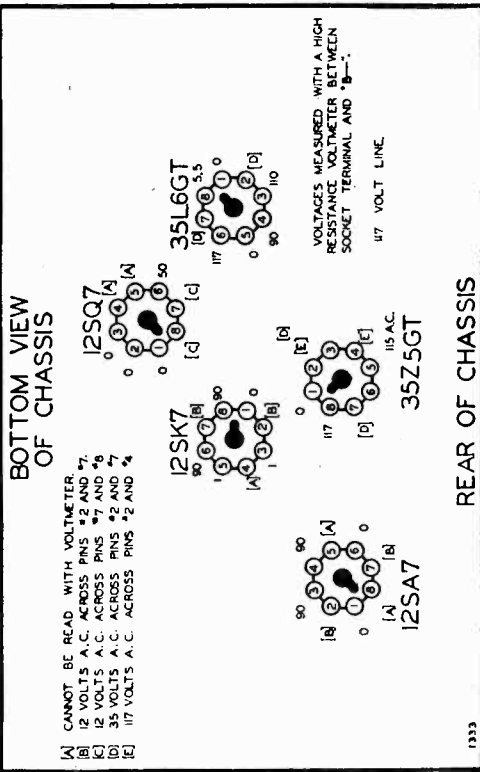
**RESISTORS**

R1	1301	25M	ohm-1/2 w.
R2	130215	25	ohm-1/2 w.
R3	130168	100	ohm-1/2 w.
R4	130315	75	ohm-1/2 w.
R5	1304	3	megohm-1/2 w.
R6	101251	1	megohm volume control and switch
R7	1309	200M	ohm-1/2 w.
R8	130257	5	megohm-1/2 w.
R9	1309	200M	ohm-1/2 w.
R10	1303	500M	ohm-1/2 w.
R11	130166	150	ohm-1/2 w.
R12	130287	1200	ohm-1 w.

**CONDENSERS**

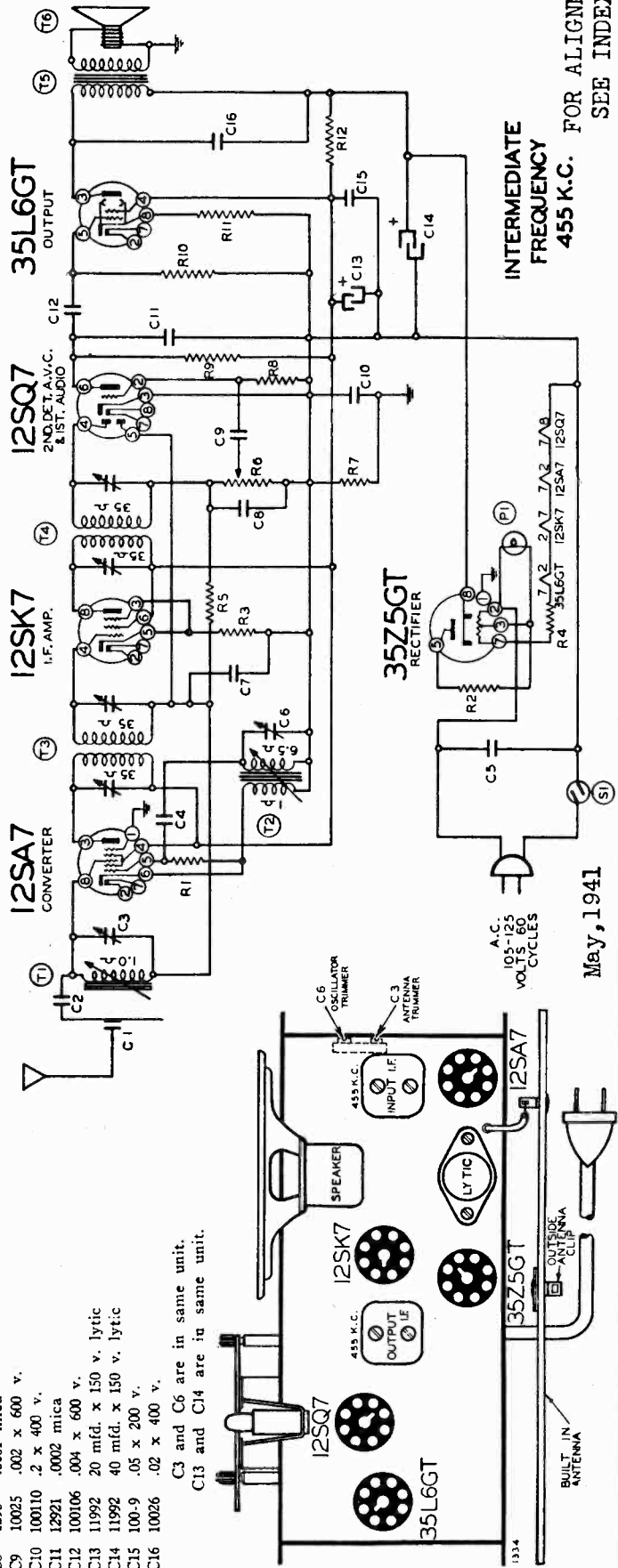
C1	131262	Washer cond.	(ant. clip on ant. plate)
C2	12912	.00025	mica
C3	124150	Antenna section	dual trimmer
C4	12938	.00005	mica
C5	1001	.1	x 400 v.
C6	124150	Oscillator section	dual trimmer
C7	1009	.05	x 200 v.
C8	1295	.0001	mica
C9	10025	.02	x 600 v.
C10	100110	.2	x 400 v.
C11	12921	.0002	mica
C12	100106	.004	x 600 v.
C13	11992	20	mfd. x 150 v. lytic
C14	11992	40	mfd. x 150 v. lytic
C15	100-9	.05	x 200 v.
C16	10026	.02	x 400 v.

C3 and C6 are in same unit.  
C13 and C14 are in same unit.



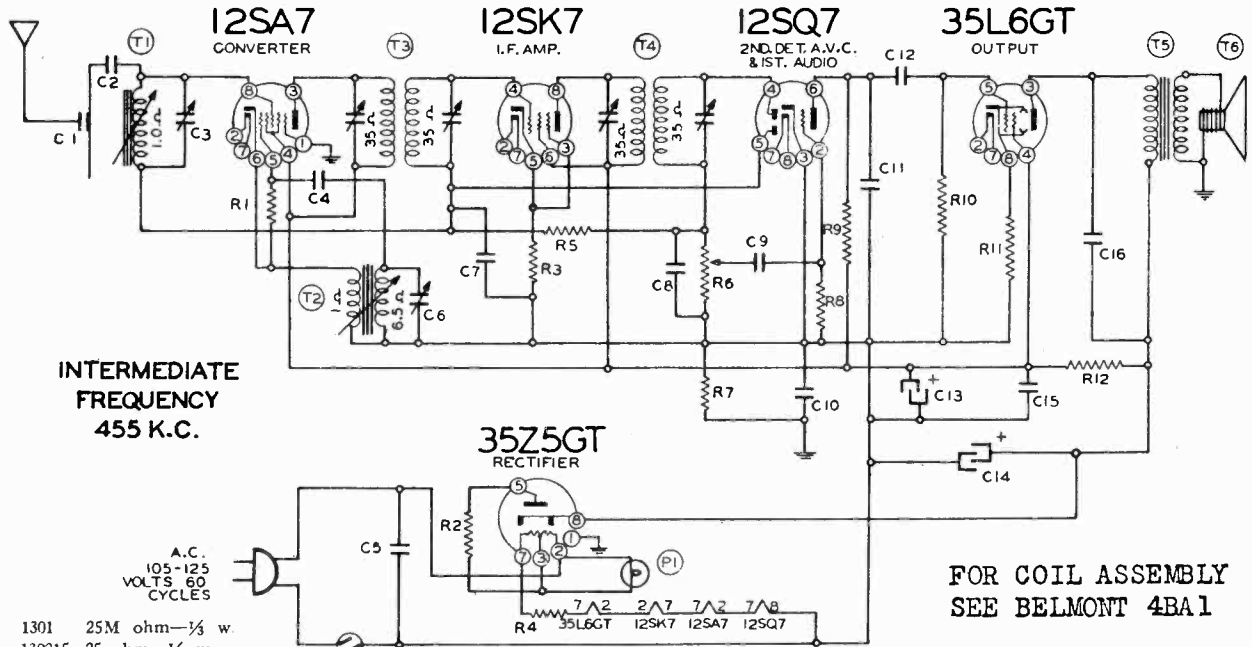
NOTE: THE ANTENNA COIL ASSEMBLY IS MADE SO THAT IT IS MOVABLE LEFT OR RIGHT. WHEN MAKING THE ADJUSTMENT AS GIVEN IN THE ALIGNMENT PROCEDURE MOVE COIL ASSEMBLY VERY SLOWLY

REAR OF CHASSIS



May, 1941

BELMONT RADIO CORP

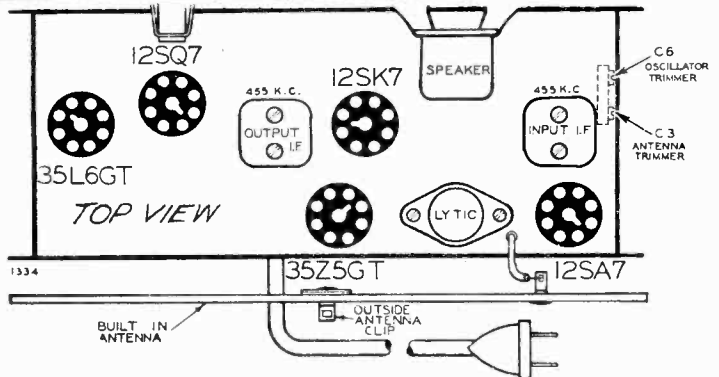
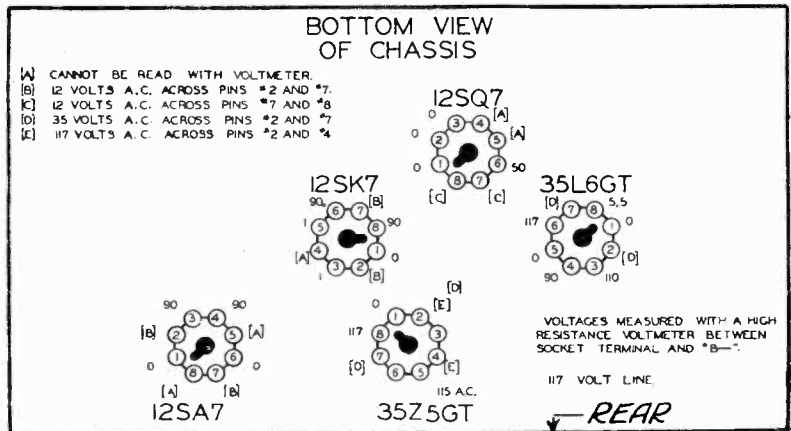


INTERMEDIATE  
FREQUENCY  
455 K.C.

FOR COIL ASSEMBLY  
SEE BELMONT 4BA1

- R1 1301 25M ohm— $\frac{1}{4}$  w.
  - R2 130215 25 ohm— $\frac{1}{4}$  w.
  - R3 130168 100 ohm— $\frac{1}{4}$  w.
  - R4 130315 75 ohm— $\frac{1}{2}$  w.
  - R5 1304 3 megohm— $\frac{1}{4}$  w.
  - R6 101251 1 megohm volume control and switch
  - R7 1309 200M ohm— $\frac{1}{4}$  w.
  - R8 130257 5 megohm— $\frac{1}{4}$  w.
  - R9 1309 200M ohm— $\frac{1}{4}$  w.
  - R10 1303 500M ohm— $\frac{1}{4}$  w.
  - R11 130166 150 ohm— $\frac{1}{4}$  w.
  - R12 130287 1200 ohm—1 w.
  - C1 131262 Washer cond. (ant. clip on ant. plate)
  - C2 12912 .00025 mica
  - C3 124150 Antenna section dual trimmer
  - C4 12938 .00005 mica
  - C5 1001 .1 x 400 v.
  - C6 124150 Oscillator section dual trimmer
  - C7 1009 .05 x 200 v.
  - C8 1295 .0001 mica
  - C9 10025 .002 x 600 v.
  - C10 100110 .2 x 400 v.
  - C11 12921 .0002 mica
  - C12 100106 .004 x 600 v.
  - C13 11992 20 mfd. x 150 v. lytic
  - C14 11992 40 mfd. x 150 v. lytic
  - C15 100-9 .05 x 200 v.
  - C16 10026 .02 x 400 v.
- C3 and C6 are in same unit.  
C13 and C14 are in same unit.

- T1 13611 Antenna Assembly (Permeability tuning Antenna Section)
- T2 13611 Permeability tuning assembly (Oscillator Section)
- T3 108140J Input I.F. coil 455 kc.
- T4 108141E Output I.F. coil 455 kc.

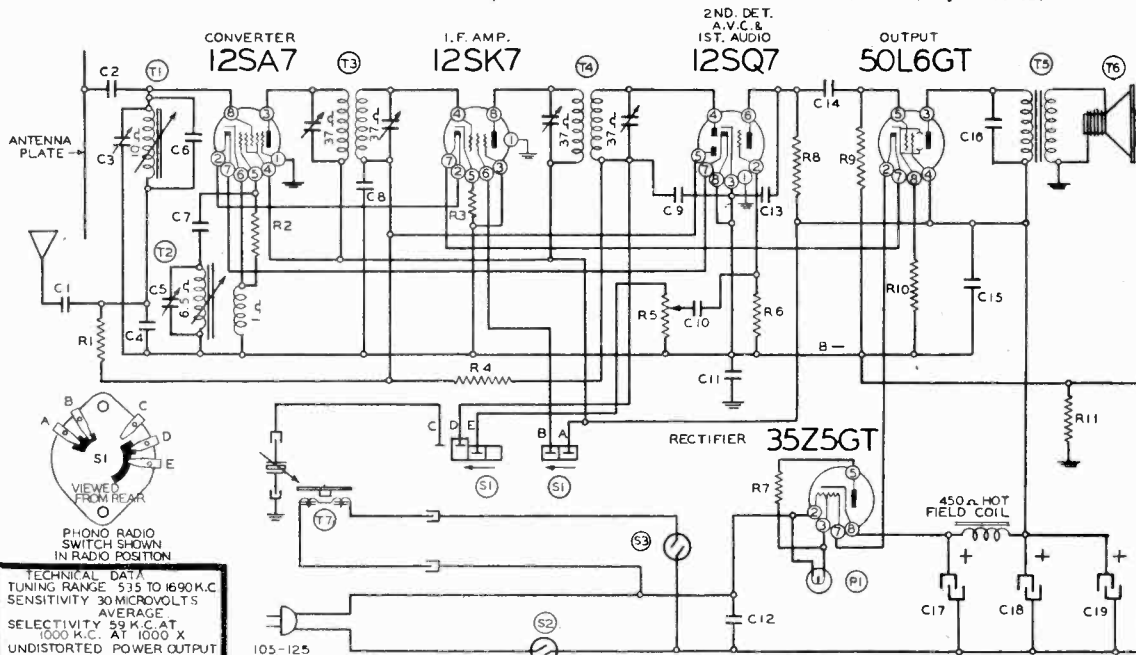


BAND	Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Connect to Grid of 12SA7	Iron Cores All the way out	Two trimmers on top of output I. F. can	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Connect to Grid of 12SA7	Iron Cores All the way out	Two trimmers on top of input I. F. can	Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1720 Kc.	.1 MFD.	Connect to Grid of 12SA7	Iron Cores All the way out	Trimmer (C6) (See chassis view)	Oscillator	Adjust to maximum output
	1720 Kc.	200 MMF.	Connect to Outside Antenna Clip	Iron Cores All the way out	Trimmer (C3) (See chassis view)	Antenna	Adjust to maximum output
	1400 Kc.	200 MMF.	Connect to Outside Antenna Clip	Turn Dial to 1400 Kc.	Adjust position of antenna coil (See coil assembly view)	Antenna Coil Adjustment	Adjust to maximum output (See Note "A")
	1720 Kc.	200 MMF.	Connect to Outside Antenna Clip	Turn Dial to 1720 Kc.	Adjust trimmer (C3) (See chassis view)	Antenna	Check for tracking (See Note "B")

MODEL 5D16

BELMONT RADIO CORP.

" FOR OAK RECORD CHANGER, SEE RIDER'S "AUTOMATIC RECORD CHANGERS"



**TECHNICAL DATA**  
 TUNING RANGE 535 TO 1690 K.C.  
 SENSITIVITY 30 MICROVOLTS  
 AVERAGE  
 SELECTIVITY 59 K.C. AT  
 1000 K.C. AT 1000 X  
 UNDISTORTED POWER OUTPUT  
 .8 WATTS  
 MAX. POWER OUTPUT  
 1.4 WATTS IN VOICE COIL.  
 POWER CONSUMPTION  
 RADIO CHASSIS 3.5 WATTS  
 PHONO MOTOR 20 WATTS  
 I.F. 455 K.C.

IF PEAK 455 KC

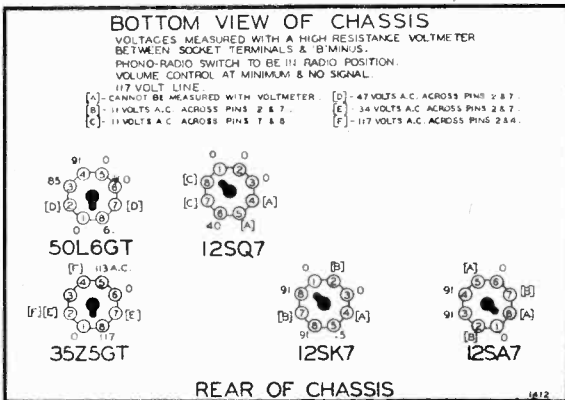
**CONDENSERS**

- C8, C15 .05 x 200 Volt Tubular Condenser.
- C11 .1 x 400 Volt Tubular Condenser
- C10 .002 x 600 Volt Tubular Condenser
- C14 .006 x 600 Volt Tubular Condenser
- C16 .01 x 400 Volt Tubular Condenser
- C12 .1 x 400 Volt Tubular Condenser
- C17, C18, C19 Electrolytic Filter Condenser. 50 to 60 Cycles. 40 Mfd. x 150 V.; 20 Mfd. x 150 V.; 20 Mfd. x 150 V.
- C17, C18, C19 Electrolytic Filter Condenser. 25 Cycles. 60 Mfd. x 150 V.; 40 Mfd. x 150 V.; 40 Mfd. x 150 V.
- C2, C5 Ant. and Osc. Dual Trimmer Condenser
- C3 .0003 Mica Type Condenser—20%
- C1, C7, C9 .0001 Mica Type Condenser—20%
- C4 .0008 Mica Type Condenser—10%
- C13 .00025 Mica Type Condenser—20%
- C6 .00005 Ceramic Condenser—10%.

**RESISTORS**

- R5, S2 Volume Control and Switch (500M Ohms)
- R1, R11 200M Ohm—1/2 Watt Resistor—20%
- R2 20M Ohm—1/2 Watt Resistor—10%
- R3 100 Ohm—1/2 Watt Resistor—10%
- R4 3 Megohm—1/2 Watt Resistor—20%
- R8 250M Ohm—1/2 Watt Resistor—20%
- R6 5 Megohm—1/2 Watt Resistor—25%
- R7 25 Ohm—1/2 Watt Resistor—10%
- R9 750M Ohm—1/2 Watt Resistor—20%
- R12 30 Ohm—1 Watt Resistor—20%
- R10 150 Ohm—1/2 Watt Resistor—10%
- 200 Ohm—1/2 Watt Resistor—10%
- 1200 Ohm—1 Watt Resistor—10%

Following Resistors Used Only When P.M. Dynamic Speaker is Used:



**VOLTAGE CHART**

- Connect B- of radio chassis to ground post of signal generator through .1 Mfd. condenser.
- Volume control—Maximum all adjustments.

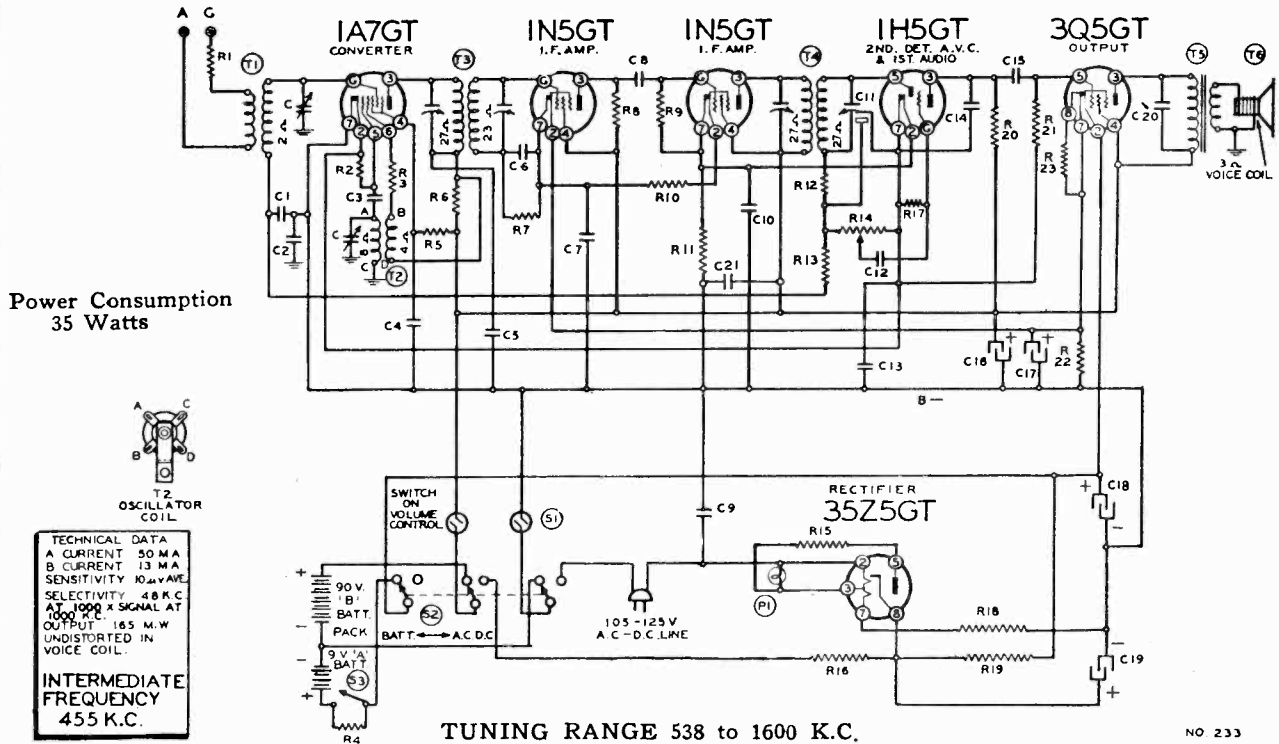
BAND	SIGNAL GENERATOR			Position of Iron Cores (Dial Setting)	Trimmers Adjusted to Maximum (in Order Shown)
	Frequency Setting	Dummy Antenna	Connection to Radio		
I. F.	455 Kc.	.1 MFD.	Connect to Antenna Plate	Iron Cores All the way out	Two trimmers on top of output I.F. (See Chassis View)
	455 Kc.	.1 MFD.	Connect to Antenna Plate	Iron Cores All the way out	Two trimmers on top of input I.F. (See Chassis View)
BROAD-CAST BAND	1690 Kc.	.1 MFD.	Connect to Antenna Plate	Iron Cores All the way out	Oscillator trimmer (C5) (See Chassis View)
	1690 Kc.	200 MMF.	Connect to Antenna Plate	Iron Cores All the way out	Antenna trimmer (C3) (See Chassis View)
	1400 Kc.	200 MMF.	Connect to Antenna Plate	Turn Dial to 1400 Kc.	Adjust position of antenna coil right or left. (See Note "A")
	1690 Kc.	200 MMF.	Connect to Antenna Plate	Turn Dial to 1690 Kc.	Adjust antenna trimmer (C3) (See Chassis View) (See Note "B")

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

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

FOR ADDITIONAL DATA SEE INDEX

BELMONT RADIO CORP.



**TECHNICAL DATA**  
 A CURRENT 50 MA  
 B CURRENT 13 MA  
 SENSITIVITY 10 μV AVE  
 SELECTIVITY 48 A.C.  
 AT 1000 X SIGNAL AT  
 1000 K.C.  
 OUTPUT 165 M.W.  
 UNDISTORTED IN  
 VOICE COIL.  
**INTERMEDIATE  
 FREQUENCY**  
 455 K.C.

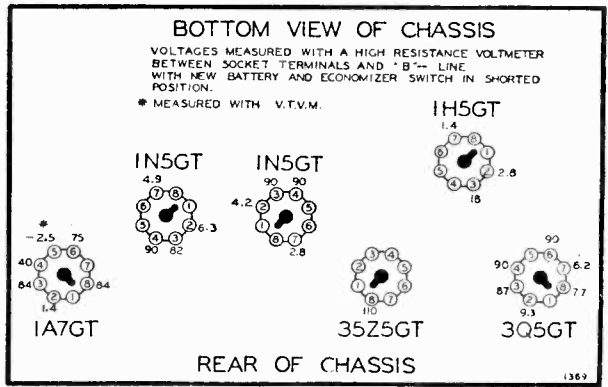
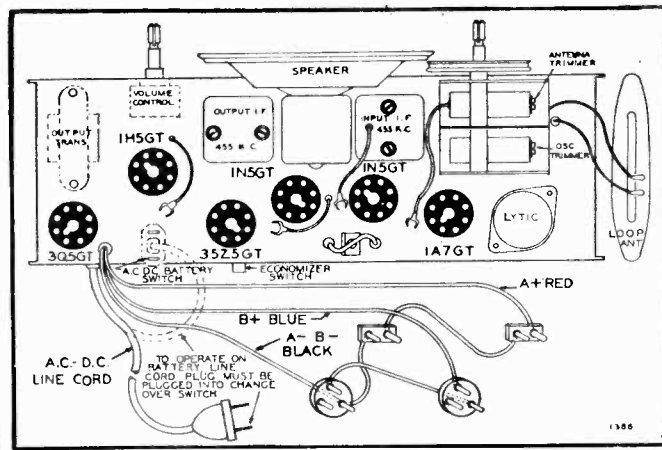
**TUNING RANGE 538 to 1600 K.C.**  
**ALIGNMENT PROCEDURE**

- The following equipment is required for aligning.
- Dummy antenna .1 mfd. and 200 mmf.
  - Volume control—Maximum all adjustments.
  - Connect B— of radio chassis to ground post of signal generator.

BAND	SIGNAL GENERATOR		Connection to Radio	Dial Setting	Trimmers Adjusted (in Order Shown)	Adjustment
	Frequency Setting	Dummy Antenna				
455 Kc. I. F.	455 Kc.	.1 MFD.	Connect to Grid of 1A7	Rotor full open (Plates out of mesh)	Input and Output Trimmers on Top of I. F. cans	Maximum output (See Note "A")
BROAD-CAST BAND	1600 Kc.	.1 MFD.	Connect to Grid of 1A7	Rotor full open (Plates out of mesh)	Osc. Trimmer on gang (See chassis view)	Maximum output (See Note "A")
	1400 Kc.	200 MMF.	Connect to Antenna Clip	Set dial at 1400 Kc.	Ant. Trimmer on gang (See chassis view)	Maximum output (See Note "B")

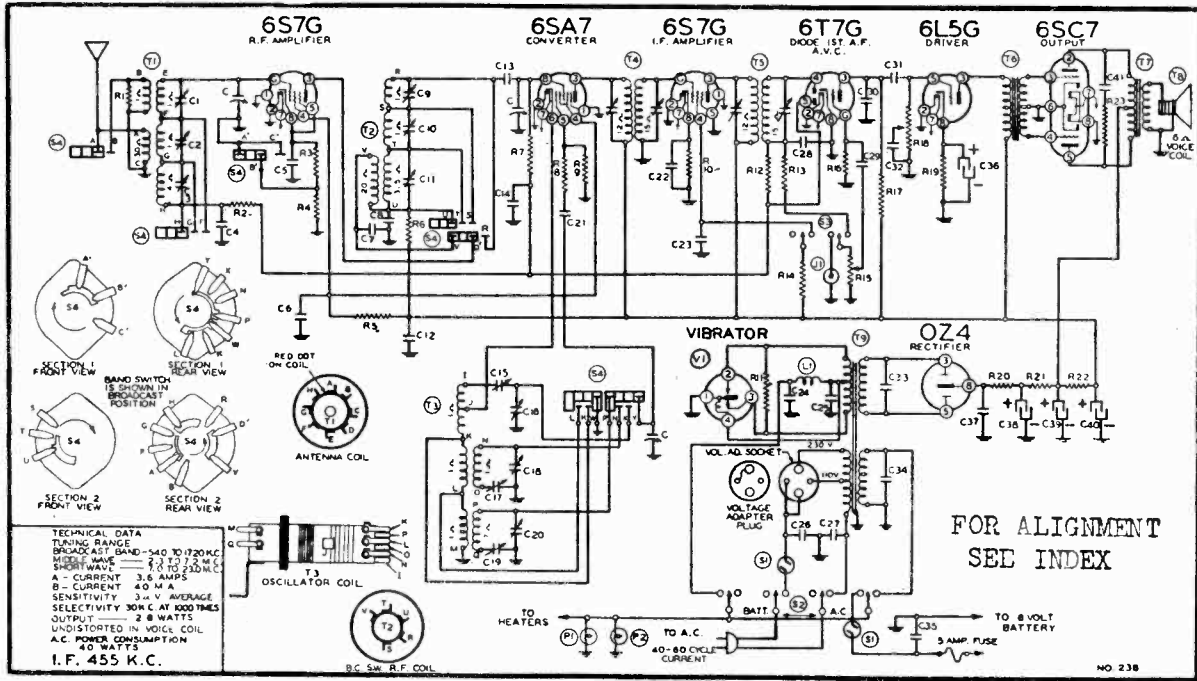
**NOTE "A"**—The loop antenna need not be connected to the radio when making these adjustments, but a 1. Meg. Resistor must be substituted across the loop clips. The ground of the signal generator is connected to the B— and the other lead from the signal generator in series with .1 MFD. dummy to the grid of the 1A7GT tube.

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



**CHASSIS VIEW** showing tube location and battery cables. **NOTE:** To operate on battery, line cord must be plugged into AC-DC battery switch shown in view above.

**VOLTAGE CHART**



FOR ALIGNMENT  
SEE INDEX

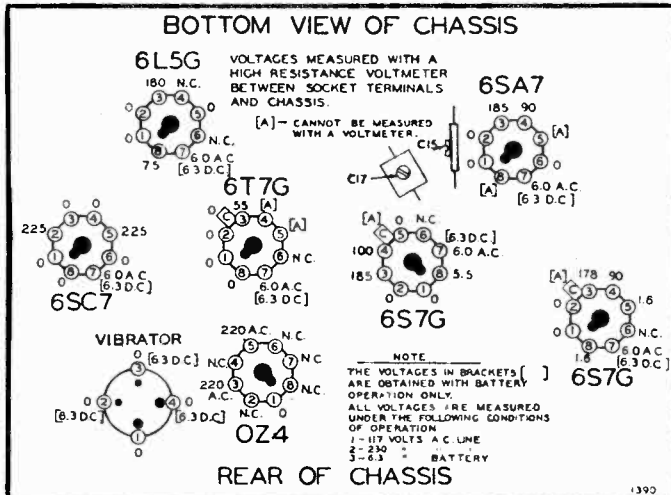
NO 238

Part No.	Schematic Diagram Reference	Description	No. Used In Set	Selling Price Each
<b>CONDENSERS</b>				
1001	C6, C37	.1 x 400 Volt Tubular Condenser	2	.25
10011	C26, C27, C31, C32, C34	.01 x 400 Volt Tubular Condenser	5	.25
10013	C8, C23	.05 x 400 Volt Tubular Condenser	2	.25
10020	C5	.1 x 200 Volt Tubular Condenser	1	.25
10022	C4, C22, C35	.05 x 200 Volt Tubular Condenser	3	.25
10025	C29	.002 x 600 Volt Tubular Condenser	2	.25
10026	C13, C14	.02 x 400 Volt Tubular Condenser	2	.25
10031	C24, C25	.5 x 120 Volt Tubular Condenser	2	.60
10071	C41	.04 x 600 Volt Tubular Condenser	1	.25
100100	C33	.008 x 1600 Volt Tubular Condenser	1	.25
100117	C12	.25 x 400 Volt Tubular Condenser—With Bracket	1	.35
119127	C36, C38, C39	C40 Electrolytic Filter Condenser. 40 Mfd. x 25 V.—40 Mfd. x 300 V.—20 Mfd. x 300 V.—20 Mfd. x 300 V.	1	1.50
124169	C9, C10, C11	S.W.—M.W.—B.C.—Triple Unit Antenna Trimmer Condenser Strip	1	.60
124170	C1, C2, C3	S.W.—M.W.—B.C.—Triple Unit Antenna Trimmer Condenser Strip	1	.60
124172	C16, C18, C20	S.W.—M.W.—B.C.—Triple Unit Antenna Trimmer Condenser Strip	1	.55
129178	C19	B.C. Osc. Series Pad Condenser	1	.35
129179	C17	M.W. Osc. Series Pad Condenser	1	.45
129180	C15	S.W. Osc. Series Pad Condenser	1	.55
1295	C21, C28	.0001 Mica Type Condenser—20%	2	.25
12912	C30	.00025 Mica Type Condenser—20%	1	.25
12940	C7	.0001 Mica Type Condenser—10%	1	.25

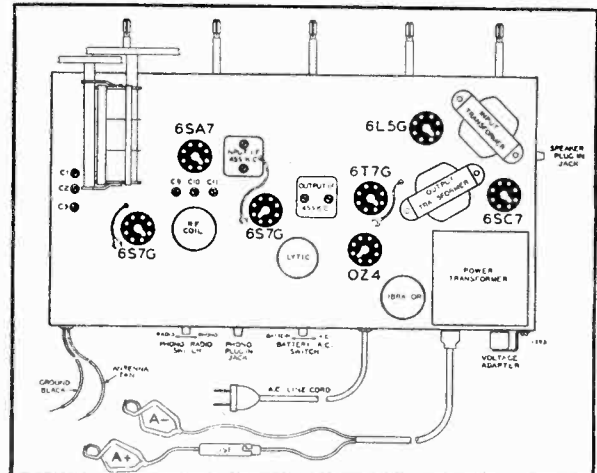
<b>RESISTORS</b>	
R12	3 Megohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R17	200M Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R13	50M Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R7	1 Megohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R20	100M Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R20	50 Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R6	1500 Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R9	35M Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R4	3500 Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R14	75M Ohm— $\frac{1}{4}$ Watt Resistor—10%.....1 .20
R11, R21	200 Ohm— $\frac{1}{4}$ Watt Resistor—20%.....2 .20
R3	300 Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R22	1500 Ohm—1 Watt Resistor—10%.....1 .20
R19	1500 Ohm— $\frac{1}{4}$ Watt Resistor—10%.....1 .20
R16	5 Megohm— $\frac{1}{4}$ Watt Resistor—25%.....1 .20
R5	12M Ohm—2 Watt Resistor—10%.....1 .20
R10	1M Ohm— $\frac{1}{4}$ Watt Resistor—10%.....1 .20
R1	2M Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R23	15M Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20
R8	10 Ohm— $\frac{1}{4}$ Watt Resistor—20%.....1 .20



TRIMMER VIEW—Looking at front of chassis.

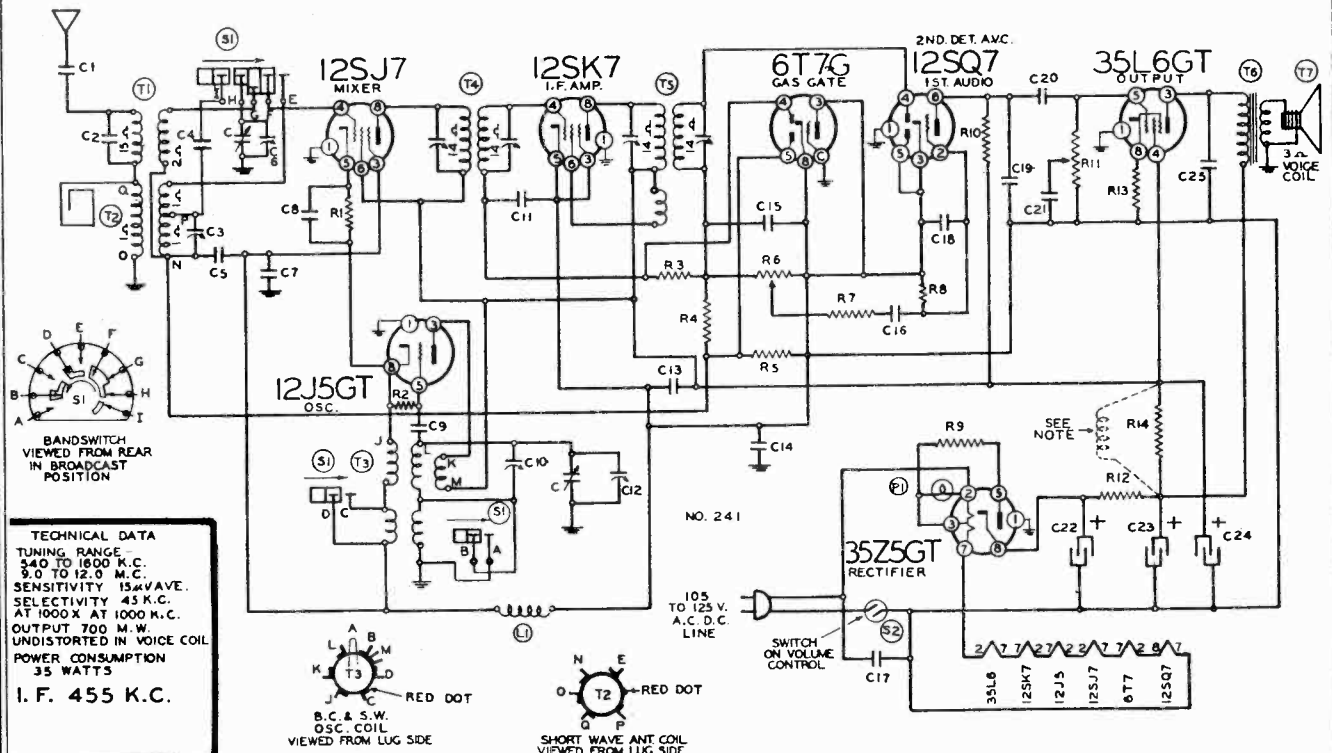


VOLTAGE CHART



CHASSIS VIEW showing tube location.  
NOTE: Antenna and ground leads at back of chassis.

BELMONT RADIO CORP.



**TECHNICAL DATA**  
 TUNING RANGE 540 TO 1600 K.C.  
 9.0 TO 12.0 M.C.  
 SENSITIVITY 15μVAVE.  
 SELECTIVITY 45 K.C.  
 AT 1000 X AT 1000 K.C.  
 OUTPUT 700 M.W.  
 UNDISTORTED IN VOICE COIL  
 POWER CONSUMPTION 35 WATTS  
 I. F. 455 K.C.

On sets which have an electrodynamic speaker, R12 is eliminated and the hot side of C22 is connected in parallel with C23. R14 is replaced by the speaker field, B+ of output transformer is connected to No. 4 pin of 35L6 tube.

Part No.	Schematic Diagram Reference	Description	No. Used In Set	Selling Price Each
100128	C5	.05 x 120 Volt Tubular Condenser	1	.25
100119	C7, C14	.1 x 400 Volt Tubular Condenser	2	.25
100127	C8	.01 x 120 Volt Tubular Condenser	1	.25
10020	C13	.1 x 200 Volt Tubular Condenser	1	.25
1009	C11	.05 x 200 Volt Tubular Condenser	1	.25
100138	C17, C20	.03 x 400 Volt Tubular Condenser	2	.25
10026	C25	.02 x 400 Volt Tubular Condenser	1	.25
10019	C16, C21	.006 x 600 Volt Tubular Condenser	2	.25
10037	C1	.003 x 600 Volt Tubular Condenser	1	.25
119129		Electrolytic Filter Cond. Added for 25 Cycle Only. 40 Mfd. x 150 Volts Across C22 and 20 Mfd. x 150 Volts Across C23	1	1.25
119128	C22, C23, C24	Electrolytic Filter Condenser. 40 Mfd.—20 Mfd.—20 Mfd x 150 Volts, 50-60 Cycles	1	1.25
124139	C3, C10	S.W. Antenna and Oscillator Trimmer Condenser	2	.25
129181	C4	.000445 Mica Type Condenser—3%	1	.30
12921	C15	.0002 Mica Type Condenser—20%	1	.25
1295	C9, C18	.0001 Mica Type Condenser—20%	2	.25
12960	C2	.00015 Mica Type Condenser—20%	1	.25
12912	C19	.00025 Mica Type Condenser—20%	1	.25

**CONDENSERS**

No.	Description	Selling Price Each
130218	R1	5M Ohm—1/2 Watt Resistor—10%
130166	R13	150 Ohm—1/2 Watt Resistor—10%
13084	R12	200 Ohm—1/2 Watt Resistor—20%
130128	R9	20 Ohm—1/2 Watt Resistor—20%
13012	R2, R7	50M Ohm—1/2 Watt Resistor—10%
130287	R14	1200 Ohm—1 Watt Resistor—20%
130350	R3, R5	3.2 Megohm—1/2 Watt Resistor—20%
13038	R4	2 Megohm—1/2 Watt Resistor—20%
130257	R8	5 Megohm—1/2 Watt Resistor—25%
1309	R10	200M Ohm—1/2 Watt Resistor—20%

**RESISTORS**

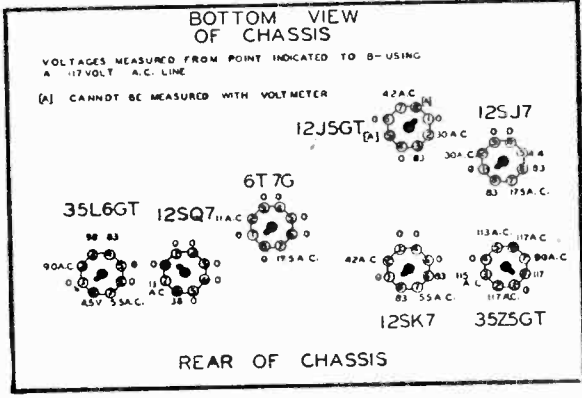
No.	Description	Selling Price Each
108206	T4	Input I.F. Coil Complete in Can
108205	T5	Output I.F. Coil Complete in Can
110184	T3	B.C. S.W.—Oscillator Coil
111249	T2	S.W. Antenna Coil Complete
111251	T1	Loop Antenna Assembly
12316	L1	Choke Coil

**COILS**

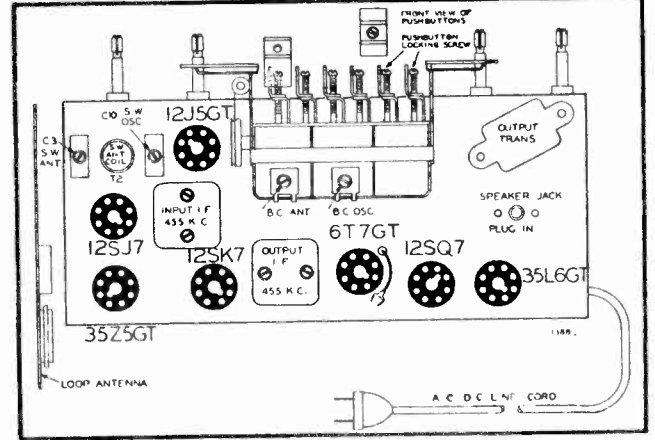
No.	Description	Selling Price Each
114262	T7	Six Inch Electro Dynamic Speaker (Less Output Transformer)
105134	T6	Output Transformer for Speaker

**SPEAKER**

No.	Description	Selling Price Each
114262	T7	Six Inch Electro Dynamic Speaker (Less Output Transformer)
105134	T6	Output Transformer for Speaker



**Voltage Chart**



**Chassis View, showing Tube Location and the Outside Antenna Clip.**

MODEL 7H31  
 MODEL 7D22  
 MODEL 590

BELMONT RADIO CORP.

ALIGNMENT PROCEDURE MODEL 7D22

- Volume control—Maximum all adjustments.
- Connect B—of radio chassis to ground post of signal generator through .1 Mfd. condenser.

BAND	SIGNAL GENERATOR			Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted to Maximum
	Frequency Setting	Dummy Antenna	Connection to Radio			
I. F.	455 Kc.	.1 MFD.	Grid of 12SK7 I. F.	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top of Output I. F.
	455 Kc.	.1 MFD.	Grid of 12SJ7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top of Input I. F.
SHORT WAVE BAND	12 Mc.	400 Ohms	External Antenna and B—	Short Wave	Set Dial at 12 Mc.	S.W. Osc. trimmer C10 S.W. Ant. trimmer C3
BROADCAST BAND	1600 Kc.	.1 mmf.	Grid of 12SJ7	Broadcast	Rotor full open (Plates out of mesh)	B.C. Osc. trimmer C12 on Gang
	1400 Kc.	200 mmf.	External Antenna and B—	Broadcast	Set Dial at 1400 Kc.	B.C. Ant. trimmer C6

NOTE: The Oscillator Frequency is lower than the signal frequency and should be aligned accordingly. The loop antenna should be connected to the radio when making all adjustments

ALIGNMENT PROCEDURE MODEL 7H31

- Volume control—Maximum all adjustments.
- Connect radio chassis to ground post of signal generator.

BAND	SIGNAL GENERATOR			Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted to Max.
	Frequency Setting	Dummy Antenna	Connection to Radio			
I. F.	455 Kc.	.1 MFD.	Grid of 6S7 I. F.	Broadcast	Tuning & Bandsread Plates out of mesh	Two trimmers on top of Output I. F.
	455 Kc.	.1 MFD.	Grid of 6SA7 I. F.	Broadcast	Tuning & Bandsread Plates out of mesh	Two trimmers on top of Input I. F.
SHORT WAVE BAND	17 Mc.	400 ohms	Antenna lead	Short Wave	Set Dial at 17 Mc.	Trimmer C16—S. W. osc. (See Note A)
	17 Mc.	400 ohms	Antenna lead	Short Wave	Set Dial at 17 Mc.	Trimmer C1-C9 S. W. ant. and R. F.
	8 Mc.	400 ohms	Antenna lead	Short Wave	Set Dial at 8 Mc.	Trimmer C15 S. W. osc. series pad (See note "B")
MEDIUM WAVE BAND	6 Mc.	400 ohms	Antenna lead	Medium Wave	Set Dial at 6 Mc.	Trimmer C18 M. W. osc.
	6 Mc.	400 ohms	Antenna lead	Medium Wave	Set Dial at 6 Mc.	Trimmer C2 C10 ant. and R. F.
	2.5 Mc.	400 ohms	Antenna lead	Medium Wave	Set Dial at 2.5 Mc.	Trimmer C17 osc. series pad (See note "B")
BROADCAST BAND	1720 Kc.	200 mmf.	Antenna lead	Broadcast	Tuning & Bandsread Plates out of mesh	Trimmer C20 B. C. osc.
	1400 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	Trimmer C3-C11 B. C. ant. R. F.
	600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 600 Kc.	Trimmer C19 B. C. osc. series pad (See note "B")

NOTE "A"—It is extremely necessary 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. After each range is completed, repeat the procedure as a final check.

ALIGNMENT PROCEDURE MODEL 590

The following equipment is required for aligning.

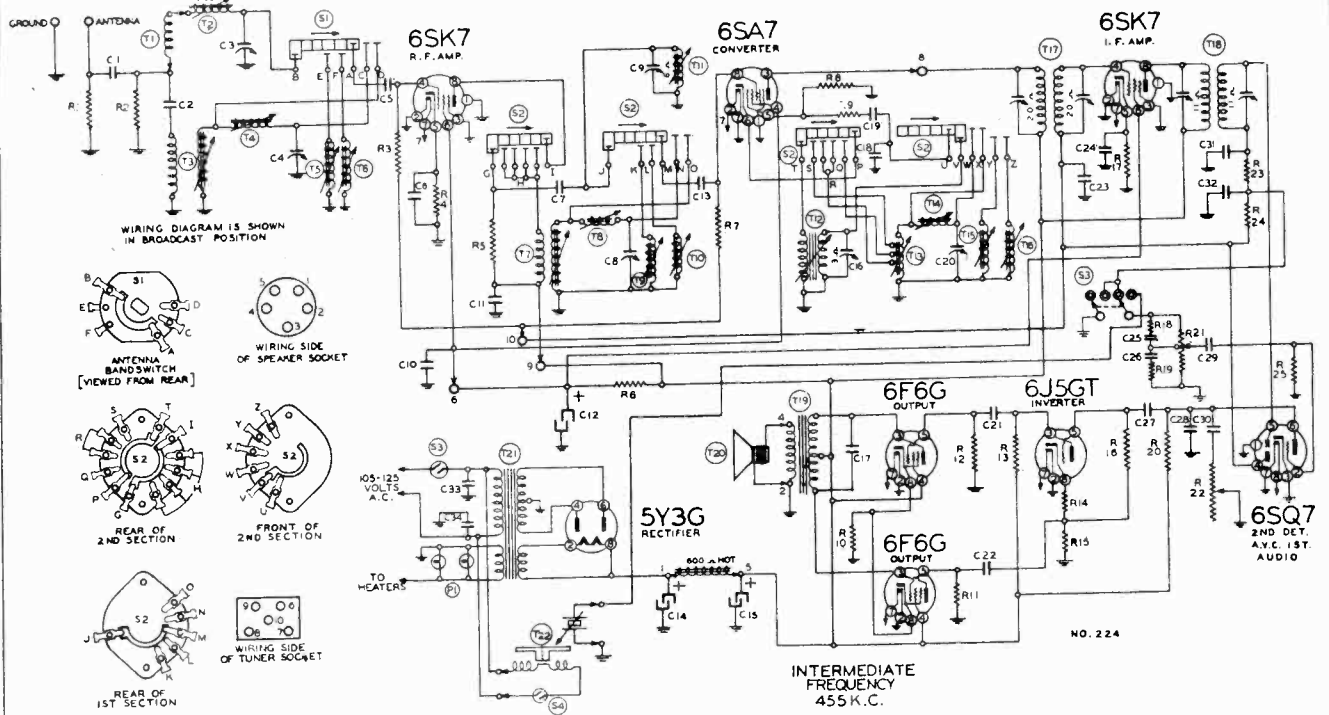
- Dummy antenna .1 mfd. and 200 mmf.
- Volume control—Maximum all adjustments.
- Connect ground lead of radio chassis to ground post of signal generator.

BAND	SIGNAL GENERATOR			Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
	Frequency Setting	Dummy Antenna	Connection to Radio				
I. F.	455 Kc.	.1 MFD.	Connect to Grid of 1A7	Rotor full open (Plates out of mesh)	Trimmers on top of I. F. cans	Output and input I. F.	maximum output (See Note "A")
BROADCAST BAND	1600 Kc.	.1 MFD.	Connect to Grid of 1A7	Rotor full open (Plates out of mesh)	Trimmer on gang (See chassis view)	Oscillator	maximum output (See Note "A")
	1400 Kc.	200 MMF.	Connect to Antenna Clip	Set dial at 1400 Kc.	Trimmer on gang (See chassis view)	Antenna	maximum output (See Note "B")

NOTE "A"—The loop antenna need not be connected to the radio when making these adjustments, but a 1. Meg. Resistor must be substituted across the loop clips. The ground of the signal generator is connected to the chassis and 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 external ground terminal. The other lead of the signal generator is connected in series with a 200 Mmf. dummy to the external antenna terminal.

BELMONT RADIO CORP.

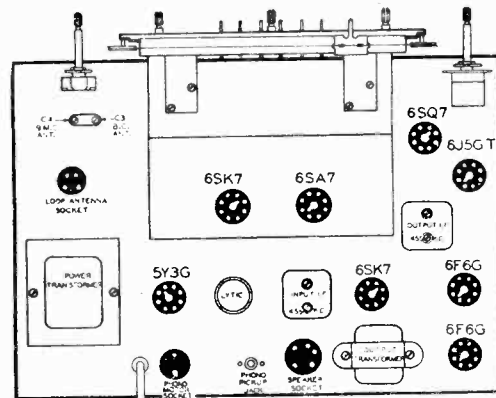
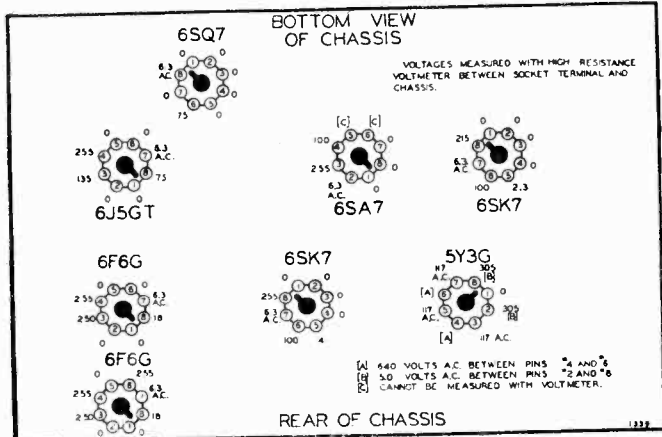


RESISTORS

R1	1301	25M ohm— $\frac{1}{2}$ w.
R2	1301	25M ohm— $\frac{1}{2}$ w.
R3	13019	1 megohm— $\frac{1}{2}$ w.
R4	130239	250 ohm— $\frac{1}{2}$ w.
R5	130218	5M ohm— $\frac{1}{2}$ w.
R6	10662	12,500 ohm—3 w.
R7	13019	1 megohm— $\frac{1}{2}$ w.
R8	130232	25M ohm— $\frac{1}{2}$ w.
R9	130174	50 ohm— $\frac{1}{2}$ w.
R10	130220	300 ohm—1 w.
R11	1303	500M ohm— $\frac{1}{2}$ w.
R12	1303	500M ohm— $\frac{1}{2}$ w.
R13	130103	100M ohm— $\frac{1}{2}$ w.
R14	130218	5M ohm— $\frac{1}{2}$ w.
R15	130103	100M ohm— $\frac{1}{2}$ w.
R16	13019	1 megohm— $\frac{1}{2}$ w.
R17	13070	500 ohm— $\frac{1}{2}$ w.
R18	13011	250M ohm— $\frac{1}{2}$ w.
R19	130149	15M ohm— $\frac{1}{2}$ w.
R20	13011	250M ohm— $\frac{1}{2}$ w.
R21	101253	$\frac{1}{2}$ megohm—volume control
R22	101254	1 megohm—tone control
R23	13012	50M ohm— $\frac{1}{2}$ w.
R24	1304	3 megohm— $\frac{1}{2}$ w.
R25	130257	5 megohm— $\frac{1}{2}$ w.

CONDENSERS

C1	1292	.0005 mica
C2	10047	.002 x 600 v.
C3	124143	B.C. antenna trimmer
C4	124143	9 mc. antenna trimmer
C5	1292	.0005 mica
C6	10020	.1 x 200 v.
C7	129168	.0001 mica
C8	124138	9 mc. R.F. trimmer
C9	124139	B.C. R.F. trimmer
C10	10074	.1 x 400 v.
C11	10074	.1 x 400 v.
C12	119109	10.0 x 350 w.v. lytic
C13	1292	.0005 mica
C14	119109	15.0 x 450 w.v. lytic
C15	119109	15.0 x 450 w.v. lytic
C16	124144	B.C. oscillator trimmer
C17	10071	.004 x 600 v.
C18	129167	.0002 Silver mica
C19	129165	.00005 mica
C20	124145	9 mc. osc. trimmer
C21	10085	.05 x 400 v.
C22	10085	.05 x 400 v.
C23	10026	.02 x 400 v.
C24	10020	.1 x 200 v.
C25	129114	.0003 mica
C26	100122	.03 x 200 v.
C27	10026	.02 x 400 v.
C28	12921	.0002 mica
C29	10019	.006 x 600 v.
C30	10019	.006 x 600 v.
C31	129165B	.00005 mica
C32	129165B	.00005 mica
C33	10061	.02 x 600 v. Bakelite
C34	10061	.02 x 600 v. Bakelite



PARTS

T1	111238	Loop ant. assembly
T2	111195	R.C. ant. coil
T3	111190	9 mc. ant. coil
T4	111189	6 mc. ant. coil
T5	111191	12 mc. ant. coil
T6	111192	15 mc. ant. coil
T7	10959	9 mc. R.F. coil
T8	10958	6 mc. R.F. coil
T9	10960	12 mc. R.F. coil
T10	10961	15 mc. R.F. coil
T11	10962	B.C. R.F. coil
T12	110161	B.C. oscillator coil
T13	110157	9 mc. oscillator coil
T14	110156	6 mc. oscillator coil
T15	110158	12 mc. oscillator coil
T16	110159	15 mc. oscillator coil
T17	108177	Input I.F. coil 455 kc.
T18	108176C	Output I.F. coil 455 kc.



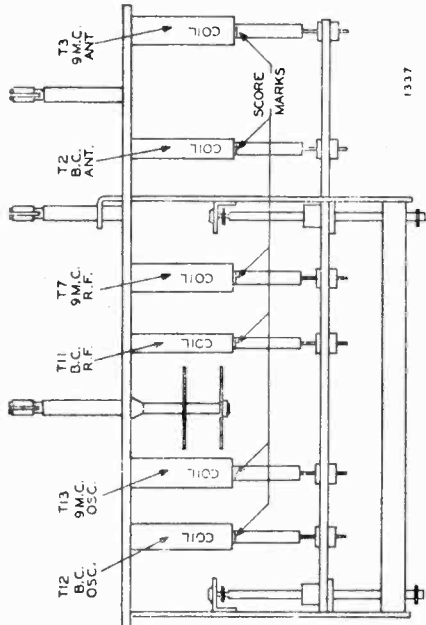
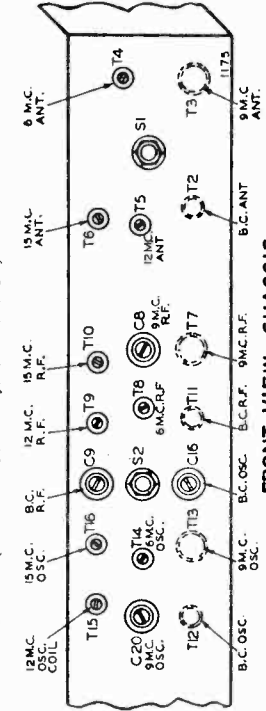
MODEL 8AE1

BELMONT RADIO CORP

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

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

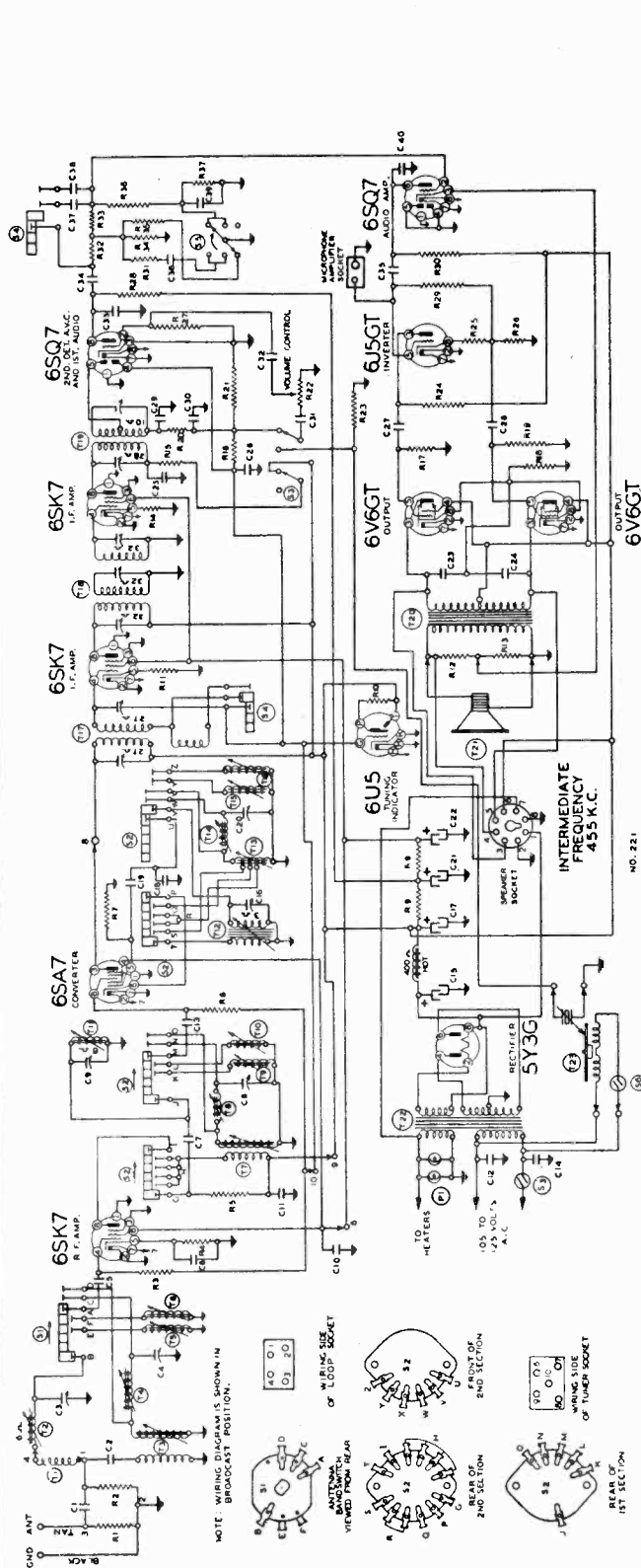
BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted in Order Shown	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 (I.F.)	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Grid of 6SA7	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Input I. F.	Adjust to maximum output
31 METER BAND	9.6 Mc.	400 ohms.	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) C20 (See Trimmer View) C8 (See Trimmer on Top) C4	Osc. R. F. Ant.	Adjust to maximum output
49 METER BAND	6.1 Mc.	400 ohms.	Antenna lead	49M	Set Dial at 6.1 Mc.	(See Trimmer View) T14 (See Trimmer View) T8 (See Trimmer View) T4	Osc. R. F. Ant.	Adjust to maximum output
25 METER BAND	11.8 Mc.	400 ohms.	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T15 (See Trimmer View) T9 (See Trimmer View) T5	Osc. R. F. Ant.	Adjust to maximum output
19 METER BAND	15.2 Mc.	400 ohms.	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T16 (See Trimmer View) T10 (See Trimmer View) T6	Osc. R. F. Ant.	Adjust to maximum output
BROAD-CAST BAND	1600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C16 (See Trimmer View) C9 (See Trimmer on Top) C3	Osc. R. F. Ant.	Adjust to maximum output
	1400 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	Rotate Core T11 Rotate Core T2 (See Iron Core Adjustment View)	R. F. Ant.	Adjust to maximum output



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

Do not realign the band spread scales score marks are even with the edge of unless you are positive they are out of the coil forms.  
 You are now ready to continue with the trimmer adjustments as shown on the alignment chart.  
 Rotate each iron core until the fine

BELMONT RADIO CORP.



NO. 221

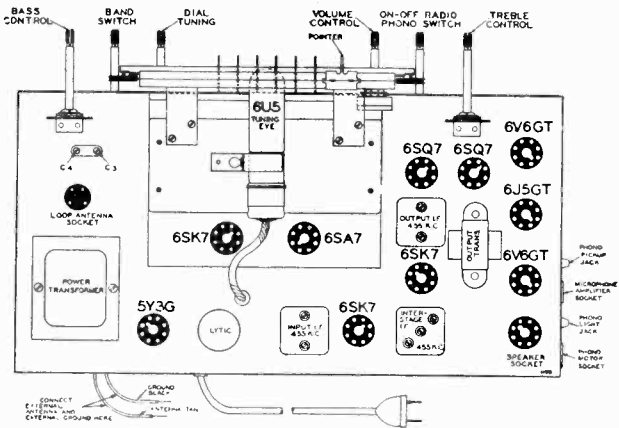
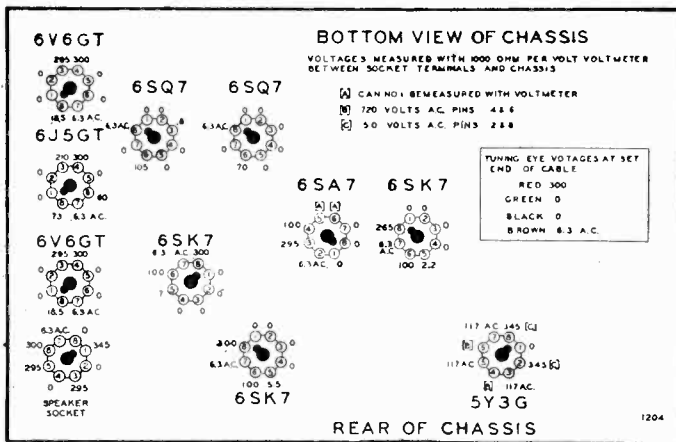
- RESISTORS**
- | Code No. | Description                               |
|----------|---|
| R1       | 130232 25M ohm-1/2 w.                     |
| R2       | 13019 1 megohm-1/2 w.                     |
| R3       | 130232 25M ohm-1/2 w.                     |
| R4       | 130239 250 ohm-1/2 w.                     |
| R5       | 130218 5M ohm-1/2 w.                      |
| R6       | 130219 1 megohm-1/2 w.                    |
| R7       | 130232 25M ohm-1/2 w.                     |
| R8       | 130318 6M ohm-2 w.                        |
| R9       | 130319 1 megohm in tuning indicator cable |
| R10      | 13016 900 ohm-1/2 w.                      |
| R11      | 13082 10M ohm-1/2 w.                      |
| R12      | 130235 1500 ohm-1/2 w.                    |
| R13      | 130235 1500 ohm-1/2 w.                    |
| R14      | 130192 2M ohm-1/2 w.                      |
| R15      | 130192 2M ohm-1/2 w.                      |
| R16      | 13019 1 megohm-1/2 w.                     |
| R17      | 1303 500M ohm-1/2 w.                      |
| R18      | 130317 250 ohm-2 w.                       |
| R19      | 1303 500M ohm-1/2 w.                      |
| R20      | 13094 50M ohm-1/2 w.                      |
| R21      | 130316 120M ohm-1/2 w.                    |
| R22      | 101229 500M ohm volume control            |
| R23      | 1303 500M ohm-1/2 w.                      |
| R24      | 13094 50M ohm-1/2 w.                      |
| R25      | 130218 5M ohm-1/2 w.                      |
| R26      | 13094 50M ohm-1/2 w.                      |
- CONDENSERS**
- |     |                                 |
|-----|---------------------------------|
| C1  | 1292 .005 mica                  |
| C2  | 10047 .02 x 600 v.              |
| C3  | 124143 B.C. antenna trimmer     |
| C4  | 124143 9 mc. antenna trimmer    |
| C5  | 1292 .005 mica tubular          |
| C6  | 10020 .1 x 200 v.               |
| C7  | 129168 .00001 mica              |
| C8  | 124139 9 mc. R.F. trimmer       |
| C9  | 10074 .1 x 400 v.               |
| C10 | 10074 .1 x 400 v.               |
| C11 | 10061 .02 x 600 v.              |
| C12 | 10061 .02 x 600 v.              |
| C13 | 1292 .005 mica                  |
| C14 | 10061 .02 x 600 v.              |
| C15 | 10061 .02 x 600 v.              |
| C16 | 124144 B.C. oscillator trimmer  |
| C17 | 119112 30.0 mfd. lyric x 450 v. |
| C18 | 129167 .0002 silver mica        |
- CONVERTERS**
- |      |                             |
|------|-----------------------------|
| 6SA7 | CONVERTER                   |
| 6SK7 | I.F. AMP.                   |
| 6SK7 | I.F. AMP.                   |
| 6SK7 | I.F. AMP.                   |
| 6SK7 | 2ND I.F. AMP. AND DET. AVC. |
- INDICATORS**
- |       |            |
|-------|------------|
| 6U5   | INDICATOR  |
| 6V5GT | INVERTER   |
| 6V6GT | OUTPUT     |
| 6V6GT | OUTPUT     |
| 6SQ7  | AUDIO AMP. |
- TRANSFORMERS**
- |     |   |
|-----|---|
| T4  | 111189 6 mc. antenna coil   |
| T5  | 111191 12 mc. antenna coil  |
| T6  | 111192 15 mc. antenna coil  |
| T7  | 10959 9 mc. R.F. coil   |
| T8  | 10958 6 mc. R.F. coil   |
| T9  | 10960 12 mc. R.F. coil  |
| T10 | 10961 15 mc. R.F. coil  |
| T11 | 10962 B.C. R.F. coil  |
| T12 | 110161 B.C. oscillator coil   |
| T13 | 110157 9 mc. oscillator coil  |
| T14 | 110156 6 mc. oscillator coil  |
| T15 | 110158 12 mc. oscillator coil   |
| T16 | 110159 15 mc. oscillator coil   |
| T17 | 108181 Input I.F. coil-455 kc.  |
| T18 | 108155B Interstage I.F. coil  |
| T19 | 108182 Output I.F. coil-455 kc.   |
| T20 | 105115 Output Transformer   |
| T21 | 114207 12" dynamic speaker  |
| T22 | 104219 Power transformer-50/60 cycles                                     |
| T23 | 104218 Power transformer-25 cycle   |
| T24 | 104238 Automatic record changer, Seeburg                                  |
| T25 | 104257 Automatic record changer, complete-25 cycle Seeburg-with turntable |
| T26 | 104252 Automatic record changer-25 cycle Seeburg-complete with turntable  |
| T27 | 125154 Antenna bandswitch   |
| T28 | 125122 R.F.-oscillator bandswitch   |
| T29 | 125150 On-off radio phono switch  |
| T30 | 125151 Treble switch  |
| T31 | 125152 Bass switch  |
| T32 | 10794 2 6-8 volts pilot light T44   |

- RESISTORS**
- |     |                                 |
|-----|---------------------------------|
| C19 | 129165 .00005 mica              |
| C20 | 124145 9 mc. oscillator trimmer |
| C21 | 119112 10.0 mfd. lyric          |
| C22 | 11969 .16 mfd. x 350 w.v.       |
| C23 | 10065 .015 x 600 v.             |
| C24 | 10065 .015 x 600 v.             |
| C25 | 1001 .1 x 400 v.                |
| C26 | 10020 .1 x 200 v.               |
| C27 | 10013 .05 x 400 v.              |
| C28 | 1009 .5 x 200 v.                |
| C29 | 1295 .0001 mica                 |
| C30 | 1295 .0001 mica                 |
| C31 | 10020 .1 x 200 v.               |
| C32 | 10019 .006 x 600 v.             |
| C33 | 12912 .05 x 400 v.              |
| C34 | 1001 .1 x 400 v.                |
| C35 | 10013 .08 x 600 v.              |
| C36 | 10018 .0005 mica                |
| C37 | 12938 .000125 mica              |
| C38 | 129166 .003 x 600 v.            |
| C39 | 10037 .0025 mica                |
| C40 | 12912 .00025 mica               |
- C3 and C4 in same unit  
C15, C17 and C21 in same unit
- PARTS**
- |    |                              |
|----|------------------------------|
| T1 | 111237 Loop antenna assembly |
| T2 | 111195 B.C. antenna coil     |
| T3 | 111190 9 mc. antenna coil    |

MODEL 11AE2

BELMONT RADIO CORP.

BAND	SIGNAL GENERATOR		Connection to Radio	Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted in Order Shown	Trimmer Function	Adjustment
	Frequency Setting	Dummy Antenna						
I. F.	455 Kc.	.1 MFD. Grid of 6SK7 (I.F.)	Broadcast	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Output I. F.	Adjust to Maximum output
	455 Kc.	.1 MFD. Grid of 6SA7	Broadcast	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top	Input I. F.	Adjust to Maximum output
31 METER BAND	9.6 Mc.	400 ohms	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) C20 (See Trimmer View) C8 (See Trimmer on Top) C4	Osc. R. F. Ant.	Adjust to Maximum output
49 METER BAND	6.1 Mc.	400 ohms	Antenna lead	49M	Set Dial at 6.1 Mc.	(See Trimmer View) T14 (See Trimmer View) T8 (See Trimmer View) T4	Osc. R. F. Ant.	Adjust to Maximum output
25 METER BAND	11.8 Mc.	400 ohms	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T15 (See Trimmer View) T9 (See Trimmer View) T5	Osc. R. F. Ant.	Adjust to Maximum output
19 METER BAND	15.2 Mc.	400 ohms	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T16 (See Trimmer View) T10 (See Trimmer View) T6	Osc. R. F. Ant.	Adjust to Maximum output
BROAD-CAST BAND	1600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C16 (See Trimmer View) C9 (See Trimmer on Top) C3	Osc. R. F. Ant.	Adjust to Maximum output
	1400 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	Rotate Core T11 Rotate Core T2 (See Iron Core Adjustment View)	R. F. Ant.	Adjust to Maximum output



**Power Consumption**  
 Radio Only - - - - 120 Watts

**Power Output - - - - 10 Watts**  
 Undistorted

**Sensitivity for 500 Milliwatt Output:** - 10 Microvolts Average

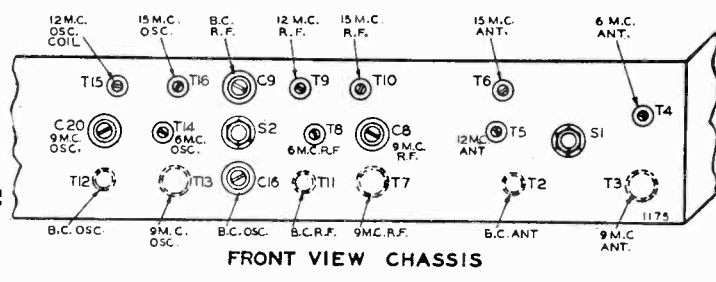
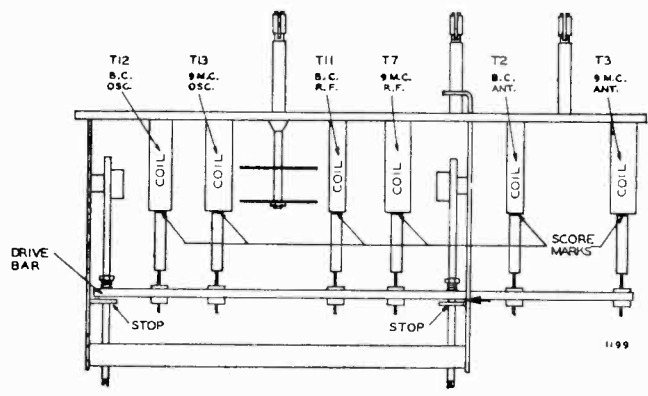
**Selectivity - 27 KC Broad at 1000 Times Signal at 1000 KC**

**Tuning Frequency Range Broadcast Band - - 540 to 1600 KC**

49M Band - 5.9 to 6.1 MC  
 31M Band - 9.1 to 10 MC  
 25M Band - 11.4 to 12.1 MC  
 19M Band - 14.9 to 15.4 MC

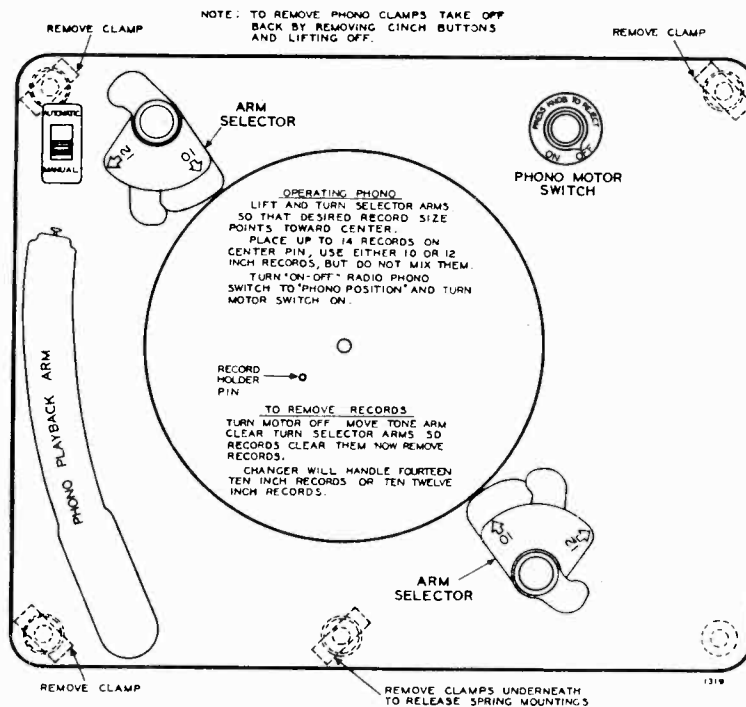
**Intermediate Frequency - - - 455 KC**

**Speaker - - 12 in. Electro Dynamic**



BELMONT RADIO CORP.

## Automatic Record Changer--Operating Instructions



### Setting for Size of Record

The Changer plays up to fourteen 10" or ten 12" records at one loading. All records must be the same size for each loading.

On each post you will see selecting arms. The position of these arms determines the setting for different size records. To set for 10 or 12 inch records, it is merely necessary to grasp the posts by the knobs at the top, lift, and turn until the 10" or 12" arrows are pointing toward the center of the turntable. When in either the 10" or 12" position, the posts will snap into place except when they are lifted by hand. Be sure to set both posts for the same size record.

### Loading

See that the selecting arms of both posts are turned toward the center of the turntable as indicated by the engraved arrows, and that both sets of arms are set for the same size (10" or 12") records as described in the preceding paragraph.

Place the stack of records (up to fourteen 10" or ten 12") over the center

pin so that they will rest on the selecting arms.

### Starting the Changer

1. Turn on the radio (allowing approximately 30 seconds for the tubes to warm up) and turn the phonograph-radio knob, to the phonograph position.
2. Turn the switch knob on the Record Changer panel to "ON". The motor will then start and the record changer will go into automatic operation of its own accord.

### How to Reject a Record

Merely press the switch knob on the Changer panel. You can do it any time after the needle has come into contact with that record.

### Automatic—Manual Switch

When this switch is pushed towards the manual position the selector arms can be turned out of the way and individual records played without the automatic changer working—To operate the changer again push the switch to automatic, start the motor and press the reject button.

### Unloading

First switch off the motor. Grasp each post by its knob at the top and turn them out of the way.

Lift the played records from the turntable. Then return the posts to the proper playing position as indicated by the arrows on the selecting arms.

The Changer may then be loaded with a new stack of records according to the size shown on the selecting arms.

### Turning Off Changer

Throw Changer switch knob to "OFF" position.

Lift tone arm and place it in the rest position. (If you happen to turn off the Changer switch while the mechanism is going through a "change cycle," you will notice that it does not stop until the cycle has been completed, and the tone arm is again in playing position, at which point it is ready to be lifted to the rest position. If you prefer to turn off your Changer with the radio switch, be sure to turn it off while needle is resting upon a record; otherwise, the selecting arms cannot be correctly reset.

To avoid warping of records, never leave records resting on posts.

### If Changer is Left Running

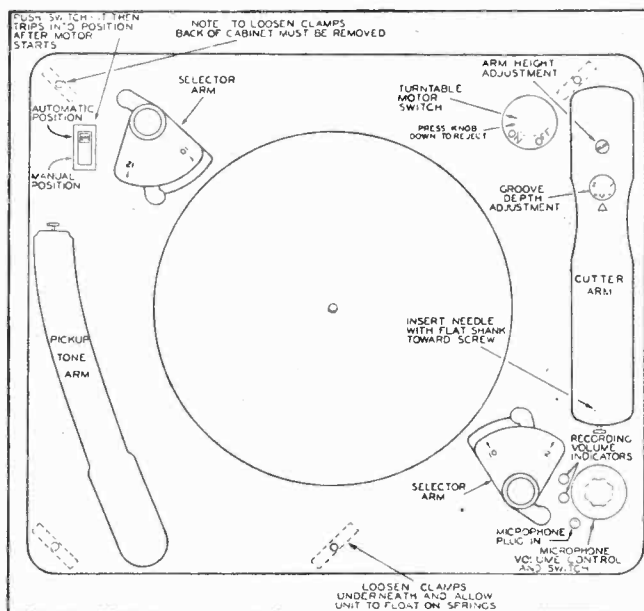
No damage will be done if you forget to turn off Changer after it has played its entire load of records. It will simply repeat the last record until stopped or reloaded.

### Phonograph Needles

In general there are two types of needles which can be satisfactorily used on an Automatic Record Changer: those which require changing after approximately 12 records, and the so-called permanent type needles which are rated in terms of "hours of service." In no case should the manufacturers' claims for these needles be exceeded, since in all probability the needles are rated in terms of their maximum life.

MODEL 11AE2

## BELMONT RADIO CORP.



**NOTE**—Some radios of this model are equipped with a recording arm on the record changer with which you can make your own records. If your radio has the recording unit follow the instructions below for making records.

The Mike volume control must be turned off (all the way left) except when recording with the microphone.

The two volume indicator lights along side the microphone volume control are used for setting the proper recording level. When recording radio programs the radio volume control should be adjusted so that the red indicator light remains off while the white continues to flicker. When recording with the microphone the lights should be adjusted in the same manner but using the microphone volume control.

### Operating the Phono on Home Recordings

Turn radio on. Put phono switch in "Phono" position.

Push manual switch toward manual side to play home recordings.

Put your record on turntable and start motor. Place playback arm on record and control tone and volume with the radio volume and tone control knobs.

Be sure mike control is turned off when playing records.

### Recording Radio Programs

Turn the radio on and tune in the program you wish to record. Put manual switch in manual position. Start motor and then gently lower cutting needle onto blank record, about  $\frac{1}{4}$ " from outer edge. Radio Volume will drop—Adjust volume control so red volume indicator light is off and white indicator light continues to flicker.

### Microphone Recording

Turn the mike volume control well up. Phono pushbutton should be in "Phono" position. Put manual switch in manual position. Start motor, and set cutting needle gently on start of record. Adjust volume indicator lights the same as in recording radio programs.

**NOTE:** The cutting arm must be raised about three inches to move it freely across the record.

## How to Make Perfect Recordings

### Cutting Needle

The cutting stylus is razor sharp and must not be dropped on the record or allowed to rest on the turntable.

For best operation, the instrument should be level in all directions. To check this, place a small level, if you have one, on the turntable. If you do not have a level, a marble will do. If the marble rolls off the turntable, it is low in the direction in which it rolls. Place something under the cabinet until the machine is reasonably level.

### Shavings

The cutting stylus cuts out a fine shaving that is just a little thicker than a human hair. These shavings should not be allowed to gather under the cutting stylus.

While cutting, gently brush the shavings from the left side of the record in, toward the center pin, allowing them to

collect there until the recording is completed.

### Do Not Use Too Much Volume

The most frequent cause of poor recordings is too much volume or overloading. If some passages of your recording are smooth and clear while others are raspy, rough and distorted, you are probably using too much volume. Overloading occurs most often on strong passages. The remedy is to reduce the volume slightly and watch the volume indicator lights.

Too little volume will show up when you play the record back. The volume control on playbacks will have to be turned up quite high and needle scratch will be excessive.

### Cutting Arm Adjustments

The cutting arm is adjusted at the factory for proper operation, however,

with various types of blanks this adjustment may sometimes have to be altered. With a blank record on the table, the height adjustment on the cutter arm should be adjusted so that the needle screw is centered in the slot when the needle rests on a blank record.

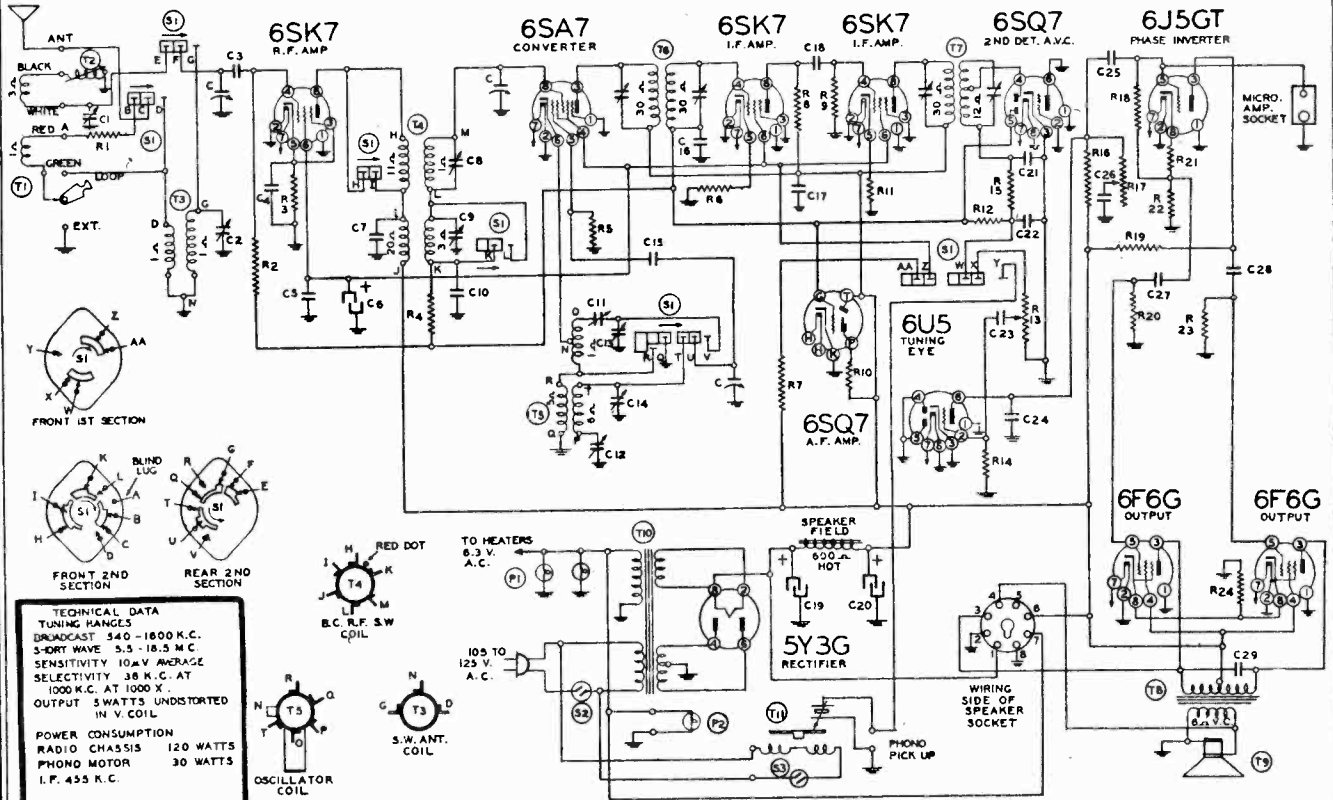
Several blank grooves should now be cut to see if the groove is the proper depth. The depth adjustment screw on the cutter arm will increase the depth of the groove if turned to the letter "H" and will decrease the groove if turned to the letter "L"—For a medium groove turn to "M".

If the groove is too shallow, the playback needle will not stay in the groove. If it is too deep, not enough wall will be left between grooves and the playback needle will break through from one track to the next after a few playings.

A properly cut groove will leave a shaving just a little heavier than a human hair.

BELMONT RADIO CORP

MODEL 11A24

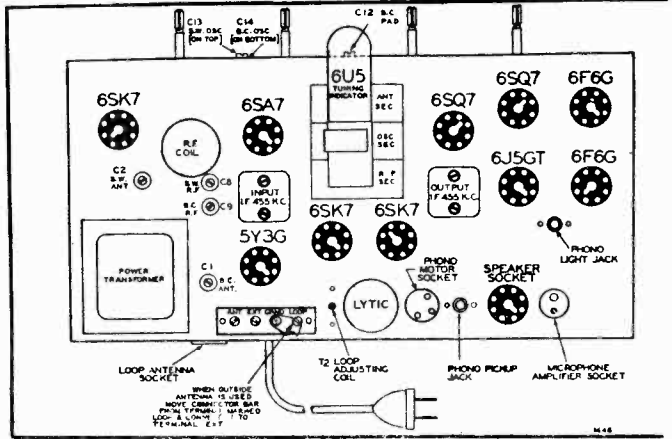


**TECHNICAL DATA**  
 TUNING RANGES  
 BROADCAST 540-1800 K.C.  
 SHORT WAVE 5.5-18.5 M.C.  
 SENSITIVITY 10 μV AVERAGE  
 SELECTIVITY 38 K.C. AT  
 1000 K.C. AT 1000 X  
 OUTPUT 3 WATTS UNDISTORTED  
 IN V. COIL  
 POWER CONSUMPTION  
 RADIO CHASSIS 120 WATTS  
 PHONO MOTOR 30 WATTS  
 I.F. 455 K.C.

Part No.	Schematic Diagram Reference	Description	No. Used In Set	Price Each
102152	C	Three Gang Variable Condenser	1	4.00
10020	C4	1 x 200 Volt Tubular Condenser	1	.25
10026	C10, C16, C25	.02 x 400 Volt Tubular Condenser	3	.25
10025	C23	.002 x 600 Volt Tubular Condenser	1	.25
1009	C27	.05 x 200 Volt Tubular Condenser	1	.25
10013	C28	.05 x 400 Volt Tubular Condenser	1	.25
10011	C26	.01 x 400 Volt Tubular Condenser	1	.25
10071	C29	.004 x 600 Volt Tubular Condenser	1	.25
100117	C5, C17	.25 x 400 Volt Tubular Condenser	2	.35
119124	C6, C19, C20	Electrolytic Filter Condenser—10 Mfd. x 350 V.; 25 Mfd. x 450 V.; 25 Mfd. x 450 V. 1	1.50	
124180	C2	S.W. Antenna Trimmer	1	.55
124179	C8, C9	S.W. and B.C. R.F. Trimmer—Dual	1	.45
124181	C13, C14	S.W. and B.C. Osc. Trimmer—Dual	1	.40
124182	C1	B.C. Antenna Trimmer	1	.70
129157	C12	.000525 Compression Cond.—B.C. Pad	1	.35
1292	C3, C18	.0005 Mica Type Condenser—20%	2	.25
129160	C7	.0004 Mica Type Condenser—20%	1	.35
12939	C15	.00005 Mica Type Condenser—20%	1	.25
1295	C21, C22	.0001 Mica Type Condenser—2%	2	.50
129156	C11	.0024 Compression Mica Condenser	1	.25
12912	C24	.00025 Mica Type Condenser—20%	1	.25
101270	R13, S2	Volume Control and Switch (500M Ohms)	1	1.25
101271	R17	Tone Control (1 Megohm)	1	.90
13019	R2, R18	1 Megohm—1/4 Watt Resistor—20%	2	.20
1305	R4	300M Ohm—1/4 Watt Resistor—20%	1	.20
130208	R5	40M Ohm—1/4 Watt Resistor—20%	1	.20
13054	R6, R11	500 Ohm—1/4 Watt Resistor—20%	2	.20
130263	R8	12M Ohm—1/4 Watt Resistor—20%	1	.20
13070	R9, R19, R22	100M Ohm—1/4 Watt Resistor—20%	3	.20
130304	R7	12M Ohm—2 Watt Resistor—10%	1	.20
13012	R15	50M Ohm—1/4 Watt Resistor—20%	1	.20
130170	R12	3 Megohm—1/4 Watt Resistor—25%	1	.20
130225	R14	15 Megohm—1/4 Watt Resistor—30%	1	.20
13043	R21	2500 Ohm—1/4 Watt Resistor—20%	1	.20
1303	R20, R23	500M Ohm—1/4 Watt Resistor—20%	2	.20
13011	R16	250M Ohm—1/4 Watt Resistor—20%	1	.20
130311	R24	370 Ohm—1 Watt Resistor—20%	1	.20
13099	R3	370 Ohm—1/4 Watt Resistor—20%	1	.20
13024	R1	400 Ohm—1/4 Watt Resistor—20%	1	.20
	R10	1 Megohm—In Eye Socket	1	.20
108169J	T6	Input I. F. Coil Complete in Can	1	1.00
108130C	T7	Output I.F. Coil Complete in Can	1	1.25
10957	T4	B.C.—S.W. R.F. Coil Complete in Can	1	1.25
110149	T5	B.C.—S.W. Oscillator Coil	1	.75
111176	T3	S.W. Antenna Coil	1	.50
111153	T2	Loop Adjusting Coil With Iron Slug	1	.50
111257	T1	Loop Antenna Assembly	1	2.00

**SPEAKER**  
 Ten In-h Electrodynamic Speaker (Less Output Transformer) 1 6.00

FOR NEW PRODUCTS RECORD CHANGER 320  
 SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS".



**CHASSIS VIEW**  
**ANTENNA AND GROUND TERMINALS**

When using an external antenna and ground, move the metal strap (connector bar) from terminal marked LOOP and connect it to terminal marked EXT.

The antenna and ground wires should then be connected to the terminals marked "Ant." - "Gnd."

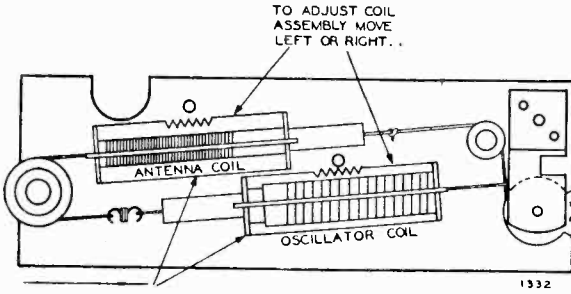
MODEL 5D16  
MODEL 11A24

BELMONT RADIO CORP.

MODEL 5D16

NOTE: THE ANTENNA COIL ASSEMBLY IS MADE SO THAT IT IS MOVABLE LEFT OR RIGHT. WHEN MAKING THE ADJUSTMENT AS GIVEN IN THE ALIGNMENT PROCEDURE MOVE COIL ASSEMBLY VERY SLOWLY

COIL ASSEMBLY VIEW



MODEL 11A24

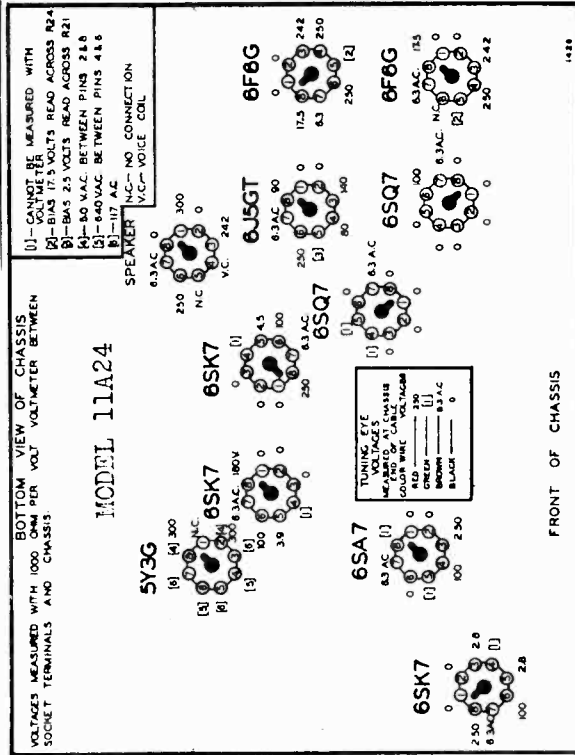
Alignment Procedure

- Volume control—Maximum all adjustments.
- Connect dummy antenna value in series with generator output lead.

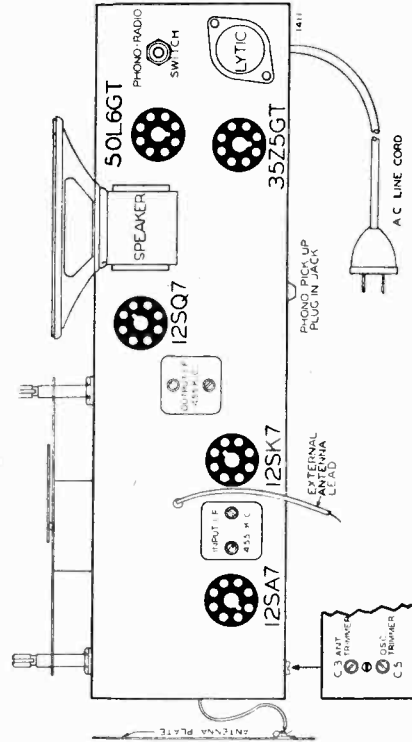
SIGNAL GENERATOR		Connect on to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted to Maximum (in Order Shown)
BAND	Frequency Setting				
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 I. F.	Rotor full open (Plates out of mesh)	Two trimmers on top Output I. F.
	455 Kc.	.1 MFD.	Grid of 6SA7 Mixer	Rotor full open (Plates out of mesh)	Two trimmers on top Input I. F.
SHORT WAVE BAND	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	C13, S.W. Osc.
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	C8, S.W. R.F., C2 S.W. Antenna
	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	C11 S.W. Osc. Series Pad See Note "A"
BROADCAST BAND	1580 Kc.	200 mmf.	Grid of 6SK7 R. F. Tube	Broadcast	C14 B.C. Osc.
	540 Kc.	200 mmf.	Grid of 6SK7 R. F. Tube	Broadcast	C12 B.C. Osc. Series Pad (Plates in Mesh)
	1400 Kc.	200 mmf.	Grid of 6SK7 R. F. Tube	Broadcast	C9 D.C. R.F.
LOOP ALIGNMENT	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	C1 B.C. Ant.
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	T2 Iron Core Tracking Coil

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

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

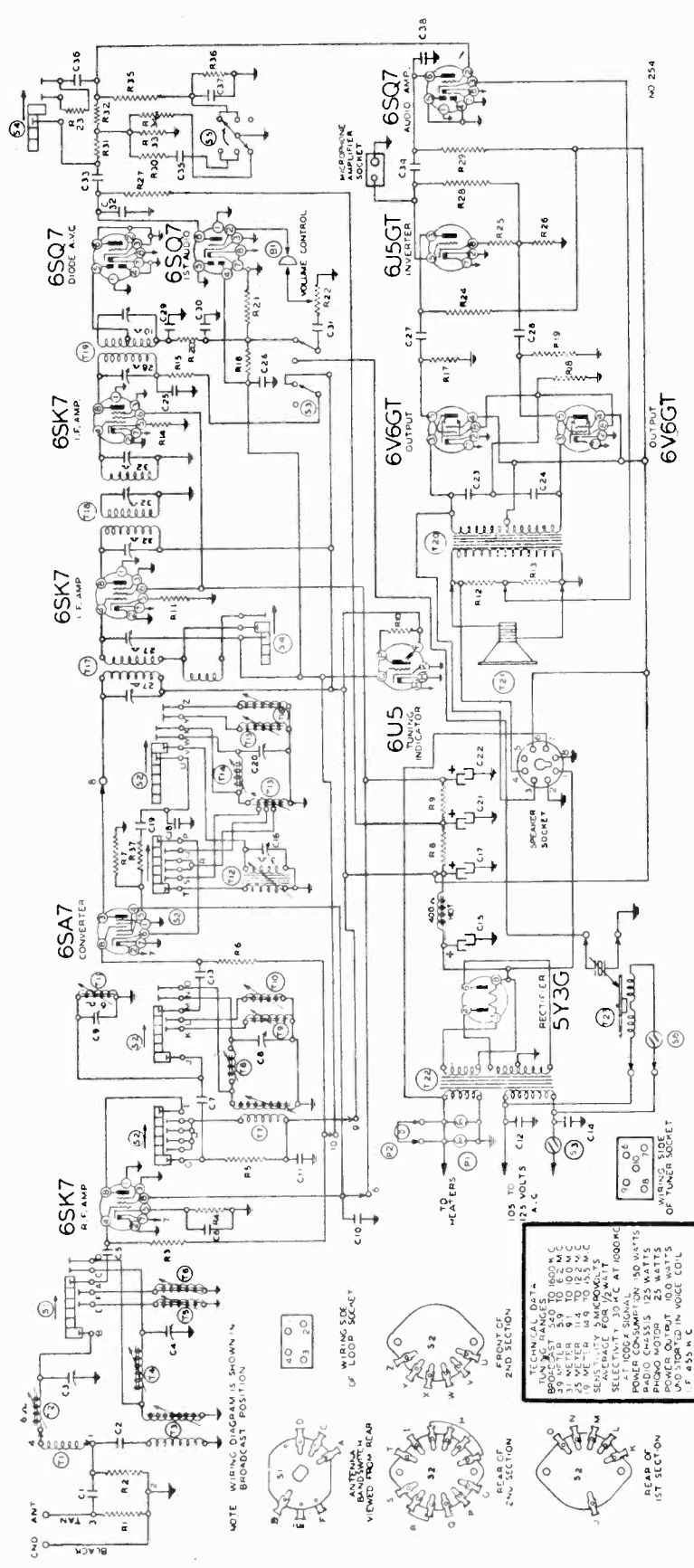


MODEL 5D16

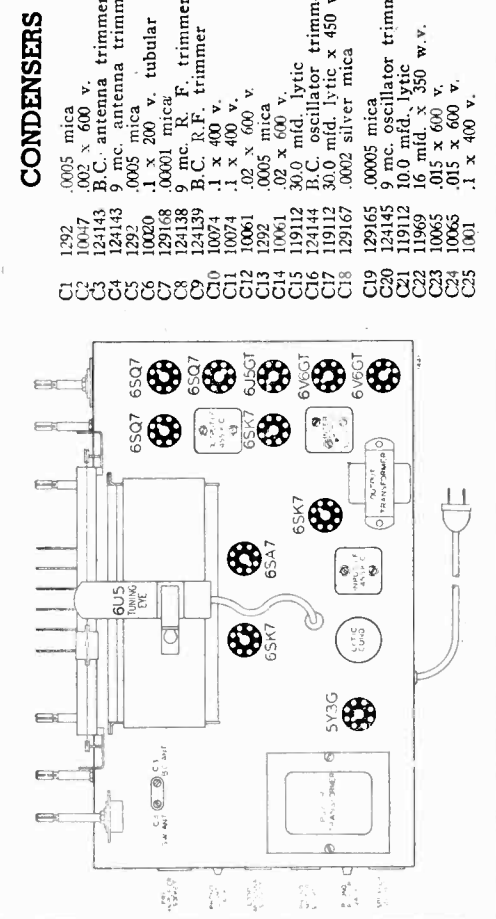


CHASSIS VIEW—Showing tube location and type.  
Note External Antenna Lead at back of chassis.

BELMONT RADIO CORP



- CONDENSERS**
- C1 1292 .0005 mica
  - C2 10047 .002 x 600 v.
  - C3 124143 B.C. antenna trimmer
  - C4 1295 9 mc. antenna trimmer
  - C5 10020 .1 x 200 v.
  - C6 1292 .0005 mica
  - C7 129168 .1 x 200 v. tubular
  - C8 124138 9 mc. R.F. trimmer
  - C9 124139 B.C. R.F. trimmer
  - C10 10074 .1 x 400 v.
  - C11 10074 .1 x 400 v.
  - C12 10061 .02 x 600 v.
  - C13 1292 .0005 mica
  - C14 10061 .02 x 600 v.
  - C15 19112 30.0 mid. lytic
  - C16 124144 B.C. oscillator trimmer
  - C17 19112 30.0 mid. lytic x 450 w.v.
  - C18 129167 .0002 silver mica
  - C19 129165 .00005 mica
  - C20 124145 9 mc. oscillator trimmer
  - C21 19112 10.0 mid. lytic
  - C22 19969 16 mid. x 350 w.v.
  - C23 10065 .015 x 600 v.
  - C24 10065 .015 x 600 v.
  - C25 1001 .1 x 400 v.
- RESISTORS**
- C3 and C4 in same unit
- C15 C17 and C21 in same unit
- RESISTORS**
- R1 130232 25M ohm-1/2 w.
  - R2 130232 25M ohm-1/2 w.
  - R3 13019 1 megohm-1/2 w.
  - R4 130239 25M ohm-1/2 w.
  - R5 130218 5M ohm-1/2 w.
  - R6 13019 1 megohm-1/2 w.
  - R7 130232 25M ohm-1/2 w.
  - R8 130318 6M ohm-2 w.
  - R9 130319 10M ohm-2 w.
  - R10 13070 1 megohm in tuning indicator cable
  - R11 13062 500 ohm-1/2 w.
  - R12 130235 10M ohm-1/2 w.
  - R13 130192 1500 ohm-1/2 w.
  - R14 130192 2M ohm-1/2 w.
  - R15 130192 2M ohm-1/2 w.
  - R16 13019 1 megohm-1/2 w.
  - R17 1303 500M ohm-1/2 w.
  - R18 130317 250 ohm-1/2 w.
  - R19 1303 500M ohm-1/2 w.
  - R20 13094 500M ohm-1/2 w.
  - R21 130316 120M ohm-1/2 w.
  - R22 101229 500M ohm volume control
  - R23 130191 1.5 megohm-1/2 w.
  - R24 13094 50M ohm-1/2 w.
  - R25 130218 5M ohm-1/2 w.
  - R26 13094 50M ohm-1/2 w.
  - R27 130172 250M ohm-1/2 w.
  - R28 1303 500M ohm-1/2 w.
  - R29 130172 250M ohm-1/2 w.
  - R30 130232 25M ohm-1/2 w.
  - R31 13080 150M ohm-1/2 w.
  - R32 130309 350M ohm-1/2 w.
  - R33 130266 200M ohm-1/2 w.
  - R34 13066 75M ohm-1/2 w.
  - R35 13080 150M ohm-1/2 w.
  - R36 130146 2 megohm-1/2 w.
  - R37 130174 50 ohm-1/2 w.





MODEL 12A51

BELMONT RADIO CORP.

Aligning Instructions

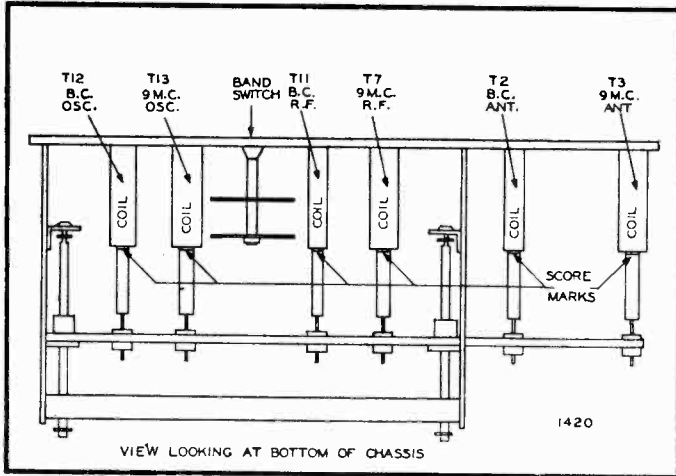
CAUTION:—No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltage, defective tubes, condensers and resistors. In order to properly align this radio, the chassis should be removed from the cabinet. Although the short wave bands on this radio are of the band spread type the Alignment Procedure is not difficult. However because each short wave scale covers only a small portion of the short wave spectrum you must do the work carefully and your oscillator must be accurate.

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

Tune set to high frequency end of dial scale on any band.

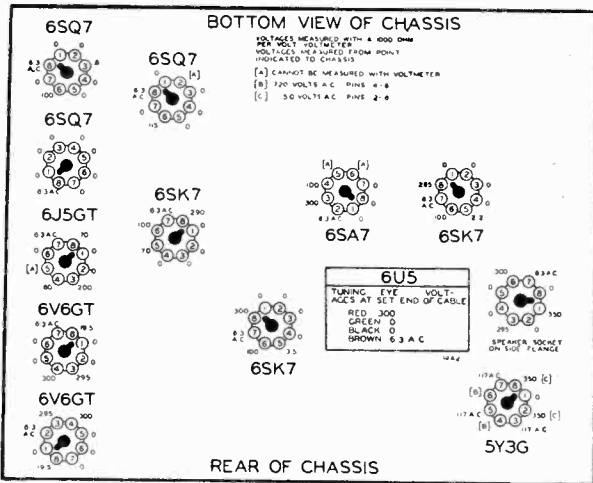
Rotate each iron core until the fine score marks are even with the edge of the coil forms.

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



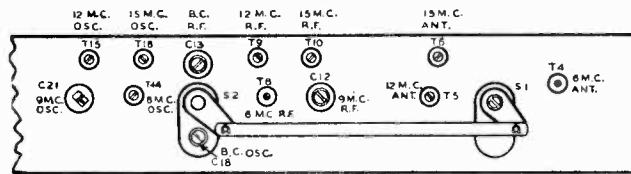
VIEW LOOKING AT BOTTOM OF CHASSIS

IRON CORE ADJUSTMENT VIEW



REAR OF CHASSIS

VOLTAGE CHART



TRIMMER VIEW

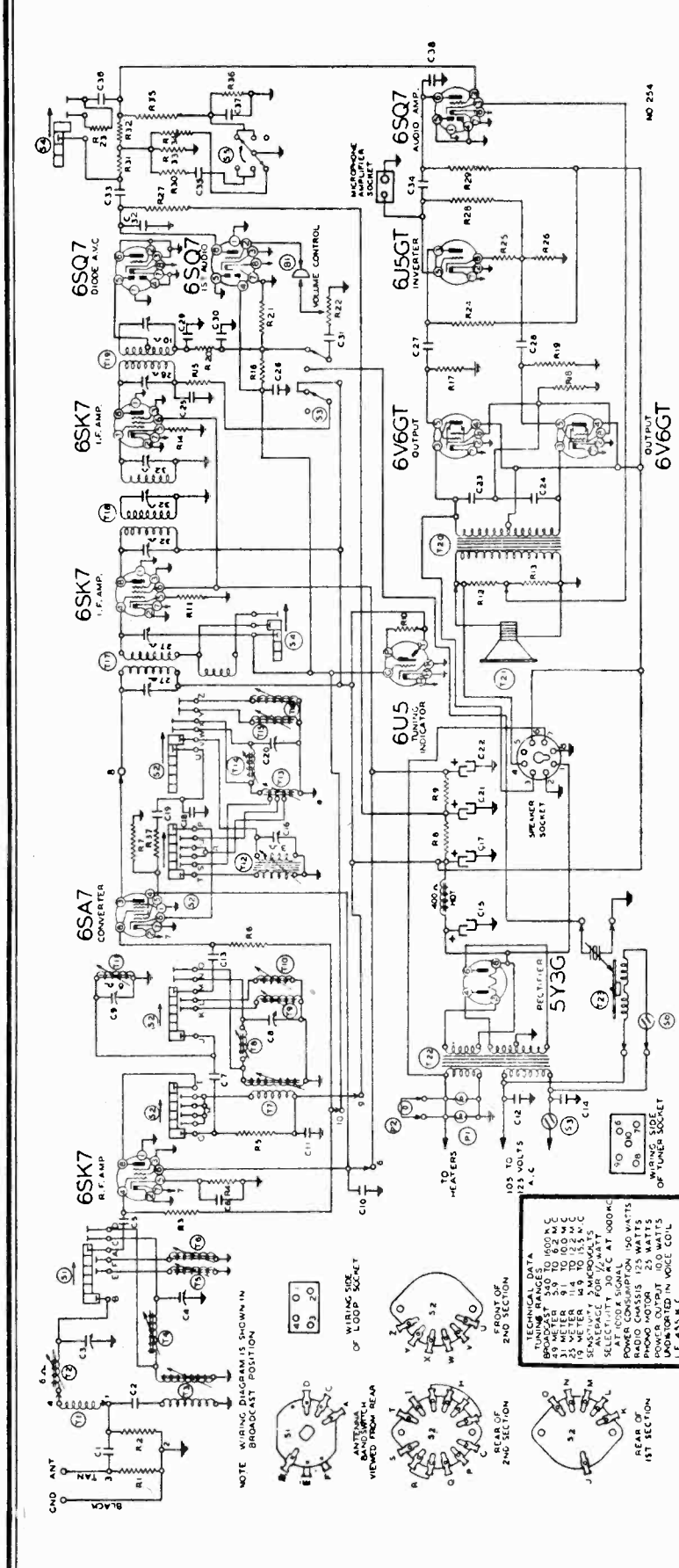
ALIGNMENT PROCEDURE

- Tone control—Treble.
- Volume control—Maximum all adjustments.
- Connect dummy antenna valve in series with generator output lead.

- Use an all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.

BAND	SIGNAL GENERATOR			Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted To Maximum
	Frequency Sett'ng	Dummy Antenna	Connection to Radio			
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 (I.F.)	Broadcast	Set Dial at 1600 Kc.	On Top of Output I. F.
	455 Kc.	.1 MFD.	Grid of 6SA7	Broadcast	Set Dial at 1600 Kc.	On Top of Input I. F.
31 METER BAND	9.6 Mc.	400 ohms	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) C21—Osc. (See Trimmer View) C12—R.F. (See Chassis View) C4—Ant.
49 METER BAND	6.1 Mc.	400 ohms	Antenna lead	49M	Set Dial at 6.1 Mc.	(See Trimmer View) T14—Osc. (See Trimmer View) T8—R.F. (See Trimmer View) T4—Ant.
25 METER BAND	11.8 Mc.	400 ohms	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T15—Osc. (See Trimmer View) T9—R.F. (See Trimmer View) T5—Ant.
19 METER BAND	15.2 Mc.	400 ohms	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T16—Osc. (See Trimmer View) T10—R.F. (See Trimmer View) T6—Ant.
BROAD-CAST BAND	1600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C18—Osc. (See Trimmer View) C13—R.F. (See Chassis View) C3—Ant.
	1400 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	Rotate Core T11—R.F. Rotate Core T2—Ant. (See Iron Core Adjustment View)

BELMONT RADIO CORP.



**RESISTORS**

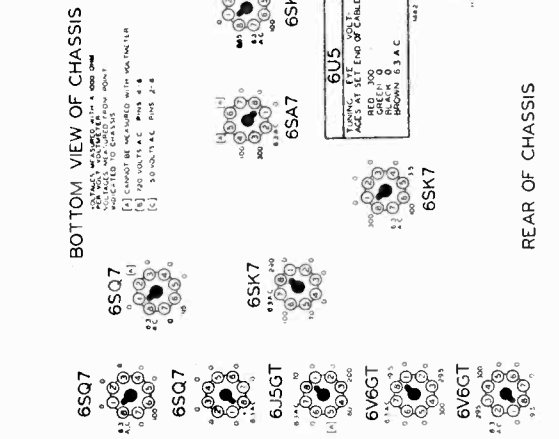
Volume Control (500M Ohms).....1  
 25M Ohm-1/2 Watt Resistor-10%.....3  
 6M Ohm-2 Watt Resistor-10%.....1  
 10M Ohm-2 Watt Resistor-10%.....1  
 500 Ohm-1/2 Watt Resistor-10%.....1  
 1500 Ohm-1/2 Watt Resistor-10%.....1  
 10M Ohm-1/2 Watt Resistor-10%.....1  
 2500 Ohm-1/2 Watt Resistor-10%.....1  
 500 Ohm-1/2 Watt Resistor-10%.....1  
 5M Ohm-1/2 Watt Resistor-10%.....1  
 1 Megohm-1/2 Watt Resistor-10%.....1  
 5M Ohm-1/2 Watt Resistor-10%.....1  
 25M Ohm-1/2 Watt Resistor-10%.....1  
 250 Ohm-1/2 Watt Resistor-10%.....1  
 1 Megohm-In Tuning Eye Cable.....1  
 50 Ohm-1/2 Watt Resistor.....1  
 2M Ohm-1/2 Watt Resistor-10%.....2  
 250M Ohm-1/2 Watt Resistor-10%.....2  
 120M Ohm-1/2 Watt Resistor-10%.....1  
 1 Megohm-1/2 Watt Resistor-10%.....1  
 150M Ohm-1/2 Watt Resistor-10%.....2  
 500M Ohm-1/2 Watt Resistor-10%.....1  
 200M Ohm-1/2 Watt Resistor-10%.....1  
 75M Ohm-1/2 Watt Resistor-10%.....1  
 1.5 Megohm-1/2 Watt Resistor-10%.....1

**CONDENSERS**

1 x 400 Volt Tubular Condenser.....2  
 .1 x 200 Volt Tubular Condenser.....2  
 .003 x 600 Volt Tubular Condenser.....2  
 .05 x 400 Volt Tubular Condenser.....2  
 .05 x 200 Volt Tubular Condenser.....2  
 .015 x 600 Volt Tubular Condenser.....2  
 .008 x 600 Volt Tubular Condenser.....2  
 .02 x 600 Volt Bakelite Condenser.....2  
 119112 C15, C17, C21 Electrolytic Filter Condenser 30 Mfd.; 30 Mfd., 10 Mfd., OR Mfd.; 10 Mfd., x 450 Volts. 30  
 119112B C15, C17, C21 Electrolytic Filter Condenser 30 Mfd.; 30 Mfd., 10 Mfd., x 450 Volts. 30  
 11969 C22 Electrolytic Filter Condenser 16 Mfd. x 350 Volts.....1  
 12912 C13 Mica Type Condenser.....2  
 12915 C32 Mica Type Condenser.....2  
 12918 C30 Mica Type Condenser.....2  
 10020 C6 Mica Type Condenser.....1  
 10047 C2 Tubular Condenser.....1  
 10074 C10, C11 Tubular Condenser.....2  
 124138 C8 B.C., R.F. Adjustable Trimmer Condenser.....1  
 124139 C9 B.C., R.F. Adjustable Trimmer Condenser.....1  
 124143 C3, C4 B.C. and 9 Mc. Dual Adjustable Antenna Trimmer Condenser.....1  
 124144 C16 B.C. Oscillator Adjustable Trimmer Condenser.....1  
 124145 C20 9 Mc. Oscillator Adjustable Trimmer Condenser.....1  
 1292 C1, C5 Mica Type Condenser-20%.....1

**CONDENSERS**

129165 C19 Mica Type Condenser-10%.....1  
 129168 C7 Mica Type Condenser-20%.....1  
 129167 C18 Silver Mica Type Condenser-3%.....1  
 101229 R22 Volume Control (500M Ohms).....1  
 130232 R1, R2, R30 25M Ohm-1/2 Watt Resistor-10%.....3  
 130232 R8 6M Ohm-2 Watt Resistor-10%.....1  
 130318 R9 10M Ohm-2 Watt Resistor-10%.....1  
 130319 R11 500 Ohm-1/2 Watt Resistor-10%.....1  
 13070 R13 1500 Ohm-1/2 Watt Resistor-10%.....1  
 130235 R12 10M Ohm-1/2 Watt Resistor-10%.....1  
 13082 R17, R19, R28 2500 Ohm-1/2 Watt Resistor-10%.....3  
 13031 R18 500 Ohm-1/2 Watt Resistor-10%.....1  
 13094 R20, R24, R26 500 Ohm-1/2 Watt Resistor-10%.....3  
 130218 R25 5M Ohm-1/2 Watt Resistor-10%.....1  
 13019 R3, R6 1 Megohm-1/2 Watt Resistor-10%.....2  
 130218 R5 5M Ohm-1/2 Watt Resistor-10%.....1  
 13032 R7 25M Ohm-1/2 Watt Resistor-10%.....1  
 13032 R4 250 Ohm-1/2 Watt Resistor-10%.....1  
 130239 R7 1 Megohm-In Tuning Eye Cable.....1  
 130174 R37 50 Ohm-1/2 Watt Resistor.....1  
 130192 R14, R15 2M Ohm-1/2 Watt Resistor-10%.....2  
 130172 R27, R29 250M Ohm-1/2 Watt Resistor-10%.....2  
 130316 R21 120M Ohm-1/2 Watt Resistor-10%.....1  
 130319 R16 1 Megohm-1/2 Watt Resistor-10%.....1  
 13019 R31 150M Ohm-1/2 Watt Resistor-10%.....2  
 130146 R36 500M Ohm-1/2 Watt Resistor-10%.....1  
 130309 R32 200M Ohm-1/2 Watt Resistor-10%.....1  
 130266 R33 500M Ohm-1/2 Watt Resistor-10%.....1  
 13066 R34 75M Ohm-1/2 Watt Resistor-10%.....1  
 130191 R23 1.5 Megohm-1/2 Watt Resistor-10%.....1



MODEL 12A52

BELMONT RADIO CORP.

ALIGNMENT PROCEDURE

October, 1941

- Tone control—Treble.
- Volume control—Maximum all adjustments.
- Use an all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.

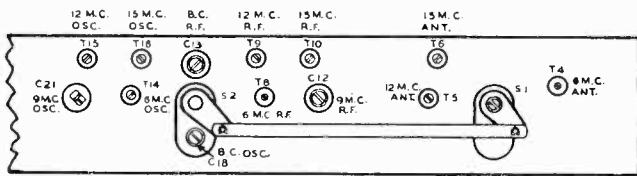
BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted To Maximum
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 (I.F.)	Broadcast	Set Dial at 1600 Kc.	On Top of Output I.F.
	455 Kc.	.1 MFD.	Grid of 6SA7	Broadcast	Set Dial at 1600 Kc.	On Top of Input I.F.
31 METER BAND	9.6 Mc.	400 ohms	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) C21—Osc. (See Trimmer View) C12—R.F. (See Chassis View) C4—Ant.
49 METER BAND	6.1 Mc.	400 ohms	Antenna lead	49M	Set Dial at 6.1 Mc.	(See Trimmer View) T14—Osc. (See Trimmer View) T8—R.F. (See Trimmer View) T4—Ant.
25 METER BAND	11.8 Mc.	400 ohms	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T15—Osc. (See Trimmer View) T9—R.F. (See Trimmer View) T5—Ant.
19 METER BAND	15.2 Mc.	400 ohms	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T16—Osc. (See Trimmer View) T10—R.F. (See Trimmer View) T6—Ant.
BROAD-CAST BAND	1600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C18—Osc. (See Trimmer View) C13—R.F. (See Chassis View) C3—Ant.
	1400 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	Rotate Core T11—R.F. Rotate Core T2—Ant. (See Iron Core Adjustment View)

**IMPORTANT:** Before removing chassis, remove the escutcheon and dial scale and then the pointer which is fastened to the pointer carriage by a small screw.

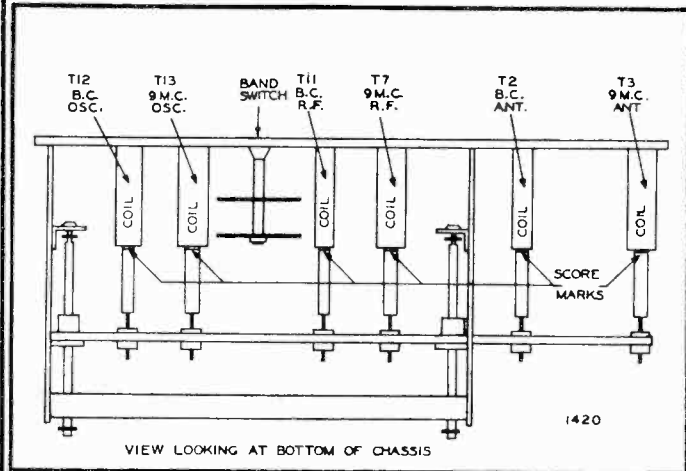
Setting the Pushbuttons

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

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



TRIMMER VIEW



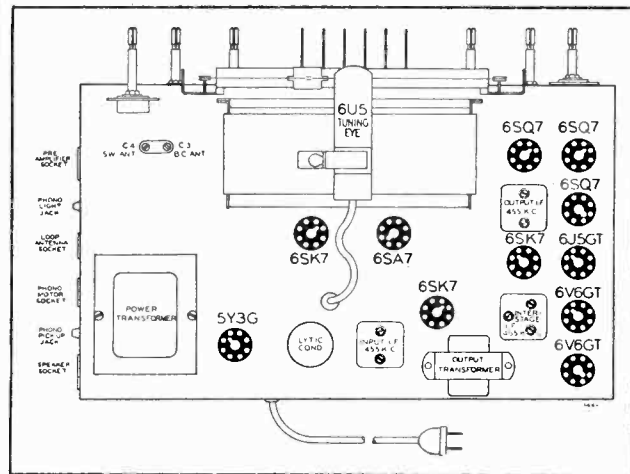
IRON CORE ADJUSTMENT VIEW

COILS

108210 T17	Input I. F. Coil	1.25
108155C T18	Interstage I. F. Coil	1.25
108209 T19	Output I. F. Coil	1.25
111209 T1	Loop Antenna Assembly	2.00

SPEAKER

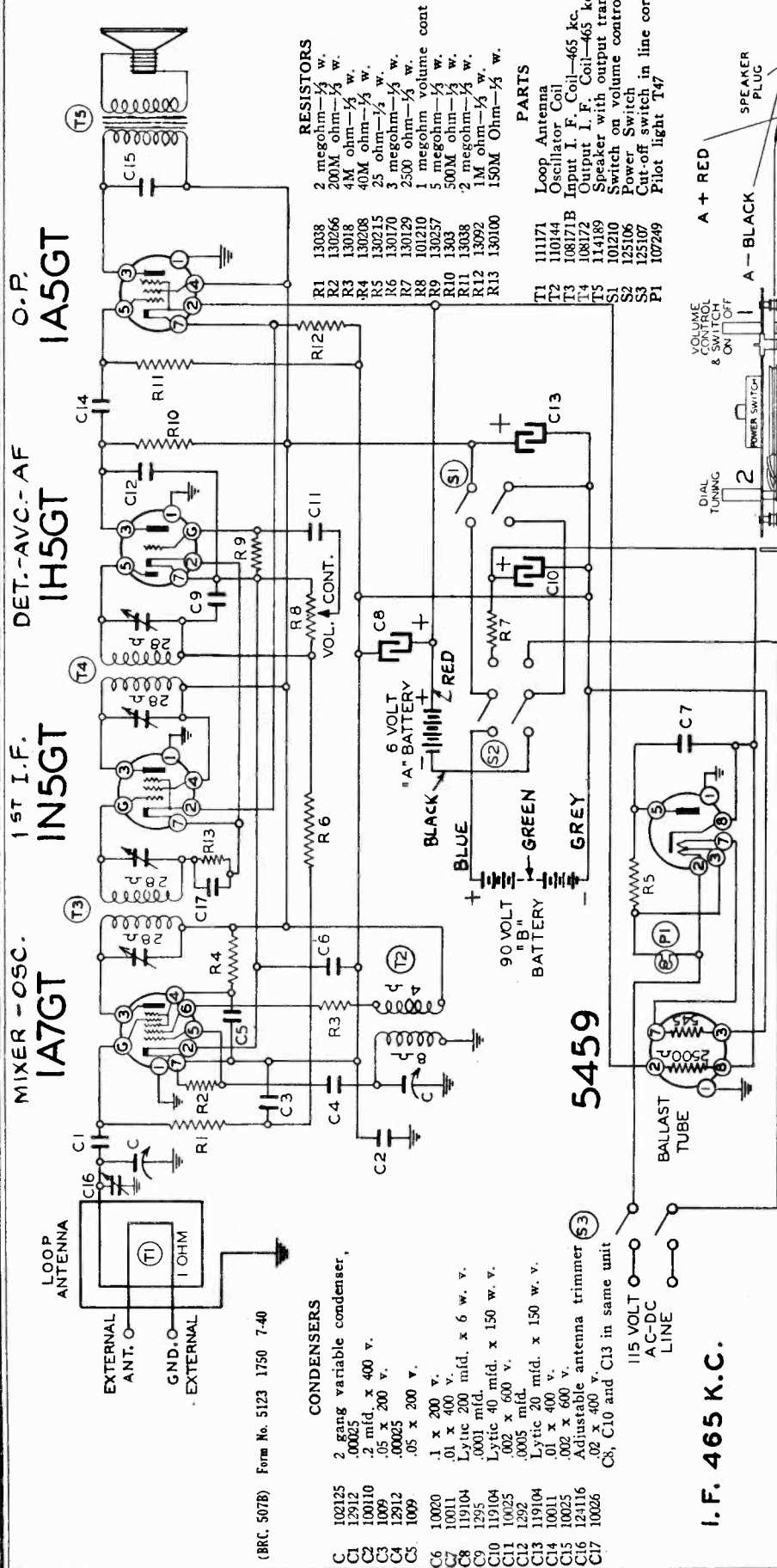
114269 T21	Twelve Inch Electrodynamic Speaker (Less Output Transformer)	9.00
105115B T20	Output Transformer for Speaker	1.25



CHASSIS VIEW

BELMONT RADIO CORP.

MODEL 546

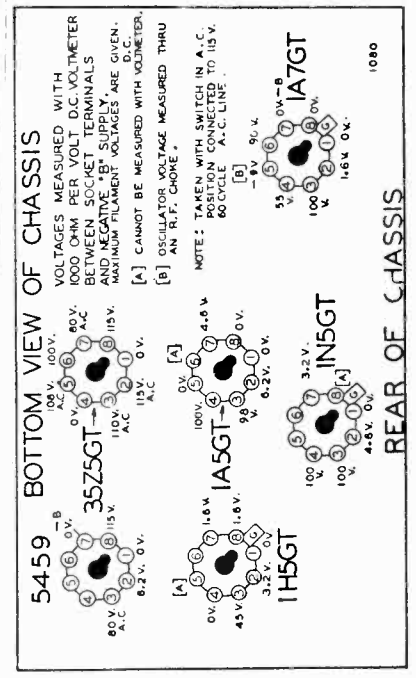


- CONDENSERS**
- 102125 2 gang variable condenser, .00025
  - 12912 .2 mfd. x 400 v.
  - 100110 .05 x 200 v.
  - 1009 .00025
  - 12912 .05 x 200 v.
  - 1009 .1 x 200 v.
  - 10020 .01 x 400 v.
  - 10011 Lytic 200 mid. x 6 w. v.
  - 119104 Lytic mid.
  - 1295 Lytic 40 mid. x 150 w. v.
  - 119104 Lytic 40 mid. x 150 w. v.
  - 10025 .002 x 600 v.
  - 1292 .0005 mid.
  - 119104 Lytic 20 mid. x 150 w. v.
  - 10011 .01 x 400 v.
  - 10025 .002 x 600 v.
  - 124116 Adjustable antenna trimmer
  - 10026 .02 x 400 v.
- RESISTORS**
- R1 13038 2 megohm-1/2 w.
  - R2 130266 200M ohm-1/2 w.
  - R3 13018 4M ohm-1/2 w.
  - R4 130208 40M ohm-1/2 w.
  - R5 130215 25 ohm-1/2 w.
  - R6 130170 2 megohm-1/2 w.
  - R7 130129 2500 ohm-1/2 w.
  - R8 101210 1 megohm volume cont
  - R9 130257 5 megohm-1/2 w.
  - R10 13038 2 megohm-1/2 w.
  - R11 13038 1M ohm-1/2 w.
  - R12 13092 150M Ohm-1/2 w.
  - R13 130100
- PARTS**
- T1 111171 Loop Antenna
  - T2 100144 Oscillator Coil
  - T3 108171B Input I. F. Coil-465 kc.
  - T4 108172 Output I. F. Coil-465 kc.
  - T5 114189 Speaker with output trans
  - S1 10210 Switch on volume control
  - S2 125106 Power Switch
  - S3 125107 Cut-off switch in line cord
  - P1 107249 Pilot light T47

**RECT. 35Z5GT**

**ALIGNMENT FREQUENCIES:**  
 IF - 465kc, 4 trims. thru  
 .1mf dummy  
 BC - 1500kc, osc. trim. thru  
 .1mf dummy  
 1400 kc, ant. trim C16  
 thru 200 mmf dummy

**POWER CONSUMPTION - 35 watts**  
**POWER O.P. - 100 to 200 Max.**



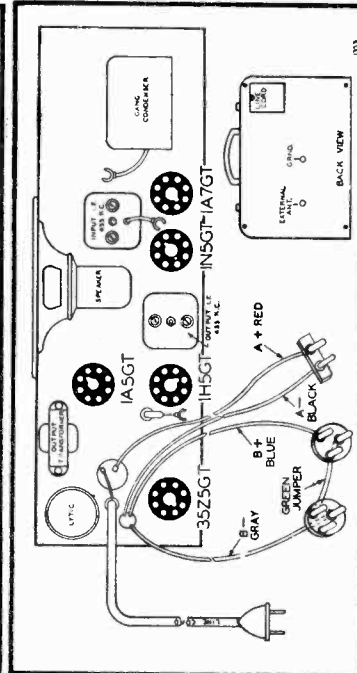
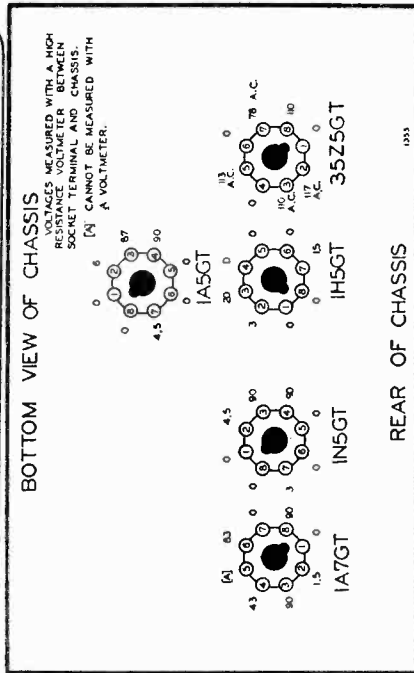
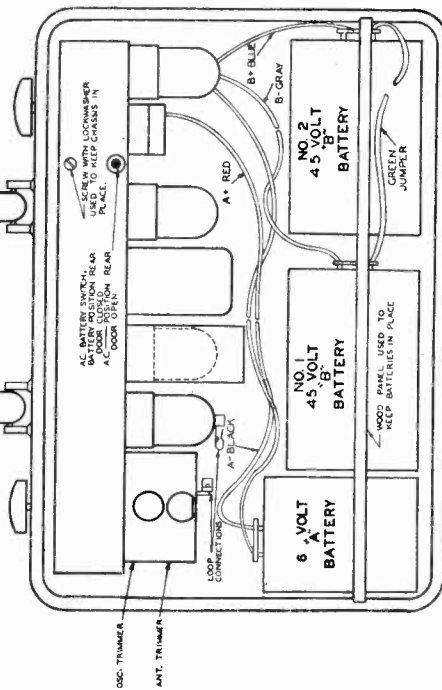
**5459 BOTTOM VIEW OF CHASSIS**

**I. F. 465 K.C.**

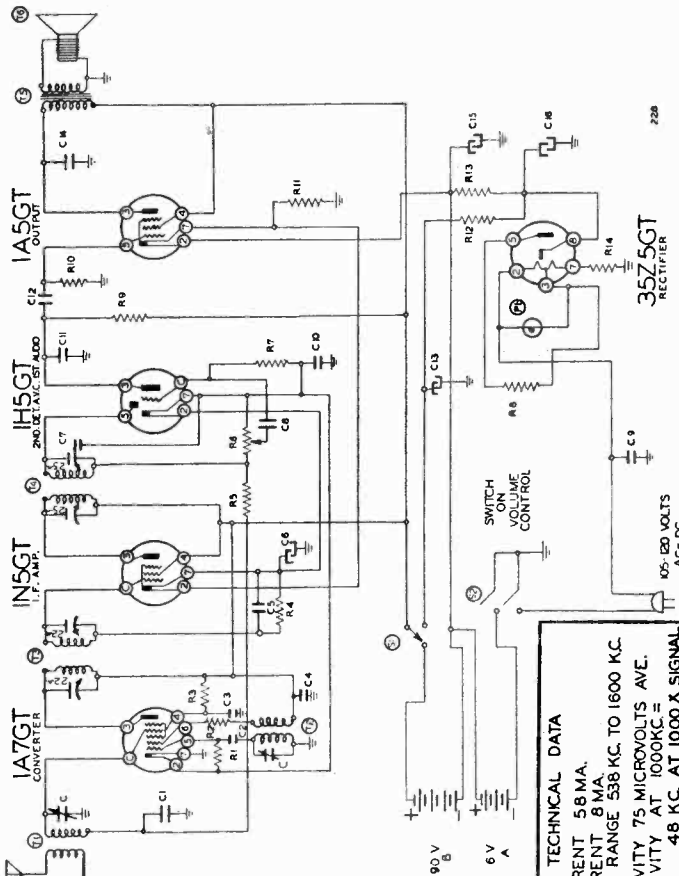
(BRC. 507B) Form No. 5123 1750 7-40

BELMONT RADIO CORP.

MODEL 590



CHASSIS VIEW showing tube location and battery cables —INSET back view, shows external ant. and ground connections.

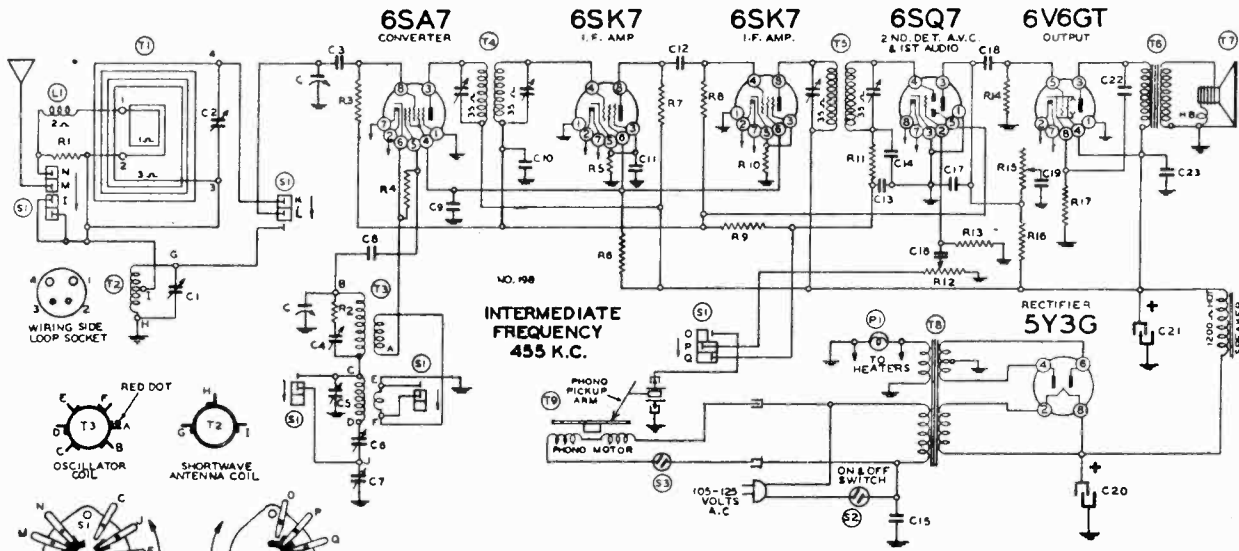


**TECHNICAL DATA**  
 A - CURRENT 58 MA.  
 B - CURRENT 8 MA.  
 TUNING RANGE 538 KC. TO 1600 KC.  
 SENSITIVITY 75 MICROVOLTS AVE.  
 SELECTIVITY AT 1000KC =  
 48 KC. AT 1000 X SIGNAL  
 OUTPUT 180 MW UNDISTORTED 3 OHM  
 I.F. 455 KC. VOICE COIL

- Code No. Part No. Description**
- RESISTORS**
- R1 1309 200M ohm— $\frac{1}{2}$  w.
  - R2 13093 3M ohm— $\frac{1}{2}$  w.
  - R3 130305 65M ohm— $\frac{1}{2}$  w.
  - R4 130225 15 megohm— $\frac{1}{2}$  w.
  - R5 1304 3 megohm— $\frac{1}{2}$  w.
  - R6 101252 1 megohm—Volume control
  - R7 130223 10 megohm— $\frac{1}{2}$  w.
  - R8 130197 20 ohm— $\frac{1}{2}$  w.
  - R9 13019 1 megohm— $\frac{1}{2}$  w.
  - R10 1304 3 megohm— $\frac{1}{2}$  w.
  - R11 130345 1M ohm— $\frac{1}{2}$  w.
  - R12 130129 2500 ohm— $\frac{1}{2}$  watt
  - R13 130344 1975 ohm—6 watt
  - R14 130343 545 ohm—14 watt
- CONDENSERS**
- C1 102141 Gang condenser
  - C2 1009 .05 x 200 v. condenser
  - C3 100128 .05 x 120 v. condenser
  - C4 100135 .25 x 120 v. condenser
- PARTS**
- C5 100127 .01 x 120 v. condenser
  - C6 119123 20.0 mfd.—50 w. v. Lytic
  - C7 100134 .006 x 120 v. condenser
  - C8 100113 .05 x 400 v. condenser
  - C9 100033 .1 x 120 v. condenser
  - C10 1000133 .0001 mica
  - C11 1295
  - C12 100127 .01 x 120 v. condenser
  - C13 119123 40.0 mfd.—150 w. v. Lytic
  - C14 10025 .002 x 600 v. condenser
  - C15 119123 200.0 mfd.—10 w. v. Lytic
  - C16 119123 40.0 mfd.—150 w. v. Lytic
- C6, C13, C15 and C16 are in one unit

- FOR ALIGNMENT**
- SEE INDEX**
- T1 111241 Loop antenna assembly
  - T2 110179 Oscillator coil
  - T3 108201 Input I. F. coil
  - T4 108200 Output I. F. coil
  - T5 105127 Output transformer
  - T6 114240 Speaker 5" P.M.
  - S1 125153 A. C. Battery switch
  - S2 101252 Switch on Volume control
  - P1 107362 Pilot Lite bulb—T47

BELMONT RADIO CORP.



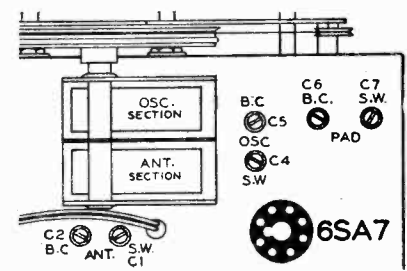
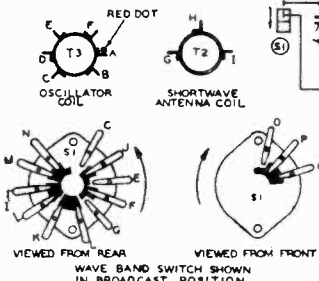
C1 and C2 are in same unit C4 and C5 in same unit  
C6 and C7 are in same unit C13 and C14 in same unit  
C20 and C21 are in same unit

PARTS

T1	111208	Loop antenna assembly
T2	111184	S. W. Antenna Coil
T3	110154	B. C. and S. W. Oscillator Coil
T4	108169E	Input I. F. Coil—455 kc.
T5	108106U	Output I. F. Coil—455 kc.
T6	105118	Output Transformer
T7	114216	8" Electro Dynamic Speaker
T7	114222	10" Electro Dynamic Speaker
T8	104225B	60 cycle power transformer
	and 104238B	25 cycle power transformer
T9	104263	60 cycle G. I. Record Changer and Phono Assembly
S1	125132	Phono-band switch
S2		Switch on volume control
S3		Switch on record changer
L1	12312	R. F. Choke coil
P1	10794	Pilot light bulb No. T-44

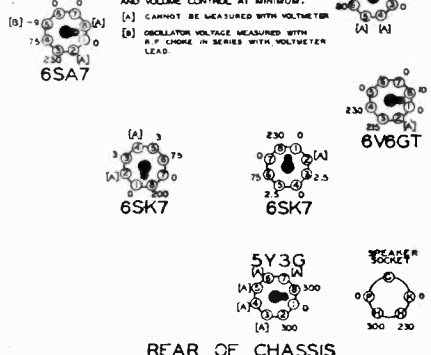
Code No.	Part No.	Description
<b>RESISTORS</b>		
R1	13071	4000 ohm— $\frac{1}{2}$ w.
R2	130128	20 ohm— $\frac{1}{2}$ w.
R3	13019	1 megohm— $\frac{1}{2}$ w.
R4	130236	30M ohm— $\frac{1}{2}$ w.
R5	130283	750 ohm— $\frac{1}{2}$ w.
R6	130324	18M ohm—1 watt
R7	130218	5M ohm— $\frac{1}{2}$ w.
R8	13020	100M ohm— $\frac{1}{2}$ w.
R9	130170	3 megohm— $\frac{1}{2}$ w.
R10	130222	350 ohm— $\frac{1}{2}$ w.
R11	13012	50M ohm— $\frac{1}{2}$ w.
R12	101232	1 megohm volume control
R13	130223	10 megohm— $\frac{1}{2}$ w.
R14	1303	500M ohm— $\frac{1}{2}$ w.
R15	101231	1 megohm tone control
R16	130172	250M ohm— $\frac{1}{2}$ w.
R17	130323	270 ohm—1 watt

Code No.	Part No.	Description
<b>CONDENSERS</b>		
C	102137	Two gang variable condenser
C1	124149	S. W. Antenna trimmer
C2	124149	B. C. Antenna trimmer
C3	1292	.0005 mica
C4	124142	S. W. Oscillator trimmer
C5	124142	B. C. Oscillator trimmer
C6	124146	B. C. Padding Condenser
C7	124146	S. W. Padding Condenser
C8	12960	150 mmfd. mica
C9	10013	.05 x 400 v.
C10	10022	.05 x 200 v.
C11	1009	.05 x 200 v.
C12	1292	.0005 mica
C13	129161	.0001 mica
C14	129161	.0001 mica
C15	10061	.02 x 600 v.
C16	10025	.002 x 600 v.
C17	12912	.00025 mica
C18	10026	.02 x 400 v.
C19	10071	.004 x 600 v.
C20	119115	16 mfd. x 400 v. lytic
C21	119115	16 mfd. x 400 v. lytic
C22	10019	.006 x 600 v.
C23	1001	.1 x 400 v.

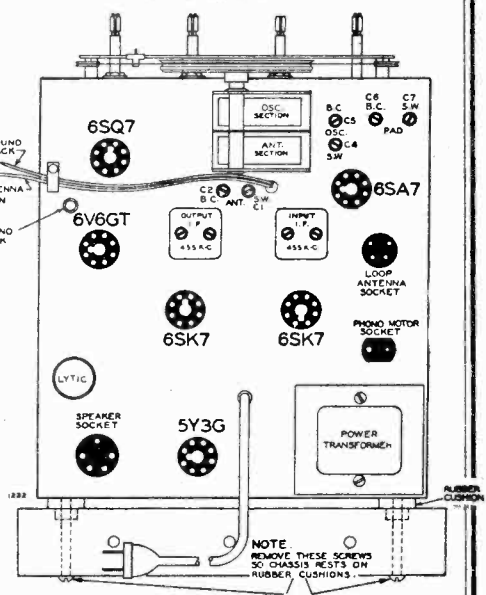


BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS & CHASSIS. BAND SWITCH IN BROADCAST POSITION AND VOLUME CONTROL AT MINIMUM.



REAR OF CHASSIS



NOTE REMOVE THESE SCREWS SO CHASSIS RESTS ON RUBBER CUSHIONS.

Radio Only	70 Watts
Power Consumption Motor Only	20 Watts
Power Output	2.1 Watts Undistorted
Sensitivity for 500 Milliwatt Output:	15 Microvolts Average
Selectivity	51 KC Broad at 1000 Times Signal at 1000 KC
Tuning Frequency Range Broadcast Band	530 to 1600 KC
	Shortwave Band - 5.46 to 18.3 MC
Intermediate Frequency	455 KC
Speaker	8 in. Electro Dynamic or 10 in. Electro Dynamic

FOR GENERAL INSTRUMENT 102 RECORD CHANGER, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS".

## BELMONT RADIO CORP.

## ALIGNMENT PROCEDURE

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

The following equipment is required for aligning:

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Output indicating meter.
- Non-metallic screwdriver.
- Dummy antennas—1—mf., 200 mmf., 400 ohms.

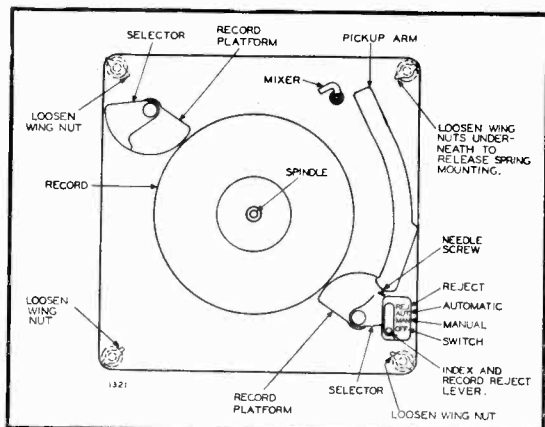
BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (In Order Shows)	Trimmer Function	Adjustment
I. F.	455 Kc.	1 MFD	Grid of 6SA7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Trimmers on top (See Top View)	Input and Output I. F.	Adjust to maximum output
SHORT WAVE BAND (See Note A)	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C4	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C1	Short Wave antenna	Adjust to maximum output
	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	Trimmer C7	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "C")
BROADCAST BAND (See Note A)	1600 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C5	Broadcast oscillator	Adjust to maximum output
	530 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full closed	Trimmer C6	Broadcast oscillator series pad	Adjust to maximum output
LOOP ALIGNMENT (See Note B)	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	Trimmer C2 (See Top View)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer C3 (See Top View)	Broadcast oscillator series pad	Adjust to maximum output

NOTE "A"—The signal generator is connected to the "ANT." and "GND." leads when aligning the Short Wave Band and to the grid of the 6SA7 tube and ground terminal when setting the Broadcast Band oscillator end frequencies. (1600 and 530 K. C.). The loop antenna should be connected to the radio when making these adjustments.

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

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.

## Automatic Record Changer--Operating Instructions



## General

This Record Changer will play automatically a series of standard 10- or 12 inch records of the type generally available today, or records of any size up to 12 inches changed manually. This Changer does not require any adjustment by operator for playing different size records. Stacks of mixed sizes may be played but this is not recommended or guaranteed. Records of the last few years with the standard eccentric or spiral finishing groove will operate the automatic mechanism.

## Controls and Moving Mechanism

**Index and Record Reject Lever:** This lever is located near the right front corner of the phonograph with its index plate marked for four positions—

OFF-MAN-AUT-REJ.

When you desire to change record selections manually, this lever should be set in the "MAN." (MANUAL) position.

To play a series of records, the lever should be set at the "AUT." (AUTOMATIC) 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 "REJ." (REJECT) position and let go. The pickup arm will raise up and swing outwards and the next record will drop.

Keep the lever in its "MAN." position when not actually playing records automatically.

To start the turntable set the switch to the "MAN." or "AUT." position. To stop the turntable, set the switch to the "OFF" position.

## Manual Operation

1. Insert Needle in pickup and clamp securely with needle screw protruding from front of pickup arm.
2. Lift record platforms and rotate away from turntable.
3. Place record to be played on turntable.
4. Advance index and reject lever to "MAN."
5. Place needle on blank edge of record and push pickup arm gently toward center to start needle in groove.
6. When playing is completed lift pickup arm slightly to clear record and replace same on rest.
7. Return index and reject lever to "OFF".

## Automatic Operation

1. Insert long playing needle in pickup and clamp securely with needle screw protruding from front of pickup arm. Return arm to rest.
2. Rotate record platforms to index position (locked in place by pin).
3. Place records to be played over the turntable spindle and on the record platforms.
4. Push index and reject lever to "REJ." position and release. The first record will then feed and play thru, followed by the balance of the records.
5. After last record has been played, allow pickup arm to reset on record. Return arm to rest and push lever to "OFF".
6. Raise and turn record platforms away from turntable.
7. Remove records carefully from turntable. Be careful not to strain spindle.

**CAUTION**—This Changer is designed and built to play standard 10- and 12-inch records in good condition automatically. To obtain the benefit of satisfactory operation it is necessary that instructions be followed explicitly and in no case use force, as this may cause damage.

## Mechanism

Do not rotate turntable in reverse direction or bend or strain turntable spindle when loading or unloading records.

Do not overload with records. The maximum load is either:

- 10 - 12 inch records
- 12 - 10 inch records

Do not touch pickup arm when it is in motion during automatic function or stop the mechanism until pickup arm reaches playing position and is returned to rest provided.

Do not move platforms by selector. Always raise and turn by hub of record platform.

## Records

Do not use warped records; records with rough, square, or uneven edges; records that are extra thin or extra thick.

Do not use other than standard 10 inch or 12 inch records.

Do not leave records on record platforms. This will cause warpage.

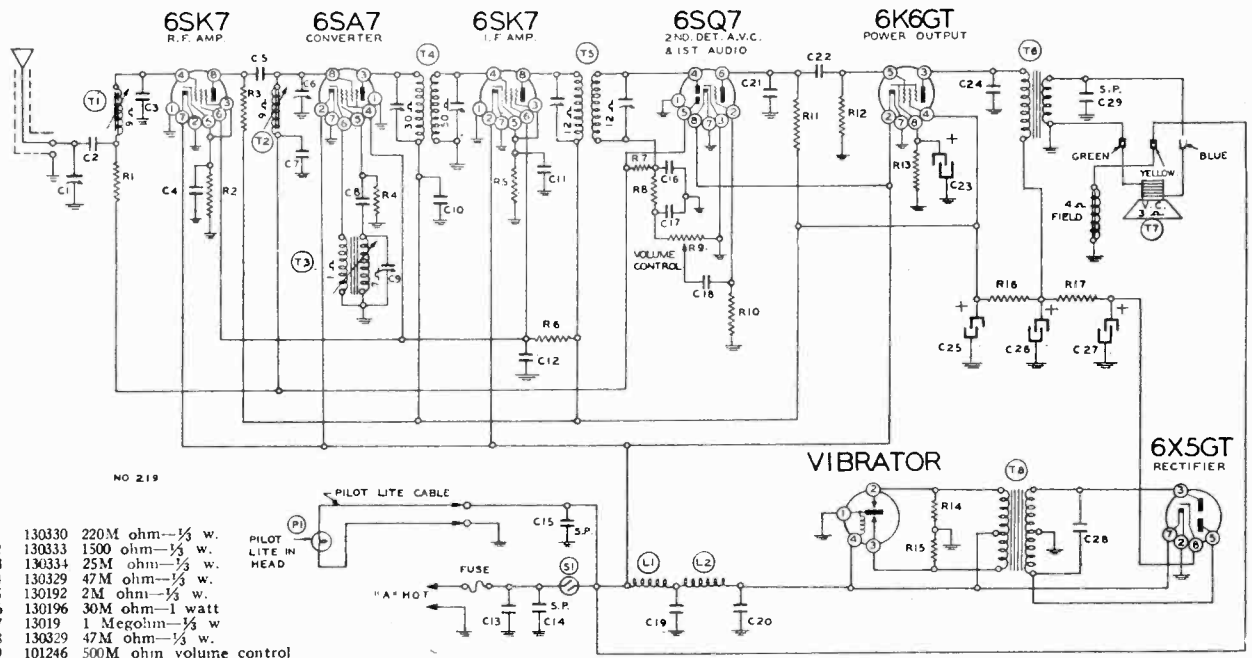
## Needles

Single-playing needles may be used for manual operation, but they are somewhat inconvenient.

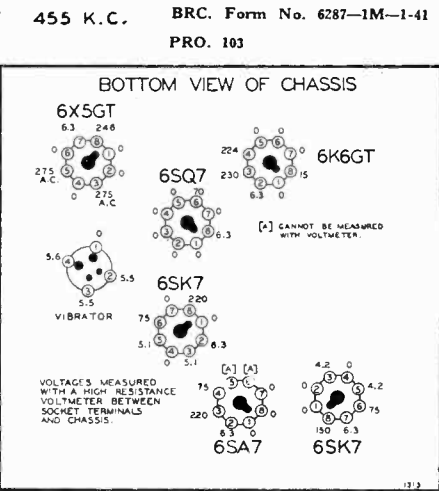
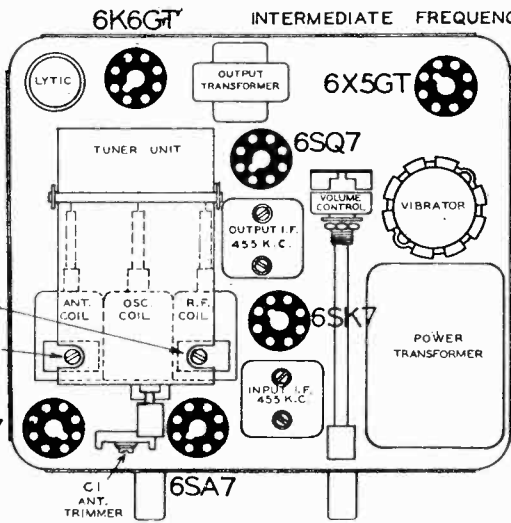
Multiple-playing needles are essential for automatic operation to conserve record life, as well as being a convenience for manual operation.

NEVER put a needle into pickup, once it has been removed, since this will result in unnecessary wear on the records—many times that resulting from normal use.

BELMONT RADIO CORP.



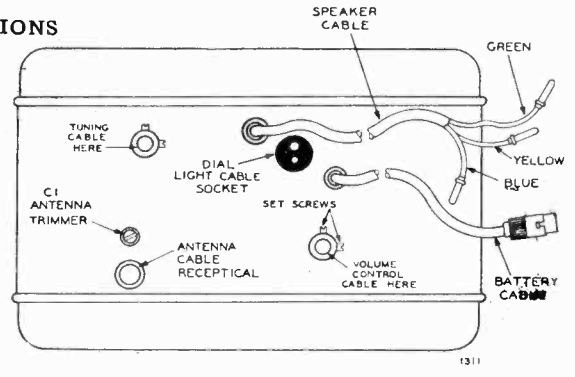
- NO 219
- R1 130330 220M ohm—1/2 w.
  - R2 130333 1500 ohm—1/2 w.
  - R3 130334 25M ohm—1/2 w.
  - R4 130329 47M ohm—1/2 w.
  - R5 130192 2M ohm—1/2 w.
  - R6 130196 30M ohm—1 watt
  - R7 130119 1 Megohm—1/2 w
  - R8 130329 47M ohm—1/2 w.
  - R9 101246 500M ohm volume control
  - R10 130257 5 megohm—1/2 w.
  - R11 13011 250M ohm—1/2 w.
  - R12 13019 1 Megohm—1/2 w.
  - R13 130267 550 ohm—1/2 w.
  - R14 130168 100 ohm—1/2 w.
  - R15 130168 100 ohm—1/2 w.
  - R16 130199 1500 ohm—1 watt
  - R17 130168 100 ohm—1/2 w.
  - C1 124157 Antenna Trimmer
  - C2 100127 .01 x 120 v.
  - C3 129172 .0001 Ceramicon
  - C4 100128 .05 x 120 v.
  - C5 129145 .00001 Ceramicon
  - C6 124159 R.F. Trimmer
  - C7 100129 .02 x 120 v.
  - C8 100172 .0001 Ceramicon
  - C9 124158 Oscillator Trimmer
  - C10 1001 1 x 400 v.
  - C11 100128 .05 x 120 v.
  - C12 10053 25 x 400 v.
  - C13 10031 .5 x 120 v.
  - C14 115687 Spark Plate
  - C15 115710 Spark Plate
  - C16 129165B .00005 Mica
  - C17 129165B .00005 Mica
  - C18 100127 .01 x 120 v.
  - C19 10031 .5 x 120 v.
  - C20 10031 .5 x 120 v.
  - C21 100130 .00025 x 400 v.
  - C22 100130 .02 x 400 v.
  - C23 11975 10.0 mfd. x 25 volt lytic
  - C24 10987 .01 x 600 v.
  - C25 119120 15.0 mfd. x 350 v. lytic
  - C26 119120 15.0 mfd. x 350 v. lytic
  - C27 119120 15.0 mfd. x 350 v. lytic
  - C28 100100 .008 x 1600 v.
  - C29 115710 Spark Plate



- CHASSIS VIEW  
SHOWING TRIMMER POSITIONS
- C16 and C17 are in same unit.  
C21 and C22 are in same unit.  
C25, C26, and C27 are in same unit.

**SPECIFICATIONS**

- Battery Drain - - - - - 7 Amps.
- Power Output - - - - - 1.8 Watts Undistorted
- Sensitivity for 1 Watt Output - - 6 Microvolt Average
- Selectivity - 38 KC Broad at 1000 Times Signal at 1000 KC
- Tuning Frequency Range - - - - - 540 to 1600 KC
- Intermediate Frequency - - - - - 455 KC
- Speaker - - - - - 6 in. Electro Dynamic



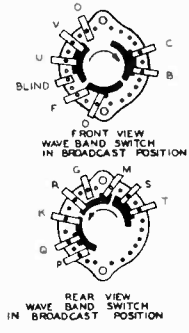
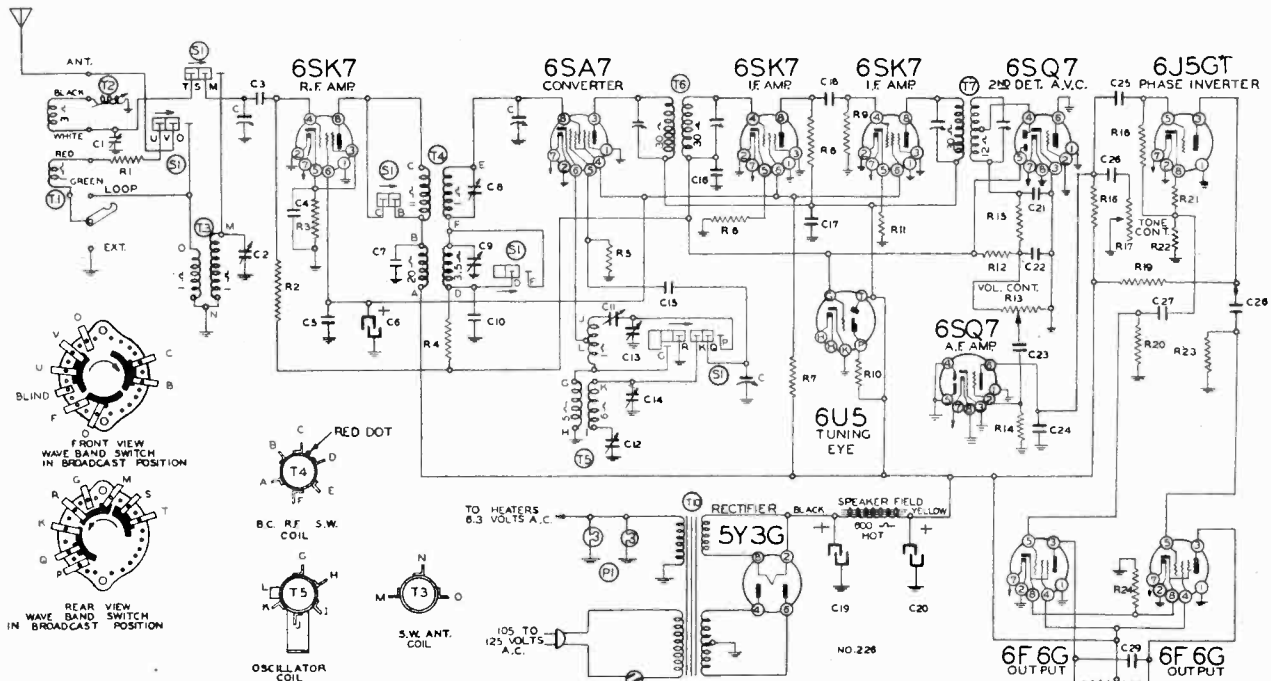
• Dummy antennas—1 mf., 35 mmf.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Remote Tuner Dial Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 I. F. Tube	Set dial at 1400 Kc.	See Chassis View	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Grid of 6SA7 I. F. Tube	Set dial at 1400 Kc.	See Chassis View	Input I. F.	Adjust to maximum output
BROAD- CAST BAND	1600 Kc.	35 mmf.	Antenna lead	Set dial at 1600 Kc.	Trimmer C9, C6, C1 See Chassis View	Oscillator R. F. antenna	Adjust to maximum output
	1400 Kc.	35 mmf.	Antenna lead	Set dial at 1400 Kc.	Rotate cores of antenna and R. F. coils	Antenna and R. F.	Adjust to maximum output



MODEL 1131, Series A

BELMONT RADIO CORP.



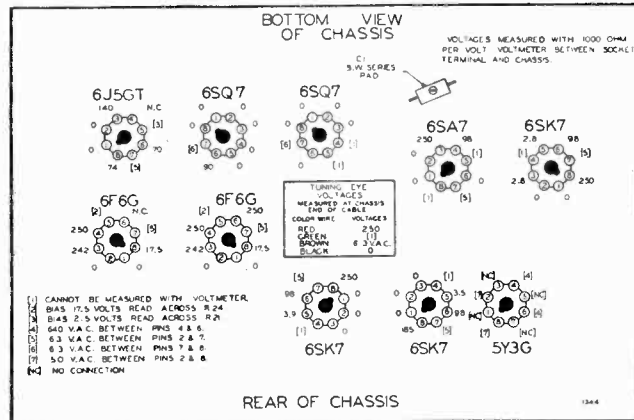
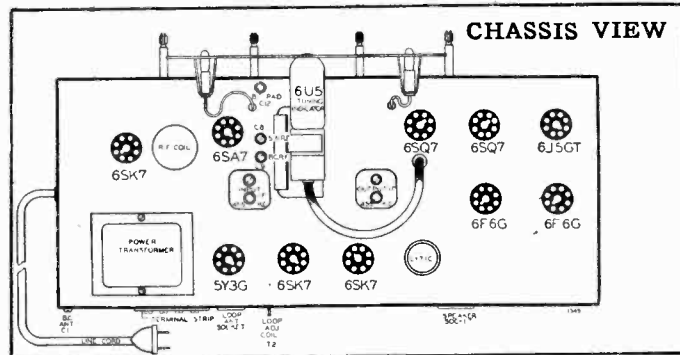
RESISTORS

- R1 13024 400 ohms— $\frac{1}{2}$  w.
- R2 13019 1 megohm— $\frac{1}{2}$  w.
- R3 13099 300 ohms— $\frac{1}{2}$  w.
- R4 1305 300M ohm— $\frac{1}{2}$  w.
- R5 130208 40M ohm— $\frac{1}{2}$  w.
- R6 13054 500 ohm— $\frac{1}{2}$  w.
- R7 130304 12M ohm—2 w.
- R8 130263 12M ohm— $\frac{1}{2}$  w.
- R9 13020 100M ohm— $\frac{1}{2}$  w.
- R10 1 megohm—in eye socket
- R11 13054 500 ohm— $\frac{1}{2}$  w.
- R12 130170 3 megohm— $\frac{1}{2}$  w.
- R13 101214 Volume control (500M ohm)
- R14 130225 15 megohm— $\frac{1}{2}$  w.
- R15 13012 50M ohm— $\frac{1}{2}$  w.
- R16 13011 250M ohm— $\frac{1}{2}$  w.
- R17 101213 Tone control (1 megohm)
- R18 13019 1 megohm— $\frac{1}{2}$  w.
- R19 13020 100M ohm— $\frac{1}{2}$  w.
- R20 1303 500M ohm— $\frac{1}{2}$  w.
- R21 13043 2500 ohm— $\frac{1}{2}$  w.
- R22 13020 100M ohm— $\frac{1}{2}$  w.
- R23 1303 500M ohm— $\frac{1}{2}$  w.
- R24 130311 300 ohm—1 w.

CONDENSERS

- C 102129 Three gang variable condenser
- C1 124132 B.C. antenna trimmer
- C2 124117 S.W. antenna trimmer
- C3 1292 .0005 mica
- C4 10020 .1 x 200 v.
- C5 100117 .25 x 400 v.
- C6 119124 10 mfd. lytic—350 w. v.
- C7 129160 .0004 mica
- C8 124131 S.W. R.F. trimmer
- C9 124131 B.C. R.F. trimmers
- C10 10026 .02 x 400 v.
- C11 129156 .0024 compression S.W. pad
- C12 129157 .000525 compression B.C. pad
- C13 124130 S.W. oscillator trimmer
- C14 124130 B.C. oscillator trimmer
- C15 12939 .00005 mica
- C16 10026 .02 x 400 v.
- C17 100117 .25 x 400 v.
- C18 1292 .0005 mica
- C19 119124 25 mfd. lytic—450 w. v.
- C20 119124 25 mfd. lytic—450 w. v.
- C21 1295 .0001 mica
- C22 1295 .0001 mica
- C23 10025 .002 x 600 v.
- C24 12912 .00025 mica
- C25 10026 .02 x 400 v.
- C26 10011 .01 x 400 v.
- C27 1009 .05 x 200 v.
- C28 10013 .05 x 400 v.
- C29 10071 .004 x 600 v.

- T1 111240 Loop antenna assembly
  - T2 111153 Loop adjustable coil
  - T3 111176 S.W. antenna coil
  - T4 10957 B.C. S.W.—R.F. coil
  - T5 110149 B.C. S.W. oscillator coil
  - T6 108169I Input I.F. 465 kc.
  - T7 108130D Output I.F. 465 kc.
  - T8 10554B Output transformer
  - T9 114192B 10" dynamic speaker (600 ohm field)
  - T10 104202 Power transformer
  - S1 125111 Wave band switch
  - S2 On-off switch on volume control
  - P1 10794 (2) pilot light bulbs T-44
- C6, C19 and C20 in one unit  
C8 and C9 in one unit  
C13 and C14 in one unit



# ALIGNMENT PROCEDURE

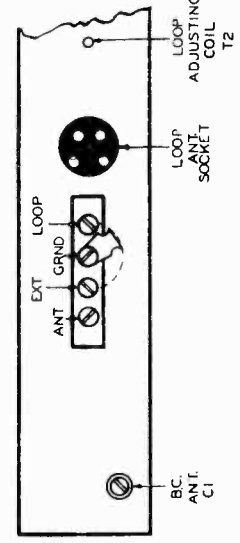
- Volume control—Maximum all adjustments.
  - Connect radio ground to ground post of signal generator with a short heavy lead.
  - Connect dummy antenna value in series with generator output lead.
- The following equipment is required for aligning.
- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
  - 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.	455 Kc.	.1 MFD.	Grid of 6SK7 I. F.	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Grid of 6SA7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top	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 C13	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmers C8, C2	Short Wave R. F. and S. W. Antenna	Adjust to maximum output
	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	Trimmer C11 (See voltage chart)	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "C")
BROAD-CAST BAND (See Note A)	1580 Kc.	200 mmf.	Grid of 6SK7 R. F. Tube	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C14	Broadcast oscillator	Adjust to maximum output
	540 Kc.	200 mmf.	Grid of 6SK7 R. F. Tube	Broadcast	Set Dial at 540 Kc. (Plates in Mesh)	Trimmer C12	Broadcast oscillator series pad	Adjust to maximum output
	1400 Kc.	200 mmf.	Grid of 6SK7 R. F. Tube	Broadcast	Set Dial at 1400 Kc.	Trimmer C9	Broadcast K. F.	Adjust to maximum output
LOOP ALIGN-MENT (See Note B)	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	Trimmer C1	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer T2	Iron Core Tracking Coil	Adjust to maximum output

NOTE "A"—The signal generator is connected to the "ANT." and "GND." terminals on the rear of the chassis when aligning the Short Wave Band and to the grid of the 6SK7 R. F. Tube and ground terminal when setting the Broadcast Band oscillator end frequencies, (1580 and 540 K. C.).

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

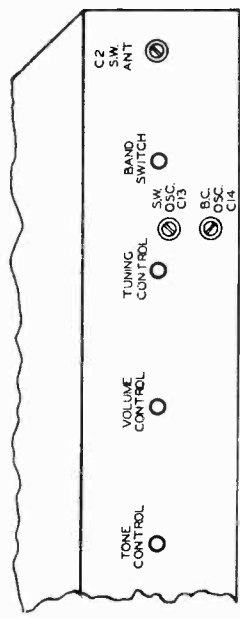
NOTE "B"—Loop alignment is made with the chassis mounted in the cabinet and the loop antenna connected to the terminal board. The signal generator is connected to



**ANT. & GROUND TERMINALS**—When using an external antenna and ground, move the metal strap shown above and fasten it under the screw marked "Ext."

The antenna and ground wires should then be connected to the terminals marked "Ant." — "Grnd."

**Tuning Frequency Range Broadcast Band - 540 to 1580 KC**  
**Short Wave Band - 5.5 to 18.5 MC**



TRIMMER VIEW—FRONT OF CHASSIS

1

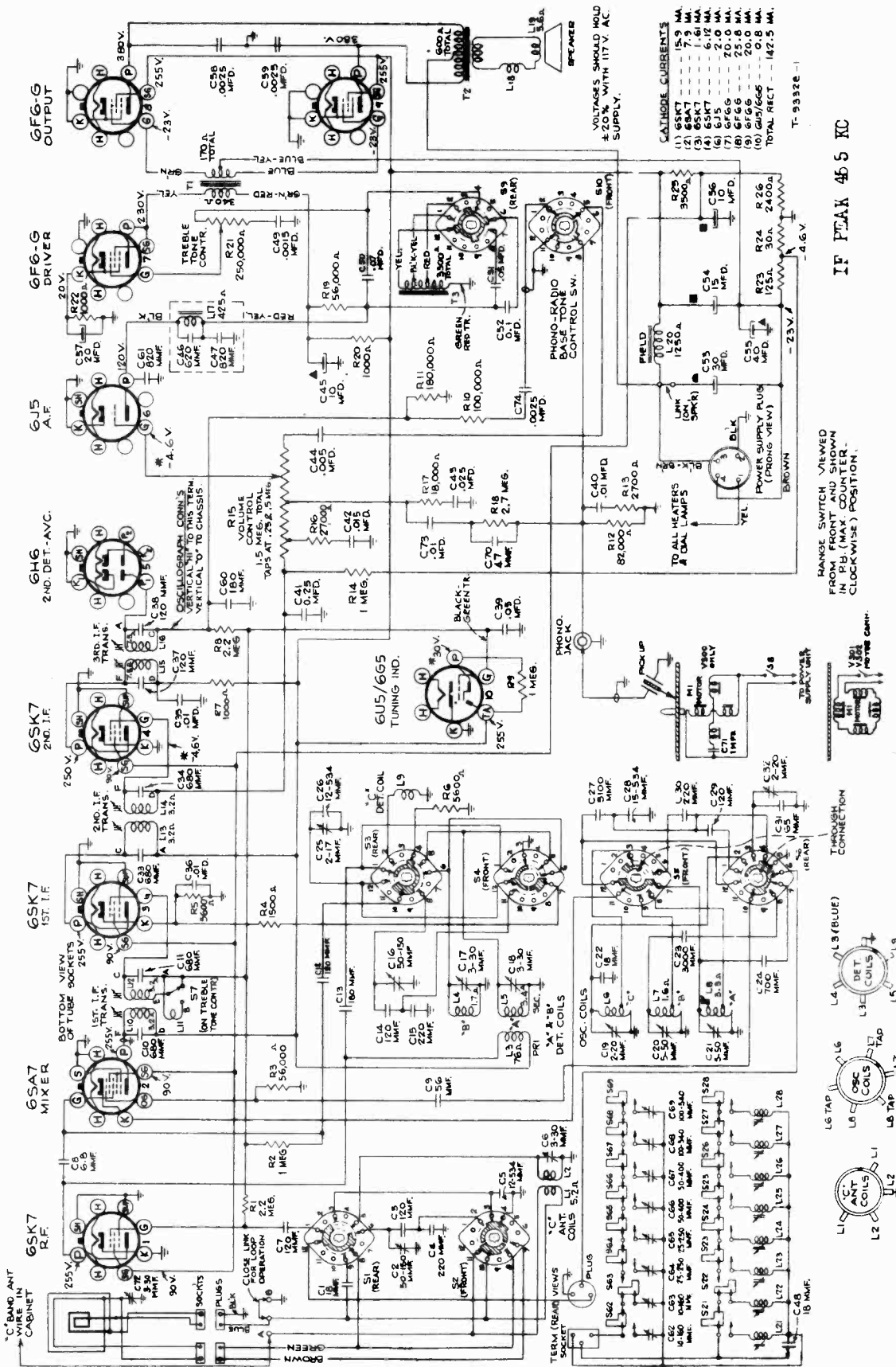
2

3

4

# BRUNSWICK RADIO DIV. — RADIO & TELEVISION, INC.

MODELS 275, 276, 277



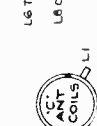
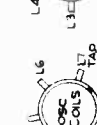
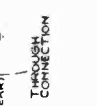
CATHODE CURRENTS

(1) 6SK7	15.9 MA
(2) 6SA7	7.9 MA
(3) 6SK7	1.6 MA
(4) 6SK7	6.12 MA
(5) 6SK7	7.0 MA
(6) 6SK7	7.0 MA
(7) 6F6-G	20.0 MA
(8) 6F6-G	25.8 MA
(9) 6F6-G	20.0 MA
(10) 6G5/6G6	0.8 MA
TOTAL RECT.	142.5 MA

VOLTAGES SHOULD HOLD  
±20% WITH 117V. AC  
SUPPLY.

IF PEAK 46.5 KC

RANGE SWITCH VIEWED  
FROM RIGHT SIDE DOWN  
IN P1 (MAX. COUNTER-  
CLOCKWISE) POSITION.

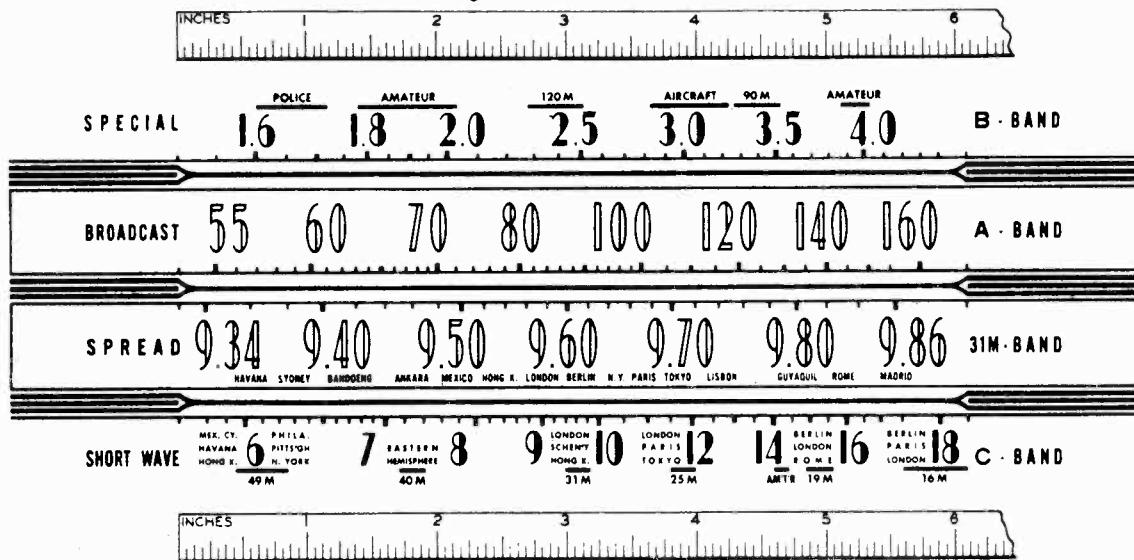


\* Voltages marked with star are actual operating values. The measured voltages will be lower, depending on the voltmeter loading.

MODELS 275, 276, 277

# BRUNSWICK RADIO DIV. RADIO & TELEVISION, INC.

## Alignment Procedure



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

**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.**—The glass tuning dial may be easily removed from the cabinet and temporarily attached to the chassis for quick reference during alignment. In the event that only the chassis is returned for service, and the cabinet with its tuning dial is left in the customer's home, the calibration scale printed in this service note can be used in conjunction with an ordinary 12-inch ruler as an accurate and convenient substitute for the regular dial.

Each method is described below.

**Using Tuning Dial.**—

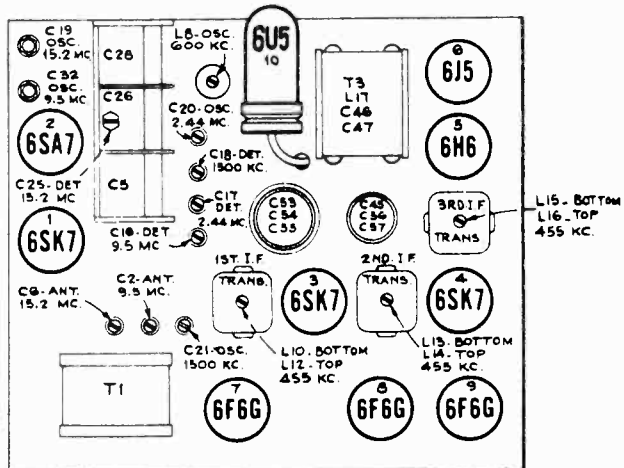
1. Slide out the flat spring clamp at each end of the dial, and remove the glass dial from the cabinet.
2. With gang in full mesh, move the dial pointer to the reference mark at the left-hand end of the dial backing plate.
3. Place the glass dial under the pointer so that the extreme left scale graduations coincide with the pointer. Use scotch tape to hold the glass dial in this position.

**Using Calibration Scale.**—

1. With gang in full mesh, move the dial pointer to the reference mark at the left-hand end of the dial backing plate.
2. Place a flat 12-inch ruler on the dial backing plate so the left-end of ruler is at the reference mark at left-end of backing plate. Temporarily fasten the ruler with scotch tape to the backing plate.
3. Refer to calibration scale printed in this service note. This is a reduced reproduction of the dial with an inch-scale drawn at top and bottom. To find the correct pointer position in inches for any desired frequency, draw a vertical line through this frequency on the calibration scale.

**Dial-Pointer Adjustment.**—After the chassis is replaced in cabinet, move the dial pointer (if necessary) so that it is at the left-hand graduation on the dial with the gang in full mesh.

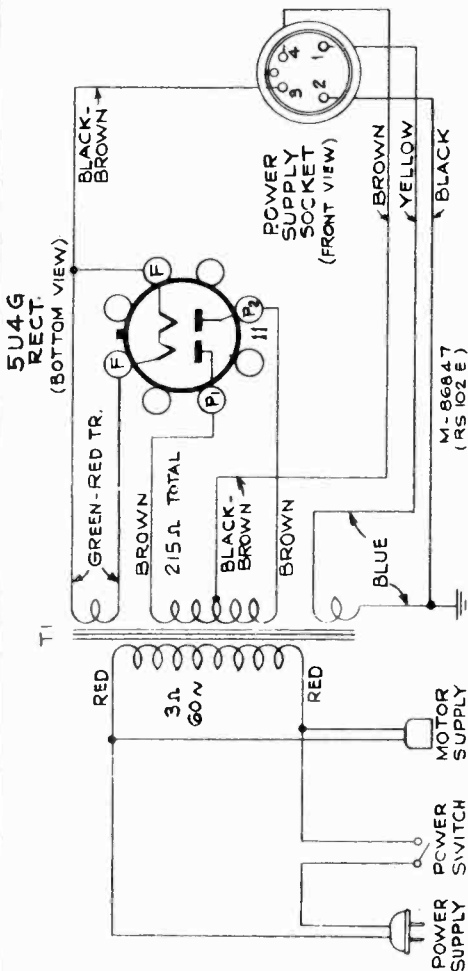
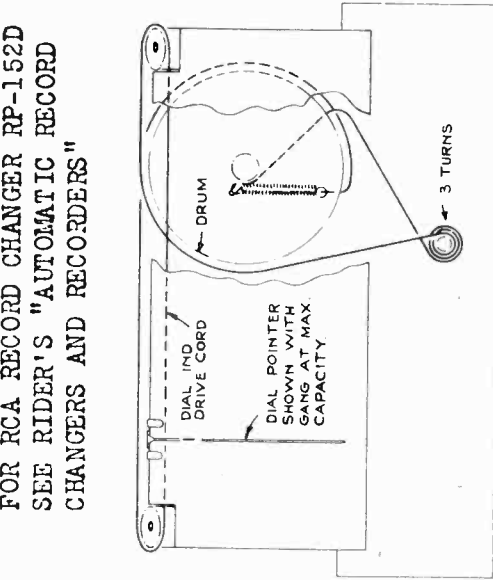
Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for maximum peak output
1	Turn "Treble Tone Control" (center knob)		counter-clockwise so that I-F is in "Sharp" position.	
2	2nd I-F grid, in series with .01 mfd.	455 kc	"A" Band Quiet Point at HF end	L15 and L16* (3rd I-F Trans.)
3	1st I-F grid, in series with .01 mfd.			L13 and L14* (2nd I-F Trans.)
4	1st-Det. grid, in series with .01 mfd.			L10 and L12* (1st I-F Trans.)
5	Turn Treble Tone Control full clockwise to "Broad" position. Response on CRO should be the conventional double-humped type. If necessary, retouch 3rd I-F transformer slightly (so as not to disturb the "Sharp" curve appreciably). Leave control in sharp position for the following steps.			
6	Ant. terminal, in series with 47 mmfd. (link closed)	15.2 mc	"C" Band 15.2 mc	C19 (osc.)** C25 (det.) C6 (ant.)
7		9.5 mc	"31M" Band 9.5 mc	C32 (osc.)** C16 (det.) C2 (ant.)
8	Rear stator of gang, in series with .01 mfd.	2.44 mc	"B" Band 2.44 mc	C20 (osc.) C17 (det.)
9		600 kc	"A" Band 800 kc	L8 (osc.) Rock in
10		1,500 kc	"A" Band 1,500 kc	C21 (osc.) C18 (det.)
11	Repeat steps 9 and 10.			
12	Install and connect chassis in cabinet. Tune in a radiated oscillator signal at 1,500 kc and peak the "A" band trimmer C72 (on loop). Rock in L8 for peak output.			



\* Adjust for coincidental curves and maximum gain.  
 \*\* Use minimum capacity peak if two peaks can be obtained. (Check for correct peak on "C" band by tuning receiver to 14.29 mc, where a weaker signal should be received.)

BRUNSWICK RADIO DIV.—  
RADIO & TELEVISION, INC.

FOR RCA RECORD CHANGER RP-152D  
SEE RIDER'S "AUTOMATIC RECORD  
CHANGERS AND RECORDERS"



Push Button Adjustment

On the 880 to 1,550 kc push-buttons the higher frequency stations may be received with No. 7 or 8 either in or out (oscillator frequency either 455 kc below or 455 kc above the station frequency). The adjustment with this core in its out position (oscillator frequency 455 kc above the station frequency) is the correct one.

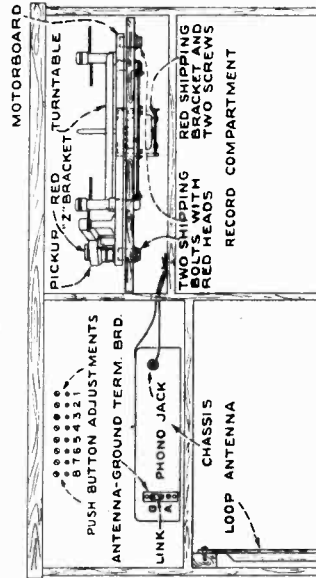
The station push buttons connect to separate magnetite-core oscillator coils and separate antenna trimmers which must be adjusted for the desired stations. Use an insulated screwdriver or alignment tool. Allow at least five minutes warm-up period before making adjustments.

In the event that the receiver is to be used with an external antenna use one or two feet of wire (as an antenna) to ensure sharp peaking during the final adjustment procedure. For loop operation, the link should be strapped across terminals on back of set. In either case the procedure is as follows:

1. Make a list of the desired stations, arranged in order from low to high frequencies.
2. Turn the range selector to "A" band, and manually tune in the first station on the list.
3. Push range selector to "Electric Tuning" (PB) position, push in station button No. 1 (extreme left). Then adjust the No. 1 oscillator core to receive the station.
4. After oscillator core is set correctly, adjust No. 1 antenna trimmer for maximum output.  
Clockwise adjustment of cores and trimmers tunes the circuits to lower frequencies.
5. Adjust for each of the remaining stations in the same manner.
6. Make a final careful adjustment of the oscillator cores and antenna trimmers.

880 TO 1030 KC	140 TO 1550 KC
1 ①	1 ①
2 ②	2 ②
3 ③	3 ③
4 ④	4 ④
5 ⑤	5 ⑤
6 ⑥	6 ⑥
7 ⑦	7 ⑦
8 ⑧	8 ⑧
9 ⑨	9 ⑨
10 ⑩	10 ⑩

TRIMMER SCREWS  
CORE RODS



POWER OUTPUT RATING

Undistorted ..... 18 W.  
Maximum ..... 20 W.  
POWER SUPPLY RATINGS  
105-125 V., 60 C. ... 200 W.  
105-125 V., 50 C. ... 200 W.  
SPREAD BAND ... 9.34-9.86 mc

FREQUENCY RANGES

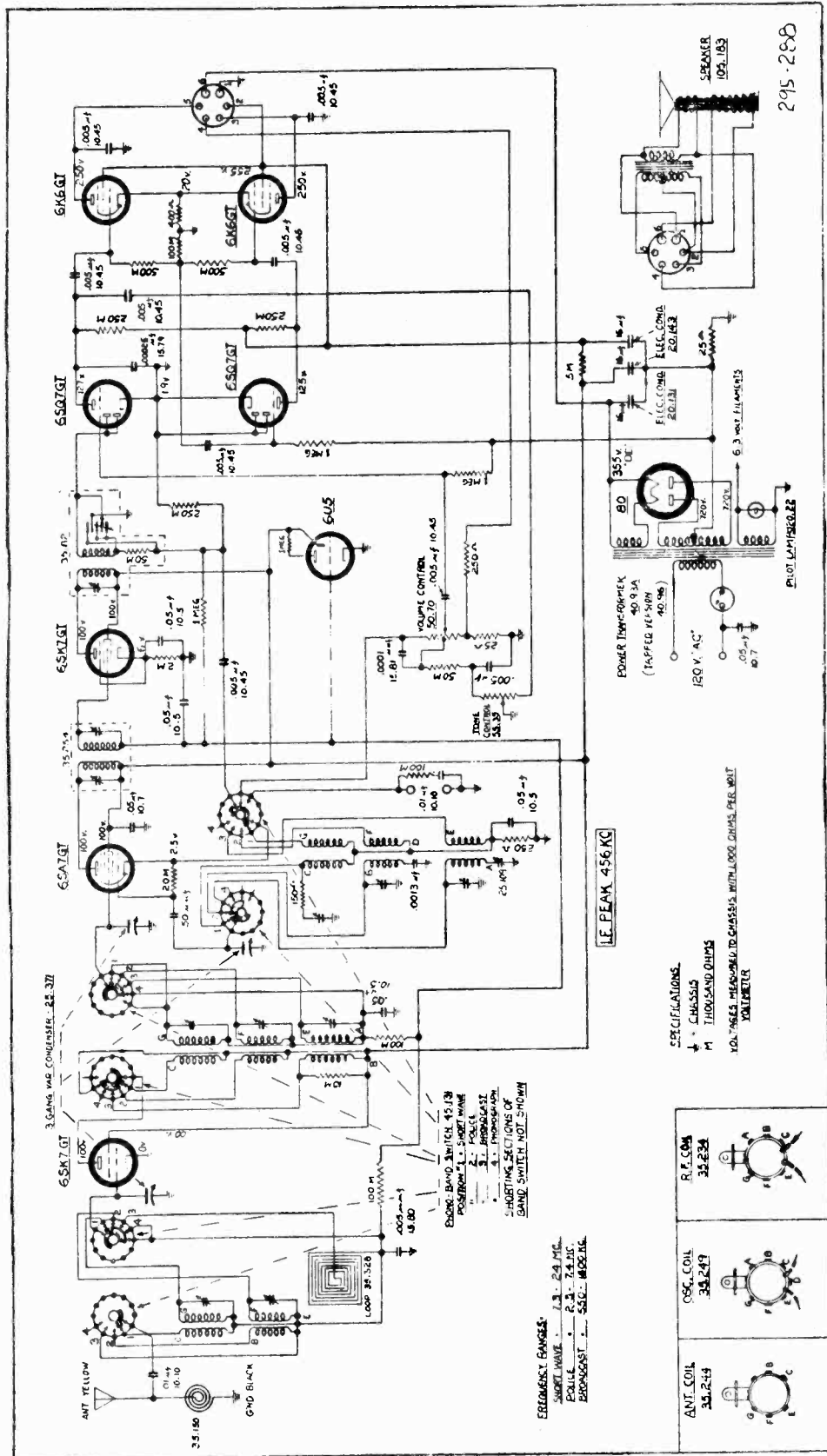
Broadcast "A" .. 540-1,600 kc  
Med. Wave "B" ... 1.55-4.0 mc  
Short Wave "C" .. 5.8-18.0 mc  
LOUDSPEAKER (RL-94-1)  
Type .. 15-in. Electrodynamic  
V.C. Imp. .. 7.2 ohms at 400 c.

BRUNSWICK RADIO DIV.—  
RADIO & TELEVISION, INC.

FOR RCA RP-160 RECORD CHANGER, SEE  
RIDER'S "AUTOMATIC RECORD CHANGERS  
AND RECORDERS".

This model is a 9 tube (including tuning eye) three wave band Super-  
heterodyne Receiver designed to operate on 105-125 Volts, 50-60 cycles  
Alternating Current (AC) only.

TUNING RANGE: 550 to 1600 kilocycles (KC) (Domestic Broadcast),  
2.3 to 7.0MC (Megacycles) (Police Call Band), 7.5 to 24.MC (Megacycles)  
(International Short Wave).



LE PEAK 456KC

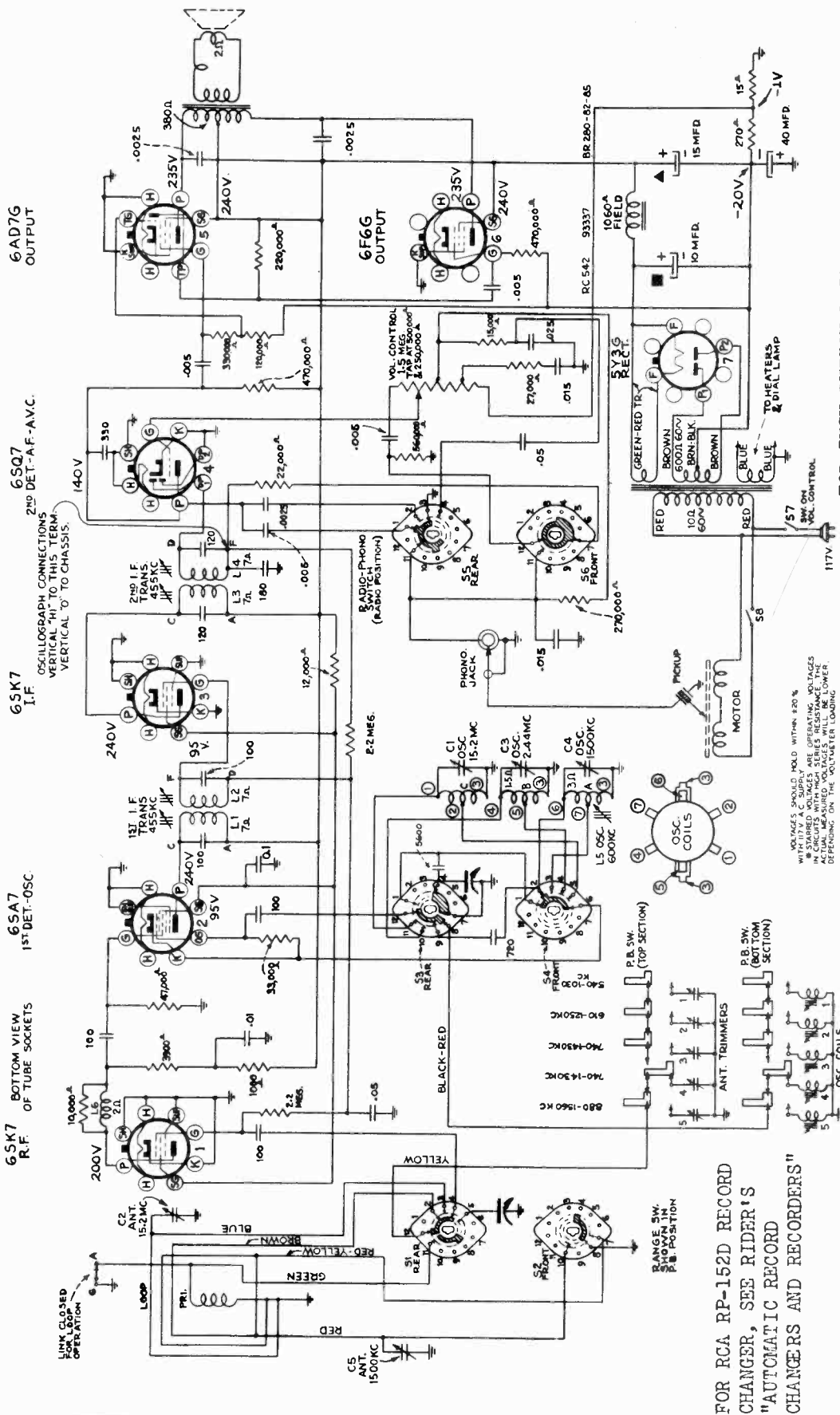
SPECIFICATIONS:  
↓ = CHASSIS  
M = THOUSAND OHMS  
VOLTS/FEET MEASURED TO CHASSIS WITH 1000 OHMS PER FOOT  
VOLUME METER

EMERGENCY RANGES:  
SHORT WAVE - 7.3 - 24 MC  
POLICE - 2.3 - 7.4 MC  
BROADCAST - 550 - 1600 KC

ANT. COIL	34-2-44	
OSC. COIL	34-2-49	
R.F. COIL	34-2-24	

295-288

BRUNSWICK RADIO DIV.—  
RADIO & TELEVISION, INC.



FOR PUSH-BUTTON DATA, SEE INDEX

**PHONOGRAPH (RP-152-D)**  
 Type ..... Automatic  
 Record Cap. . . . 8 10-in. or 7 12-in.  
 Turntable Speed ..... 78 rpm  
 Type Pickup ..... Crystal  
 Pickup imp. 100,000 ohms @ 1000 c.  
 Average O.P. 1 1/2 v. @ 1000 c. ac r 1/2 meg.

**FREQUENCY RANGES**  
 Broadcast "A" ..... 540-1,560 kc  
 Med. Wave "B" ..... 1.4-4.5 mc  
 Short Wave "C" ..... 5.8-18 mc  
**POWER SUPPLY RATINGS**  
 105-125 v., 60 c. .... 100 w.  
 105-125 v., 50 c. .... 100 w.

**LOUDSPEAKER (RL-70L-6)**  
 Diameter ..... 12 in.  
 Voice coil imp. at 400 c. 2.2 ohms  
**POWER OUTPUT RATING**  
 Undistorted ..... 4.5 w.  
 Maximum ..... 5.0 w.  
**INTERMEDIATE FREQUENCY** .... 455 kc

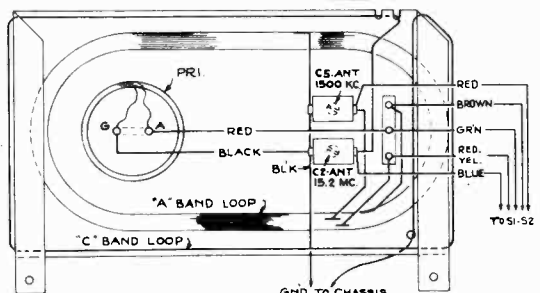
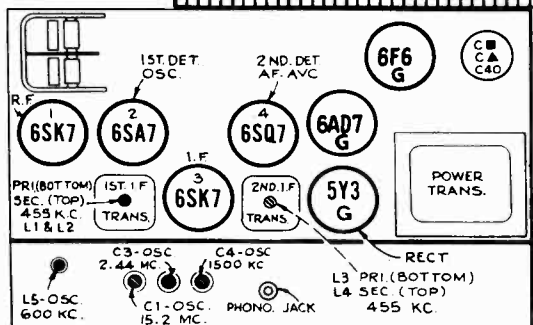
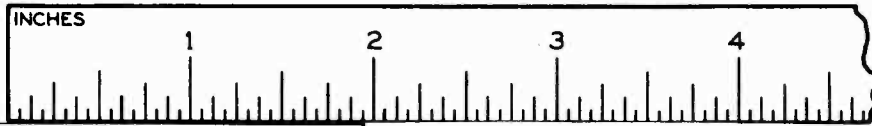
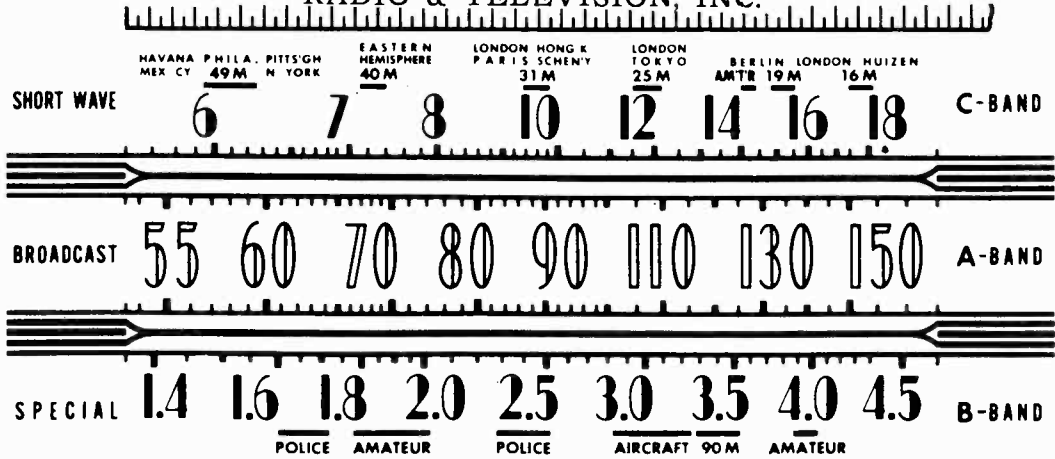
FOR RCA RP-152D RECORD CHANGER, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS"

VOLTAGES SHOULD HOLD WITHIN 20%  
 WITH STARRED VOLTAGES ARE OPERATING VOLTAGES  
 ACTUAL MEASURED VOLTAGES WILL BE LOWER,  
 DEPENDING ON THE VOLTMETER LOADING.



MODELS 280, 282, 285, 285-1

BRUNSWICK RADIO DIV.—  
RADIO & TELEVISION, INC.



**Calibration Scale.**—The glass tuning dial may be easily removed from the cabinet and temporarily attached to the chassis for quick reference during alignment. Or, if necessary, the calibration scale printed in this service note can be used in conjunction with an ordinary 12-inch ruler as an accurate and convenient substitute for the regular dial.  
 Each method is described below.

- Using Tuning Dial.**—
- Slide out the flat spring clamp at each end of the dial, and remove the glass dial from the cabinet.
  - With gang in full mesh, move the dial pointer to the reference mark at the left-hand end of the dial backing plate.
  - Place the glass dial under the pointer so that the extreme left scale graduations coincide with the pointer. Use scotch tape to hold the glass dial in this position.
  - After completion of the alignment, replace the glass dial

in cabinet, taking care that the fibre light shields are in correct position at ends of dial.

- Using Calibration Scale.**—
- With gang in full mesh, move the dial pointer to the reference mark at the left-hand end of the dial backing plate.
  - Place a flat 12-inch ruler on the dial backing plate so the left-end of ruler is at the reference mark at left-end of backing plate. Temporarily fasten the ruler with scotch tape to the backing plate.
  - Refer to calibration scale printed in this service note. This is a reproduction of the dial with an inch-scale drawn at top and bottom. To find the correct pointer position in inches for any desired frequency, draw a vertical line through this frequency on the calibration scale. For example, 1,500 kc is approximately 4 inches from the reference mark.

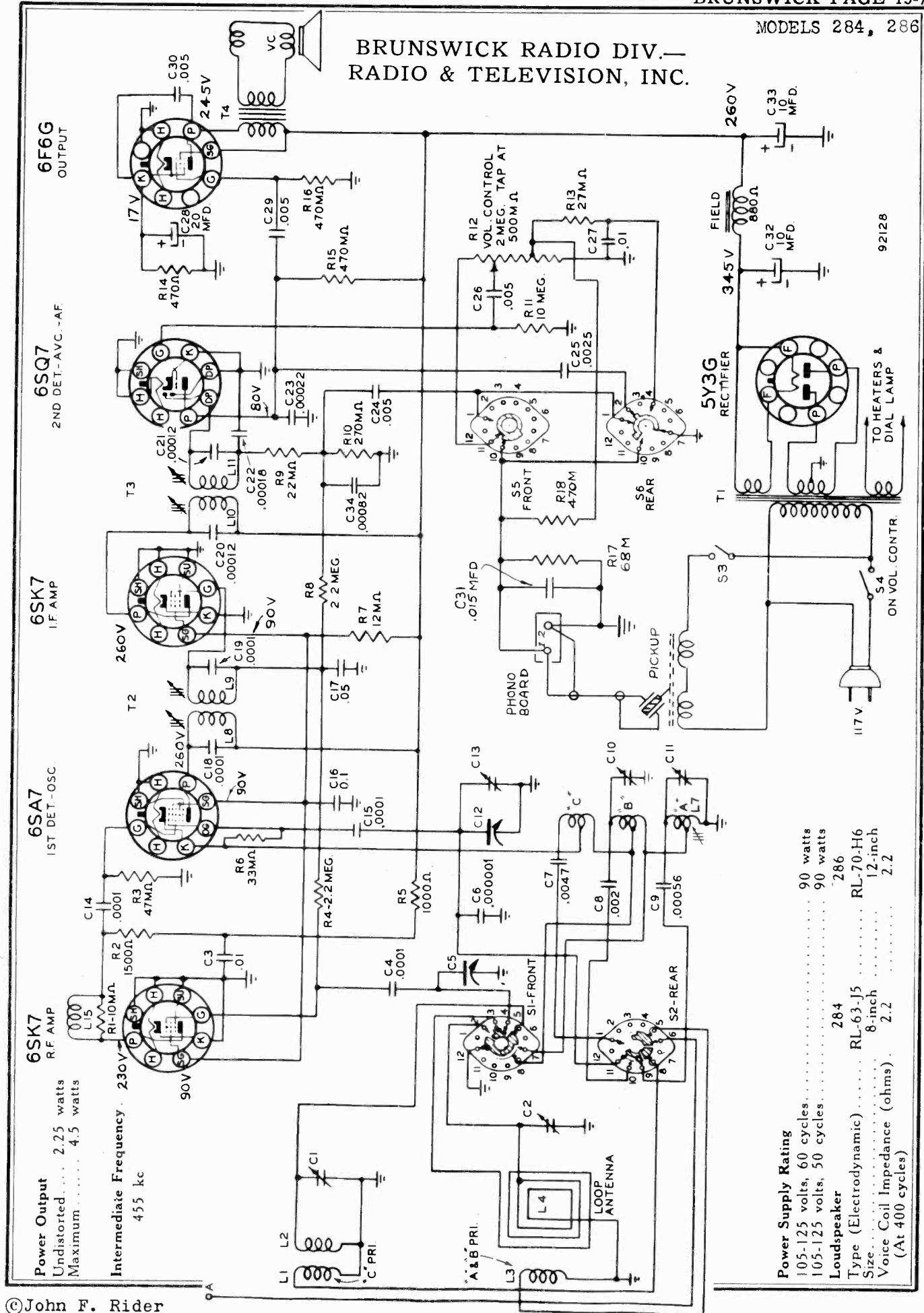
**Dial-Pointer Adjustment.**—After the chassis is replaced in cabinet, move the dial pointer (if necessary) so that it is at the left-hand graduation on the dial with the gang in full mesh.

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	I-F grid, in series with .01	455 kc	"A" band, Quiet point at 1,500 kc end of dial	L3 and L4 (2nd I.F. trans.)
2	1st-Det. grid, in series with .01			L1 and L2 (1st I.F. trans.)
3	Antenna terminal, in series with 300 ohms (link open)	15.2 mc	15.2 mc "C" band	C1 (osc.)* C2 (ant.)
4		2.44 mc	2.44 mc "B" band	C3 (osc.) Rock in
5	Antenna terminal, in series with 200 mmfd. (link open)	1,500 kc	1,500 kc "A" band	C4 (osc.) C5 (ant.)
6		600 kc	600 kc "A" band	L5 Rock in
7	Repeat steps 5 and 6.			

\* Use minimum capacity peak if two peaks can be obtained. Check to determine that the correct peak has been used, by tuning receiver to 14.29 mc, where a weaker signal should be received.

Note: Oscillator tracks above signal on all bands.

BRUNSWICK RADIO DIV.—  
RADIO & TELEVISION, INC.



**Power Output**  
Undistorted . . . . . 2.25 watts  
Maximum . . . . . 4.5 watts

**Intermediate Frequency** . . . . . 455 kc  
230V

- Power Supply Rating**  
105-125 volts, 60 cycles . . . . . 90 watts  
105-125 volts, 50 cycles . . . . . 90 watts
- Loudspeaker**  
284  
Type (Electrodynamic) . . . . . RL-63-J5  
Size . . . . . 8-inch  
Voice Coil Impedance (ohms) . . . . . 2.2  
(At 400 cycles)
- 286  
Type (Electrodynamic) . . . . . RL-70-H6  
Size . . . . . 12-inch  
Voice Coil Impedance (ohms) . . . . . 2.2  
(At 400 cycles)

MODELS 284, 286

BRUNSWICK RADIO DIV.—  
RADIO & TELEVISION, INC.

Alignment Procedure

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	L10 and L11 (2nd I-F trans.)
2	6SA7 grid in series with .01 mfd.			L8 and L9 (1st I-F trans.)
3	Ant. terminal in series with 47 mmfd.	15 mc	15 mc "C" band	C13 (osc.)* C1 (ant.)
4	Ant. terminal in series with 300 ohms	2.44 mc	2.44 mc "B" band	C10 (osc.)*
5	Ant. terminal in series with 200 mmfd.	1,500 kc	1,500 kc "A" band	C11 (osc.) C2 (ant.)
6		600 kc	600 kc "A" band	L7 (osc.) Rock gang
7	Repeat steps 5 and 6.			

\* Use minimum capacity peak if two peaks can be obtained.

The oscillator tracks above the signal frequency on all bands.

**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.**—The glass tuning dial may be easily removed from the cabinet and temporarily attached to the chassis for quick reference during alignment. Or, if necessary, the calibration scale printed in this service note can be used in conjunction with an ordinary 6-inch ruler as an accurate and convenient substitute for the regular dial.

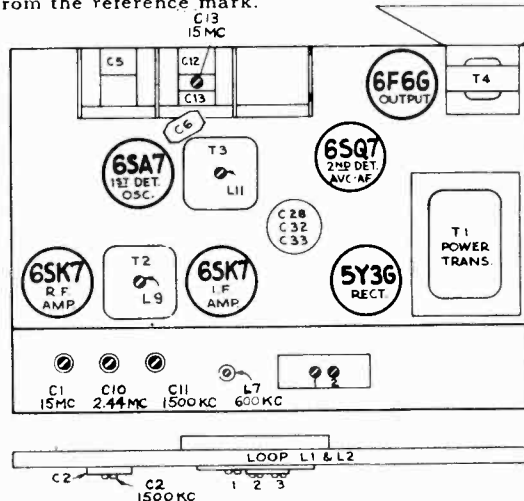
Using Calibration Scale:

1. With gang in full mesh, move the dial pointer to the reference mark at the left-hand end of the dial backing plate.
2. Place a flat 6-inch ruler on the dial backing plate so the left-end of the ruler is at the reference mark at the left-end of backing plate. Temporarily fasten the ruler with scotch tape to the backing plate.
3. Refer to calibration scale printed in this service note. This is a reduced reproduction of the dial with an inch-scale drawn at top and bottom. To find the correct

Frequency Range

Standard Broadcast (A)..... 540-1,600 kc  
Medium Wave (B)..... 1.6-4.5 mc  
Short Wave (C)..... 5.8-18 mc

pointer position in inches for any desired frequency, draw a line through this frequency on the calibration scale. For example, 1,500 kc is approximately 3 3/4 inches from the reference mark.



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:

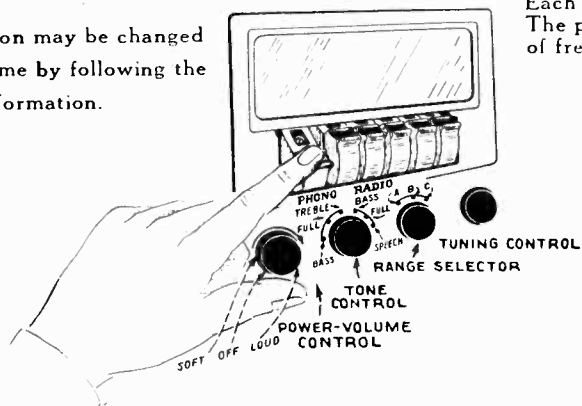
Cut out the tabs for your six favorite stations and arrange them in order of frequency in the recesses on the push-buttons.

Press down on the first push-button and hold it down. The screw in back of the push-button is now accessible and should be loosened one or two turns with a screwdriver.

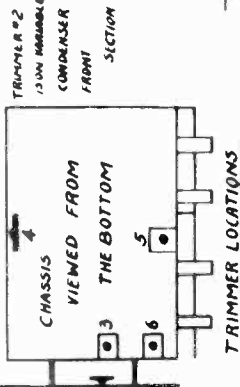
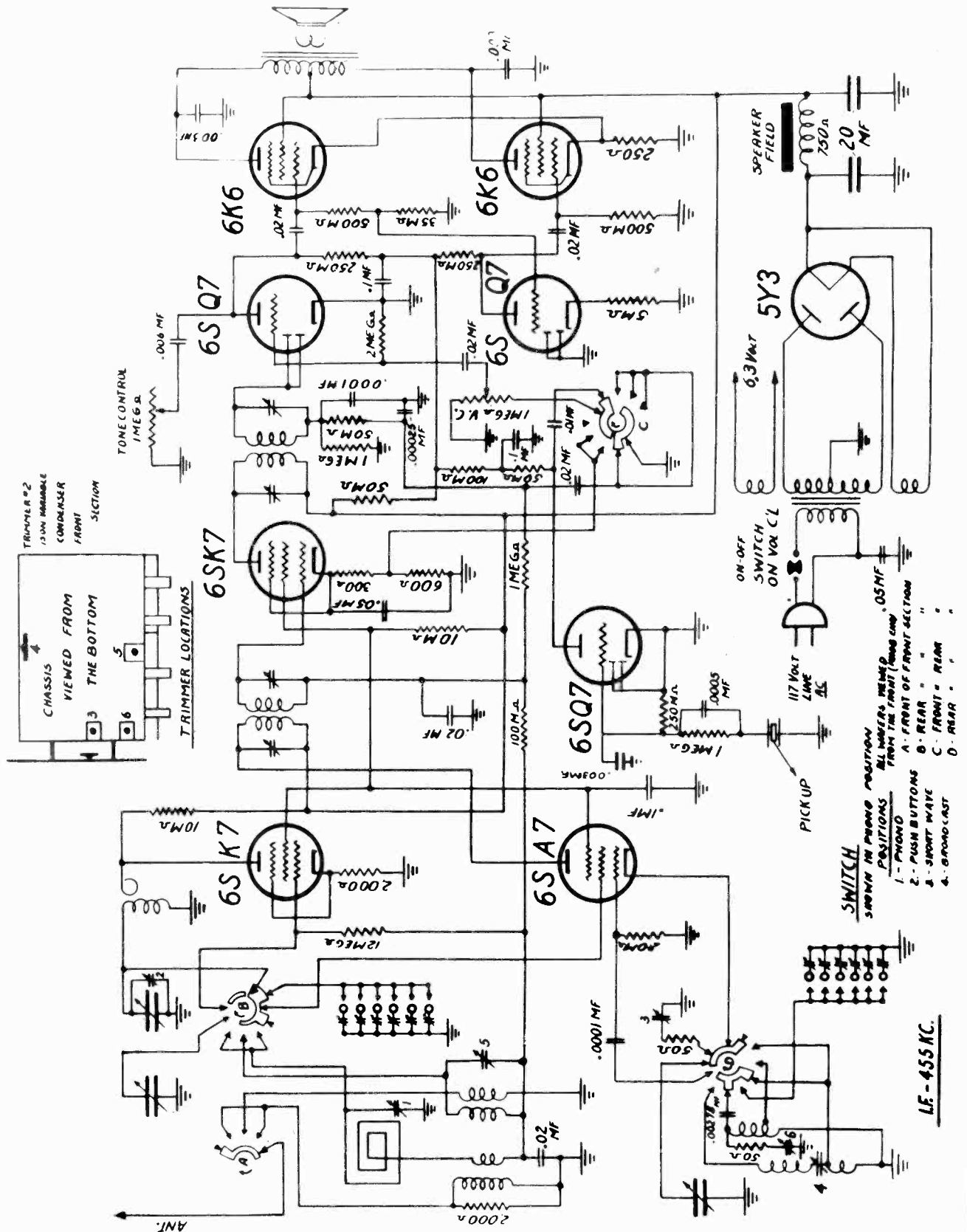
While still holding down the push-button, tune in the first station represented by the station tab with the tuning knob, by Dial Tuning. When the station is heard at its best, tighten up the screw in back of the push-button. Now let go of the push-button, turn the tuning knob in order to detune and again press down the button and let go. The station should be heard again. If not, repeat the above adjustment process until reception is satisfactory.

Proceed to set up the other five push-buttons in a similar manner.

A station may be changed at any time by following the above information.



BRUNSWICK RADIO DIV.—  
RADIO & TELEVISION, INC.



SWITCH  
POSITIONS IN PHONE POSITION  
SHOWN IN FRONT SECTION  
ALL NUMBERS REFERRED  
FROM THE FRONT SECTION

1 - PHONO  
2 - PUSH BUTTONS  
3 - SHORT WAVE  
4 - BROADCAST

A - FRONT OF FRONT SECTION  
B - REAR " "  
C - FRONT - REAR " "  
D - REAR " "

LF - 455 KC.

MODELS 289, 291, 294

BRUNSWICK RADIO DIV.—  
RADIO & TELEVISION, INC.

rotate the lower (oscillator) orange screw till the same program is received. Check this by switching back to dial tuning. (Broadcast position on the band switch). When this has been determined, the signal may now be clarified by carefully adjusting the trimmer of the same color (orange) directly above it. Now repeat the operation by turning in, on the dial, the next station, of a higher frequency that it is desired to set up; and so on until all six have been aligned. Note that there are two BLUE and two BROWN SETS of screws. Each button will cover only a range of frequencies as noted above, and therefore a group of stations falling within these limits must be selected. The antenna trimmer in each case is directly over the corresponding oscillator.

The station markers may now be inserted into the recesses in the buttons and the celluloid covers forced in over them.

## ALIGNMENT INSTRUCTIONS

Re-alignment of this receiver should not be attempted unless all other possible causes of faulty operation have been thoroughly investigated. An accurately calibrated signal generator which will cover the necessary wave bands, and an output meter for indicating the effect of adjustments are required.

During the alignment procedure all adjustments should be made under the following conditions:

- 1) Line Voltage as indicated on instruction sheet.
- 2) Volume & Tone control at maximum volume positions.
- 3) Minimum Input from signal generator.

If this procedure is not adhered to, all adjustments will appear very broad. This is due to the action of the automatic volume control.

**I. F. Adjustment** - The signal generator is set at 455 KC and is connected to the grid of the converter tube (6SA7) through a .5 MFD condenser. Be sure to connect a resistor of approximately 25,000 Ohms between the converter grid and ground so that the grid circuit is at ground potential for D. C. It is unnecessary to disconnect the grid from the rest of the circuit.

**The Input I. F.** Transformer trimmers - are both adjusted for maximum output as indicated by the output meter connected across either the voice coil or the primary coil of the loud speaker.

**The Output I. F.** Transformer trimmers - are adjusted for maximum output as indicated on the output meter. The Input I. F. should now be rechecked for maximum output.

**Short Wave** - Set the band switch to the third position which is the short wave band. Connect the signal generator thru a standard dummy antenna to the antenna and ground leads of the receiver. Set the generator at 17 MC; turn the condenser until a response is indicated. The pointer should coincide with the 17 MC mark on the dial. Adjust the short wave antenna trimmer (#5, see diagram) for maximum output while rocking the condenser gang from left to right.

## Broadcast Band

It is desirable to align this band on the loop. The signal generator is coupled to the receiver by means of a 2 or 3 turn loop. Set the band switch in the broadcast position and condenser plates completely out of mesh. Set the signal generator at 1650 KC and adjust the broadcast oscillator trimmer (#3, see diagram) until a response is indicated on the output meter. The generator is now set at 1400 KC. Turn the variable condenser until a response is indicated. The dial pointer should now coincide with the 1400 KC mark on the dial. Now adjust the broadcast inter-stage trimmer (#2) for maximum. This trimmer is located on the right side of the front section of the variable condenser. Set the generator at 800 KC and rotate the variable condenser until a response is indicated. Adjust the broadcast oscillator padder condenser (#4) for maximum response while "Rocking" the gang condenser. The High frequency adjustment should now be re-checked.

RADIO-PHONOGRAPH COMBINATIONS  
MODELS 289-291-294

These models employ a 9 tube radio chassis in conjunction with a new type automatic record changer, using a feather-weight pickup which reduces record wear and objectionable needle scratch. A permanent needle is built into the phono pickup so that no other needles need be used.

This combination will operate only on 105-125 volt, 60 cycle current.

For PHONOGRAPH operation, the band switch knob is rotated all the way to the left (counter-clockwise). The records are stacked up on the changer, and the turntable switch is slid to the "on" position. Push the lever adjacent to it, momentarily to "start", and operation will commence. The Volume and Tone controls are then set as desired.

For PUSH BUTTON operation, the Band Switch is turned to the second position. Any of the six pre-set stations may now be tuned in by depressing the corresponding button. The procedure for setting up these buttons will be described later.

The Short Wave band covers the frequencies from 5.5 to 18.5 Megacycles. The channels used for local and international short wave broadcasts are indicated by meter blocks and are designated on the lower part of the dials as 16M, 19M, 25M, 31M, 39M and 49M. Tuning is the same as for the regular broadcasts except that greater care must be exercised since tuning is extremely sharp and many stations may be passed over if the tuning knob is rotated too rapidly.

The Broadcast band covers the range from 535 to 1650 kilocycles. All of the American broadcast stations and some police calls may be heard on this band.

In tuning on either band, for best results, the station should be tuned for maximum. The volume is then reduced to the desired level. Never reduce volume by detuning, as distortion and noisy reception may result.

## Push Button Alignment

To set up the receiver for push button operation, proceed as follows:

Looking into the back of the cabinet directly behind the buttons, above the dial will be seen two rows of screws. These are painted in various colors. Viewed from the rear these are, from left to right, YELLOW, BLUE, BROWN, BROWN, and ORANGE. Each of these may be adjusted to cover a band of frequencies as tabulated below:

Yellow	- 850 to 1570 kilocycles
Blue	- 850 to 1450 kilocycles
Brown	-- 570 to 1250 kilocycles
Orange	- 535 to 950 kilocycles

The bottom row of adjusting screws are the oscillator trimmers which determine the frequency of the station to be received. The upper row is for the antenna adjustment.

The simplest procedure, when a suitable oscillator is available, is to feed the desired frequency into the antenna, depress the button; turn the oscillator trimmer till the signal is picked up, then reduce the output from the oscillator so that it is just audible. Now adjust the antenna trimmer for maximum. Proceed to the next button and repeat the operation.

In the absence of such equipment, turn the Band Switch all the way to the right for dial tuning of broadcast stations. Start at the low frequency end of the band and tune in the program of the station it is desired to receive. Note the frequency of this station. Without touching the tuning, throw the Band Switch over to the second or Push Button position. Depress the first button, corresponding to the orange screws. Slowly

BUICK MOTOR

MODEL 980650

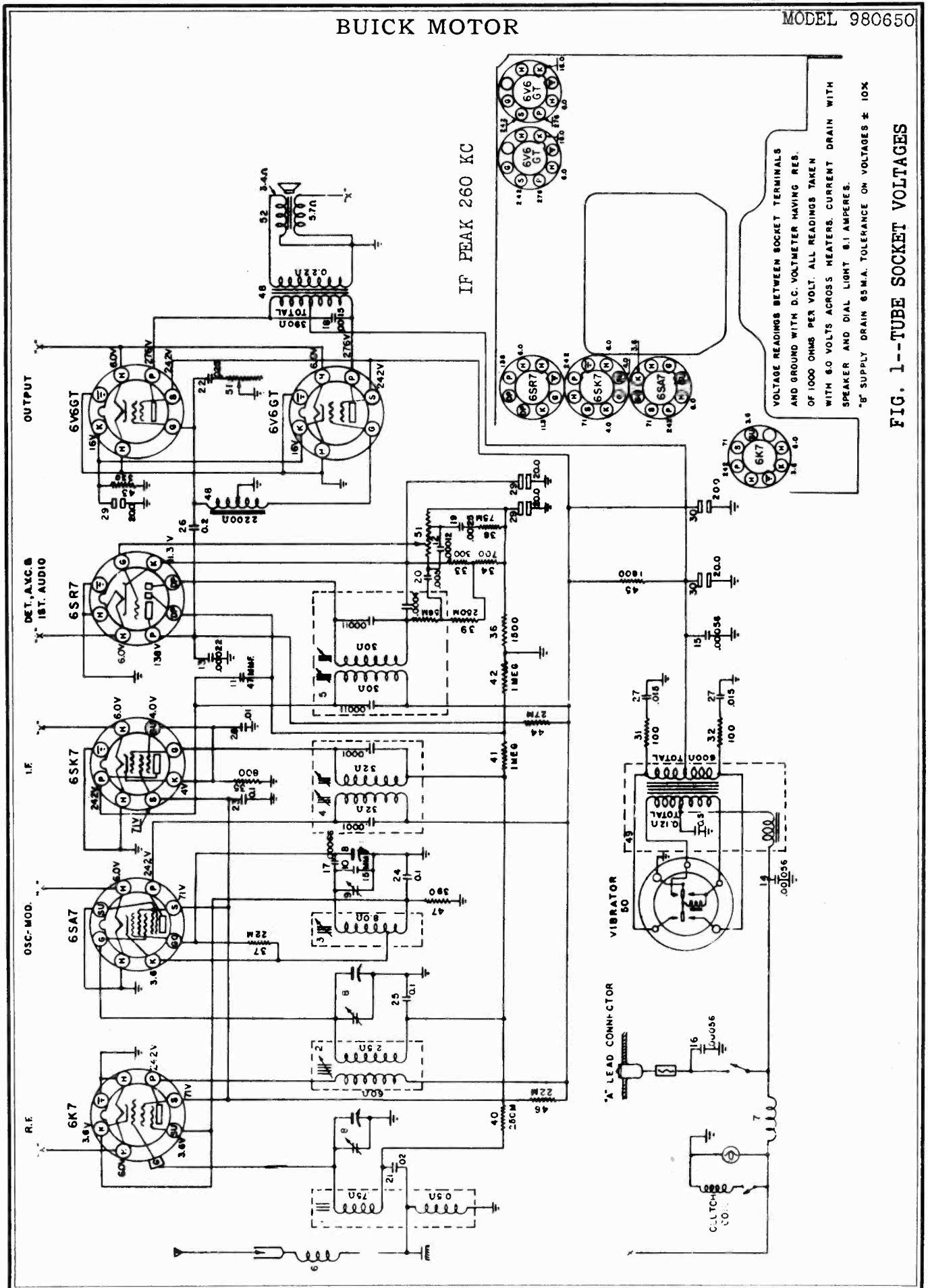


FIG. 1--TUBE SOCKET VOLTAGES

BUICK MOTOR

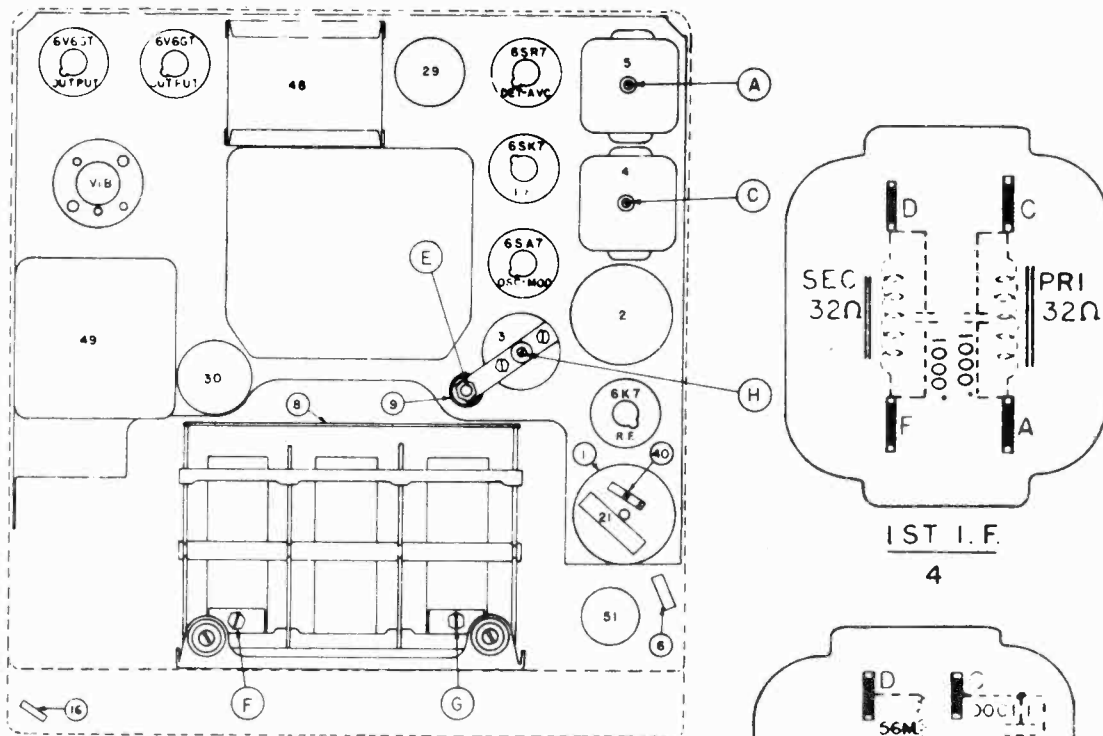


FIG. 3--PARTS LAYOUT--Top View

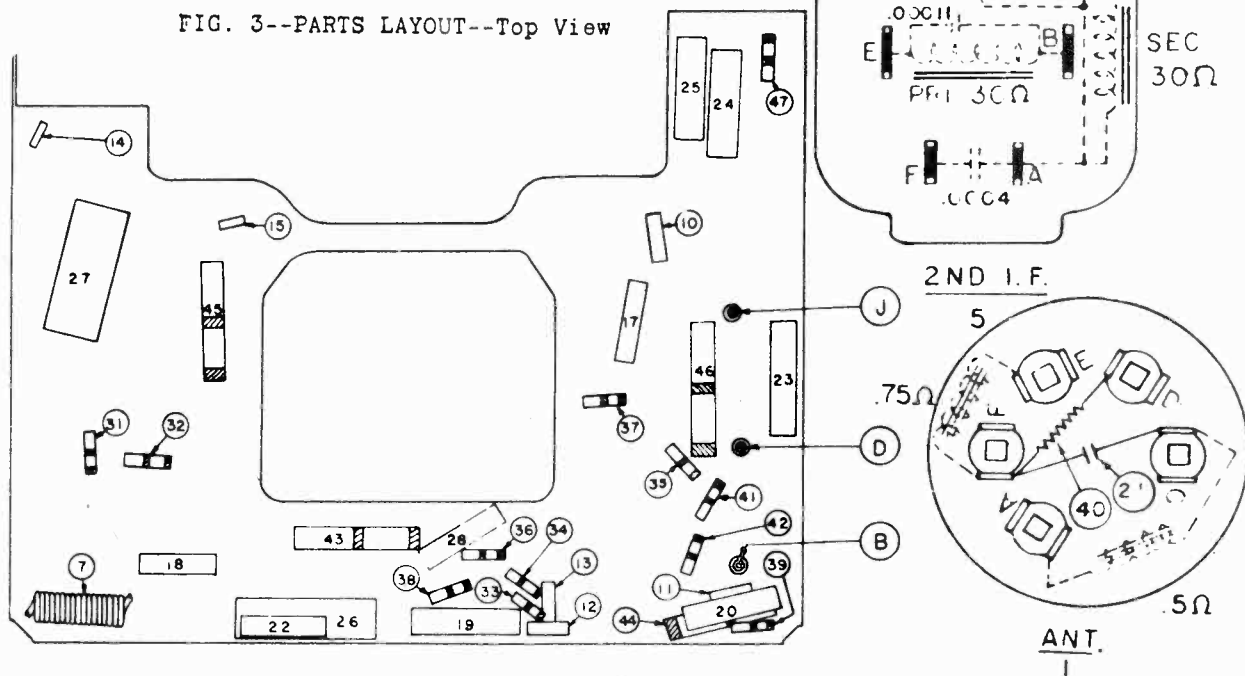
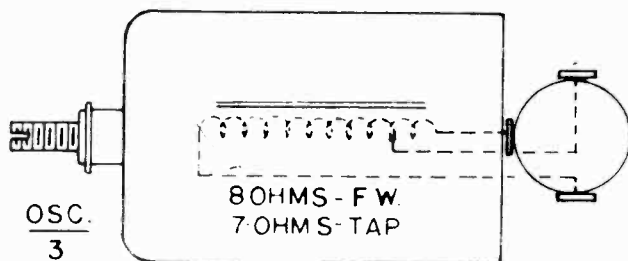
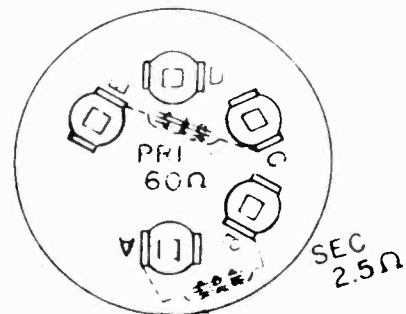


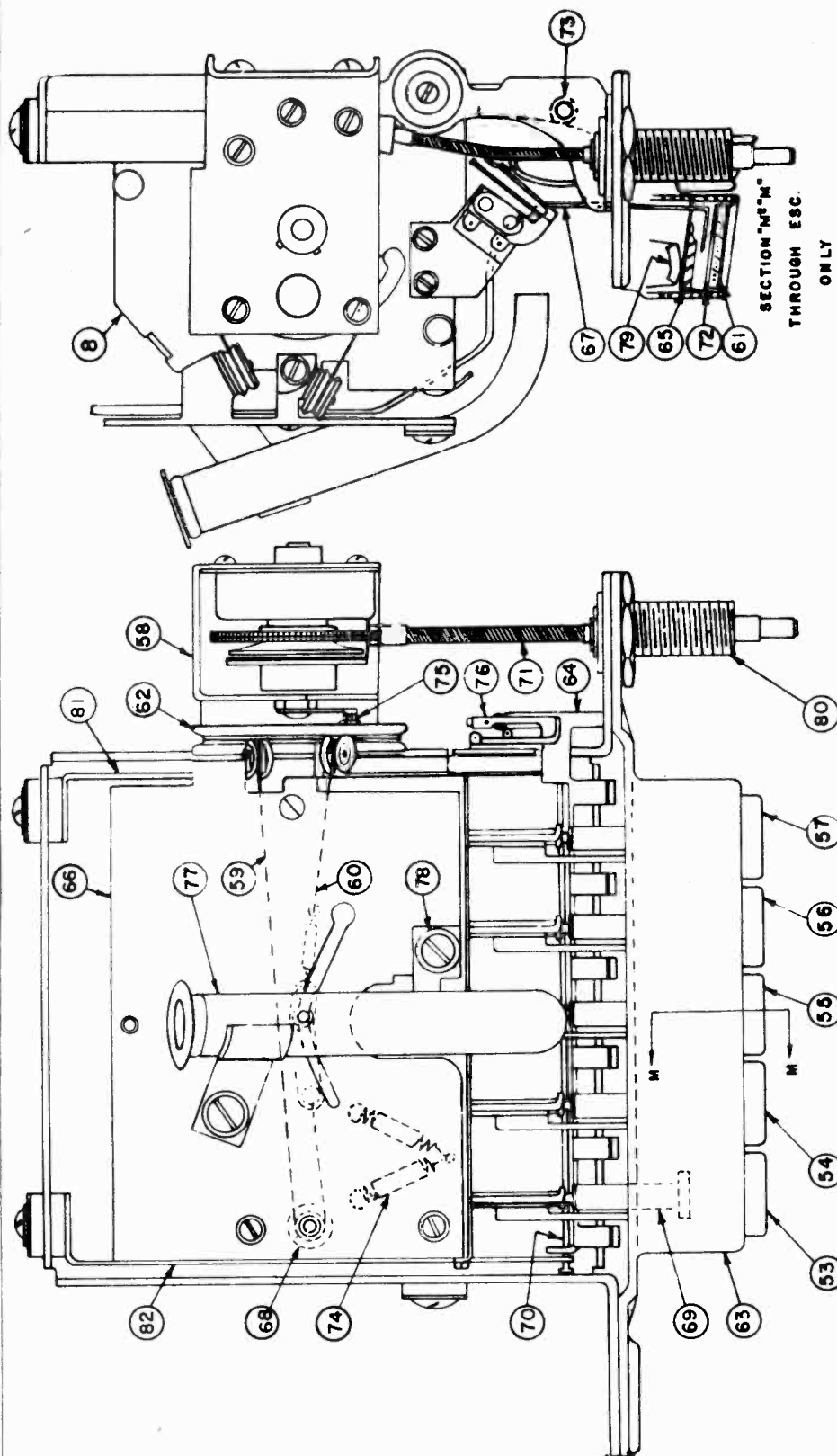
FIG. 4--PARTS LAYOUT--Bottom View



R. F.  
2



BUICK MOTOR



ANTENNA SYSTEM: The 1941 Buick uses a roof peak antenna as standard equipment.

TUNING CONTROLS: Tuning is accomplished by means of the conventional manual tuning control or by means of a five push button mechanical tuner which may be set up for any desired group of stations.

An electric clutch is provided which automatically disconnects the manual tuning mechanism when any one of the buttons is pressed.

NOTE: Do not attempt to operate the push button tuning unless the set is connected to a six volt battery and turned on.



MODEL 980650

## BUICK MOTOR

CIRCUIT ALIGNMENT

Should realignment be necessary, the circuits can be properly adjusted only by the use of a calibrated test oscillator or signal generator and an output meter.

1. Aligning I-F Stages at 260 Kilocycles

- (a) Connect the ground lead of the signal generator to the chassis.
- (b) Connect the signal lead of the signal generator to the R.F. section of the gang condenser (Illus. F, Fig. 3) through a .1 mfd. condenser.
- (c) Connect the output meter from the plate prong of one 6V6GT tube to the plate prong of the other 6V6GT tube.
- (d) Set the signal generator to 260 Kilocycles and turn volume control on full.
- (e) Set the condenser gang to a point around 600 Kilocycles where no station is received.
- (f) Adjust the four screws on the two I.F. coils (Illus. A,B,C & D, Figs. 3 & 4) until maximum output is obtained. Repeat these adjustments with as low an output from the signal generator as possible for a readable indication on the output meter.

2. Aligning at 1560 Kilocycles

- (a) Leave the signal generator connected as before.
- (b) Turn the tuning condenser plates all the way out and against the high frequency stop.
- (c) Set the signal generator to 1560 Kilocycles.
- (d) Adjust the trimmer (Illus. E, Fig. 3) for maximum output.

3. Aligning at 1400 Kilocycles

- (a) Connect the signal lead of the signal generator to the antenna connection of the receiver through a .00005 mfd. mica condenser.
- (b) Set the signal generator to 1400 Kilocycles.
- (c) Rotate the variable plates of the gang condenser until the signal is tuned for maximum output.
- (d) Adjust the trimmers (Illus. F, G, Fig. 3) for maximum output.

4. Aligning at 600 Kilocycles

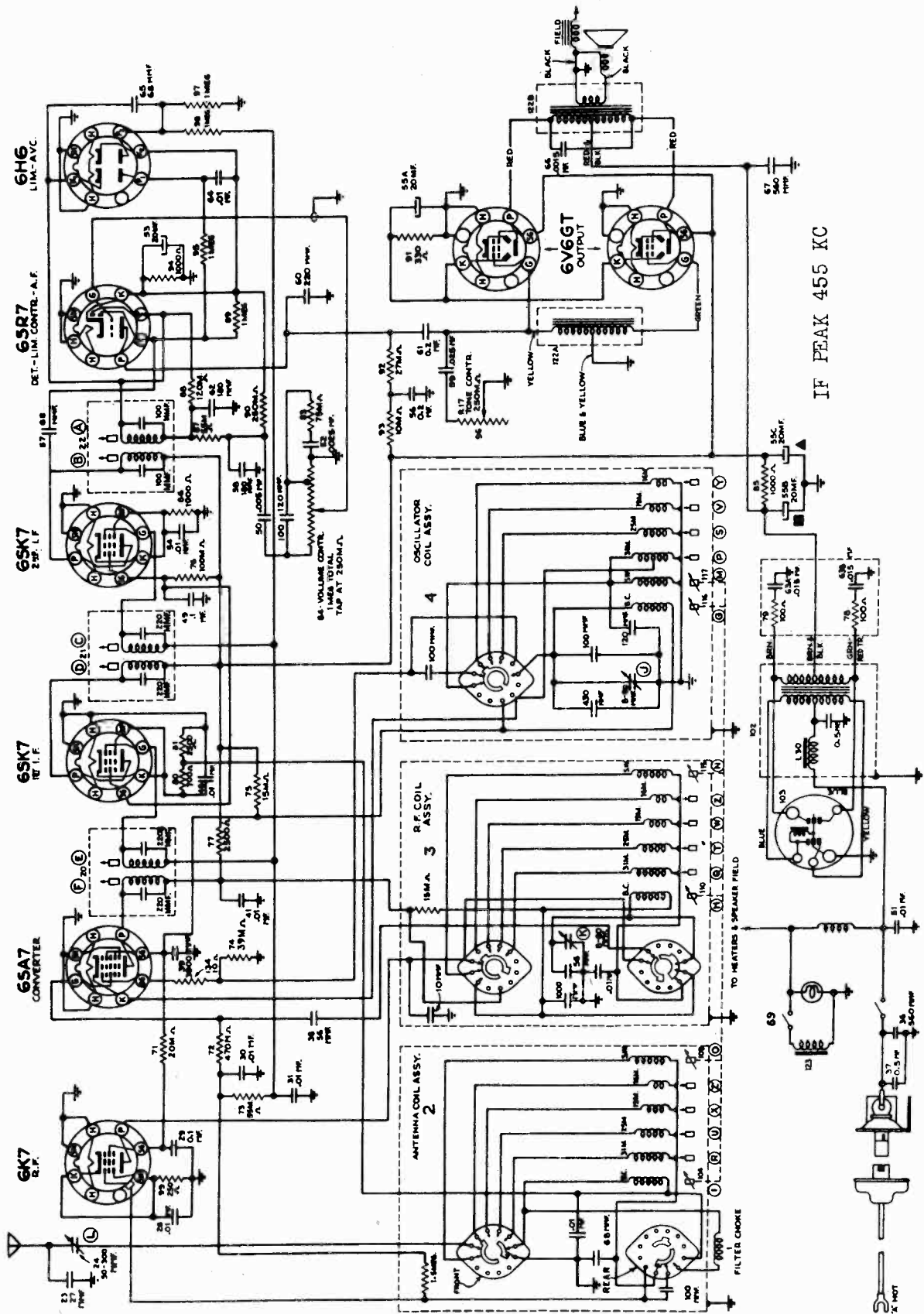
- (a) Leave the signal generator connected as before.
- (b) Set the signal generator to 600 Kilocycles.
- (c) Tune this signal in on the set.
- (d) Adjust the oscillator coil iron core aligning screw (Illus. H, Fig. 3) while rocking the condenser gang back and forth through the signal until maximum output is obtained.
- (e) Adjust screw (Illus. J, Fig. 4) for maximum output.
- (f) Repeat adjustments made under 3 and 4 above.

5. Adjustment of Radio to Car Antenna

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

- (a) Tune in a weak station near the high frequency end of the dial (approximately 1400 KC.)
- (b) Adjust the antenna trimmer (Illus. G, Fig. 3) for maximum output.

BUICK MOTOR



IF PEAK 455 KC

BUICK MOTOR

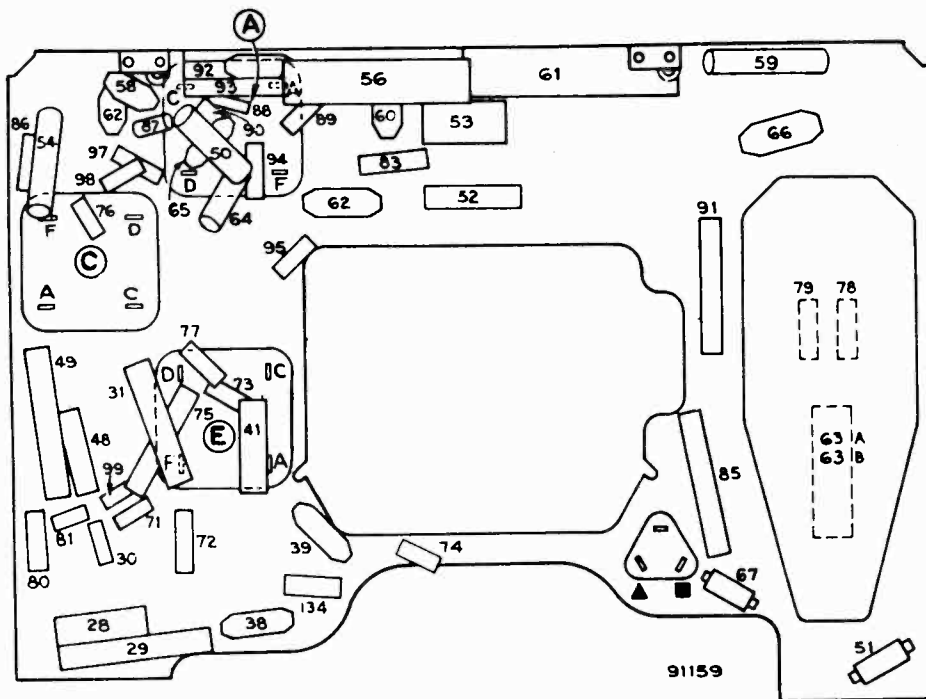
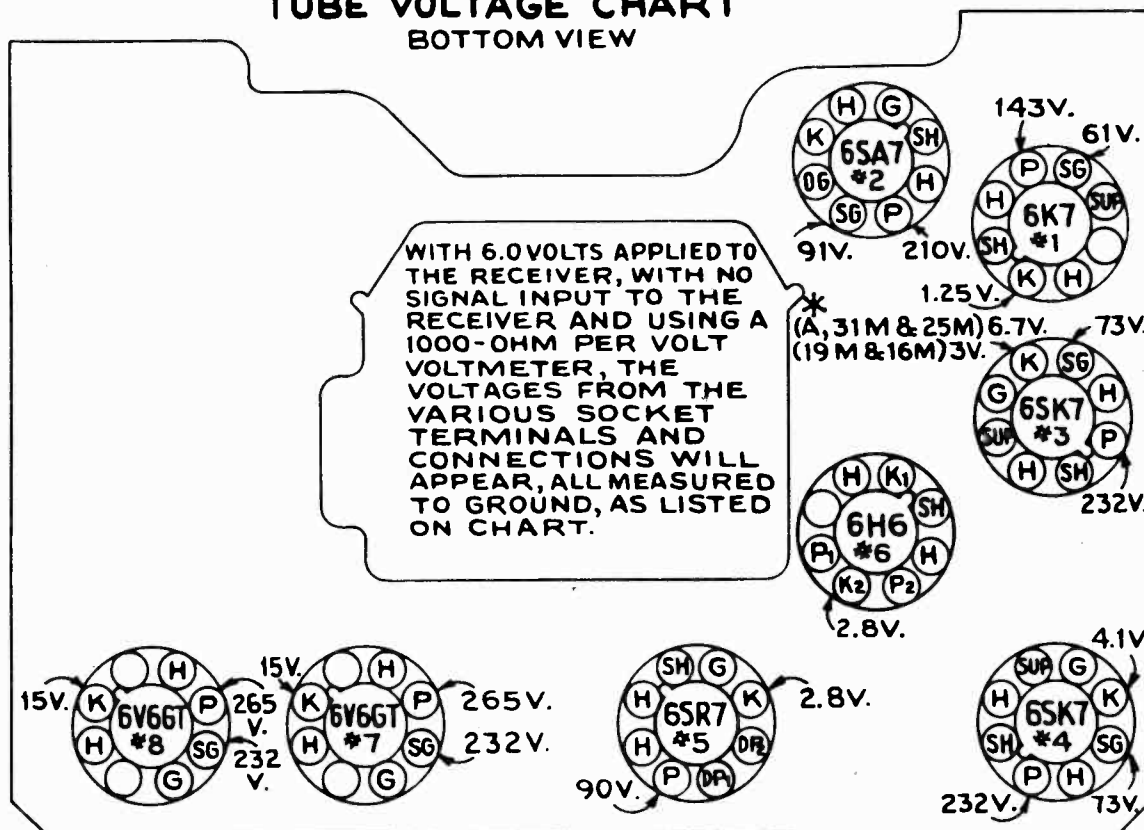


FIG. 4--PARTS LAYOUT--Bottom View

**TUBE VOLTAGE CHART**  
BOTTOM VIEW



\* ALL VOLTAGES GIVEN SHOULD BE CHECKED WITH BAND SELECTOR SWITCH SET IN THE BROADCAST BAND POSITION EXCEPT (6SK7, TUBE No.3) AS NOTED ON SKETCH.

FIG. 1--TUBE SOCKET VOLTAGES

BUICK MOTOR

MODEL 980660

CIRCUIT ALIGNMENT

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

Should realignment be necessary the circuits can be properly adjusted only by the use of a calibrated test oscillator or signal generator and an output meter.

To align the circuits of this receiver correctly, an accurately calibrated oscillator or signal generator and an output meter must be used. In aligning this receiver it is very important that the correct frequencies be used and that all alignment adjustments be made in sequence specified below starting with the I.F. Amplifier, then aligning the broadcast band and finally the short wave bands. Slight misalignment of either the I.F. or R.F. circuits will result in a loss of sensitivity over most of the dial.

All R.F. and I.F. adjustments are accessible after removing the speaker cover and rear cover. The I.F. primary windings are adjusted by iron core screws B, D, F, located on top of the I.F. transformers, Fig. 3, and the secondary windings A, C, E are adjusted by core screws located at the bottom of each I.F. transformer, Fig. 4.

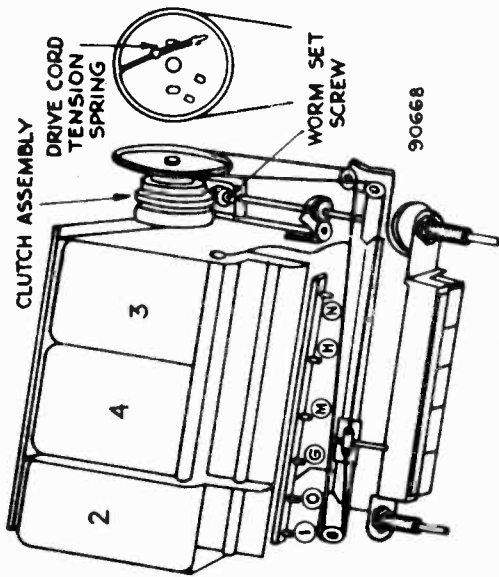


FIG. 5--DIAL CORD LAYOUT

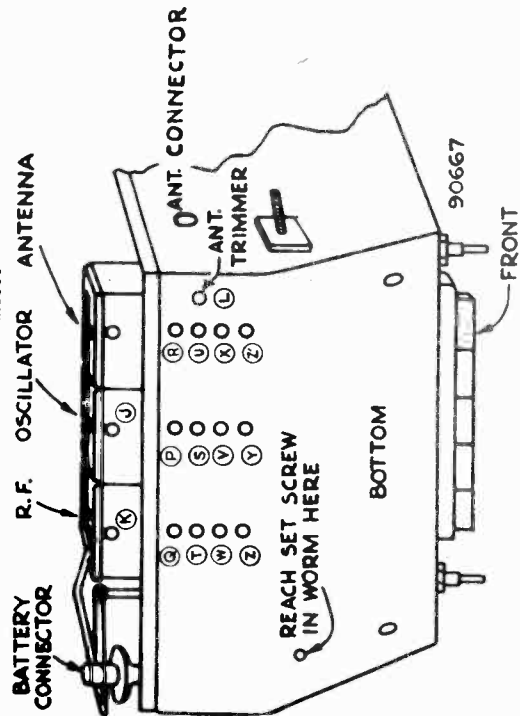


FIG. 6--TRIMMER LOCATIONS

1. Aligning I.F. Stages at 455 K.C.

- (a) Connect output meter across the voice coil of the speaker.
- (b) Connect the high side of the signal generator to the grid of the second I.F. tube 6SK7, (Pin #4, Fig. 2) through a .01 mfd. condenser and the low side of the signal generator should be connected to the frame of the chassis.
- (c) Turn the volume control on full.
- (d) Adjust signal generator to 455 K.C.
- (e) Adjust core screws (illus. A & B, Figs. 4 & 3) on the 3rd I.F. transformer for maximum reading on the output meter.  
NOTE: Always use the lowest signal generator output that will give a reasonable deflection on the output meter.
- (f) Connect the signal generator lead through the .01 condenser to the grid of the first I.F. tube--6SK7, Pin #4--and adjust core screws (illus. C & D, Figs. 4 & 3), in the 2nd I.F. transformer for maximum output as in (e).
- (g) Connect the signal generator lead through the .01 condenser to the grid of the tube 6SA7, (Pin #8) and adjust core screws (illus. E & F, Figs. 4 & 3) in the first I.F. transformer for maximum output.

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

2. Broadcast Band Alignment

Six trimming adjustments are provided which include trimmers L, K, J, associated with illus. #2, 3, 4 and the three iron cores I, H, G, which are mounted in front of the coil assemblies in conjunction with the core draw bar. If realignment is found necessary, the R.F. circuits should be adjusted in the following sequence:  
(a) Tune the receiver to the extreme high frequency end of the dial and against the stop.

2. Broadcast Band Alignment--Cont'd.

- (b) Turn each of the three core screws (Illus. G, H, & I, Fig. 5) in a counter-clockwise direction 8 TURNS. (This is done in order to separate the cores from the coil windings far enough so that the cores will have no effect on the frequency of the circuits.)
- (c) Connect the "high" side of the signal generator, through a 50 mmf. condenser, to the Buick shielded antenna lead-in cable, (Part No. 1321036), and the "low" side to the shield of the cable.
- (d) Connect the output meter across the voice coil and turn the volume control to maximum.
- (e) Adjust the frequency of the signal generator to exactly 1590 K.C. and peak trimmers (Illus. J, K & L, Fig. 6) for maximum signal output, at the same time reducing the signal generator output to as low a value as is consistent with a reliable indication on the output meter.
- (f) Change the frequency of the signal generator to 1560 K.C. and turn the oscillator core screw (Illus. G, Fig. 5) clockwise until maximum output is obtained.
- (g) Change the frequency of the signal generator to 1200 K.C. and TUNE the RECEIVER by means of the manual tuning knob for maximum signal at approximately 1200 K.C. Check the dial calibration at 1200 K.C. (between 110 and 130 on the dial) and if the receiver does not appear to track at this point repeat paragraph F.
- (h) Adjust the core screws (Illus. H & I, Fig. 5) for maximum signal output.
- (i) Change the frequency of the signal generator to 600 K.C.
- (j) TUNE the RECEIVER by means of manual tuning knob for maximum signal at 600 K.C.
- (k) Adjust the antenna and R.F. trimmers (Illus. L & K, Fig. 6) for maximum output.
- (l) Reset signal generator to 1200 K.C. and tune receiver for maximum output at 1200 K.C.
- (m) Adjust antenna and R.F. cores (Illus. H & I, Fig. 5) for maximum output.

3. Short Wave Alignment

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

- (a) Do not attempt to align the short wave bands without having first completed the broadcast alignment.  
NOTE: THIS IS VERY IMPORTANT.
- (b) Turn the band indicator to "31 METERS", and the volume control to maximum.
- (c) Tune the receiver so that the dial pointer is at the extreme high frequency end of the 31 meter band and adjust iron core screws (Illus. M, N & O, Fig. 5) so that each core end is flush with the coil forms, which extend beyond the shield.
- (d) Turn iron trimmer core screws (Illus. R, U, X, Z, Q, T, W, Z, P, S, V, Y, Fig. 6) in a counter-clockwise direction as far as they will go.  
NOTE: Do not force the cores against their stops as too much force may fracture the core.

- (e) Connect the "high" side of the signal generator through a 30 mmf. condenser, and the Buick shielded antenna lead-in to the antenna connection of the receiver, and the "low" side to the shield of the lead-in.

- (f) Adjust the signal generator frequency to 9.6 MC. and move the pointer to 9.6 MC. on the dial scale.
- (g) Turn core screw (Illus. P, Fig. 6) in a CLOCKWISE direction until the FIRST peak is obtained and adjust carefully for maximum reading on the output meter.
- (h) Turn core screw (Illus. Q, Fig. 6) in a clockwise direction until the SECOND peak is obtained if more than one peak can be found and adjust for maximum reading on the output meter, at the same time reducing the signal generator output to as low a value as is consistent with a reliable indication on the output meter.
- (i) Adjust core screw (Illus. R, Fig. 6) as in (h) above.
- (j) Change the signal generator frequency to 11.8 MC., the band indicator to "25 METERS" and move the pointer to 11.8 MC. on the dial scale.
- (k) Adjust core screw (Illus. S, Fig. 6) as in (g) above.
- (l) Adjust core screws (Illus. T & U, Fig. 6) as in (h) above.
- (m) Change the signal generator frequency to 15.2 MC., the band indicator to "19 METERS", and move the dial pointer to 15.2 MC. on the dial scale.
- (n) Adjust core screw (Illus. V, Fig. 6) as in (g) above.
- (o) Adjust core screws (Illus. W & X, Fig. 6) as in (h) above.
- (p) Change the signal generator frequency to 17.8 MC., the band indicator to "16 METERS", and move the pointer to 17.8 MC. on the dial scale.
- (q) Adjust core screw (Illus. Y, Fig. 6) as in (h).
- (r) Adjust core screws (Illus. Z & Z1, Fig. 6) as in (g).
- (s) Repeat operations e, f, g, h, i, j, k, l, m, n, o, p, q, and r, described above at least three times.

4. General Alignment Information

Alignment of the short wave bands should never be attempted without first completing the broadcast alignment.

The most satisfactory method of aligning or checking the "Spread-Band" ranges is on actual reception of short wave stations of KNOWN FREQUENCY, by adjusting the iron oscillator coil for each band (Illus. P, S, V & Y, Fig. 6) so that these stations come in at the correct points on the dial. (Note: Repeat R, F & Ant.)

In exceptional cases, when the set is being serviced in a location where the noise level is high enough to prevent reception of short wave stations, a signal generator should be used for alignment, but an extremely high degree of accuracy is required in the frequency settings of the signal generator, as a slight error will produce considerable inaccuracy on the spread-band dial.

BUICK MOTOR

MODEL 980660  
 MODELS 980690, 980691  
 MCDL 1323457

Illus. No.	Service Part No.	Part Name	Description	MODEL 1323457
56	7240927	Coil	Ant. R.F. & Osc. coil & bkt. assy.	
57	7240179	Coil	Oscillator series	
58	7241066	Coil	Oscillator shunt	
59	7239816	Control	Volume-tone-on-off switch	
61	7241622	Condenser	.000125 mfd. compensating	
62	7231178	Condenser	.0002 mfd. molded	
63	7230912	Condenser	.005 mfd. 800 V. tub.	
64	7241199	Condenser	Ant. trimmer	
65	7241204	Tuner assy.	Push button-latching device (includes 75 to 89)	
66	7240033	Cord	Pointer cord & link assy.	
67	7240022	Core	Connecting link and core assy.	
68	7240001	Diffuser		
69	7240036	Plate	Pointer plate assy.	
70	7240007	Spring	Pointer return	
71	7239990	Spring	Latch bar spring	
72	7240215	Bracket	Light bkt. & lead assy.	
73	7238461	Bulb		
74	7239865	"C" washer	Pointer cord & link mtg.	
75	7241863	Button	Push button & shaft assy. (P.B.) tuning shaft tip	
76	7240472	Tip	Latching button-manual	
77	7241834	Tip	Rubber bumper strip	
78	7239866	Bumper	Tuning nut (P.B.)	
79	7240925	Nut	Tuning nut (manual)	
80	7240090	Nut	Nut & sleeve-manual tuning screw	
81	7240109	Nut	Manual shaft friction spring	
82	7240246	Spring	P. B. shaft-friction spring	
83	7240074	Spring	Manual shaft friction spring	
84	7239967	Shaft	Manual tuning screw	
85	7240108	"C" washer	Manual tuning nut retainer	
86	7239991	"C" washer	Spring retaining washer--P.B.	
87	7239971	Spring	Push button return	
88	7240111	Spring	Manual tuning shaft return	
89	7240112	Washer	Cup washer--man. tuning spring	

Series Condenser	Connect To	Signal Generator Frequency	Adjust Screws In Order
Dummy Antenna			A B C D
0.1 Mfd.	Grid side of R.F. Sec. (14B) of Gang Condenser	262 K.C.	E
0.1 Mfd.	Grid Side of R.F. Sec. (14B) of Gang Cond.	1615 K.C.	F G
.000060 Mfd.	Antenna Connector	1430 K.C.	H J
.000060 Mfd.	Antenna Connector	600 K.C.	F G
.000060 Mfd.	Antenna Connector	1430 K.C.	F G
.000060 Mfd.	Antenna Connector	600 K.C.	H J

VOLUME CONTROL MAXIMUM.  
 SIGNAL GENERATOR OUTPUT MINIMUM FOR SATISFACTORY OUTPUT INDICATION.

Adjust trimmer G to match car antenna (1430 KC) when radio is installed.  
 Rock gang condenser back and forth through signal during 600 K.C. adjustment of screws H & J. See Bulletin 6D-2 for complete Alignment Procedure.  
**PUSH BUTTON SET-UP**  
 Release holding spring in bottom of button, pull button off. Loosen re-set screw, tune in desired station. Push in re-set screw until it bottoms. Release and tighten screw. Replace button.

MODEL 980660

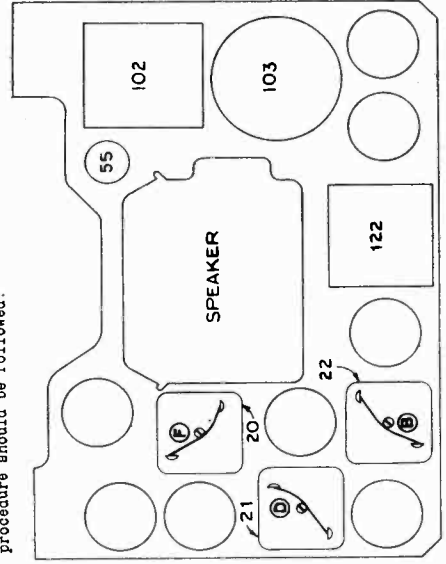
5. Adjusting Antenna Compensating Condenser

This adjustment should only be made after the receiver has been properly installed in the car with the antenna connected to the receiver. Tune the receiver to a weak signal at the high frequency end of the broadcast band at about 1200 K.C. and with the antenna fully extended, adjust the antenna compensating trimmer (illus. 1, Fig. 6) for maximum signal strength.  
 Do not attempt to make any other alignment adjustments with the receiver installed in the car.

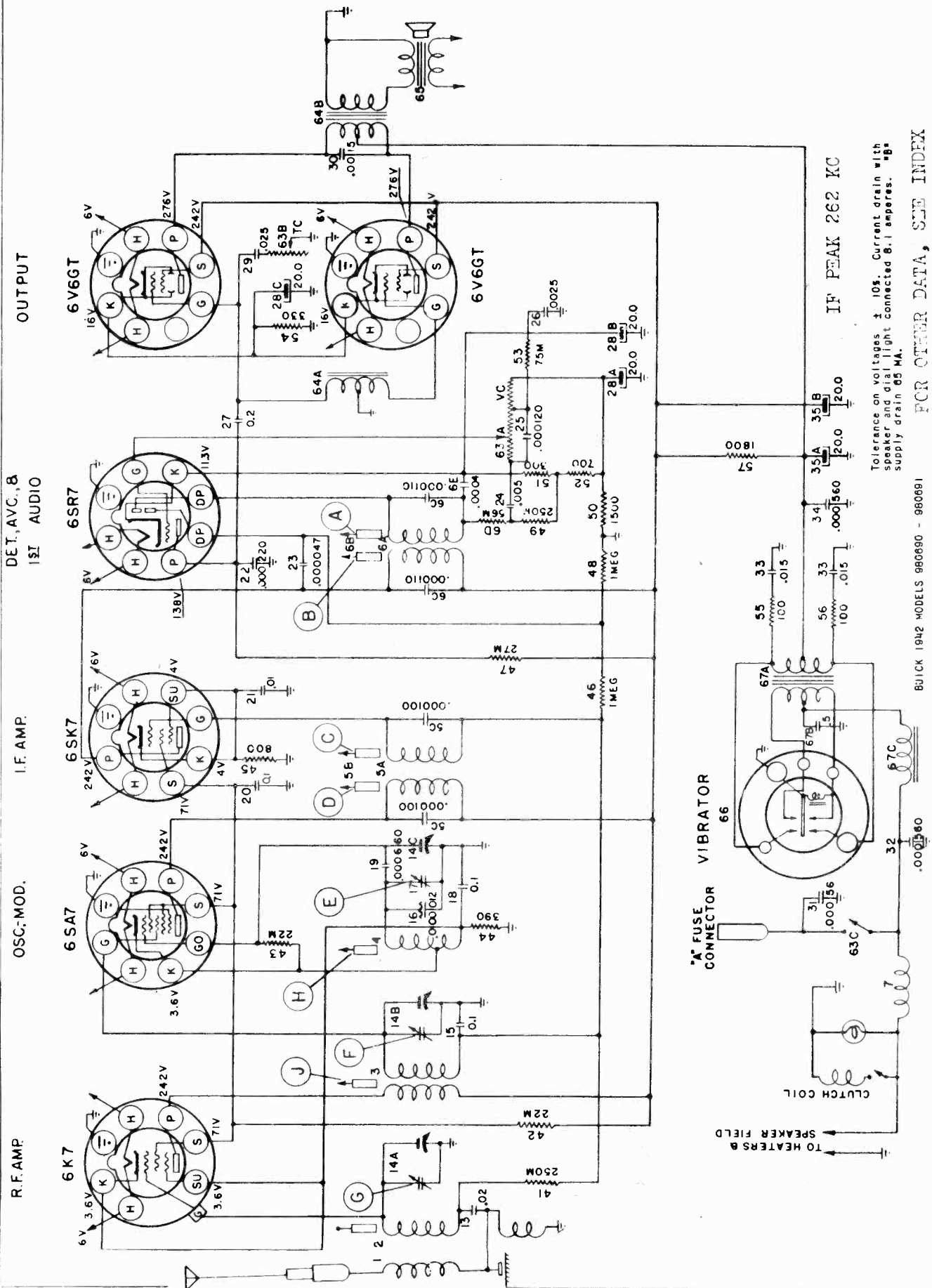
- Remove speaker (front) cover, rear cover and the bottom of tuner section. Unsolder the connecting leads from the volume control and other points in the chassis.
- Remove the link and arm arrangement that operates the band switches by first removing the two units, (A), holding the short link arm (B) to the band indicator shaft.
- Remove screws (C) and link arms (D) from each of the band switch shafts, but in removing the center one, care should be taken not to lose the two steel rollers and "g"-spring (which are loose on the assembly) from the detent device at the base of the center coil unit.
- Remove the four units (E) which hold the coil plate (F) to the tuner assembly and withdraw the coil plate from the assembly, being careful to prevent the coil cores from striking any part of the assembly which may result in breakage of the core.
- After removing the two small screws located at the base of each coil unit, the coil units can then be removed from the coil plate.
- In re-assembling the cores into the coil units, hold the coil plate (F) slightly "off-square" from the cores, then insert the core nearest its coil, one by one, as the coil plate is brought square with the tuner assembly frame.

REMOVAL OF COIL UNIT

Should it become necessary to remove a coil unit, the following procedure should be followed:



BUICK MOTOR

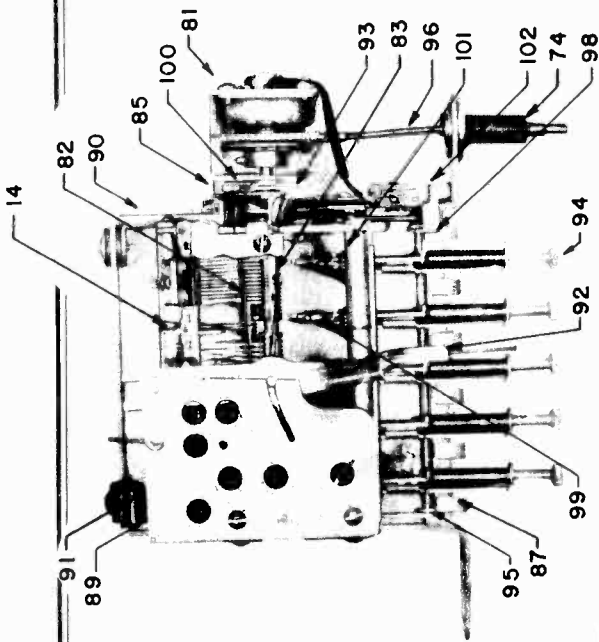
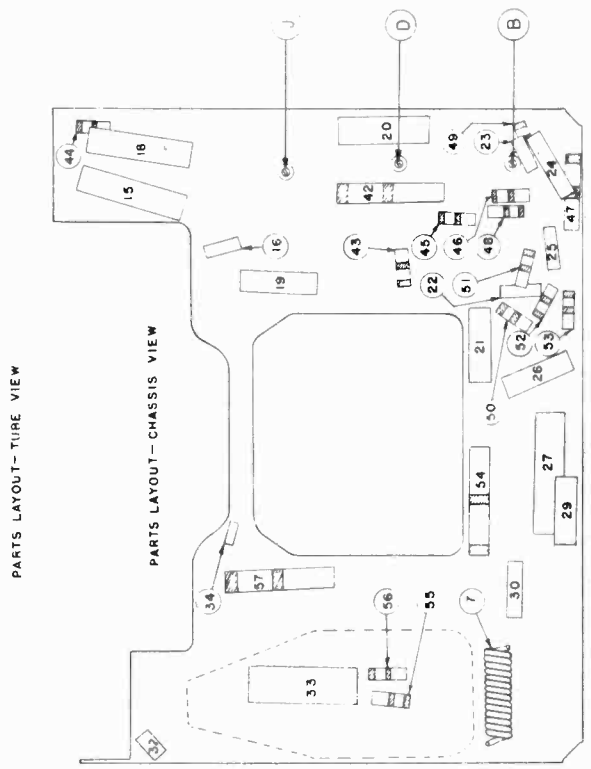
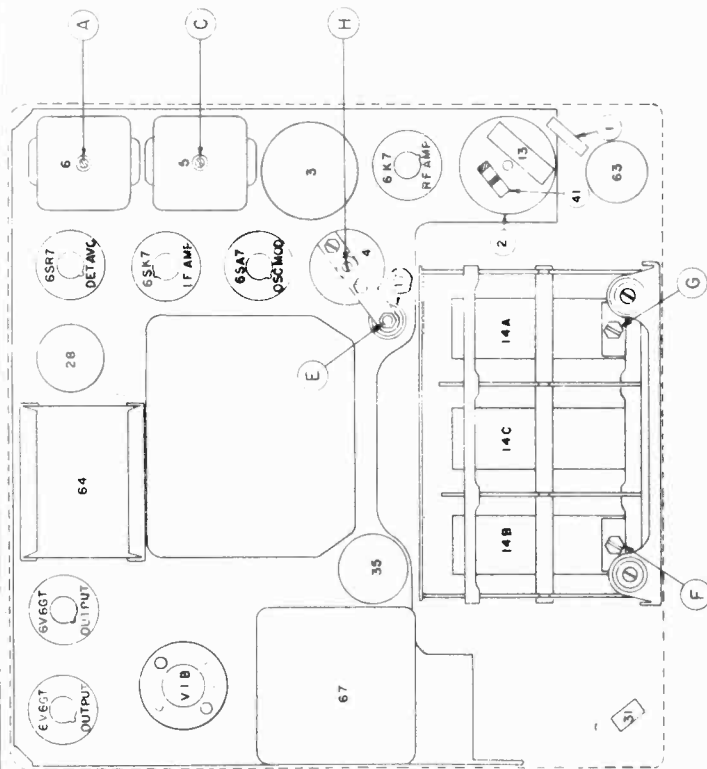


Tolerance on voltages  $\pm 10\%$ . Current drain with speaker and dial light connected 8.1 amperes. \*8= supply drain 85 MA.

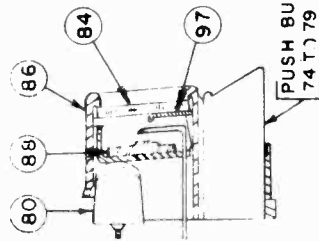
FOR OTHER DATA, SEE INDEX

BUICK 1942 MODELS 980690 - 980691

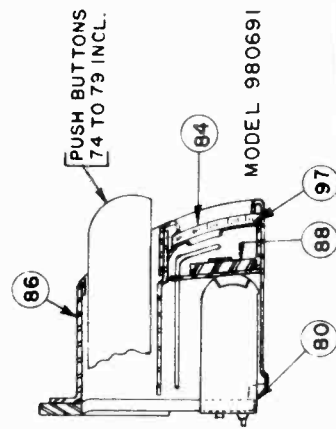
BUICK MOTOR



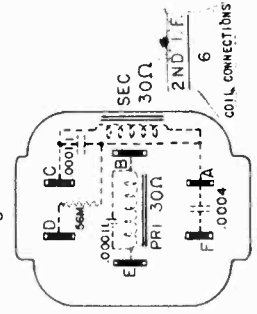
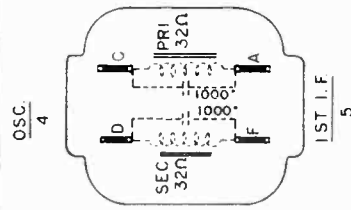
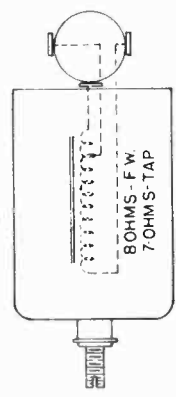
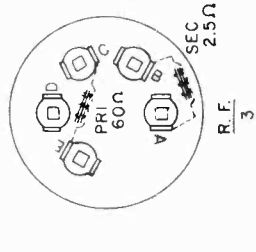
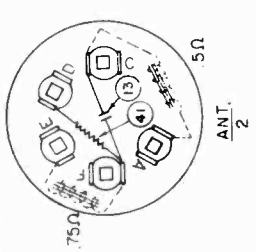
TUNER PICTURE



MODEL 980690  
 ESCUTCHEON CROSS SECTION

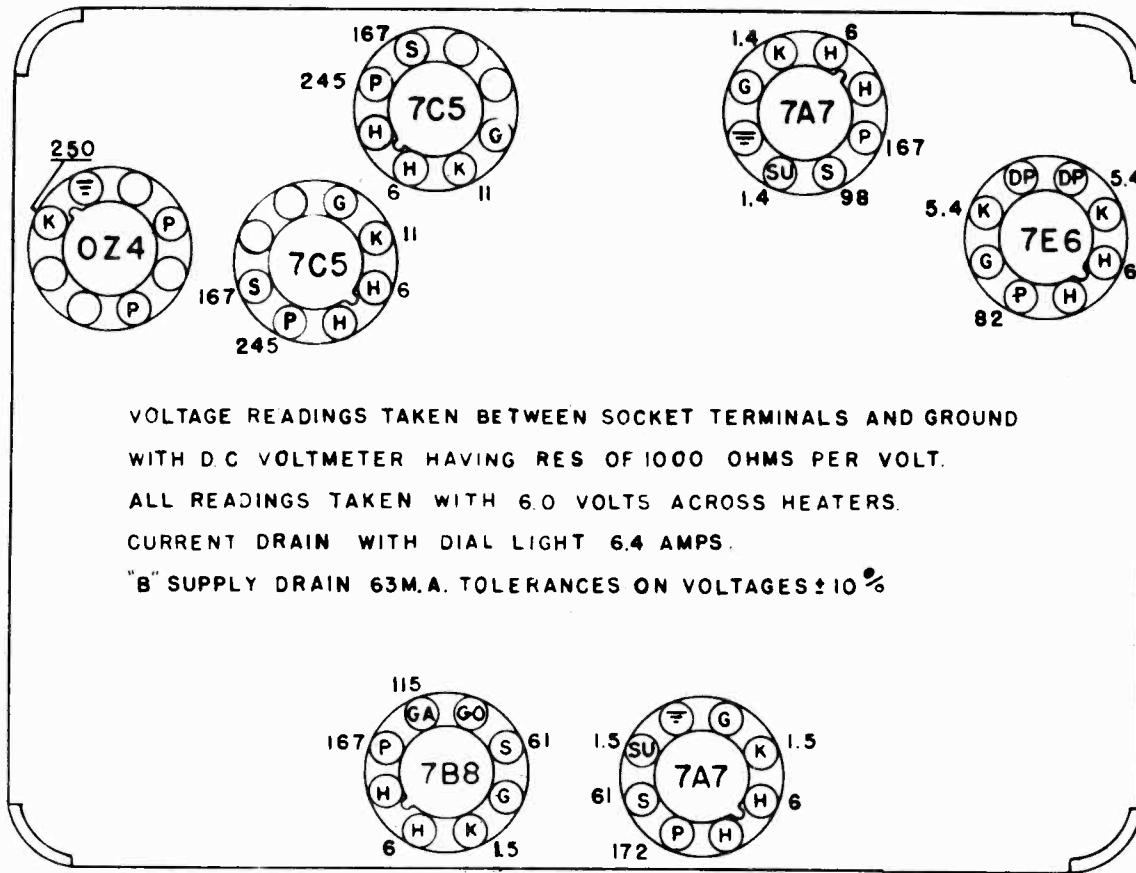


MODEL 980691  
 ESCUTCHEON CROSS SECTION



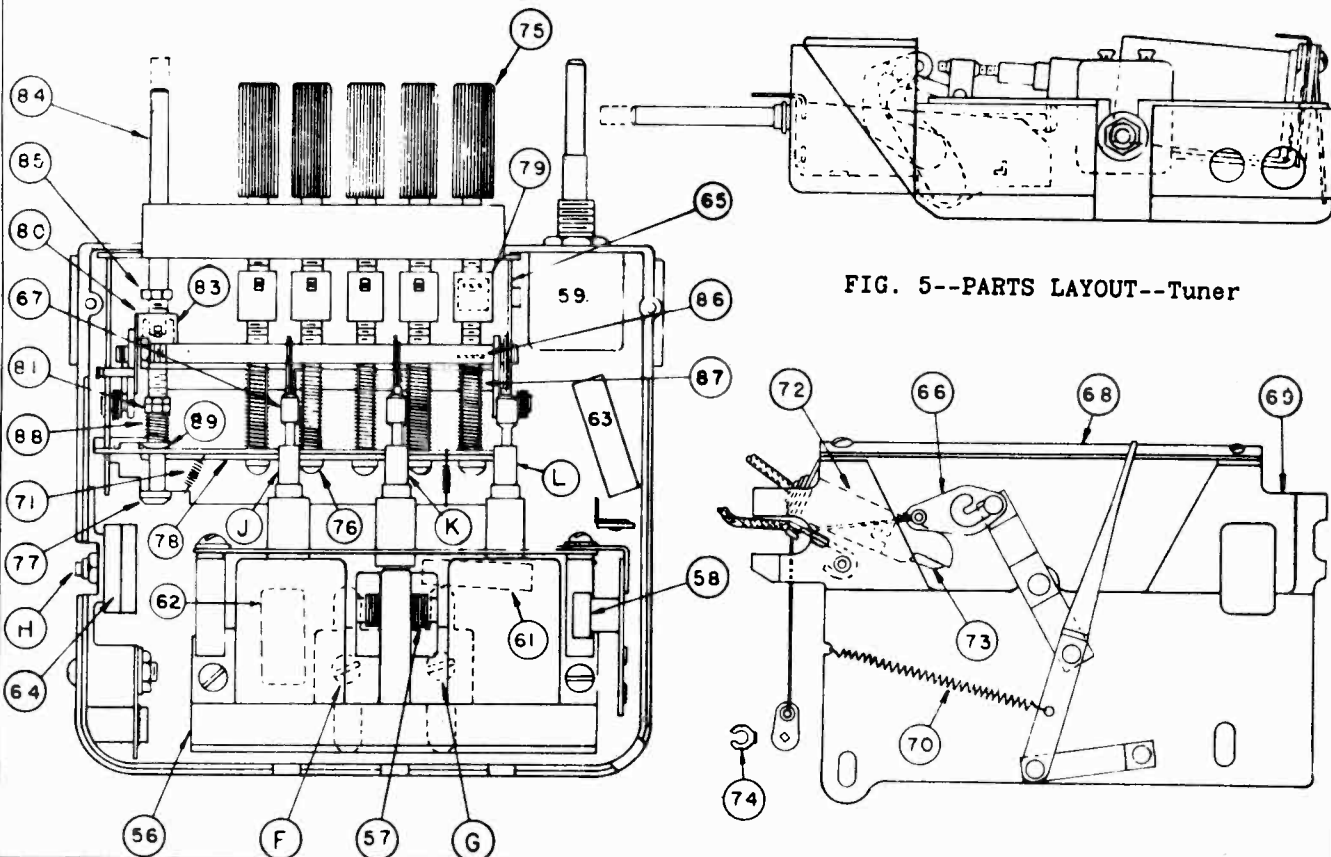


BUICK MOTOR

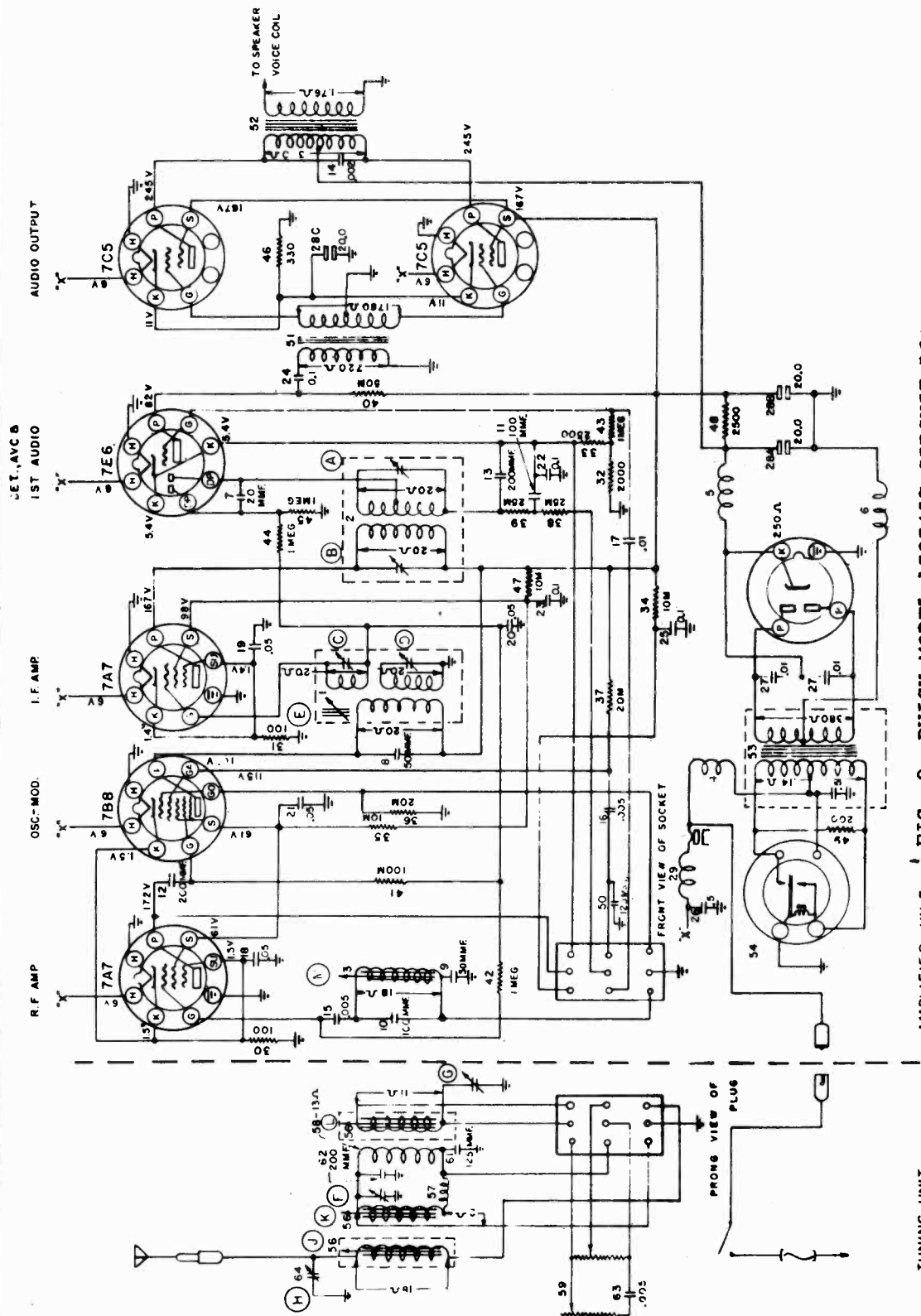


VOLTAGE READINGS TAKEN BETWEEN SOCKET TERMINALS AND GROUND WITH D.C. VOLTMETER HAVING RES OF 1000 OHMS PER VOLT. ALL READINGS TAKEN WITH 6.0 VOLTS ACROSS HEATERS. CURRENT DRAIN WITH DIAL LIGHT 6.4 AMPS. "B" SUPPLY DRAIN 63M.A. TOLERANCES ON VOLTAGES  $\pm 10\%$

FIG. 1--TUBE SOCKET VOLTAGES



BUICK MOTOR



AMPLIFIER UNIT ' FIG. 2--BUICK MODEL 1323457 CIRCUIT DIAGRAM

TUNING UNIT

GENERAL: The Buick model 1323457 is a 7 tube three unit radio built especially for 1941 Buick cars. It is arranged with an arm rest mounting tuner, and amplifier unit for trunk mounting and a header speaker to be mounted in the rear of the car.

MODEL 1323457

BUICK MOTOR

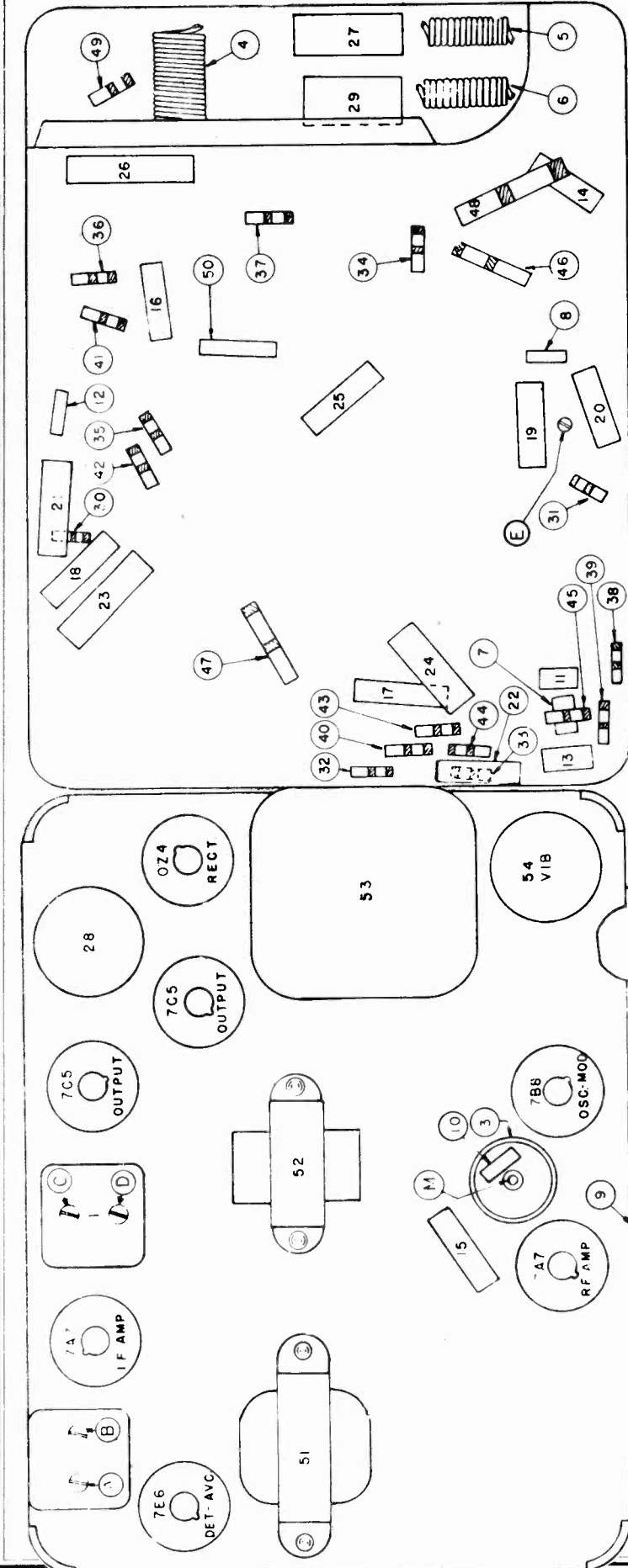


FIG. 3--PARTS LAYOUT--Top View

FIG. 4--PARTS LAYOUT--Bottom View

**TUNING CONTROL:** Tuning is accomplished by means of a manual tuning control or by means of five push buttons each of which adjusts the position of three iron cores in the tuning unit to preselected frequencies.

Setting up the push buttons for any desired station is accomplished by pressing the button into its latched position and rotating in the manner of a manual tuning control until the desired station is tuned in. No locking device is required to retain this setting.

**Note:** Do not hold button in beyond its normal latching position when setting up station.

The manual control operates by pressing the tuning knob into its latched position and tuning in the conventional manner.

## BUICK MOTOR

CAPACITY ALIGNMENT1. Aligning I.F. stages at 455 K.C.

- (a) Connect the ground lead of the signal generator to the chassis frame.
- (b) Connect the signal lead of the signal generator to the grid of the 7B8 tube (Grid side of condenser 12) through a 0.1 mfd. condenser.

2. Mechanical alignment of cores--Cont'd.

- (b) Remove the pointer plate (note insulating washers under mounting screw) without disturbing the tuning mechanism.
- (c) Using a spare core as a gauge, adjust the oscillator core K so that its rear surface is exactly flush with the front end of the oscillator coil winding.
- (d) Manually tune the set to a point where the front surface of the oscillator core is flush with the front end of the oscillator coil fiber mounting bushing.
- (e) Adjust the antenna and R.F. cores (Illus. J, L, Fig. 5) so that the front surfaces of these cores are flush with the front ends of the coil fiber mounting bushing. Paragraphs (c), (d) and (e) mechanically align the cores so that all three are just at the point of entering their respective windings when the tuning mechanism is against the high frequency stop.
- (f) Replace the pointer plate assembly.

3. Aligning at 1560 K.C.

- (a) Connect the signal lead of the signal generator to the antenna connection of the receiver through an .000075 mfd. condenser.
- (b) Turn the manual control of the set to the high frequency end against stop.
- (c) Set signal generator to 1560 K.C.
- (d) Adjust the oscillator trimmer (Illus. F, Fig. 5) for maximum output.

4. Aligning at 600 K.C.

- (a) Leave the signal generator connected the same as before and set frequency to 600 K.C.
- (b) Tune in this frequency on the set.
- (c) Adjust the R.F. trimmer (Illus. G, Fig. 5) for maximum output.
- (d) Adjust the antenna trimmer (Illus. H, Fig. 5) for maximum output.

5. Aligning at 1400 K.C.

- (a) Set the signal generator to 1400 K.C. and tune set to this signal.
- (b) Adjust the antenna core (Illus. J, Fig. 5) and the R.F. core (Illus. L, Fig. 5) for maximum output.

6. Realigning at 600 and 1400 K.C.

- (a) Repeat the alignment outlined under paragraphs 4 and 5 with as low an output from the signal generator as possible.
- (b) Apply cement to the core screws to prevent their changing alignment.

7. Adjusting receiver to car antenna.

After the receiver is installed in the car readjust the antenna trimmer (Illus. H, Fig. 5) on a weak station near 1400 K.

CIRCUIT ALIGNMENT

If realignment is found necessary, the circuits can be properly aligned only with the use of a calibrated test oscillator or signal generator and an output meter. Extreme care should be exercised in following the alignment instructions in order to obtain the best performance possible.

ALIGNMENT PROCEDURE

Two separate alignment procedures are included in these instructions. The first or capacity alignment is to be considered the usual alignment procedure and the second or capacity and inductance alignment is to be used only when there is definite evidence that the iron cores of the tuning coils are out of alignment.

CAPACITY ALIGNMENT1. Aligning I.F. stages at 455 K.C.

- (a) Connect the ground lead of the signal generator to the chassis frame.
- (b) Connect the signal lead of the signal generator to the grid of the 7B8 tube (Grid side of condenser 12) through a 0.1 mfd. condenser.
- (c) Connect an output meter across the speaker voice coil. (If speaker is disconnected a 4 ohm load may be used instead.)
- (d) Set signal generator to 455 K.C.
- (e) Turn the set volume control on full and tune the set to a position where no squeals or beat notes may be heard, and so that when the tuning control knob is rotated within narrow limits there is no appreciable change in output. The tone control should be rotated to its extreme high position (clockwise.)
- (f) Adjust the I.F. trimmers (Illus. A, B, C, D, Fig. 3) and the I.F. core adjustment (Illus. E, Fig. 4) until maximum output is obtained.
- (g) Repeat these adjustments with as low an output from the signal generator as possible for more accurate alignment.
- (h) Connect the signal generator to the antenna connection of the set through an 60 mfd. condenser.
- (i) Adjust the I.F. trap adjustment (Illus. M, Fig. 3) for MINIMUM output.

2. Alignment at 1560 K.C.

- (a) Leave signal generator connected the same as for the I.F. trap adjustment.
- (b) Tune the set to the extreme high frequency position against the stop.
- (c) Set the signal generator to 1560 K.C.
- (d) Adjust the oscillator trimmer (Illus. F, Fig. 5) for maximum output.

3. Alignment at 600 K.C.

- (a) Set the signal generator to 600 K.C. and tune the set to this signal.
- (b) Adjust the R.F. trimmer (Illus. G, Fig. 5) and the antenna trimmer (Illus. H, Fig. 5) for maximum output.

( )

( )

( )

( )

CADILLAC DIV.—GEN. MOTORS

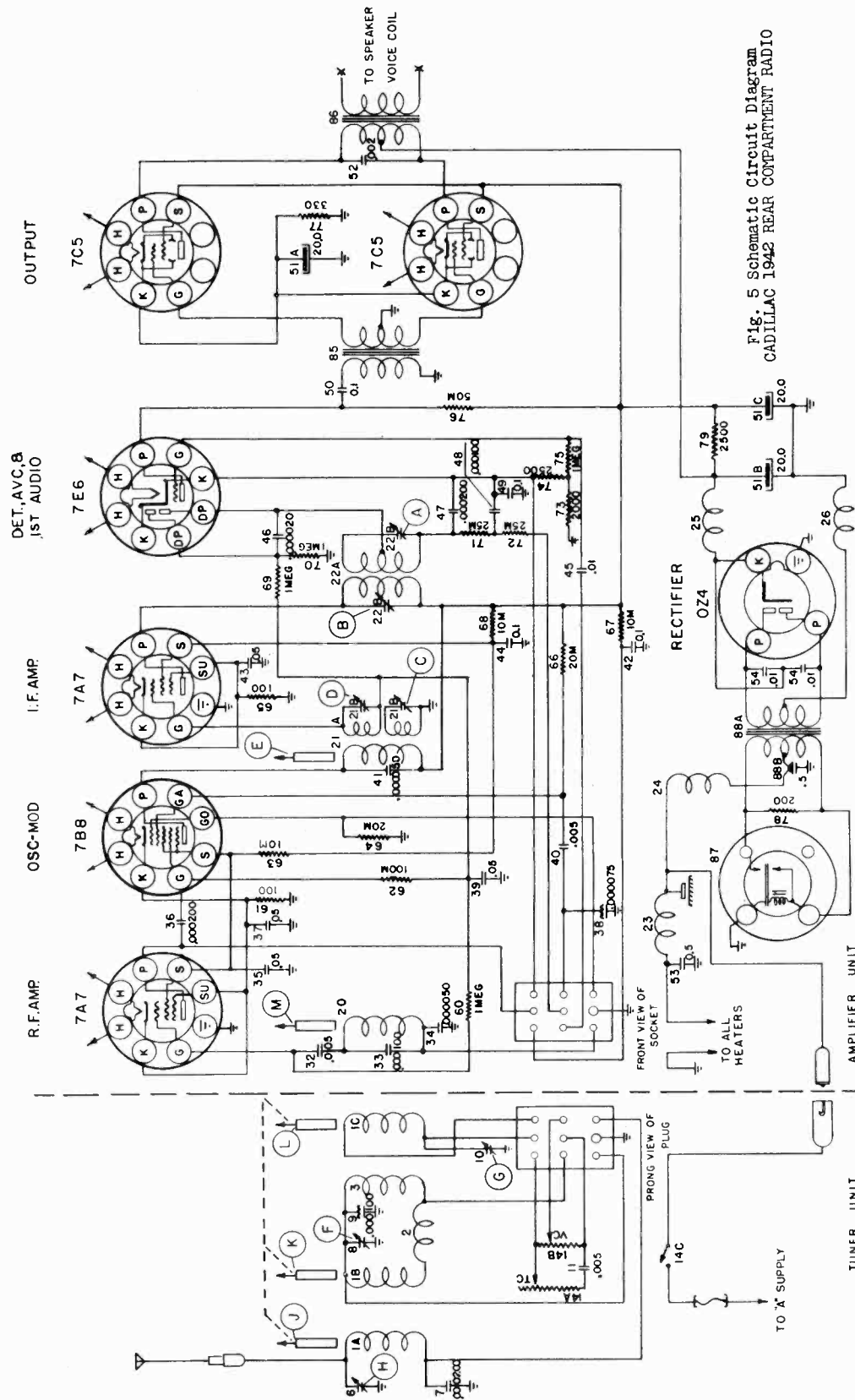


Fig. 5 Schematic Circuit Diagram  
CADILLAC 1942 REAR COMPARTMENT RADIO

CADILLAC DIV.—GEN. MOTORS

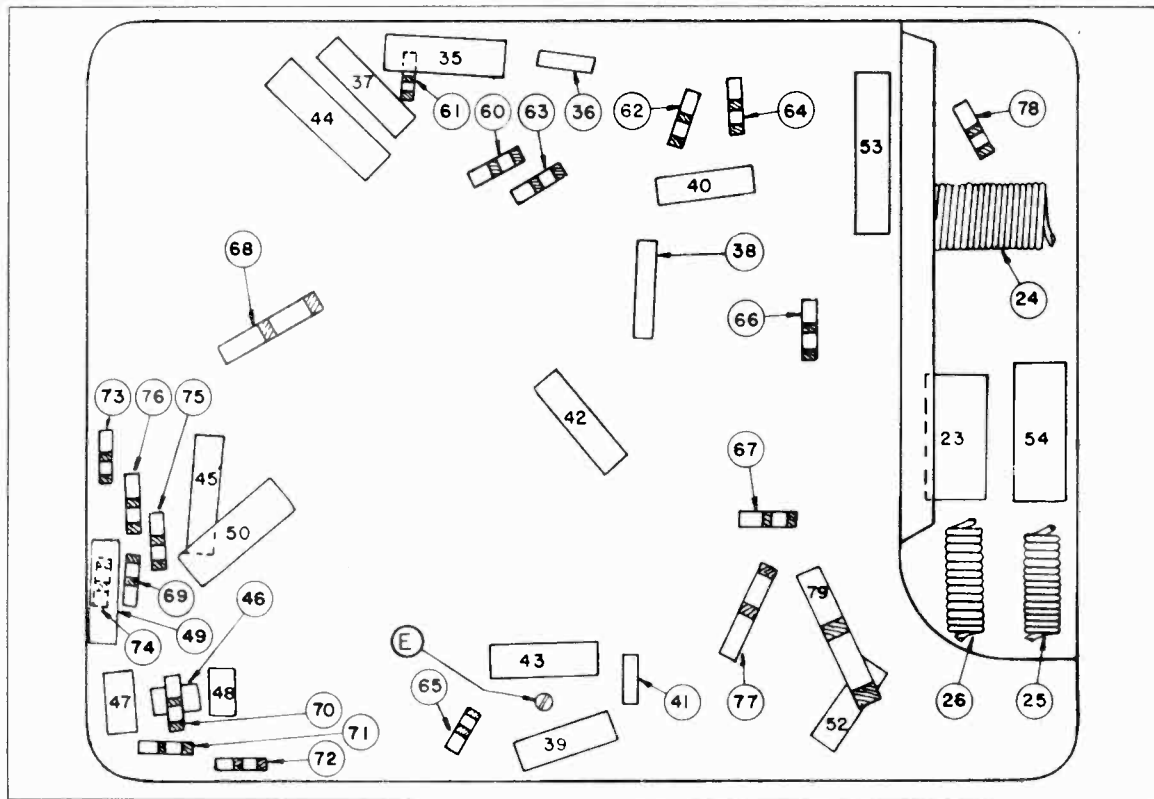


Fig. 2 Parts Layout - Bottom View  
CADILLAC 1942 REAR COMPARTMENT RADIO

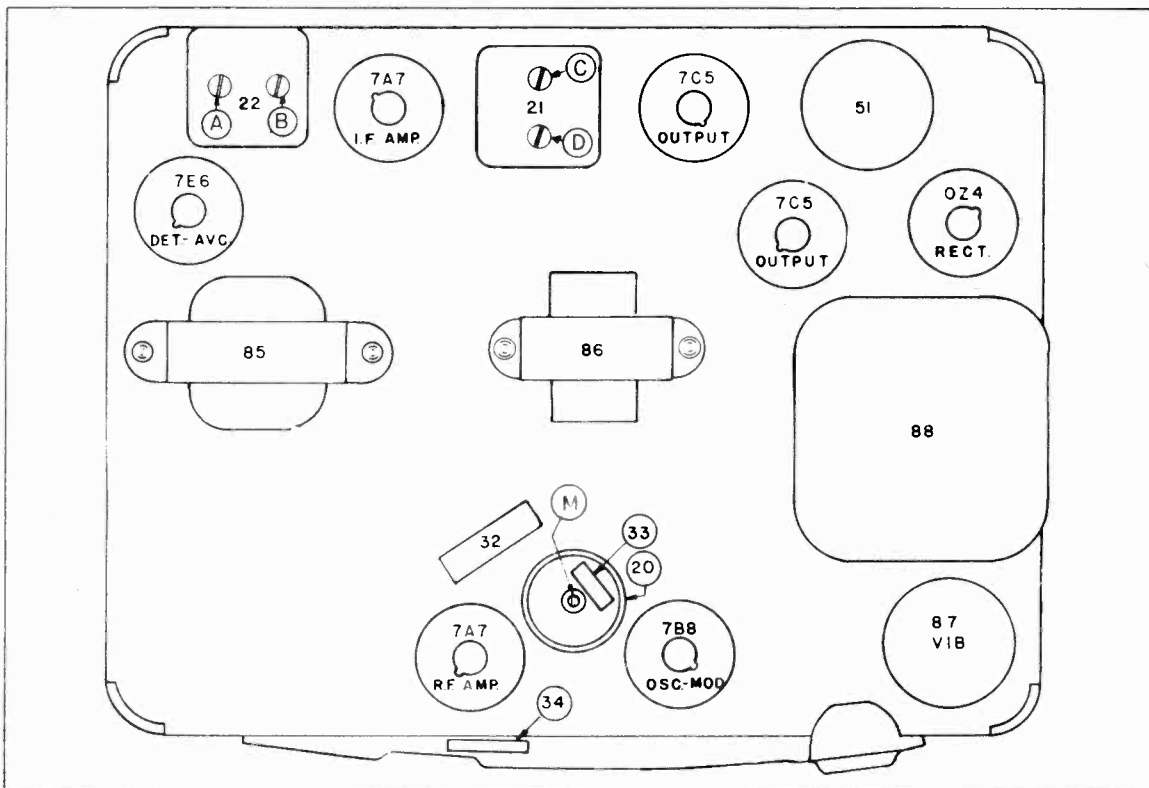


Fig. 1 Parts Layout - Top View  
CADILLAC 1942 REAR COMPARTMENT RADIO

CADILLAC DIV.—GEN. MOTORS

To Control the Vacuum Aerial (Cont'd.)

within the other. For maximum reception both rods should be extended to their full height, the inner rod being extended manually.

TO CHANGE STATION SETTING OF PUSH BUTTONS

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

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

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

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

CIRCUIT ALIGNMENT

If realignment is found necessary, the circuits can be properly aligned only with the use of a calibrated test oscillator or signal generator and an output meter. Extreme care should be exercised in following the alignment instructions in order to obtain the best performance possible.

ALIGNMENT PROCEDURE

Two separate alignment procedures are included in these instructions. The first or capacity alignment is to be considered the usual alignment procedure and the second or capacity and inductance alignment is to be used only when there is definite evidence that the iron cores of the tuning coils are out of alignment.

CAPACITY ALIGNMENT

1. Aligning I.F. stages at 455 KC.
  - (a) Connect the ground lead of the signal generator to the chassis frame.
  - (b) Connect the signal lead of the signal generator to the grid of the 7B8 (Grid side of condenser 36) through a 0.1 mfd condenser.
  - (c) Connect an output meter across the speaker voice coil. (If speaker is disconnected a 4 ohm load may be used instead).
  - (d) Set signal generator to 455 KC.
  - (e) Turn the set volume control on full and tune the set to a position

SPECIFICATIONS

Power Output 5 Watts Undistorted  
 Power Consumption 7.5 Amperes at 6 Volts  
 Sensitivity 6 Microvolts at 1 Watt Output  
 Selectivity 35 KC  
 Tuning Range 545 to 1600 KC  
 Manual Tuning 545 to 1600 KC  
 Automatic Tuning (all 5 buttons) 21 oz. Permanent Magnet, Elliptical Speaker

Intermediate Frequency Peak 455  
 Antenna Trimmer - Designed for 80 mmf. vacuum trunk antenna

TUBE COMPLEMENT

Quantity	Part No.	Type	Function
2	1213583	7A7	RF and IF Amplifier
1	1213585	7B8	First Detector - Oscillator
1	1213582	7E6	Second Detector AVC and First Audio Amplifier
2	1213586	7C5	Power Amplifier
1	7237180	OZ4	Rectifier

CIRCUIT

This model is a 7-tube three unit radio covering the standard broadcast band and designed for installation in the rear trunk compartment with the remote control in the right rear arm rest. The speaker is mounted in the trunk on the ledge behind the rear seat back, the sound being projected through an opening in this ledge.

The permeability tuned remote control unit contains the complete tuning and control mechanism and coils.

The receiver unit contains the RF tubes, the IF amplifier, audio system and power supply. This unit is connected to the remote tuner unit by a shielded plug-in cable.

Tuning is accomplished by means of the conventional manual control or by means of five push buttons. Pushing any of the buttons operates a small mechanical motor which moves the tuning cores in or out of the coils to a pre-selected position.

The separate rear compartment speaker is a new elliptical design and is 6-1/4" x 9-1/4". The speaker's 21 ounce permanent magnet insures excellent tone quality under all operating conditions.

TO CONTROL THE VACUUM AERIAL

To the left of the volume control rod is the knob which controls the vacuum aerial. Pulling this button upward will raise the aerial and pushing it downward will lower the aerial. The vacuum aerial has two rods, one sliding



## CADILLAC DIV.—GEN. MOTORS

Capacity Alignment (Cont'd.)

where no squeals or beat notes may be heard, and so that when the tuning control knob is rotated within narrow limits there is no appreciable change in output. The tone control should be rotated to its extreme high position (clockwise).

- (f) Adjust the I.F. trimmers A, B, C, and D, and the I.F. core adjustment E until maximum output is obtained.
- (g) Repeat these adjustments with as low an output from the signal generator as possible for more accurate alignment.
- (h) Connect the signal generator to the antenna connection of the set through a 70 mmfd. condenser.

- (1) Adjust the I.F. trap adjustment M for minimum output.

2. Alignment at 1615 KC.

- (a) Leave signal generator connected the same as for the I.F. trap adjustment.
- (b) Tune the set to the extreme high frequency position against the stop.
- (c) Set the signal generator to 1615 KC.
- (d) Adjust the oscillator trimmer F for maximum output.

3. Alignment at 600 KC.

- (a) Set the signal generator to 600 KC and tune the set to this signal.
- (b) Adjust the R.F. trimmer G and the antenna trimmer H for maximum output.

CAPACITY AND INDUCTANCE ALIGNMENT1. Aligning I.F. stages at 455 KC.

Align the I.F. stages as outlined under paragraph 1 under "Capacity Alignment".

2. Mechanical Alignment of Cores.

- (a) Turn the manual control of the set to the high frequency end, against stop.
- (b) Remove the pointer plate (note insulating washers under mounting screws) without disturbing the tuning mechanism.
- (c) Using a spare core as a gauge, adjust the oscillator core K so that its rear surface is exactly flush with the front end of the oscillator coil winding.
- (d) Manually tune the set to a point where the front surface of the oscillator core is flush with the front end of the oscillator coil fibre mounting bushing.

Capacity and Inductance Alignment (Cont'd.)

- (e) Adjust the antenna and R.F. cores J and L so that the front surfaces of these cores are flush with the front ends of the coil fibre mounting bushing. Mechanically align the cores so that all three are just at the point of entering their respective windings when the tuning mechanism is against the high frequency stop.
  - (f) Replace the pointer plate assembly.
3. Aligning at 1615 KC.
- (a) Connect the signal lead of the signal generator to the antenna connection of the receiver through a 70 mmfd. condenser.
  - (b) Turn the manual control of the set to the high frequency end against stop.
  - (c) Set signal generator to 1615 KC.
  - (d) Adjust the oscillator trimmer "F" for maximum output.
4. Aligning at 600 KC.
- (a) Leave the signal generator connected the same as before and set frequency to 600 KC.
  - (b) Tune in this frequency on the set.
  - (c) Adjust the R.F. trimmer G for maximum output.
  - (d) Adjust the antenna trimmer H for maximum output.
5. Aligning at 1400 KC.
- (a) Set the signal generator to 1400 KC and tune set to this signal.
  - (b) Adjust the antenna core J and the R.F. core L for maximum output.
6. Realigning at 600 and 1400 KC.
- (a) Repeat the alignment outlined under paragraphs 4 and 5 with as low an output from the signal generator as possible.
  - (b) Apply cement to the core screws to prevent their changing alignment.
7. Adjusting receiver to car antenna.
- After the receiver is installed in the car, readjust the antenna trimmer H on a weak station near 1400 KC.

CADILLAC DIV.—GEN. MOTORS

Part No.	Illust. No.	Part Name	Description	List Price
<u>TUNER MECHANICAL PARTS</u>				
7242580	95	Tuner Assy.	Push Button latching devise - Includes item 96 to 110. . . . .	\$8.50
7241863	96	Button	Push Button & Shaft	
7239986	97	Bumper	Rubber Strip	
7240925	98	Nut	P. B. Tuning. . . . .	.36
7240090	99	Nut	Manual Tuning . . . . .	
7240109	100	Nut	Nut & Sleeve-Manual Screw . . . . .	.12
7239987	101	Shaft	Manual Tuning	
7240246	102	Spring	P. B. Shaft Friction	
7240074	103	Spring	Manual Shaft Friction	
7239971	104	Spring	P. B. Return	
7240111	105	Spring	Man. Shaft Return	
7240472	106	Tip	P. B. Tuning Shaft. . . . .	.05
7241834	107	Tip	Manual Shaft Latching . . . . .	.05
7240108	108	Washer	Manual Tuning Nut Retainer	
7239991	109	Washer	Spring Retainer-P. B.	
7240112	110	Washer	Cup-Manual Tuning Spring. . . . .	.03
7242588	111	Core	Connecting Link & Core Assy. . . . .	.70
7240036	112	Plate	Pointer Plate Assy.-Includes Items 113 to 117. . . . .	1.60
7240033	113	Cord	Pointer Cord & Link Assy. . . . .	.20
7240001	114	Diffuser		.20
7240215	115	Light	Light Bracket & Lead Assy . . . . .	.40
7240007	116	Spring	Pointer Return. . . . .	.05
7238985	117	Washer	Holding Pointer Cord & Link . . . . .	.03
7239990	118	Spring	Latch Bar	

MISCELLANEOUS PARTS

7241084	Cable	Tuner Cable & Plug to Set. . . . .	4.00
7241503	Cable	Speaker. . . . .	.85
7242591	Escutcheon	Tuner Front Cover & Dial Assy. . . . .	2.10
7241082	Knob	Control. . . . .	
7239940	Knob	Dummy. . . . .	.25
7239545	Knob	Tone Control . . . . .	.30
7241078	Lead	"A" Lead Assy.-Fuse to Tuner . . . . .	.35
7241070	Lead	"A" Lead Assy.-Tuner to Set. . . . .	.40
5272607	Lead	Fuse to Ammeter. . . . .	1.60
7238455	Socket	Loktal Tube Base . . . . .	
7236279	Socket	Octal Tube Base. . . . .	
7233944	Socket	Vibrator . . . . .	
7241514	Speaker	. . . . .	9.00

TUBE COMPLEMENT

1213583	7A7	R.F. Amp . . . . .	1.25
1213585	7B8	Osc. Modulator . . . . .	1.25
1213583	7A7	I.F. Amplifier . . . . .	1.25
1213852	7E6	Det. AVC & First Audio . . . . .	
1213586	7C5	Push-Pull Output . . . . .	1.25
7237180	OZ4	Rectifier. . . . .	1.60

INSTALLATION PARTS

7241060	Parts Pkg. Assy.		
1880659	Generator Condenser . . . . .		\$ .45
1879526	Coil Condenser. . . . .		.35
1435482	Distributor Suppressor. . . . .		.30
7240138	Front Wheel Static Collector. . . . .		.20
7240808	Insulating Ferrule. . . . .		.12
147685	Fuse 14 Amp . . . . .		.10
120617	Screw		
131015	Washer		
113987	Screw		
132900	Screw		
121801	Lockwasher		

CADILLAC DIV.—GEN. MOTORS

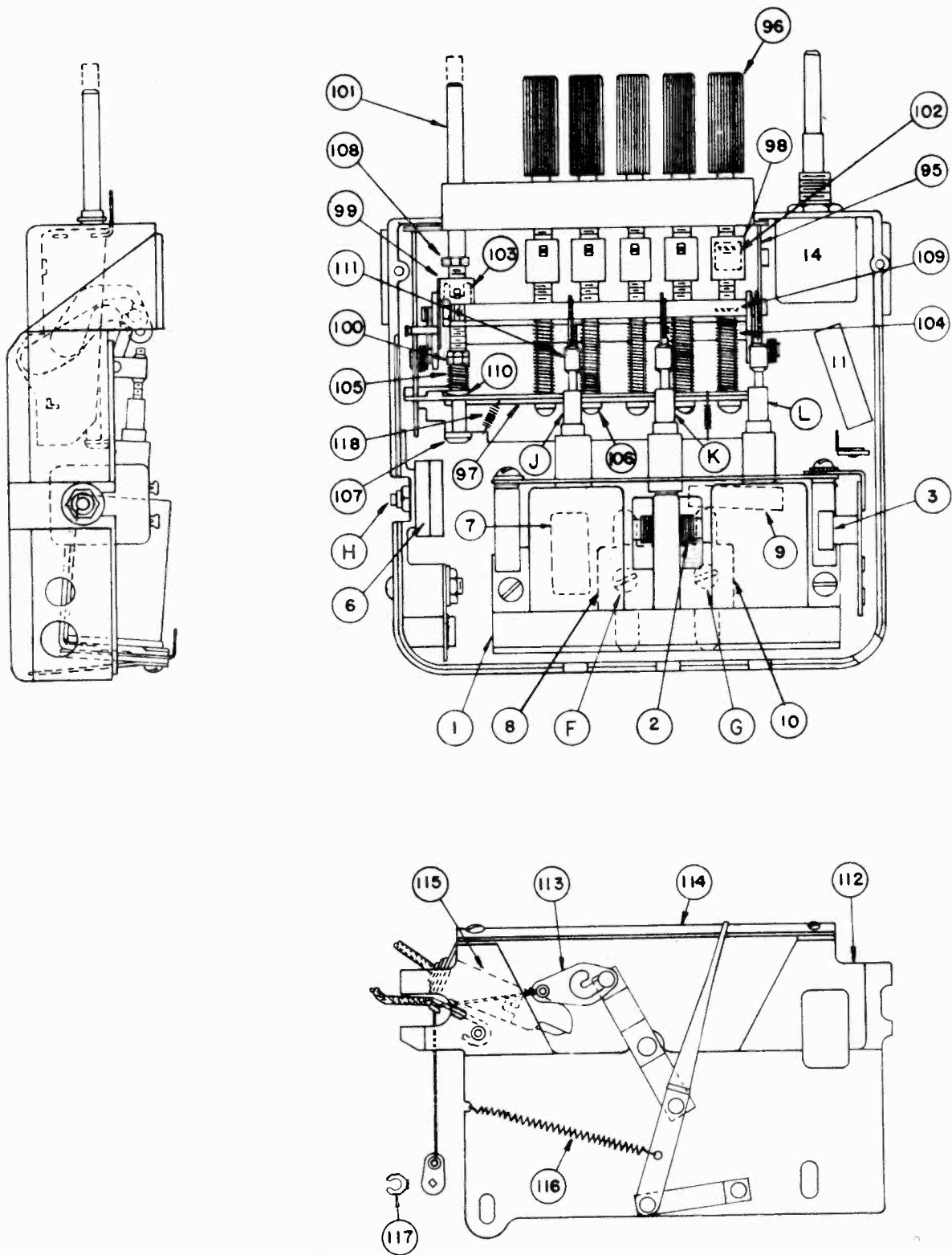


Fig. 3 Parts Layout - Tuner  
CADILLAC 1942 REAR COMPARTMENT RADIO

CADILLAC DIV.—GEN. MOTORS

MODEL 7241938

MODEL 7241951

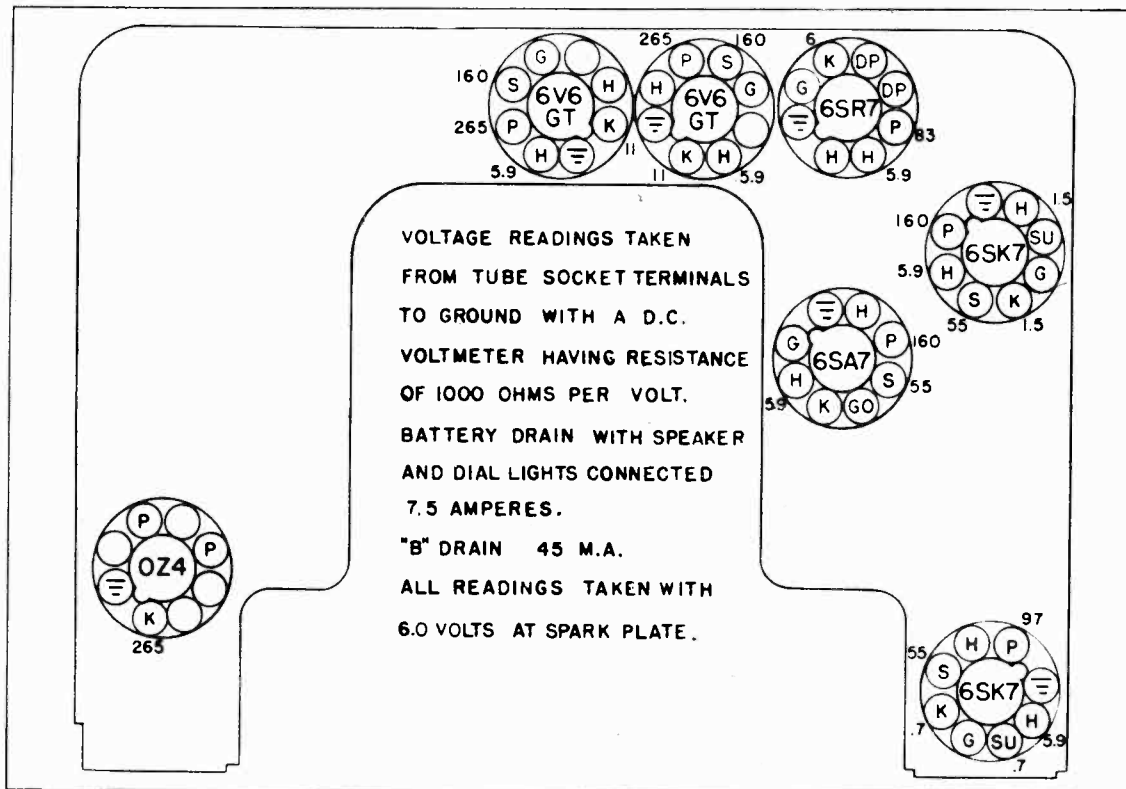


Fig. 6 Voltage Chart  
CADILLAC 1942 AUTOMATIC RADIO

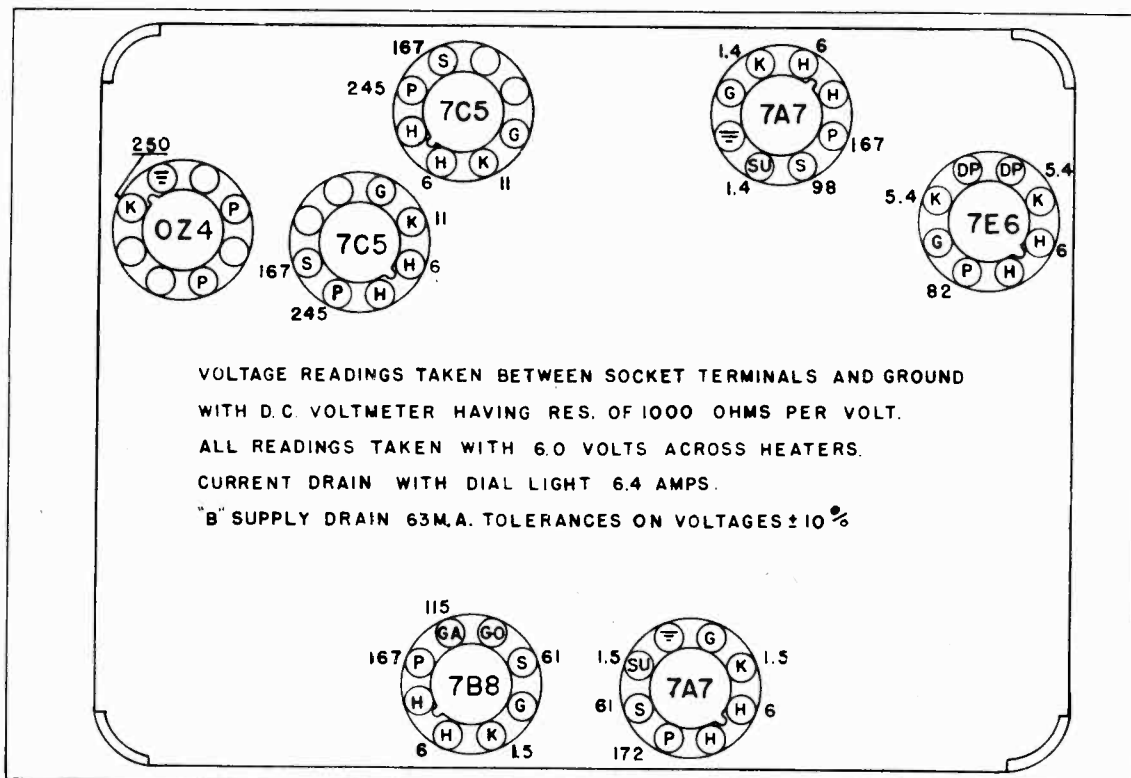


Fig. 4 Voltage Chart  
CADILLAC 1942 REAR COMPARTMENT RADIO

CADILLAC DIV.—GEN. MOTORS

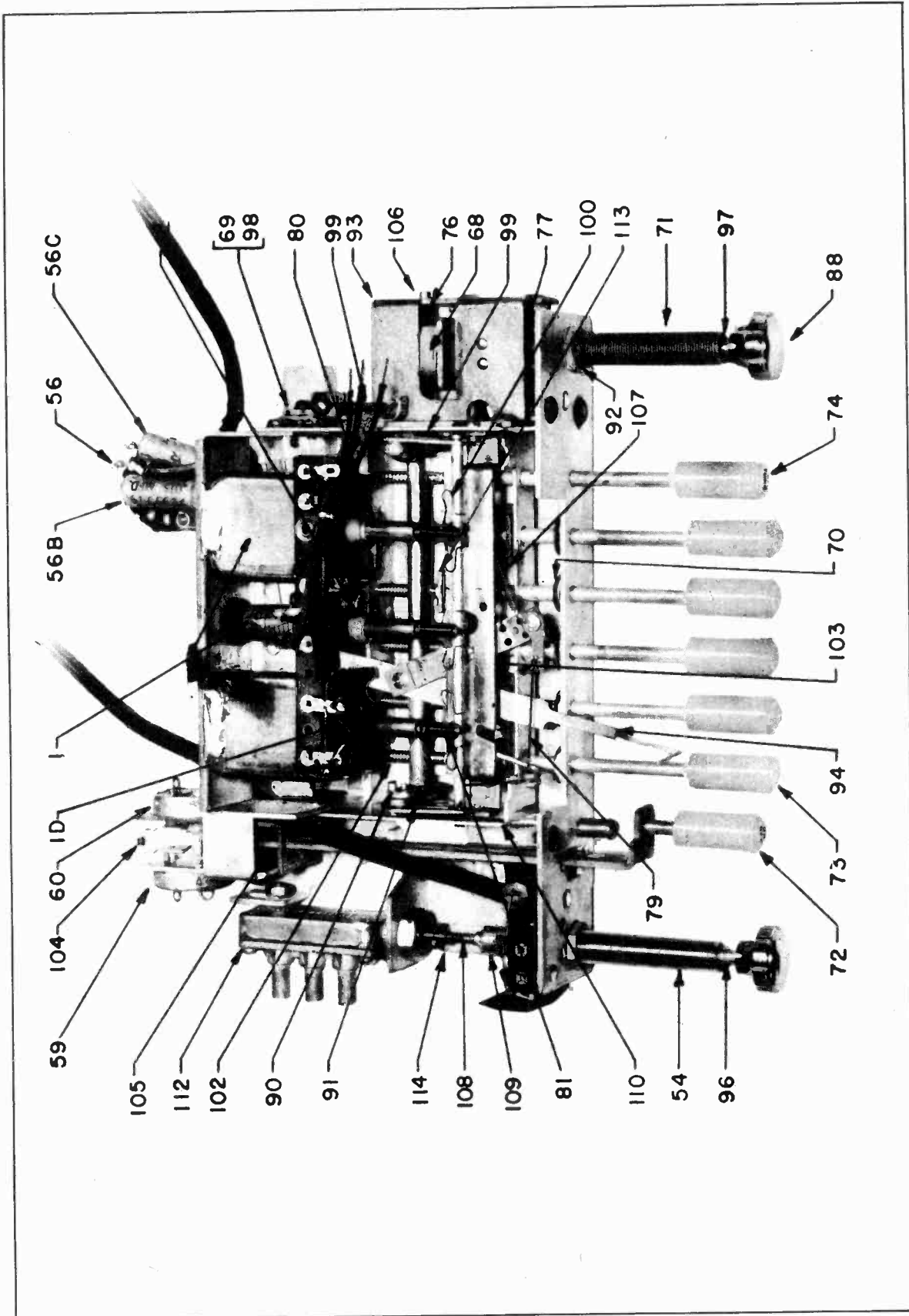
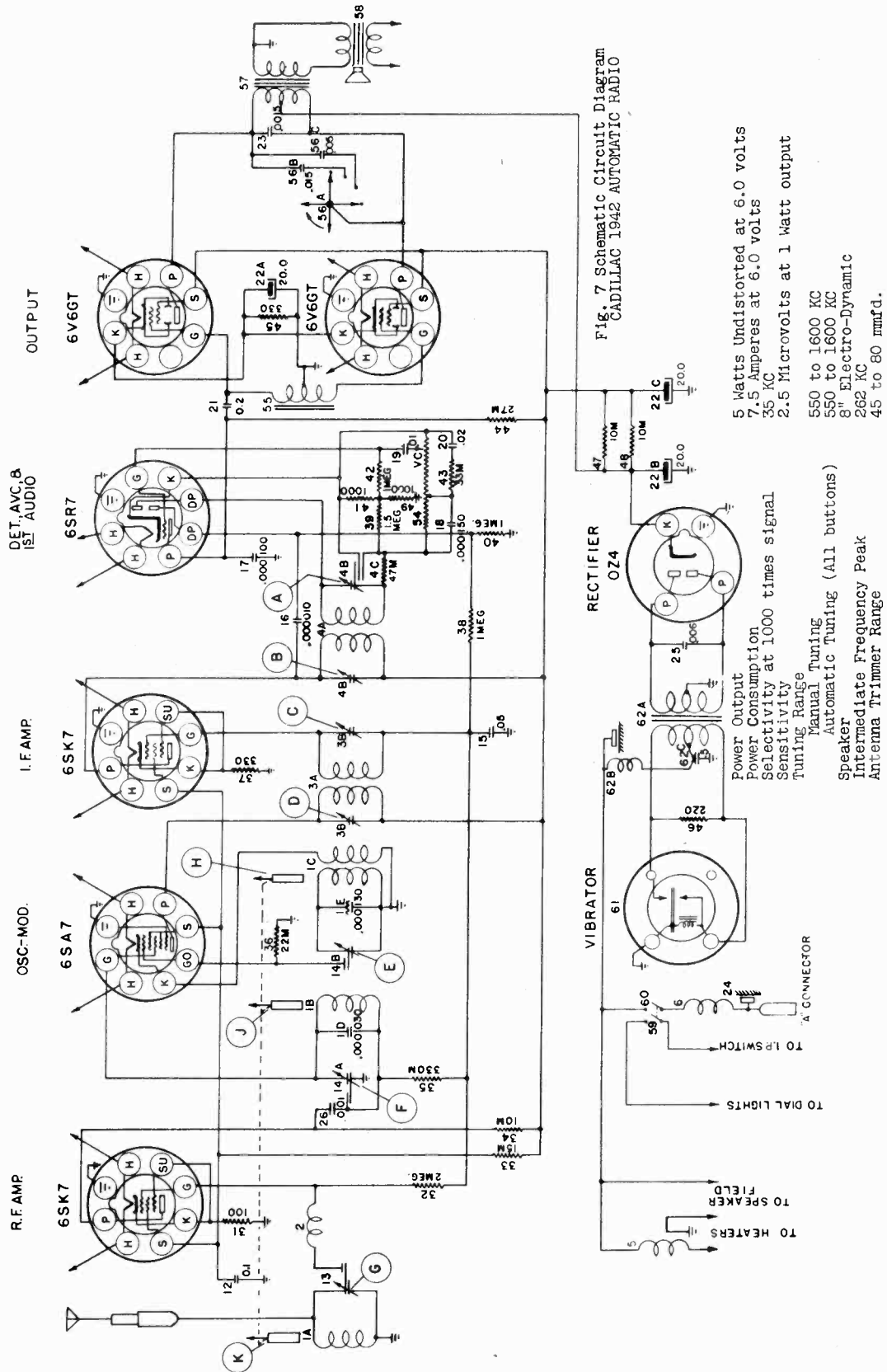


Fig. 5 Parts Layout - Tuner  
CADILLAC 1942 AUTOMATIC RADIO

CADILLAC DIV.—GEN. MOTORS



CADILLAC DIV — GEN MOTORS

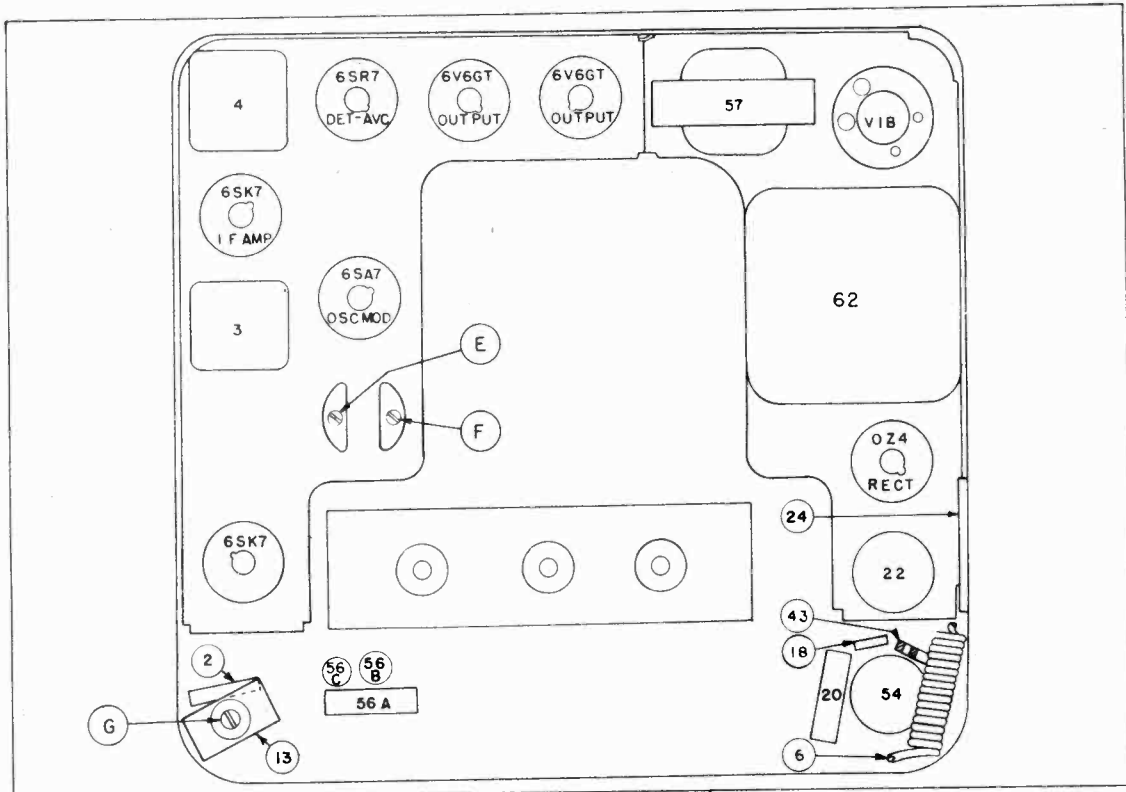


Fig. 3 Parts Layout - Rear View  
CADILLAC 1942 AUTOMATIC RADIO

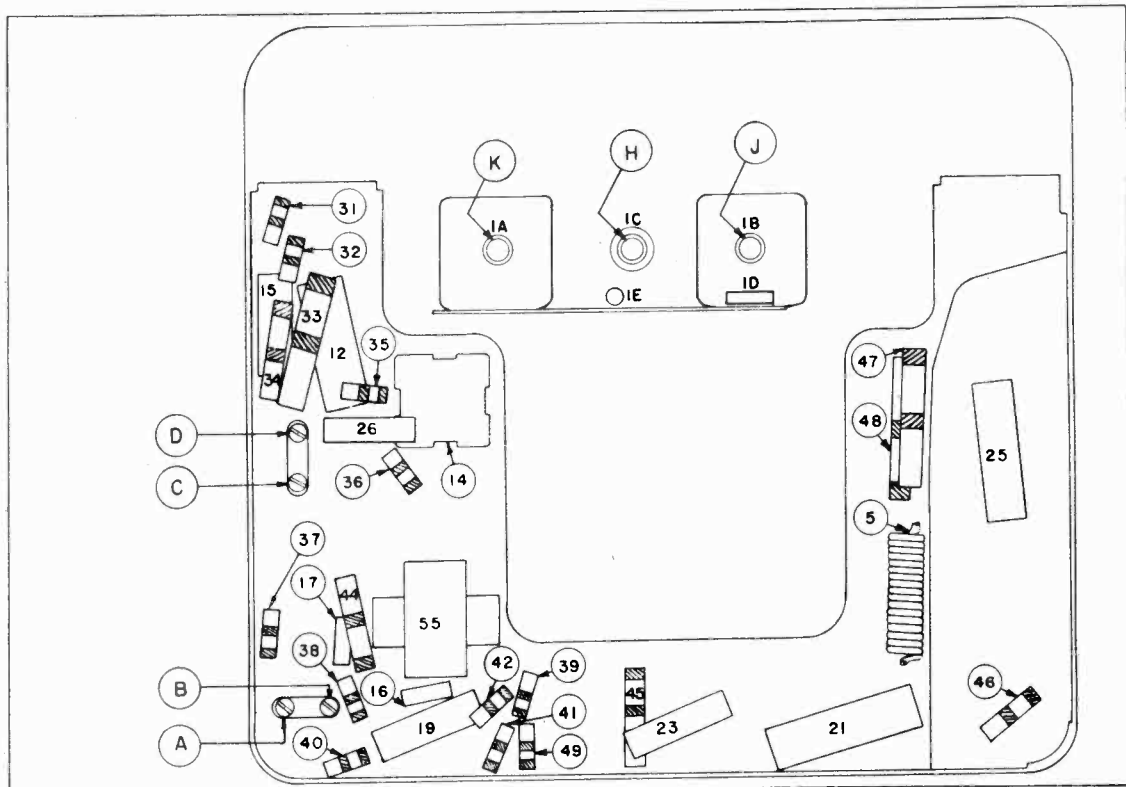


Fig. 4 Parts Layout - Front View (Less Tuner)  
CADILLAC 1942 AUTOMATIC RADIO

## CADILLAC DIV.—GEN. MOTORS

Capacity Alignment (Cont'd.)

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

This type of tuning circuit does not require alignment at 600 KC.

4. Alignment with Car Antenna

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

CAPACITY AND INDUCTANCE ALIGNMENT1. I.F. Alignment at 262 KC.

Follow the procedure as outlined under I.F. Alignment at 262 KC Capacity Alignment.

2. Alignment at 1615 KC.

- (a) Connect the signal lead of the signal generator to the antenna connection of the set through a .000070 mfd condenser.

- (b) Set signal generator to 1615 kilocycles.

- (c) Rotate the manual tuning mechanism until the high frequency stop is reached. Mechanically align the iron cores K, H, & J by setting the oscillator core H so that its front edges project out 1-5/32" from the end of the coil form and the antenna and R.F. cores K & J project 1-5/32" from the end of their respective coil forms.

- (d) Adjust the oscillator trimmer E, R.F. trimmer F, and antenna trimmer G for maximum output.

3. Alignment at 1400 KC.

- (a) Set signal generator to 1400 K.C. and tune set to this signal.

- (b) Adjust the R.F. core J for maximum output.

- (c) Adjust the antenna core K for maximum output.

4. Realignment at 1615 and 1400 KC.

- (a) Repeat alignment of trimmer E and trimmers F and G at 1615 KC.

- (b) Repeat alignment of cores K and J at 1400 KC. Apply shellac to the core screws to seal the adjustment.

5. Alignment with car antenna.

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

CIRCUIT ALIGNMENT

Alignment Procedure: The trimmer condensers in this receiver have been carefully adjusted at the factory and should require no further adjustment (except the antenna trimmer) unless tampered with or unless a defective coil has been replaced. It is advisable not to attempt any adjustment unless it is definitely known that an adjustment is necessary.

An accurately calibrated test oscillator or signal generator and an output meter must be used to align the receiver circuits correctly. To make all alignment adjustments, the front and back covers must be removed. All trimmers are readily accessible. The antenna trimmer is adjusted in the rear of the case near the antenna socket.

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

CAPACITY ALIGNMENT1. I.F. Alignment at 262 KC

- (a) Connect an output meter across the voice coil terminals of the speaker leaving the speaker connected.

- (b) Connect the ground lead of the signal generator to the chassis frame.

- (c) Connect the signal lead of the signal generator to the grid of the 6SA7 tube through the 0.1 mfd condenser.

- (d) Turn set volume control on full and tone control to the extreme treble end. Set the signal generator at 262 KC. Tune the receiver to a frequency where no squeals or beat notes may be heard and so that when the tuning control is moved in narrow limits no appreciable change in output may be noted.

- (e) Adjust the I.F. trimmers A, B, C, & D for maximum output, beginning with trimmer A.

2. Alignment at 1615 KC

- (a) Connect the signal lead of the signal generator to the receiver antenna connection through a .000070 mfd condenser or 7241619 alignment dummy.

- (b) Turn the manual tuning control of the receiver to the stop at the extreme high frequency end of the dial.

- (c) Set the signal generator to 1615 KC.

- (d) Adjust the oscillator trimmer E for maximum output.

3. Alignment at 1400 KC

- (a) Set the signal generator to 1400 KC.



MODEL 7241951

CADILLAC DIV.—GEN. MOTORS

List Price

Description

Part Name

Illust. No.

Part No.

List Price

Description

Part Name

Illust. No.

Part No.

MISCELLANEOUS CHASSIS & TUNER PARTS

TUNER MECHANICAL PARTS

Cable  
Cover  
Cover  
Cable  
Lead  
Nut  
Shroud  
Socket  
Socket  
Socket  
Lead  
Fuse

Face worm.  
Slide Assy  
Plunger Shock Absorber  
Manual Drive  
On-Off Switch Button & Plunger  
Push Button & Screw  
T.C. Button & Plunger  
Core Clamp (Not shown on tuner picture)  
Assy  
Man Drive Shaft  
Tone Plunger Assy  
Pointer Drive  
Iron Tuning  
Core

5274994  
7242381  
7242413  
5274973  
7242478  
7242290  
7242399  
7239475  
7236279  
7233944  
7238456  
147685

.12  
.25  
.03  
.50  
.60  
.30  
.30  
.80  
.20  
.28  
.40

Calibrated  
Assy. (Includes Items 86-87-& 96\*\*)

88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110

7241957  
7242321  
7242421  
7242385  
7242481  
7242387  
7242389  
7242387  
7242387  
7241267  
7242508  
7242138  
7240921  
7242494  
7242397  
7242277  
7242285  
7242507  
7242560  
7241370  
7240922  
7236461  
7242384  
7242392  
7242286  
7242386  
7240982  
7241042

1.25  
3.00  
.15  
.08  
.90  
.45  
.12  
.05  
1.00  
.03  
.92  
.03  
.15  
.05  
.04  
.03  
.03  
.08  
.03  
.08  
.03  
.08  
10.00  
.20

Dial  
Escutcheon  
\*\*Frame  
\*\*Glass  
Knob  
Light  
Lever  
Link  
Nut  
Outrigger  
Pointer  
Dial Glass  
Manual Assy.  
Shoulder-Spacing Latch Bar  
Connecting Link-Also Manual Latch  
Bar Return  
Core Coupling  
Latch Bar (Not shown on tuner picture)  
Plunger Return  
Tuning Nut Yoke  
Switch Coupling  
Switch-Plunger Return  
Tension-Clutch Shaft  
Pointer Return  
Vacuum Valve Yoke  
Volume Control Shaft  
Staked Assy. Includes  
Items 70,73,74,101,102,103,111,&  
113 (\*)  
Latching Button (Not shown on tuner picture)  
Vacuum  
Tuning Nut  
Vacuum Valve Drive

83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114

7242494  
7242397  
7242277  
7242285  
7242507  
7242560  
7241370  
7240922  
7236461  
7242384  
7242392  
7242286  
7242386  
7240982  
7241042  
7241045  
7241039  
7241169  
7241835  
7242513  
7240815  
7240915  
7241694  
7240812  
7242514  
7242509  
7242425  
7240845  
7240740  
7240752

TUBE COMPLEMENT

MOUNTING & INSTALLATION PARTS

R.F. Amp  
Oscillator-Modulator  
I.F. Amp  
Det. A.V.C. & 1st Audio  
Push Pull Output  
Rectifier

6SK7  
6SA7  
6SK7  
6SR7  
6T6GT  
024

1.00  
1.00  
1.00  
1.05  
1.05  
1.60

MOUNTING & INSTALLATION PARTS

Bracket Radio Support  
Parts Pkg. Assy.  
Gen. Cond  
Coil Cond  
Dist. Suppressor  
Front Wheel Static Collector  
Washer  
Ground Spring  
Ground Strap  
Serrated Washer  
Lockwasher  
Hex. Nut  
Insulating Ferrule  
Screw  
Washer  
Screw  
Screw  
Parts Pkg. Assy.  
Irim Plate Assy  
Hex. Nut

7242412  
7242535  
1880659  
1879526  
1435482  
7240138  
120395  
7242886  
5274049  
7240761  
120380  
120375  
7240808  
155343  
120854  
120392  
161827  
7242536  
7242535  
1305817

.40  
.45  
.35  
.30  
.20  
.05  
.15  
.12  
.90

CHEVROLET DIV.—GEN. MOTORS

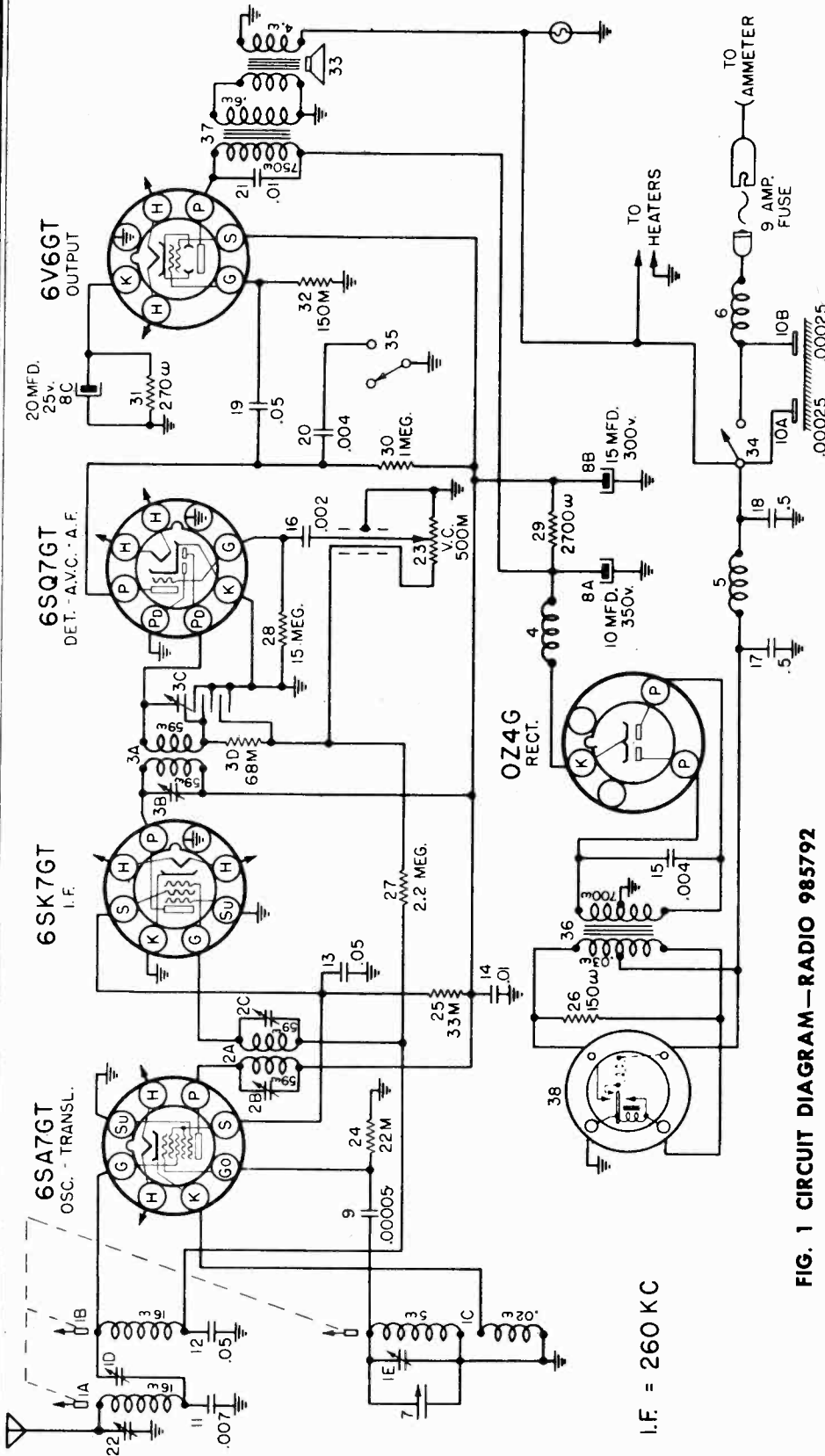


FIG. 1 CIRCUIT DIAGRAM—RADIO 985792

**GENERAL:** This auto radio is a five-tube single unit universal receiver with automatic push-button tuning. The power supply consists of an OZ4G rectifier tube used in conjunction with a full wave plug-in vibrator. The receiver is designed to mount through the instrument panel in all 1942 Chevrolet cars, and may be mounted under the instrument panel in other cars and trucks.

**Antenna System:** The antenna system used with this receiver consists of a rod-type antenna with a specially designed low capacity lead-in.

MODEL 985792

CHEVROLET DIV.—GEN. MOTORS

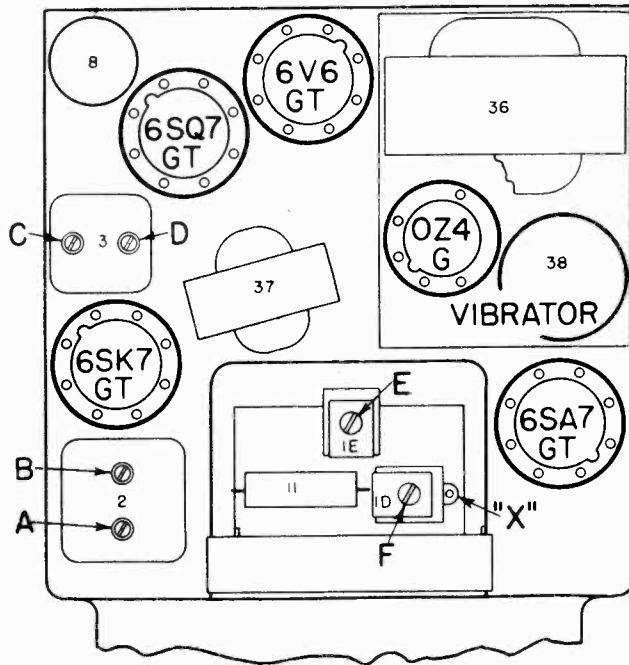
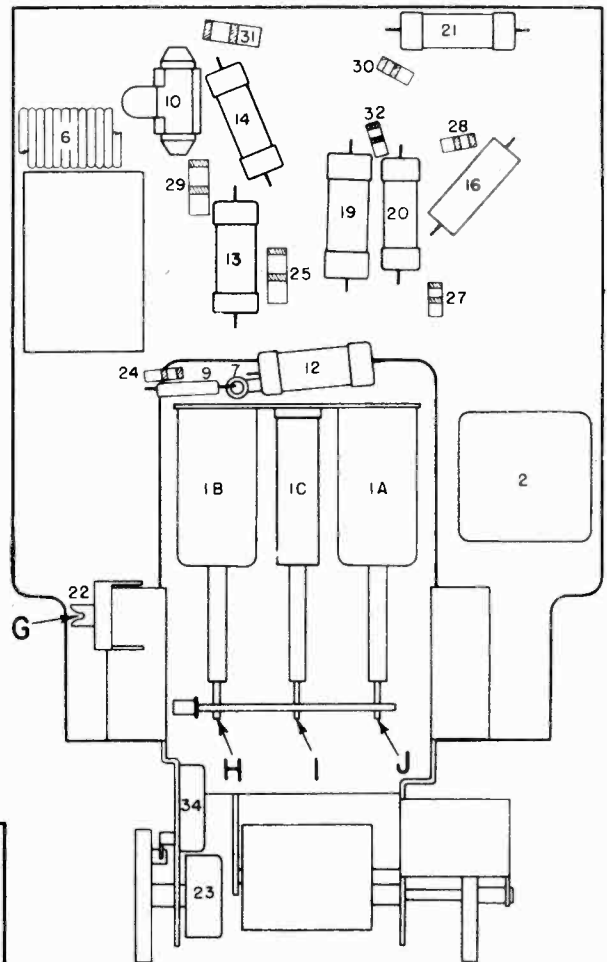
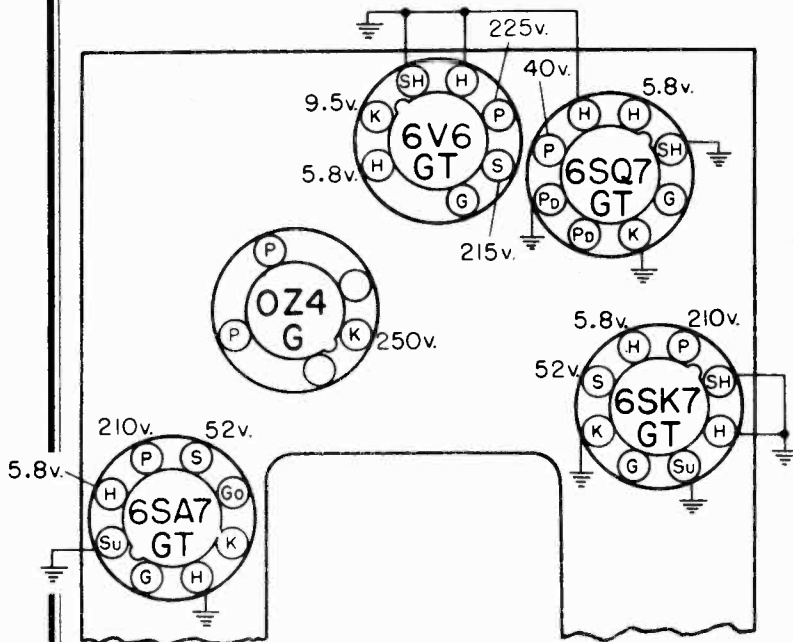


FIG. 2 PARTS LAYOUT—RADIO 985792



RADIO DATA

MODEL NUMBER — 985792  
 SERIAL NUMBER — B-42-1000 AND UP  
 TUBE COMPLEMENT — 6SA7GT, 6SK7GT, 6SQ7GT, 6V6GT, OZ4G  
 BATTERY CURRENT — 6.2 AMPERES  
 B+ VOLTS — 250 VOLTS  
 I.F. KC — 260  
 R.F. KC — 1610 - 540  
 VIBRATOR TYPE — NON SYNCHRONOUS  
 YEAR — 1942



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. ALL VOLTAGES EXCEPT THE HEATER VOLTAGES MEASURED ON THE 0-250 VOLT SCALE. "A" BATTERY 6.0 VOLTS. CURRENT DRAIN 6.2 AMPERES. "B" SUPPLY DRAIN APPROXIMATELY 45 MA.

FIG. 3 VOLTAGE CHART—RADIO 985792

RADIO BULLETIN 3-37  
 Part No. 985792  
 Date 10-1-41

## CHEVROLET DIV.—GEN. MOTORS

### Circuit Alignment

All of the adjustable condensers in this receiver are very accurately adjusted at the factory and will need no further adjustment (excepting antenna trimmer condenser), unless tampered with or a defective coil has been replaced. If realignment is found to be necessary, the circuits can be properly adjusted only with the use of a calibrated test oscillator or signal generator and output meter. **NOTE:** Do not attempt to align this receiver without carefully noting the following instructions.

#### 1. Aligning I. F. Stage at 260 Kilocycles

Turn volume control to the maximum position.

- Connect the signal lead of the test oscillator to terminal "X" (see parts layout), which is the control grid lead of the 6SATGT tube, through a .1 mfd. condenser.
- Connect the ground lead of the test oscillator to the chassis frame.
- Connect the output meter from the plate prong of the 6V6GT output tube to ground. Care should be taken when connecting the output meter to insert a series condenser to protect the meter from d. c. voltages.
- Set the test oscillator to exactly 260 kilocycles.
- Adjust the trimmers "A," "B," "C" and "D" on the I. F. transformers for maximum output (see parts layout). These adjustments should be repeated several times and during alignment the test oscillator output should be kept to as low a value as is consistent with obtaining a readable indication on the output meter.

#### 2. Aligning at 1610 Kilocycles

- Leave the test oscillator leads connected the same as for aligning the I. F. circuits.
- Set the test oscillator to 1610 kilocycles.
- Adjust the condenser "E" (see parts layout) for maximum output. It is very important that this frequency be set accurately as a slight missetting will cause the receiver to be out of track over the high frequency end of the dial.

#### 3. Aligning at 1400 Kilocycles

- Remove the signal lead of the test oscillator from the grid of the 6SATGT tube and connect to the antenna terminal of the receiver THROUGH A .000075 MFD. MICA CONDENSER connected in place of the .1 mfd. condenser previously used. (It is very important that a .000075 mfd. mica condenser be used when aligning the antenna stage of these receivers in order that this circuit can be made to track properly.)
- Set the test oscillator to 1400 kilocycles.

- Tune the receiver until this frequency is tuned in with maximum output.
- Adjust the antenna compensating condenser "G" (see parts layout) for maximum output.
- Adjust the grid coil trimmer condenser "F" for maximum output.

**NOTE:** With permeability tuning it is necessary to adjust the capacity at only one frequency. The coils are so wound that tracking is automatic and the usual low frequency adjustments are not necessary. If the entire alignment procedure has been accomplished accurately, the receiver should be uniformly sensitive over the entire frequency range.

### Instructions for the Replacement of Tuning Core Assembly Part No. 1216034

- Remove broken or defective core assembly (part No. 1216034) consisting of the three cores. This is accomplished by removing the coupling springs (two part Nos. 1216036) and sliding the cores out (as a complete unit) of the coils.
- Install new core assembly, using the reverse of procedure No. 1.
- Tune receiver to high frequency stop position by turning manual station selector control. With cores at high frequency stop position make sure that the dial is correctly set to the reference line above the 1600 kilocycle graduation line.
- Connect the signal generator to the antenna terminal of the receiver and the output meter to the output of the receiver as outlined in the Alignment Instructions.
- Set the signal generator to exactly 1610 kilocycles, **taking care not to change the receiver dial position.**
- Adjust the oscillator and grid coil trimmers (see Parts Layout—"E" and "F") for maximum output meter indication.
- Set the receiver dial to the 1300 kilocycle graduation line. (In order to make certain that the 1300 kilocycle point on the dial will be used for reference throughout this procedure it is suggested that one of the push buttons be set up for this position.)
- Set signal generator to exactly 1300 kilocycles, **taking care not to change the receiver dial position.**
- Adjust the oscillator core (see Parts Layout—"I") for maximum output. Then adjust the other two cores for maximum output indication (see Parts Layout—"H" and "J").
- Repeat operations 3, 5, 6, 7, 8 and 9 until no further improvement can be made.

**IMPORTANT NOTE:** Never attempt to remove or replace one core at a time. The entire assembly (Part No. 1216034) should be removed and replaced as such.

CHEVROLET DIV.—GEN. MOTORS

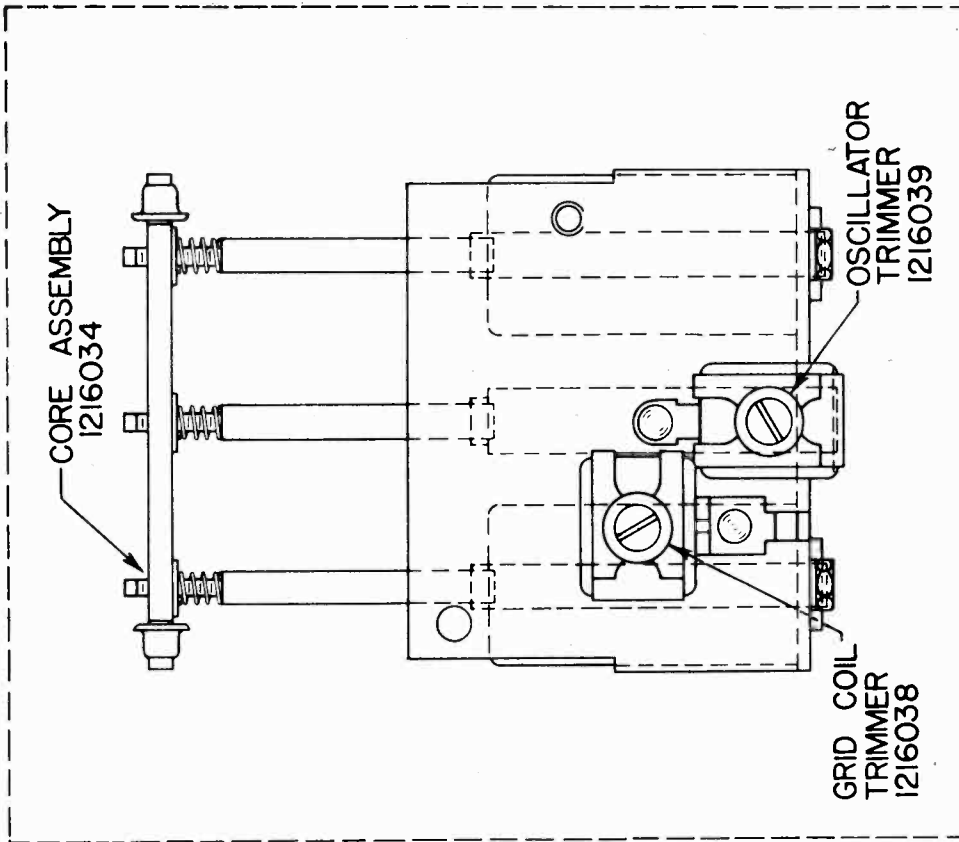
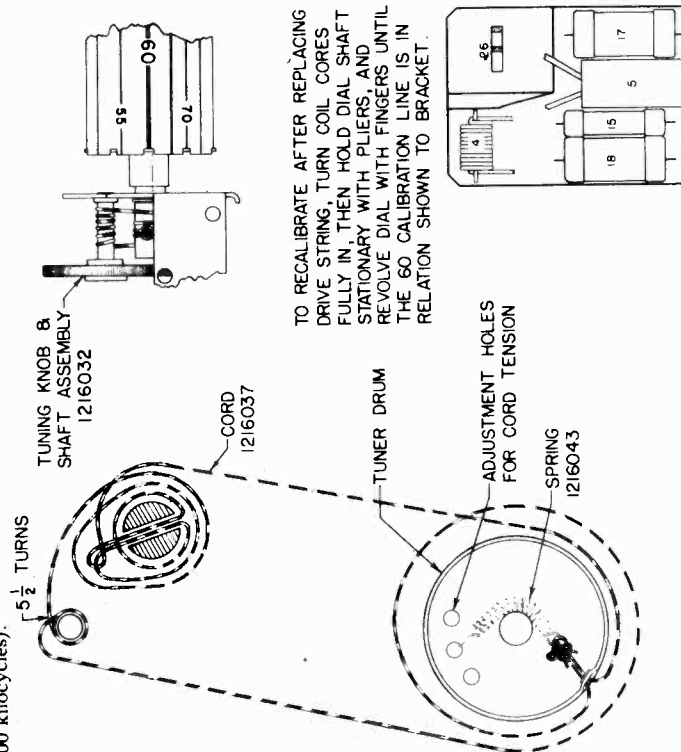


FIG. 6 PERMEABILITY COIL ASSEMBLY PARTS—RADIO 985792

Tube Complement			
Type	Function	Type	Function
6SA7GT	Oscillator-Modulator	6V6CT	Audio Output
6SK7GT	I.F. Amplifier	0Z4G	Rectifier
6SQ7GT	Detector A.V.C.-1st Audio		

Circuit Description

The circuit used in this receiver is the superheterodyne type, employing the permeability method of tuning. An adjustable condenser is provided for matching the antenna circuit to the antenna. This adjustment is made near the high frequency end of the band (1400 kilocycles).

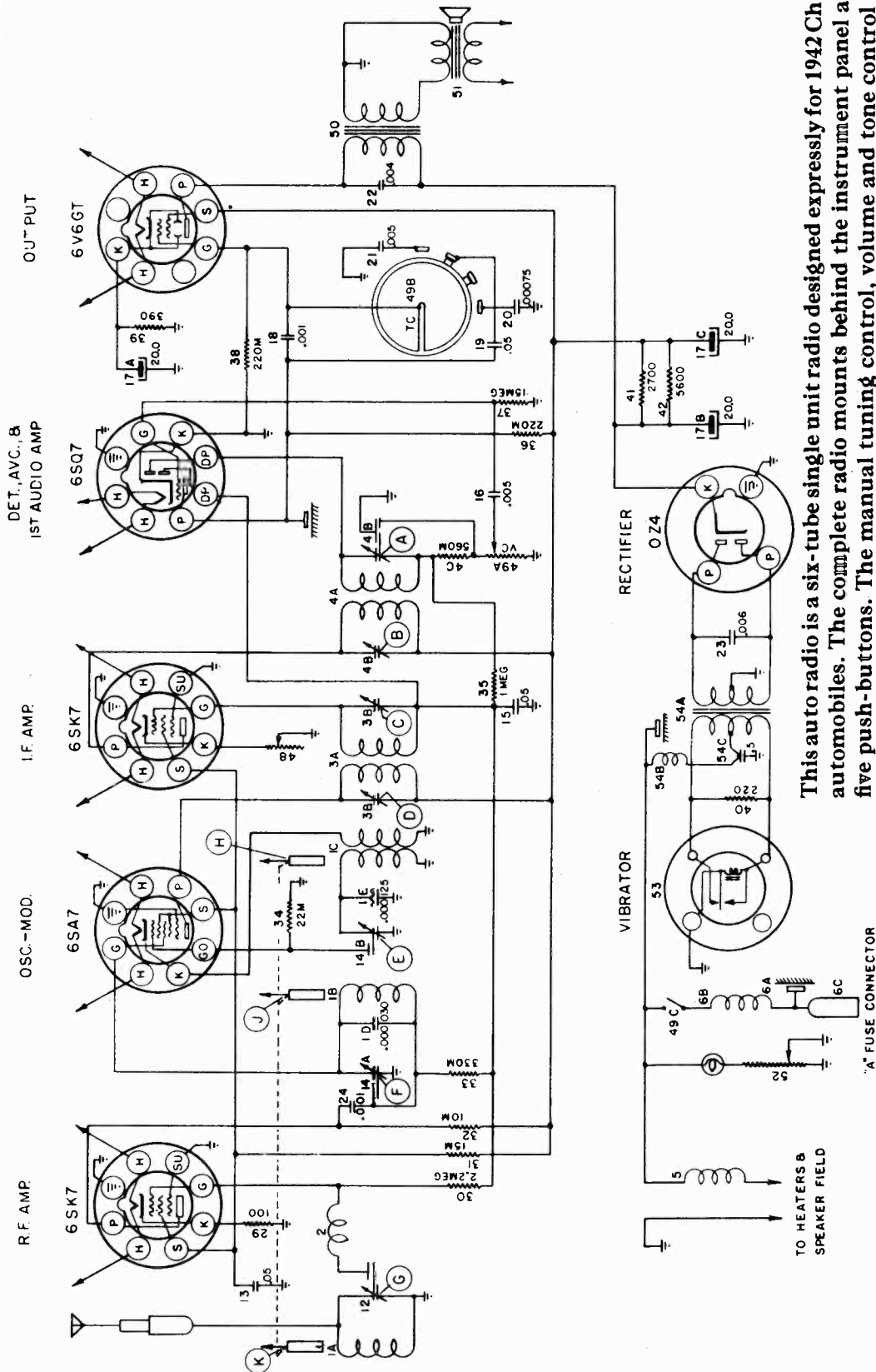


TO RECALIBRATE AFTER REPLACING DRIVE STRING, TURN COIL CORES FULLY IN, THEN HOLD DIAL SHAFT STATIONARY WITH PLIERS, AND REVOLVE DIAL WITH FINGERS UNTIL THE 60 CALIBRATION LINE IS IN RELATION SHOWN TO BRACKET.

FIG. 4 DIAL CORD HOOK-UP—RADIO 985792

FIG. 5 POWER PACK PARTS LAYOUT RADIO 985792

CHEVROLET DIV.—GEN. MOTORS



This auto radio is a six-tube single unit radio designed expressly for 1942 Chevrolet automobiles. The complete radio mounts behind the instrument panel and has five push-buttons. The manual tuning control, volume and tone control knobs, dial and push-buttons extend through the instrument panel, blending with the design of the car interior. An elliptical speaker is used and is mounted in the front of the receiver, projecting sound through the ornamental grille of the instrument panel. Tuning is accomplished by a mechanical unit of rugged construction assuring accuracy. A special compensating condenser in the oscillator circuit minimizes tuning circuit changes due to normal variations in car voltages and temperature ranges. The power supply consists of a full wave primary type vibrator, a power transformer and an OZ4 rectifier tube.

FIG. 1 CIRCUIT DIAGRAM—RADIO 985793

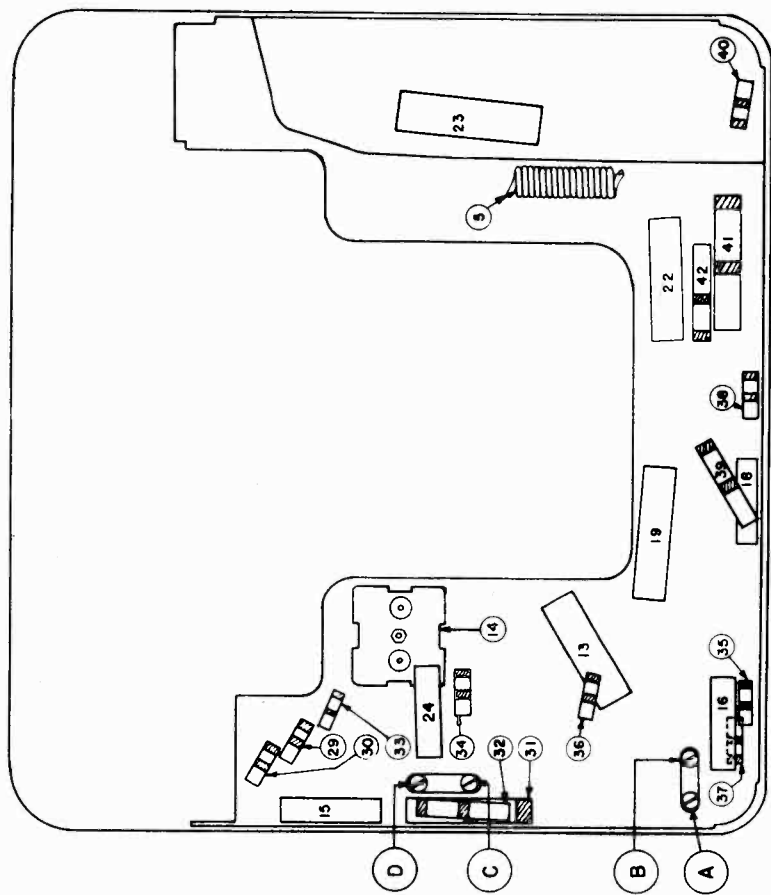
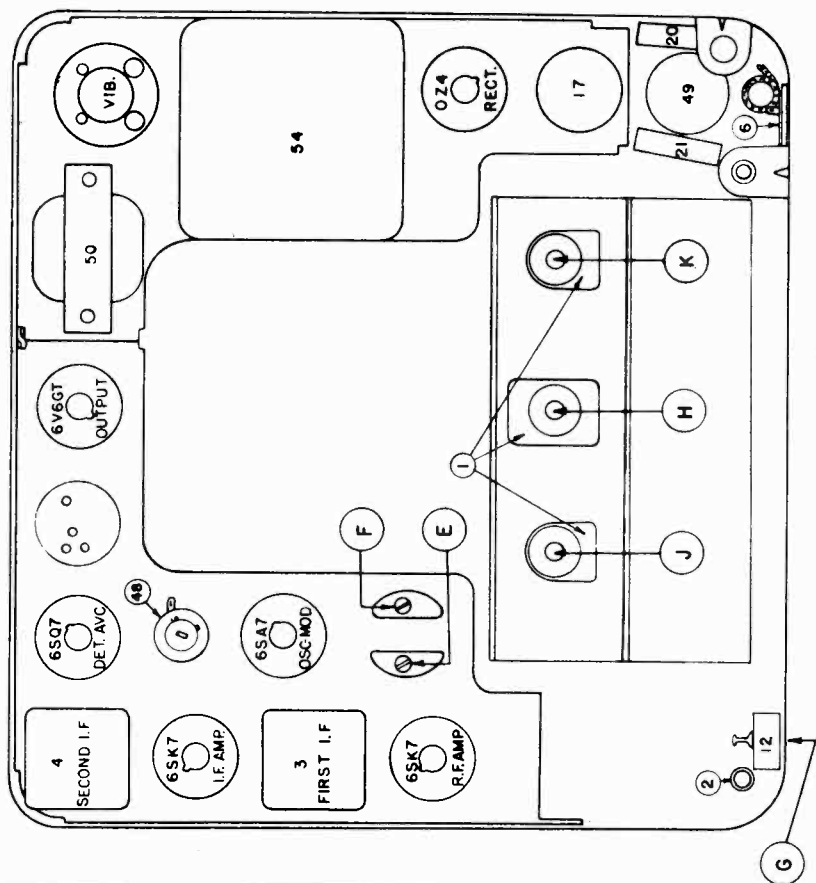


FIG. 3 PARTS LAYOUT—RADIO 985793

### Circuit Description

The circuit used in this receiver is the conventional superheterodyne type and uses no regeneration. The tuning circuits are tuned by varying the inductance of the antenna, R.F. and oscillator coils by means of iron cores which slide in and out of the coils like pistons. The alignment of the cores has been sealed at the factory and further adjustment should not be required unless the coils have been changed or an iron core has been replaced. A special tone control circuit is employed to give the desired tone without distortion.

**Antenna Circuit:** The antenna circuit is directly coupled to the antenna. The antenna, oscillator and R.F. circuits are tuned by means of iron cores. The antenna circuit is adjusted for slight variations in antenna capacity by means of an antenna trimmer located on the bottom of the receiver case.



PARTS LAYOUT - TUBE VIEW.

Date 10-1-41

CHEVROLET DIV.—GEN. MOTORS

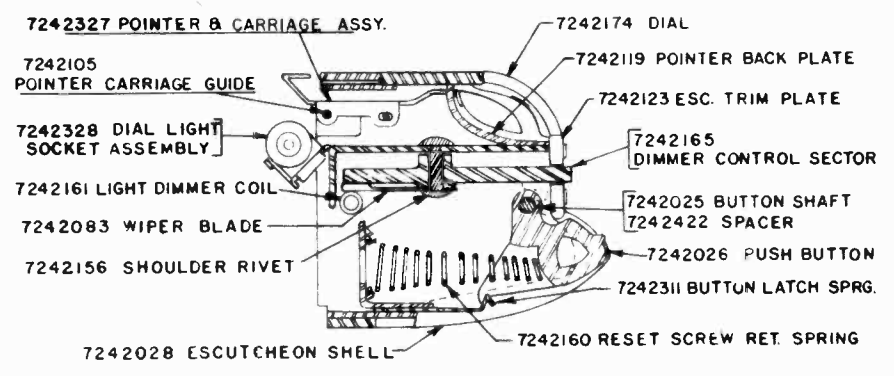
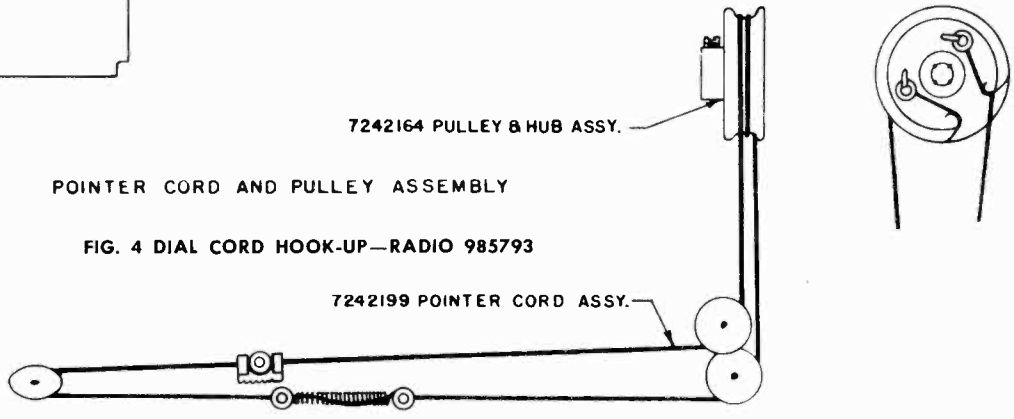
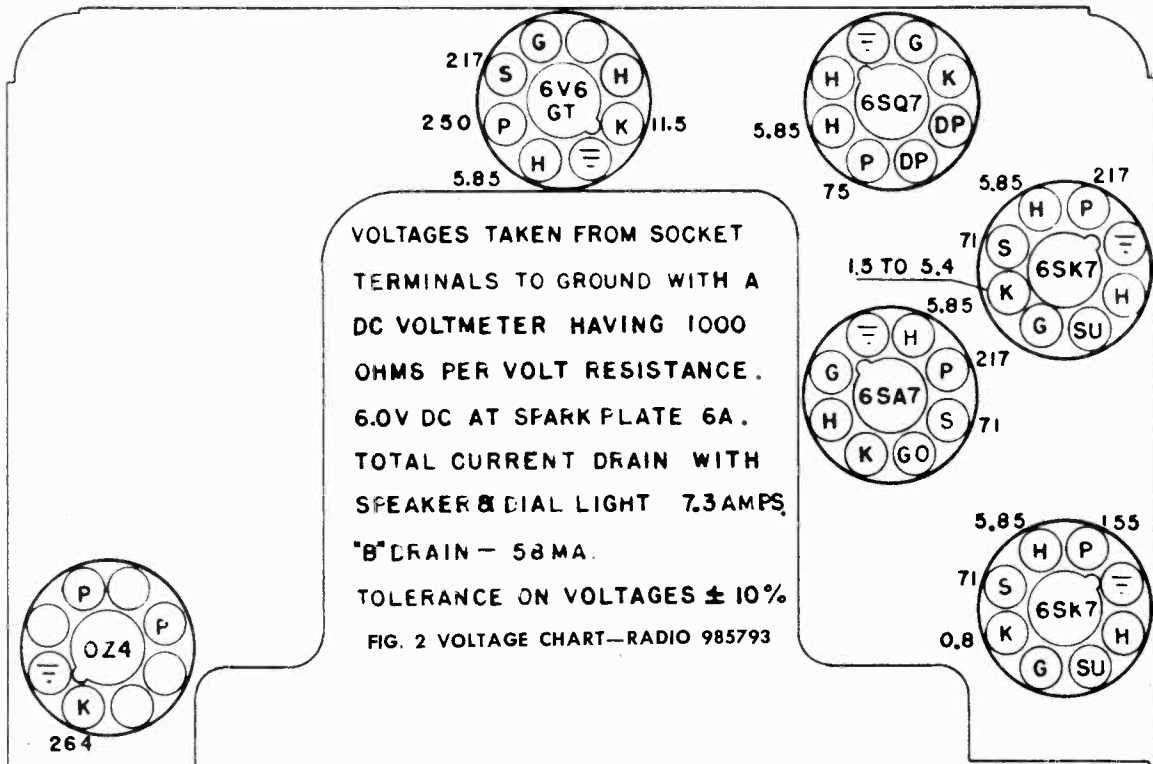


FIG. 5 ESCUTCHEON CROSS SECTION—RADIO 985793



MODEL 985793

## CHEVROLET DIV.—GEN. MOTORS

**Capacity Alignment****1. I.F. Alignment at 262 Kilocycles**

- (a) Connect a 0.1 mfd. condenser between the plate prong of the 6V6GT output tube and one terminal of the output meter, to protect the meter from DC voltages. Connect the other terminal of the output meter to ground.
- (b) Connect the ground lead of the signal generator to the chassis frame.
- (c) Connect the signal lead of the signal generator to the grid (G) prong of the 6SA7 tube socket through a 0.1 mfd. condenser.
- (d) Turn the set volume control on full and rotate the tone control knob to the center (Music) position. Adjust the signal generator to 262 kilocycles, and tune the receiver to a frequency where no squeals or beat notes may be heard and so that when the tuning control is moved through narrow limits no appreciable change in output is noticeable.
- (e) Adjust the I.F. trimmers A, B, C, and D for maximum output.

**2. Aligning at 1615 Kilocycles**

- (a) Connect the signal lead of the signal generator to the receiver antenna connection through a .000070 mfd. condenser.
- (b) Turn the manual control of the receiver to the stop at the extreme high frequency end of the dial.
- (c) Set the signal generator to 1615 kilocycles.
- (d) Adjust the oscillator trimmer "E" for maximum output.
- (e) Adjust the R.F. trimmer "F" for maximum output.
- (f) Adjust the antenna trimmer "G" for maximum output.

**3. Aligning at 1400 Kilocycles**

- (a) Set the signal generator frequency to 1400 kilocycles.
  - (b) Tune the receiver to this signal and readjust the R.F. trimmer "F" and antenna trimmer "G" for maximum output. The signal generator output should be as low as possible and still give a satisfactory output meter reading.
- NOTE:** This type of tuning circuit does not require alignment at 600 kilocycles.

**4. Alignment with Car Antenna**

Antenna trimmer "G" must be adjusted to match the car antenna when receiver is installed. With the antenna fully extended tune in a weak station near 1400 on the dial and adjust the antenna trimmers for maximum volume.

**Capacity and Inductance Alignment**

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

**1. I.F. Alignment at 262 Kilocycles**

The same procedure as previously outlined should be followed.

**2. Aligning at 1615 Kilocycles**

- (a) Connect the signal lead of the signal generator to the antenna connection of the set through a .000070 mfd. condenser.
- (b) Set the signal generator to 1615 kilocycles.
- (c) Rotate the manual tuning knob until the pointer is against the high frequency stop. Mechanically align the iron cores H, J and K by setting the oscillator core "H" so that its front edge sticks out  $\frac{1}{16}$ " from the end of the coil form. The antenna core "K" and the R.F. core "J" should be approximately lined up with the oscillator core by aligning their front edge with that of the oscillator core.
- (d) Adjust the oscillator trimmer "E," the R.F. trimmer "F" and the antenna trimmer "G" for maximum output.

**3. Aligning at 1400 Kilocycles**

- (a) Adjust the signal generator to 1400 kilocycles and tune set to this signal.
- (b) Adjust the R.F. core "J" for maximum output.
- (c) Adjust the antenna core "K" for maximum output.

**NOTE:** When checking maximum output remove hand from the vicinity of the cores as body capacity will affect reading.

**4. Realignment at 1615 and 1400 Kilocycles**

- (a) Repeat alignment of trimmers "F" and "G" at 1615 kilocycles.
- (b) Repeat alignment of cores "K" and "J" at 1400 kilocycles. Do not change adjustment of oscillator core "H." Make sure insulated core spring is properly in place.

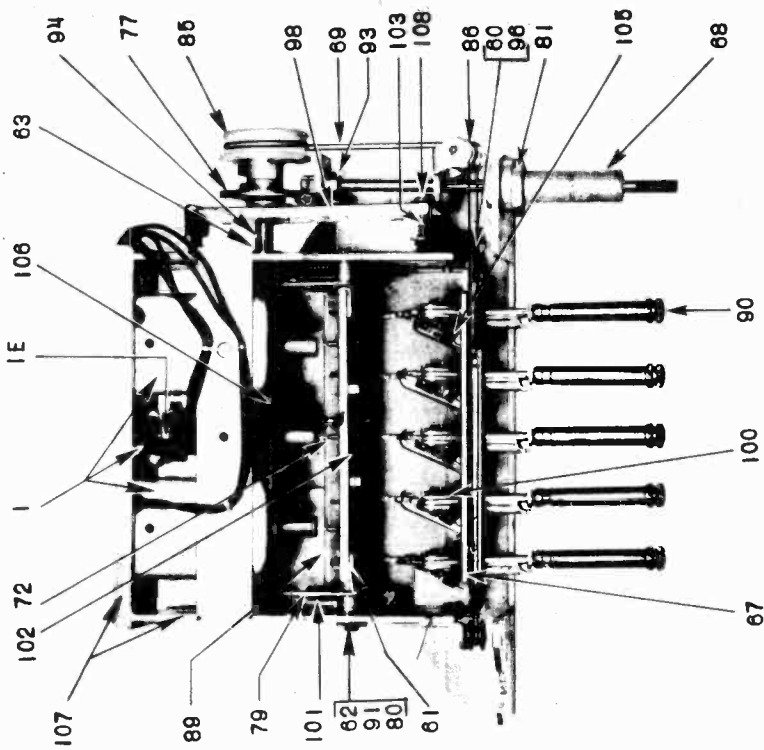
**5. Alignment with Car Antenna**

Antenna trimmer "G" must be adjusted to match the car antenna when receiver is installed. With the antenna fully extended tune in a weak station near 1400 on the dial and adjust the antenna trimmer for maximum volume.

CHEVROLET DIV.—GEN. MOTORS

Tuner Unit and Parts—Cont'd

Pro-duction Part No.	Service Part No.	Part Name	Description—Function	Illus. No.
7242028		Escutcheon	Shell	75
7241590		Gear	Crown Gear Assy	77
7242105		Guide	Dial Pointer Carriage	78
7240922		Link	Connecting Link	79
7242143		Nut	Adjusting—Rotor Arm Bearing (No. 12-28)	80
7241191		Nut	Spacer	81
7242119		Plate	Dial Pointer Back	82
7242123		Plate	Escutcheon Trim (Chrome)	83
7242327		Pointer	Dial—With Carriage Assy	84
7242164		Pulley	Dial Pointer Drive Pulley Assy	85
7242058		Pulley	With Stud	86
7242156		Rivet	Shoulder—Dimmer Control	88
7242356		Rotor	Rotor Arm and Gear Assembly	89
7242163		Screw	Reset—For Station Setting	90
7242144		Screw	Set—For adjusting Rotor Arm Bearing	91
7242025		Shaft	Push Button	92
7242128		Shaft	Manual Tuning Shaft and Bracket Assy	93
7242438		Shaft	Pulley Shaft and Pinion Assy	94
7242328		Socket	Dial Light Socket Assy	95
7238531		Spacer	Latch Bar	96
7242422		Spacer	Tuning Button Shaft (Washer)	97
7242355		Spring	Brake Assy	98
***7242311		Spring	Push Button Latch	99
***7242951		Spring	Push Button Latch Spring and Back Plate Assy	99
7241042		Spring	Connecting Link	101
7242552		Spring	Iron Tuning Core	102
7242253		Spring	Latch Bar Hook-Up	103
7242160		Spring	Reset Screw Return	104
7242189		Spring	Slide Bar Return	105
7242180		Strip	Limiter (on oscillator coil)	106
7242374		Tuner Unit	Mechanical Staked Assy	107
7242346		Washer	Latch Bar Hook-Up	108



TUNER UNIT PARTS—RADIO 985793

Tuner Unit and Parts

7242203	Bar	Latch Assembly Bar	60
7242361	Bar	Parallel Guide Bar Assembly	61
115529	Bearing	Ball—Rotor Arm Bearing	62
7242152	Bearing	Pulley Shaft	63
7242026	Button	Push—Tuning	65
7242083	Blade	Dial Light Dimmer Wiper	66
7242354	Bumper	Rubber—Slide Bar Return Shock Absorber	67
7242084	Bushing	Manual Tuning Shaft Drive	68
7242199	Cord	Dial Pointer Cord Assy	69
7242485	Coil Assy.	Permeability Tuning Unit	1
7242161	Coil	Dial Light Dimmer	52
7242251	Core	Iron Tuning Core	72
7242165	Control	Dial Light Dimmer Sector	73
7242174	Dial	Calibrated (Glass)	74

Miscellaneous Chassis Parts

Part Name	Description—Function
Bulb	Dial Light
Cable	Speaker Cable and Plug
Cable	Volume Control
Cover	Front Case Cover Assy
Cover	Rear Case Cover Assy
Lead	Antenna Lead Assy
Socket	Octal Tube
Socket	Speaker Plug
Socket	Vibrator

CHEVROLET DIV.—GEN. MOTORS

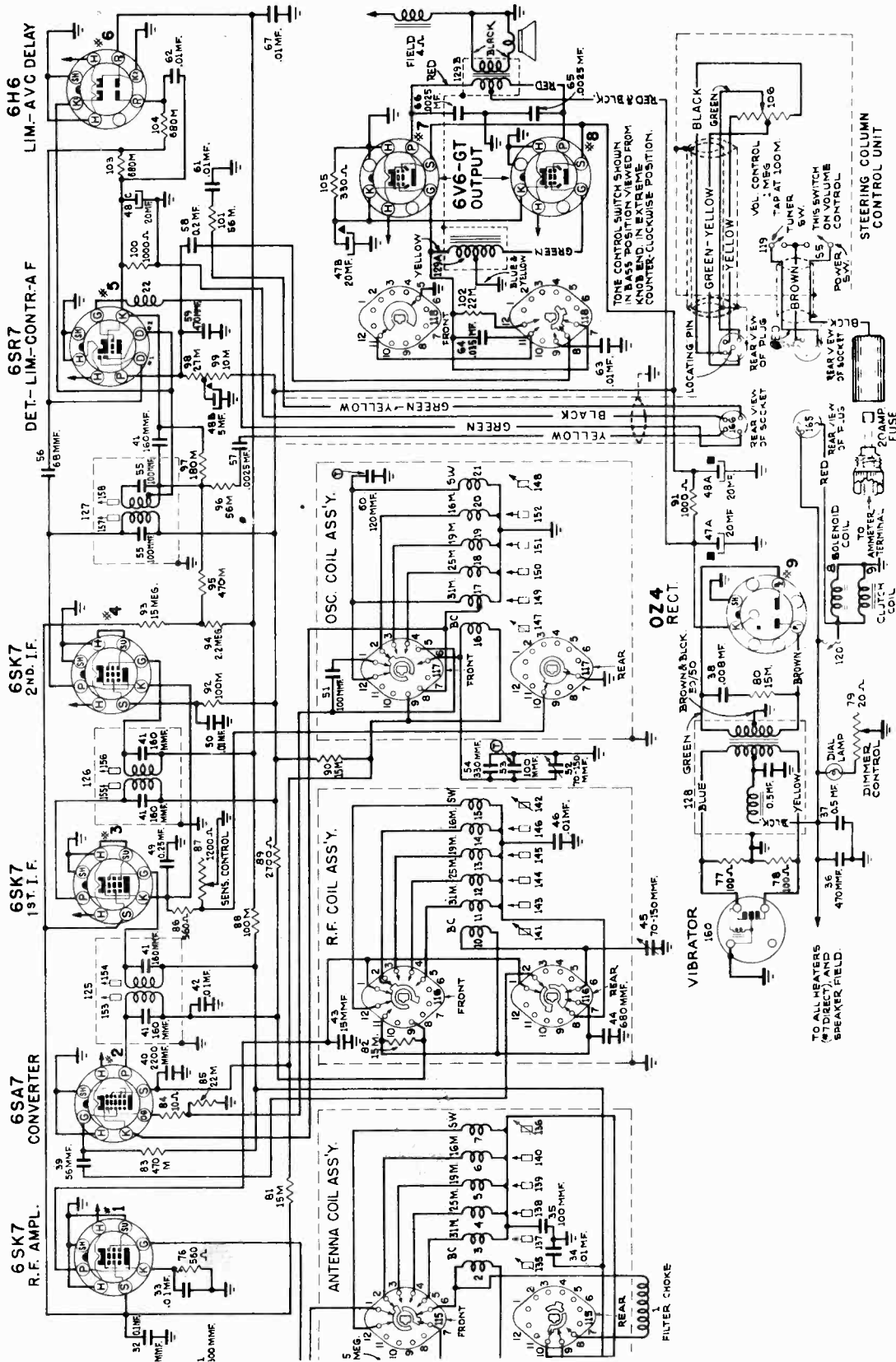


FIG. 1 CIRCUIT DIAGRAM—RADIO 985794 Date 10-1-41

CHEVROLET DIV.—GEN. MOTORS

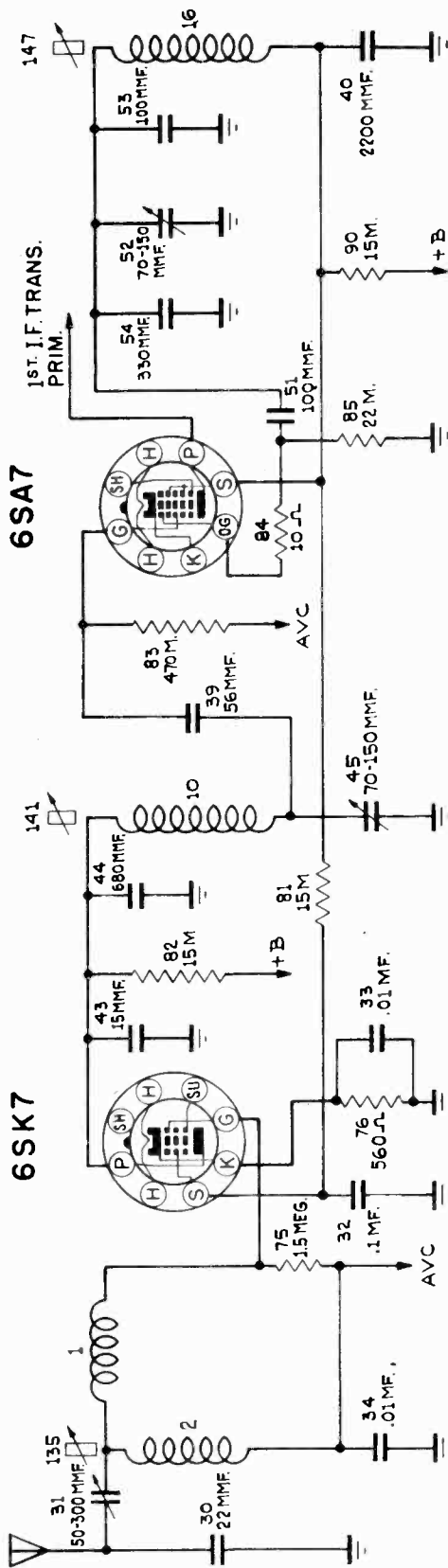


FIG. 2 "A" BAND COIL CIRCUIT—RADIO 985794

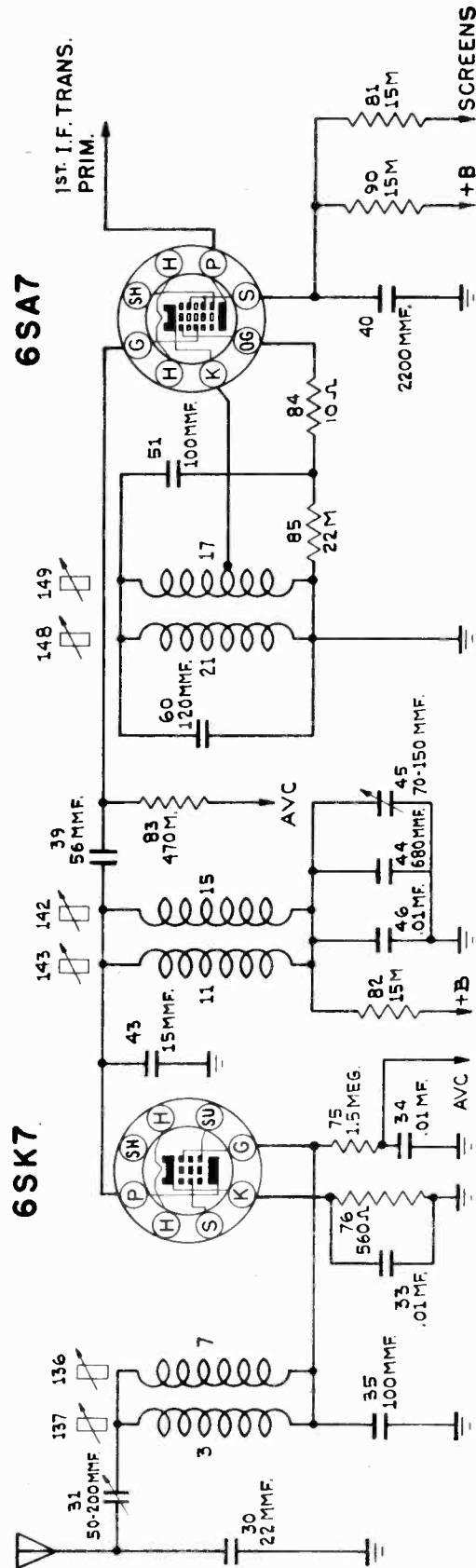


FIG. 3—31 METER BAND COIL CIRCUIT—RADIO 985794

CHEVROLET DIV.—GEN. MOTORS

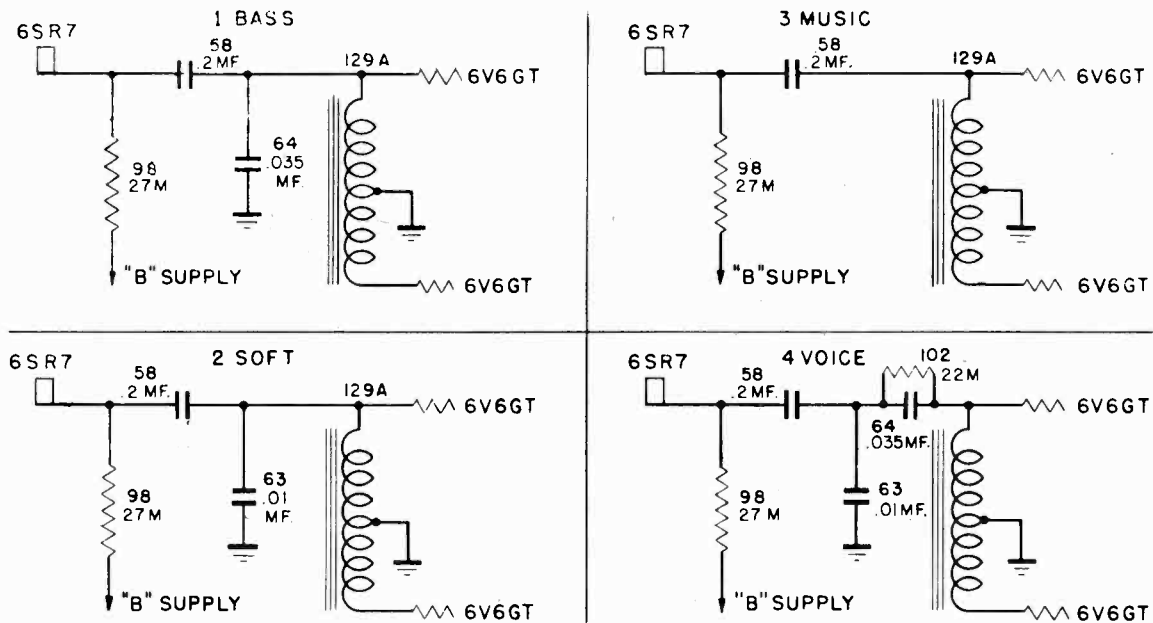


FIG. 4 TONE CONTROL POSITION WIRING—RADIO 985794

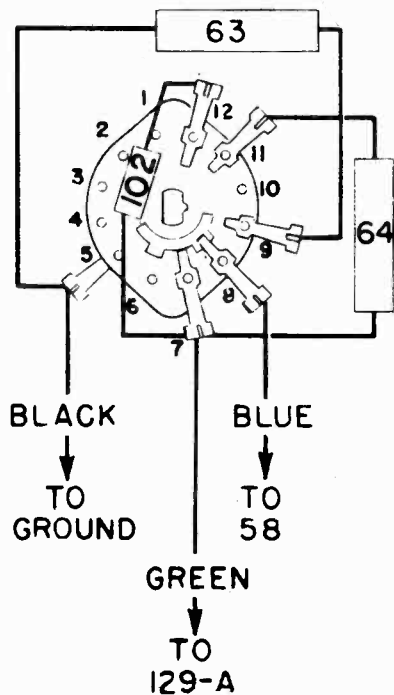


FIG. 5 TONE CONTROL WIRING—RADIO 985794

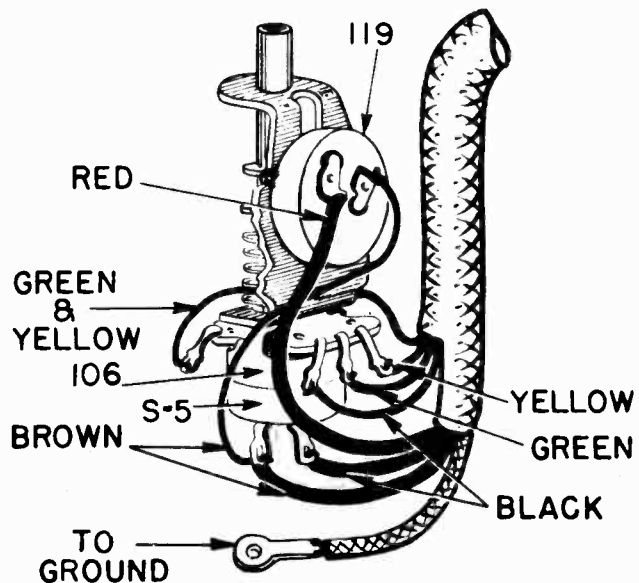


FIG. 6 VOLUME CONTROL AND ON-OFF SWITCH—RADIO 985794

CHEVROLET DIV.—GEN. MOTORS

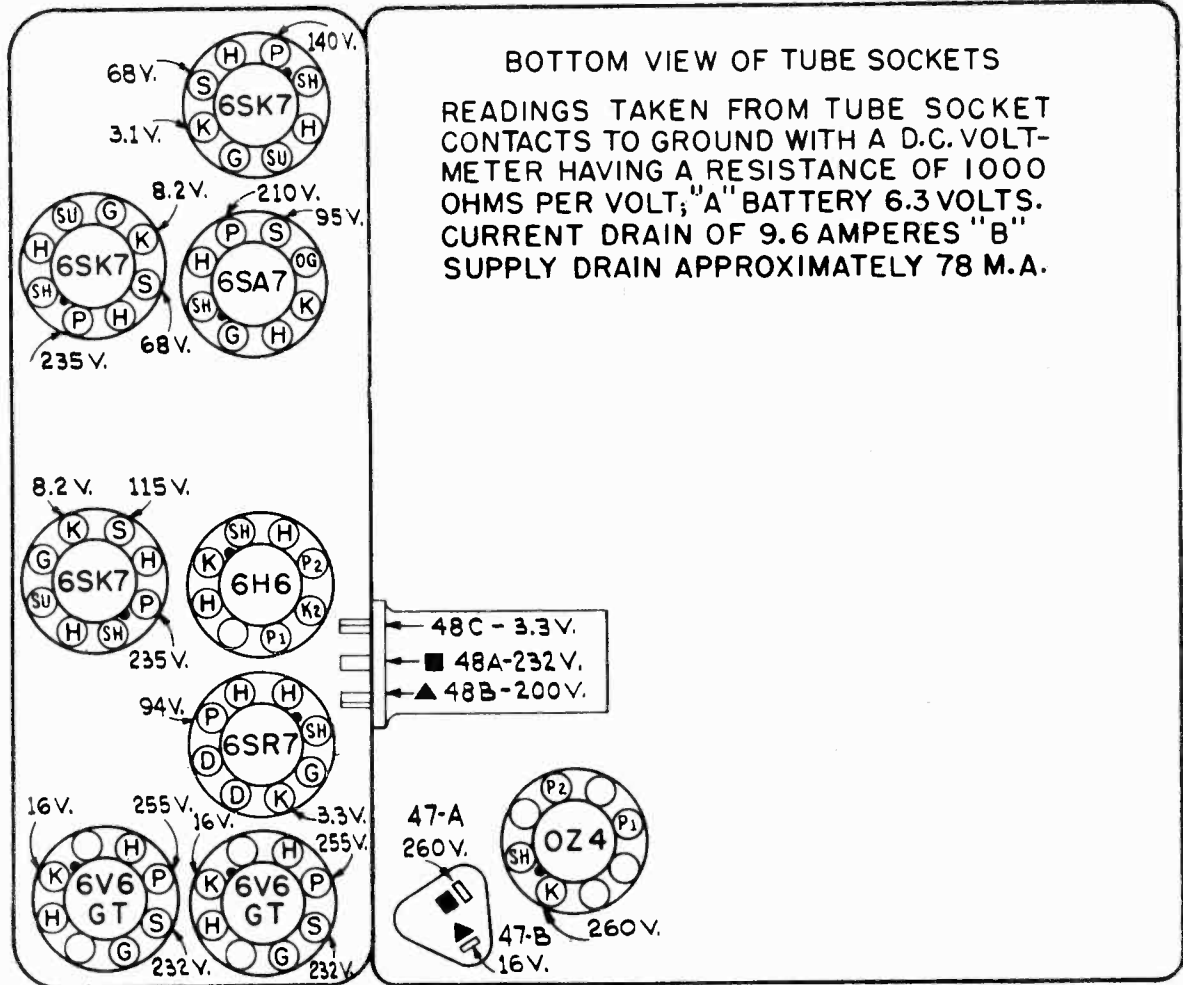


FIG. 8 VOLTAGE CHART—RADIO 985794

CORD DRIVE FOR BAND INDICATOR DRUM

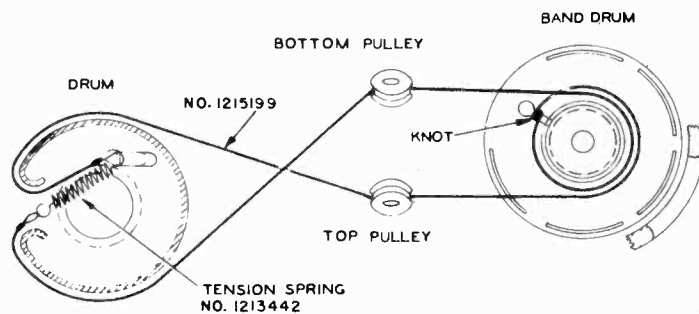
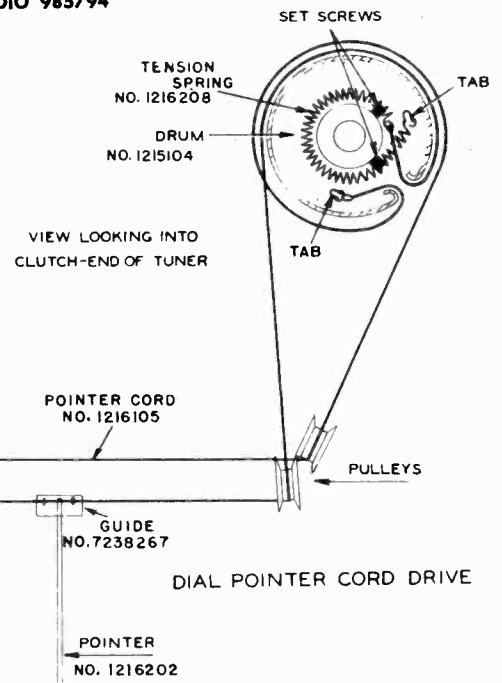


FIG. 7 CORD DRIVE ASSEMBLIES—RADIO 985794



MODEL 985794

CHEVROLET DIV.—GEN. MOTORS

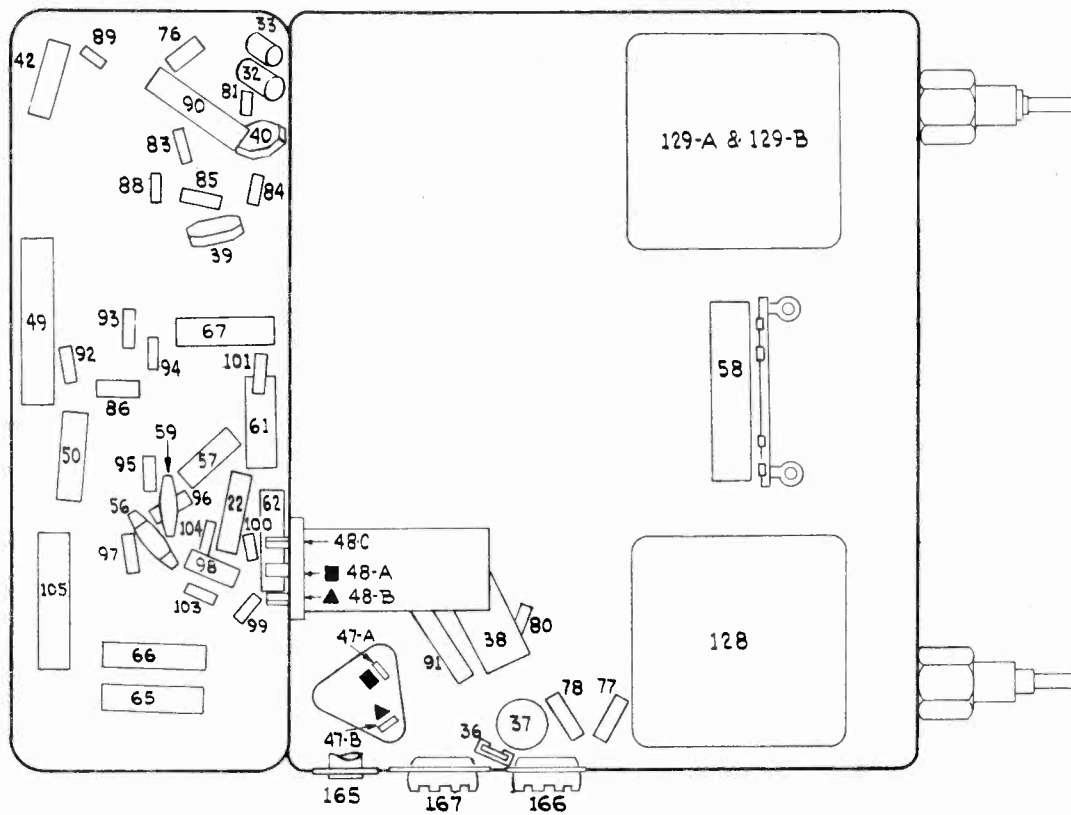


FIG. 9 PARTS LOCATING DIAGRAM (TOP VIEW)—RADIO 985794

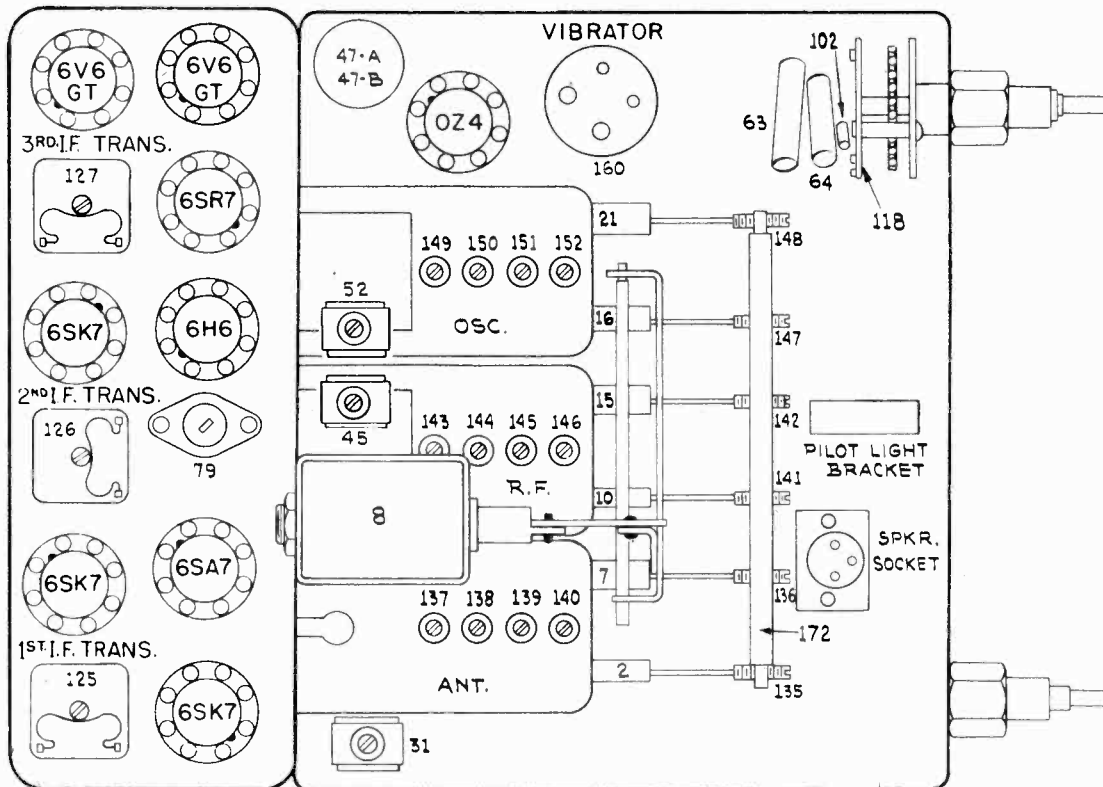


FIG. 10 PARTS LOCATING DIAGRAM (BOTTOM VIEW)—RADIO 985794

CHEVROLET DIV.—GEN. MOTORS

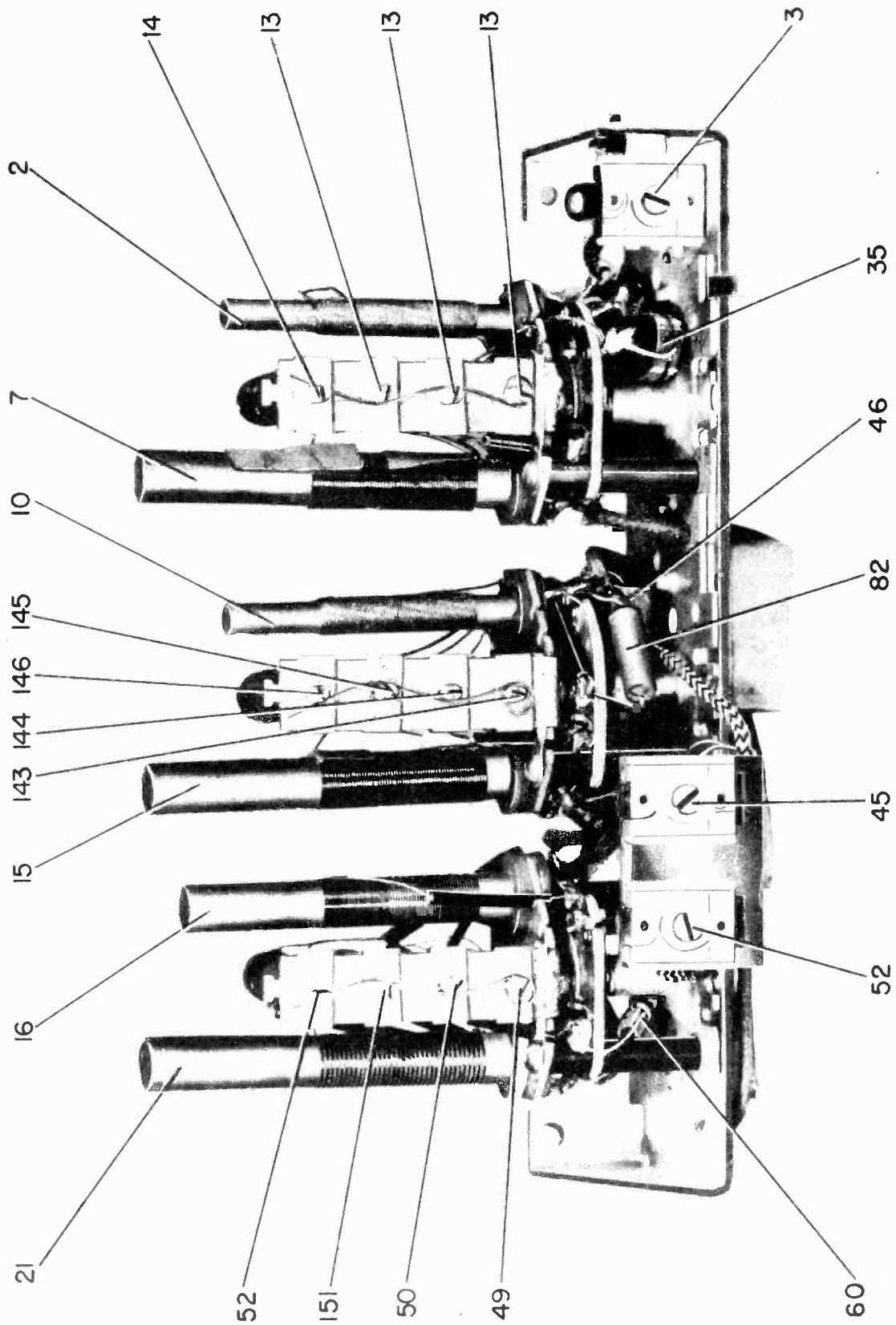


FIG. 11 COIL ASSEMBLY (BOTTOM VIEW)—RADIO 985794



CHEVROLET DIV.—GEN. MOTORS

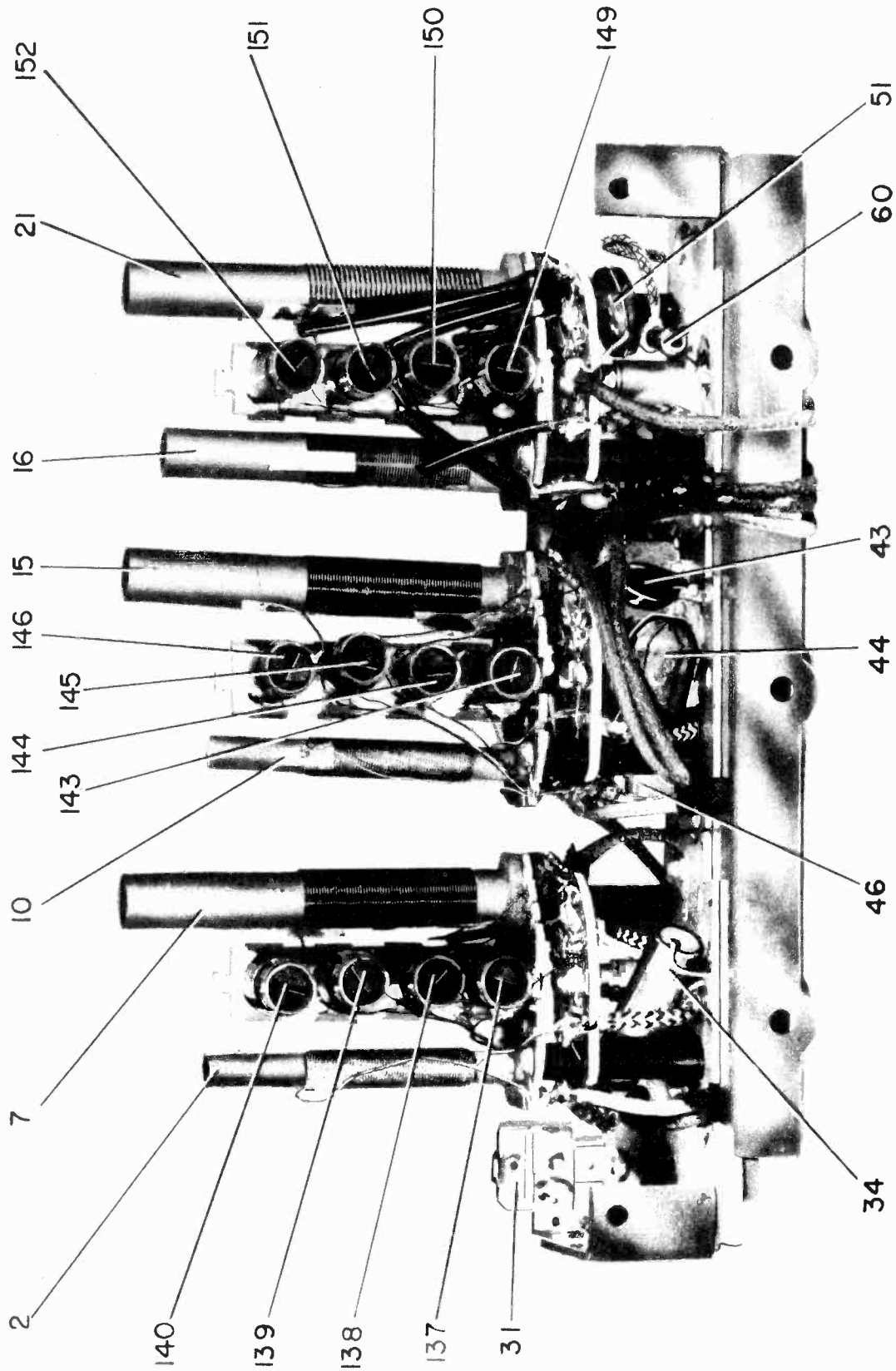


FIG. 12 COIL ASSEMBLY (TOP VIEW)—RADIO 985794

CHEVROLET DIV.—GEN. MOTORS

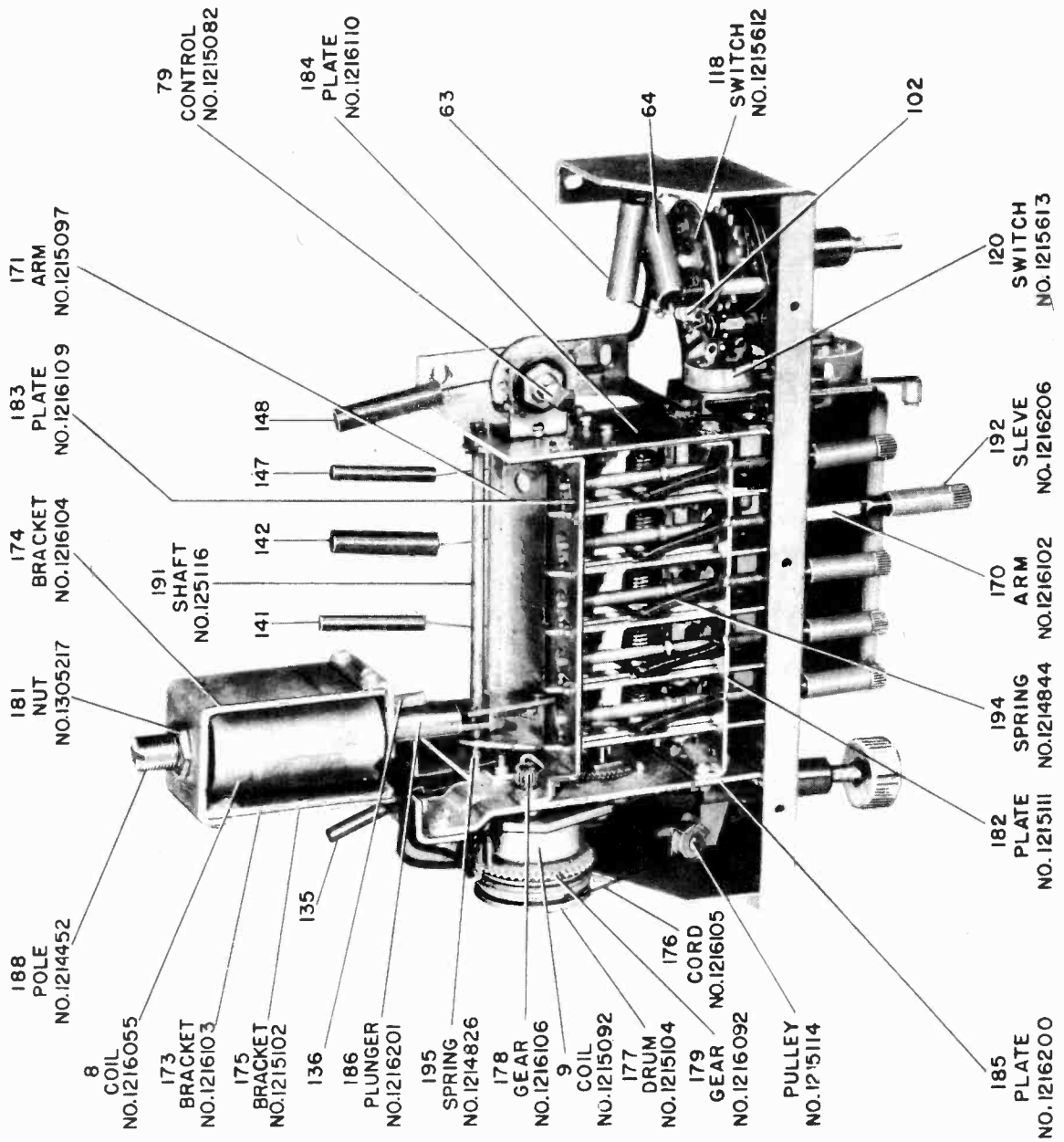


FIG. 13 TUNER UNIT (BOTTOM VIEW)—RADIO 985794

CHEVROLET DIV.—GEN. MOTORS

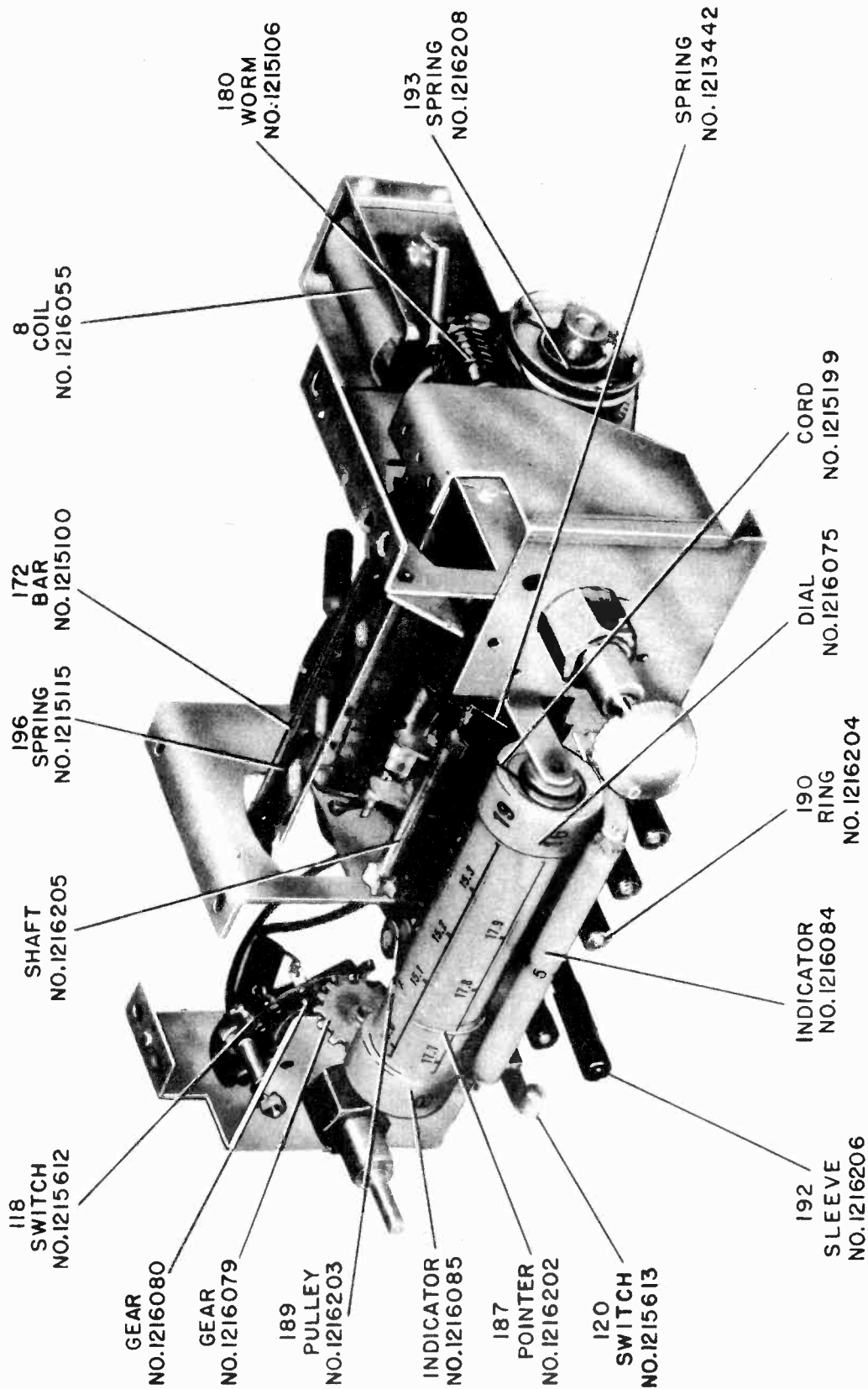


FIG. 14 TUNER UNIT (TOP VIEW)—RADIO 985794

CHEVROLET DIV.—GEN. MOTORS

Service Parts List

Pro- duction Part No.	Service Part No.	Part Name	Description—Function	Illus. No.	Pro- duction Part No.	Service Part No.	Part Name	Description—Function	Illus. No.
1215060		Coil	Choke coil—R.F. grid	1	7238787	7231594	Condenser	Tubular—0.25 mfd., 200 volts—6SK7 cathode	49
1216050		Coil	Antenna coil—"A" band	2	1215200	1215192	Condenser	Tubular—01 mfd., 1000 volts—3rd 6SK7 screen	50
1216051		Coil	Antenna shunt coil—31 meter band	3	1215076	1210275	Condenser	Moulded—0001 mfd., oscillator grid coupling	51
1216052		Coil	Antenna shunt coil—25 meter band	4	1216097		Condenser	Trimmer—70-150 mmfd., oscillator tuning	52
1216053		Coil	Antenna shunt coil—19 meter band	5	1214932		Condenser	Ceramic—0001 mfd., "A" oscillator grid	53
1216054		Coil	Antenna shunt coil—16 meter band	6	7236158		Condenser	Silvered mica moulded—00033 mfd., "A" oscillator grid	54
1215066		Coil	Solenoid coil, (Fig. 13-14)	7					
1216055		Coil	Clutch coil, (Fig. 13)	8	Not Serviced		Condenser	.0001 mfd.—I.F. circuit (See Ill. 127)	55
1215092		Coil	Clutch coil	9	1215078	1215081	Condenser	Moulded—000068 mfd., limiter coupling	56
1216050		Coil	R.F. coil—"A" band	10	1215195		Condenser	Tubular—0025 mfd., 1400 volts—audio coupling	57
1216051		Coil	R.F. shunt coil—31 meter band	11	1215194	7235836	Condenser	Tubular—0.2 mfd., 300 volts, audio coupling	58
1216052		Coil	R.F. shunt coil—25 meter band	12	1215080	1209878	Condenser	Moulded—00047 mfd., 6SK7—plate filter	59
1216053		Coil	R.F. shunt coil—19 meter band	13	1215186		Condenser	Ceramic—00012 mfd., S.W. oscillator grid	60
1216054		Coil	R.F. shunt coil—16 meter band	14	1215192		Condenser	Tubular—01 mfd., 1000 volts, V.C. Comp.	61
1215066		Coil	R.F. coil—S.W.	15	1215200	1215192	Condenser	Tubular—01 mfd., 1000 volts—Limiter Filter	62
1216056		Coil	Oscillator coil—"A" band	16	1215192		Condenser	Tubular—01 mfd., 1000 volts—Tone Control, (Fig. 13)	63
1216057		Coil	Oscillator shunt coil—31 meter band	17	7242448		Condenser	Tubular—035 mfd., 400 volts—Tone Control, (Fig. 13)	64
1216058		Coil	Oscillator shunt coil—25 meter band	18					
1216059		Coil	Oscillator shunt coil—19 meter band	19					
1216060		Coil	Oscillator shunt coil—16 meter band	20	1215195		Condenser	Tubular—0025 mfd., 1400 volts—6V6 Plate	65
1215068		Coil	Oscillator coil—S.W.	21	1215195		Condenser	Tubular—0025 mfd., 1400 volts—6V6 Plate	66
1216061		Coil	Choke coil—Grid 6SR7	22	1215200	1215192	Condenser	Tubular—01 mfd., 1000 volts, A.V.C. Filter	67
7242577		Condenser	Moulded—00022 mfd., antenna filter	30	1211141		Resistor	Insulated—1.5 meg., ¼ watt R.F. Grid	75
1215074		Condenser	Trimmer—50-300 mfd., antenna tuning	31	7233314		Resistor	Insulated—660 ohms, ¼ watt 6SK7 Cathode	76
1215201		Condenser	Tubular—01 mfd., 300 volts—screen filter	32	1211000		Resistor	Insulated—100 ohms, ½ watt, Primary Buffer	77
1215200	1215192	Condenser	Tubular—01 mfd., 1000 volts—R.F. cathode	33	1211000		Resistor	Insulated—100 ohms, ½ watt, Primary Buffer	78
7236146		Condenser	Tubular—01 mfd., 1000 volts—A.V.C.	34	1216042		Control	Dimmer control (20 ohm resistance), (Fig. 13)	79
1214168		Condenser	Silvered mica moulded—0001 mfd. S.W. tuning	35	1215181		Resistor	Insulated—15,000 ohms, ½ watt, Secondary Buffer	80
7232580		Condenser	Mica—00047 mfd., "A" filter	36	1214567	1211089	Resistor	Insulated—15,000 ohms, ½ watt, 6SK7 Screen	81
1215191		Condenser	Tubular—0.5 mfd., 150 volts "A" filter	37	1211089		Resistor	Insulated—15,000 ohms, ½ watt, R.F. Plate	82
1215077		Condenser	Tubular—008 mfd., 1200 volts—secondary buffer	38	7240588	1210470	Resistor	Insulated—470,000 ohms, ¼ watt, 6SA7 Grid	83
7236157		Condenser	Moulded—00056 mfd., 6SA7—signal grid	39	1215107		Resistor	Insulated—10 ohms, ¼ watt, 6SA7 Oscillator Grid	84
1215200		Condenser	Silvered mica moulded—0022 mfd. 6SA7 Screen	40	1215182		Resistor	Insulated—22,000 ohms, ¼ watt, 6SA7 Osc. Grid Leak	85
1214489		Condenser	.00016 mfd.—I.F. circuit—(See Ill. 125, 126, 127)	41					
7238891	1215192	Condenser	Tubular—01 mfd., 1000 volts—B+ filter	42	7233314		Resistor	Insulated—560 ohms, ¼ watt, 6SK7 Cathode	86
7242579		Condenser	Moulded—00015 mfd., R.F. plate	43	1215179		Control	Sensitivity control (1200 ohm)	87
1216097		Condenser	Moulded—00068 mfd., R.F. plate	44	7236812	1209883	Resistor	Insulated—100,000 ohms, ¼ watt A.V.C. Filter	88
1215200	1215192	Condenser	Trimmer—70-150 mmfd., R.F. tuning	45	7236689	1211049	Resistor	Insulated—2700 ohms, ¼ watt, B+ Filter	89
1214489		Condenser	Tubular—01 mfd., 1000 volts—B+ filter	46	7233653		Resistor	Insulated—15,000 ohms, 2 watt, Screen Dropping	90
		Condenser	Electrolytic	47	1215183		Resistor	Insulated—1000 ohms, 2 watt B+ Filter	91
		Condenser	A—20 mfd., 400 volts—filter		7236812	1209883	Resistor	Insulated—100,000 ohms, ¼ watt, 3rd 6SK7 Screen	92
		Condenser	B—20 mfd., 25 volts—by-pass		1213843		Resistor	Insulated—15 meg., ½ watt, Screen Dropping	93
		Condenser	Electrolytic	48	1214170	1214563	Resistor	Insulated—2.2 meg., ¼ watt, Noise Limiter	94
		Condenser	A—20 mfd., 350 volts—filter		7240588	1210470	Resistor	Insulated—470,000 ohms, ¼ watt, Noise Limiter	95
		Condenser	B—5 mfd., 300 volts—hum filter		1211194	1211112	Resistor	Insulated—56,000 ohms, ¼ watt, Audio Diode Filter	96
		Condenser	C—20 mfd., 25 volts—by-pass						

CHEVROLET DIV.—GEN. MOTORS

Service Parts List—Cont'd

Pro-duction Part No.	Service Part No.	Part Name	Description—Function	Illus. No.	Pro-duction Part No.	Service Part No.	Part Name	Description—Function	Illus. No.
7242582	7242583	Resistor	Insulated—180,000 ohms, ¼ watt, Audio Diode Filter	97	1215090		Core	Trimmer, for oscillator coil, 31 meter band	149
1214551		Resistor	Insulated—27,000 ohms, ¼ watt, 6SR7 Plate	98	1215090		Core	Trimmer, for oscillator coil, 25 meter band	150
7236701	1210834	Resistor	Insulated—10,000 ohms, ¼ watt, 6SR7 Plate Filter	99	1215090		Core	Trimmer, for oscillator coil, 19 meter band	151
7236684	1211035	Resistor	Insulated—1000 ohms, ¼ watt, 6SR7 Cathode	100	1215090		Core	Trimmer, for oscillator coil, 16 meter band	152
7236832	7236248	Resistor	Insulated—56,000 ohms, ¼ watt, Compensation	101	1215616		Coil	Complete elliptical speaker	
1215182		Resistor	Insulated—22,000 ohms, ¼ watt Tone Control, (Fig. 13)	102	1215615		Coil	R.F. coil, switch, and can assembly	
1213488		Resistor	Insulated—680,000 ohms, ¼ watt Limited Bias Load	103	1215614		Coil	Oscillator coil, switch, and can assembly	
1213488		Resistor	Insulated—680,000 ohms, ¼ watt Limiter Filter	104	1215198	7239439	Vibrator	Plug-in-Unit	160
1214572		Resistor	Insulated—330 ohms, 2 watt—6V6 Cathode	105					
1215610		Control	Steering post volume control and power switch	106					
1216062		Switch	Antenna coil switch wafers	115					
1215094		Switch	R.F. coil switch wafers	116					
1216063		Switch	Oscillator coil switch wafers	117					
1215012		Switch	Tone control switch (in radio set), (Fig. 13-14)	118					
1216064		Switch	Steering post tuning switch	119					
1215613		Switch	Tuning switch and arm complete (in radio set), (Fig. 13-14)	120					
1215608		Transformer	First I.F. transformer	125	1216045		Unit	Tuner—mechanical staked assy. (includes push arm and reset screws), (Fig. 13-14)	
1215608		Transformer	Second I.F. transformer	126	1216101		Arm	Pawl arm—operates push bar indicator	
1215609		Transformer	Third I.F. transformer	127	1216102		Arm	Push arm assembly and set-up sleeve (Fig. 13)	170
1215611		Transformer	Vibrator transformer	128	1215097		Arm	Selector arm and link assembly, (Fig. 13)	171
1215091		Transformer	Audio pack	129	145635		Ball	½" dia.—steel ball for worm gear	
			A—Driver		1215099		Bar	Pointer slide bar	
			B—Output		1215100		Bar	Rocker bar, gear sector, and core rail assy., (Fig. 14)	172
1216065		Core	Tuning core for "A" band antenna coils—"Red"	135	1216103		Bracket	Solenoid coil holder (plunger end), (Fig. 13)	173
1216066		Core	Tuning core for "A" band antenna coils—"Green"	135	1216104		Bracket	Solenoid coil holder (pole piece end), (Fig. 13)	174
1216067		Core	Tuning core for "A" band antenna coils—"Yellow"	135	1215102		Bracket	Solenoid mounting bracket, (Fig. 13)	175
1215089		Core	Tuning core for S.W. Antenna coil, (Fig. 13)	136	1214822		Clip	Retaining clip for selector arm shaft	
1215090		Core	Trimmer, for antenna coil—31 meter band	137	1216105		Cord	Pointer cord, (Fig. 13)	176
1215090		Core	Trimmer, for antenna coil—25 meter band	138	1214464		Cover	Clutch coil cover	
1215090		Core	Trimmer, for antenna coil—19 meter band	139	7235945		Disc	Rubber disc for clutch	
1216065		Core	Tuning core for "A" band R.F. coils—"Red"	141	1215104		Drum	Pointer drive cord and clutch disc, (Fig. 13)	177
1216066		Core	Tuning core for "A" band R.F. coils—"Green"	141	1216092		Gear	Clutch pinion gear and spindle, (Fig. 13)	178
1216067		Core	Tuning core for "A" band R.F. coils—"Yellow"	141	1215106		Gear	Scissors gear and disc for clutch, (Fig. 13)	179
1215089		Core	Tuning core for S.W.—R.F. coil	142	7238267		Guide	Worm gear, (Fig. 14)	180
1215090		Core	Trimmer, for R.F. coil—31 meter band	143	1216107		Guide	Dial pointer guide (carriage)	
1215090		Core	Trimmer, for R.F. coil—25 meter band	144	368319		Nut	Pointer cord guide	
1215090		Core	Trimmer, for R.F. coil—19 meter band	145	7231480		Nut	¾"-32 hex. nut for clutch spindle sleeve	
1215090		Core	Trimmer, for R.F. coil—16 meter band	146	1305217		Nut	¾"-32 hex. nut for dimmer control	
1216065		Core	Tuning core for "A" band oscillator coil—"Red"	147	1214821		Nut	Locknut for solenoid pole piece, (Fig. 13)	181
1216066		Core	Tuning core for "A" band oscillator coil—"Green"	147	1216108		Plate	Locknut for worm gear bearing screw	
1216067		Core	Tuning core for "A" band oscillator coil—"Yellow"	147	1215111		Plate	Front bearing plate	
1215089		Core	Tuning core for S. W. oscillator coil	148	1215111		Plate	Push arm stop plate, (Fig. 13)	182
					1216109		Plate	Rear bearing plate, (Fig. 13)	183
					1216110		Plate	L.H. end plate, (Fig. 13)	184
					1216201		Plate	R.H. end plate, (Fig. 13)	185
					1216202		Plunger	Solenoid plunger and stud, (Fig. 13)	186
					1214452		Pointer	Dial pointer only, (Fig. 14)	187
							Pole	Solenoid pole piece, (Fig. 13)	188

Tuner Unit Parts

CHEVROLET DIV.—GEN. MOTORS

Tuner Unit Parts—Cont'd

Production Part No.	Service Part No.	Part Name	Description—Function	Illus. No.
1216203		Pulley	L.H. pulley and bracket assembly (1 pulley), (Fig. 14)	189
1215114		Pulley	R.H. pulley and bracket assembly (2 pulleys) (see illus.), (Fig. 13)	
7232972		Retainer	Clip to fasten cam shaft pawl arm to selector arm.	
1216206		Screw	Push arm set-up screw and sleeve assembled (Fig. 13-14)	192
1214845		Screw	No. 6—32x $\frac{1}{4}$ self-tapping, for tuner frame.	
1215127		Screw	No. 8—32x $\frac{1}{2}$ self-tapping, for solenoid bracket.	
1215126		Screw	No. 10—32x $\frac{3}{8}$ hex. head, for solenoid coil.	
7240316		Screw	No. 10—32x $\frac{3}{8}$ screw for worm gear bearing.	
127555	128036	Screw	Set screw for worm gear.	
1216205		Shaft	Camshaft (See illus.), (Fig. 14)	191
1215116		Shaft	Selector arm and link pivot shaft, (Fig. 13)	
1214466		Spring	Clutch spring.	
1215120		Spring	Core rail tension spring—L.H.	
1215234		Spring	Core rail tension spring—R.H.	
1216207		Spring	Pawl arm spring.	
1216208		Spring	Pointer cord spring, (Fig. 14)	193
1214844		Spring	Push arm return spring, (Fig. 13)	194
1215235		Spring	Rocker bar gear sector spring.	
1216209		Spring	Rocker bar tension spring.	
1214826		Spring	Selector arm and link spring, (Fig. 13)	195
7236121	Not Serviced	Spring	Tension spring for clutch scissors gear.	
1215115		Spring	Tuning core holding spring, (Fig. 14)	196
1216210		Washer	"C" washer for pawl arm.	
1214609		Washer	"C" washer to hold indicator drum pawl arm.	
7235892		Washer	Fibre washer for worm gear bearing.	
1214837		Washer	Flat washer for selector arm shaft.	
1213909		Washer	Rubber, for push arm.	
1214823		Washer	Spring washer for worm gear bearing.	

Chassis Parts—Miscellaneous

169066		Ball	$\frac{3}{16}$ " dia. steel ball for switch detent.	
1216088		Bar	Tuning push bar.	
1216069		Board	Terminal board for antenna coil shield can.	
1215123		Bracket	S.W. shunt coil mounting bracket.	
1216070		Bushing	Tuning shaft bushing.	
1215130		Cable	Antenna cable and socket.	165
1216071		Can	Antenna coil assembly shield can.	
1216072		Can	R.F. or oscillator coil assembly shield can.	
1216073		Case	Receiver case—less control panel.	
1216074		Clip	Mounting clip for shunt coils.	
1215134		Clip	Retaining clip for coil shield can (fastens on end of coil bracket).	
1215199		Cord	Band indicator drive cord (See illus.), (Fig. 14)	
1216075		Dial	Dial cylinder and band indicator strip (See illus.), (Fig. 14)	

Chassis Parts—Miscellaneous—Cont'd

Production Part No.	Service Part No.	Part Name	Description—Function	Illus. No.
1216076		Drum	Range switch intermediate shaft drive cord drum.	
1216077		Escutcheon	Control panel escutcheon and window.	
1215143		Gasket	Rubber gasket for speaker cover.	
1216078		Gear	Range switch intermediate shaft gear—less set screws.	
1216079		Gear Assy.	Tone control, drum drive gear (See illus.), (Fig. 14) Includes: 1—gear 1—stud 1—washer	
1216080		Gear	Tone control intermediate gear (See illus.), (Fig. 14)	
1216081		Grommet	Rubber grommet for "A" band antenna or R.F. coil can opening.	
1216082		Grommet	Rubber grommet for "A" band antenna or R.F. coil mounting.	
1215147		Grommet	Rubber grommet "A" band oscillator coil can opening.	
1216083		Grommet	Rubber grommet for "A" band oscillator coil mounting.	
1215148		Grommet	Rubber grommet for S.W. band antenna, R.F. or oscillator coil can opening.	
7232948		Grommet	Rubber grommet for S.W. band antenna R.F. or oscillator coil mounting.	
1216084		Indicator	Push bar tuning indicator drum (See illus.), (Fig. 14)	
1216085		Indicator Lamp	Tone indicator drum (See illus.), (Fig. 14)	
125588		Link	Dial lamp—Mazda No. 55.	
1216086		Nut	Coil switch link and arm assembly.	
7238510		Nut	Hex nut for volume control or tuning shaft bushing.	
1216227		Nut	No. 5-40 nut for tone control switch.	
1216087		Panel	Control panel, bracket and pulleys, and gear assembled.	
1216088		Plate	Coil mounting and range switch detent plate assembly.	
1215154		Pulley	Bracket and 2 pulleys for control panel.	
1215157		Screw	Guide screw for tuning knob shaft.	
1216229		Screw	No. 6-32x $\frac{3}{8}$ " screw for push bar indicator drum index spring.	
1215160		Screw	No. 6-32x $\frac{1}{2}$ " hex head for coil switch link.	
1216047		Screw	No. 8-32x $\frac{1}{8}$ " set screw for range switch shaft cord drum or gear.	
1215161		Shaft	Coil assembly switch shaft.	
1215162		Shaft	Dial shaft.	
1216089		Shaft	Manual tuning flexible shaft.	
1216090		Shaft	Pivot shaft for push bar indicator drum.	
1215165		Shaft	Range switch intermediate shaft.	
1216091		Shaft	Range switch knob shaft and gear.	
1216093		Socket	Dial lamp socket and lead.	
1215174		Socket	Speaker plug socket.	
1213439		Socket	Tube socket.	

**Circuit Description—Cont'd**

circuit arrangement formed by the main tuning inductance (item 16) 2200 mmf. condenser (item 40) and condensers consisting of items 52, 53 and 54 in which item 53 is the negative temperature coefficient condenser.

The two 6SK7 tubes are used in the two stage I.F. amplifier. In the short wave position, both tubes get their bias from the 560 ohm resistor (item 86), but in the broadcast position a 1200 ohm variable resistor (item 87) is connected in series with the 560 ohm resistor and is adjusted in the factory for uniform sensitivity. The variable resistor (item 87) increases the bias on the 6SK7 tubes, therefore, the I.F. stage gain in the broadcast position is less than that in the short wave position so that the desired sensitivity is obtained on all bands.

The 6SR7 tube serves three distinct functions. The diode plate No. 2 is used for signal detection. Diode No. 1 is used for supplying bias for the noise limiter circuit, while the triode part is used for the audio amplifier. Diode plate No. 1 gets its signal from the primary of the 3rd I.F. transformer through the 68 mmf. condenser (item 56) and inasmuch as the secondary of the transformer is tapped down the bias for the noise-limiter circuit is greater than the DC voltage of the rectified signal. The bias for the tube is developed across the 1000 ohm resistor (item 100).

The 6H6 tube performs two functions: plate No. 1 is used in the noise limiter circuit and plate No. 2 is used for providing A.V.C. delay. A.V.C. is derived from the high end of diode load resistor (item 97) and the delay is provided by means of a bleeding resistor (item 93) from +B. For signals below the A.V.C. level, diode plate No. 2 of the 6H6 is conducting because of the + voltage from resistors 93 and 94. Under these conditions the A.V.C. line is therefore at essentially zero potential, but as signal input increases the junction of resistor 97 and the low side of the 3rd I.F. transformer secondary assumes a negative potential and when this counteracts the positive voltage from resistors 93 and 94 on 6H6 diode plate No. 2 this diode ceases to conduct. As signal input increases further, A.V.C. is applied to the R.F. and I.F. tubes.

The noise limiter functions automatically whenever a noise pulse appearing at the 3rd I.F. transformer exceeds 100 per cent modulation. Cathode No. 1 of the 6H6 is connected to the second detector diode (No. 2 of the 6SR7) and diode plate No. 1 of the 6H6, does not conduct in the absence of noise because of the negative control voltage applied through resistor 104 to diode plate No. 1 of the 6H6. This voltage is derived from the primary of the 3rd I.F. transformer by diode No. 2 of the 6SR7 and varies with the signal input in such a way that the ratio of control voltage to the second detector diode voltage is constant. This ratio determines the modulation percentage at which the noise limiter functions. If the ratio is too low, the noise limiter will cut modulation peaks and if the ratio is too high the limiter will not eliminate noise as effectively as it could. The voltage ratio is determined by the design of the complete 3rd I.F. transformer circuit and should not be changed.

**Mounting and Installation Parts**

Pro-duction Part No.	Service Part No.	Part Name	Description—Function	Illus. No.
605302		Condenser	.5 mfd., generator (1)	
1882272		Condenser	.5 mfd., ignition coil (1)	
605303		Condenser	.5 mfd., regulator (1)	
605301		Condenser	.5 mfd., voltage regulator (1)	
7230032		Suppressor	Distributor suppressor (1)	
1882054		Washer	For mounting coil condenser (1)	
1215229		Package	Electrical Mounting Parts (Accessory Bag No. 3)— Consists of the following parts:	
			Suppressor adapter (1)	
1853686		Adapter	Ground clip for coil condenser (1)	
1882053		Clip	Regulator choke (1)	
605307		Coil	.01 mfd., regulator field (1)	
605204		Condenser	.5 mfd., ammeter (1)	
1849161		Condenser	Steering Post Control (Accessory Bag No. 6)	
1215660		Control Assy.	Cable Cover (1)	
606218		Cover	Cable cover spring (1)	
606347		Spring		

**Circuit Description**

The circuit used in this receiver is the conventional superheterodyne type with two stages of I.F. and six tuned I.F. circuits. In the short wave position the band switch operates by shunting respective coils (with their magnetite trimmer cores) across the main variable tuning inductances in the antenna, R.F. and oscillator circuits. When tuning either of the four short wave bands the signal is fed to the grid of the R.F. amplifier tube 6SK7 which also receives its A.V.C. bias through the 1.5 megohm resistor (item 75).

In the broadcast band position the filter choke (item 1) is included in the circuit and in conjunction with the input capacity of the tube constitutes a low-pass filter which effectively prevents unwanted disturbances from reaching the R.F. tube. The variable trimmer (item 31) is used for compensating the slight variations in the effective capacities of the antenna and the shielded lead-in cable. Bias for the 6SK7 tube is developed across the 560 ohm resistor (item 76).

The 6SA7 tube serves the combined functions of 1st detector and oscillator. In the short wave position the oscillator section of 6SA7 uses the conventional Hartley circuit, however the band switching arrangement of this section differs slightly from that of the antenna and R.F. sections, in that a 31-meter auxiliary oscillator coil (item 17) is permanently shunted across the main tuning coil (item 21) and a tap is brought out for return to the cathode. In changing to the 25, 19 and 16 meter bands, the respective auxiliary oscillator coils (items 18, 19 and 20) are shunted in parallel to the previous combination. The negative coefficient 120 mmf. condenser (item 60) in parallel to the main tuning coil (item 21) constitutes the temperature compensating arrangement for the short wave bands. In the broadcast band the oscillator uses a modified Colpitts

## CHEVROLET DIV.—GEN. MOTORS

### Circuit Alignment

The adjustable condensers and magnetite cores in this receiver have been very carefully adjusted at the factory and should require no further adjustment (except antenna compensating condenser, item 31) unless tampered with or a defective unit has been replaced. It is advisable not to attempt any adjustment unless it is definitely known that an adjustment is necessary.

To align the circuits of this receiver correctly a signal generator and an output meter must be used. In aligning the receiver it is very important that the correct frequencies be used and that all alignment adjustments be made in sequence, starting with the I.F. amplifier, then aligning the broadcast band, and finally the short wave bands. Slight misadjusting of either the I.F. or R.F. circuits will result in a weak set over most of the dial. All R.F. and I.F. adjustments are accessible after removing the speaker cover, top cover and rear bottom cover. The I.F. primary windings are adjusted by magnetite core screws Nos. 153, 155 and 157, located on top of the I.F. transformers (Fig. 1); and the secondary windings are adjusted by core screws Nos. 154, 156 and 158, located at the bottom of each I.F. transformer (Fig. 1).

#### 1. Aligning I.F. Stages at 455 Kilocycles

- (a) Connect one terminal of the output meter to the plate of one of the 6V6GT output tubes and connect the other terminal through a .1 mfd. condenser to the plate of the other 6V6GT output tube.
- (b) Connect the output of the signal generator through a .01 mfd. condenser to the grid of the 2nd I.F. tube, 6SK7 (Pin No. 4). Connect the ground lead from the signal generator to the frame of the receiver chassis.
- (c) Turn the volume control on full.
- (d) Adjust the signal generator to 455 kilocycles.
- (e) Adjust core screws (157 and 158) on the 3rd I.F. transformer for maximum reading on the output meter.

**NOTE:** Always use the lowest signal generator output that will give a reasonable deflection on the output meter.

- (f) Connect the signal generator lead through the .01 condenser to the grid of the 1st I.F. tube, 6SK7 (Pin No. 4), and adjust core screws (155 and 156) in the 2nd I.F. transformer for maximum output.
- (g) Connect the signal generator lead through the .01 condenser to the grid of the 6SA7 tube (Pin No. 8) and adjust core screws (153 and 154) in the 1st I.F. transformer for maximum output.

#### 2. Aligning the R.F. Amplifier

The main tuning cores should never be touched unless a coil or core is replaced. Where one of these parts has been replaced the complete broadcast band alignment procedure (No. 3) should be followed. Generally when checking the R.F. circuits for proper peak-

ing the following procedure and sequence must be used. There are fifteen trimmer screws properly labeled "Antenna," "Oscillator," and "R.F." The broadcast band is designated by the letter "A" and the four short wave bands are designated by the numbers indicating the bands—31, 25, 19 and 16. The labels all appear on the coil assembly shields.

##### (a) "A" Band, or Broadcast:

If the dial pointer is right on calibration, merely trim the "A" band, antenna and R.F. trimmers at 1200 kilocycles. If the pointer is slightly off calibration it can be corrected by bending.

**NOTE:** When the radio is installed in the car the antenna trimmer should be aligned on the "A" band between 1000 and 1200 kilocycles.

##### (b) 31 Meter Band:

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

##### (c) 25 Meter Band:

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

##### (d) 19 Meter Band:

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

##### (e) 16 Meter Band:

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

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

#### 3. Broadcast Band Alignment

Six adjustments are provided which include trimmers Nos. 31, 45 and 52 associated with circuits Nos. 2, 10, 16 and the three iron cores Nos. 135, 141, and 147, which are mounted in front of the coil assemblies in conjunction with the core draw-bar No. 172. If complete realignment is found necessary the R.F. circuits should be adjusted in the following sequence.

##### (a) Tune the receiver to the extreme high frequency end of the band.

##### (b) Turn each of the three core screws (135, 141 and 147) in a counterclockwise direction ten turns.

**NOTE:** This is done in order to separate the cores from the coil windings far enough so that the cores will have no effect on the frequency of the circuits.



MODEL 985794

## CHEVROLET DIV.—GEN. MOTORS

**Circuit Alignment—Cont'd**

- (c) Connect the signal generator through a 35 mmf. condenser to the standard Chevrolet shielded antenna lead-in. Connect the ground lead from the signal generator to the shield of the antenna lead-in cable.
- (d) Connect one terminal of the output meter to the plate of one of the 6V6GT output tubes, and connect the other terminal through a .1 mfd. condenser to the plate of the other 6V6GT output tube.
- (e) Adjust the frequency of the signal generator to 1645 kilocycles and peak trimmers Nos. 31, 45 and 52 for maximum signal output, at the same time reducing the signal generator output to as low a value as is consistent with a reliable indication on the output meter.
- (f) Change the frequency of the signal generator to 1620 kilocycles and turn the oscillator core screw (147) clockwise until maximum output is obtained.
- (g) Change the frequency of the signal generator to 1200 kilocycles and tune the receiver for maximum signal at 1200 kilocycles.
- (h) Adjust core screws (135 and 141) for maximum signal output.
- (i) Change the frequency of the signal generator to 600 kilocycles.
- (j) Tune the receiver for maximum signal output at 600 kilocycles.
- (k) Adjust the antenna and R.F. trimmers (31 and 45) for maximum output.
- (l) Reset the signal generator to 1200 kilocycles and tune the receiver for maximum output at 1200 kilocycles.
- (m) Adjust the antenna and R.F. cores (135 and 141) for maximum output.

**4. Complete Short Wave Alignment**

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

- (a) Check broadcast band antenna trimmer (item 31) for maximum peaking at 1200 kilocycles. This is very important.
- (b) Tune the receiver so that the dial pointer is at the extreme high frequency end of the 31-meter band, and adjust the magnetite core screws (136, 142 and 148) so that each core end is flush with the coil forms (items No. 7, No. 15 and No. 21) which extend beyond the shield.
- (c) Turn the magnetite trimmer core screws (137, 138, 139, 140, 143, 144, 145, 146, 149, 150, 151 and 152) in a counter-clockwise direction, as far as they will go.
- NOTE:** Do not force the cores against their stops as too much force may fracture the core.
- (d) Connect the signal generator through a 35 mmf. condenser and the Chevrolet shielded antenna lead-in, to the antenna connection of the receiver. Connect the ground lead from the signal generator to the shield of the lead-in.
- (e) Turn the band indicator to 31 meters and turn the volume control to the maximum position.
- (f) Adjust the signal generator frequency to 9.6 megacycles and move the pointer to 9.6 megacycles on the dial scale.

- (g) Turn the core screw (149) in a clockwise direction until the first peak is obtained, and then adjust carefully for maximum reading on the output meter.
- (h) Turn the core screw (143) in a clockwise direction until the 2nd peak is obtained, if more than one peak can be found, and adjust for maximum reading on the output meter at the same time reducing the signal generator output to as low a value as is consistent with a reliable indication on the output meter.
- (i) Turn the core screw (137) in a clockwise direction or until 2nd peak is obtained, and adjust for maximum reading on the output meter.
- (j) Change the signal generator frequency to 11.8 megacycles, the band indicator to 25 meters, and move the pointer to 11.8 megacycles on the dial scale.
- (k) Turn the core screw (150) in a clockwise direction, until 1st peak is obtained, and adjust for maximum reading on the output meter.
- (l) Turn core screws (144 and 138) in a clockwise direction until 2nd peak is obtained, and adjust for maximum reading on output meter.
- (m) Change the signal generator frequency to 15.2 megacycles, the band indicator to 19 meters, and move the dial pointer to 15.2 megacycles on the dial scale.
- (n) Turn core screw (151) in a clockwise direction until the 1st peak is obtained and adjust for maximum reading on the output meter.
- (o) Turn core screws (145 and 139) in a clockwise direction until 2nd peak is obtained, and adjust for maximum reading on output meter.
- (p) Change the signal generator frequency to 17.8 megacycles, the band indicator to 16 meters, and move the pointer to 17.8 megacycles on the dial scale.
- (q) Adjust core screw (152) by turning in a clockwise direction until 2nd peak is obtained and adjust for maximum output.
- (r) Adjust core screws (146 and 140) by turning in a clockwise direction until 1st peak is obtained and adjust for maximum reading on output meter.
- (s) Repeat all operations starting with (e) until no further improvement can be obtained.

**5. General Alignment Information**

Alignment of the short wave bands should never be attempted without first peaking trimmer condenser No. 31 in accordance with the procedure outlined under "Broadcast Band Alignment" (3). A slight misalignment of this trimmer condenser will result in unsatisfactory short wave operation, the reason being that trimmer condenser No. 31 is in the circuit on all bands but it should be peaked on the broadcast band only.

The most satisfactory method of aligning or checking the spread band ranges is on actual reception of short wave stations of known frequency by adjusting the magnetite core oscillator coil for each band, so that the short wave stations come in at the correct points on the dial. In exceptional cases, when the set is being serviced in a location where the noise level is high enough to prevent reception of short wave stations a signal

## CHEVROLET DIV.—GEN. MOTORS

### Circuit Alignment—Cont'd

generator should be used for alignment, but an extremely high degree of accuracy is required in the frequency settings of the signal generator as a slight error will produce considerable inaccuracy on the spread band dial.

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

#### 6. Adjusting Antenna Compensating Condenser

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

**NOTE:** When aligning the antenna trimmer condenser, be sure that the antenna is fully extended.

#### 7. Instructions for Removal of Coil Unit

- (a) Remove the top, rear bottom, and speaker cover from the receiver.
- (b) Remove the row of tubes immediately behind coil unit assembly.
- (c) Remove the two No. 8 self-tapping screws that hold the antenna connector to the side of the case, then unsolder the antenna cable shielding from the two grounding lances which will leave this part entirely free. Remove cable clamps which hold the leads from the oscillator coils to the chassis. Free these leads. Unsolder the leads from the antenna, R.F. and oscillator coil assembly whichever is to be removed.

- (d) Remove the two No. 8 screws which hold the solenoid mounting bracket to the main tuner frame. Place the solenoid out of the way, taking care that the armature does not get damaged. Unsolder the small condenser (item 30) from the case. Remove No. 8 self-tapping screw which anchors the coil mounting bracket to the side of the case.

- (e) Remove the  $\frac{1}{2}$  hex. head screw from the end of the switch shaft to be found at the center of the coil unit base. Remove the two nuts from the end of the band indicator shaft. The short link arm which is retained by these nuts is to be removed after the main assembly is free. Remove the two  $\frac{1}{2}$  hex. head screws that hold the coil unit base to the main coil assembly bracket.

- (f) Turn the tuning indicator to the high frequency end of the band, then remove the three No. 8 self-tapping screws and the two No. 8 machine screws that hold the coil unit mounting bracket to the chassis. Remove the sleeve covered tension wire on the core bar, part No. 1215115, and back out the threaded portion of the two cores. This will leave the wire only passing through the threaded holes in the core bar. Carefully pull the cores from the coil forms by drawing the whole assembly towards the I.F. transformers. With the coil unit assembly in this position the affected coil can be removed by first moving it away from the coil unit assembly bracket until the projections at its base just clear the bracket, then raising the base

end and withdrawing the unit over the I.F. transformer. **CAUTION:** When performing this operation take care that the band indicator shaft is not withdrawn with the coil unit assembly bracket, and that shield can is disengaged from the spring clip on the chassis at the front end of the coil can.

#### 8. To Disassemble Coil Units

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

#### 9. Reassembling Coil Units

- (a) Replace the cable clamp which holds the coil leads located between the 6SK7 and the 6SR7.
- (b) In replacing the cores into the coil tubes, grasp the threaded stud end, raise the core and work it into the coil tube.
- (c) When the oscillator coil is removed be sure that the two detent balls at the switch shaft do not get lost.
- (d) The two nuts which hold the short link arm to the band indicator shaft must be taken up tight.
- (e) While replacing the coil unit mounting bracket be sure that the three spring clips enter their slots in the shield cans properly.

#### 10. Stiff Manual Tuning

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

#### 11. Tone Control

The four positions of the tone control are: Bass, Soft, Music and Voice. The tone control and its tone compensating network in the circuit are between the audio amplifier and the output stage. When the switch is in the "bass" position, a .035 mfd. condenser (item 64) shunts the output of the 6SR7 audio frequency amplifier stage resulting in minimum highs, since a large portion of the high audio frequencies are by-passed to ground. In the "soft" position, a .01 mfd. condenser (item 63) shunts the output of the 6SR7 audio frequency amplifier stage to ground (the same as item 64 does in the "bass" position), but because the shunting capacity is less, the reduction of high frequencies will not be so pronounced as in the "bass" position. Neither high nor low frequencies are attenuated over the normal amplifier response in the "music" position, resulting in a maximum high and low frequency response.

## CHEVROLET DIV.—GEN. MOTORS

## Circuit Alignment—Cont'd

With the tone control in the "voice" position, the output of the 6SR7 audio amplifier stage is shunted to ground with a .01 mfd. condenser (item 63) thus by-passing some of the high frequencies. A parallel combination consisting of a 22,000 ohm resistor (item 102) and a .035 mfd. condenser (item 64) is connected in series with the output of the 6SR7 audio amplifier stage, resulting in a reduced low frequency response since this combination has a higher impedance at low frequencies than at high frequencies, thus both the high and the low frequencies are attenuated resulting in optimum tone balance for speech programs.

## 12. Band Switching Circuits

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

The "A" band coil circuit shows the actual simplified circuit diagram for the "A" band without the switch contacts being shown. The same applies to the 31-meter band coil circuit. Coils 7, 15, 21 and 17 remain in the circuit at all times for short wave operation. When switching to the 25-meter band, coil No. 3 is replaced by coil No. 4. Coil No. 11 is replaced by coil No. 12. Coil No. 18 is switched across coils Nos. 21 and 17, thus on each of the 25, 19 and 16-meter bands there are three oscillator coils in parallel at the same time. The sensitivity control is removed from the circuit for short wave operation thereby giving full sensitivity on short waves.

In order to provide good tracking sensitivity only perfectly matched main tuning cores are used in the receivers on the "A" band (Nos. 135, 141 and 147). The cores are color coded with a spot of red, yellow or green paint on the stud-end of the core. Only one particular color will be used in each receiver. When servicing one of these cores always replace the defective core assembly with a replacement core bearing the exact color coding, or replace all three cores with a new set of cores of another color code.

## 13. Adjustment of Clutch Assembly

- Remove bottom covers (front and rear).
- Loosen both set screws on hub of pointer drive cord drum (item 177, Fig. 13).
- Move core bar (item 172, Fig. 14) against stop pin with tuning cores all the way inside the coils.
- Scissors bakelite gear and clutch assembly (item 179, Fig. 13) counter-clockwise one tooth and engage with worm (item 180, Fig. 14), taking care not to lose scissors action.

- Rotate drum (item 177, Fig. 13) until dial pointer (item 187, Fig. 14) lines up with the last mark at the low frequency end of the dial drum.

- Insert a .010 metal shim between brass gear and clutch lining. Press entire assembly firmly together and tighten set screws on drum hub after which remove the metal shim.

**CAUTION:** During the preceding steps of adjustment, it is very important that the core bar position is maintained and that neither the bakelite nor the brass gear become disengaged from the worm.

## 14. Solenoid Pole Piece Adjustment

- Insert plunger (item 186, Fig. 13) all the way in solenoid assembly until link strikes extruded lip on end of solenoid. (No push arm engaged to selector bar.)
- Loosen lock nut (item 181, Fig. 13) and screw in pole piece until it touches the plunger.
- Back off pole piece  $1\frac{1}{4}$  turns and tighten lock nut in place.

**GENERAL:** This auto radio is a nine tube self-contained receiver built expressly for installation in 1942 Chevrolet automobiles. Special features incorporated in this receiver are: automatic tuning; single band sequence tuning from instrument panel; steering column station selection and volume control; elliptical speaker; permeability tuning; sensitivity control; automatic noise limiter circuit; four position tone control; 0Z4 rectifier; and a primary type vibrator.

**Antenna System:** There are two antenna systems available for use with this receiver; the cowl rod antenna, and the telescopic reel type antenna. Either of the antennas will operate very efficiently with this Chevrolet radio.

## Tube Complement

Type	Function	Type	Function
6SK7	R.F. Amplifier	6H6	Noise Limiter and A.V.C.
6SA7	Oscillator-Modulator	6V6GT	Output (2)
6SK7	I.F. Amplifier (2)	OZ4	Rectifier
6SR7	2nd Detector and A.F.		

CHEVROLET DIV.—GEN. MOTORS

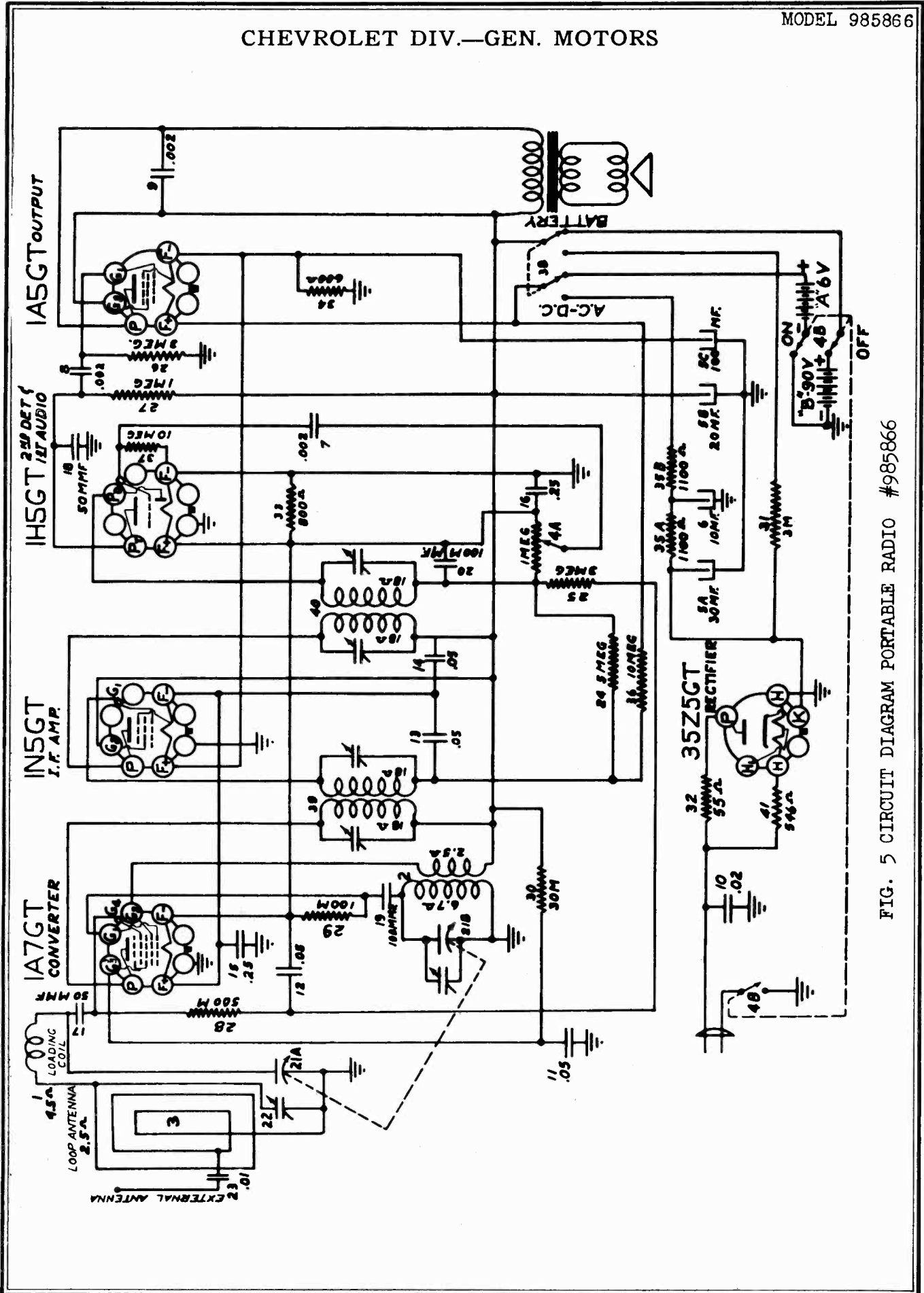


FIG. 5 CIRCUIT DIAGRAM PORTABLE RADIO #985866

CHEVROLET DIV.—GEN. MOTORS

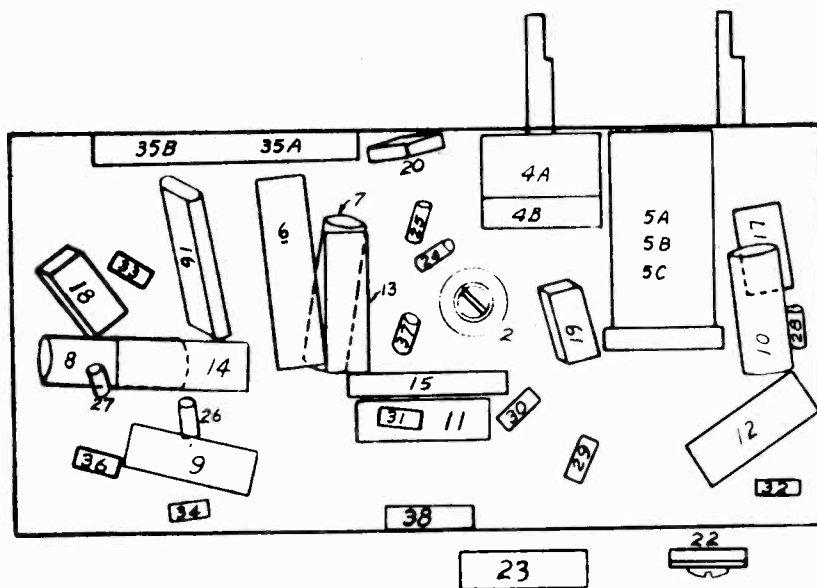


FIG. 3 PARTS LOCATING DIAGRAM PORTABLE RADIO #985866

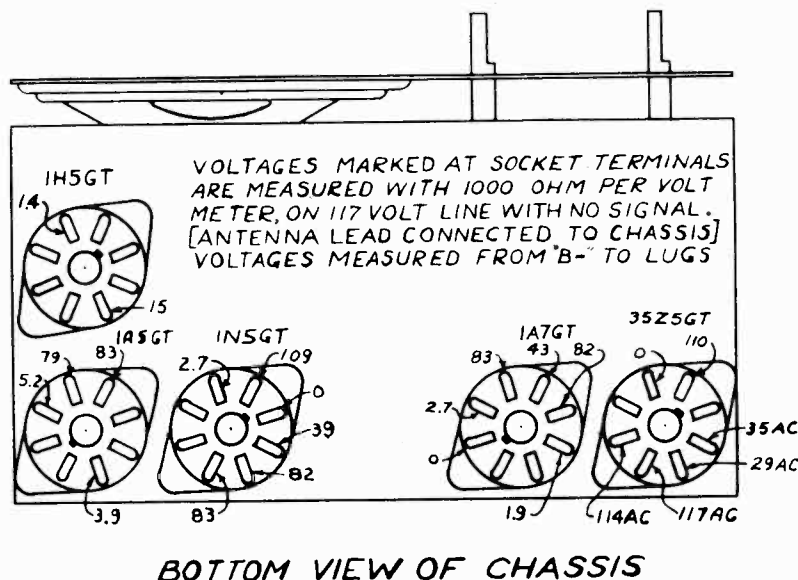
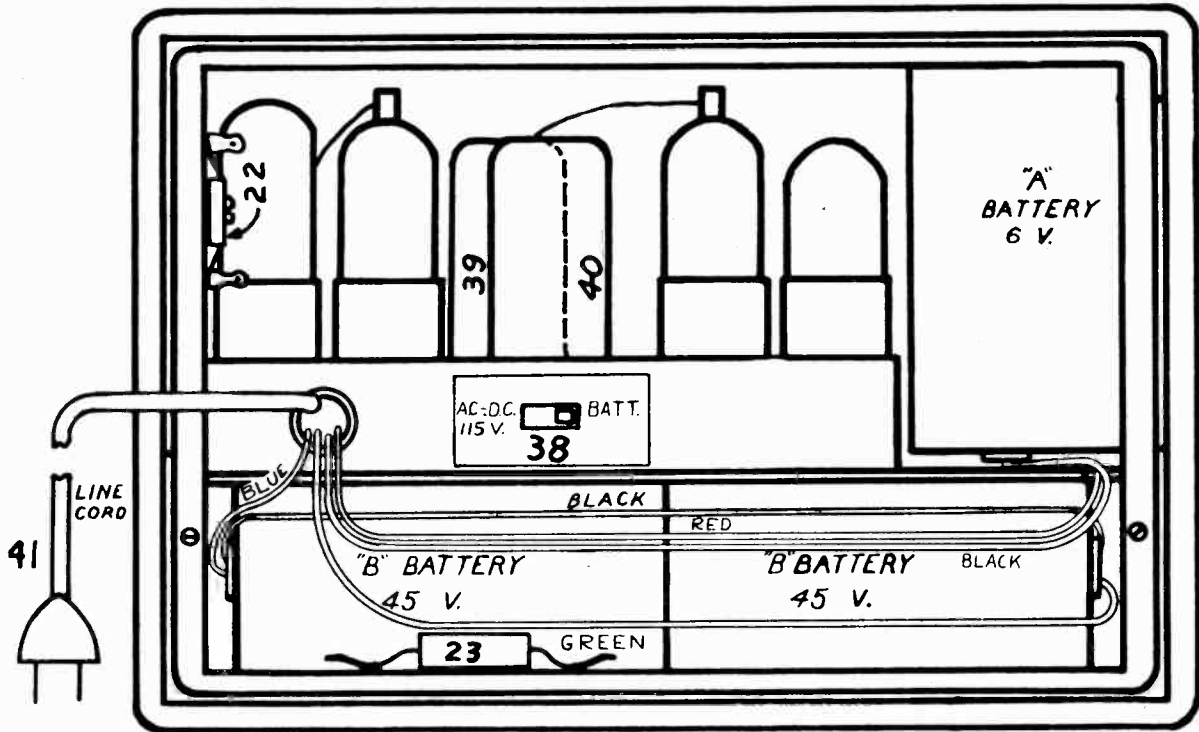


FIG. 4 Tube Voltage Chart  
 NOTES FOR VOLTAGE CHART

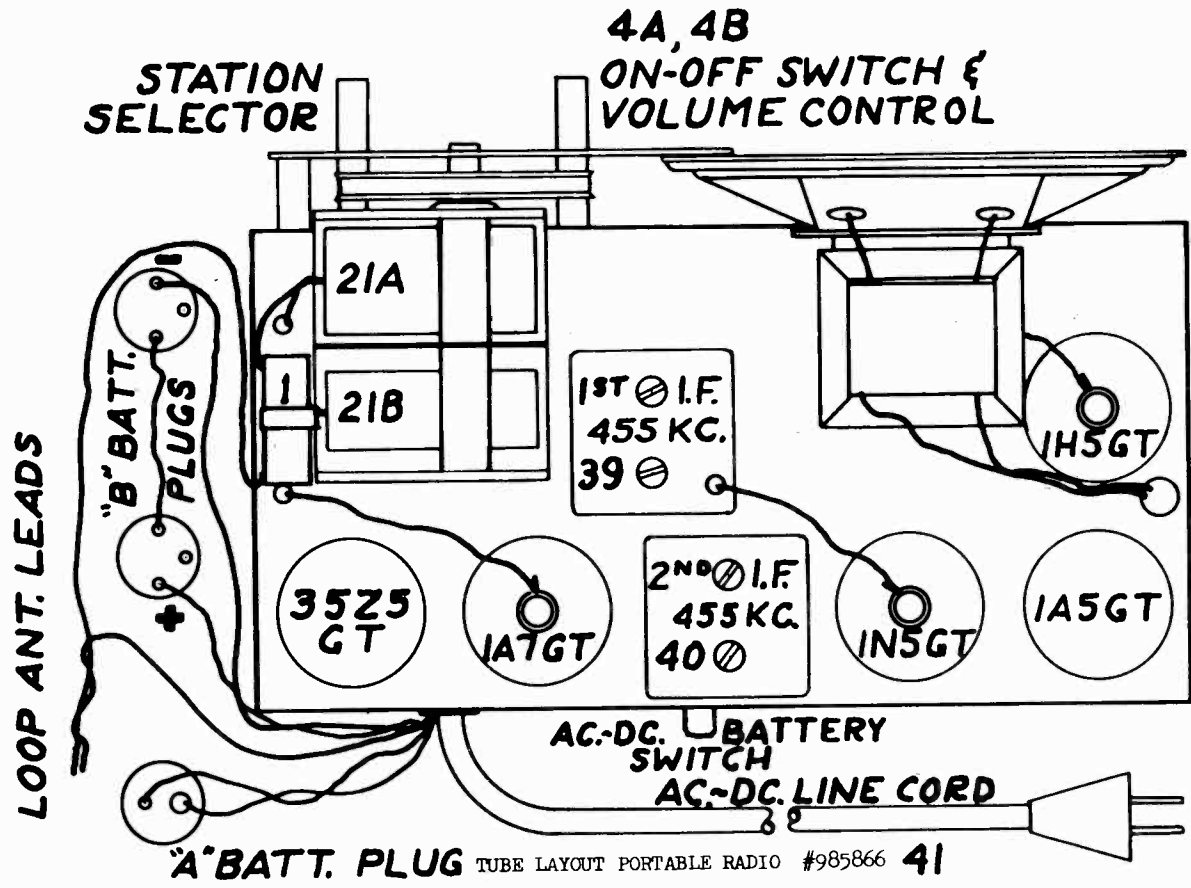
Voltages measured with 1000 ohm per volt D.C. voltmeter between socket terminals and negative "B" supply.  
 \*-Oscillator voltage measured with R.F. choke in series with voltmeter lead.

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

CHEVROLET DIV.—GEN. MOTORS



PORTABLE RADIO #985866



'A' BATT. PLUG TUBE LAYOUT PORTABLE RADIO #985866 41

MODEL 985866

CHEVROLET DIV.—GEN. MOTORS

**SUBJECT: TECHNICAL SERVICE INSTRUCTIONS**

**GENERAL:** This Plug-in Portable radio is a five tube receiver designed to operate from either self-contained dry batteries or from 105-125 volt, 50/60 cycle A.C. or D.C. house lighting current.

**ANTENNA:** The antenna is a loop type inside the cabinet and, under normal operating conditions, no other antenna is necessary. For remote locations, where reception may be weak, provision is made for attachment of an outside antenna to a wire extending from the back of the cabinet.

**TUBE COMPLEMENT**

TYPE	FUNCTION	TYPE	FUNCTION
1A7GT	Mixer, 1st Detector-Oscillator	1N5GT	2nd Det.-A.V.C.-1st A.F. Amplifier
1N5GT	I.F. Amplifier	35Z5GT	Power Output Rectifier

**CIRCUIT DESCRIPTION**

The circuit used in this receiver is the conventional superheterodyne type designed for loop antenna operation.

The range of frequencies covered is from 540 to 1620 kilocycles.

**POWER SUPPLY:** This radio is designed to operate from either batteries or from 105-125 volts A.C. (50/60) or D.C. supply line.

A switch accessible from the rear of the radio switches the radio for either battery or A.C.-D.C. operation.

**CIRCUIT ALIGNMENT**

The adjustable condensers in this receiver have been very carefully adjusted at the factory and will require no further adjustment unless tampered with or a defective coil has been replaced. If re-alignment is found necessary, the circuits can be adjusted only with the use of a calibrated test oscillator or signal generator and an output meter.

**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 455 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 chassis.

**CIRCUIT ALIGNMENT (Cont'd)**

- c. Connect the output meter across primary winding of the output transformer.
- b. Set the test oscillator to exactly 455 kilocycles.
- e. Adjust the trimmers on the 1st and 2nd I.F. transformers 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. Alignment at 1620 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 1620 kilocycles.
- d. Adjust the trimmer of the oscillator section of the condenser gang 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.

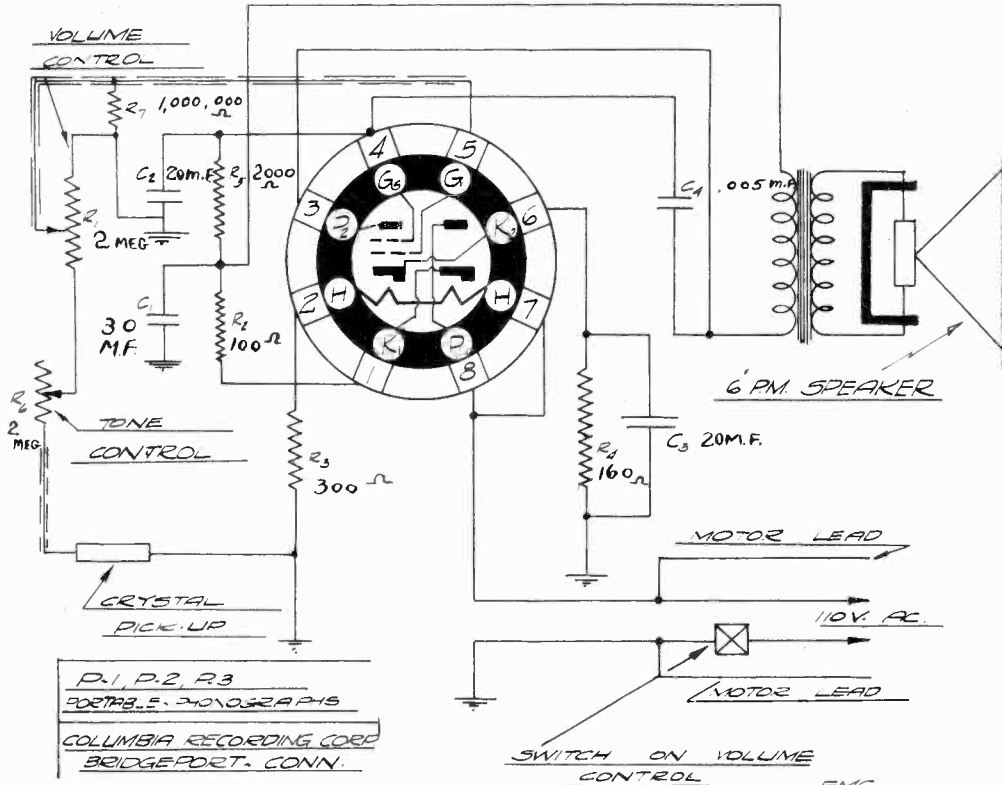
3. Aligning at 1400 kilocycles.

- a. This adjustment should be made with the chassis, loop antenna, and batteries 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 chassis.
- d. Set the test oscillator to 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 for maximum output.

COLUMBIA

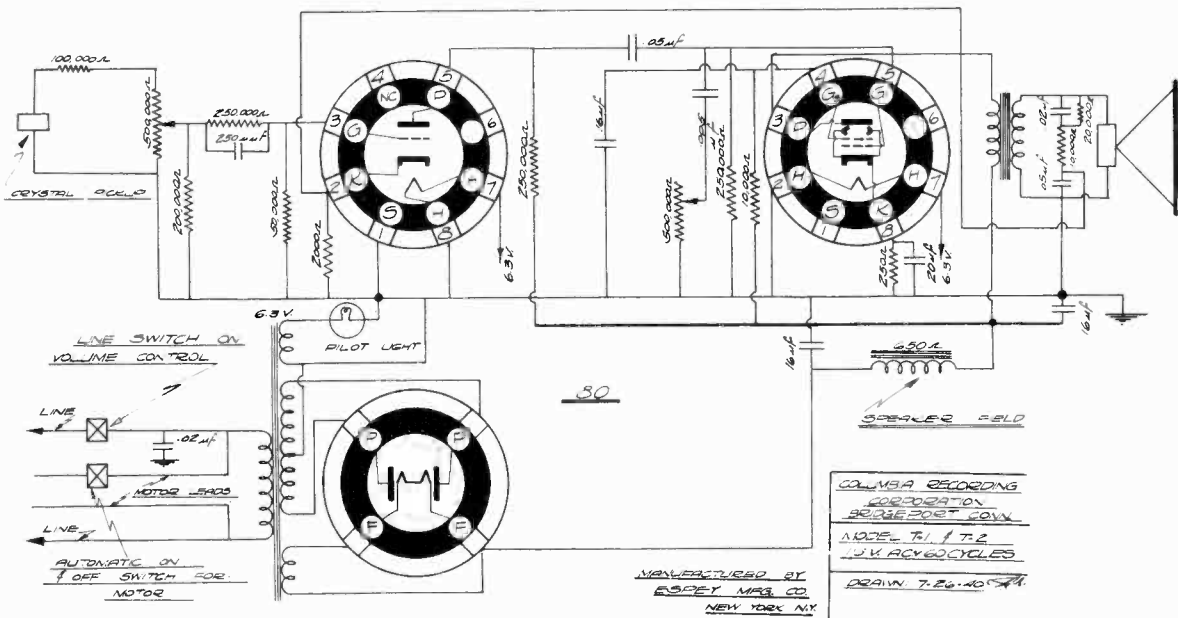
MODELS P1, P2, P3  
Phonograph  
MODELS T1, T2  
Phonograph

70-7GT



65-5

6-6G





MODEL D1  
Demonstrator  
MODEL D3

COLUMBIA

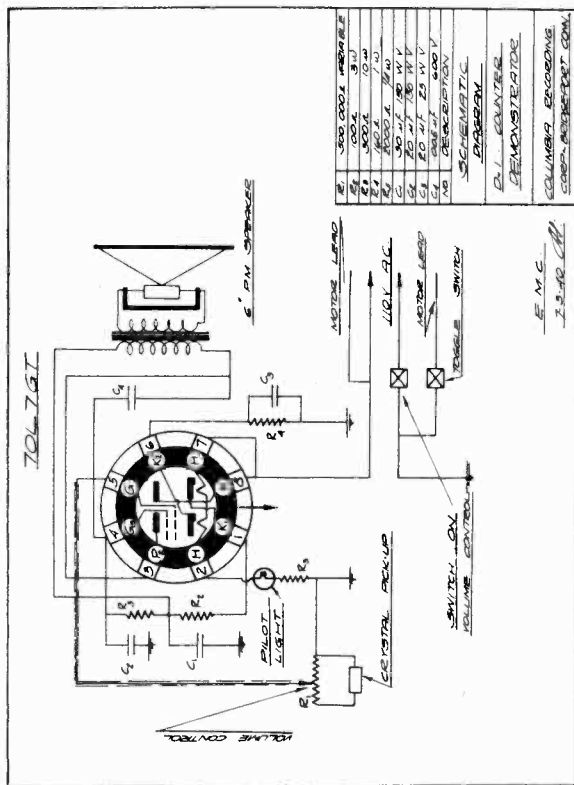
INSTRUCTIONS FOR OPERATING

MODEL D1 COUNTER DEMONSTRATOR  
OPERATE ON 110-120 VOLTS A. C. 60 CYCLES ONLY

To turn the amplifier on, rotate the knob marked "Volume" in a clockwise position until a click is heard. After about thirty seconds the machine will be ready to operate. This knob can then be used to control the volume required.

The toggle switch is for starting and stopping the motor without turning the amplifier off.

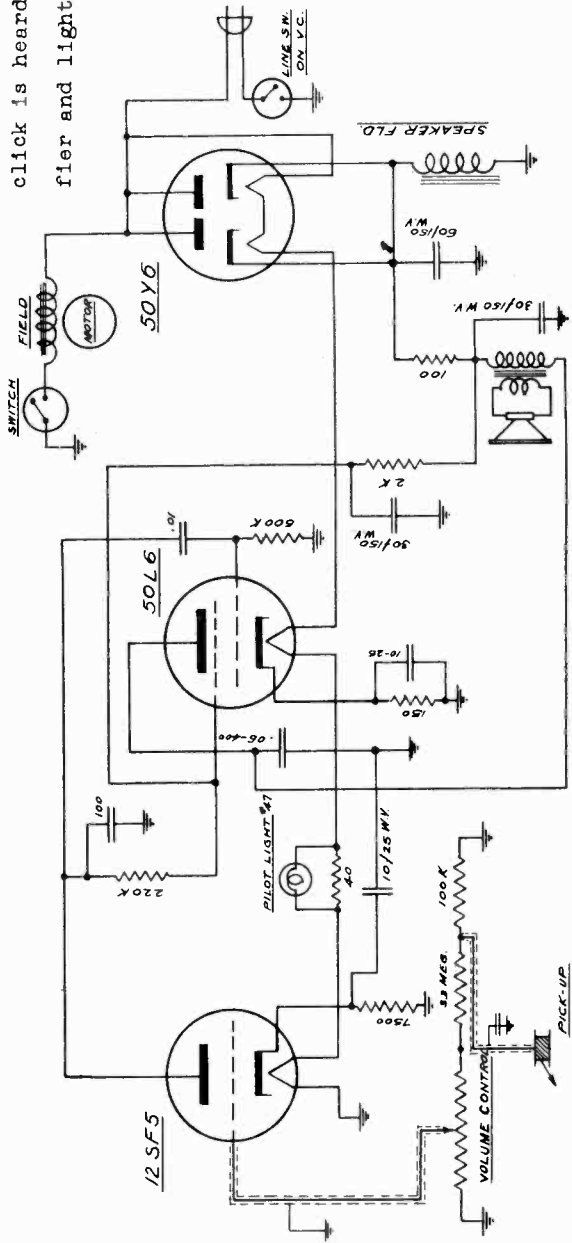
When the demonstrator is not being used, turn the "Volume" knob counter-clockwise until a click is heard. This will turn off the amplifier and light.



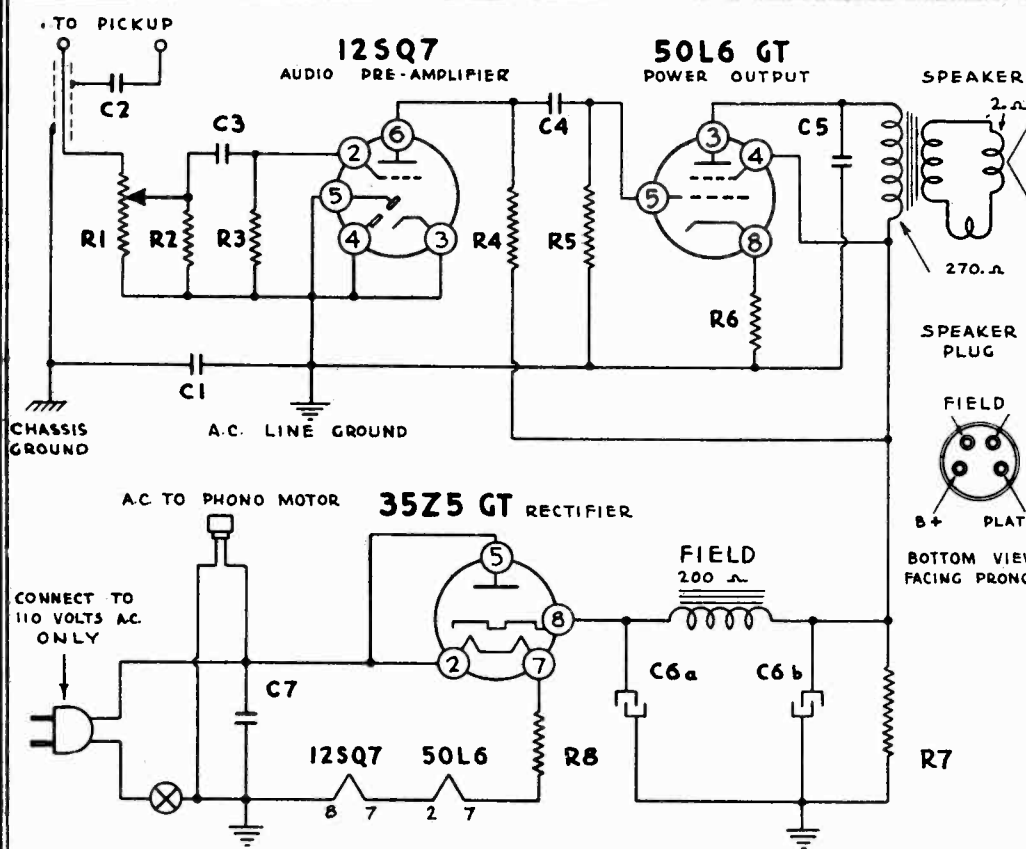
SCHEMATIC DIAGRAM

COLUMBIA

RECORDING CORP.  
MODEL D-3.



CONTINENTAL RADIO & TELEV. CORP.

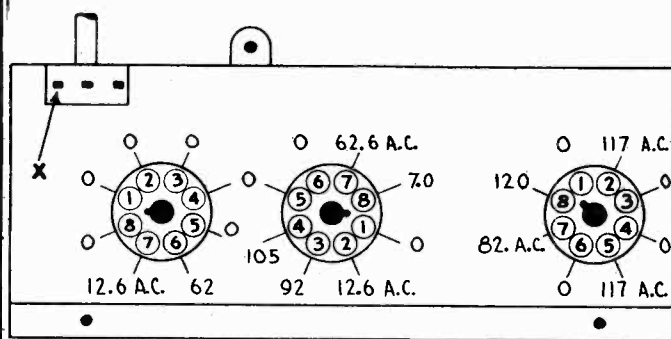


RESISTORS		
NO.	OHMS	WATTS
R1	2,000,000	V. C.
R2	1,000,000	1/2 W.
R3	10,000,000	1/2 W.
R4	250,000	1/2 W.
R5	500,000	1/2 W.
R6	150	1/2 W.
R7	2,500	5 W.
R8	130	5 W.

CONDENSERS		
NO.	CAPACITY	VOLTS
C1	.16	400
C2	.2	400
C3	.005	600
C4	.01	400
C5	.01	400
C6 a	30.	ELECT. 150
C6 b	50.	ELECT. 150
C7	.05	400

SCHEMATIC DIAGRAM XA3



12SQ7      50L6 GT      35Z5 GT

Operation on 110-120 volts, (RC50) 60 cycle A. C. (Alternating Current), ONLY.  
Power Consumption: 55 watts.

**NOTE:** RC50 may be changed to RC51, 50 cycle Model by the purchase of 50 cycle speed reduction spring bushing. This bushing is placed over the motor shaft (thereby increasing its diameter) running against the idler wheel. Turntable must be removed for this change.

All prices quoted are list and subject to trade discount. All parts should be ordered from local Admiral Distributor. Shipments are F.O.B. if ordered direct from the factory. When remitting in advance please include postage.

A handling charge of \$0.25 will be made on all orders under \$0.75 list.

Prices are subject to change without notice.

PAPER CONDENSERS		
P1194	.005 mfd. 600 volt.....	.15
P164	.01 mfd. 400 volt.....	.25
P334	.05 mfd. 400 volt.....	.30
P4950	.16 mfd. 400 volt.....	.30
P4881	.2 mfd. 400 volt.....	.30

ELECTROLYTIC CONDENSERS		
P4932	{ 50 mfd. 150 volt } { 30 mfd. 150 volt }	1.50

RESISTORS		
P5161	150 ohm, 5 watt.....	.25
P3803	150 ohm, 1/2 watt.....	.15
P5162	2,500 ohm, 5 watt W. W.	.45
P3868	250,000 ohm, 1/2 watt.....	.15

P3876	500,000 ohm, 1/2 watt.....	.15
P3882	1,000,000 ohm, 1/2 watt.....	.15
P3889	10,000,000 ohm, 1/2 watt.....	.15

VARIABLE RESISTORS		
P5141	2 Meg. Volume Control and Switch	1.00

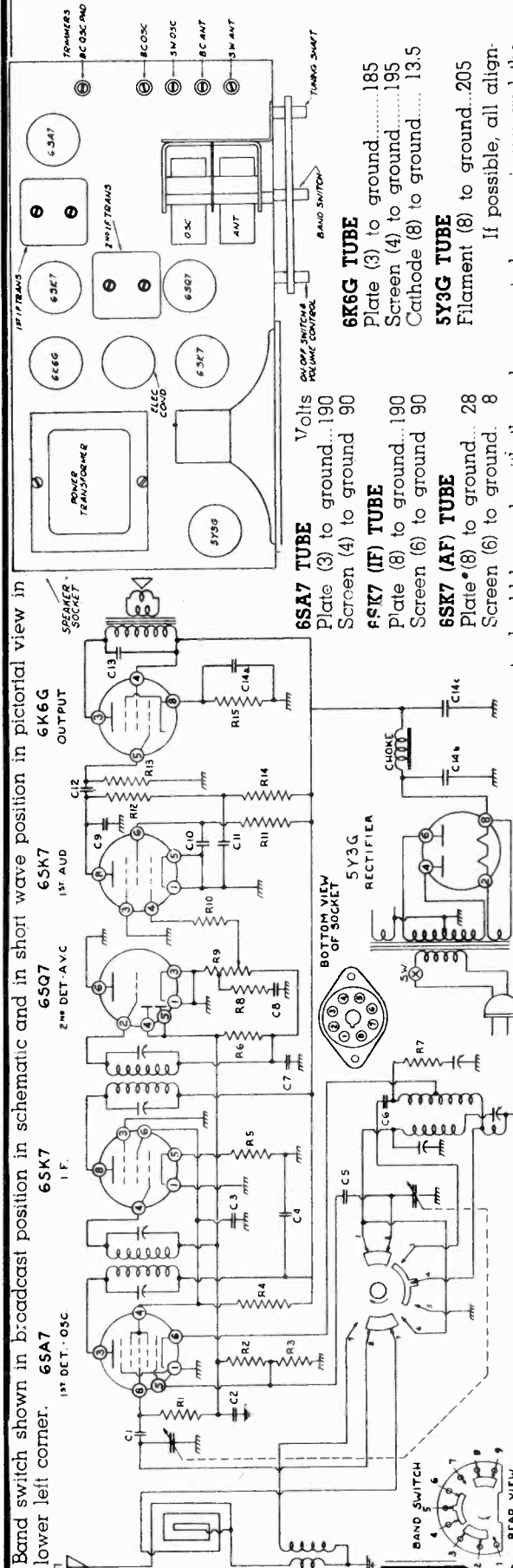
MISCELLANEOUS		
P5164	Speaker and Output Transformer	4.40
P946	Speaker Plug	.10
P945	Speaker Socket	.10
P4583	Tube Socket	.15
P4894	Line Cord	.55
P3557	Line Cord Clamp	.10
P4496	Motor A. C. Cord and Socket	.40

P5166	Asbestos Plate	.05
P5165	Knob	.10

PHONOGRAPH PARTS		
(See Record Changer Service Manual For Detailed List)		
RC4010	Record changer mounting spring, 1/2 doz.	.10
RC7017	Record changer mounting screw	.05
P4781	Record changer mounting bracket	.10
RC6008	Admiral Lifetime Needle	1.50
RC3020	Center post	1.35
RC50	Record changer (60 cycle)	
RC51	Record changer (50 cycle)	
60 to 50	cycle, speed reduction spring bushing	.15

CONTINENTAL RADIO & TELEV. CORP.

MODEL K63



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

6SA7 1ST DET.-OSC

6SK7 I.F.

6SQ7 2ND DET.-A.V.C

6SK7 1ST AUD

6K6G OUTPUT

**RESISTORS**

No.	Ohms
R1	500,000
R2	10,000,000
R3	20,000
R4	10,000
R5	100-10%
R6	2,000,000
R7	30
R8	20,000
R9	500,000
R10	1,000,000
R11	1,000,000
R12	500,000
R13	500,000
R14	50,000
R15	500-10%

**CONDENSERS**

No.	Capacity (Mfd.)	Volts
C1	.00025	Mica
C2	.05	200
C3	.05	200
C4	.05	400
C5	.0005	Mica
C6	.0025	Mica
C7	.0025	Mica
C8	.02	200
C9	.00025	Mica
C10	.05	200
C11	.1	400
C12	.01	400
C13	.005	600
C14a	20	25
C14b	20	350
C14c	20	350

All voltages measured with a 1,000 ohm per volt meter on the 250 volt scale. Line voltage 117 volts A.C. Volume control maximum and no signal tuned in. Power consumption 45 watts.

**Speaker** (Part No. P-4464) 8" PM Type

**D.C. voice coil resistance**..... 3.1 ohms

**Voice coil impedance at 400 cycles**..... 3.5 ohms

**Short Wave Antenna Coil** (Part No. P3378)

Looking at the connection end in a clockwise direction starting at the mounting lug side the connections are: No. 1, AVC; No. 2, Ant; No. 3, Grid; No. 4, Ground.

**Primary**—No. 2 and No. 4—Resistance..... 3 ohm

**Secondary**—No. 1 and No. 3—Resistance..... .07 ohm

**Oscillator Coil** (Part No. P4135)

Looking at the mounting bracket end in a clockwise direction starting at the chassis the connections are: No. 1, pad; No. 2, B.C. grid; looking at the other end in a clockwise direction starting at the chassis the connections are: No. 3, ground; No. 4, sec. tap; No. 5, open; No. 6, S.W. grid; No. 7, tickler.

**Tickler**—No. 3 and No. 7—Resistance..... 8 ohm

**S.W. Secondary**—No. 6 and No. 7—Resistance..... .07 ohm

**B.C. Secondary**—No. 2 and No. 1—Resistance..... 5.1 ohms

**First I.F. Transformer** (Part No. P4108)

**Primary**—Blue, plate; red, B+—Resistance..... 18.2 ohms

**Secondary**—White, grid; black, AVC—Resistance..... 15.1 ohms

**Second I.F. Transformer** (Part No. P4109)

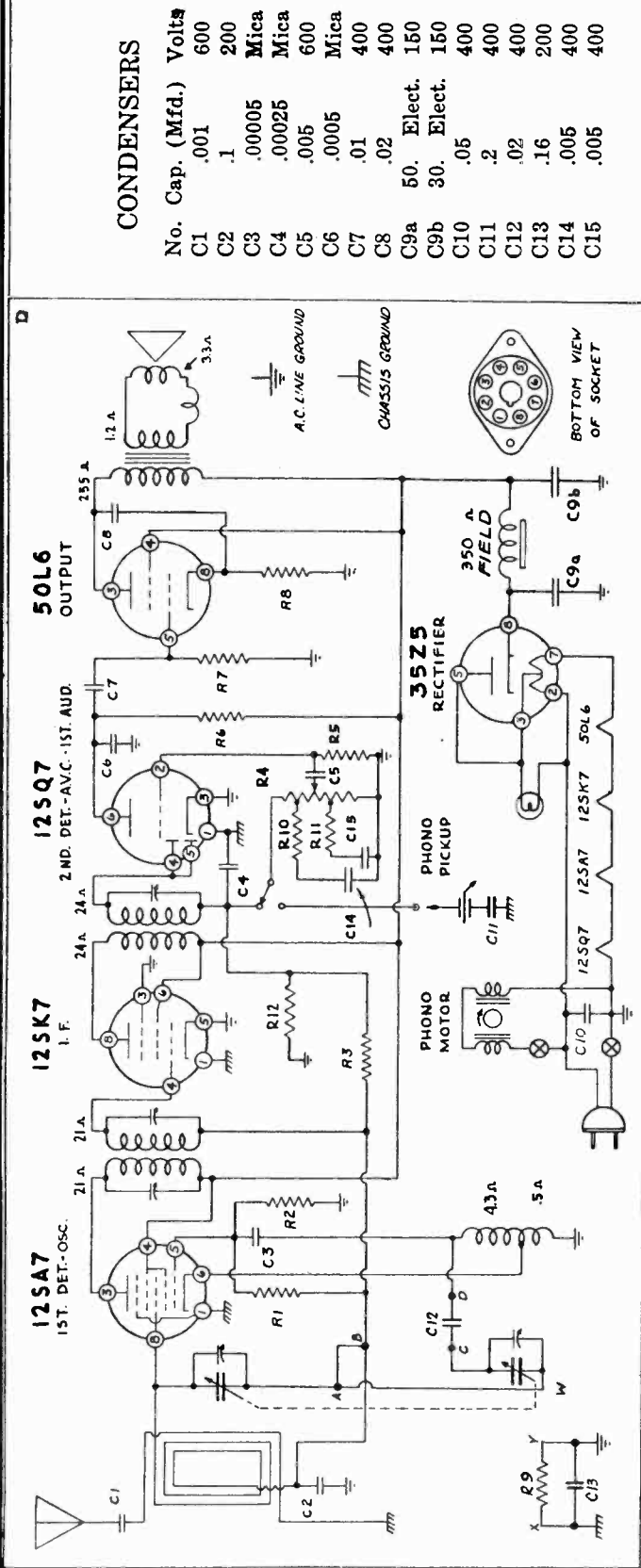
**Primary**—Blue, plate; red, B+—Resistance..... 20.8 ohms

**Secondary**—White, diode; black, AVC—Resistance..... 17.4 ohms

MODEL K63

ISSUE A AUGUST 1940

CONTINENTAL RADIO & TELEV. CORP.



CONDENSERS

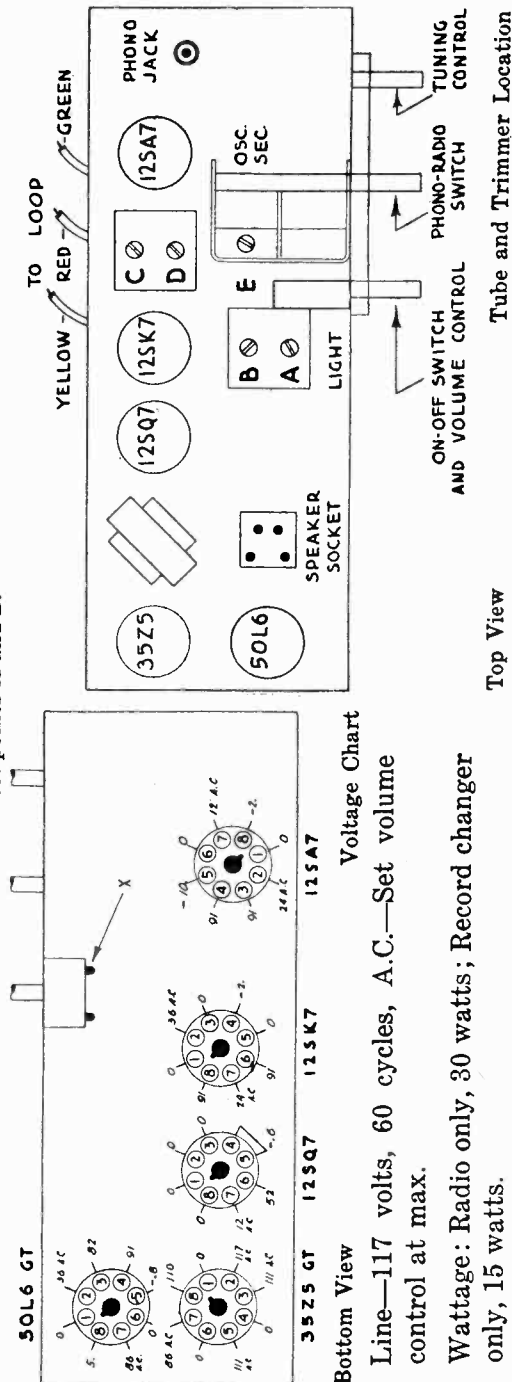
No.	Cap. (Mfd.)	Voltage
C1	.001	600
C2	.1	200
C3	.00005	Mica
C4	.00025	Mica
C5	.005	600
C6	.0005	Mica
C7	.01	400
C8	.02	400
C9a	50. Elect.	150
C9b	30. Elect.	150
C10	.05	400
C11	.2	400
C12	.02	400
C13	.16	200
C14	.005	400
C15	.005	400

RESISTORS

No.	Ohms	Watts
R1	10,000,000	1/4
R2	25,000	1/4
R3	2,000,000	1/4
R4	1,000,000	V.C.
R5	5,000,000	1/4
R6	250,000	1/4
R7	500,000	1/4
R8	150-10%	1/4
R9	150,000	1/2
R10	100,000	1/2
R11	50,000	1/2
R12	1,000,000	1/2

Volume control tapped at 300,000 ohms and 600,000 ohms from zero end.

In model M5-PH only, connect points w, x, and y together. R9 and C13 are not used. Also C12 is not used, and point C connects to D. Disconnect points A and B.



Tube and Trimmer Location

Top View

20,000 ohm per volt meter used. No station tuned in.

MODELS M5, XM5  
MODELS B6, XB6  
MODEL C6

CONTINENTAL RADIO & TELEV. CORP.

ALIGNMENT PROCEDURE

STEP	Connect Signal Generator To—	Dummy Antenna Between Radio and Generator	Set Generator Controls To—	Set Radio Controls To—	Adj. Following Trimmers to Max. Output	Special Instructions
<b>1</b>	Green Loop Lead	.1 mfd.	455 Kc.	1630 Kc.	<b>A, B, C, D,</b> I.F.	Note I - II
<b>2</b>	Green Loop Lead	.1 mfd.	1630 Kc.	1630 Kc.	<b>E</b> Bc. Osc.	Note I
<b>3</b>	Loop Radiator	Two Feet From Radio No Connection	1400 Kc.	1400 Kc.	<b>F</b> Bc. Ant. (On Loop)	Note III

NOTE I —Chassis may be connected or disconnected from cabinet loop during these adjustments.

NOTE II —Trimmer B not in later production models.

NOTE III—Chassis must be connected to cabinet loop. Use Aerometer or 10" diameter one turn loop on signal generator.

ALIGNMENT PROCEDURE

STEP	Connect Signal Generator to—	Dummy Antenna Between Radio and Generator	Set Generator Controls to—	Set Radio Controls to—	Adj. Following Trimmers to Max. Output
<b>1</b>	Tuning Cond. Ant. Stator	.1	455 Kc.	1630 Kc.	<b>A, B, C, D,</b> I. F.
<b>2</b>	Tuning Cond. Ant. Stator	.1	1630 Kc.	1630 Kc.	<b>E</b> Osc.
<b>3</b>	Tuning Cond. Ant. Stator	.1	1400 Kc.	1400 Kc.	<b>F</b> R. F.
<b>4</b>	Loop Radiator	Two feet from Radio No Connection	1400 Kc.	1400 Kc.	<b>G</b> Ant.

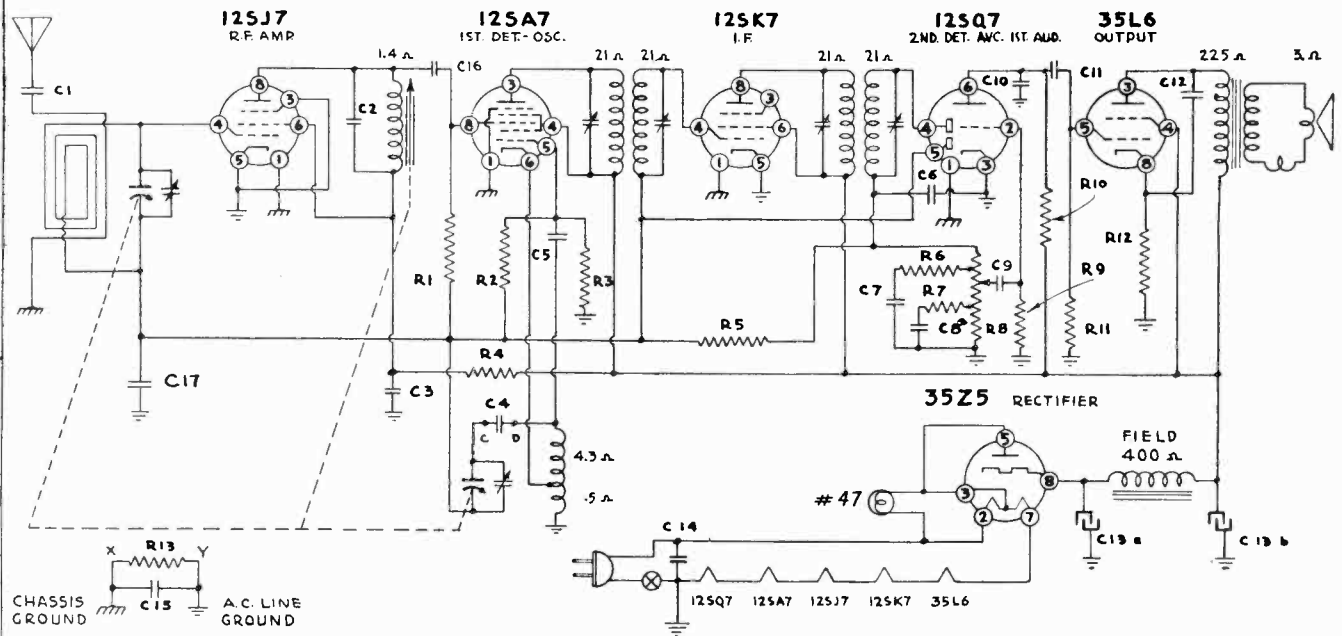
Use Aerometer or 10" diameter one turn loop on Signal Generator in Step 4.

STEP	Connect Signal Generator To—	Dummy Antenna Between Radio and Generator	Set Generator Controls To—	Set Radio Controls To—	Adj. Following Trimmers to Max. Output	Special Instructions
<b>1</b>	Tuning Cond. Ant. Stator	.1 mfd.	455 Kc.	1630 Kc. BC Range	<b>A, B, C, D,</b> I.F.	Note A
<b>2</b>	Tuning Cond. Ant. Stator	.1 mfd.	1630 Kc.	1630 Kc. BC Range	<b>E</b> Bc. Osc.	Note A
<b>3</b>	Green Loop Lead	400 ohms	9.5 Mc.	9.5 Mc. SW Range	<b>G</b> Sw. Osc.	Note A
<b>4</b>	Green Loop Lead	400 ohms	9.5 Mc.	9.5 Mc. SW Range	<b>H</b> Sw. Ant.	Note A
<b>5</b>	Loop Radiator	Two Feet From Radio No Connection	1400 Kc.	1400 Kc. BC Range	<b>F</b> Bc. Ant.	Note B

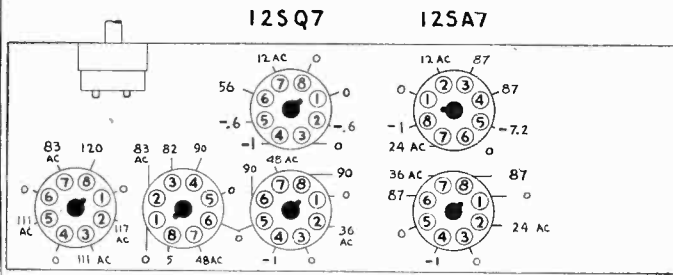
NOTE A—Chassis may be connected or disconnected from cabinet loop during these adjustments.

NOTE B—Chassis must be connected to cabinet loop. Use Aerometer or 10" diameter one turn loop on signal generator.

CONTINENTAL RADIO & TELEV. CORP.



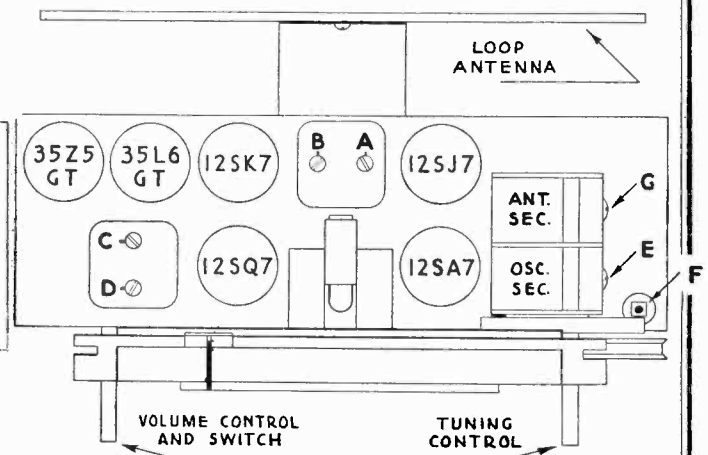
In model B6 only, X and Y are connected together. R13, C15, and C4 are not used. C is connected to D.



Bottom View—Voltage Chart

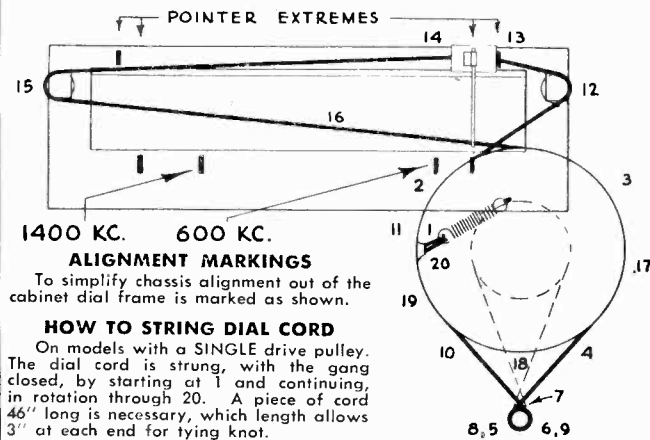
Voltages are positive D. C. unless noted. Measured from chassis with 20,000 ohm per volt meter. On XB6 Series use floating ground instead of chassis.

Line—117 volts, 60 cycle A.C. Volume control at maximum. No station tuned in.



Top View—Tube and Trimmer Location

Volume control tapped at 100,000 ohms and 200,000 ohms from zero end.



**ALIGNMENT MARKINGS**  
To simplify chassis alignment out of the cabinet dial frame is marked as shown.

**HOW TO STRING DIAL CORD**  
On models with a SINGLE drive pulley. The dial cord is strung, with the gang closed, by starting at 1 and continuing, in rotation through 20. A piece of cord 46" long is necessary, which length allows 3" at each end for tying knot.

On models with DOUBLE drive pulley the dial cord is in two pieces. The pointer cord is on the large pulley starting at 1 and continuing through 20 BUT in the following special order, 1, 2, 3, 4, 18, 19, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20. The drive cord is on the smaller dotted pulley, in the dotted position.

To clarify dial cord arrangement the dial frame is shown as transparent.

RESISTORS

No.	Ohms
R1	10,000
R2	10,000,000
R3	25,000
R4	100
R5	1,000,000
R6	50,000
R7	30,000
R8 V. C.	500,000
R9	5,000,000
R10	250,000
R11	500,000
R12	150
R13	150,000

CONDENSERS

No.	Capacity (Mfd.)
C1	.005
C2	.000785
C3	.05
C4	.02
C5	.00005
C6	.00025
C7	.01
C8	.01
C9	.01
C10	.0005
C11	.01
C12	.02
C13a	30. Elect.
C13b	50. Elect.
C14	.05
C15	.2
C16	.00025
C17	.1

Set to be used on 110-120 volts D.C. (Direct Current) or A.C. (Alternating Current) 40 to 60 cycles, ONLY. Current consumption: 30 watts.

MODEL C6

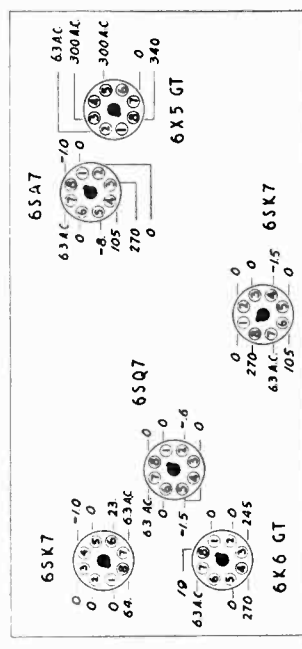
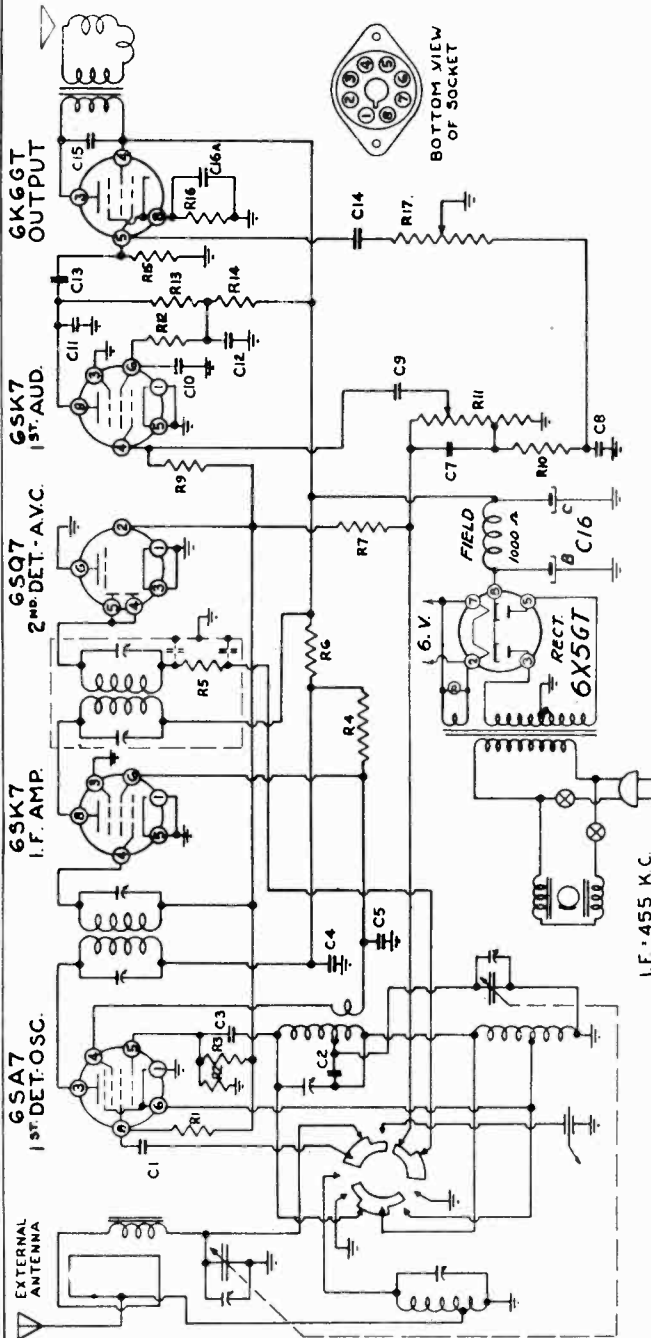
CONTINENTAL RADIO & TELEV. CORP.

RESISTORS

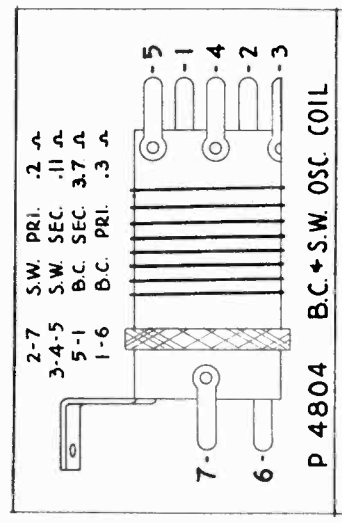
No.	Ohms
R1	2,000,000
R2	20,000
R3	10,000,000
R4	15,000
R5	70,000
R6	100,000
R7	1,000,000
R9	1,000,000
R10	20,000
R11	500,000
R12	1,000,000
R13	200,000
R14	50,000
R15	500,000
R16	600,000
R17	500,000

CONDENSERS

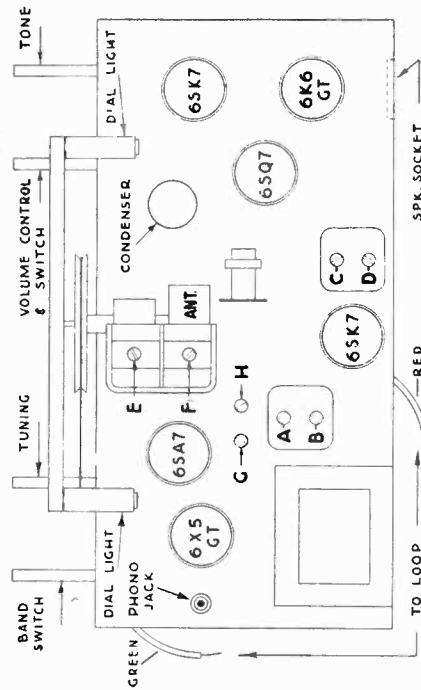
No.	Capacity (Mfd.)
C1	.00025
C2	.00025—10%
C3	.00005
C4	.05
C5	.05
C7	.00025
C8	.02
C9	.01
C10	.05
C11	.00025
C12	.1
C13	.01
C14	.002
C15	.005
C16a	.20
C16b	.20
C16c	.20



Bottom View



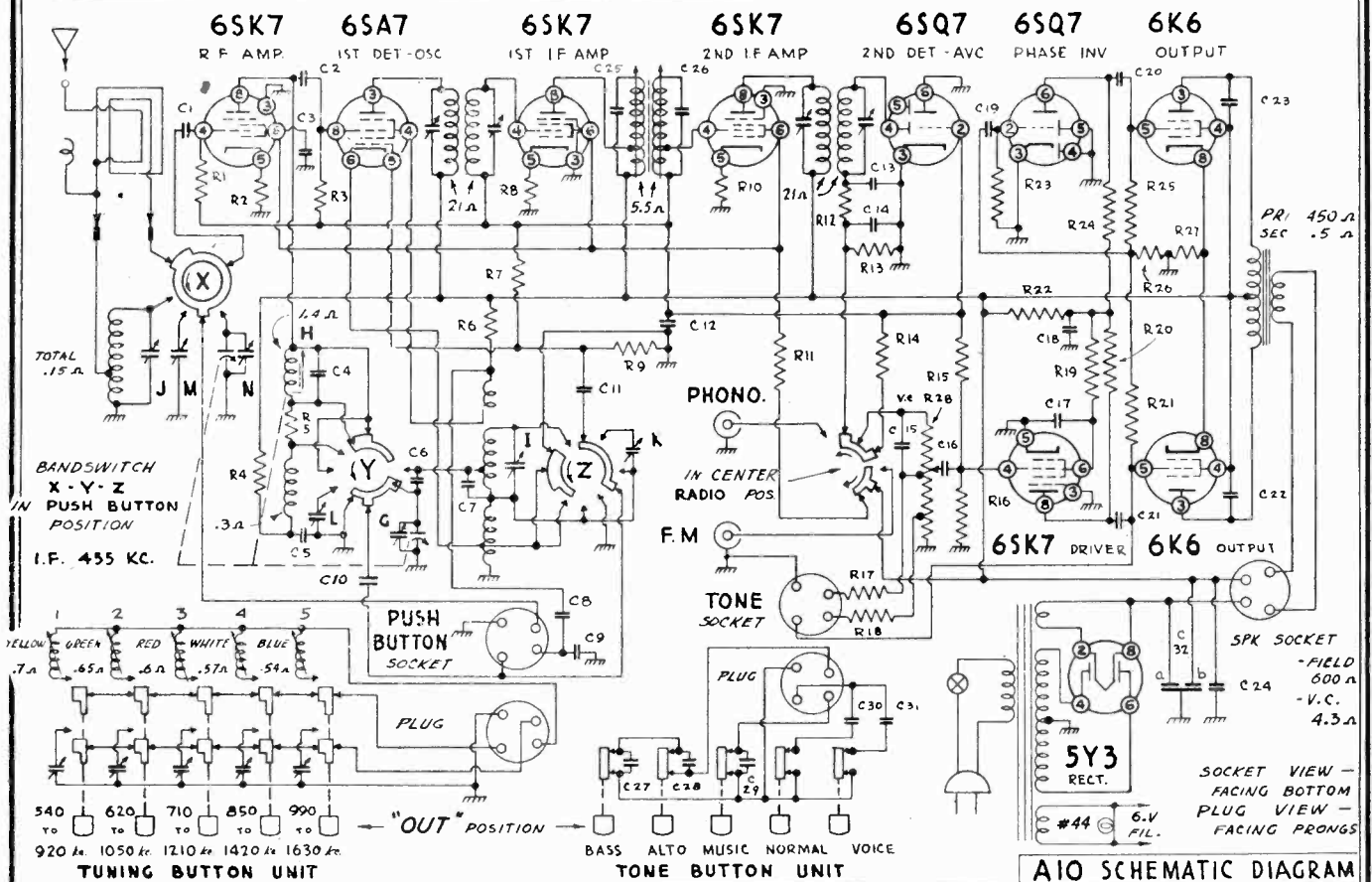
Top View



Tube and Trimmer Location

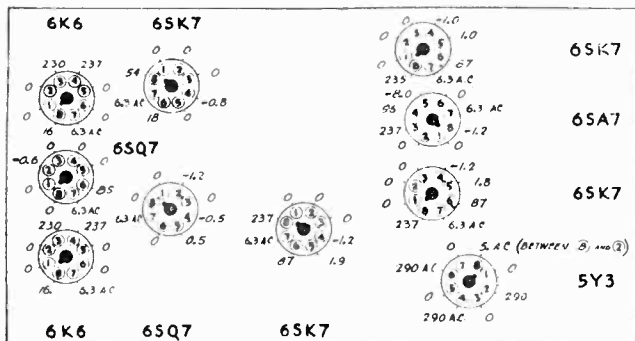
	Pri.	Sec.
First I.F. Trans.	15. ohms	11. ohms
Second I.F. Trans.	22. ohms	18. ohms
Output Trans.	455. ohms	
Voice Coil—D.C.	2. ohms	
Ant. Loading Coil	1.3 ohms	
Sw. Ant. Coil	.05 ohm	

CONTINENTAL RADIO & TELEV. CORP.



For Condenser and Resistor values see Replacement Parts List.

Volume control tapped at 300,000 ohms and 600,000 ohms from ground end.



Bottom View

Voltage Chart

Voltages measured with 20,000 ohm per volt meter, from terminal to chassis and are positive D.C., unless noted otherwise.

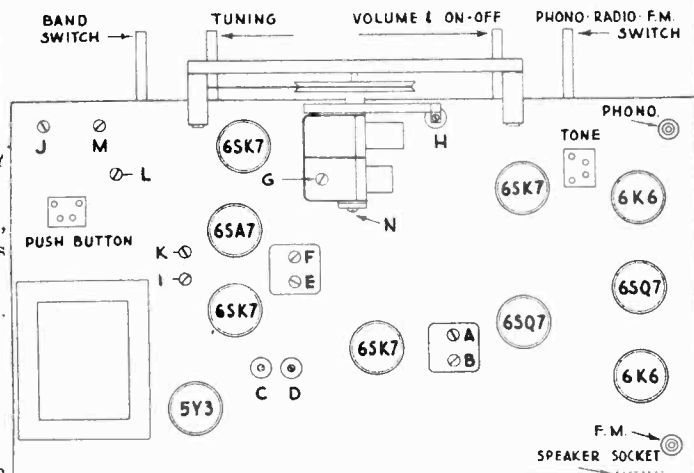
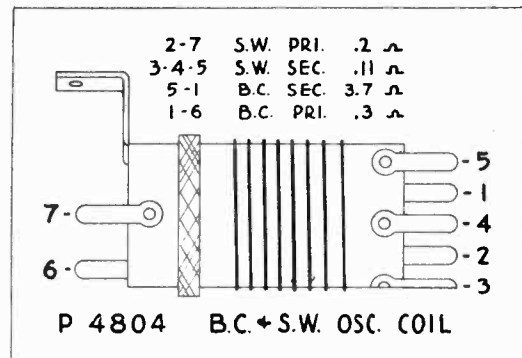
Line—117 volts, 60 cycles, A.C. Vol. max, No station. Switches set at RADIO and BROADCAST.

Changer only, 15 watts.

Radio only, 90 watts—RADIO position.

Radio only, 80 watts—PHONO position.

(R.F. and I.F. screens disconnected in PHONO position which also makes plate voltages higher.)



Top View

Tube and Trimmer Location



MODEL A-10

CONTINENTAL RADIO & TELEV. CORP.

STEP	Connect Signal Generator To—	Dummy Ant. Between Radio and Generator	Set Generator Controls To—	Set Radio Controls To—	Adj. Following Trimmers To Max. Output
<b>1</b>	6SA7 Grid	.1 mfd.	455 Kc.	1630 Kc. B. C. Range	<b>A, B, C, D, E, F</b> I.F.
<b>2</b>	Green Loop Lead (Grid)	.1 mfd.	1630 Kc.	1630 Kc. B. C. Range	<b>G</b> Bc. Osc.
<b>3</b>	Green Loop Lead (Grid)	.1 mfd.	1400 Kc.	1400 Kc. B. C. Range	<b>H</b> Bc. RF.
<b>4</b>	Yellow Loop Lead (Ground)	400 ohms	11.7 Mc.	11.7 Mc. 25M Range	<b>I</b> 25m Osc.
<b>5</b>	Yellow Loop Lead (Ground)	400 ohms	11.7 Mc.	11.7 Mc. 25M Range	<b>J</b> 25m Ant.
<b>6</b>	Yellow Loop Lead (Ground)	400 ohms	9.5 Mc.	9.5 Mc. 31M Range	<b>K</b> 31m Osc.
<b>7</b>	Yellow Loop Lead (Ground)	400 ohms	9.5 Mc.	9.5 Mc. 31M Range	<b>L - M</b> R.F. Ant.
<b>8</b>	Loop Radiator	Two Feet From Radio No Connection	1400 Kc.	1400 Kc. B. C. Range	<b>N</b> Bc. Ant.

Use Aerometer or 10" diameter one turn loop on Signal Generator in Step 8

REPLACEMENT PARTS LIST

RESISTORS

Part No.	Value	Ohms	Watts	Notes
P3800	R2	100	1/2	.15
P3806	R8, R10	200	1/2	.15
P5178	R27	320	1-10%	.25
P3820	R4	500	1/2	.15
P3833	R5	3,000	1/2	.15
P3841	R3	10,000	1/2	.15
P1944	R6	15,000	2	.25
P3844	R9	20,000	1/2	.15
P2184	R11	25,000	1	.20
P3853	R12, R18, R22	50,000	1/2	.15
P3860	R17	100,000	1/2	.15
P3864	R20, R24	200,000	1/2	.15
P3876	R13, R21, R25, R26	500,000	1/2	.15
P3882	R14, R19	1 megohm	1/2	.15
P3883	R1	2 megohm	1/2	.15
P3886	R7, R15, R16, R23	5 megohm	1/2	.15

VARIABLE RESISTORS

P5152	R28	V. C. 1 megohm	1.10
-------	-----	----------------	------

PAPER CONDENSERS

Part No.	Value	Mfd.	Volts	Notes
P3203	C30	.001	600	.15
P904	C31	.002	600	.15
P1322	C22, C23, C27, C29	.005	600	.15
P164	C19, C20, C21, C28	.01	400	.25
P143	C16	.02	400	.25
P334	C3, C5, C8, C12	.05	400	.30
P276	C17, C24, C18	.1	400	.30

MICA CONDENSERS

Part No.	Value	Mfd.	Notes
P1382	C11, C13	.00005	.15
P480	C14	.0001	.15
P5184	C6	.0002	10% .25
P817	C1, C2, C7, C15	.00025	.20
P4368	C10	.0005	2 1/2% .40
P5163	C25, C26	.0005	10% .25
P5087	C4	.000785	2 1/2% .50
P2565	C9	.003	5% .40

TRANSFORMERS AND COILS

G6502	Loop Assembly	2.50
G6500	Sw. Choke Coil	.25
G6476	R.F. Coil Assembly	.40
P4802	Sw. Ant. Coil	.40
P4804	Bc. and Sw. Osc. Coil	.80
G6532	2nd I.F. Transformer	1.25
P5114	1st and 3rd I.F. Trans.	1.15
P5159	Output Transformer	1.90
P5119	Power Trans., 60 cycles	5.20

PERMEABILITY UNIT

G6521	Unit Complete	7.50
P5106	Push Button Switch	2.50
P5093	Trimmer Strip	1.25
P4363	Iron Core	.15
P5171	Iron Core Lock Nut	set .05
P4352	Coil Clip	set .05
G6522	Coil, 1 Yellow dot	.25
G6523	Coil, 2 Green dot	.25
G6524	Coil, 3 Red dot	.25
G6525	Coil, 4 White dot	.25
G6526	Coil, 5 Blue dot	.25
P1957	Plug only	.10
P5088	Push Button	.10
P5104	Mtg. Bracket	pair .05

tone CONTROL UNIT

G6528	Unit Complete	3.75
P5107	Push Button Switch	2.20
G6530	Fibre Strip and All Condensers	1.00
P3596	Cinch Clips	pair .05
P1957	Plug	.10
P5088	Push Button	.10
P5142	Upper Mtg. Bracket	.05
P5143	Lower Mtg. Bracket	.05

ELECTROLYTIC CONDENSERS

P4372	{ C32 a 20 mfd. 450 volt } { C32 b 16 mfd. 450 volt }	1.15
-------	--	------

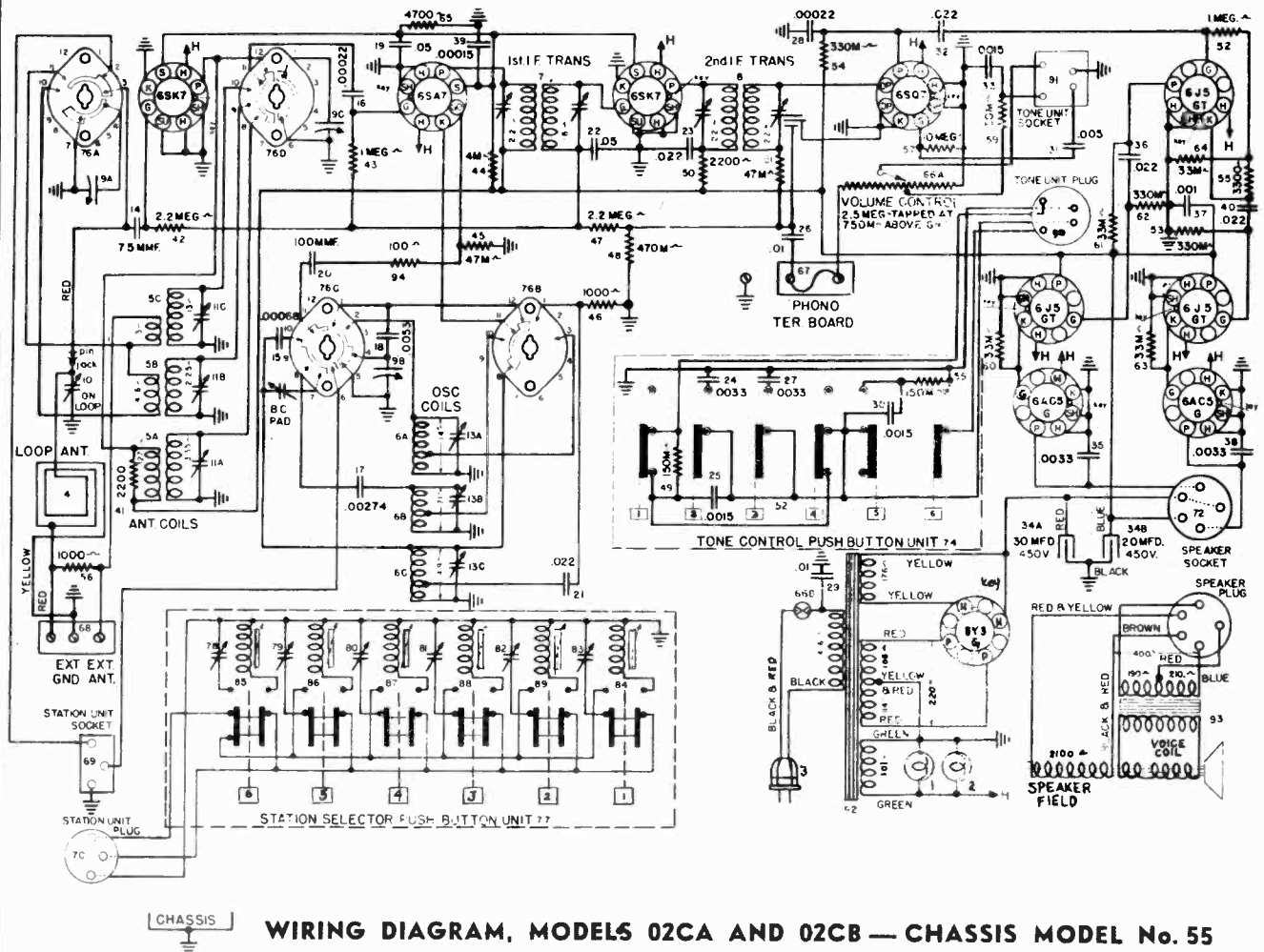
VARIABLE CONDENSERS

P5092	Gang Condenser	2.70
P5003	Trimmer (on gang)	.20
P5147	Double Trimmer	.40
P5156	Trimmer with bracket	.25

MISCELLANEOUS

P5180	Speaker	7.25
P5084	Speaker Socket	.15
P4583	Tube Socket	.15
P5065	Socket, for Push Button Units	.15
P3005	5Y3 Socket	.15
P4404	Phono—F. M. Jack	.10
P5149	Phono, Radio, F. M. Switch	.90
P5105	Band Switch	2.00
P3557	Line Cord Clamp	.15
P4894	Line Cord	.65
P4787	Shielded Cable and Plug	.60
P2739	A.C. Phono Cable & Socket	.60
P4139	Pilot Light Socket and Leads	.25
P1713	Pilot Light	.25
P4248	Pilot Light Shield	.05
G6516	Drive Drum and Cam Assembly	.25
P5066	Drive Shaft	.10
P1399	Horseshoe Washer	.05
P1587	Spring Washer	.05
P2925	Tension Spring	.05
P4979	Iron Slug	.35
G6517	Iron Slug Lift Assembly	.35
P5032	"T" Ferrule	
P269	Washer	
P5109	Spring	.10
P931	Screw	set
G6518	Dial Scale Assembly	1.00
G6519	Band Indicator Assembly	.50
P6135	"U" Lever Only	.10
P5053	Pointer	.15
P3911	Pointer Crystal	.05
P5047	Dial Crystal	.60
P5151	Large Escutcheon	1.85
P5112	Left Escutcheon	.55
P5410	Right Escutcheon	.40
P5111	Removable Piece for above	.35
P5121	Spring Clip for above	.15
P4626	Tinnerman Clips for above	.05
P5136	Plain Knobs	.15
P5137	Marked Knob	.15
P5088	Push Button	.10
P4444	Chassis Mtg. Screws	.05
G6101	Mtg. Foot Assembly	.25
4207	Cabinet	

THE CROSLEY CORP.



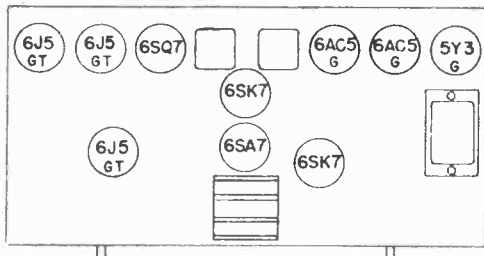
WIRING DIAGRAM, MODELS 02CA AND 02CB — CHASSIS MODEL No. 55

**TUNING RANGES**

American Broadcast Band—540 to 1630 KC (555 to 184 Meters)  
 Police, Amateur, etc.—1600 to 5200 KC (187 to 57.5 Meters)  
 Short Wave (Foreign)—5.2 to 18.0 MC (57.5 to 16.6 Meters)

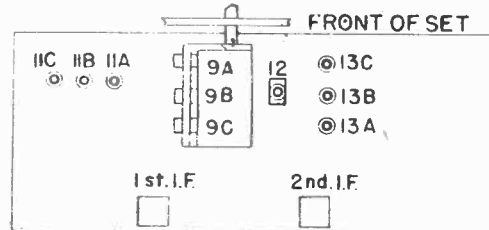
**TUBES**

2—6SK7, 1—6SA7, 1—6SQ7, 3—6J5, 2—6AC5GT, and 1—5Y3G. (Tubes may be metal or Bantam (GT) equivalents.)



TUBE AND TRIMMER LAYOUT

**TRIMMER LOCATION**



MODELS O2CA, O2CB, Chassis 55 THE CROSLEY CORP.

Preliminary

- Output Meter Connections.....Plate to Plate of 6AC5G's
- Generator Ground Connection.....To chassis or Ground Lead
- Dummy Antenna to be in series with generator output.....See Chart Below
- Position of Volume Control.....Fully On
- Position of Master Tone Control.....All Buttons Out

**ALIGNMENT PROCEDURE CHART**

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1630 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Terminal	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Terminal	Police	Approx. 5.0	Pol "ANT" Trimmer	Adjust for maximum output.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

**IMPORTANT ALIGNMENT NOTES**

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

**TUBE VOLTAGE CHART**

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SA7—Converter.....		Gnd.	Gnd.	180	74	0	{0-S. W. } {4.0 B. C. }	6.3 A. C.	0
6SK7—I. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.....		Gnd.	0	Gnd.	0	0	75	6.3 A. C.	Gnd.
6J5GT—Phase Inverter.....		Gnd.	Gnd.	145	J. B.	0	J. B.	6.3 A. C.	40
6J5GT(2)—P. P. A. F. Drivers.....		Gnd.	Gnd.	180	0	0	J. B.	6.3 A. C.	6.5
6AC5GT(2)—P. P. Output.....		Gnd.	Gnd.	304	J. B.	6.5	J. B.	6.3 A. C.	Gnd.
5Y3G—Rectifier.....		N. C.	310	J. B.	308 A. C.	J. B.	308 A. C.	J. B.	310

MAX. POWER OUTPUT.....12.0 WATTS  
 POWER CONSUMPTION.....90 WATTS  
 DROP ACROSS SPEAKER FIELD.....120 VOLTS

J. B.—Junction Block

N. C.—No Connection

Voltagcs may vary 10% of values given.

## THE CROSLY CORP.

**SETTING THE PUSH BUTTONS (Station Selector)**

The six station selector push buttons are set up by means of two adjusting screws per button. These adjusting screws are made accessible by removing the station selector push button escutcheon. Pry off carefully being carefully not to scratch the main escutcheon.

Select the call letter tabs of your six favorite broadcast stations from the station call letter sheets supplied. Place the call letter tabs in the window above that push button which is to be adjusted for that station. It is not essential that all push buttons be set at one time.

Note: When placing call tabs in the window be sure to arrange them according to their frequency (kilocycles) that is: the station whose frequency

is well within the range covered by the No. 1 button, should be placed above that button and so on with the rest of the buttons to be set. After tabs are in place break off the celluloid covers from the strip furnished and snap in place over the call letters to protect and hold them in place.

The frequencies of your favorite stations may be found in your local paper or by consulting a station listing sheet.

**SET-UP PROCEDURE**

Remove station selector push button escutcheon. Turn the receiver on and let it operate for a sufficient length of time to permit the tubes to reach their normal operating conditions.

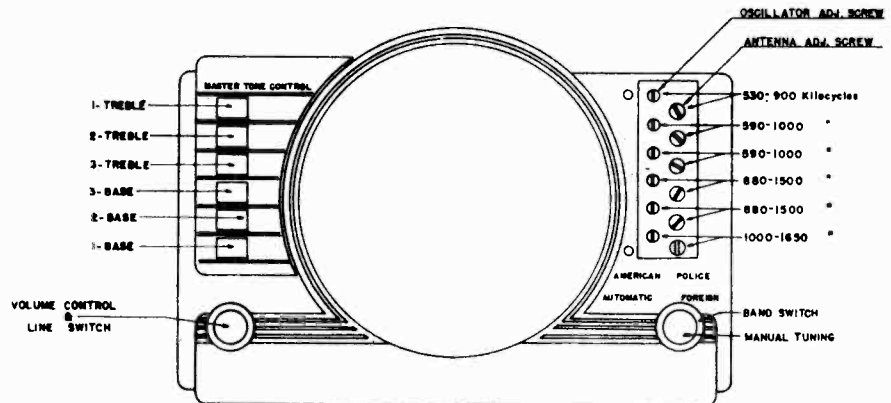
Note: To simplify the set up and insure accurate adjustments the following pre-adjustments should be made.

Tighten all Antenna Trimmer screws moderately tight. See Fig. 1. Turn the Oscillator adjusting screws to the left (counter clockwise) until the threaded portion extends approximately  $\frac{1}{2}$  inch. Note: Care should be taken when adjusting the oscillator screws so that the selected station is not passed over. Turn the screws slowly.

It is essential that the frequency (kilocycles) of the station selected is within the range of the push button to be set for that station. See Fig. 1.

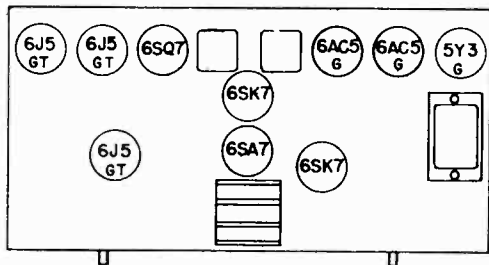
1. Turn the band change switch to the "American" position. Using the station selector knob, carefully tune in the station to which the No. 1 push button is to be set. Note program.
2. Turn the band change switch to the "Automatic" position and using a small screw driver, carefully turn in a clockwise direction the Oscillator adjusting screw until the station previously tuned in manually is heard again. Adjust for maximum output in the speaker.
3. Adjust the Antenna adjusting screw for maximum volume in the speaker.
4. Turn band change switch from "Automatic" to "American" and back again to check if adjustment has been correctly made. There should be no change in tone quality when switched from one to the other.
5. Repeat above procedure for the remaining push buttons.

To tune the receiver with the push buttons, set the band change switch on "Automatic" and depress completely the button corresponding to the station you wish to hear.

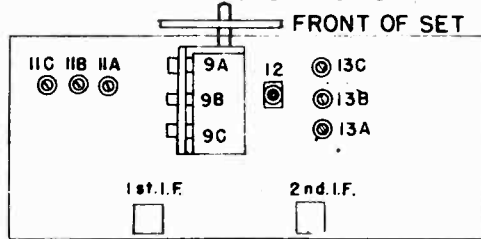


MODELS 02CP, 02CQ,  
Chassis 70

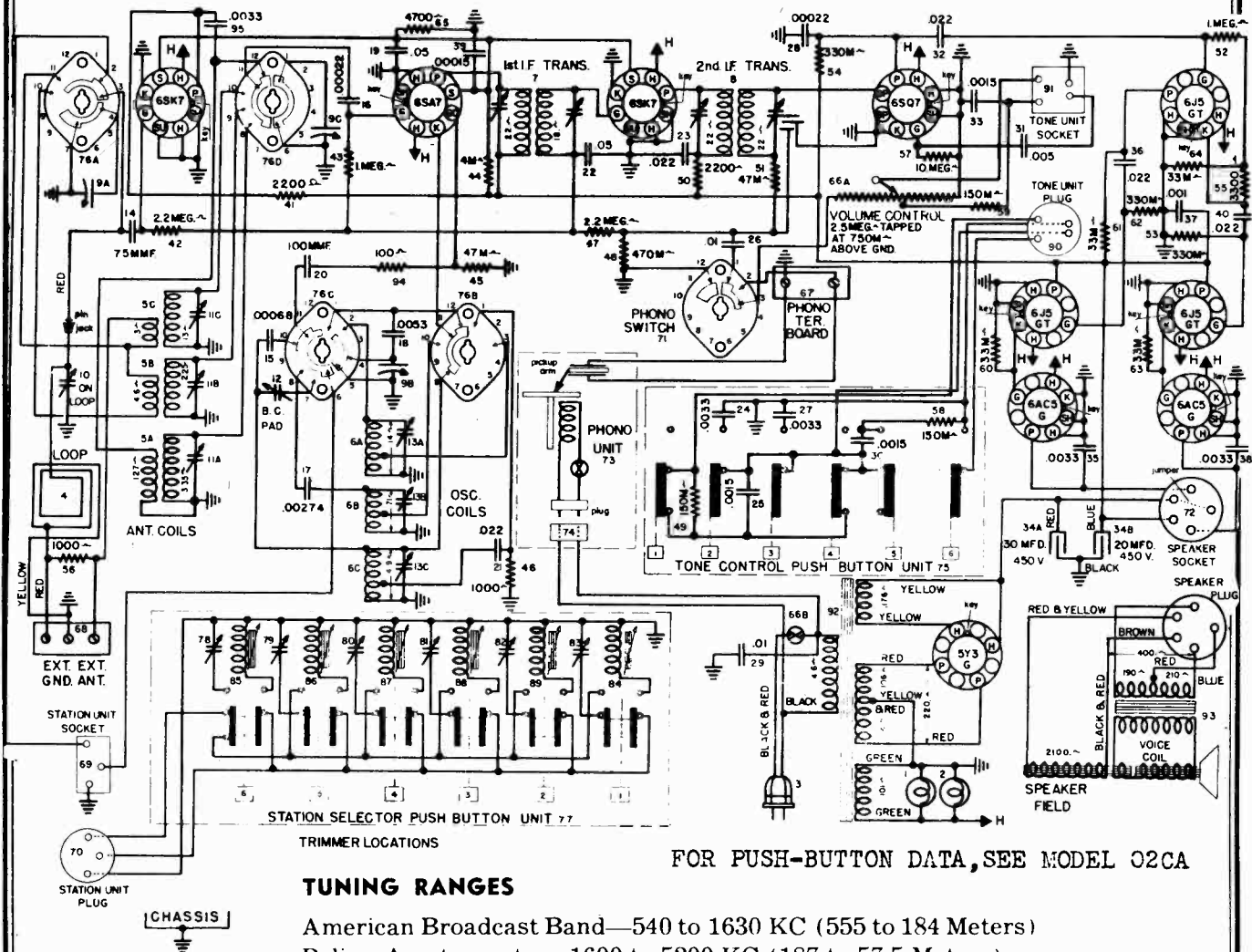
THE CROSLEY CORP.



TRIMMER LOCATIONS



WIRING DIAGRAM, MODELS 02CP AND 02CQ — CHASSIS MODEL No. 70



TUNING RANGES

American Broadcast Band—540 to 1630 KC (555 to 184 Meters)  
Police, Amateur, etc.—1600 to 5200 KC (187 to 57.5 Meters)  
Short Wave (Foreign)—5.2 to 18.0 MC (57.5 to 16.6 Meters)

FEATURES

Some of the features of these outstanding phonocombinations that will add greatly to your enjoyment are as follows: a large efficient built-in antenna; Litz wound coils; a three gang tuning condenser providing maximum selectivity and sensitivity; push-pull audio tubes, dynamically coupled to push-pull triode output for maximum distortionless reproduction; six station selector pushbuttons; a full twelve inch concert dynamic speaker; six push buttons controlling a "Master Tone Control" system which provides more than 60 different combinations of bass and high notes; and an extremely high quality unit for the reproduction of phonograph records, including the "Floating Jewel Tone System" (a Crosley invention) which assures a quality of reproduction never before obtainable.

FOR PUSH-BUTTON DATA, SEE MODEL 02CA

THE CROSLEY CORP.

MODELS O2CP, O2CQ,  
Chassis 70

Preliminary

Output Meter Connections.....Plate to Plate of 6AC5G's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Master Tone Control.....All Buttons Out

ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1630 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Terminal	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Terminal	Police	Approx. 5.0	Pol "ANT" Trimmer	Adjust for maximum output.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SA7—Converter.....		Gnd.	Gnd.	180	74	0	{0-S. W. } {4.0 B. C.}	6.3 A. C.	0
6SK7—I. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.....		Gnd.	0	Gnd.	0	0	75	6.3 A. C.	Gnd.
6J5GT—Phase Inverter.....		Gnd.	Gnd.	145	J. B.	0	J. B.	6.3 A. C.	40
6J5GT(2)—P. P. A. F. Drivers.....		Gnd.	Gnd.	180	0	0	J. B.	6.3 A. C.	6.5
6AC5GT(2)—P. P. Output.....		Gnd.	Gnd.	304	J. B.	6.5	J. B.	6.3 A. C.	Gnd.
5Y3G—Rectifier.....		N. C.	310	J. B.	308 A. C.	J. B.	308 A. C.	J. B.	310

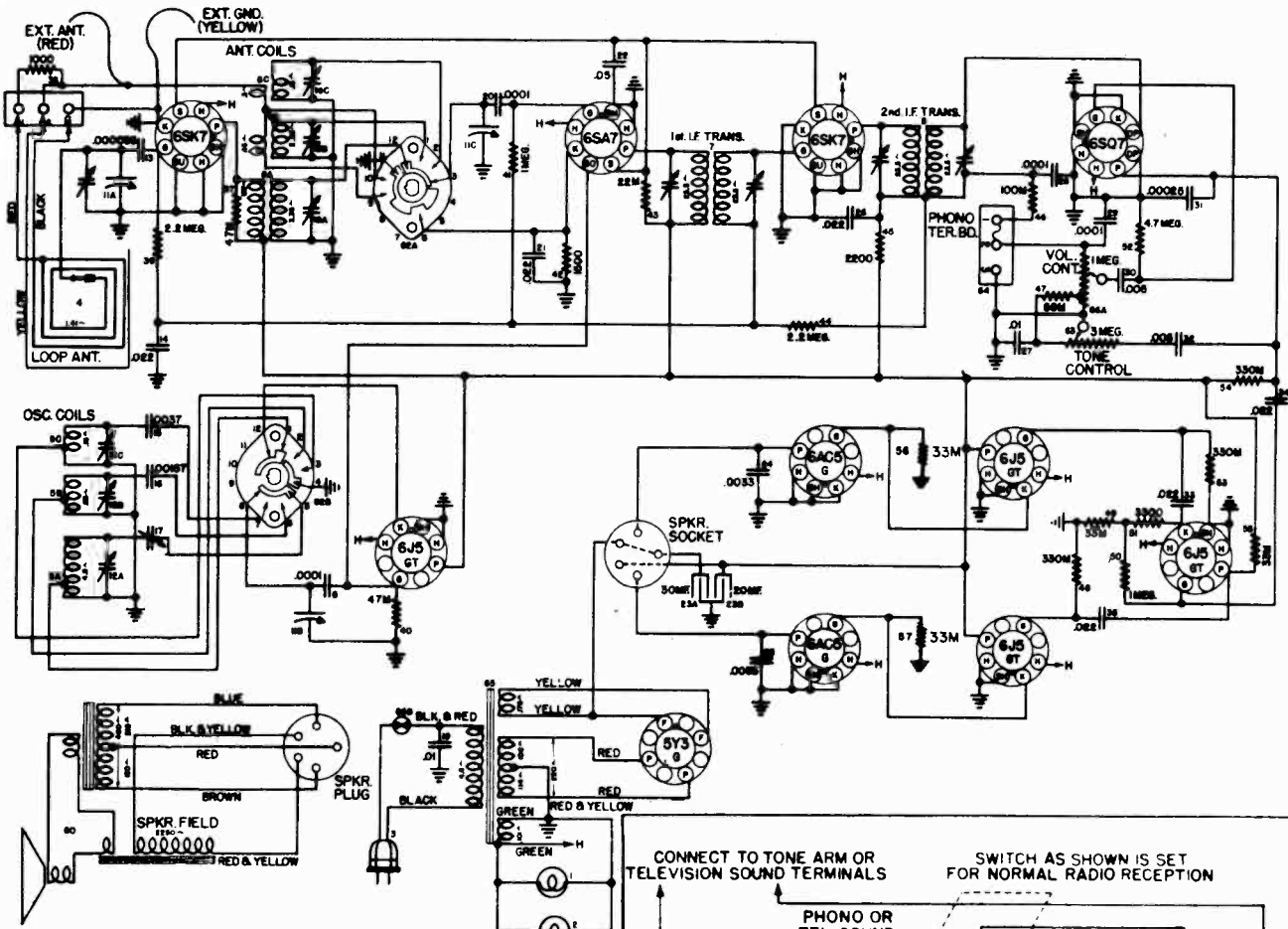
MAX. POWER OUTPUT ..... 12.0 WATTS  
 POWER CONSUMPTION ..... 90 WATTS  
 DROP ACROSS SPEAKER FIELD ..... 120 VOLTS

J. B.—Junction Block N. C.—No Connection

Voltages may vary 10% of values given.

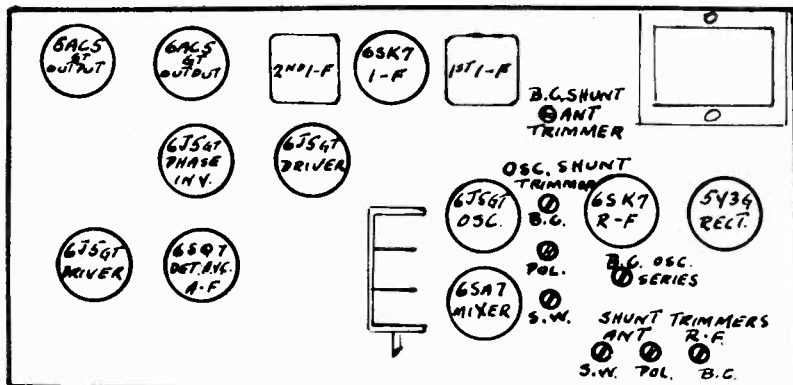
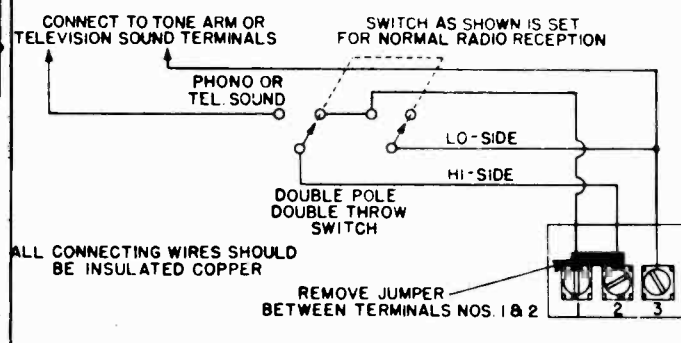
THE CROSLEY CORP.

MODEL CA12



**PHONO CONNECTIONS**

This chassis is so constructed as to be adaptable to a phonograph pickup (high impedance type) for the reproduction of recordings. The terminals may also be used for the reproduction of television sound as supplied by a suitable television converter unit. The double pole double throw switch for changing from Radio to Phono or television sound, should be connected as shown in the diagram. The terminals are coded as follows: 1, 2, 3, respectively. The No. 2 terminal connects to the high side of the phono pickup or television A-F connections.



**NOTE:** The jumper wire between No. 1 and No. 2 terminals must be removed when phono-radio switch is connected. If phono switch is removed, it is absolutely essential that the jumper wire between No. 1 and No. 2 terminals be replaced. Be sure all connections are tight.

The No. 3 terminal is the ground or low side connection. The No. 1 terminals should be connected to the No. 3 terminals by some means (as indicated in the above diagram). This prevents any radio signals from the receiver proper interfering with the Phono or Television sound reproduction.

THE CROSLY CORP.

ALIGNMENT PROCEDURE

Preliminary

- Output Meter Connections.....Plate to Plate of 6AC5G's
- Generator Ground Connection.....To chassis or Ground Lead
- Dummy Antenna to be in series with generator output.....See Chart Below
- Position of Volume Control.....Fully On
- Position of Tone Control.....Treble or Speech

ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1600 Kc.	Ant. Lead (Red)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Lead (Red)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Red)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Red)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Red)	Police	Approx. 5.0	Pol "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Red)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Red)	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.						

IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.)

TUBE FUNCTION	PIN NUMBER							
	1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....	GND	GND	GND	0	0	59	6.3 NC	217
6SA7—Converter.....	GND	GND	217	59	0	3.0 B.C.O.-S.W.	6.3 NC	0
6J5GT—Oscillator.....	GND	GND	217	0	0	0	6.3 NC	0
6SK7—I. F. Amplifier.....	GND	GND	GND	0	GND	59	6.3 NC	204
6SQ7—Det. A. V. C. 1st A. F.....	GND	0	0	0	0	74	6.3 NC	GND
6J5GT—Phase Inverter.....	GND	0	153	J. B.	0	0	6.3 NC	3.5
6J5GT (2)—P. P. A. F. Drivers.....	GND	GND	217	J. B.	0	0	6.3 NC	8.5
6AC5GT(2)—P. P. Output.....	GND	GND	305	0	8.5	0	6.3 NC	GND
5Y3G—Rectifier.....	NC	310	0	308 AC	0	308 AC	5 AC	0

MAX. POWER OUTPUT @ 117.5 V. LINE.....8.0 Watts  
 POWER CONSUMPTION @ 117.5 V. LINE.....80 Watts  
 DROP ACROSS SPEAKER FIELD.....90 Volts

J.B.—JUNCTION BLOCK. Voltages may vary 10% of values given. N.C.—NO CONNECTION.



MODEL CR26, Wireless  
Record Player

THE CROSLEY CORP.

## THE CROSLEY AUTOMATIC WIRELESS RECORD PLAYER MODEL CR26

The Crosley Automatic Wireless Record Player Model CR26, with the automatic record changer will enable one to greatly increase his enjoyment of recorded music.

After correct adjustments have been made, it will be possible to place the Record Player in any part of the room, place the selected recordings on the changer, set the volume control of the receiver at the desired level, and enjoy your favorite recorded music.

### RECORDED MUSIC

Modern records are made by electrical processes and the bringing out of their full tonal perfection requires a well-designed electrical tone arm such as is provided in this Record Changer Model CR26.

Fully as remarkable is the wide variety of selections that are obtainable. They range from the latest hit tunes played by the most popular bands, to complete operas and symphonies recorded by the world's leading artists. These longer works are to be had in the form of a set of double sided records so arranged that the first half of the work is heard by playing one side of all the records, and the last half by playing the other side. Be sure to purchase records so arranged if it is desired to use them on an Automatic Changer.

### POWER SUPPLY FOR AUTOMATIC WIRELESS RECORD CHANGER

The Changer is equipped with a constant-speed self-starting motor. Under all normal conditions it starts automatically and runs at correct speed.

Each Changer is designed to operate on a certain voltage and frequency (cycles) only. Be sure to look at your radio nameplate and see that the instrument you have conforms to your power supply before plugging in cord. The rating of your power supply can be determined by calling the local electric company.

### PLACING UNIT IN OPERATION

The Crosley Automatic Wireless Record Player will operate on 850 to 600 Kilocycles (usually 85 to 60 on the radio dial). Turn the receiver "ON" and adjust the dial pointer to a position between 85 and 60 where there is no station interference. Turn volume control fully on. Plug the unit power cord into a convenient wall receptacle. Place a 10-inch record on turntable of unit and turn "OFF-ON" motor switch to "ON" position (Fig. 1). Allow approximately 30 seconds for the unit to warm up, then gently lift tone arm onto recording, or merely depress "Reject" knob.

Turn the adjusting screw (Fig. 1) until record being played is heard through the receiver. Turning the adjustment screw to the left increases the frequency, that is, the signal from unit will be picked up closer to 85 on the dial of the receiver. Turning to the right decreases the frequency and the signal will be picked by the receiver closer to 60 on the dial.

The adjusting screw should be turned so as to obtain the sharpest signal. Adjust radio volume control to desired level for recordings being played.

### SETTING FOR SIZE OF RECORD

The Changer plays up to fourteen 10" or ten 12" records at one loading. All records must be the same size for each loading.

On each post you will see selecting arms. The position of these arms determines the setting for different size records. To set for 10 or 12-inch records, it is merely necessary to grasp the posts by the knobs at the top, lift, and turn until the 10" or 12" arrows are pointing toward the center of the turntable. When in either the 10" or 12" position, the posts will snap into place except when they are lifted by hand. Be sure to set both posts for the same size record.

Figure (1) shows the Changer with the selecting arms set for 10" records and ready to be loaded; the tone arm in the rest position.

Figure (2) shows the Changer set for 12" records and ready to be loaded the tone arm in the rest position.

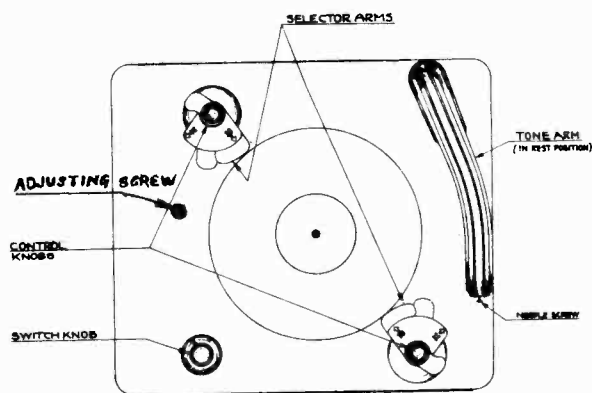


Fig. 1

## THE CROSLEY CORP.

**TURNING OFF CHANGER**

- (1) Throw Changer switch knob to "OFF" position.
- (2) Lift tone arm and place it in the rest position. (If you happen to turn off the Changer switch while the mechanism is going through a "change cycle", you will notice that it does not stop until the cycle has been completed, and the tone arm is again in playing position, at which point it is ready to be lifted to the rest position. If you prefer to turn off your Changer by the use of any other switch than the one on the Changer itself, be sure to turn it off while needle is resting upon a record; otherwise, the selecting arms cannot be correctly reset.
- (3) To avoid warping of records, never leave records resting on the posts.

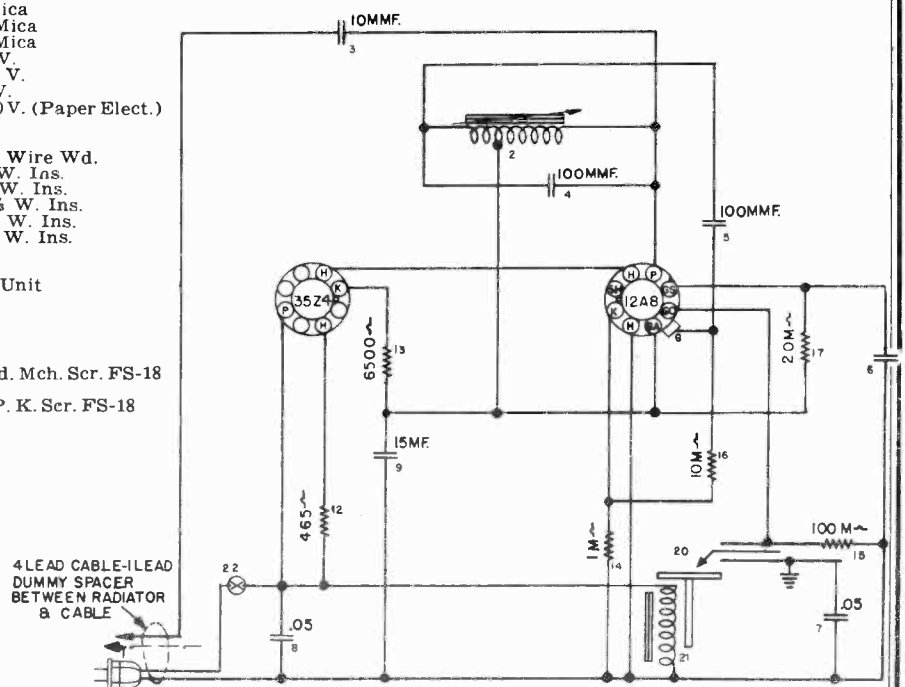
**IF CHANGER IS LEFT RUNNING**

No damage will be done if you forget to turn off Changer after it has played its entire load of records. It will simply repeat the last record until stopped or reloaded.

**FAILURE TO PLAY THE NEXT RECORD**

An old record may occasionally be found (made before the introduction of automatic changers) which does not carry the needle close enough to center-pin of turntable, to set the changer mechanism in operation. Should one of these old records be found in the stack, merely depressing the button will instantly set the Changer mechanism in action again. Any need for doing this can be avoided by placing the old record at top of stack to be played, so that it will come into position last.

Item No.	Part No.	Description
1	B-131602	Cable and Plug (4 lead)
2	LW-131609	Osc. Coil
3	G8-34002	Condenser 10 Mmfd. Mica
4	G2-34002	Condenser 100 Mmfd. Mica
5	G2-34002	Condenser 100 Mmfd. Mica
6	W-50105	Condenser .1 Mfd. 200 V.
7	W-32380	Condenser .05 Mfd. 200 V.
8	W-32380	Condenser .05 Mfd. 200 V.
9	W-131607	Condenser 2x15 Mfd. 150 V. (Paper Elect.)
10	W-34736	3/8 Dia. Hole Plug
11	B-131604	Chassis
12	W-131606	Resistor 465 ohm 10W. Wire Wd.
13	35934	Resistor 6,500 Ohm 1/2 W. Ins.
14	50046	Resistor 1,000 Ohm 1/2 W. Ins.
15	35600	Resistor 100,000 Ohm 1/2 W. Ins.
16	36317	Resistor 10,000 Ohm 1/2 W. Ins.
17	36760	Resistor 20,000 Ohm 1/2 W. Ins.
18		
19		
20	D-131529	Auto. Record Changer Unit
21		Motor with D-131529
22		Switch with D-131529
23		
24		
25	49742	#6-32x 7/8 Rd. Cr. Rec. Hd. Mch. Scr. FS-18
26		
27	W-131603	#8 x 3/8 Rd. Cr. Rec. Hd. P. K. Scr. FS-18
28	131610	Tube Socket
29	W-49674	.120 x 7/8 Eyelet
30		
31	W-49982	Coil Form Mtg. Clip
32	W-49859	Iron Core
33		
34	21253	Coil Mtg. Brkt.
35		
36		
37	W-45056	Rubber Grommet
38	N-5062	#6-32 Hex Nut
39		
40		
41	D-131617A	CD Cabinet
42		
43		
44	W-131605	Cable Lock Plate
45		
46	131792	CD Carton
47		
48	W-47217	Grommet
49		

**WIRING DIAGRAM — MODEL CR26****CAUSE OF NOISY RECORDS**

A background of noise and scratching indicates worn records. Poor tone may be evidence of a worn needle. Some records will wear longer than others, even if kept equally clean. This is due not only to quality of manufacture, and care given the records, but also to the kind of music recorded.

MODEL CR26, Wireless  
Record Player

THE CROSLEY CORP.

### LOADING

See that the selecting arms of both posts are turned toward the center of the turntable as indicated by the engraved arrows, and that both sets of arms are set for the same size (10" or 12") records as described in the preceding paragraph. Place the stack of records (up to fourteen 10" or ten 12") over the center pin so that they will rest on the selecting arms.

### STARTING THE CHANGER

Turn the "OFF-ON" motor switch knob to the "ON" position (Fig. 1), the motor will then start and the record changer will go into automatic operation of its own accord.

### HOW TO REJECT A RECORD

Merely press the switch knob on the Changer panel. You can do it any time after the needle has come into contact with that record.

### PLAYING INDIVIDUAL RECORDS

Should it be desired to play an individual record merely set up the machine as described above for the proper size (10" or 12" as indicated on the selecting arms), place the record on top of the arms as described under "Loading", and set the machine in operation by means of the switch knob described under "Starting the Changer". In other words, play an individual record in the same manner as you would play a stack of that size.

**NOTE:** If the record player refuses to operate, CHECK the tubes to be sure they are pushed well down into their respective sockets. The tubes are accessible by removing the bottom of the Record Player.

After correct adjustments have been made it is necessary only to turn "ON" the receiver and tune-in on the frequency setting the Record Player, just as though you are tuning-in a regular broadcasting station, provided, of course, the Record Player is in operating condition.

If at any time extremely noisy conditions are encountered, wind a lead from the radio receiver antenna around the Record Player Power Cord.

### UNLOADING

First switch off the motor. Grasp each post by its knob at the top and turn them out of the way. (See Figure 3).

This view shows the Changer with the tone arm in the rest position, and the selecting fingers turned for unloading.

Lift the played records from the turntable. Then return the posts to the proper playing position as indicated by the arrows on the selecting arms. (See Fig. 1 and 2). The Changer may then be loaded with a new stack of records according to the size shown on the selecting arms.

### USE OF TONE CONTROL

If the radio through which this Changer is being played has a tone control switch, do not forget to adjust it, as well as the volume control, to the position which best brings out the tonal qualities of the kind of records being played.

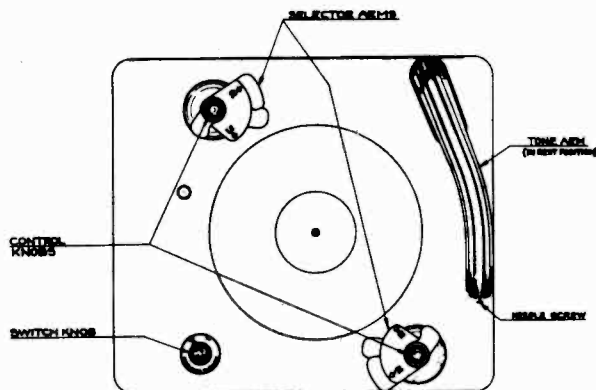


Fig. 2

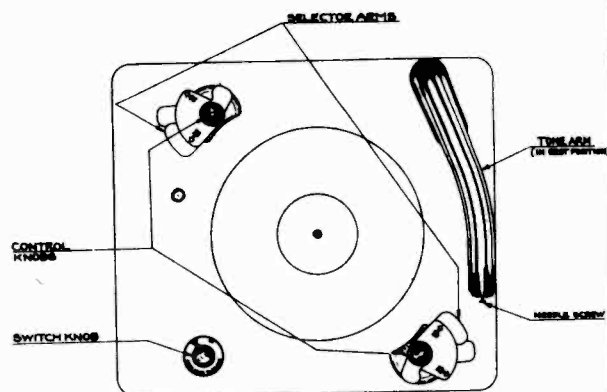


Fig. 3

THE CROSLLEY CORP.

MODELS 52FA, 52FB  
Chassis 57

Measured from "B" minus using 1000 Ω/V **SOCKETS VOLTAGES** Chassis No.57 Voltmeter. 100 V. Range. no signal input

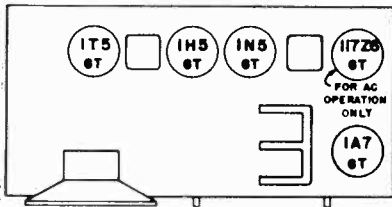
Tube		@ 117.5-Volt Line				Battery Pack			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Cathode Volt	Filament Volt	Plate Volt	Screen Volt	Cathode Volt
1A7GT	Osc. Modulator	1.3	80	34	.....	1.7	90	36	.....
1N5GT	I. F. Amplifier	3.8	80	80	.....	4.4	90	90	.....
1H5GT	Det.-A. S. C. 1st A. F.	2.6	7	.....	.....	3.0	8	.....	.....
1T5GT	Out Put	5.1	72	80	.....	6.0	88	90	.....
117Z6GT	Rectifier	117.5 A. C. 117.5 A. C.		.....	115	.....	.....	.....	.....

**ALIGNMENT PROCEDURE** Volume-Control on full Output meter connected to Plate and Screen of 1T5GT

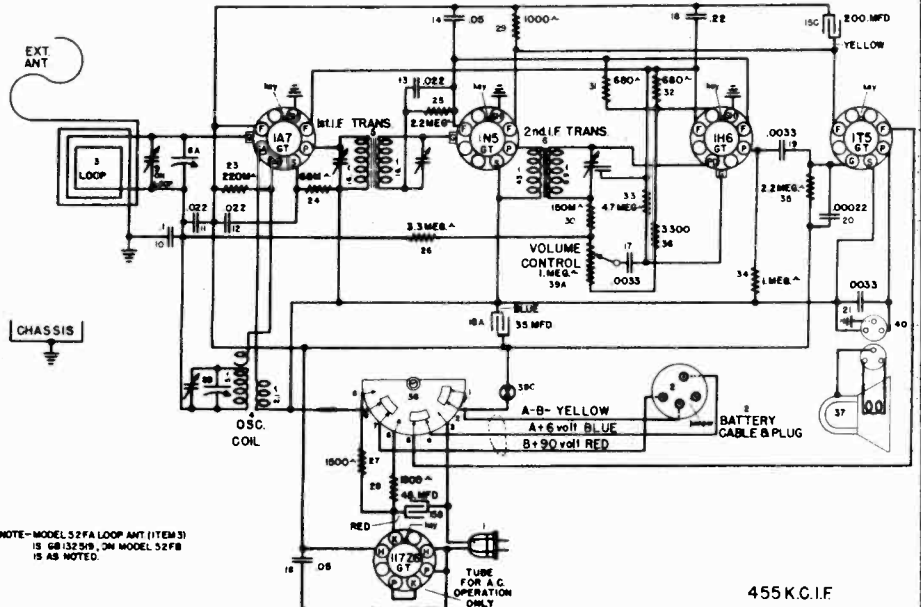
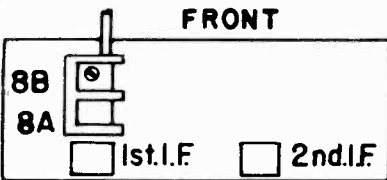
SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on loop	Adjust for maximum output.

Repeat above procedures for more accurate adjustments.  
Maximum power output @ 90 V. "B" — approx. 340 M. W.

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 90 V., 12 M. A.  
Power consumption @ 117.5 volts line — 20 Watts



**TRIMMER LOCATIONS**



NOTE—MODELS 52FA LOOP ANT (ITEM 3) IS SB 13259. ON MODEL 52FB IS AS NOTED.

455 K.C.I.F

The chassis as employed in this model receiver is a five tube (including rectifier), single band superheterodyne, designed to operate from an "A and B" Battery Pack, or 110 volts A.C. (50-60 cycle) or 110 volt D.C. electric circuits.

**TUNING RANGE** — 550-1600 Kilocycles — 546-187.5 Meters

**TUBES USED** — one 1A7GT, one—1N5GT, one—1H5GT, one—1T5GT and one—117Z6GT\*

**BATTERIES REQUIRED** — one No. CR-57 Crosley "A and B" Battery Pack (6 Volt "A"—90 Volt "B").

\*Note: The 117Z6GT rectifier tube is not required for battery operation and is therefore not supplied as original equipment with your receiver. If 110 volt current is made available in your home the above tube should be purchased from your Crosley dealer.

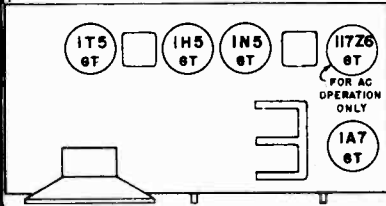
MODEL 52FC, Chassis 90

THE CROSLLEY CORP.

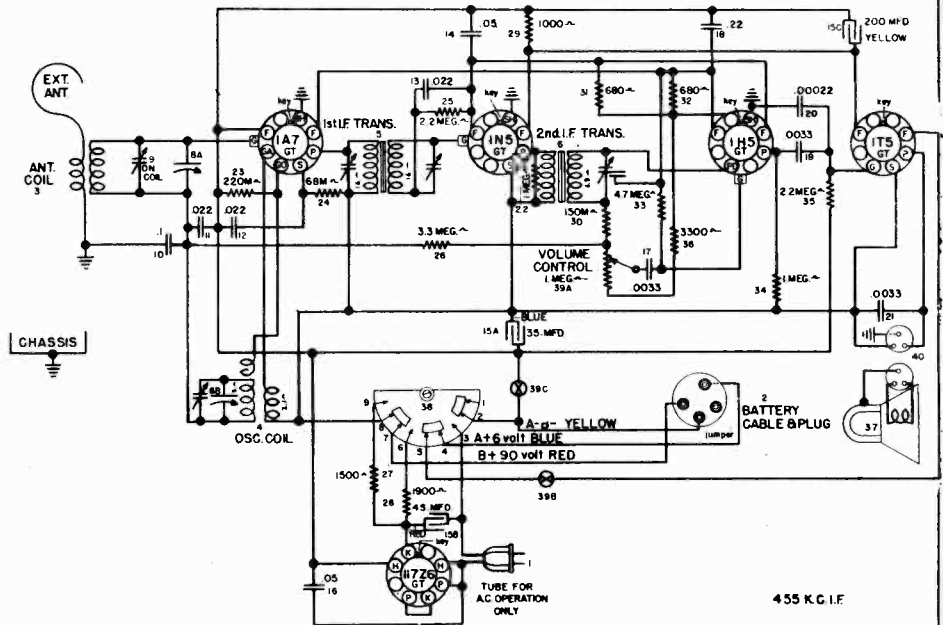
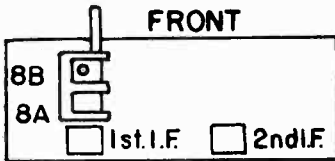
SERVICE INFORMATION — Model 90 Chassis

WIRING DIAGRAM

TUBE LAYOUT



TRIMMER LOCATIONS



455 K.C. I.F.

SOCKETS VOLTAGES — Model 52-PA

Measured from "B" minus using 1000 Ω/V

Voltmeter, 100 V. Range, no signal input

Tube		@ 117.5-Volt Line				Battery Pack			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Cathode Volt	Filament Volt	Plate Volt	Screen Volt	Cathode Volt
1A7GT	Osc. Modulator	1.3	80	34	.....	1.7	90	36	.....
1N5GT	I. F. Amplifier	3.8	80	80	.....	4.4	90	90	.....
1H5GT	Det.-A. S. C. 1st A. F.	2.6	7	.....	.....	3.0	8	.....	.....
1T5GT	Out Put	5.1	72	80	.....	6.0	88	90	.....
117Z6GT	Rectifier	117.5 A. C.	117.5 A. C.	.....	115	.....	.....	.....	.....

ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F (1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on loop	Adjust for maximum output.

Repeat above procedures for more accurate adjustments  
Maximum power output @ 90 V. "B" — approx. 340 M. W.

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 90 V., 12 M. A.  
Power consumption @ 117.5 volts line — 20 Watts

The chassis as employed in this model receiver is a five tube (including rectifier), single band superheterodyne, designed to operate from an "A and B" Battery Pack, or 110 volts A.C. (50-60 cycle) or 110 volt D.C. electric circuits.

**TUNING RANGE** — 550-1600 Kilocycles — 546-187.5 Meters

**TUBES USED** — one 1A7GT, one—1N5GT, one—1H5GT, one—1T5GT and one—117Z6GT\*

**BATTERIES REQUIRED** — one No. CR-57 Crosley "A and B" Battery Pack (6 Volt "A"—90 Volt "B").

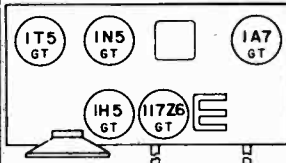
THE CROSLY CORP.

MODEL 52PA, Chassis 67

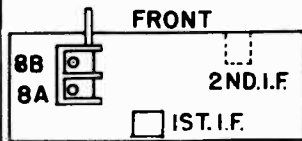
MODEL 52PB, Chassis 71

SERVICE INFORMATION — Model 67 Chassis

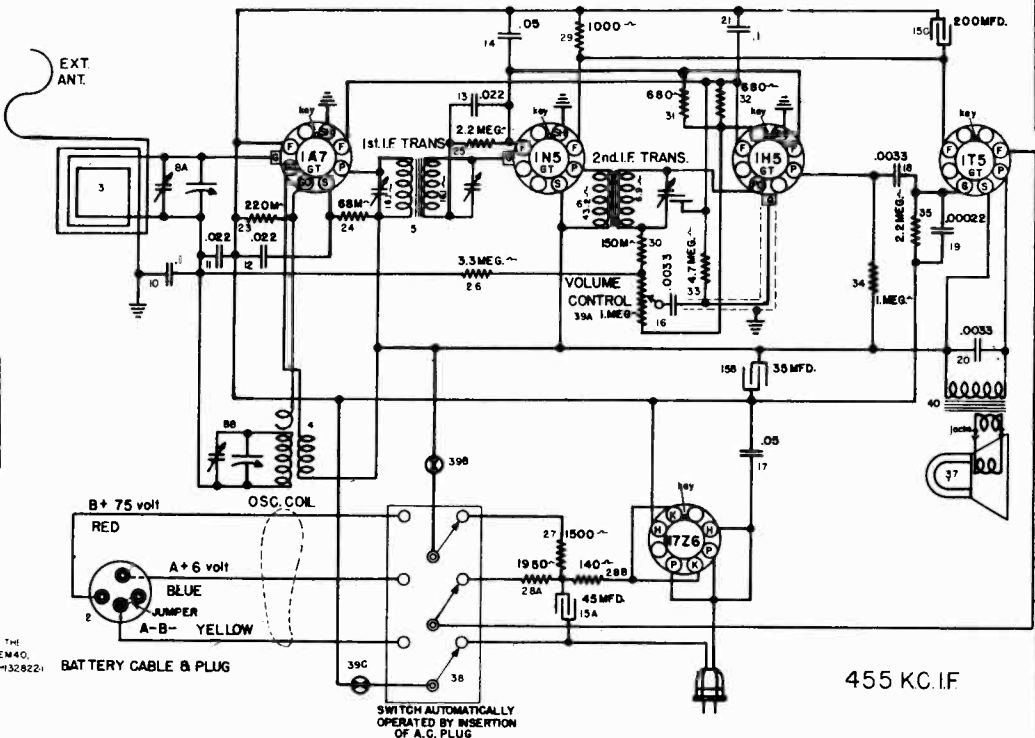
TUBE LAYOUT



TRIMMER LOCATIONS



WIRING DIAGRAM



NOTE: CHASSIS 71 IS SIMILAR TO CHASSIS 67 EXCEPT FOR THE FOLLOWING: ITEM 37 SPEAKER BECOMES L-132825-1, ITEM 40, OUTPUT TRANS. BECOMES ITEM 40, SPK. CABLE & SOCKET, W-132822-1, ALSO ADD ITEM 41, PRONGED PLUG, NO. W-132821-1

SOCKET VOLTAGES — Model 52-PA

Measured from "B" minus using 1000 Ω/V

Voltmeter, 100 V. Range, no signal input

Type	Function	@ 117.5-Volt Line				Battery Pack			
		Filament Volt	Plate Volt	Screen Volt	Cathode Volt	Filament Volt	Plate Volt	Screen Volt	Cathode Volt
1A7GT	Osc. Modulator	1.3	80	34	.....	1.7	75	30	.....
1N5GT	I. F. Amplifier	3.8	80	80	.....	4.4	75	75	.....
1H5GT	Det.-A. S. C. 1st A. F.	2.6	7	.....	.....	3.0	6	.....	.....
1T5GT	Out Put	5.1	72	80	.....	6.0	68	75	.....
117Z6GT	Rectifier	117.5 A. C.	117.5 A. C.	.....	100	.....	.....	.....	.....

ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1) front chassis flange	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum signal while rocking gang.

Repeat above procedures for more accurate adjustments. Maximum power output @ 75 V. "B" — approx. 200 M. W. undistorted

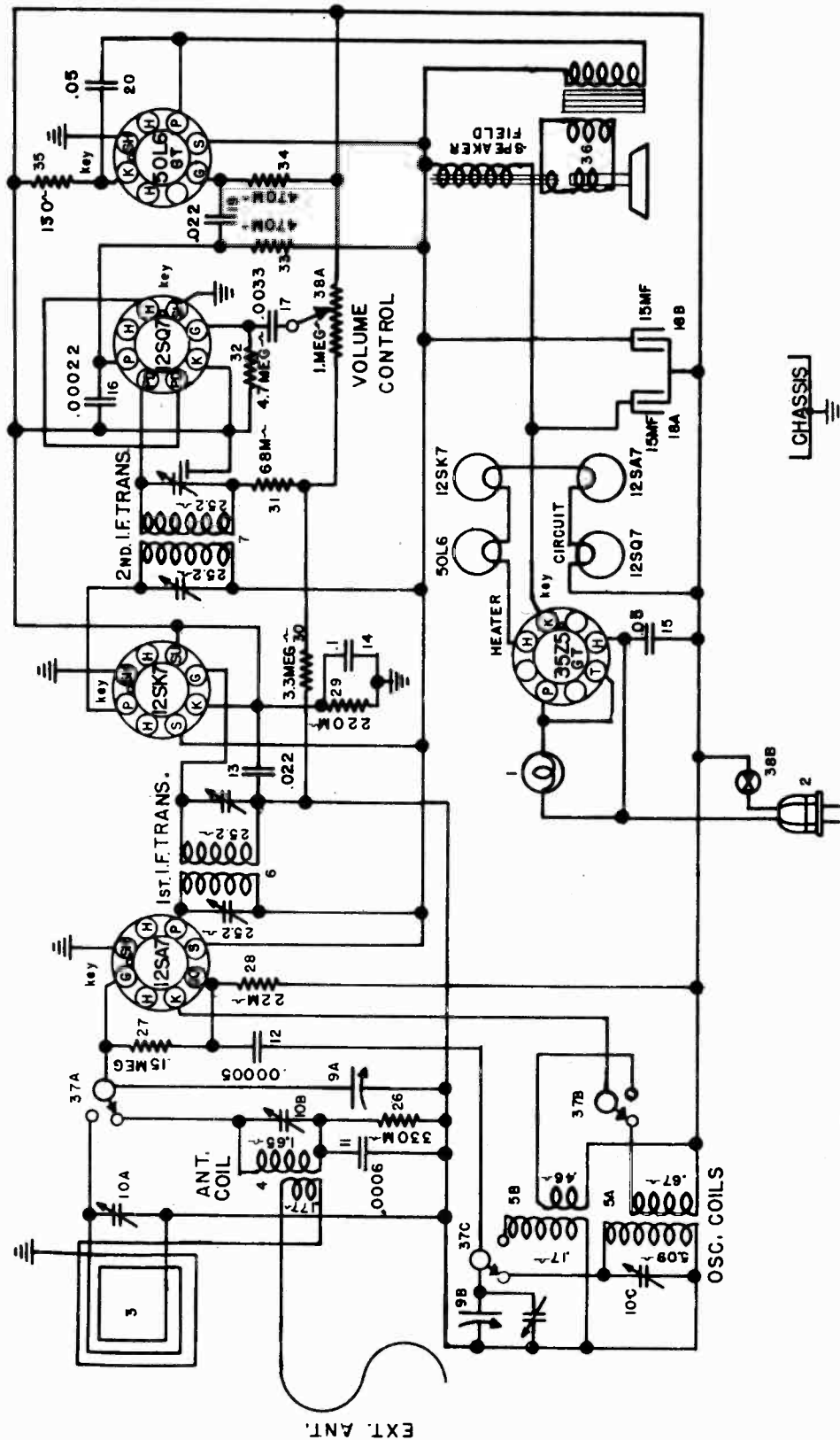
A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A. Power consumption @ 117.5 volts line — 20 Watts

The chassis as employed in this model portable receiver is a five tube (including rectifier), single band super-heterodyne, designed to operate from an "A and B" Battery Pack, or 110 volts A.C. (50-60 cycle) or 110 volt D.C. electric circuits.

- TUNING RANGE** — 550-1600 Kilocycles — 546-187.5 Meters
- TUBES USED** — one 1A7GT, one 1N5GT, one 1H5GT, one 1T5GT and one 117Z6GT
- BATTERIES REQUIRED** — one No. CR67 Crosley "A and B" Battery Pack (6 Volt "A"—75 Volt "B") or equivalent.

MODELS 52TD, 52TD-U, 52TE,  
52TE-U, Chassis 77;  
52TF, 52TF-U, Chassis 76

THE CROSLY CORP.



455 K.C.I.F.

NOTE-ON 52TD-U, 52TE-U & 52TF-U, ITEM 36 (SPEAKER)  
BECOMES G3-49675, ALL OTHER PARTS & CONNECTIONS  
REMAIN THE SAME

NOTE-ON 52TF, ITEM 3 (LOOP ANT.) BECOMES GB132245-1  
ALL OTHER PARTS & CONNECTIONS REMAIN THE SAME.

The back on receivers employing the 77 chassis is part of the loop antenna assembly. To gain access to the tubes, carefully pry out two trimount studs which fasten back to top of cabinet. Then remove the two screws at lower edge and carefully lay loop on table. Do not disconnect lead wires to the loop.

The back on receivers employing the 76 chassis is fastened with wood screws. Remove the back, then remove the two screws at lower edge of loop support and carefully lay loop back to gain access to the tubes.

THE CROSLY CORP.

MODELS 52TD, 52TD-U, 52TE,  
52TE-U, Chassis 77; 52TF  
52TF-U, Chassis 76

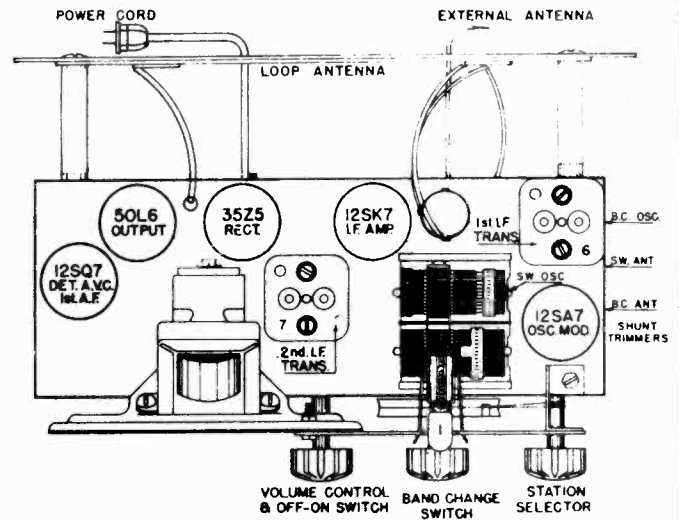
Chassis No. 76 and No. 77 are identical electrically in that they are both five-tube, two band, superheterodyne receivers, designed to operate on either A.C. or D.C. electric circuits, as specified on model label.

**TUNING RANGE**

Broadcast Band—1600 to 540 kilocycles, or 18.75 to 555 meters  
Short Wave Band—15 to 6 megacycles, or 20 to 50 meters.

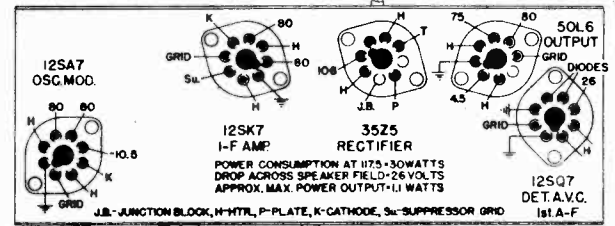
**TUBES                      FUNCTION**

- 1 — 12SA7                      Oscillator Modulator
- 1 — 12SK7                      Intermediate Frequency Amplifier
- 1 — 12SQ7                      Detector, A.V.C. and 1st Audio Amplifier
- 1 — 50L6GT                      Beam Power Output
- 1 — 35Z5GT                      Rectifier



**ALIGNMENT PROCEDURE**

- Preliminary
- Output Meter Connections . . . . . Plate and screen of 50L6
- Generator Ground Connections . . . . . Ground Lead and Chassis
- Dummy Antenna to be in series with generator output
- Position of Volume Control . . . . . Fully on



VOLTAGES MEASURED BETWEEN SOCKET PIN & GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS PER. VOLT METER. READINGS MAY VARY 10%.

**POWER SUPPLY**

Make certain that the power rating on the model and license label is the SAME as your lighting circuit BEFORE plugging the receiver power cord into a convenient receptacle. Never put your hand in the receiver cabinet without first disconnecting receiver plug from the electric circuit.

**ALIGNMENT PROCEDURE CHART**

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	Signal Generator .0001 MF.	455 KC.	Antenna Lead	BC	Fully Open	2nd I-F (2) 1st L-F (2)	Adjust for maximum signal. Adjust for maximum signal.
2.	400 ohm Carbon Resistor	15.3 MC.	Antenna Lead (red)	S.W.	Fully Open	S.W. "Osc."	Adjust for maximum output.
3.	400 ohm Carbon	15.0 MC.	Antenna Lead (red)	S.W.	15 on Dial	S.W. "Ant."	Adjust for maximum signal while rocking gang through it.
4.	.0001 MF.	1650 KC.	Antenna Lead (red)	BC	Fully Open	B.C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal.
5.	.0001 MF.	1400 KC.	Antenna Lead (red)	BC	140 Dial	B.C. "Ant."	Adjust for maximum output.

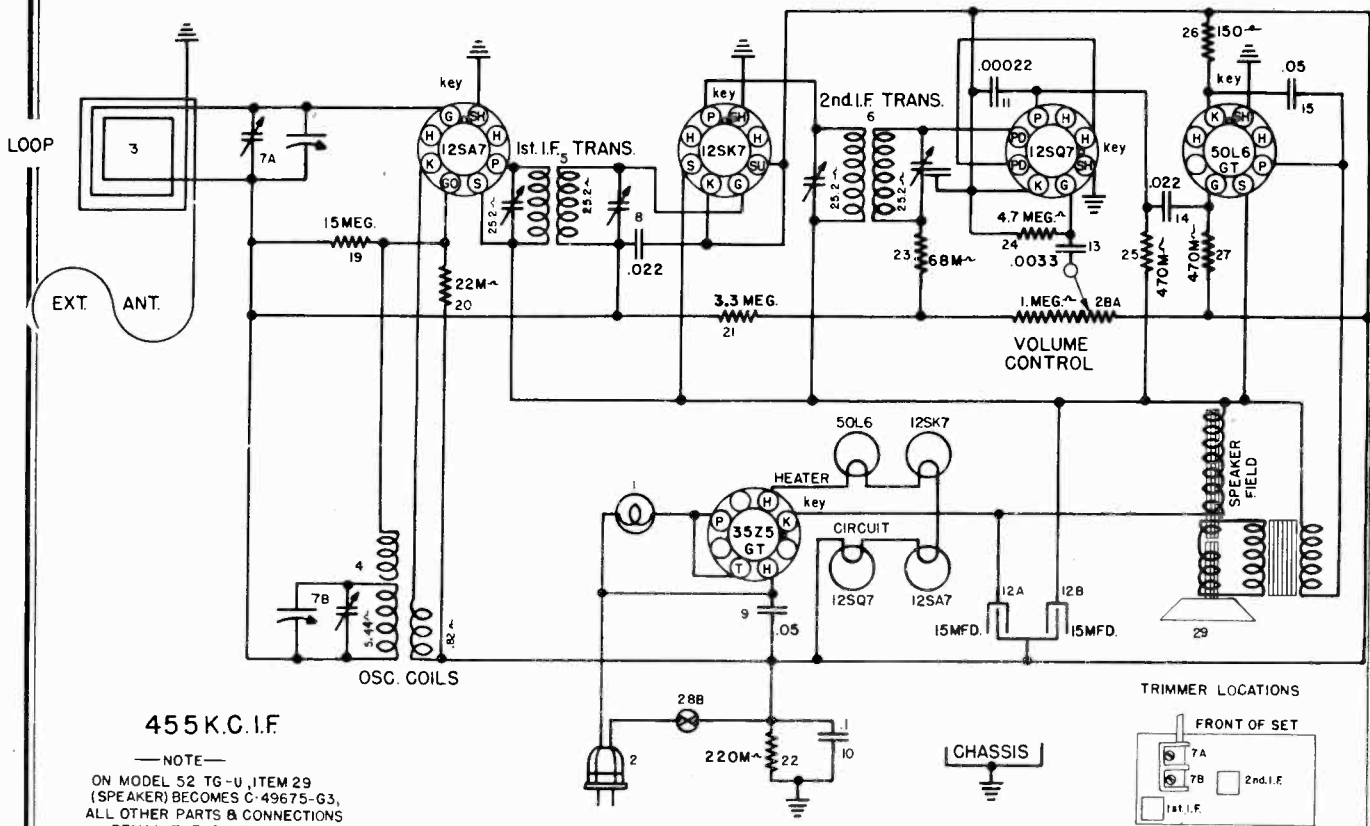
When aligning the shortwave band "OSC" trimmer, care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune in the generator frequency and then tune in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

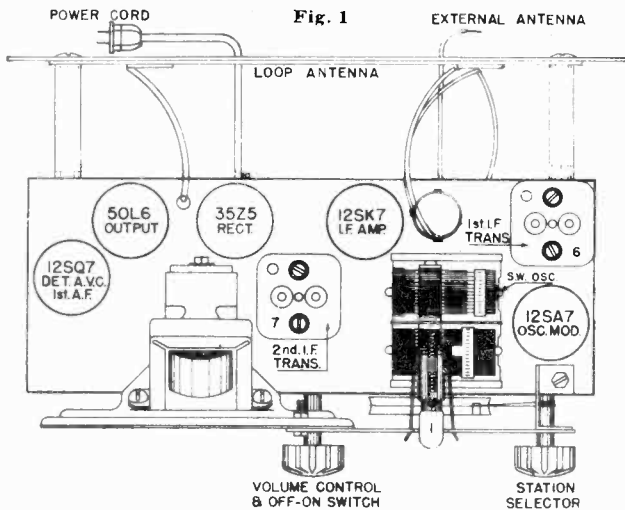


MODELS 52TG, Chassis 74,  
52TG-U, Chassis 74U

THE CROSLEY CORP.

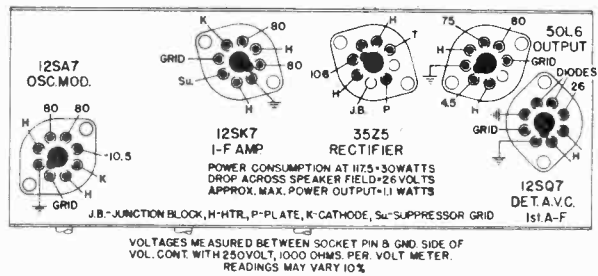


**TUNING RANGE**—Broadcast Band—1600 to 540 kilocycles, or 18.75 to 555 meters.



**ALIGNMENT PROCEDURE**

**Preliminary**  
Output Meter Connections . . . . . Plate and screen of 50L6  
Generator Ground Connections . . . . . Ground Lead and Chassis  
Dummy Antenna to be in series with generator output  
Position of Volume Control . . . . . Fully on

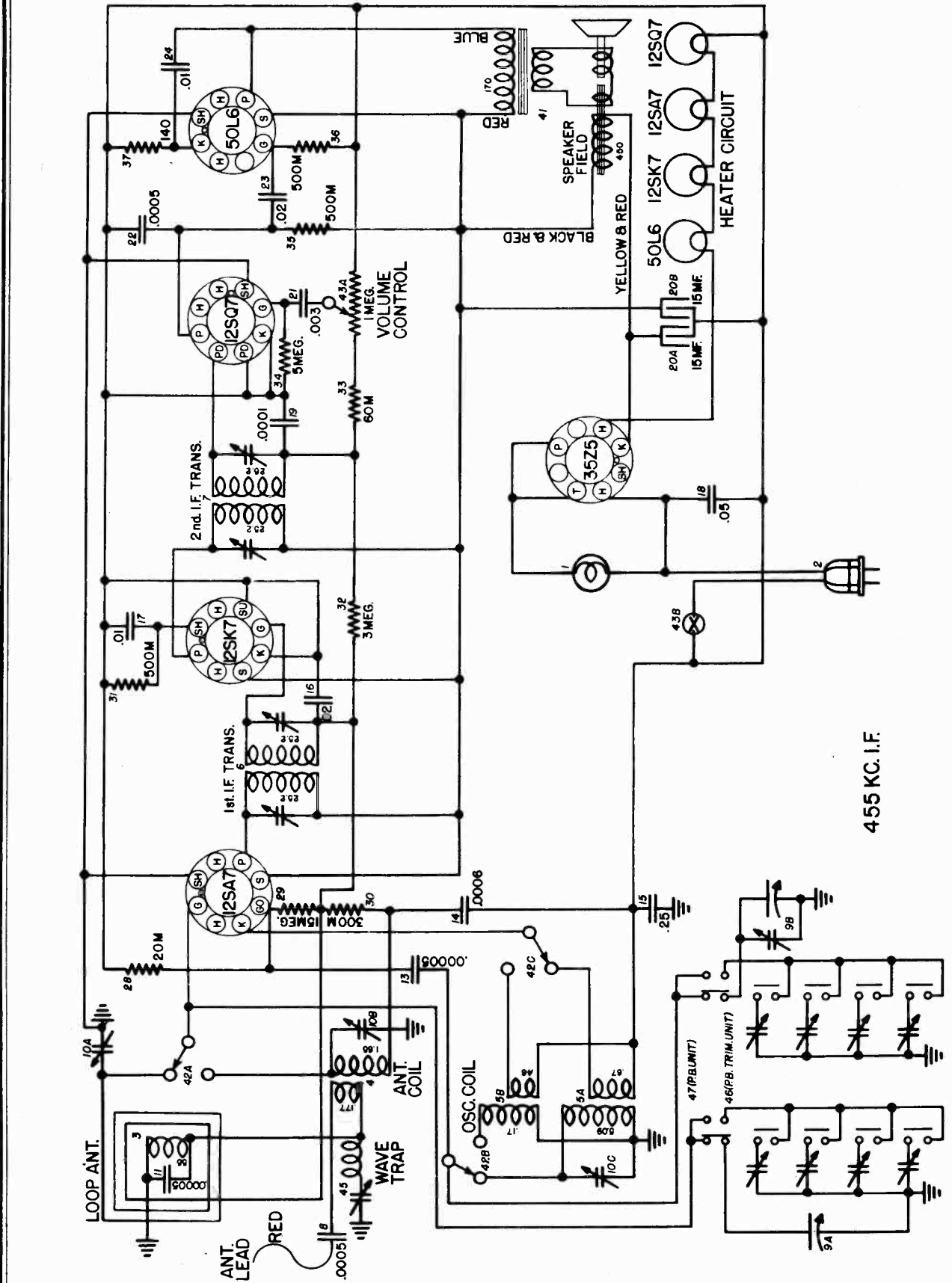


**ALIGNMENT PROCEDURE CHART**

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.0001 MF.	455 KC.	Antenna Lead	BC	Fully Open	1st I-F(2) 2nd I-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	.0001 MF.	1650 KC.	Antenna Lead	BC	Fully Open	B.C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal
3.	.0001 MF.	1400 KC.	Antenna Lead	BC	140 Dial	B.C. "Ant."	Adjust for maximum output.

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.S.C. circuit.

### THE CROSLEY CORP.



455 KC. I.F.

MODELS TK52, TK52W

Chassis 64

"Set-Up Procedure"

**ALIGNMENT CHART**

CHASSIS 63 and 64

Sequence	SIGNAL GENERATOR			Band Switch	Tuning Cond. Setting	Trimmer Cond. Adjusted	Remarks
	Dummy Antenna	Frequency Setting	Input Connection To Radio				
1.	.05 Mf.	456 Kc.	Antenna	S. B.	Fully on	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2.	400 Ohm carbon	15.4 Mc.	Antenna	S. W.	Fully open	S. W. "OSC" (Rear section tuning cond.)	Adjust for maximum output.
3.	400 Ohm carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "ANT" (Center trimmer right end of chassis)	Adjust for maximum output while rocking gang thru signal.
4.	.0002 Mf.	1600 Kc.	Antenna	S. B.	Fully on	B. C. "OSC" (Front trimmer right end of Chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5.	.0002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 140 on dial	B. C. "ANT" (Rear trimmer right end of chassis)	Adjust for maximum output.

(Foot Note) (1). Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (approx. .001 mf. 400 V) should be connected in series with the ground lead of the generator and receiver chassis.

When aligning the short wave band "OSC" trimmer, care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune in the generator frequency and then tune in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If the image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil, and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram. The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser open and the volume control fully on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

**THE SETTING AND OPERATION OF THE ELECTRIC PUSH BUTTONS**

Select and remove the call letter tabs of your four favorite local broadcast stations from the station call letter sheets supplied. Place them in the windows above the push buttons, in the order of their frequency (Kilocycles). That is, the station whose frequency is within the frequency range of the left hand button should be inserted (from top) in the window directly above that button and so on for the following three. The push button on the right MUST be depressed when receiver is to be tuned with the station selector knob. Place the "Manual" or "Dial" tab in window above this button.

The frequencies (Kilocycles) of your local stations may be found in your daily paper or by referring to any station list.

THE CROSLY CORP.

NOTE: To simplify the set-up and insure correct adjustments of push buttons the following pre-adjustments should be made:

1. Tighten all the padder condensers' screws.
2. Then loosen each "ANT" padder screw approximately two turns.

While adjusting "OSC" padder screws always turn very slowly as they tune very sharp and it is possible to tune past station without hearing the signal.

SET-UP PROCEDURE

1. Turn the set on and leave operate for about ten or twenty minutes before attempting to set the push buttons.
2. Due to the wide range to which each button will tune it is essential that the stations selected are well within each buttons tuning range.
3. Push in the "Manual" button (extreme right) and using the station selector knob, tune in the station to which the No. 1 button is to be set.
4. Push in the No. 1 button and using a long, thin screw driver adjust the "OSC"/A padder screw, turning slowly (extreme right looking at rear of cabinet) until the station you tuned in (MANUALLY) is heard again. The padder condensers are accessible through the long horizontal opening in the upper left side of cabinet back. Be sure to adjust for maximum volume in speaker.
5. Adjust the No. 1 push button "ANT"/AA padder condenser for maximum volume in speaker.
6. Push in "Manual" push button and re-check station to make sure button is correctly set. There should be no change in volume when switched from push button to manual.
7. The set up for No. 1 button is then complete. Set up remaining buttons, using same procedure; adjust the "OSC" padder first, then the "ANT" padder, etc.

To tune the receiver with the push buttons, simply press in the button which corresponds to the call letters of the desired station: The volume may be adjusted to suit.

Tubes Used	Functions
12SA7	Oscillator—Modulator
12SK7	Intermediate Frequency Amplifier
12SQ7	Detector, A.V.C. 1st Audio Amplifier
50L6	Beam Power Output
35Z5	Rectifier

Tube may be GT (Bantam) or metal equivalents.

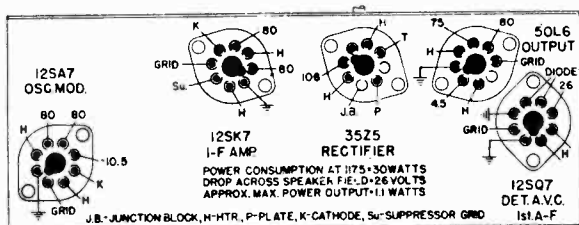


Fig. 1—Norket Voltage Chart

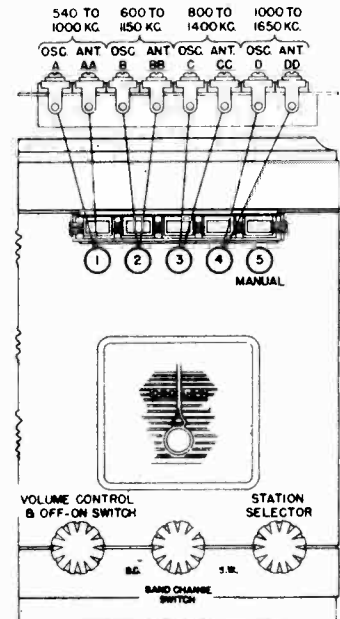
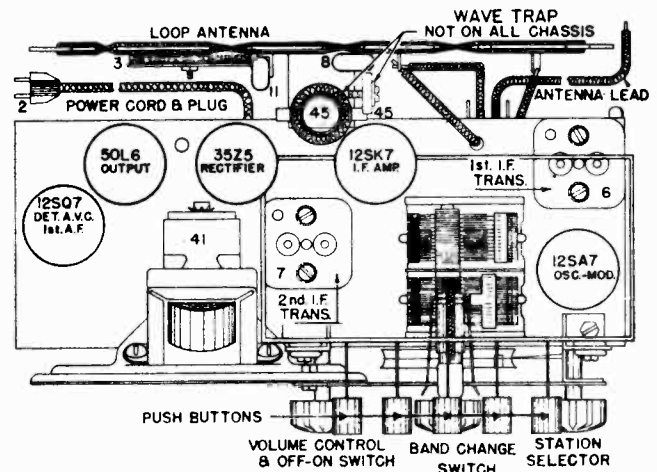


Fig. 3—Front View



THE CROSLLEY CORP.

Model No. 52-TP is a Table Model Phono-Combination incorporating a five-tube, two-band superheterodyne receiver and a sensitive and efficient unit for the reproduction of phonograph recordings. Designed to operate on A.C. electric circuits as specified on model label.

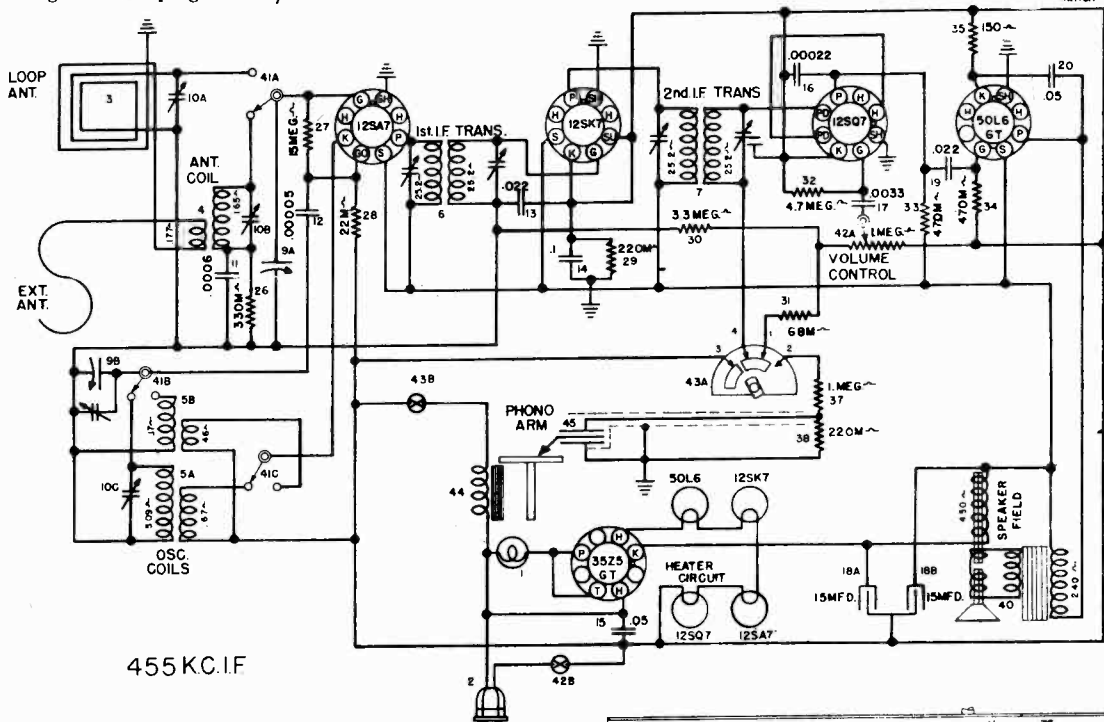
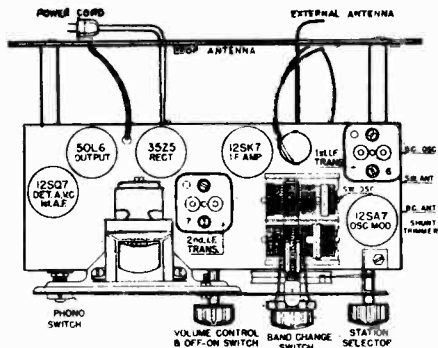
**TUNING RANGE**—Broadcast Band—1600 to 540 kilocycles, or 18.75 to 555 meters. Short Wave Band—15 to 6 megacycles, or 20 to 50 meters.

**TUBES**—1—12SA7, 1—12SK7, 1—12SQ7, 1—50L6GT, 1—35Z5GT. Tubes must be GT (Bantam) or metal equivalent.

**ANTENNA**—This model has a built-in loop antenna. Under normal conditions this loop antenna will provide sufficient pickup for satisfactory reception from nearby and powerful stations, whose operating frequency is between 1600 and 540 kilocycles. Due to the slightly directional effect of the loop antenna, reception from some stations may be improved by turning the receiver. For Short Wave or distant reception on the broadcast band, an outdoor antenna should be installed. Connect the antenna lead-in wire to the red lead extending from the rear of the cabinet.

**GROUND**—NEVER ATTACH A GROUND WIRE TO THIS RECEIVER.

**POWER SUPPLY**—Make certain that the power rating on the model and license label is the SAME as your lighting circuit BEFORE plugging the receiver power cord into a convenient receptacle. Never put your hand in the receiver cabinet without first disconnecting receiver plug from the electric circuit.

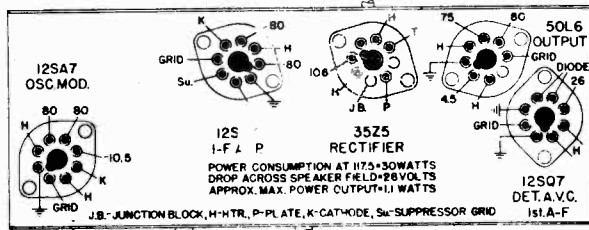


455 KC. I.F.

ALIGNMENT PROCEDURE

Preliminary

- Output Meter Connections . . . . . Plate and screen of 50L6
- Generator Ground Connections . . . . . Ground Lead and Chassis
- Dummy Antenna to be in series with generator output
- Position of Volume Control . . . . . Fully on

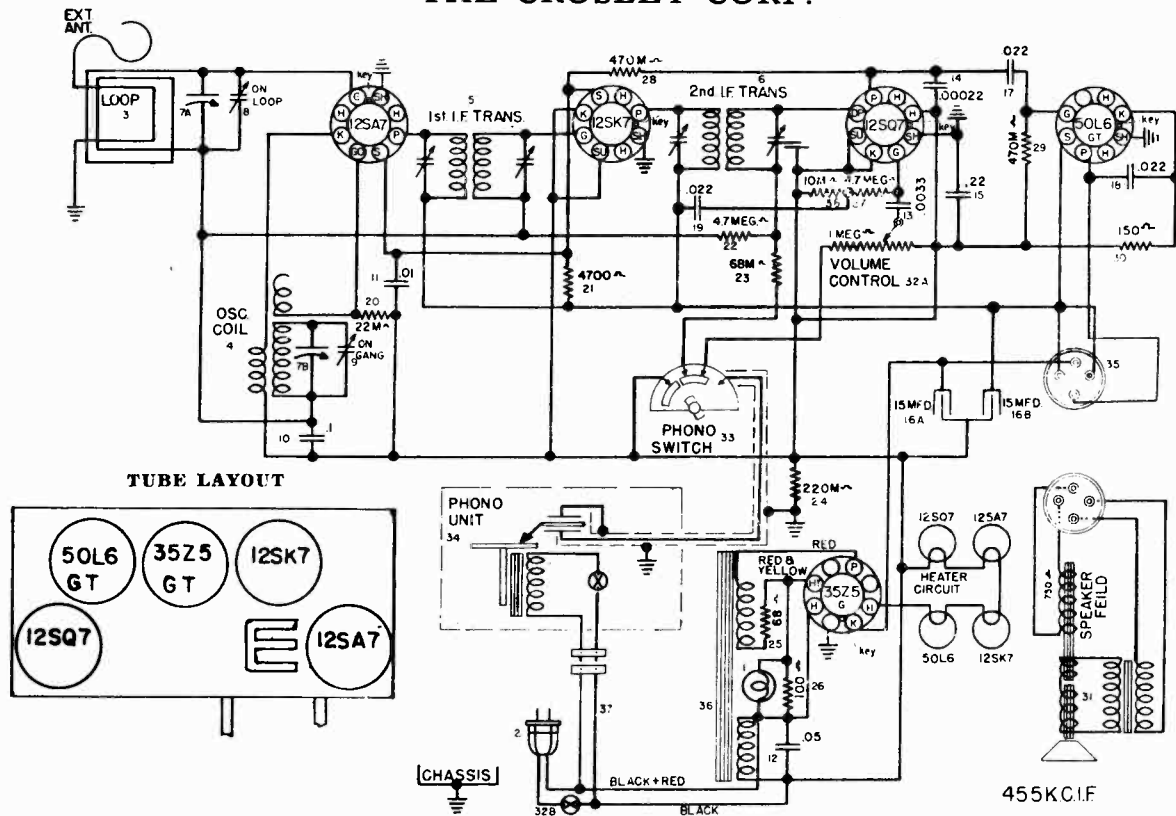


VOLTAGES MEASURED BETWEEN SOCKET PIN & GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS. PER. VOLT METER READINGS MAY VARY 10%.

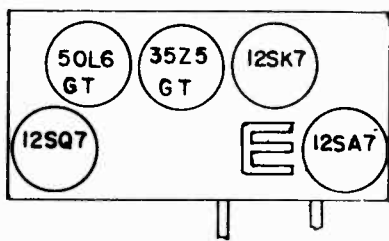
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.0001 MF.	455 KC.	Antenna Lead	BC	Fully Open	1st I-F(?) 2nd I-F(?)	Adjust for maximum signal. Adjust for maximum signal.
2.	400 ohm Carbon Resistor	15.3 MC.	Antenna Lead (red)	S.W.	Fully Open	S.W. "Osc."	Adjust for maximum output.
3.	400 ohm Carbon	15.0 MC.	Antenna Lead (red)	S.W.	15 on Dial	S.W. "Ant."	Adjust for maximum signal while rocking gang through it.
4.	.0001 MF.	1650 KC.	Antenna Lead (red)	BC	Fully Open	B.C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal
5.	.0001 MF.	1400 KC.	Antenna Lead (red)	BC	140 Dial	B.C. "Ant."	Adjust for maximum output.

When aligning the shortwave band "OSC" trimmer, care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune in the generator frequency and then tune in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.) Repeat original alignment procedure for more accurate adjustments. Keep signal generator output low as possible to prevent action of A.S.C. circuit.

THE CROSLY CORP.



TUBE LAYOUT



**TUNING RANGE** — Broadcast Band — 1600 to 540 kilocycles, or 18.75 to 555 meters.

**TUBES**—1—12SA7, 1—12SK7, 1—12SQ7, 1—50L6GT, 1—35Z5GT. Tubes must be GT (Bantam) or metal equivalent.

**ANTENNA**—This model has a built-in loop antenna. Under normal conditions this loop antenna will provide sufficient pickup for satisfactory reception from nearby and powerful stations, whose operating frequency is between 1600 and 540 kilocycles. Due to the slightly directional effect of the loop antenna, reception from some stations may be improved by turning the receiver. For distant reception on the broadcast band, an outdoor antenna should be installed. Connect the antenna lead-in wire to the red lead extending from the rear of the cabinet.

**GROUND**—NEVER ATTACH A GROUND WIRE TO THIS RECEIVER.

**POWER SUPPLY**—Make certain that the power rating on the model and license label is the SAME as your lighting circuit BEFORE plugging the receiver power cord into a convenient receptacle. Never put your hand in the receiver cabinet without first disconnecting receiver plug from the electric circuit.

Connect output meter to plate and screen of 50L6. Connect generator ground to chassis through .001 mf. Volume control on full.

ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Phono. Radio Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.0001 MF.	455 KC.	Antenna Lead	Radio	Fully Open	1st I-F(2) 2nd I-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	.0001 MF.	1650 KC.	Antenna Lead (red)	Radio	Fully Open	B.C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal.
3.	.0001 MF.	1400 KC.	Antenna Lead (red)	Radio	140 Dial	B.C. "Ant."	Adjust for maximum output.

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.

Socket Voltage is measured @ 117.5 V line

TUBE VOLTAGE CHART

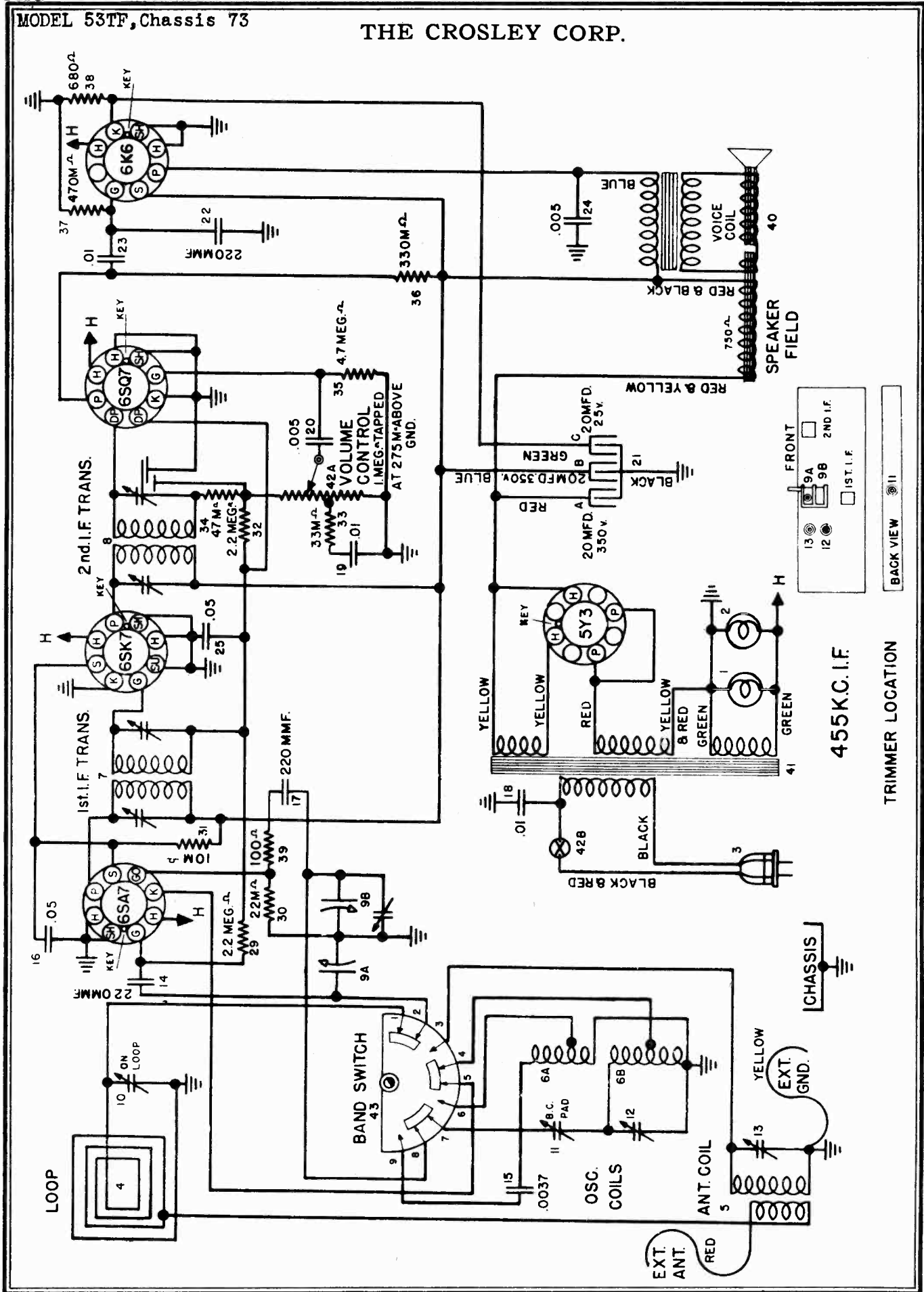
(BETWEEN SOCKET PINS AND B-) WITH 1000 OHM PER VOLT—500 V. RANGE D. C. VOLTMETER

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
12SA7	Osc. Mod.	.....	.....	123	78	Neg.	0	.....	Neg.
12SK7	I. F. Amp.	.....	.....	0	Neg.	0	78	.....	123
12SQ7	Det., Etc.	.....	0	0	0	*Neg.	18.5*	.....	0
50L6	B. P. O.	.....	.....	112	123	0	.....	.....	8.5
35Z5	Rect.	.....	.....	.....	.....	208AC	.....	.....	188

All voltages may vary 10% of values indicated. Neg. indicates Neg. reading on Voltmeter Scale but of too small a value to record accurately. \*Measured on 100 V. Scale. Power consumption at 117.5 V. line, 60 watts. Phono Motor 20 watts additional. Drop across Speaker Field—65 V Current thru Speaker Field—90 M. A.

MODEL 53TF, Chassis 73

THE CROSLLEY CORP.



THE CROSLY CORP.

MODEL 53TF, Chassis 73

TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SA7—OSC.—Mod.		0	0	180	73		0	6.3 A. C.	0
6SK7—I. F. Amplifier		0	0	0	0	0	73	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.		0	0	0	0	0	68	6.3 A. C.	0
6K6G or GT—Output		0	0	160	180	0	180	6.3 A. C.	9
5Y3G—Rectifier		0	225		270 A.C.		270 A. C.		225

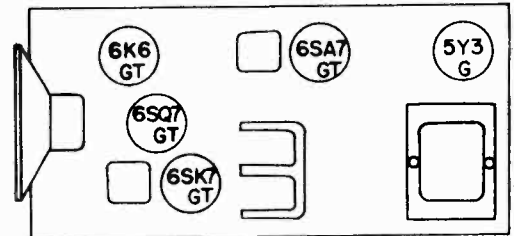
MAX. POWER OUTPUT..... 3.0 WATTS.  
 POWER CONSUMPTION..... 55 WATTS.  
 DROP ACROSS SPEAKER FIELD..... 45 VOLTS.

Voltages may vary 10% of values given.

This is a five-tube, two-band superheterodyne receiver, designed for operation on Alternating Current (A. C.) power supply as specified on the Model and License Label.

TUBES	FUNCTION
1—6SA7	Oscillator-Modulator
1—6SK7	Intermediate Frequency Amplifier
1—6SQ7	Detector, A.S.C., 1st Audio Amplifier
1—6K6 G or GT	Pentode Output
1—5Y3G	Rectifier.

TUBE LAYOUT



TUNING RANGE

Broadcast Band—550 Kc. to 1600 Kc.  
 Short Wave Band—5.2 Mc. to 18.0 Mc.

ALIGNMENT PROCEDURE

Output Meter Connections..... Plate and Screen of 6K6G  
 Generator Ground Connection..... To Chassis or Ground Lead  
 Dummy Antenna to be in series with generator output..... See Chart Below  
 Position of Volume Control..... Fully On

Signal Generator		ALIGNMENT PROCEDURE CHART					
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd 1-F (2) 1st 1-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
3.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
4.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
5.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B.C.LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

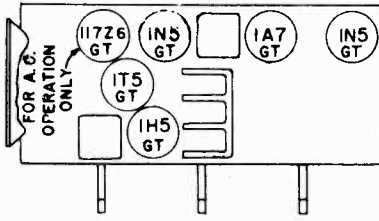
**IMPORTANT ALIGNMENT NOTES** — When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)



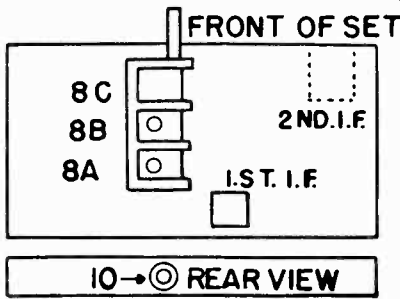
MODELS 62FA, 62FB,  
Chassis 58

THE CROSLLEY CORP.

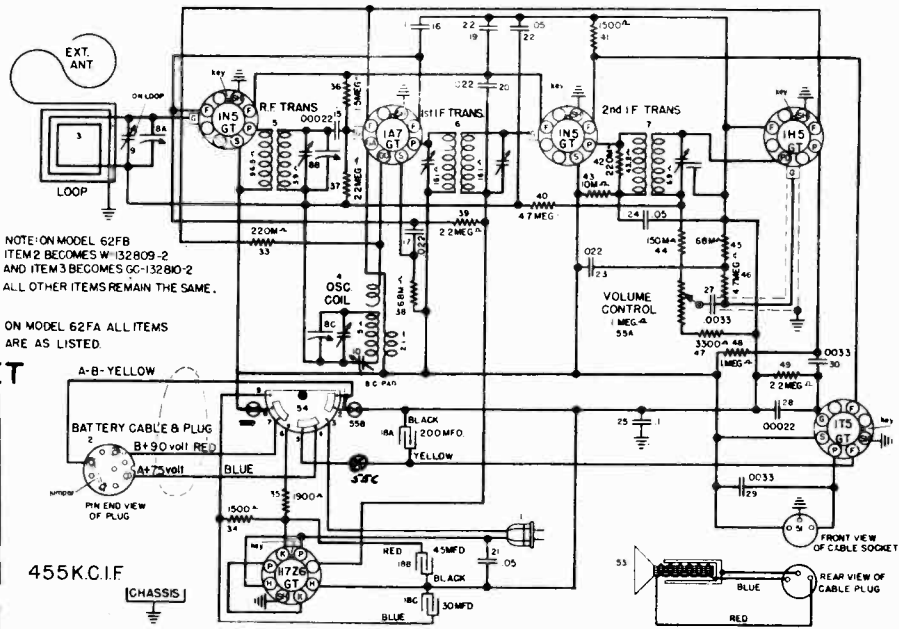
TUBE LAYOUT



TRIMMER LOCATIONS



WIRING DIAGRAM



NOTE: ON MODEL 62FB  
ITEM 2 BECOMES W-132809-2  
AND ITEM 3 BECOMES GC-132810-2  
ALL OTHER ITEMS REMAIN THE SAME.

ON MODEL 62FA ALL ITEMS  
ARE AS LISTED.

SOCKETS VOLTAGES — Chassis No. 58

Measured from "B" minus using 1000 Ω/V

Voltmeter, 100 V. Range, no signal input

Tube	Function	@ 117.5-Volt Line				Battery Pack			
		Filament Volt	Plate Volt	Screen Volt	Filament Volt	Filament Volt	Plate Volt	Screen Volt	Filament Volt
1N5GT	R. F. Amplifier	2.8	90	90	4.0	2.8	90	90	4.0
1A7GT	Osc. Modulator	1.4	90	36	2.7	1.4	90	90	2.8
1N5GT	I. F. Amplifier	4.0	76	90	5.3	4.0	76	76	5.4
1H5GT	Det.-A. S. C. 1st A. F.	0	12	.....	1.3	0	12	.....	1.4
1T5GT	Out Put	5.4	83	90	6.7	5.4	83	90	7.5
117Z6GT	Rectifier	117.5 A. C.	117.5 A. C.	.....	97	.....	.....	.....	.....

ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
1400	Ant. Lead	.0001 MF	140 on dial	"RF" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	"OSC." Series Pad	Adjust for maximum output while rocking gang.

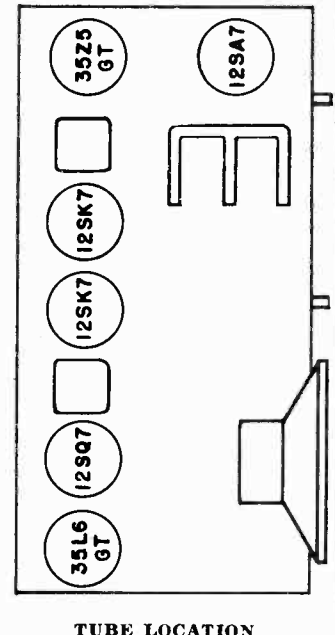
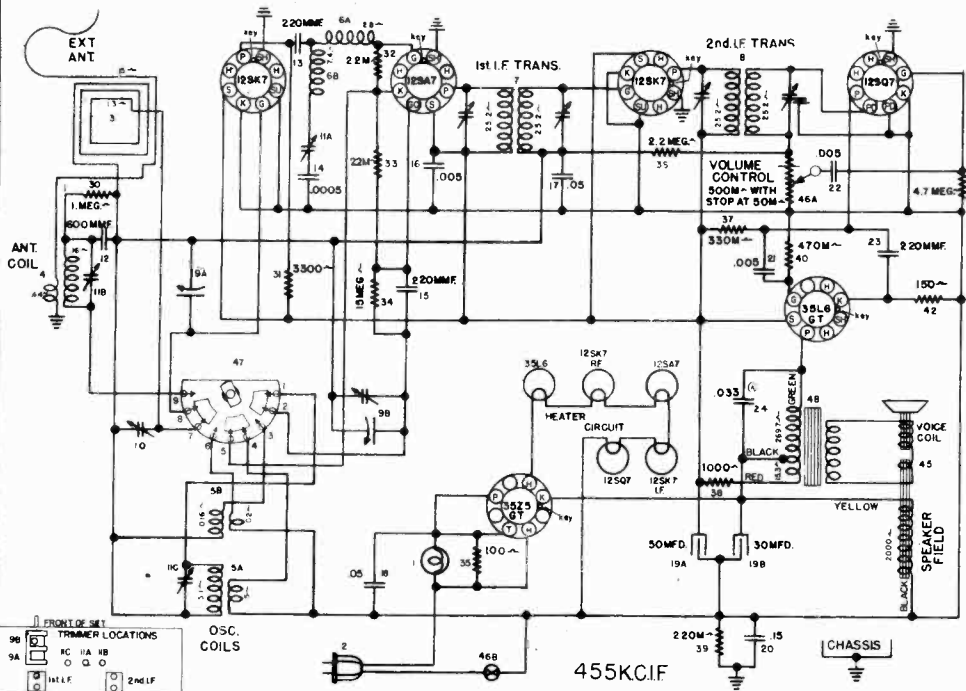
Repeat above for more accurate adjustments  
Maximum power output @ 90 V. "B" — approx. 340 M. W.

A Battery drain @ 7.5 volts, .05 Amp.; "B" Battery drain @ 90 V., 12.5 M. A. @ Power consumption @ 117.5 volts line — 22 Watts

The chassis as employed in this model receiver is a six tube (including rectifier), single band superheterodyne, designed to operate from an "A and B" Battery Pack, or 110 volts A.C. (50-60 cycle) or 110 volt D.C. electric circuits.

- TUNING RANGE** — 550-1600 Kilocycles — 546-187.5 Meters
- TUBES USED** — one 1A7GT, two—1N5GT, one—1H5GT, one—1T5GT and one—117Z6GT\*
- BATTERIES REQUIRED** — one No. CR-58 Crosley "A and B" Battery Pack (7.5 Volt "A"—90 Volt "B").

THE CROSLLEY CORP.



**ALIGNMENT PROCEDURE**  
 Preliminary Output Meter Connections ..... To Voice Coil Terminals of Speaker or to Plate of 35L6GT and Cathode of 35Z5GT  
 Generator Ground Connections ..... In Series with .001 MFD. Condenser  
 Dummy Antenna ..... 400 Ohm Carbon Resistor in Series with Generator Output  
 Position of Volume Control ..... Fully On

**ALIGNMENT CHART**

Step	Signal Generator Frequency Setting	Input	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks	Location
1	456 Kc.	Antenna	S. B.	Fully open	2nd I-F (2)	Adjust for maximum output.	Tops of I. F. Trans.
1-A	456	Antenna	S. B.	Fully open	1st I-F (2)	Adjust for minimum output.	Center Section of 3 Sec. Trimmer.
2	15.3 Mc.	Antenna	S. W.	Fully open	S. W. "OSC"	Adjust for maximum output.	Ton of Tuning Condenser
3	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "Ant."	Adjust for maximum output while rocking gang thru signal.	L. H. Section of 3 Sec. Trimmer.
4	1650 Kc.	Antenna	S. B.	Fully open	B. C. "OSC" (front trimmer right end of chassis)	Adjust for maximum output. Gang does not have to tune thru signal.	R. H. Section of 3 Sec. Trimmer.
5	1400 Kc.	Antenna	S. B.	Approx. 1400 on dial	B. C. "ANT"	Adjust for maximum output.	On Cabinet Back.

When aligning the short wave band "OSC" trimmer care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position). Repeat original alignment procedure for more accurate adjustments. Always keep signal generator output low as possible to prevent action of A.S.C. circuit.

Socket Voltage is measured @ 117.5 V line

**TUBE VOLTAGE CHART**

(BETWEEN SOCKET PINS AND B-) WITH 1000 OHM PER VOLT—500 V. RANGE D. C. VOLTMETER

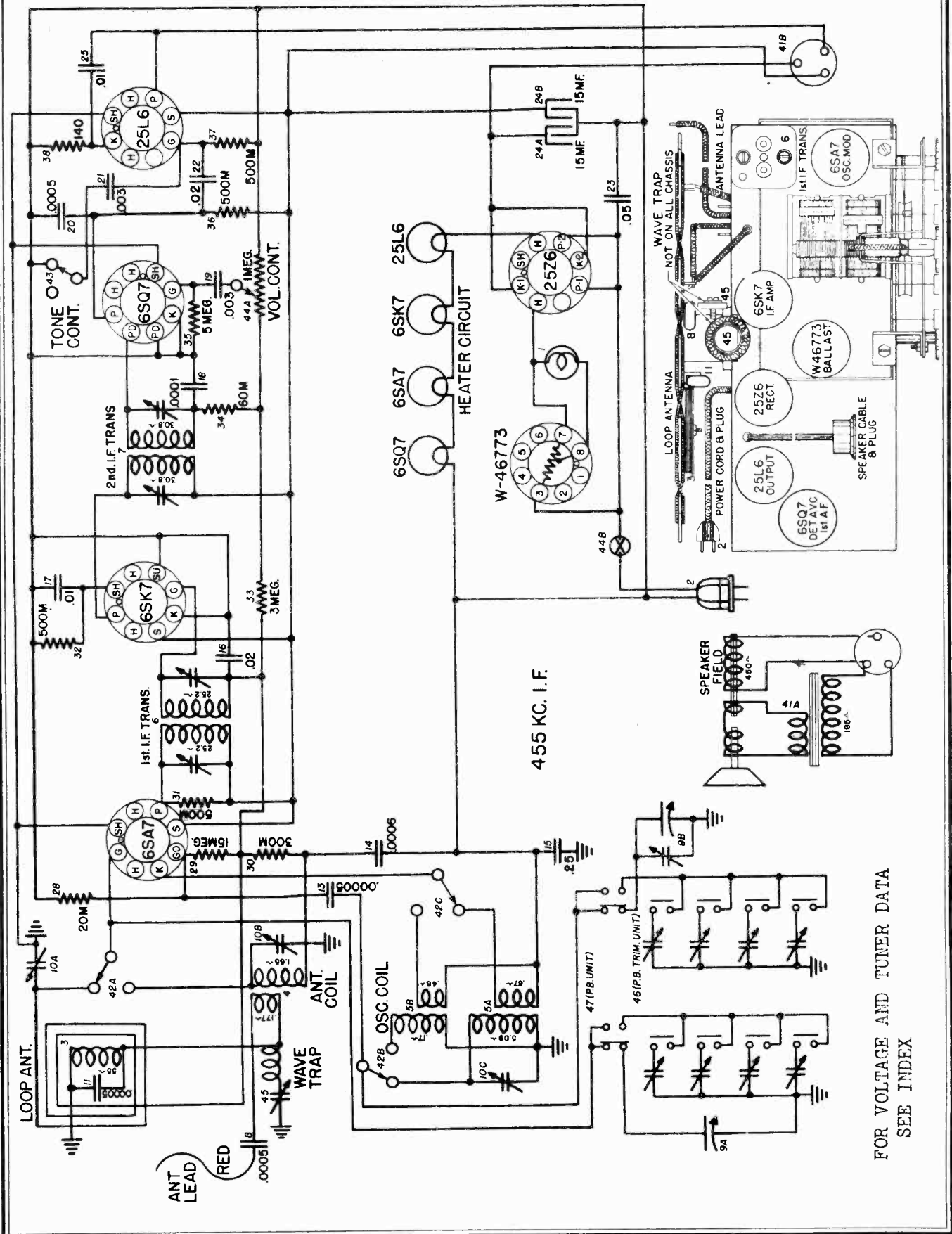
TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
12SK7	R. F. Amp.			0	Neg.	0	76		40
12SA7	Osc. Mod.			76	76	Neg.	0		Neg.
12SK7	I. F. Amp.			0	Neg.	0	76		76
12SQ7	Det. Etc.		0	0	0	Neg.	16*		0
35L6	B. P. O.			92	76	0			4
35Z5	Rect.						113AC		100

All voltages may vary 10% of values indicated. Neg. indicates Neg. reading on Voltmeter Scale but of too small a value to record accurately.  
 \* Measured on 100 V. Scale. Power consumption at 117.5 V. line, 30 watts. Drop across Speaker Field—100 V. Current thru Speaker Field—52 M.A.

This model Crosley is a six-tube, two-band superheterodyne receiver, designed for operation on 105-130-volt electric circuits, either D. C. or 50-60 cycles A. C.

**TUNING RANGE**—Standard Broadcast Band—1600 to 540 Kilocycles or 187.5 to 555 meters.  
 Short Wave Band—5.8 to 15.0 Megacycles or 62.5 to 20 meters.

**TUBES**—1—12SK7, 1—12SA7, 1—12SK7, 1—12SQ7, 1—35L6, 1—35Z5. Tubes may be GT (Bantam) or metal equivalents.



FOR VOLTAGE AND TUNER DATA  
SEE INDEX

## THE CROSLEY CORP.

**ALIGNMENT PROCEDURE**

Preliminary

Output Meter Connections.....Plate and Screen 25L6GT  
 Generator Ground Connections.....See foot note (1)  
 Dummy Antenna in series with Generator output.....See Chart below  
 Position of Volume Control.....Fully on  
 Depress Manual Push-Button

Signal Generator							
Sequence	Dummy Antenna	Frequency Setting	Input Connection for Radio	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1	.05 Mf.	456 Kc.	Antenna	S. B.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2	400 ohm carbon	15.4 Mc.	Antenna	S. W.	Fully open	S. W. "OSC" (rear section of tuning condenser)	Adjust for maximum output.
3	400 ohm carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "Ant." (center trimmer right end of chassis)	Adjust for maximum output while rocking gang thru signal.
4	.0002 Mf.	1600 Kc.	Antenna	S. B.	Fully open	B. C. "OSC" (front trimmer right end of chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5	.002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 1400 on dial	B. C. "ANT" (rear trimmer right end of chassis)	Adjust for maximum output.

(1) Do not use a ground return from the signal generator unless it is found to be absolutely necessary.

If necessary a small condenser (approx. a .001 mf.—400 Volt) should be connected in series with the ground lead of the generator and receiver chassis.

**IMPORTANT ALIGNMENT NOTES**

When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

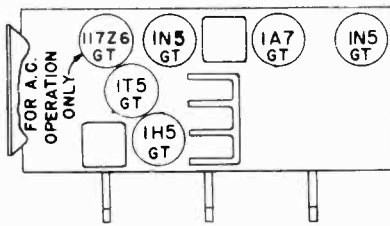
**WAVE TRAP W MODELS**

The Wave Trap should not be adjusted until all other adjustments have been made. To make the adjustment feed a 455 kilocycle signal from the signal terminal of the receiver. With the gang condenser open and the volume control fully on, adjust the trimmer condenser on the wave trap for MINIMUM output.

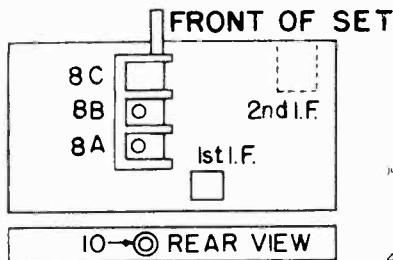
Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles the exact frequency should be determined with the aid of the signal generator. Then instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is more noticeable. Then adjust the wave trap for minimum interference.

THE CROSLLEY CORP.

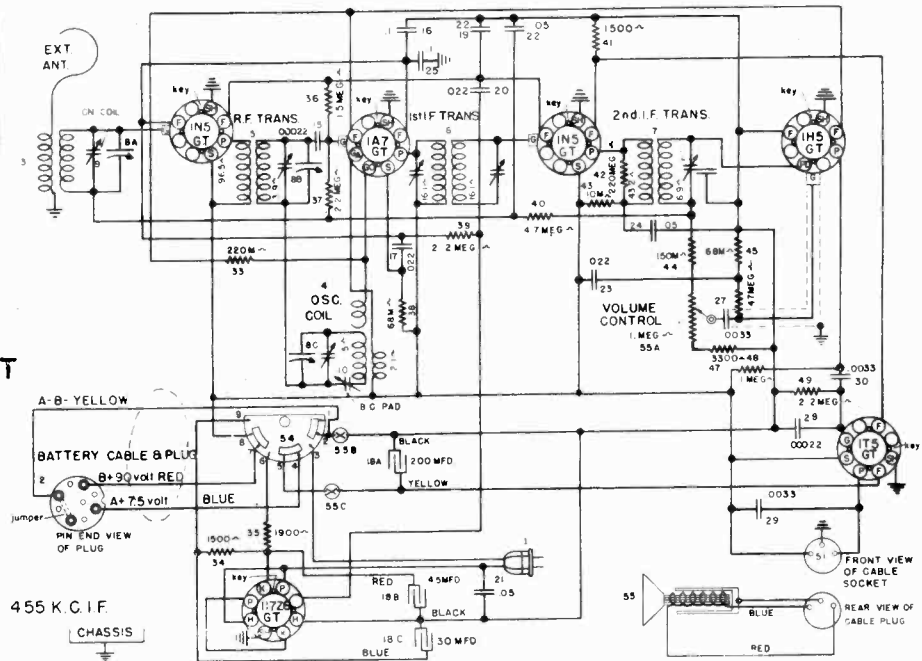
TUBE LAYOUT



TRIMMER LOCATIONS



WIRING DIAGRAM



TUNING RANGE

— 550-1600 Kilocycles — 546-187.5 Meters

TUBES USED

— one 1A7GT, two—1N5GT, one—1H5GT, one—1T5GT and one—117Z6GT\*

BATTERIES REQUIRED

— one No. CR-58 Crosley "A and B" Battery Pack (7.5 Volt "A"—90 Volt "B").

\*Note: The 117Z6GT rectifier tube is not required for battery operation and is therefore not supplied as original equipment with your receiver. If 110 volt current is made available in your home the above tube should be purchased from your Crosley dealer.

SOCKETS VOLTAGES — Chassis No. 93

Measured from "B" minus using 1000 Ω/V

Voltmeter, 100 V. Range, no signal input

Tube		@ 117.5-Volt Line				Battery Pack			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Filament Volt	Filament Volt	Plate Volt	Screen Volt	Filament Volt
1N5GT	R. F. Amplifier	2.8	90	90	4.0	2.8	90	90	4.0
1A7GT	Osc. Modulator	1.4	90	36	2.7	1.4	90	90	2.8
1N5GT	I. F. Amplifier	4.0	76	90	5.3	4.0	76	76	5.4
1H5GT	Det.-A. S. C. 1st A. F.	0	12	.....	1.3	0	12	.....	1.4
1T5GT	Out Put	5.4	83	90	6.7	5.4	83	90	7.5
117Z6GT	Rectifier	117.5 A. C.	117.5 A. C.	.....	97	.....	.....	.....	.....

ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
1400	Ant. Lead	.0001 MF	140 on dial	"RF" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	"OSC." Series Pad	Adjust for maximum output while rocking gang.

Repeat above for more accurate adjustments  
Maximum power output @ 90 V. "B"—approx. 340 M. W.

A Battery drain @ 7.5 volts, .05 Amp.; "B" Battery drain @ 90 V., 12.5 M. A.;  
Power consumption @ 117.5 volts line — 22 Watts

THE CROSLY CORP.

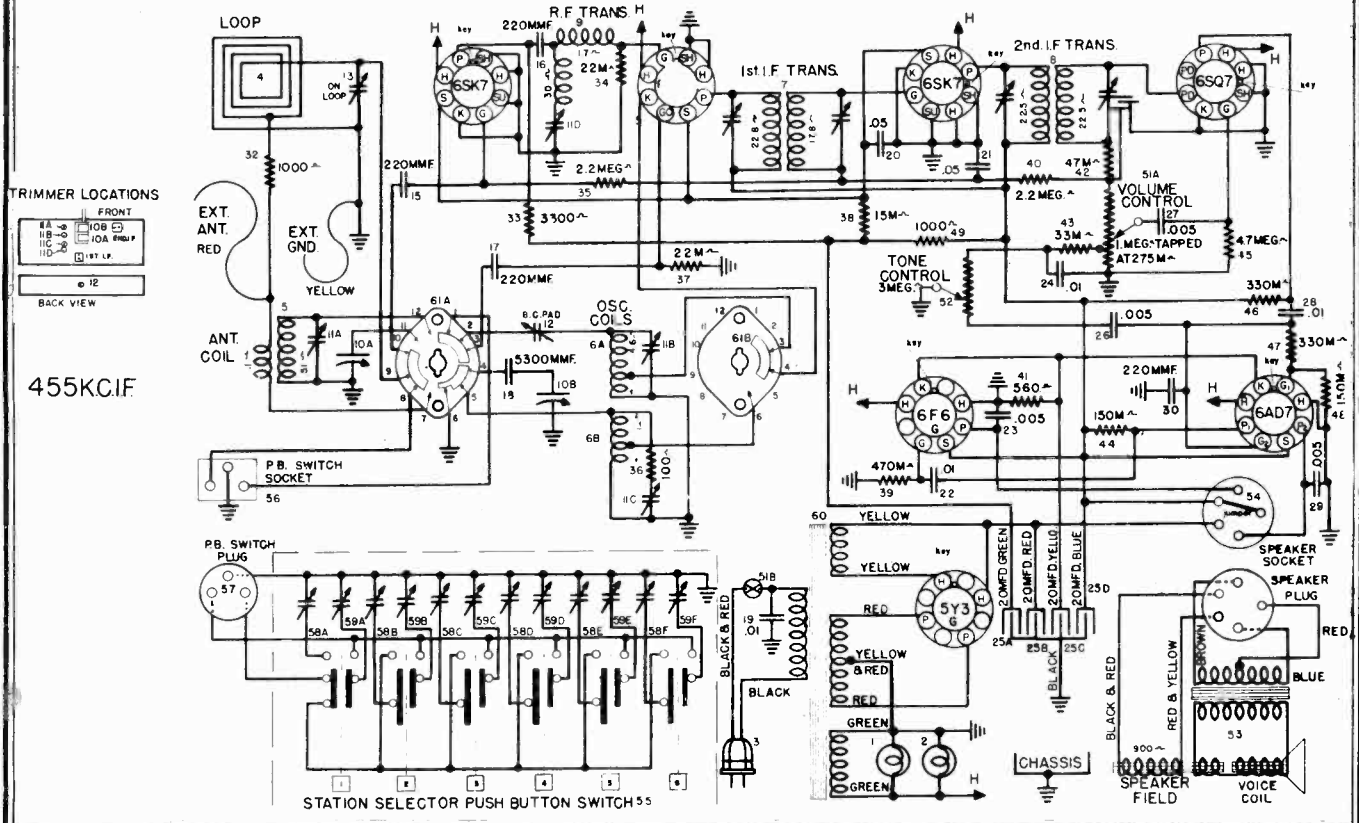
ALIGNMENT PROCEDURE

Output Meter Connections..... Plate of 6AD7 to Plate of 6F6  
 Generator Ground Connection..... To Chassis or Ground Lead  
 Dummy Antenna to be in series with generator output..... See Chart Below  
 Position of Volume Control..... Fully On  
 Position of Tone Control..... Treble or Speech

ALIGNMENT PROCEDURE CHART

Signal Generator								
Align- ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks	
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.	
2.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully Open	Adj. Wave Trap Trimmer.	Adjust for Minimum.	
3.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.	
4.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.	
5.	Repeat Step No. 3 to check possible shift due to series adjustment.							
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.	
7.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.	
8.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.	
9.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.							

**IMPORTANT ALIGNMENT NOTES**—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

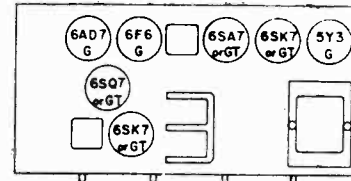


THE CROSLLEY CORP.

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier		0	0	0	0	0	80	6.3 A. C.	235
6SA7—OSC.—Mod.		0	0	260	80	0	0	6.3 A. C.	0
6SK7—I. F. Amplifier		0	0	0	0	0	80	6.3 A. C.	260
6SQ7—Det. A. S. C. 1st A. F.		0	0	0	0	0	85	6.3 A. C.	0
6AD7—Phase Inverter		0	0	255	260	0	180	6.3 A. C.	23
6F6—Output		0	0	255	260	0	235	6.3 A. C.	23
5Y3G—Rectifier		N. C.	330	J. B.	300A.C.	J. B.	300 A. C.	J. B.	330

MAX. POWER OUTPUT ..... 6.5 WATTS  
 POWER CONSUMPTION ..... 85 WATTS  
 DROP ACROSS SPEAKER FIELD ..... 70 VOLTS  
 J. B.—Junction Block. N. C.—No Connection



**SETTING THE PUSH BUTTONS**

The six station selector push buttons are set up by means of two adjusting screws per button. These adjusting screws are made accessible by removing the push button escutcheon.

Select the call letter tabs of your six favorite broadcast stations from the station call letter sheets supplied. Place the call letter tabs in the window above that push button which is to be adjusted for that station. It is not essential that all push buttons be set at one time.

Note: When placing call tabs in the window be sure to arrange them according to their frequency (kilocycles) that is: the station whose frequency is well within the range covered by the No. 1 button, should be placed above that button and so on with the rest of the buttons to be set. After tabs are in place break off the celluloid covers from the strip furnished and snap in place over the call letters to protect and hold them in place.

The frequencies of your favorite stations may be found in your local paper or by consulting a station listing sheet.

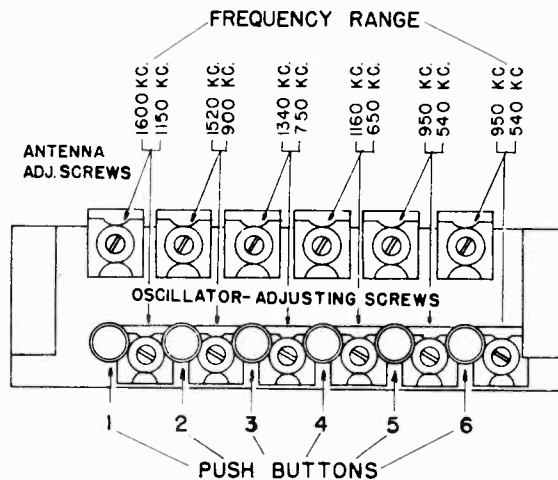


Fig. 1

**TUNING THE RECEIVER-MANUAL OPERATION**

Turn the band change switch knob to the desired frequency band. Turn the volume control knob approximately half way in a clockwise direction. Rotate the station selector knob (right hand knob) slowly until a station is heard. Increase or decrease the volume as desired by readjusting the volume control knob. For best quality of reception always adjust the station selector to the middle of the range on the dial within which the program is being received. It should be remembered in tuning in stations on the Shortwave band that tuning is much sharper and greater care must be exercised when adjusting the station selector.

**SET-UP PROCEDURE**

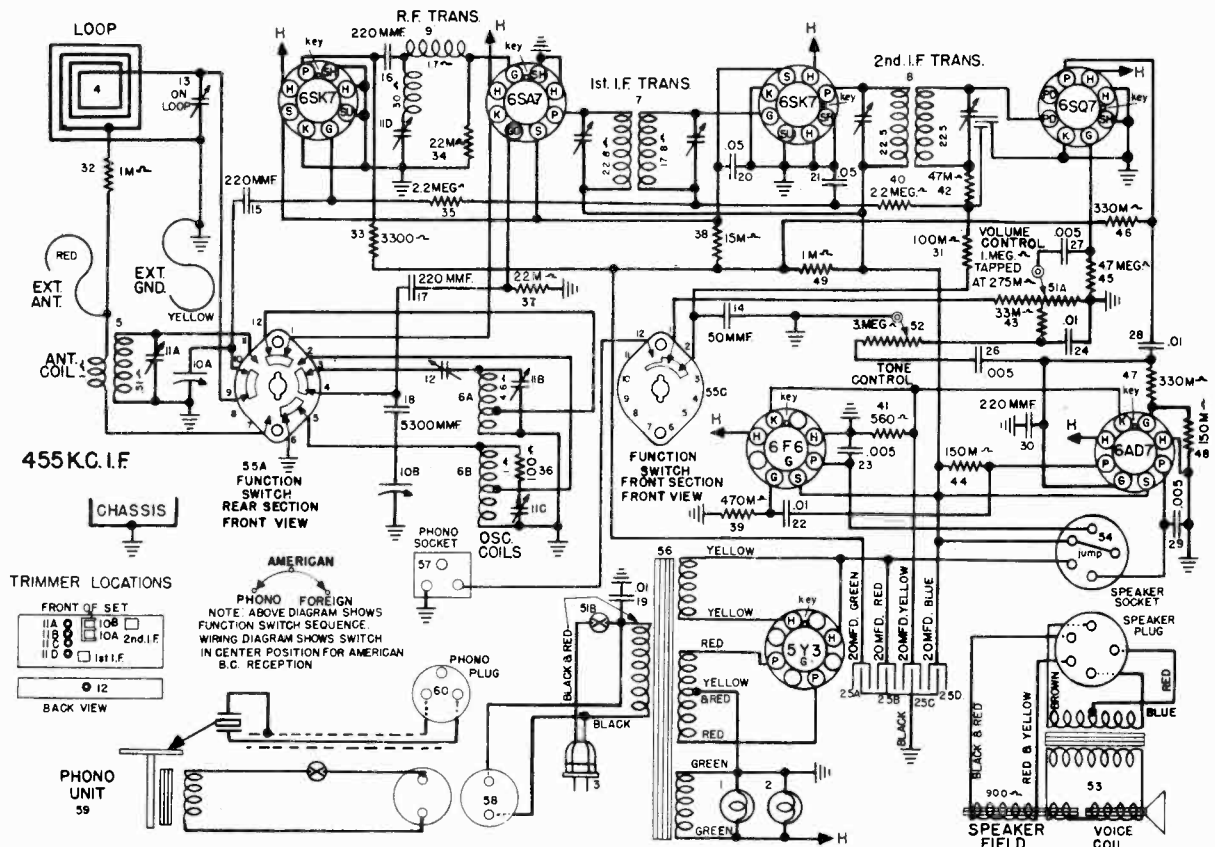
Remove station selector push button escutcheon. Turn the receiver on and let it operate for a sufficient length of time to permit the tubes to reach their normal operating conditions.

It is essential that the frequency (kilocycles) of the station selected be within the range of the push button to be set for that station. See Fig. 1.

1. Turn the band change switch to the "American" position. Using the station selector knob, carefully tune in the station to which the No. 1 push button is to be set. Note program.
2. Turn the band change switch to the "Automatic" position and using a small screw driver, carefully turn in a clockwise direction the Oscillator adjusting screw until the station previously tuned in manually is heard again. Adjust for maximum output in the speaker.
3. Adjust the Antenna adjusting screw for maximum volume in the speaker.
4. Turn band change switch from "Automatic" to "American" and back again to check if adjustment has been correctly made. There should be no change in tone quality when switched from one to the other.
5. Repeat above procedure for the remaining push buttons.

To tune the receiver with the push buttons, set the band change switch on "Automatic" and depress completely the button corresponding to the station you wish to hear.

THE CROSLY CORP.



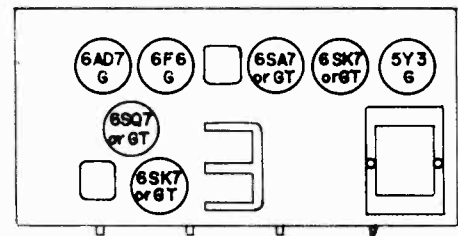
WIRING DIAGRAM

TUNING RANGES

American Broadcast Band—540 to 1600 KC (555 to 187 Meters)  
 Shortwave (Foreign)—4.7 to 18.0 MC (63.8 to 16.6 Meters)

TUBES

2—6SK7, 1—6SA7, 1—6SQ7, 1—6AD7, 1—6F6, 1—5Y3G.



TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7	R. F. Amplifier	0	0	0	0	0	80	6.3 A. C.	235
6SA7	OSC.—Mod.	0	0	260	80	0	0	6.3 A. C.	0
6SK7	I. F. Amplifier	0	0	0	0	0	80	6.3 A. C.	260
6SQ7	Det. A. S. C. 1st A. F.	0	0	0	0	0	85	6.3 A. C.	0
6AD7	Phase Inverter and Output	0	0	255	260	0	180	6.3 A. C.	23
6F6	Output	0	0	255	260	0	235	6.3 A. C.	23
5Y3G	Rectifier	N. C.	330	J. B.	300A.C.	J. B.	300A.C.	J. B.	330

MAX. POWER OUTPUT ..... 6.5 WATTS  
 POWER CONSUMPTION ..... 85 WATTS  
 DROP ACROSS SPEAKER FIELD ..... 70 VOLTS

J. B.—Junction Block. N. C.—No Connection

Voltagcs may vary 10% of values given.



MODELS TA62, TA62W  
 MODEL 72CP, Chassis 85

THE CROSLEY CORP.

MODEL 72CP

ALIGNMENT PROCEDURE

Output Meter Connections ..... Plate of 6AD7 to Plate of 6F6  
 Generator Ground Connection ..... To Chassis or Ground Lead  
 Dummy Antenna to be in series with generator output ..... See Chart Below  
 Position of Volume Control ..... Fully On  
 Position of Tone Control ..... Treble or Speech

ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully Open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
4.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
5.	Repeat Step No. 3 to check possible shift due to series adjustment.						
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
8.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
9.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

**IMPORTANT ALIGNMENT NOTES**—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

MODELS TA62, TA62W

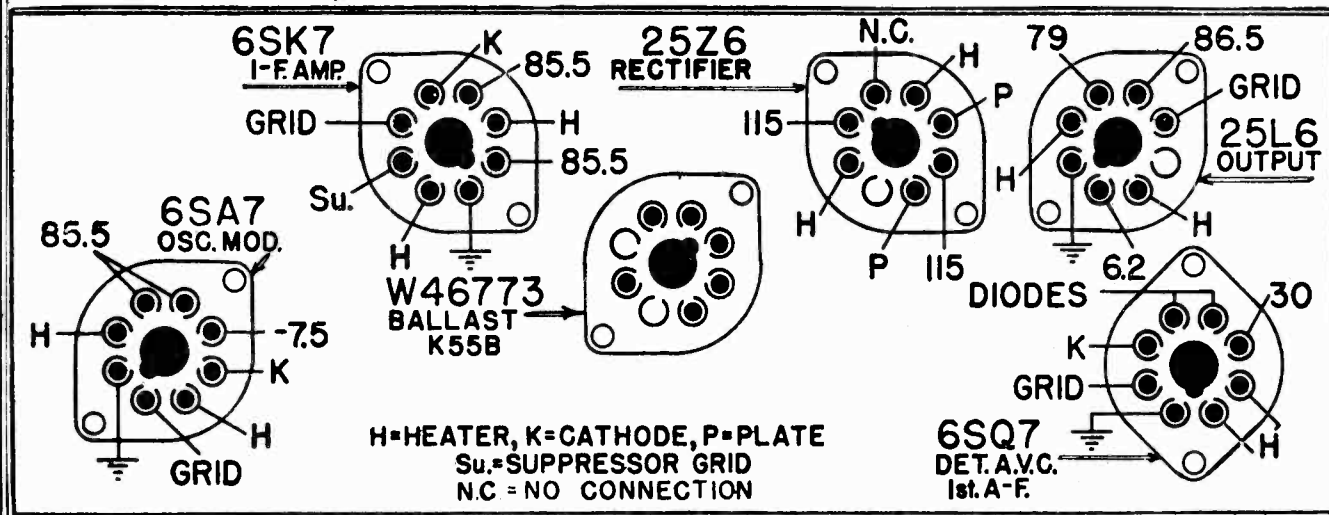
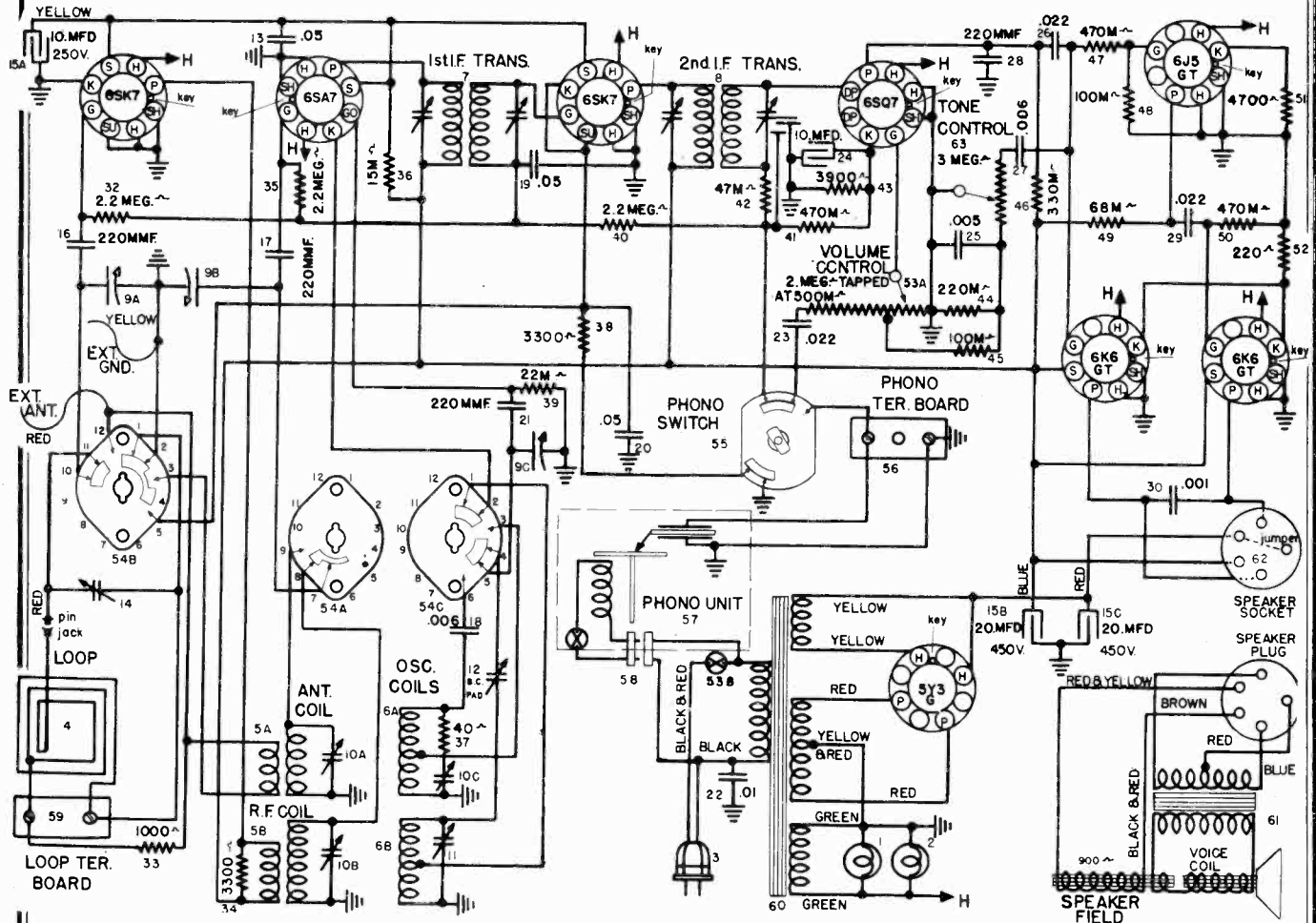


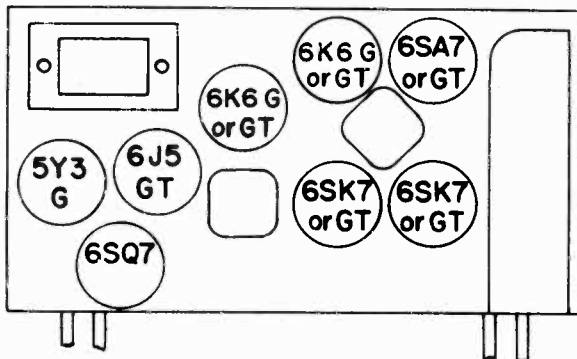
Fig. 4—Socket Voltage Chart

THE CROSLY CORP.

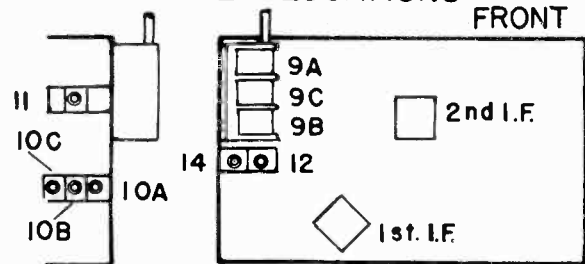
MODELS 82CP, 82CQ  
Chassis 75



455K.C.I.F.



TRIMMER LOCATIONS



**PHONO TERMINAL STRIP**—The two terminals located on the rear of the chassis and marked 1 and 2 provide connections for the phonograph and automatic record changer assembly. After disconnecting this cable from the terminals they may be used for connecting to the set, adapter units for the reproduction of television sound or F-M programs.

**THE DIAL**—The tuning range of these receivers is approximately from 540 to 1630 Kilocycles, and from 6000 to 18000 Kilocycles and is divided into two bands. The upper numbers on the Dial are to be used when tuning stations in the American Broadcast Band. Add one zero (0) to these numbers to read directly in kilocycles. The lower numbers on the Dial are for International Short Wave Stations. Short Wave calibrations are directly in megacycles.

**ANTENNA**—These receivers incorporate an efficient built-in antenna system and under normal operating conditions no outside antenna will be required. When installing the receiver DO NOT place near large metal objects such as metal partitions, radiators, etc. since if this is done reception efficiency may be greatly reduced. For most efficient Short Wave reception, or if it is necessary to install the receiver in a shielded location, the installation of an outdoor antenna is recommended. The antenna lead-in wire is to be attached to red lead extending from rear of chassis. Reception may sometimes be improved by connecting a ground wire to the yellow lead extending from the rear of the chassis.

MODELS 82CP, 82CQ

Chassis 75

THE CROSLLEY CORP.

ALIGNMENT PROCEDURE

Preliminary

Output Meter Connections.....Plate to Plate of 6K6GT's  
 Generator Ground Connection.....To Chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech

ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
7.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
8.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

**IMPORTANT ALIGNMENT NOTES**—When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7GT—R. F. Amplifier.....		0	0	0	0	0	82	6.3 A. C.	210
6SA7GT—OSC.—Mod.....		0	0	210	82BC	0	0	6.3 A. C.	0
6SK7GT—I. F. Amplifier.....		0	0	0	0	-6.5BC - -OSW -	82	6.3 A. C.	210
6SQ7—Det. A. S. C. 1st A. F.....		0	0	1.4	0	0	78	6.3 A. C.	0
6J5GT—Phase Inverter.....		0	0	125	N. C.	0	0	6.3 A. C.	5.2
6K6GT(2)—Output.....		0	0	200	210	0	0	6.3 A. C.	13
5Y3G—Rectifier.....		N. C.	300	N. C.	338	J. B.	338 A. C.	J. B.	300

MAX. POWER OUTPUT.....6.5 WATTS  
 POWER CONSUMPTION.....85 WATTS  
 DROP ACROSS SPEAKER FIELD.....90 VOLTS

N. C.—No Connection

Voltages may vary 10% of values given.

**THE AUTOMATIC RECORD CHANGER**—This record changer will automatically play a series of twelve 10" or ten 12" records of the standard 78 R. P. M. type. The records must be all one size when loading, and may consist of less records than listed above. Records of any size up to 12" may be played manually.

**FEATURES**—Some of the features of these outstanding phono-combinations that will add greatly to your enjoyment are as follows: a large efficient built-in antenna; Litz wound coils; a three gang tuning condenser providing maximum selectivity and sensitivity; push-pull output tubes for maximum distortionless reproduction; continuously variable tone control; ten inch concert dynamic speaker; and an extremely high quality unit for the reproduction of phonograph records, including the "Floating Jewel Tone System" (a Crosley invention) which assures a quality of reproduction never before obtainable.

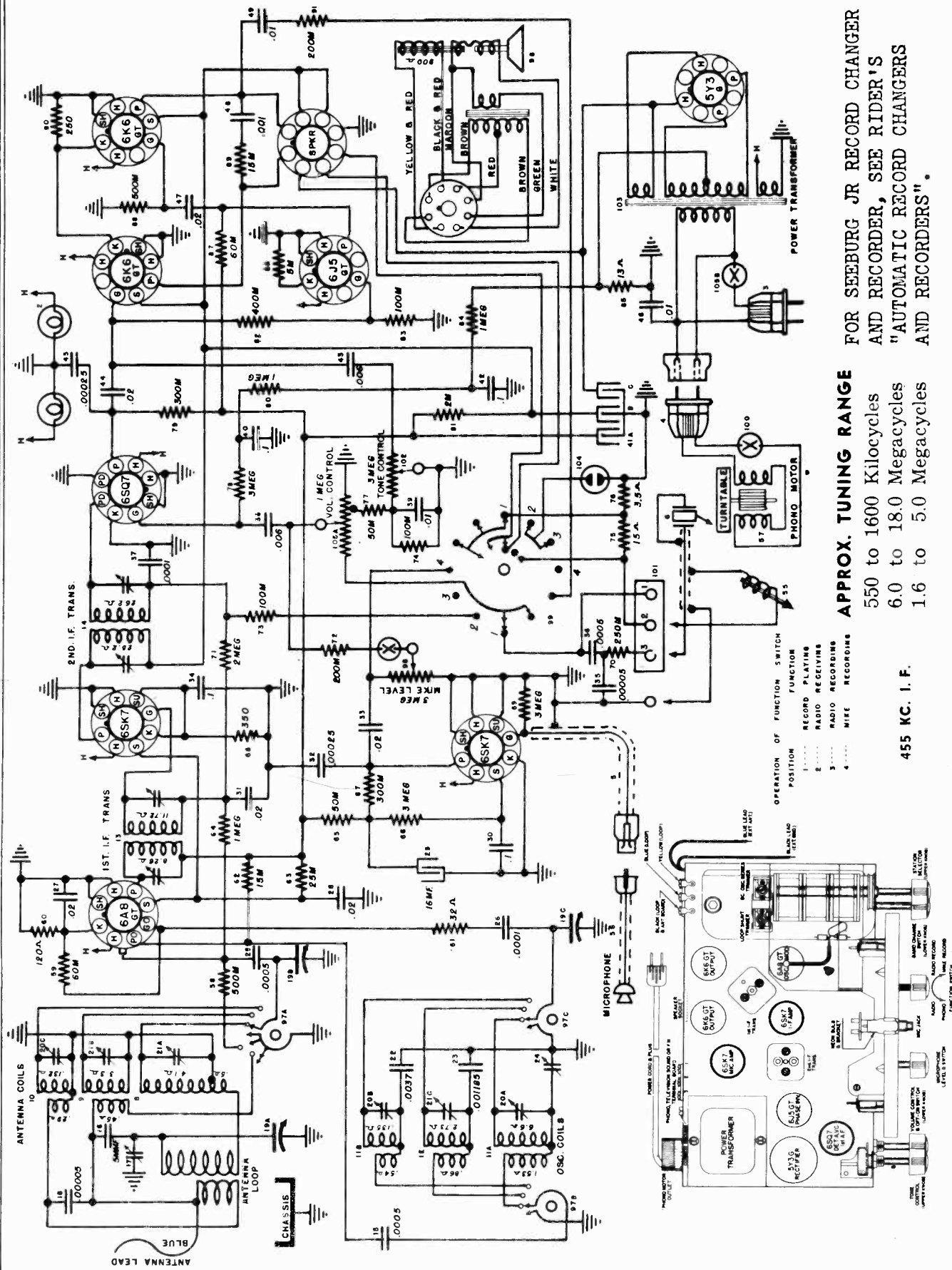
FOR RADIO PRODUCTS RECORD CHANGER 50 OR GENERAL INSTRUMENT RECORD CHANGER 201, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS".

THE CROSLY CORP.

FOR SEEBURG JR RECORD CHANGER  
AND RECORDER, SEE RIDER'S  
"AUTOMATIC RECORD CHANGERS  
AND RECORDERS".

APPROX. TUNING RANGE  
550 to 1600 Kilocycles  
6.0 to 18.0 Megacycles  
1.6 to 5.0 Megacycles

455 KC. I. F.



MODEL CB82-R, Chassis 28

THE CROSLLEY CORP.

**RADIO RECEIVER ALIGNMENT PROCEDURE**

**PRELIMINARY**

Output Meter Connections..... Plate to Plate of 6K6G's  
 Generator Ground Connection..... To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output..... See Chart Below  
 Position of Volume Control..... Fully On  
 Position of Tone Control..... Treble or Speech  
 Position of Function Switch..... Radio  
 Position of Mike Level Control..... All the Way to Left (Off)

**ALIGNMENT PROCEDURE CHART**

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "PRE" Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.

**IMPORTANT ALIGNMENT NOTES**

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

**SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS)  
 WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.)**

TUBE FUNCTION	PIN NUMBER							
	1	2	3	4	5	6	7	8
6SK7—Pre-Amp.....	0	0	.....	.....	0	J. B.	*6.3	52
6A8GT—Osc.-Mod.....	0	0	198	76.5	0	132	*6.3	1
6SK7—I. F. Amp.....	0	0	2.4	0	2.3	76.5	*6.3	226
6SQ7—Det. A. V.C.-A. F.....	0	0	0	0	0	98	*6.3	0
6J5GT—Phase Invert.....	0	0	118.5	0	0	J. B.	*6.3	6.0
6K6G—Output.....	0	0	226	236	0	J. B.	*6.3	15.5
6K6G—Output.....	0	0	226	236	0	J. B.	*6.3	15.5
5Y3G—Rectifier.....	NC	310	J. B.	*300	J. B.	*300	J. B.	310

\*Measure with A. C. Voltmeter.

MAX. POWER OUTPUT @ 117.5 V. LINE..... 5.0 Watts  
 POWER CONSUMPTION @ 117.5 V. LINE..... 66 Watts (Radio Only)  
 TOTAL POWER CONSUMPTION @ 117.5 V. LINE..... 110 Watts (Including Phono Motor)  
 DROP ACROSS SPEAKER FIELD..... 74 Volts

Voltages may vary 10% of values given.

J. B.—JUNCTION BLOCK

N. C.—NO CONNECTION

## THE CROSLEY CORP.

MODEL 494 Record  
Player for Model  
758 Receiver

Model 758 Receiver.

remove the jumper wire from the "PHONO SOCKET" (see Diagram of Connections in the receiver instruction booklet) and insert plug (eight prong) from the Record Player.

If it is desired to change over to 78 R.P.M. records

other is accomplished by changing the drive pinion on the motor shaft. The large pinion is for 78 R.P.M. and the small pinion is for 33½ R.P.M. A special wrench is supplied to fit the set screws that hold pinions on motor shaft. The special friction drive takes up the difference in pinions automatically.

### CONTROLS

The Phono-Radio Switch when turned to the right (clockwise) connects the pickup to the radio receiver and at the same time shorts radio signals, when turned to the left (counter clockwise) it disconnects the pickup and permits the radio to function normally.

The motor switch is controlled by the starting and stopping lever. This lever, through cam action engages and disengages the special friction drive pulley at the same time it throws the motor switch "On" and "Off".

The Phono Record Player is so wired that the volume control of the receiver is used to vary the amount of output.

### OPERATION

After all connections have been made, the Phono Record Player, should be placed upon a solid stand and set so that the turn table is level.

Place selected record on the turn table. (33½ R.P.M. See note for information on 78 R.P.M.)

Loosen the Pickup rest bracket by rolling the rubber locking ring down. Insert needle in pickup.

Turn Phono-Radio Switch to the right, Phono position.

Pull starting level forward.

Lift pickup and gently lower it on the record so that the needle point enters the outside groove.

Adjust volume control (on receiver) to the desired level.

### CARE OF RECORD PLAYER

1—Never leave Pickup set on the record when not in use. Lock in stand with rubber lock ring.

2—Do not rotate needle in the pickup after once used, as this causes excessive record wear, resulting in poor reproduction.

3—Oil the motor once, for about every 200 hours of service. Be sure that the wick in the oil well is saturated but not to the extent that the oil overflows.

4—The friction drive pulley bearing is provided with an oil hole on the top of the bearing stud. Oil as needed.

5—The turn table spindle is provided with an oil hole on top. To oil turn table spindle, remove the turn table and clean bearing, then oil surface of bearing. Replace turn table and fill oil hole in top of spindle.

6—It may be advisable to apply a little light grease to the slide bar studs at least once a year.

